# TRAFFIC IMPACT ANALYSIS

The Streets at Southglenn

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# I. EXECUTIVE SUMMARY

Northwood Ravin, LLC and Alberta Development Partners, LLC are proposing to redevelop both the Macy's and Sears within the Streets at Southglenn, a mid-size shopping center located at the southwest corner of Arapahoe Road (Rd) and University Boulevard (Blvd) in Centennial, Colorado. The proposed redevelopment will include demolition of the two anchor stores, reuse of existing structures, and include construction of new multi-use structures, creating a mix of entertainment, retail, residential, and office spaces. The redevelopment will be served by several existing access points onto the adjacent transportation network, including two existing access points onto Arapahoe Rd, three access points onto University Blvd, two access points onto Easter Avenue (Ave), and three access points onto S Race Street (St). Two future planning horizons were evaluated for the site, including a short-term future year (2022, full build-out) and long-term future (2040, planning horizon).

The study assessed the effects of project-related vehicle trips on the adjacent roadways and identified roadway improvements needed to accommodate anticipated traffic operations. The Streets at Southglenn redevelopment project is estimated to generate about 6,100 new daily trips while maintaining the same level of service (LOS). This report recommends two background mitigation measures, which are address identified operational and/or safety concerns identified during the evaluation of existing and background traffic. The two mitigation measures are summarized in more detail in **Section IV.C.** of this report:

- **Short Term Future**: Convert the intersection at S University Blvd and E Davies Ave to a Right-In/Right-Out (RIRO). Adjust signal timings at Arapahoe Rd and Vine St to run split phasing to meet the City of Centennial's LOS standards.
- **Long Term Future**: No long-term mitigation measures were identified.

With these improvements, the study concludes that acceptable operations can be provided at the study area intersections.

# II. INTRODUCTION

Northwood Ravin, LLC and Alberta Development Partners, LLC are proposing to redevelop both the Macy's and Sears within the Streets at Southglenn, a mid-size mixed-use retail center located in Centennial, Colorado. **Figure 1** shows the site's location in relation to major roadways in the area. The proposed redevelopment will involve the construction of new multi-use structures, creating a mix of entertainment, retail, residential, and office spaces. Currently, the existing Macy's is in business. The Sears is no longer in business, but the building is currently occupied by a seasonal retail store. The two existing anchor stores host an available 307,700 square feet (sf) of space. After demolition of the existing sites and new construction, the proposed land uses include:

- Approximately 1071 residential dwelling units (DUs)
  - 148 approved but not yet constructed units at or near the Macy's site, already approved in the existing Master Development Plan (MDP).
  - 225 new units at the Macy's site
  - 698 new units at the Sears site
- Approximately 280,000 sf of new entertainment, office, and retail space
  - 116 thousand square feet (ksf) of retail/entertainment and 129 ksf of office at the Macy's site
  - 35 ksf of retail at the Sears site

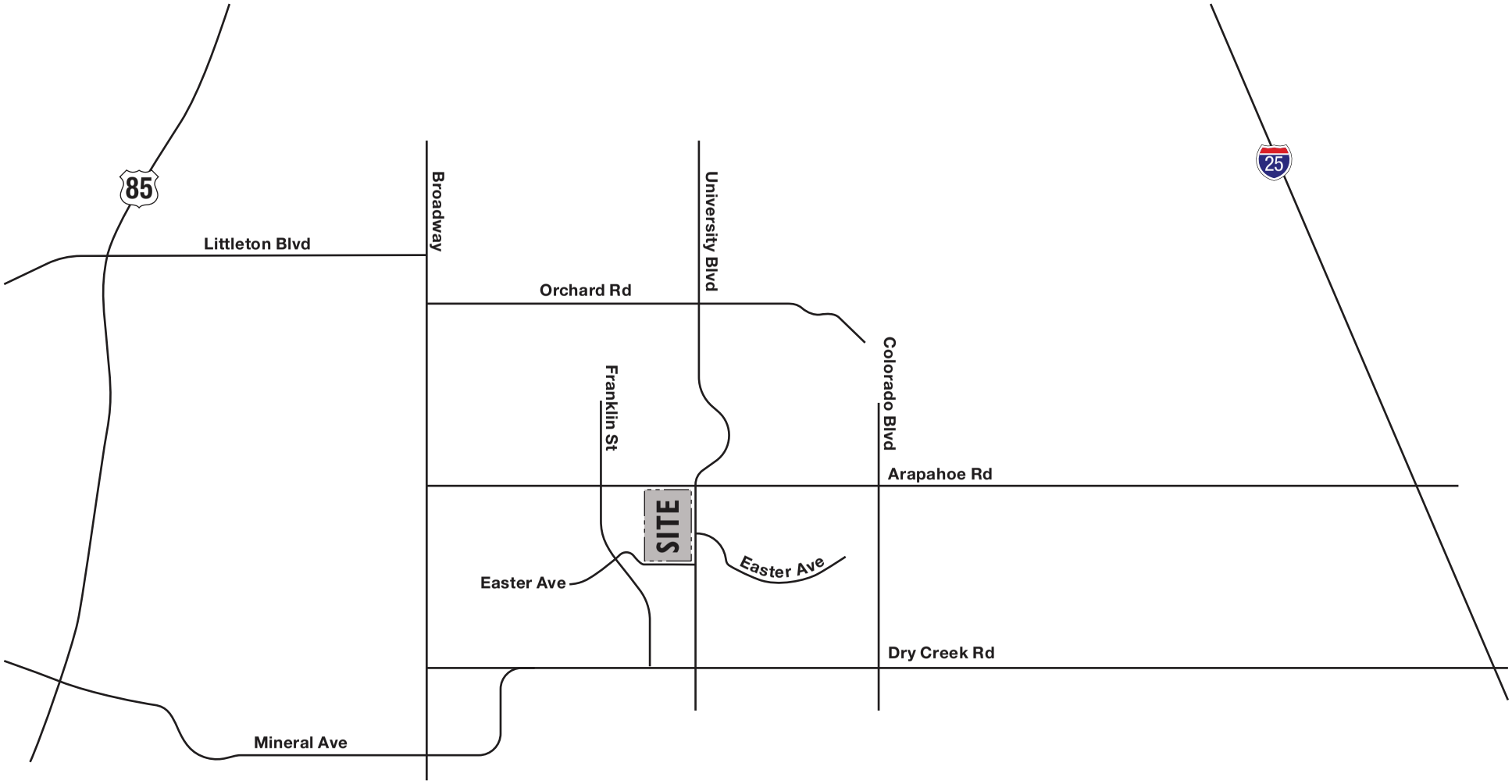
These land uses are anticipated maximums and represent a conservative analysis. Specific site plan submittals will be required that will define actual building square footages.

Several access points onto the adjacent transportation network will serve the redevelopment. The existing access points would remain and include two onto Arapahoe Rd, three onto University Blvd, two onto Easter Ave, and three onto S Race St. **Figure 2** shows the site plan and access points.

Two future planning horizons have been evaluated for the site:

- **Short Term Future**. The Year 2022 time-period (three-year horizon) was chosen to determine the effects of proposed project-related traffic when the site reaches full build-out.
- **Long Term Future**. The Year 2040 was selected for long term analyses (20-year horizon), consistent with the current long-term planning timeframe used by the Denver Regional Council of Governments (DRCOG).

This study assesses the traffic impacts on the adjacent roadways related to the proposed redevelopment of the existing land uses and identifies roadway improvements needed to accommodate anticipated project-related vehicle trips. This report includes information pertaining to existing traffic and safety conditions, additional trips associated with the proposed redevelopment, and total traffic volume projections for the short term and long-term planning horizons. Felsburg Holt & Ullevig (FHU) has completed this study based on development data provided by Northwood Ravin LLC, Alberta Development Partners LLC, the City of Centennial, and on local conditions documented in summer 2019.

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Vicinity Map | FIGURE 1

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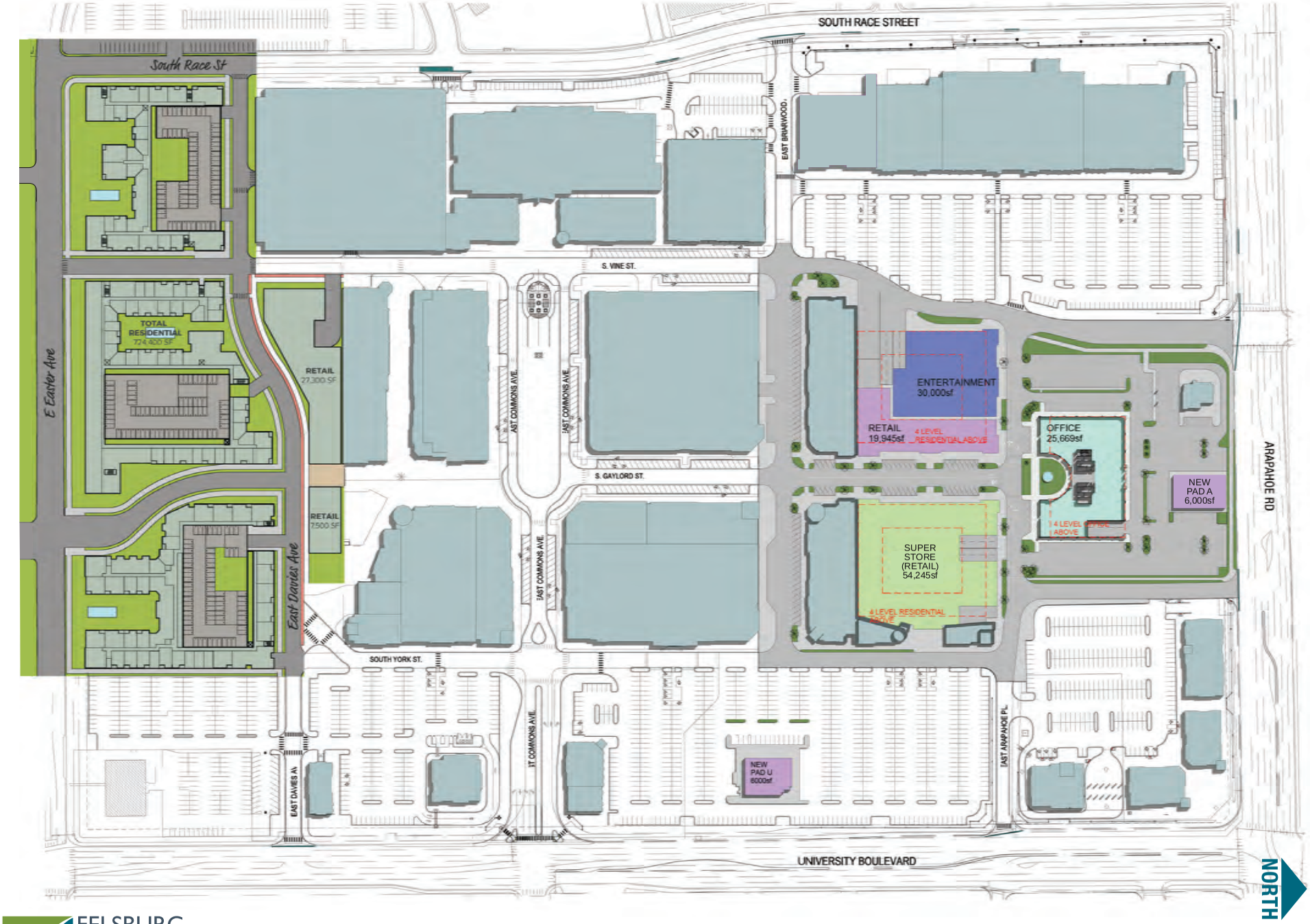


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## Conceptual Site Plan

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FIGURE 2

# III. EXISTING CONDITIONS

This chapter describes current roadway conditions in the study area, including geometry, volumes, and existing operations.

## III.A. Surrounding Land Use

Most of the area surrounding the Streets at Southglenn is residential communities with some commercial land use adjacent to both Arapahoe Rd and University Blvd. There are two schools in close proximity to the project site, including Arapahoe High School about 2/3 of a mile south along University Blvd and Twain Elementary School about 1/3 mile to the west along S Franklin St.

## III.B. Other Relevant Studies

Two previous traffic analyses were identified as relevant for this evaluation:

- FHU evaluated the conversion and redevelopment of the Southglenn Mall to the Streets at Southglenn in October 2005. The *Southglenn Mall Redevelopment Traffic Impact Analysis* evaluated University Blvd, Arapahoe Rd, Race St, and Easter Ave in support of the changes envisioned for the mall.
- FHU evaluated traffic and roadway network changes along E Easter Ave associated with the redevelopment of the Sears Department Store in the Streets at Southglenn in December 2018. This was a follow-up to the 2005 traffic impact analysis for the overall mall redevelopment.

## III.C. Existing Roadway Network

The Streets at Southglenn is surrounded by University Blvd on the east, Arapahoe Rd on the north, Race St on the west, and Easter Ave on the south. Each of these is described below.

### *South University Boulevard*

South University Blvd (State Highway 177) is generally a four-lane north-south regional arterial in the study area with a ¼ mile six-lane segment surrounding the Arapahoe Rd intersection.

### *S University Boulevard and E Easter Avenue/E Easter Place*

The intersection of S University Blvd and E Easter Ave/E Easter Place (Pl) is a four-leg, signalized intersection. The NB approach has a designated left-turn lane, a thru lane, and a thru/right-turn lane. The WB approach has a designated left-turn lane, a thru lane, and a right-turn lane. The SB approach has a designated left-turn lane, two thru lanes, and a right turn lane. The EB approach has a designated left-turn lane, a thru lane, and a right turn lane. Bicycle lanes are provided along both sides of E Easter Ave and E Easter Pl.

### *S University Boulevard and E Davies Avenue*

The intersection of S University Blvd and E Davies Ave is three-leg unsignalized intersection. The NB approach has a left-turn lane and two thru lanes. The SB approach has two thru lanes and a dedicated right-turn lane. Free flow conditions exist for both S University Blvd approaches. Eastbound E Davies Ave has a single shared left/right lane with stop control.

### *S University Boulevard and E Commons Avenue/E Easter Avenue*

The intersection of S University Blvd and E Commons Ave/E Easter Ave is four-leg signalized intersection. The NB approach of University Blvd has a designated left-turn lane, two thru lanes, and a right-turn lane. The SB approach of University Blvd has a designated left-turn lane, two thru lanes, and a right-turn lane. The EB approach on E Commons Ave has two designated left-turn lanes, one thru lane,

and a right-turn lane. The WB approach on E Easter Ave has a designated left-turn lane and a thru/right-turn lane.

### *S University Boulevard and E Arapahoe Place*

The intersection of S University Blvd and E Arapahoe Pl is a three-leg unsignalized intersection. The E Arapahoe Pl eastbound approach is restricted to RIRO movements and is stop controlled. Free flow conditions exist for both the NB and SB approaches on University Blvd. The NB approach has two thru lanes and a thru/right-turn lane. The SB approach has three thru lanes and a designated right-turn lane. The EB approach on E Arapahoe Pl has a single right-turn lane; no other movements are permitted.

### *S University Boulevard and E Arapahoe Road*

The intersection of S University Blvd and E Arapahoe Rd is four-leg signalized intersection. This intersection experiences the highest traffic volumes in the study area. The EB approach on Arapahoe Rd has two designated left-turn lanes, three thru lanes, and a single right-turn lane. The WB approach has two designated left-turn lanes, three thru lanes, and a single right-turn lane. The SB and NB approaches on S University Blvd are identical and have two designated left-turn lanes, three thru lanes, and a single right-turn lane.

## *E Arapahoe Road*

E Arapahoe Rd is generally a four-lane east-west regional arterial in the study area with a 1/3 mile six-lane segment surrounding the University Blvd intersection. The existing Arapahoe Rd bridge over Big Dry Creek is scheduled to be replaced by the City of Centennial as a six-lane structure in the next few years.

### *E Arapahoe Road and S Race Street*

The intersection of E Arapahoe Rd and S Race St is a three-leg signalized intersection. The NB approach of S Race St has a designated left-turn lane and right-turn lane. The WB approach of E Arapahoe Rd has two thru lanes and a right-turn lane. The EB approach of E Arapahoe Road has a designated left-turn lane and three thru lanes.

### *E Arapahoe Road and S Vine St*

The intersection of E Arapahoe Rd and S Vine St is a four-leg signalized intersection. The NB approach of S Vine St has a thru/left-turn lane and a right-turn lane. The SB approach of S Vine St is identical to the NB approach with the same right-turn lane and thru/left-turn lane. The EB approach on E Arapahoe Rd has one designated left-turn lane, two thru lanes, and a thru/right-turn lane. The WB approach on E Arapahoe Rd is identical to the EB approach with the same single designated left-turn lane, two thru lanes, and a thru/right-turn lane.

### *E Arapahoe Road and S York Street*

The intersection of E Arapahoe Road and S York St is a four-leg unsignalized intersection. The NB approach of S York St has a single lane approach with left, right, and thru movements permitted and is stop controlled. The SB approach has a single approach lane that allows for all movements. The EB approach of E Arapahoe Rd has a designated left-turn lane, three thru lanes, and a right-turn lane. The WB approach of E Arapahoe Rd has a designated left-turn lane, two thru lanes, and a thru/right-turn lane. Both approaches of E Arapahoe Rd allow free flow conditions. This intersection is currently being converted to a ¾ movement intersection, which will restrict left turns and thru movements onto the mainline from the NB and SB approaches.

### *S Race Street*

S Race St is generally a two-lane north-south local collector in the study area.

#### *S Race Street and E Briarwood Avenue*

The intersection of S Race St and E Briarwood Ave is a three-leg unsignalized intersection. The WB approach on E Briarwood Ave exiting the shopping district has one single lane that permits both left- and right-turn movements and is stop controlled. Both the NB and SB approaches of S Race St allow thru movements and permitted left- or right-turns onto E Briarwood Ave. The NB and SB movements are free flow.

#### *S Race Street and E Davies Place (Garage Access)*

The intersection of S Race St and E Davies Pl is a four-leg unsignalized intersection. It is important to note that the east leg on E Davies Pl is both the entrance/exit to the Streets at Southglenn parking garage and both approaches to the intersection on S Race St are in free flow conditions. The NB and SB approaches on S Race St allow left, thru, and right movements. The EB and WB approaches on E Davies Pl allow left, thru, and right movements and are stop controlled.

#### *S Race Street and E Davies Avenue*

The intersection of S Race St and E Davies Ave is a three-leg unsignalized intersection. The EB approach on E Davies Ave exiting the shopping district has one single lane that permits both left- and right-turn movements and is stop controlled. Both the NB and SB approaches of S Race St allow thru movements and permitted left- or right-turns onto E Davies Ave. The NB and SB movements are free flow.

#### *S Race Street and E Easter Avenue*

The intersection of S Race St and E Easter Ave is a three-leg unsignalized intersection. The SB approach on S Race St allows both left- and right-turn movements and is stop controlled. Both the EB and WB approaches of E Easter Ave allow left- or right-turns onto S Race St and are stop controlled.

### *E Easter Avenue*

E Easter Ave is generally a two-lane east-west local collector in the study area.

#### *E Easter Avenue and S Vine Street*

The intersection of E Easter Ave and S Vine St is a four-leg intersection with the southern approach being a private access to a residential community. The SB approach on S Vine St allows both left- and right-turn movements and is stop controlled. Both the EB and WB approaches of E Easter Ave allows left- or right-turns onto S Vine St. The EB and WB movements are free flow.

#### *E Easter Avenue and Gaylord Street*

The intersection of E Easter Ave and Gaylord St is a three-leg intersection. The NB approach on Gaylord St allows both left- and right-turn movements and is stop controlled. Both the EB and WB approaches of E Easter Ave allow left- or right-turns onto Gaylord St. The EB and WB movements are free flow.

#### *E Easter Avenue and Mall Driveway (S York St)*

The intersection of E Easter Ave and Mall Driveway/S York St is a three-leg intersection. The SB approach allows both left- and right-turn movements and is stop controlled. Both the EB and WB approaches of E Easter Ave allow left or right turns onto Mall Driveway. The EB and WB movements are free flow.

## III.D. Existing Traffic Volumes

The traffic counts conducted for this study represent AM and PM peak hour conditions for a typical commuter day. The intersection counts were collected in 15-minute increments during the hours of 7:00 AM to 9:00 AM and from 4:00 PM to 6:00 PM. The various counts were compiled and evaluated to determine peak hours. The morning peak hour was determined to be 8:00 AM to 9:00 AM, and the evening peak hour was determined to be 4:00 PM to 5:00 PM.

Counts along E Easter Ave were taken in December 2018 for an earlier evaluation of the Sears redevelopment. The 2018 counts included the intersections of S York St (Mall Driveway), Gaylord St, and S Vine St. Upon the inclusion of the redevelopment of Macy's within the project scope, counts were taken at the remaining intersections along S Race St, E Arapahoe Rd, and S University Blvd. The second set of counts was completed in July 2019.

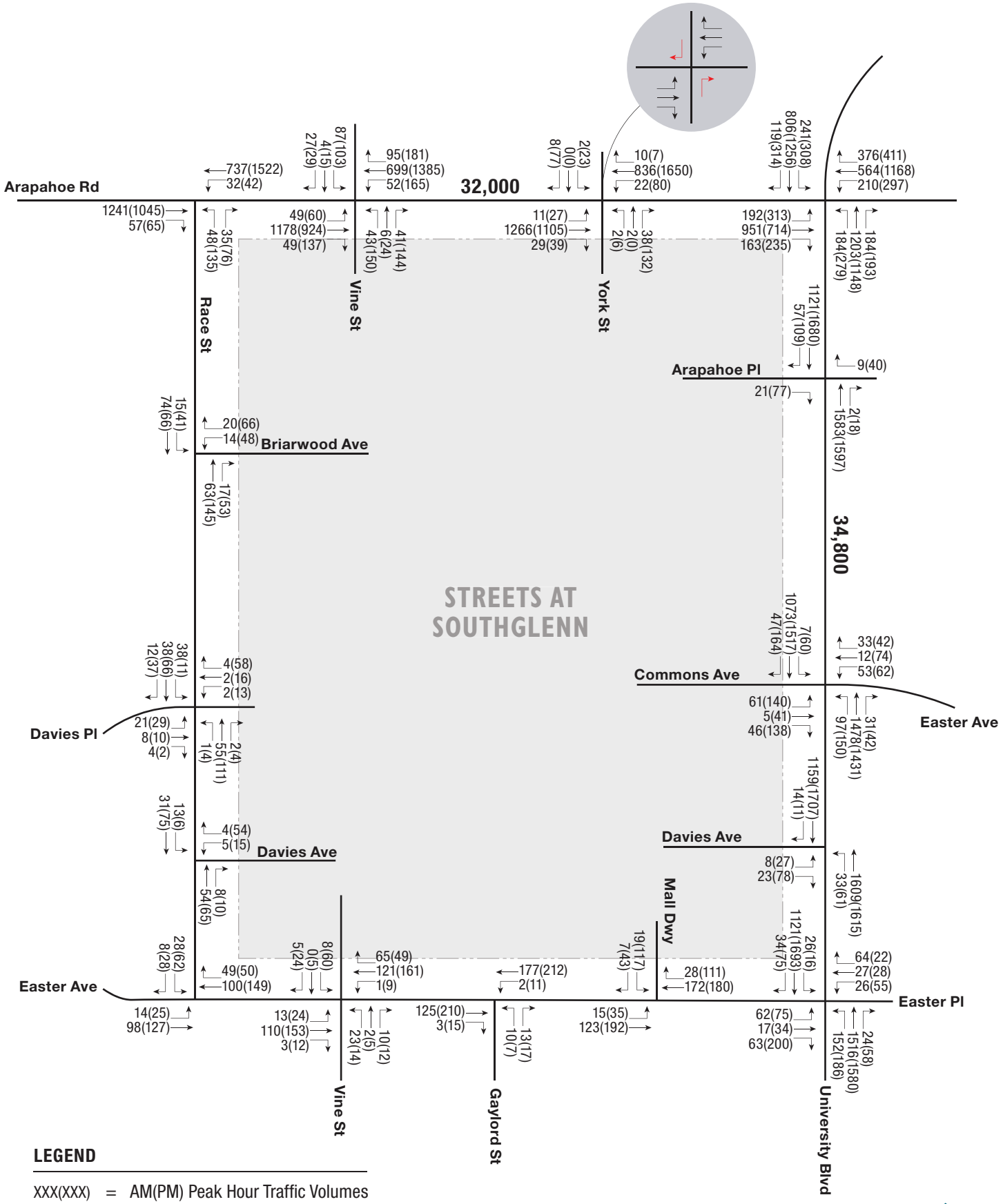
During discussions with the City of Centennial, Northwood Ravin LLC, and Alberta Development Partners LLC, school-related traffic flows were identified as a key need for this study. Since the majority of the project data were collected in July, when school is closed, two supplemental counts were conducted once schools opened in August 2019. These counts were used to develop an 8 percent school adjustment factor, and the July counts were increased by this amount to reflect school conditions.

The PM peak hour traffic passing through the busier study area intersections tends to be greater than the AM peak hour, and S University Blvd east of the project site is the busiest roadway segment in the study area. The annual average daily traffic (AADT) used for the project site analysis was determined using the DRCOG Regional Traffic Counts. AADT for E Arapahoe Rd was found to be an estimated 32,000 veh/day, and AADT for S University Blvd was found to be an estimated 34,800 veh/day.

E Arapahoe Rd and S University Blvd peak hour traffic flows near the site display a distinct commuter pattern. E Arapahoe Rd experiences heavier traffic flows in the eastbound direction during the AM peak hour and vice versa in the PM peak hour. S University Blvd experiences less distinct commuter patterns, but traffic flows in the northbound direction are heavier than those in the southbound direction during the AM peak hour and vice versa in the PM peak hour.

Traffic signal timing data along S University Blvd were collected from the Colorado Department of Transportation. Timings along E Arapahoe Rd were obtained from the City of Centennial.

**Figure 3** shows the existing traffic volumes, and **Appendix A** includes the traffic count data**.**




**LEGEND**

XXX(XXX) = AM(PM) Peak Hour Traffic Volumes

**XXXX** = Average Daily Traffic

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NORTH
(NOT TO SCALE)

**Existing Traffic Volumes**

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FIGURE 3

## III.E. Existing Traffic Operations

Existing operational conditions were analyzed at each study intersection near the project site. The analysis is based on procedures documented in the *Highway Capacity Manual*. This analysis procedure provides a LOS, a qualitative measure based on the average delay per vehicle at a controlled intersection described by a letter ranging from "A" to "F." LOS A represents minimal delay, while LOS F represents excessive congestion and delay. The City uses a target LOS D (indicative of an average of 35 seconds or 55 seconds [or less] of delay for vehicles passing through an unsignalized intersection or a signalized intersection, respectively) during the peak hours to determine acceptable vehicular delays. The signalized intersection analysis reports a LOS rating for the entire intersection, while the unsignalized analysis reports a movement LOS for left-turn movements and stop-controlled movements. Trafficware's Synchro traffic analysis software (Version 10.3) was used to perform the LOS calculations. The existing conditions analysis used the current traffic signal timing data for each intersection.

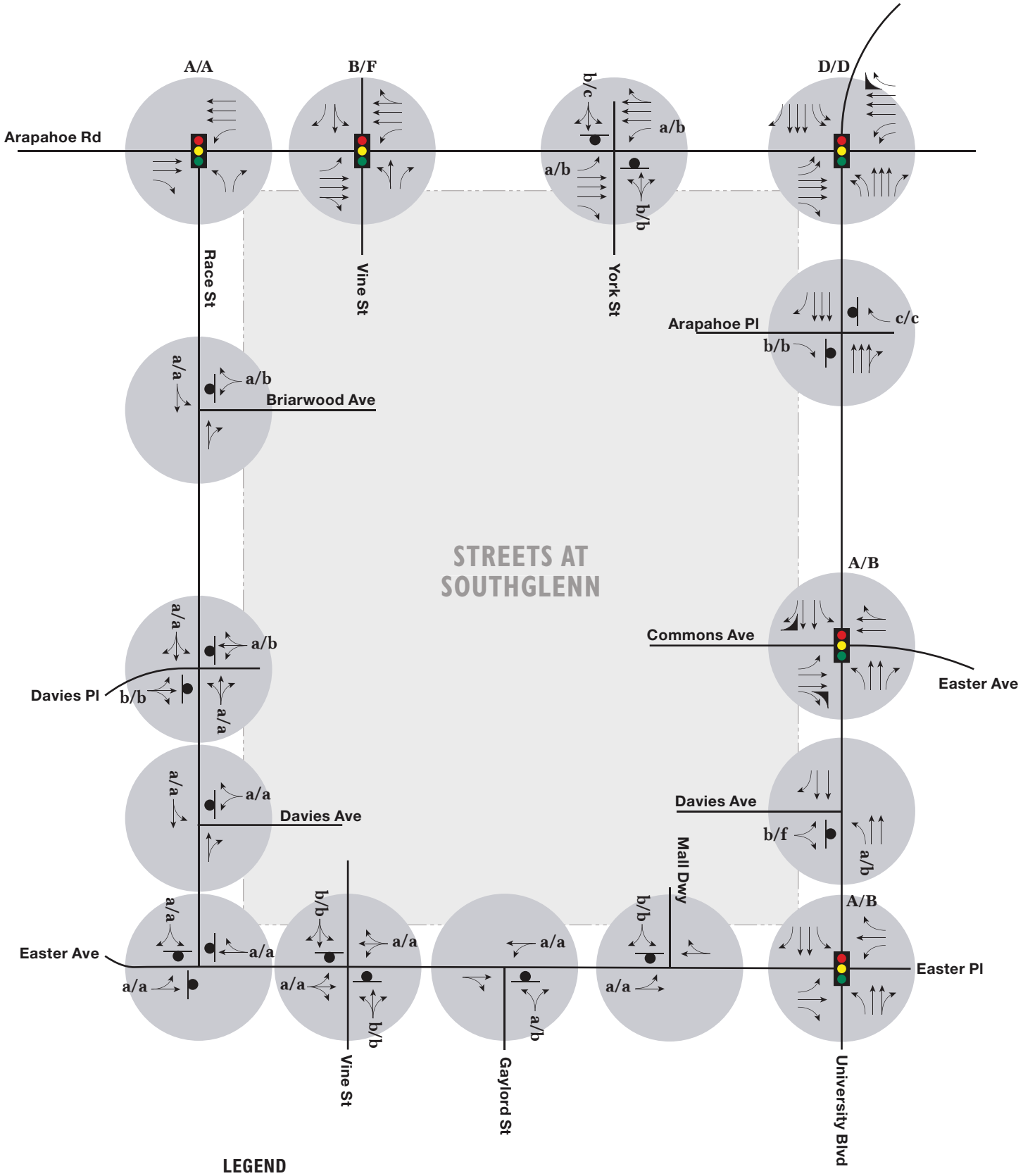
Signalized traffic operations at the study area intersections currently meet the City's target of LOS D, except for the intersection of Arapahoe Rd and Vine St. This intersection operates at an overall LOS E in the PM peak hour and has specific approaches that operate at LOS E or LOS F in the AM peak hour. Most signalized intersections also have approaches that currently operate at LOS E or LOS F but operate at LOS D overall (meeting city standards), including:

- Arapahoe Rd/Race St – The NB approach operates at LOS E in both the AM and PM peak hours.
- Arapahoe Rd/University Blvd – The WB approach operates at LOS E in the PM peak hour.
- University Blvd/Commons Ave – The WB approach operates at LOS E in both the AM and PM peak hours.
- University Blvd/Easter Pl – The EB approach operates at LOS E in the PM peak hour.

Individual movements at the unsignalized study intersections generally operate with acceptable LOS (LOS D or better), with the exception of the following:

- University Blvd/Davies Ave – The EB stop-controlled approach is currently operating at LOS F in the PM peak hour.

**Figure 4** shows the existing lane geometry and LOS. **Appendix B** includes operational analysis worksheets for existing conditions.




**LEGEND**

X/X = AM/PM Peak Hour Signalized Intersection Level of Service

x/x = AM/PM Peak Hour Unsignalized Intersection Level of Service

NORTH
(NOT TO SCALE)

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**Existing Levels of Service**

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FIGURE 4

## III.F. Safety

A safety review was completed for the 15 study area intersections to address City of Centennial Traffic Impact Study requirements. The safety review focused on understanding the magnitude and nature of safety problems within the project limits and related crash causality to roadway geometrics, roadside features, traffic control devices, traffic operations, driver behavior, and vehicle type. To uniformly evaluate across all data sources, the crash history of each facility was prepared using 5 years of data from January 1, 2013, through December 31, 2017. DiExSys™ Vision Zero Suite software was used to perform the safety review for each intersection. The software is a sophisticated and comprehensive suite of analytical tools designed to provide decision support analysis and to incorporate methodology consistent with the *Highway Safety Manual* (HSM). It should be noted that the City typically requests a 3-year crash study. However, given the lack of crash history along S Race St and E Easter Ave, the crash study was expanded to reflect a 5-year history.

An assessment of the safety problems at the intersections of interest was refined using the Safety Performance Function (SPF) methodology when data was available. Development of the SPF allows the LOSS to be determined. The concept of LOSS uses qualitative measures that characterize safety of a roadway segment in reference to its expected performance and severity. If the LOSS predicted by the SPF represents a normal or an expected number of crashes at a specific level of average daily traffic (ADT), then the degree of deviation from the norm can be stratified to represent specific levels of safety.

The range of LOSS values and their qualitative descriptions are as follows:

- LOSS-I – indicates low potential for crash reduction
- LOSS-II – indicates better than expected safety performance
- LOSS-III – indicates less than expected safety performance
- LOSS-IV – indicates high potential for crash reduction

Gradual change in the degree of deviation of the LOSS boundary line from the fitted model mean reflects the observed increase of variability in crashes as ADT increases. LOSS reflects how the intersection is performing considering its expected crash frequency at a specific level of daily traffic. It only provides a crash frequency comparison with the expected norm. It does not, however, provide any information related to the nature of the safety problem itself. If a safety problem is present, LOSS will describe its magnitude only from a frequency standpoint.

The first step in the process was to evaluate the overall number of collisions in the study area. **Table 1** summarizes crash frequency for each intersection within the study area during the 5-year study period. As shown, most of intersection-related crashes occurred at the signalized intersection of S University Blvd and E Arapahoe Rd. Of the 273 total crashes that occurred in the study area, zero crashes resulted in fatalities (FAT), 38 crashes resulted in injury (INJ), and 235 crashes were property damage only (PDO).

## Table 1. Reported Study Area Crashes

| Intersection | Number of Legs | Reported Crashes January 2013 – December 2017 | | | |
|---|---|---|---|---|---|
| | | Total | PDO | Injury | Fatality |
| S University Blvd and E Easter Pl | 4 | 32 | 29 | 3 | 0 |
| S University Blvd and E Davies Ave | 3 | 10 | 8 | 2 | 0 |
| S University Blvd and E Commons Ave | 4 | 33 | 26 | 7 | 0 |
| S University Blvd and E Arapahoe Pl | 4 | 16 | 15 | 1 | 0 |
| S University Blvd and E Arapahoe Rd | 4 | 137 | 123 | 14 | 0 |
| E Arapahoe Rd and S York St | 4 | 4 | 3 | 1 | 0 |
| E Arapahoe Rd and S Vine St | 4 | 26 | 21 | 5 | 0 |
| E Arapahoe Rd and S Race St | 3 | 9 | 5 | 4 | 0 |
| S Race St and E Briarwood Ave | 3 | 1 | 1 | 0 | 0 |
| S Race St and E Davies Pl | 4 | 1 | 1 | 0 | 0 |
| S Race St and E Davies Ave | 3 | 1 | 1 | 0 | 0 |
| S Race St and E Easter Ave | 3 | 1 | 0 | 1 | 0 |
| Easter Ave and Vine St | 4 | 1 | 1 | 0 | 0 |
| Easter Ave and Gaylord St | 3 | 1 | 1 | 0 | 0 |
| Easter Ave and S York St (Mall Driveway) | 3 | 0 | 0 | 0 | 0 |
| | | **273** | **235** | **38** | **0** |

Note: PDO = Property Damage Only

Vision Zero Suite was used to calculate LOSS results for each study area intersection (**Table 2**). For intersections with small sample sizes the LOSS is considered variable and therefore only intersections that experienced five or more crashes within the 5-year study period were analyzed further.

## Table 2. Safety Results for Project Site Intersections

| Intersection | LOSS | LOSS (Inj + Fatal) |
|---|---|---|
| S University Blvd and E Easter Pl | II | I |
| S University Blvd and E Davies Ave | III | II |
| S University Blvd and E Commons Ave | II | II |
| S University Blvd and E Arapahoe Pl | II | II |
| S University Blvd and E Arapahoe Rd | IV | II |
| E Arapahoe Rd and S York St | I | II |

| Intersection | LOSS | LOSS (Inj + Fatal) |
|---|---|---|
| E Arapahoe Rd and S Vine St | I | II |
| E Arapahoe Rd and S Race St | I | II |
| S Race St and E Briarwood Ave | III | II |
| S Race St and E Davies Pl | III | II |
| S Race St and E Davies Ave | III | II |
| S Race St and E Easter Ave | III | III |
| Easter Ave and Vine St | III | II |
| Easter Ave and Gaylord St | II | II |
| Easter Ave and S York St (Mall Driveway) | II | II |

As **Table 2** shows, most intersections perform acceptably (LOSS I & LOSS II), with a few exceptions.

- University Blvd at Davies Ave exhibits an overall LOSS III and an Injury + Fatal LOSS II.
- University Blvd at Arapahoe Rd exhibits an overall LOSS IV and an Injury + Fatal LOSS II.
- All intersections along Race St and the Easter Ave at Vine St intersection exhibit LOSS III with an Injury + Fatal LOSS II or LOSS III. As noted above, these intersections have limited sample sizes and the resulting LOSS results are not necessarily representative.

Specific evaluations of the locations experiencing five or more crashes in the study period and LOSS III or LOSS IV were also conducted, and are included in **Appendix F**. The specific evaluations are summarized as follows:

- **University Blvd at Davies Ave:** This intersection experienced 10 crashes in the 5-year study period and exhibited LOSS III results for overall safety. A diagnostic was performed using Vision Zero Suite, and Approach-Turn crashes are statistically overrepresented (half of represented crashes). Eighty percent of the approach turn collisions involved northbound left turning vehicles from University Blvd entering Davies Ave.
- **University Blvd at Arapahoe Rd:** This intersection experienced 127 crashes in the 5-year study period and exhibited LOSS IV for overall safety. A diagnostic was preformed using Vision Zero Suite, and Rear-End collisions were most common (over 55 percent of crashes). This is typical of congested urban intersections. Sideswipe (same direction) was over-represented in the dataset. Almost half of the sideswipe collisions occurred on the SB approach, which could reflect the curve on the SB approach to the intersection. No mitigation was identified. It was noted by the City's planned reconstruction of the narrow Arapahoe Road bridge over Big Dry Creek may reduce the number of sideswipe collisions at this intersection.
- The intersections along Race St and E Easter Ave that exhibit LOSS III experienced one collision in the 5-year study period. Given the low number of crashes, no pattern analysis was possible, and no further analyses were performed.

# IV. BACKGROUND TRAFFIC CONDITIONS

Background traffic has been estimated for the short term and long-term timeframes and accounts for existing traffic already using the transportation system, plus a general upward factoring of current traffic levels to capture the effects of anticipated future growth in the area. It does not include traffic generated from the redevelopment of Macy's and Sears. To reach future traffic levels, an annual factor of 0.50 percent per year was applied. This factor is based on the current version of the DRCOG travel demand model and has been accepted by the City of Centennial.

## IV.A. Short Term Background Projections and Operations

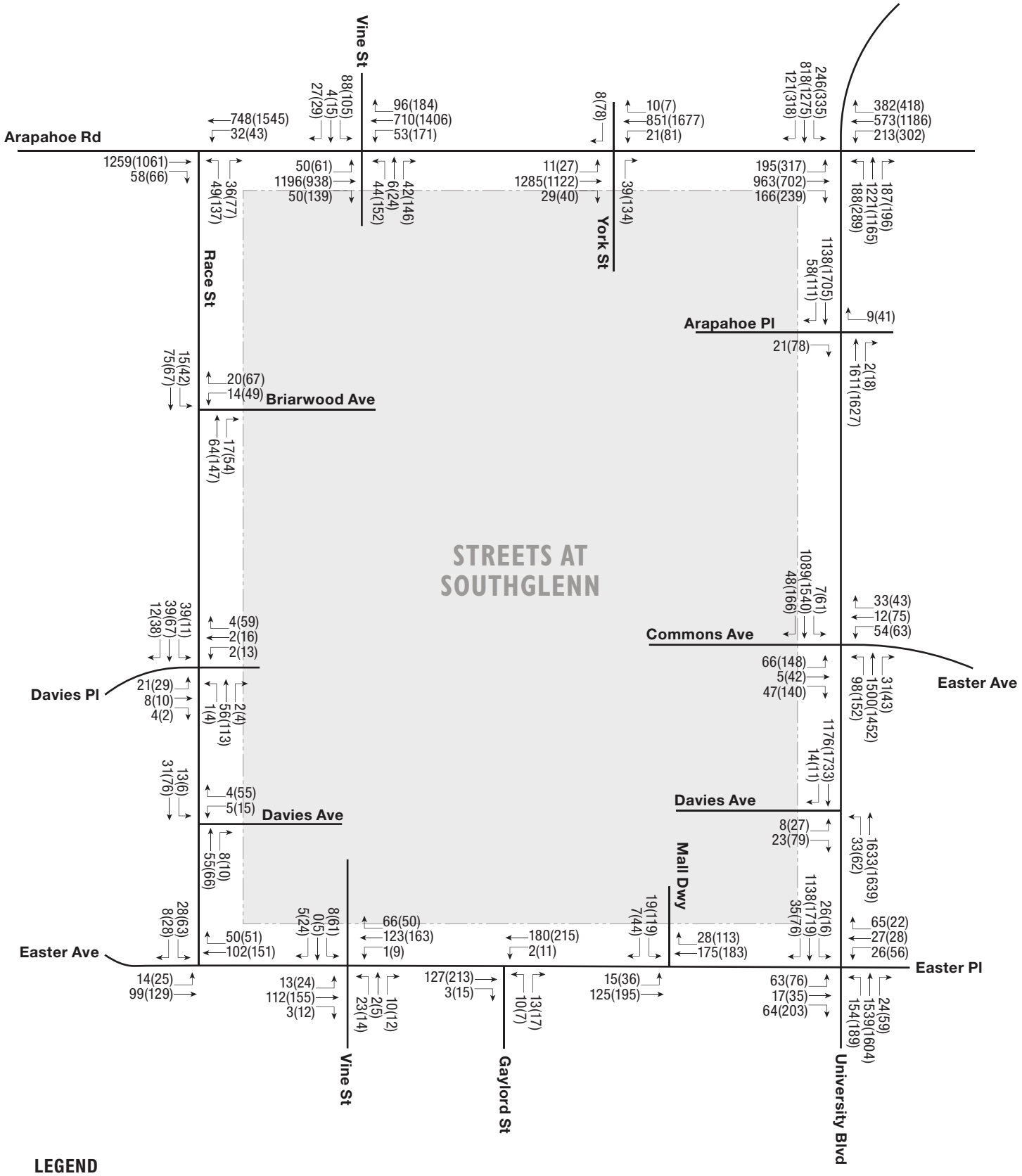
The short-term background traffic reflects traffic growth to the year 2022, which is the year that the Streets at Southglenn redevelopment is anticipated to reach full occupancy. These volumes are shown in **Figure 5**. In general, traffic volumes are estimated to increase by approximately 2 percent over existing conditions.

The City of Centennial converted the Arapahoe Rd/York St intersection from a full movement intersection to a ¾ movement intersection in September 2019, after project traffic counts were conducted. Due to the City's project, the NB and SB left turn lanes and thru movements were removed from this intersection. NB movements were relocated to the Arapahoe Rd/Vine St intersection. SB movements were converted to right turns and distributed as lefts or U-turns at the Arapahoe Rd/Vine St intersection.

**Figure 6** presents the intersection operational results for short term background traffic projections. Traffic signal timings for the short term background traffic analysis were adjusted relative to current signal timings to optimize operation. Intersections shown under existing conditions as being problematic also present operational challenges in the short term without the influence of traffic from the Streets of Southglenn, assuming only signal timing optimization and the signal phasing mitigation improvement were completed. **Section IV.C** of this report discusses the signal phasing change. It is important to note the current construction to change the geometry at Arapahoe Rd and York St is included in the background and the total traffic conditions, as this improvement will be fully in place by the short term (2022) horizon. The LOS remains constant between existing and short term background conditions. All of the signalized intersections evaluated in this study operate at or above City LOS standards. The following intersection(s) experience a movement LOS below the City of Centennial's standards, but the overall LOS is still acceptable by the City of Centennial's standards:

- Arapahoe Rd/Race St – The NB approach operates at LOS E in both the AM and PM peak hours.
- Arapahoe Rd/Vine St – The NB and SB approaches operate at LOS E in both the AM and PM peak hours.
- Arapahoe Rd/University Blvd – The WB approach operates at LOS E in the PM peak hour.
- University Blvd/Commons Ave – The WB approach operates at LOS E in both the AM and PM peak hours.
- University Blvd/Easter Pl – The EB approach operates at LOS E in the PM peak hour.

The unsignalized intersection of University Blvd and Davies Ave remains below the City standards for LOS from the existing condition to the short term background condition. The eastbound left-turn operates at LOS F in the PM for existing and short term conditions. All other unsignalized intersections identified within the scope of this study operate at or above City standards for the short term background conditions.




**LEGEND**

XXX(XXX) = AM(PM) Peak Hour Traffic Volumes

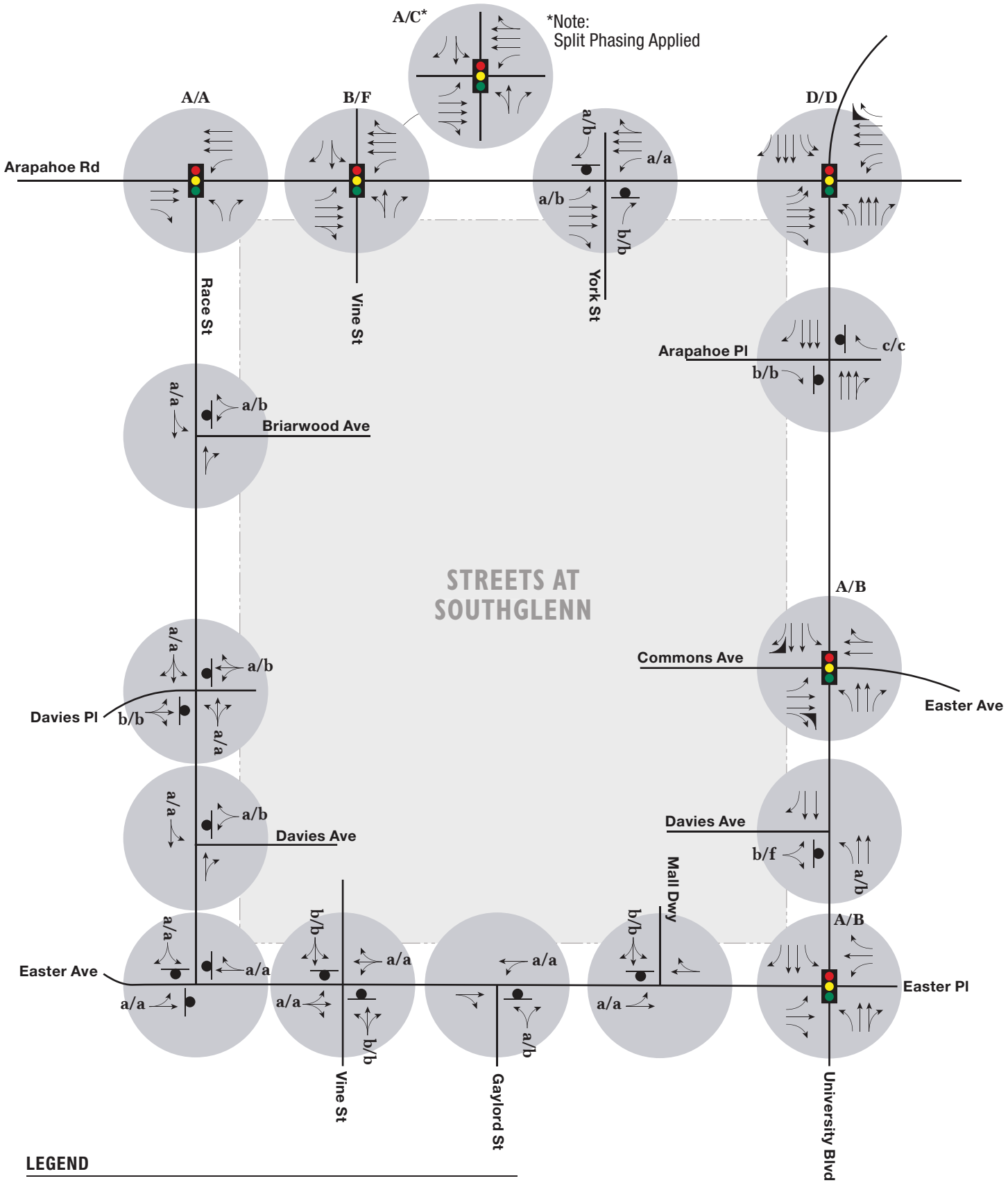
NORTH
(NOT TO SCALE)

FELSBURG HOLT & ULLEVIG

## 2022 Short Term Background Conditions Traffic Volumes

Streets at Southglenn Redevelopment 19380 110/5/19

FIGURE 5




**LEGEND**

X/X = AM/PM Peak Hour Signalized Intersection Level of Service

x/x = AM/PM Peak Hour Unsignalized Intersection Level of Service

NORTH
(NOT TO SCALE)

FELSBURG HOLT & ULLEVIG

## 2022 Short Term Background Conditions Levels of Service

Streets at Southglenn Redevelopment 19380 11/05/19

FIGURE 6

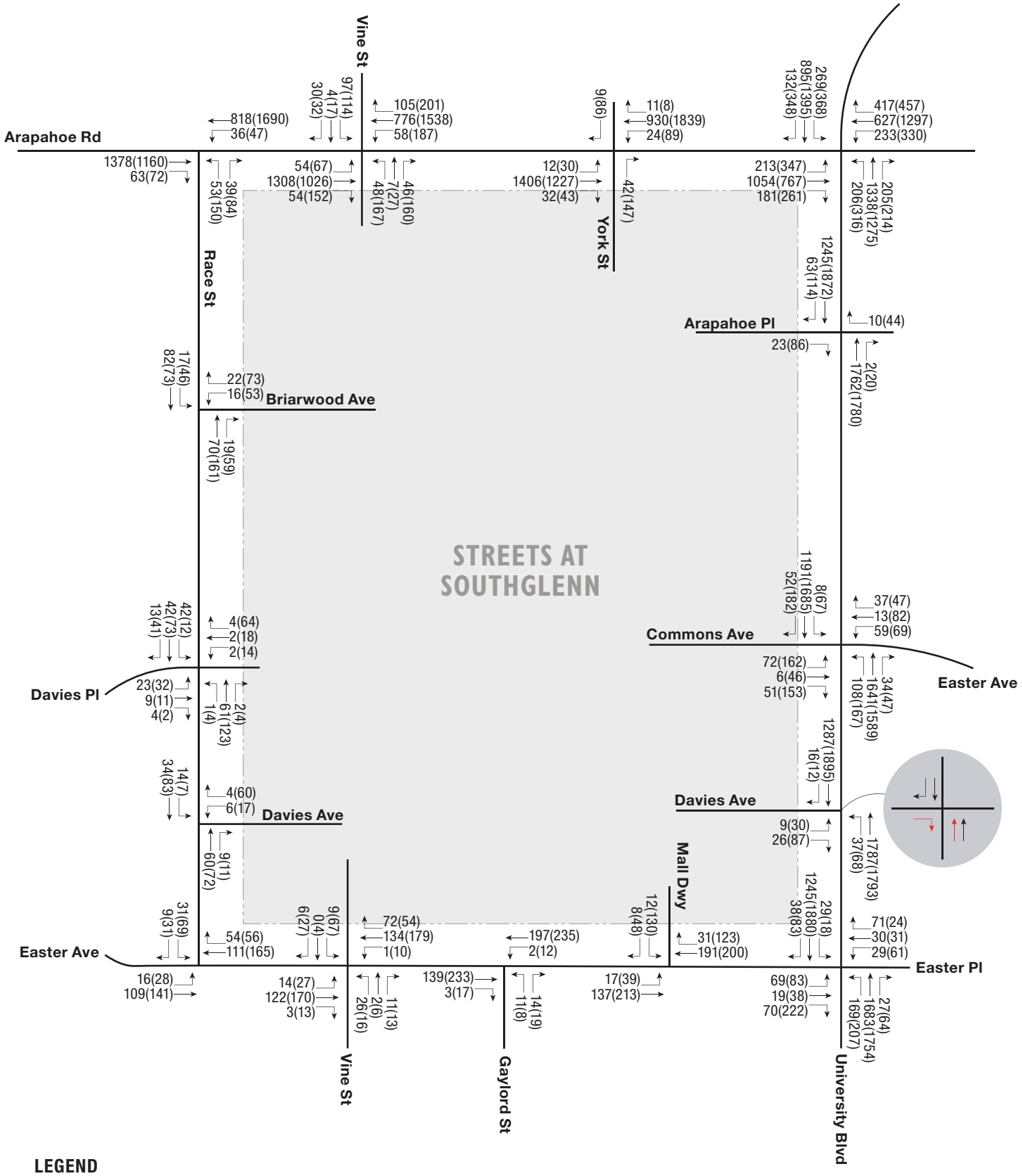
## IV.B. Long Term Background Projections and Operations

The long term background traffic (year 2040) was estimated by further applying the growth factor of 0.5 percent per year, as previously described, to account for future growth. Again, it does not include traffic from the Streets at Southglenn redevelopment project. **Figure 7** shows the long term peak hour turning movement projections for the study area intersections. The 2040 background traffic generally increases about 11 percent over existing traffic levels. The City's modification at Arapahoe Rd/York St is also included.

**Figure 8** presents the intersection operational results for the long term background traffic projections. Like the short term background traffic analyses, traffic signal timings for the long term background traffic analyses were adjusted relative to current signal timings to optimize operation. Intersections that were shown under existing conditions as being problematic do not present operational challenges in the long term scenario without the influence of traffic from the Streets of Southglenn, assuming the mitigation improvements mentioned in **Section IV.C** have occurred. All of the signalized intersections evaluated in this study operate at or above City LOS standards after mitigation is applied. The following intersection(s) experience a movement LOS below the City of Centennial's standards, but the overall LOS is still acceptable by the City of Centennial's standards:

- Arapahoe Rd/Race St – The NB approach operates at LOS E in the AM peak hour.
- Arapahoe Rd/Vine St – The NB and SB approaches operate at LOS E in the AM and at LOS F and LOS E respectively in the PM peak hours.
- Arapahoe Rd/University Blvd – The EB and WB approach operates at LOS E in the PM peak hour.
- University Blvd/Commons Ave – The WB approach operates at LOS E in both the AM and PM peak hours.
- University Blvd/Easter Pl – The EB approach operates at LOS E in the PM peak hour.

The unsignalized intersections within the study area meet the City of Centennial's standards after background mitigation measures are applied.




**LEGEND**

XXX(XXX) = AM(PM) Peak Hour Traffic Volumes

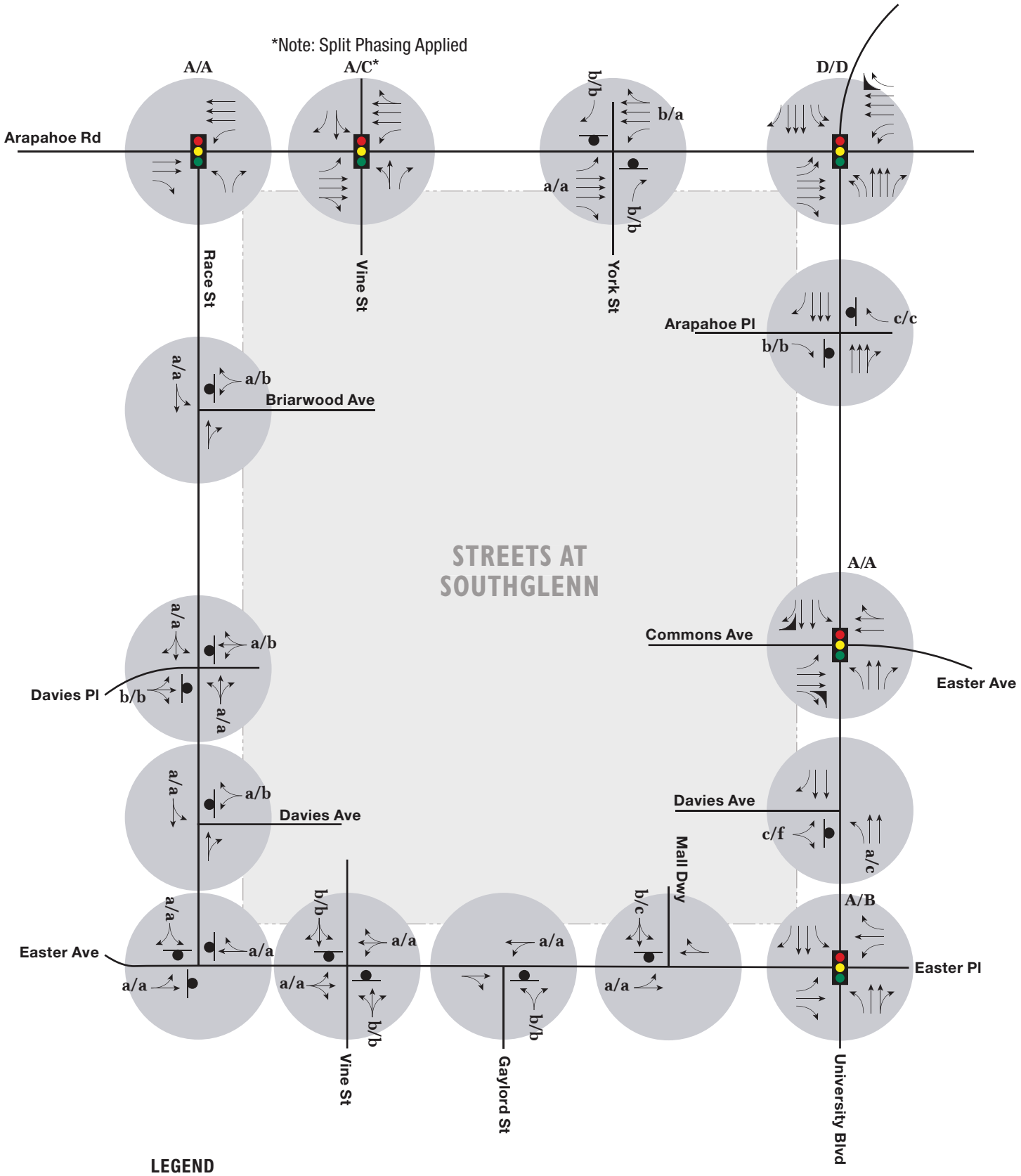
NORTH
(NOT TO SCALE)

FELSBURG HOLT & ULLEVIG

## 2040 Long Term Background Conditions Traffic Volumes

Streets at Southglenn Redevelopment 19380 11/05/19

FIGURE 7




**LEGEND**

X/X = AM/PM Peak Hour Signalized Intersection Level of Service

x/x = AM/PM Peak Hour Unsignalized Intersection Level of Service

NORTH
(NOT TO SCALE)

FELSBURG HOLT & ULLEVIG

## 2040 Long Term Background Conditions Levels of Service

Streets at Southglenn Redevelopment 19380 11/05/19

FIGURE 8

## IV.C. Potential Background Mitigations

Operational concerns were identified in the background traffic scenarios. This section of the report evaluates each concern and briefly identifies potential improvements to address them. It is important to note that these are shortfalls projected to occur without the Streets at Southglenn project; therefore, they are not the responsibility of the project.

- **Arapahoe Rd/Vine St Intersection**: The intersection operates as LOS E in the PM peak hour of the existing and the short-term background condition and LOS F in the PM peak hour of the long-term background condition. Because the LOS at this intersection operates below City standards, mitigation is recommended. Two mitigation options were considered:
  - Change from a thru/left lane and a designated right-turn lane to a thru/right and a designated left-turn lane for both NB and SB approaches. This change would improve operations to acceptable levels of service but would create lane alignment issues across the intersection.
  - Implement split phasing at the signal to allow protected left turns from the NB and SB Vine St approaches. The implementation of split phasing would improve the LOS of the PM peak hour for both the short-term and long-term background conditions to acceptable levels.

  Both potential solutions were reviewed with City staff. Concerns regarding pedestrian phasing and corridor-wide signal timing were expressed with the split phasing option. Concerns were also expressed with geometric improvements on the north side of the intersection, where the developer cannot provide right-of-way for roadway modifications. For the purposes of this study, the split phasing option has been assumed, and the City will monitor this location for operational issues. If these issues develop, the City will work with landowners on both sides of Arapahoe Rd to develop an appropriate geometric solution.
- **University Blvd/Davies Ave Intersection:** In the PM existing, short term background, and long term background conditions, the NB left-turn movement operates at LOS B and the EB left-turn movement operates at LOS F. The EB left-turn movement does not comply with the City LOS standards of LOS D for turning movements, and mitigation is recommended. Crash issues associated with northbound left turns have also been observed at this location, as described previously. Given both the operational and safety concerns, it is recommended that this intersection be converted to a RIRO intersection through the use of raised median and related signing and striping changes. This would improve LOS to acceptable levels and is anticipated to address the identified approach turn crash pattern.

### *Related Elements*

In addition to traffic operations and safety, other transportation elements have been considered. These non-project-related elements are described below:

- The team noted that the bicycle lane/parking lane striping along the south side of E Easter Pl between S University Blvd and S Knolls Way is inconsistent and does not provide a continuous bicycle lane for cyclists leaving the Streets at Southglenn area. The City should review this striping and update it to reduce confusion.
- The study team noted that there are no east-west pedestrian crossings on Race St between E Arapahoe Rd and E Easter Ave. The City should review this corridor and determine if such a crossing is appropriate, particularly with the existing RTD bus facility along Race St at Davies Pl.

# V. PROPOSED PROJECT

The proposed Streets at Southglenn redevelopment will expand on the existing mix of entertainment, retail, residential, and office spaces. The following sections describe the proposed redevelopment and how it is anticipated to interact with the adjacent street network.

## V.A. Land Use and Access

The existing site consists of the two anchor stores, Macy's and Sears, and an office building located on the southwest corner of the Streets at Southglenn. These three structures combine for a total of 315.7 ksf. Parking currently surrounds both the Macy's to the north side and to the south of the Sears and east of the office building. The Streets at Southglenn redevelopment plan includes the following land uses.

### *Existing Development Plan*

As noted earlier, there are 202 existing residential dwelling units within the Streets at Southglenn. The currently approved MDP allows for an additional 148 dwelling that have not yet been built. This includes a conversion of existing retail space into twelve dwelling units. Traffic from these units has been assumed as part of the Macy's redevelopment.

### *Macy's Redevelopment*

The Macy's redevelopment will consist of demolition of the existing 174,693 sf of retail space and is expected to be replaced with five new buildings. It is also anticipated that the existing Macy's Home Store (20,280 sf) will close, but that this space will remain and be leased by a new retail tenant. The proposed new buildings are described below.

- The core of the Macy's redevelopment is expected to include three new five-story mixed-use buildings.
  - The southeast and southwest buildings are proposed to consist of first floor commercial open space and four levels of residential above. Each residential floor is estimated to consist of 30 to 31 units or up to 120 total DUs per building. The commercial space in the southwest building is estimated to consist of 19,945 sf of retail space and a 30,000 sf entertainment space. The commercial space in the southeast building is estimated to consist of a 54,245 sf discount store.
  - The northerly five-story building is expected to consist of 116,842 sf of office space over five floors.
- The remaining two buildings are expected to be 6,000 sf pad sites for stand-alone retail.

### *Sears Redevelopment*

The Sears redevelopment will consist of demolition of the existing 132,584 sf Sears building and a nearby 7,828 sf office building and is expected to be replaced by a smaller retail building and three new five-story residential buildings.

- A total of 542,549 sf of residential is estimated to be split between the three five-story residential buildings at the southernmost end of the Streets at Southglenn site, with a total of 698 DUs.
- About 34,770 sf of retail space is expected to be constructed in the location of the existing Sears. This construction is proposed to create two retail buildings adjacent to each other and north of the three residential buildings.

### *Summary*

The sizes for each proposed land use identified above represent the highest use that could be accommodated within the zoning for the site. Further refinements to this development plan may occur that could reduce the development intensity, but these are the highest anticipated densities. The redevelopment is expected to retain the existing shopping center access points.

## V.B. Trip Generation

Vehicle trips generated by the proposed redevelopment were estimated using trip generation rates documented in *Trip Generation Manual, Institute of Transportation Engineers* (ITE), *Tenth Edition,* 2017. Data in the manual were applied to each use planned for the redevelopment; and total daily, AM peak hour, and PM peak hour trip estimates were developed. The trip generation was separated between the redevelopment of Macy's and Sears. Descriptions of the process used to obtain appropriate rates and related trip generation for each land use type are presented below.

### *Macy's*

#### *Office*

FHU used ITE Land Use Code (LUC) 710 – General Office for the proposed office portion of the Macy's redevelopment, reflecting a total of 116,842 sf of office space.

#### *Retail*

FHU used two ITE Land Use Codes for the planned retail developments on the north side of the project site. ITE Land Use Code (LUC) 820 – Shopping Center was used for the general retail portions of the Macy's redevelopment, reflecting 19,950 sf of retail space in one five-story building plus 12,000 sf in two pad sites, or a total of 31,950 sf. The ITE data for this land use code present difficulties due to the small quantity of retail space when compared to the overall ITE Shopping Center dataset. For example, the average shopping center size in the weekday ITE dataset is 453,000 sf. Therefore, when the equations and rates are applied to a 31,950 sf facility, the results vary by orders of magnitude. They also do not reflect common trends, such as higher retail trip generation in the evening peak hour of adjacent street traffic than in the morning peak hour of adjacent street traffic.

To address these issues, FHU used a feature of the ITETripGen Web-based App to filter the ITE LUC 820 trip generation dataset to include only sites where the size is less than or equal to 100,000 sf. After applying this filter, the app supplies average rates based on at least 25 study sites for AM, PM, and weekday scenarios. A comparison between site-specific trip generation using the filtered rates and trip generation using the overall rates was performed. The filtered results lie roughly in the middle between the unfiltered rates and the results from the unfiltered equations, and the PM peak hour results are slightly higher than the AM peak hour results. Given these comparisons, FHU applied the filtered rates for this LUC. **Appendix D** includes the filtered dataset information from the ITETripGen Web-based App.

The second retail space required the use of ITE Land Use Code (LUC) 815 – Free Standing Discount Store, reflecting a total of 54,245 sf of proposed retail space on the first floor of the easternmost building of the Macy's redevelopment.

#### *Residential*

FHU used ITE Land Use Code (LUC) 221 – Multifamily Housing (Mid-Rise) for the residential portion of the Macy's redevelopment. Current plans reflect a total of 225 DUs of residential space split evenly between the two buildings. Trips from the additional 148 dwelling units available within the existing development plan were also calculated using this land use code.

### *Entertainment*

The proposed entertainment land use is not reflected in any ITE land use code in the ITE *Trip Generation Manual*. Therefore, a study completed by Traffic Analysis & Design, Inc. entitled *Dave & Buster's Trip Rate and Parking Rate Calculations* was used to determine the expected trip generation for the entertainment venue within the Streets at Southglenn project site. The referenced study conducted an analysis to determine the average parking demand and trip generation rates per 1,000 sf of floor area for multiple Dave & Buster's entertainment venue / restaurant sites. The calculated rates were based on actual traffic volumes and parking demand counts collected at sites in the Atlanta, Cleveland, San Diego, and St. Louis areas. Trip rates were calculated using a weighted average trip rate for all four study sites. The weighted average trip rate methodology follows the procedures outlined in the ITE *Trip Generation Manual*. The weighted average trip rates were calculated by summing up all trips entering and exiting the four sites, and then dividing them by the sum of the gross floor area for all four sites. A copy of the study is included in **Appendix D**. The resulting trip rates were applied to the 30,000 sf entertainment space planned for the Streets at Southglenn.

### *Sears*

### *Office*

FHU used ITE Land Use Code (LUC) 710 – General Office when removing the existing office space southwest of Sears.

### *Retail*

FHU used ITE Land Use Code (LUC) 820 – Shopping Center for the retail portion of the Sears redevelopment, reflecting a proposed total of 35,000 sf of retail space.

### *Residential*

FHU used ITE Land Use Code (LUC) 221 – Multifamily Housing (Mid-Rise) for the residential portion of the Sears redevelopment. Current plans reflect a planned total of 698 DUs of residential space split between the three buildings.

### *Total Trips*

Based on the previous assumptions, the total number of trips for each land use in the Streets at Southglenn redevelopment was calculated. They are summarized in **Table 3** and **Table 4**. As can be seen, the redevelopment is anticipated to generate about 6,100 new daily external trips, and between 670 AM peak hour and 475 PM peak hour trips.

## V.C. Internal Capture and Pass-by Trips

Internal capture occurs when people travel between different land uses within a project site, without using the off-site roadway to get between these facilities. The Streets at Southglenn project is intended to take advantage of this phenomenon, allowing both office and residential users to shop at the on-site retail or enjoy the on-site entertainment. These facilities will provide additional internal capture within the Streets at Southglenn. Hence, internal capture is an important consideration for this site.

Internal trip capture between the office, residential, retail, and entertainment land uses has been calculated based on methodologies referenced in ITE's *Trip Generation Manual*. This document refers users to NCHRP Report 684, which provides methodologies for calculating the interactions between various land uses. FHU used a spreadsheet tool to compute the internal capture for the site, and the internal capture worksheets are included in **Appendix D**. Based on this process, the daily internal trip reduction is approximately 6 percent in the AM and 23 percent in the PM for the Macy's site. For the Sears site, internal capture trip reduction is approximately 1 percent in the AM and 17 percent in the PM. The AM and PM peaks have higher reductions than the projected daily trip reduction. This is

reasonable as office workers and residents of the site stop for food/beverages or shopping either immediately before or after work. The results of this process are reflected in **Table 3** and **Table 4**.

Pass-by trips occur when a motorist already traveling along a roadway stops at a location that is not his or her primary destination. These trips are already on the roadway network regardless of the purpose of the secondary stop. The ITE *Trip Generation Manual* provides tools and data for estimating pass-by trips for retail land uses. Pass-by trips were not considered in this project analysis because the mixed-use facilities within the project site are not generally generators of pass-by trips.

## Table 3. Streets at Southglenn Macy's Site Trip Generation Estimates

| Description | Land Use | ITE Code | Quantity | Units | Daily Trips | AM Peak Hour Trip | | | PM Peak Hour Trips | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | In | Out | Total | In | Out | Total |
| **Remove Existing Development** | | | | | | | | | | | |
| Retail | Department Store | 875 | 174.70 | ksf | 3,997 | 101 | 65 | 36 | 341 | 170 | 171 |
| **Existing Macy's Reduction** | | | | | **-3,997** | **-65** | **-36** | **-101** | **-170** | **-171** | **-341** |
| **Previously Approved Development** | | | | | | | | | | | |
| Residential | Multifamily Housing (Mid-Rise) | 221 | 148 | DU | 805 | 34 | 19 | 53 | 33 | 33 | 66 |
| **Approved Development** | | | | | **805** | **34** | **19** | **53** | **33** | **33** | **66** |
| **Add New Development** | | | | | | | | | | | |
| Residential | Multifamily Housing (Mid-Rise) | 221 | 225 | DU | 1224 | 21 | 60 | 81 | 60 | 39 | 99 |
| Entertainment | *(see text)* | *(see text)* | 30.00 | ksf | 600 | 0 | 0 | 0 | 37 | 17 | 54 |
| Retail | Shopping Center | 820 | 31.95 | ksf | 2767 | 104 | 64 | 108 | 112 | 122 | 234 |
| Retail | Free Standing Discount Store | 815 | 54.25 | ksf | 2881 | 63 | 43 | 20 | 131 | 131 | 262 |
| Office | General Office Building | 710 | 128.35 | ksf | 1352 | 126 | 21 | 147 | 23 | 121 | 144 |
| **Macy's New Development** | | | | | **8,824** | **294** | **165** | **459** | **363** | **430** | **793** |
| ***Total Macy's Site Trips*** | | | | | ***9,629*** | ***328*** | ***184*** | ***512*** | ***396*** | ***463*** | ***858*** |
| *Macy's Site Internal Trips (see text)* | | | | | *-2,220* | *-15* | *-15* | *-30* | *-111* | *-111* | *-222* |
| *Macy's Removal (from above)* | | | | | *-3,997* | *-65* | *-36* | *-101* | *-170* | *-171* | *-341* |
| **Macy's Site New External Trips** | | | | | **3,412** | **248** | **133** | **381** | **114** | **181** | **295** |

## Table 4. Streets at Southglenn Sears Trip Generation Estimates

| Description | Land Use | ITE Code | Quantity | Units | Daily Trips | AM Peak Hour Trip | | | PM Peak Hour Trips | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | In | Out | Total | In | Out | Total |
| **Remove Existing Development** | | | | | | | | | | | |
| Retail | Department Store | 875 | 133.00 | ksf | 3,043 | 49 | 28 | 77 | 130 | 130 | 260 |
| Office | Office | 715 | 8.00 | ksf | 76 | 8 | 1 | 9 | 1 | 8 | 9 |
| **Existing Sears Reduction** | | | | | **-3,119** | **-57** | **-29** | **-86** | **-268** | **-131** | **-138** |
| **Add New Development** | | | | | | | | | | | |
| Residential | Multifamily Housing (Mid-Rise) | 221 | 698 | DU | 3,797 | 65 | 186 | 251 | 187 | 120 | 307 |
| Retail | Shopping Center | 820 | 35.00 | ksf | 2,931 | 105 | 64 | 169 | 120 | 129 | 249 |
| **Sears New Development** | | | | | **6,728** | **170** | **250** | **420** | **307** | **249** | **556** |
| ***Total Sears Site Trips*** | | | | | ***6,728*** | ***170*** | ***250*** | ***420*** | ***307*** | ***249*** | ***556*** |
| *Sears Site Internal Trips (see text)* | | | | | *-920* | *-3* | *-3* | *-6* | *-46* | *-46* | *-92* |
| *Sears Removal (from above)* | | | | | *-3,119* | *-57* | *-29* | *-86* | *-131* | *-138* | *-268* |
| **Sears Site New External Trips** | | | | | **2,689** | **110** | **218** | **328** | **130** | **65** | **196** |

### *Trip Distribution*

The external trips generated by the site were assigned to the study area roadway network using percentages of trips expected to travel in different directions to travel to/from the site. Trip distribution percentages for the Streets at Southglenn external trips were based on existing traffic patterns in the area, the development's location relative to the major surrounding roadways, and data from the DRCOG regional travel demand model. In comparison to the previously referenced 2005 Southglenn study, the trip distribution is very similar with the only significant difference the north-south distribution on University Blvd. The 2005 Southglenn study distributed traffic evenly with 25 percent NB and 25 percent SB. The distribution used for this study favored SB traffic with 34 percent SB and 12 percent NB. This study's distribution also reduces the percent of traffic to and from residential neighborhoods at the west and south, in accordance to DRCOG data. They are shown on **Figure 9** and are described below.

- 20 percent to/from the west on E Arapahoe Rd (west of Race)
- 1 percent to/from the north on Vine St (north of Arapahoe)
- 12 percent to/from the north on S University Blvd (north of Arapahoe)
- 22 percent to/from the east on E Arapahoe Rd (east of University)
- 2 percent to/from the east on E Easter Ave (east of University)
- 3 percent to/from the east on E Easter Pl (east of University)
- 34 percent to/from the south on S University Blvd (south of Easter)
- 1 percent to/from the south on Gaylord St (south of Easter)
- 1 percent to/from the north on S Vine St (south of Easter)
- 3 percent to/from the west on E Easter Ave (west of Race)
- 1 percent to/from the west on Davies Pl (west of Race)

The peak hour site generated traffic volumes were assigned to the roadway network and site access based on these trip distribution percentages. **Figure 9** shows the trip distribution and the estimated site generated traffic (external trips) for the proposed development. It should be noted that the revised configurations at Arapahoe and York and at University and Davies were accounted for in the distribution.

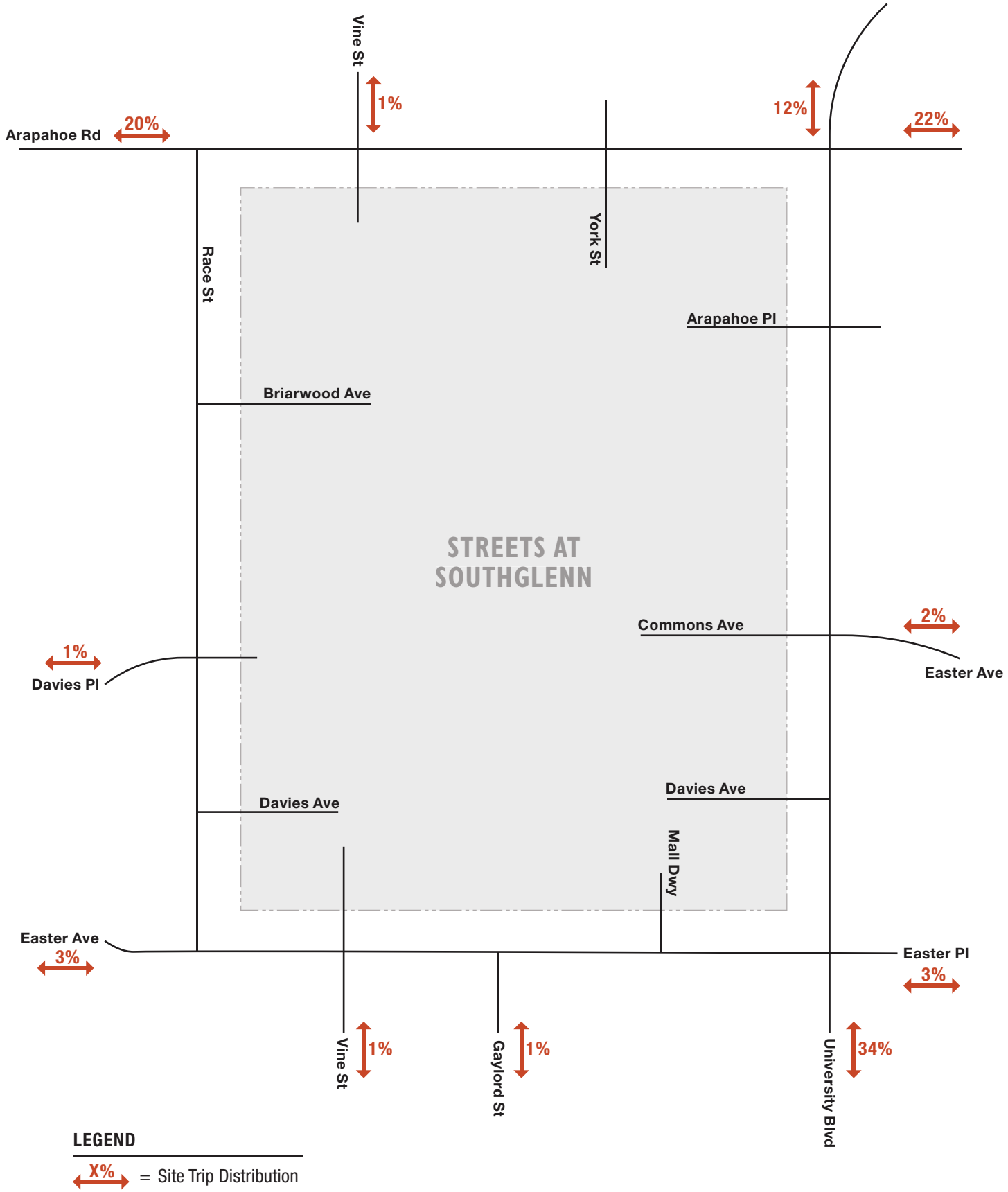
### *Neighborhood Traffic*

The residential communities surrounding the Streets at Southglenn have expressed concerns regarding Streets at Southglenn traffic using neighborhood streets to avoid congestion along adjacent arterial roadways (sometimes referred to as cut-through traffic). FHU reviewed the local roadway network and site traffic distributions to provide further information regarding this topic. Our assessments are summarized below.

- E Easter Ave between S Broadway and S University Blvd is classified as a minor collector[1] and is, therefore, intended to move traffic into and out of the neighborhood. Race Street is a local street that is not continuous either north or south of the Streets at Southglenn.
- A review of existing traffic counts indicates that less than 5 percent of the trips from the Streets at Southglenn currently travel between the development and each of the neighborhoods surrounding the project site. These data were used to inform the trip distribution for the site.
- Trip distributions are based in part on the DRCOG model. A review of these data indicated that less than 3 percent of the trips from the Streets at Southglenn are anticipated to travel between the development and each of the neighborhoods surrounding the project site. This is a significant reduction when compared to the 7 percent to the west and 5 percent to the east considered in the October 2005 study.
- The new land uses proposed in the redevelopment shift the land uses away from retail and toward residential and office space. Blending these land uses allows internal capture within the Streets at Southglenn, reducing pressure on the surrounding roadway network.

Based on these assessments, we believe that the potential for traffic from the new development to travel through the adjacent neighborhoods to avoid congestion is low.

[1] *2017 Centennial Neighborhood Traffic Management Program*, City of Centennial, Revised December 11, 2017, Appendix A.




**LEGEND**

X% = Site Trip Distribution

NORTH
(NOT TO SCALE)

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## Distribution and Site Generated Traffic

Streets at Southglenn Redevelopment 19380 11/05/19

FIGURE 9

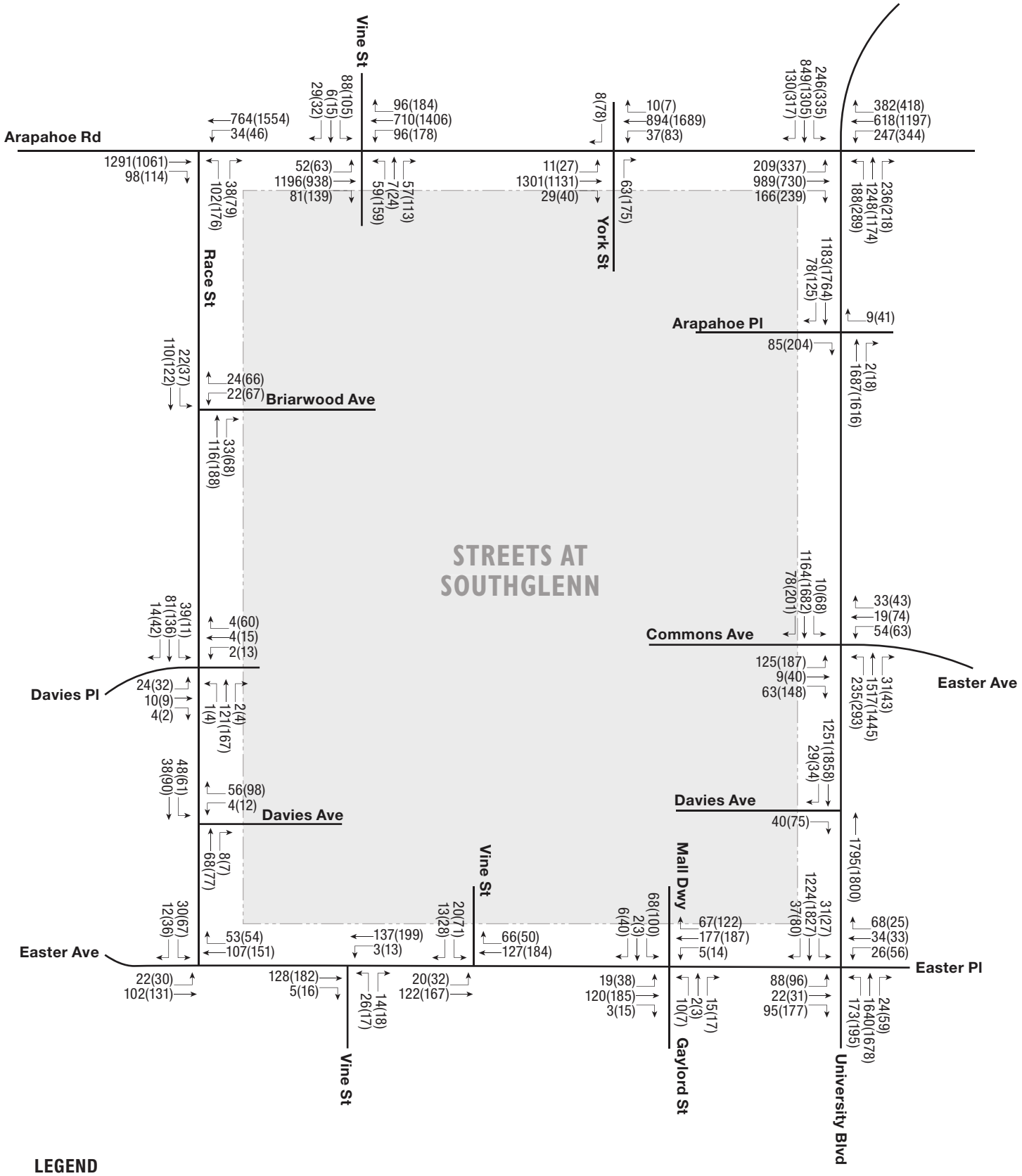
# VI. TOTAL TRAFFIC PROJECTIONS AND OPERATIONS

The external site generated traffic was added to the short term (2022) and long-term background (2040) volumes to develop total traffic volumes. Background mitigation identified in Section IV.C. were also included. These total traffic scenarios were then evaluated to determine LOS and project-related operational affects. LOS worksheets are shown in **Appendix E**. Where concerns were identified, mitigation measures have been proposed.

## VI.A. Short Term Total Projections and Operations

**Figure 10** shows total traffic estimates for the short-term timeframe (year 2022), including short term background traffic, trips from the Streets at Southglenn, and adjustments related to internal capture and pass-by traffic. The Streets at Southglenn traffic effects are projected to be greatest along E Arapahoe Rd and University Blvd. LOS results are presented in **Figure 11**. The resulting total traffic operations are acceptable (LOS D or better) at all of the study area intersections, assuming the identified improvements are in place. The following intersection(s) experience a movement LOS below the City of Centennial's standards, but the overall LOS is still acceptable by the City of Centennial's standards:

- Arapahoe Rd/Race St – The NB approach operates at LOS E in both the AM and PM peak hours.
- Arapahoe Rd/Vine St – The NB and SB approaches operate at LOS E in both the AM and PM peak hours.
- Arapahoe Rd/University Blvd – The WB approach operates at LOS E in the PM peak hour.
- University Blvd/Commons Ave – The WB approach operates at LOS E in both the AM and PM peak hours.
- University Blvd/Easter Pl – The EB approach operates at LOS E in the PM peak hour.




**LEGEND**

XXX(XXX) = AM(PM) Peak Hour Traffic Volumes

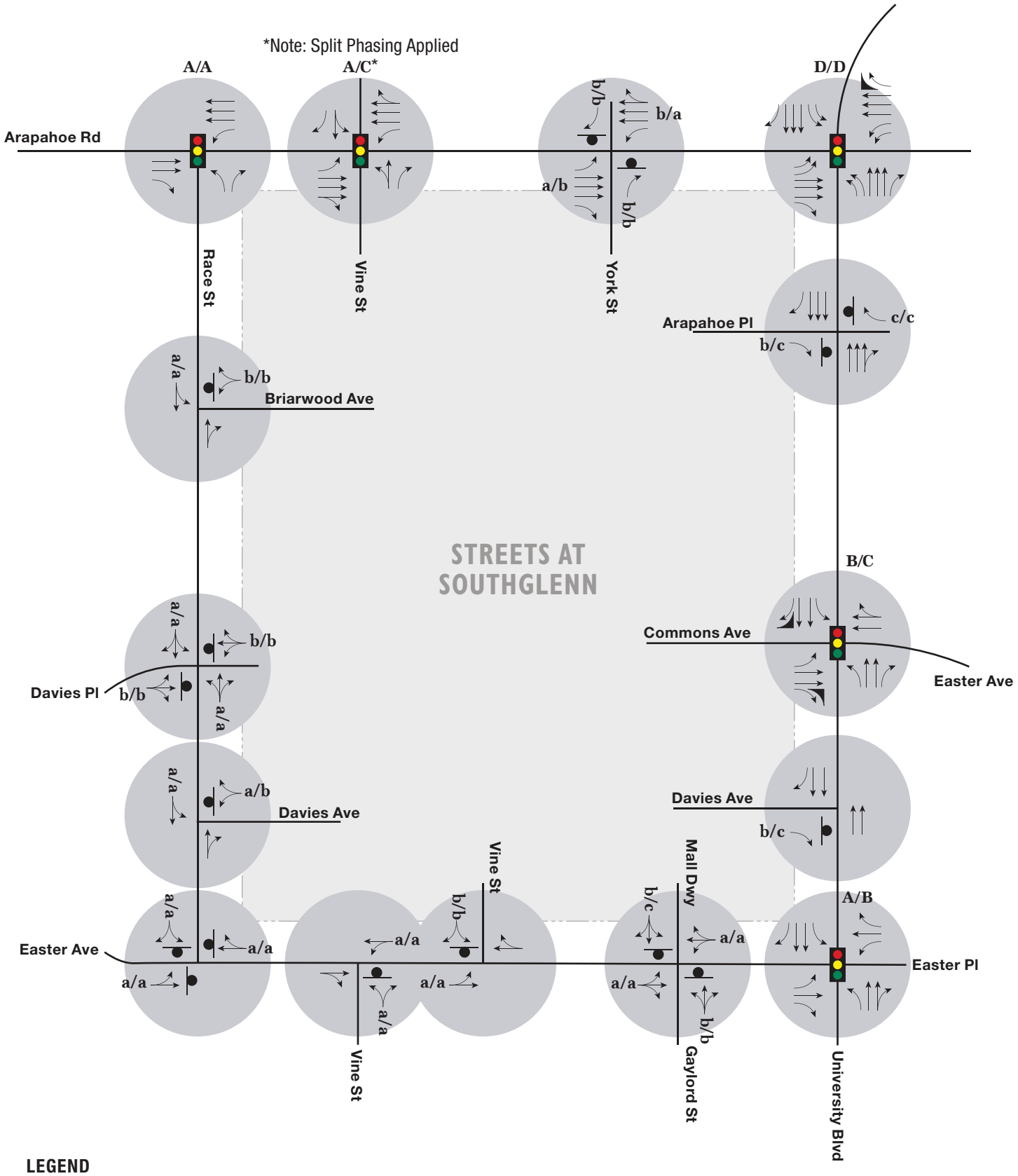
NORTH
(NOT TO SCALE)

FELSBURG HOLT & ULLEVIG

## 2022 Short Term Total Traffic Volumes

Streets at Southglenn Redevelopment 19380 11/05/19

FIGURE 10




**LEGEND**

X/X = AM/PM Peak Hour Signalized Intersection Level of Service

x/x = AM/PM Peak Hour Unsignalized Intersection Level of Service

NORTH
(NOT TO SCALE)

FELSBURG HOLT & ULLEVIG

## 2022 Short Term Total Levels of Service

Streets at Southglenn Redevelopment 19380 11/05/19

FIGURE 11

## VI.B. Long Term Total Projections and Operations

Total traffic estimates for the long-term timeframe (year 2040) are shown on **Figure 12**. The figure reflects long term background traffic, trips from the Streets at Southglenn, and adjustments related to internal capture and pass-by traffic. The Streets at Southglenn traffic effects are projected to be greatest along E Arapahoe Rd and University Blvd. **Figure 13** presents LOS. The resulting total traffic operations are acceptable (LOS D or better) at the study area intersections, assuming the identified improvements are in place. The following intersection(s) experience a movement LOS below the City of Centennial's standards, but the overall LOS is still acceptable by the City of Centennial's standards:

- Arapahoe Rd/Race St – The NB approach operates at LOS E in the AM peak hour.
- Arapahoe Rd/Vine St – The NB and SB approaches operate at LOS E in both the AM and PM peak hours.
- Arapahoe Rd/University Blvd – The WB approach operates at LOS E in the PM peak hour.
- University Blvd/Commons Ave – The WB approach operates at LOS E in both the AM and PM peak hours.
- University Blvd/Easter Pl – The EB approach operates at LOS E in the PM peak hour.

## VI.C. Findings

Th Streets at Southglenn project was evaluated to understand how additional traffic may affect the roadway network and for potential mitigations required by the new development. These efforts are summarized here.

### *Overall Volume Changes*

The removal of the existing Macy's and Sears, coupled with the addition of new office, retail, and residential space, will affect traffic along the roadways surrounding the Streets at Southglenn. **Table 5** summarizes volume changes along Arapahoe Rd, Race St, University Blvd, and Easter Ave. As shown, most of the changes are less than 10 percent and, therefore, do not represent significant changes to traffic flow.

### Table 5. Roadway Volume Summary

| Short Term | | | | | | |
|---|---|---|---|---|---|---|
| | AM | | | PM | | |
| | Background | Total | pct | Background | Total | pct |
| Arapahoe | 2,207 | 2,305 | 5% | 3,027 | 3,085 | 2% |
| Race | 171 | 283 | 65% | 317 | 445 | 40% |
| Easter | 322 | 332 | 3% | 457 | 472 | 3% |
| University | 2,819 | 3,063 | 9% | 3,391 | 3,673 | 9% |
| **Long Term** | | | | | | |
| | AM | | | PM | | |
| | Background | Total | pct | Background | Total | pct |
| Arapahoe | 2,413 | 2,508 | 4% | 3,311 | 3,356 | 2% |
| Race | 186 | 298 | 60% | 346 | 474 | 37% |
| Easter | 353 | 365 | 4% | 499 | 516 | 4% |
| University | 3,086 | 3,329 | 8% | 3,710 | 3,986 | 8% |

### *Traffic Operations*

No operational concerns were identified in the total traffic scenarios, assuming the identified background improvements are in place. Hence, no traffic mitigations have been identified. **Table 6** presents a summary of the operational results.

### Table 6. Operational Results Summary

| Intersection | AM / PM Level of Service | | | | |
|---|---|---|---|---|---|
| | Existing | Short Term Background | Long Term Background | Short Term Total | Long Term Total |
| Arapahoe Rd / Race St | A/A | A/A | A/A | A/A | A/A |
| Arapahoe Rd / Vine St | B/F | A/C[1] | A/C[1] | A/C[1] | A/C[1] |
| Arapahoe Rd / York St[2] | b/c | b/b[1] | b/b[1] | b/b[1] | b/b[1] |
| Arapahoe Rd / University Blvd | D/D | D/D | D/D | D/D | D/D |
| University Blvd / Arapahoe Pl[2] | c/c | c/c | c/c | c/c | c/d |
| University Blvd / Commons Ave | A/B | A/B | A/A | B/C | B/D |
| University Blvd / Davies Ave[2] | b/f | b/f | c/f | b/c[1] | b/d[1] |
| University Blvd / Easter Ave | A/B | A/B | A/B | A/B | B/B |
| Easter Ave / Mall Dwy[2] | b/b | b/b | b/c | b/c | b/c |
| Easter Ave / Gaylord St[2] | a/b | a/b | b/b | b/b | b/b |
| Easter Ave / Vine St[2] | b/b | b/b | b/b | b/b | b/b |
| Easter Ave / Race St[2] | a/a | a/a | a/a | a/a | a/a |
| Race St / Davies Ave[2] | a/a | a/b | a/b | a/b | a/b |
| Race St / Davies Pl (Garage)[2] | b/b | b/b | b/b | b/b | b/c |
| Race St / Briarwood Ave[2] | a/b | a/b | a/b | b/b | b/b |

1- With improvements
2- Unsignalized intersection – worst approach

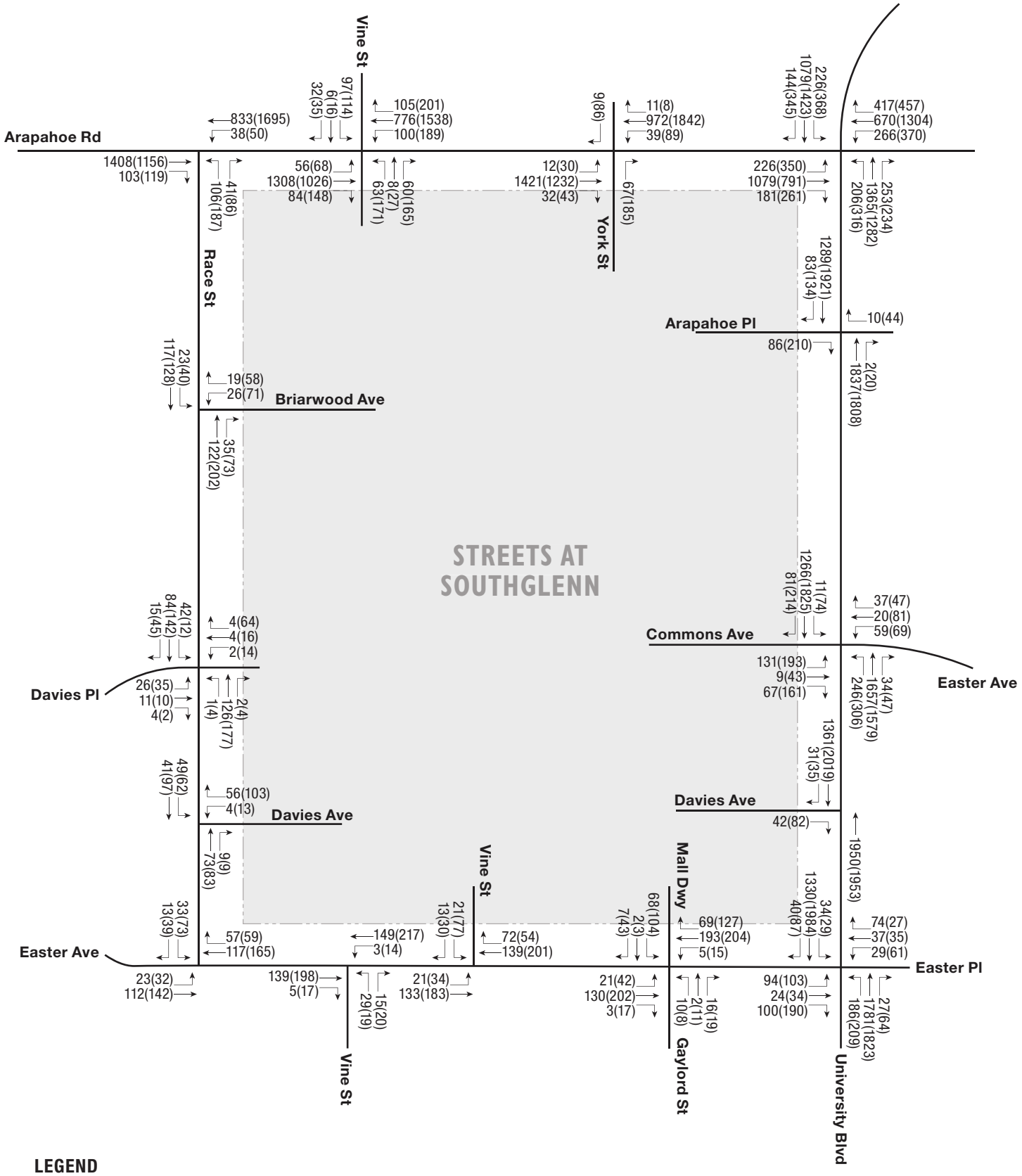
### *Intersection Sight Distances*

The traffic study is based on conceptual plans for two portions of the Streets at Southglenn site (the Macy's area and the Sears area). In the Macy's area, no changes to intersections along the study area roadways are planned, and no new construction is planned adjacent to existing intersections. Hence, no changes to existing sight distances in this area are anticipated. In the Sears area, S Vine St is proposed to be relocated, and new residential building may be constructed along the southerly edge of the site. It is recommended that the site plans for these new buildings be reviewed for sight distances during the City's site plan review process.

### *Bicycle and Pedestrian Connectivity*

As noted earlier, a study of roadway network changes along E Easter Ave due to the relocation of Vine St was performed in 2018. The 2018 evaluation is attached to this report as **Appendix G**. In addition to evaluating the existing offset intersections along this segment of E Easter Avenue, the report made recommendations for bicycle and pedestrian access updates along Easter Ave to accommodate the Vine St relocation.

The background signal phasing mitigation identified at the Arapahoe Rd and Vine St intersection may affect north-south pedestrian crossings of Arapahoe Rd. The City will monitor this intersection for changes. The restriction of the University Blvd and Davies Ave intersection to right-in / right-out will improve bicycle and pedestrian mobility slightly by removing potential left turn conflicts for north-south pedestrians along University Blvd.




**LEGEND**

XXX(XXX) = AM(PM) Peak Hour Traffic Volumes

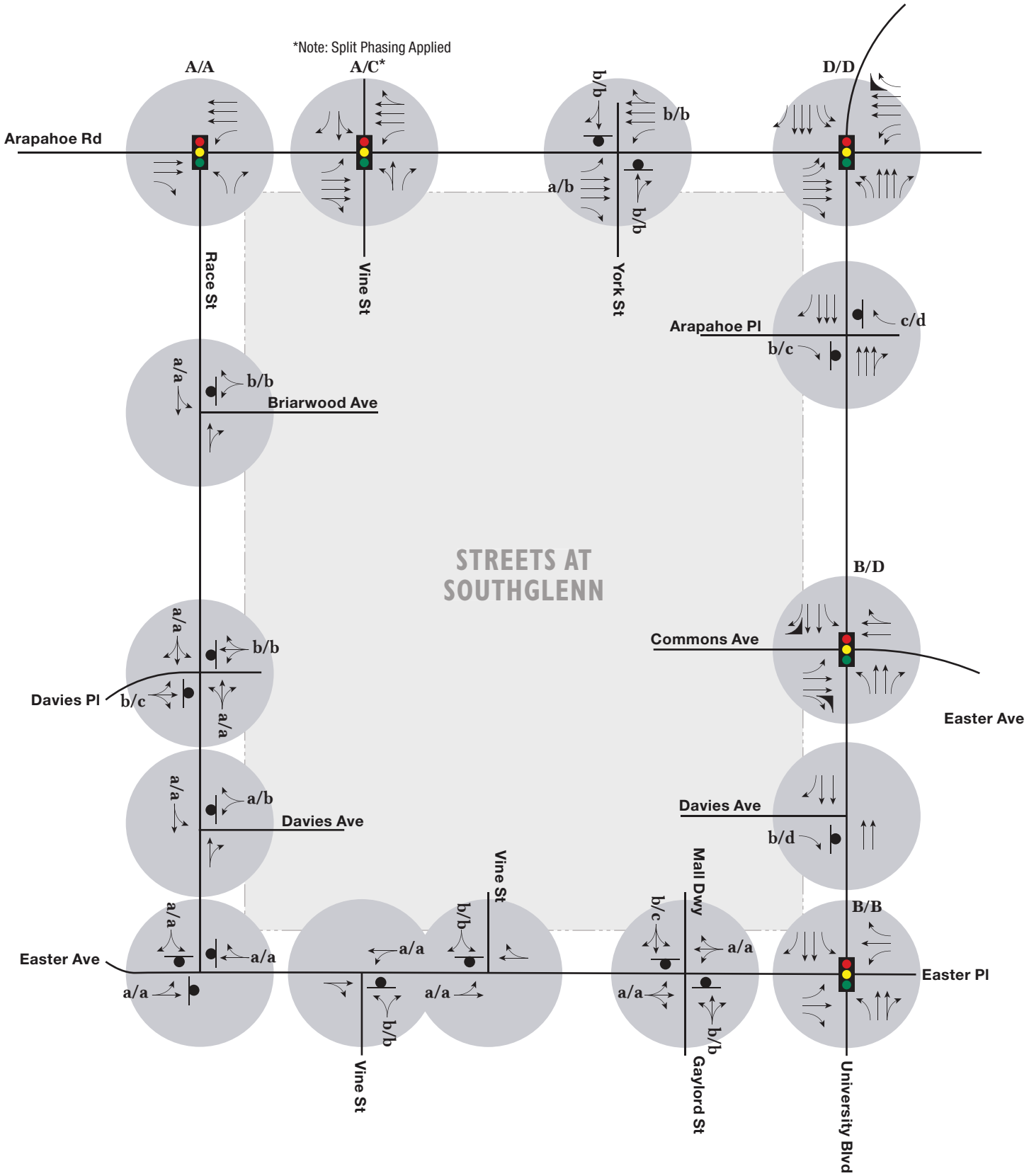
NORTH
(NOT TO SCALE)

FELSBURG HOLT & ULLEVIG

## 2040 Long Term Total Traffic Volumes

Streets at Southglenn Redevelopment 19380 11/05/19

FIGURE 12




**LEGEND**

X/X = AM/PM Peak Hour Signalized Intersection Level of Service

x/x = AM/PM Peak Hour Unsignalized Intersection Level of Service

NORTH
(NOT TO SCALE)

FELSBURG HOLT & ULLEVIG

## 2040 Long Term Total Levels of Service

Streets at Southglenn Redevelopment 19380 11/05/19

FIGURE 13

# VII. SUMMARY AND RECOMMENDATIONS

The proposed Streets at Southglenn redevelopment will create entertainment, office, retail, and residential space within the existing Streets at Southglenn site, at the southwest corner of the Arapahoe Rd and University Blvd intersection. Existing conditions have been evaluated based on the current site configuration, and deficiencies were identified at several locations. Background traffic projections have been completed based on regional growth, and these deficiencies remained. Hence, background improvements have been identified along both Arapahoe Rd and University Blvd during the study analyses, including the Arapahoe Rd/York St, Arapahoe Rd/Vine St, and University Blvd/Davies Ave intersections. These are listed below.

- The Arapahoe Rd/Vine St intersection operates below the accepted level of service in the PM under existing and background conditions. To improve the LOS, the implementation of split phasing signal timing to allow protected left turns from the NB and SB approaches on Vine St is proposed. The implementation of split phasing would improve the operations to comply with City LOS standards.
- The Arapahoe Rd/York St intersection is currently being modified to a ¾ movement intersection. With this change, acceptable operations will be achieved.
- Due to safety and operational concerns, it is recommended that the University Blvd/Davies Ave intersection be converted to a right-in / right-out intersection. This is expected to reduce the above average number of approach turn crashes at the intersection and will improve LOS to an acceptable LOS.

The proposed redevelopment of the Sears and Macy's has been assumed to include approximately 275,000 sf of office, retail, and entertainment space and 946 residential dwelling units. The proposed redevelopment is expected to generate a total of approximately 6,100 external vehicle trips per day, 670 vehicles per hour during the AM peak hour and 475 vehicles per hour during the PM peak hour. Total traffic operations were evaluated based on the addition of these trips to the study area roadway network. No additional mitigation needs were identified. With the background improvements in place, acceptable LOS can be maintained at study area intersections in accordance with current City of Centennial standards.

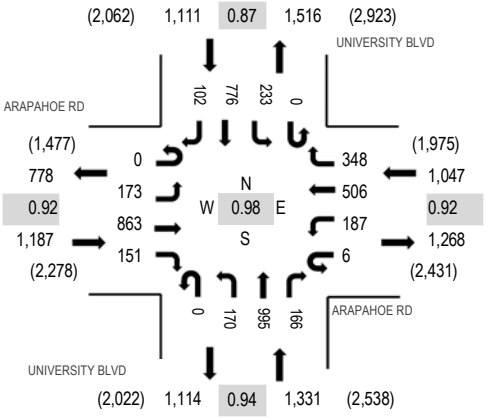
# APPENDIX A. EXISTING TRAFFIC COUNTS

All Traffic Data Services Inc.

(303) 216-2439
www.alltrafficdata.net

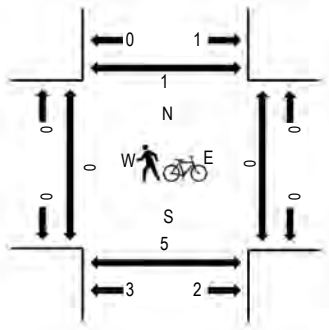
**Location:** 1 UNIVERSITY BLVD & ARAPAHOE RD AM
**Date:** Tuesday, July 30, 2019
**Peak Hour:** 07:45 AM - 08:45 AM
**Peak 15-Minutes:** 08:00 AM - 08:15 AM

## Peak Hour - All Vehicles




Note: Total study counts contained in parentheses.

## Peak Hour - Pedestrians/Bicycles on Crosswalk




## Traffic Counts

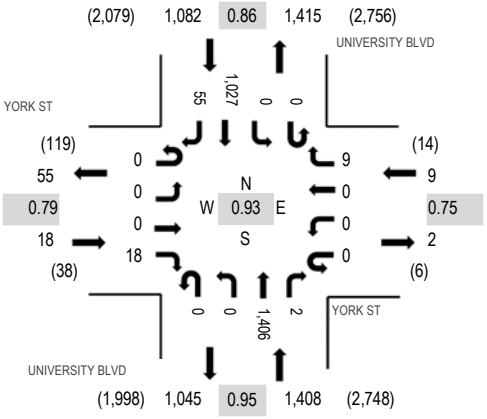
| Interval Start Time | ARAPAHOE RD Eastbound | | | | ARAPAHOE RD Westbound | | | | UNIVERSITY BLVD Northbound | | | | UNIVERSITY BLVD Southbound | | | | Total | Rolling Hour | Pedestrian Crossings | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | | | West | East | South | North |
| 7:00 AM | 0 | 29 | 178 | 19 | 0 | 25 | 90 | 75 | 1 | 24 | 202 | 31 | 0 | 39 | 120 | 24 | 857 | 4,204 | 0 | 1 | 1 | 1 |
| 7:15 AM | 0 | 37 | 224 | 26 | 0 | 27 | 102 | 84 | 0 | 25 | 252 | 35 | 0 | 50 | 145 | 28 | 1,035 | 4,540 | 0 | 0 | 0 | 0 |
| 7:30 AM | 0 | 42 | 243 | 41 | 0 | 38 | 127 | 98 | 0 | 53 | 257 | 40 | 0 | 46 | 147 | 24 | 1,156 | 4,668 | 0 | 0 | 0 | 0 |
| 7:45 AM | 0 | 34 | 227 | 45 | 1 | 40 | 126 | 69 | 0 | 45 | 228 | 47 | 0 | 58 | 211 | 25 | 1,156 | 4,676 | 0 | 0 | 3 | 0 |
| 8:00 AM | 0 | 49 | 211 | 26 | 3 | 47 | 128 | 101 | 0 | 45 | 262 | 43 | 0 | 63 | 190 | 25 | 1,193 | 4,649 | 0 | 0 | 1 | 0 |
| 8:15 AM | 0 | 38 | 199 | 44 | 2 | 47 | 104 | 87 | 0 | 45 | 283 | 40 | 0 | 59 | 191 | 24 | 1,163 | | 0 | 0 | 1 | 1 |
| 8:30 AM | 0 | 52 | 226 | 36 | 0 | 53 | 148 | 91 | 0 | 35 | 222 | 36 | 0 | 53 | 184 | 28 | 1,164 | | 0 | 0 | 0 | 0 |
| 8:45 AM | 0 | 35 | 178 | 39 | 0 | 54 | 119 | 89 | 0 | 41 | 207 | 39 | 0 | 60 | 226 | 42 | 1,129 | | 0 | 1 | 0 | 0 |
| Count Total | 0 | 316 | 1,686 | 276 | 6 | 331 | 944 | 694 | 1 | 313 | 1,913 | 311 | 0 | 428 | 1,414 | 220 | 8,853 | | 0 | 2 | 6 | 2 |
| Peak Hour | 0 | 173 | 863 | 151 | 6 | 187 | 506 | 348 | 0 | 170 | 995 | 166 | 0 | 233 | 776 | 102 | 4,676 | | 0 | 0 | 5 | 1 |

All Traffic Data Services Inc.

(303) 216-2439
www.alltrafficdata.net

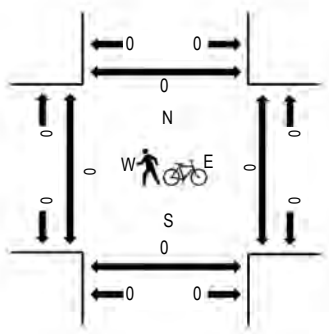
**Location:** 2 UNIVERSITY BLVD & YORK ST AM
**Date:** Tuesday, July 30, 2019
**Peak Hour:** 07:30 AM - 08:30 AM
**Peak 15-Minutes:** 07:45 AM - 08:00 AM

## Peak Hour - All Vehicles




Note: Total study counts contained in parentheses.

## Peak Hour - Pedestrians/Bicycles on Crosswalk




## Traffic Counts

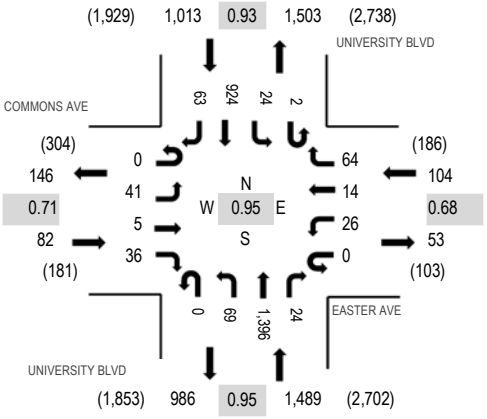
| Interval Start Time | YORK ST Eastbound | | | | YORK ST Westbound | | | | UNIVERSITY BLVD Northbound | | | | UNIVERSITY BLVD Southbound | | | | Total | Rolling Hour | Pedestrian Crossings | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | | | West | East | South | North |
| 7:00 AM | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 1 | 0 | 0 | 336 | 0 | 0 | 0 | 161 | 9 | 513 | 2,396 | 0 | 0 | 0 | 0 |
| 7:15 AM | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 336 | 1 | 0 | 0 | 204 | 11 | 556 | 2,462 | 0 | 0 | 0 | 0 |
| 7:30 AM | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 2 | 0 | 0 | 372 | 0 | 0 | 0 | 259 | 15 | 653 | 2,517 | 0 | 0 | 0 | 0 |
| 7:45 AM | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 2 | 0 | 0 | 357 | 0 | 0 | 0 | 291 | 20 | 674 | 2,501 | 0 | 0 | 0 | 0 |
| 8:00 AM | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 3 | 0 | 0 | 328 | 1 | 0 | 0 | 238 | 6 | 579 | 2,483 | 0 | 0 | 0 | 0 |
| 8:15 AM | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 2 | 0 | 0 | 349 | 1 | 0 | 0 | 239 | 14 | 611 | | 0 | 0 | 0 | 0 |
| 8:30 AM | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 1 | 0 | 0 | 339 | 1 | 0 | 0 | 273 | 17 | 637 | | 0 | 2 | 0 | 0 |
| 8:45 AM | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 3 | 0 | 0 | 325 | 2 | 0 | 0 | 295 | 27 | 656 | | 0 | 0 | 0 | 0 |
| Count Total | 0 | 0 | 0 | 38 | 0 | 0 | 0 | 14 | 0 | 0 | 2,742 | 6 | 0 | 0 | 1,960 | 119 | 4,879 | | 0 | 2 | 0 | 0 |
| Peak Hour | 0 | 0 | 0 | 18 | 0 | 0 | 0 | 9 | 0 | 0 | 1,406 | 2 | 0 | 0 | 1,027 | 55 | 2,517 | | 0 | 0 | 0 | 0 |

All Traffic Data Services Inc.

(303) 216-2439
www.alltrafficdata.net

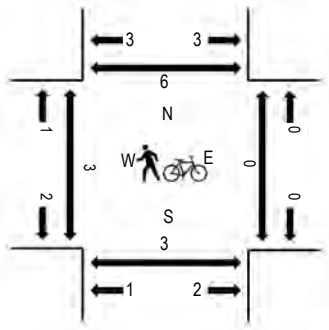
**Location:** 3 UNIVERSITY BLVD & EASTER AVE AM
**Date:** Tuesday, July 30, 2019
**Peak Hour:** 07:30 AM - 08:30 AM
**Peak 15-Minutes:** 07:45 AM - 08:00 AM

## Peak Hour - All Vehicles




Note: Total study counts contained in parentheses.

## Peak Hour - Pedestrians/Bicycles on Crosswalk




## Traffic Counts

| Interval Start Time | COMMONS AVE Eastbound | | | | EASTER AVE Westbound | | | | UNIVERSITY BLVD Northbound | | | | UNIVERSITY BLVD Southbound | | | | Total | Rolling Hour | Pedestrian Crossings | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | | | West | East | South | North |
| 7:00 AM | 0 | 11 | 0 | 6 | 0 | 0 | 6 | 12 | 0 | 8 | 265 | 0 | 0 | 5 | 131 | 11 | 455 | 2,365 | 0 | 0 | 0 | 1 |
| 7:15 AM | 0 | 12 | 0 | 4 | 0 | 6 | 3 | 10 | 0 | 10 | 313 | 0 | 0 | 3 | 184 | 14 | 559 | 2,545 | 0 | 0 | 0 | 3 |
| 7:30 AM | 0 | 9 | 1 | 4 | 0 | 12 | 7 | 19 | 0 | 12 | 370 | 2 | 0 | 3 | 192 | 16 | 647 | 2,688 | 1 | 0 | 0 | 1 |
| 7:45 AM | 0 | 9 | 1 | 8 | 0 | 3 | 3 | 12 | 0 | 15 | 369 | 9 | 0 | 2 | 254 | 19 | 704 | 2,685 | 2 | 0 | 0 | 1 |
| 8:00 AM | 0 | 14 | 2 | 10 | 0 | 5 | 2 | 18 | 0 | 17 | 312 | 3 | 2 | 7 | 227 | 16 | 635 | 2,633 | 0 | 0 | 0 | 2 |
| 8:15 AM | 0 | 9 | 1 | 14 | 0 | 6 | 2 | 15 | 0 | 25 | 345 | 10 | 0 | 12 | 251 | 12 | 702 | | 0 | 0 | 2 | 2 |
| 8:30 AM | 0 | 14 | 4 | 7 | 0 | 3 | 6 | 15 | 0 | 19 | 296 | 7 | 1 | 9 | 242 | 21 | 644 | | 0 | 0 | 1 | 0 |
| 8:45 AM | 0 | 23 | 5 | 13 | 0 | 6 | 8 | 7 | 0 | 27 | 256 | 12 | 0 | 5 | 265 | 25 | 652 | | 0 | 0 | 0 | 1 |
| Count Total | 0 | 101 | 14 | 66 | 0 | 41 | 37 | 108 | 0 | 133 | 2,526 | 43 | 3 | 46 | 1,746 | 134 | 4,998 | | 3 | 0 | 3 | 11 |
| Peak Hour | 0 | 41 | 5 | 36 | 0 | 26 | 14 | 64 | 0 | 69 | 1,396 | 24 | 2 | 24 | 924 | 63 | 2,688 | | 3 | 0 | 2 | 6 |

All Traffic Data Services Inc.

(303) 216-2439
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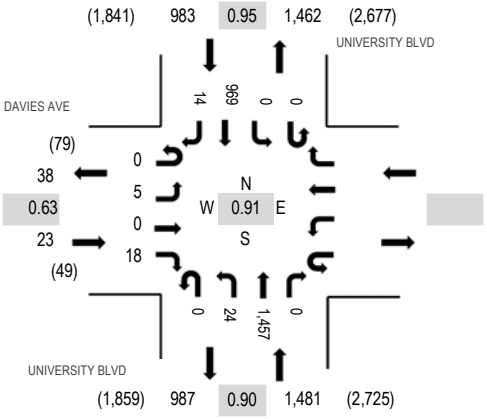
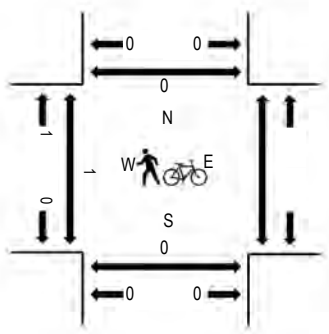
**Location:** 4 UNIVERSITY BLVD & DAVIES AVE AM
**Date:** Tuesday, July 30, 2019
**Peak Hour:** 07:30 AM - 08:30 AM
**Peak 15-Minutes:** 07:45 AM - 08:00 AM

## Peak Hour - All Vehicles




Note: Total study counts contained in parentheses.

## Peak Hour - Pedestrians/Bicycles on Crosswalk




## Traffic Counts

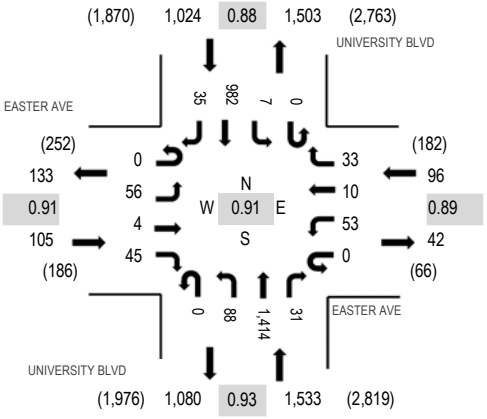
| Interval Start Time | DAVIES AVE Eastbound U-Turn | Eastbound Left | Eastbound Thru | Eastbound Right | Westbound U-Turn | Westbound Left | Westbound Thru | Westbound Right | UNIVERSITY BLVD Northbound U-Turn | Northbound Left | Northbound Thru | Northbound Right | UNIVERSITY BLVD Southbound U-Turn | Southbound Left | Southbound Thru | Southbound Right | Total | Rolling Hour | Pedestrian Crossings West | East | South | North |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7:00 AM | 0 | 0 | 0 | 4 | | | | | 0 | 2 | 270 | 0 | 0 | 0 | 142 | 4 | 422 | 2,235 | 1 | | 0 | 0 |
| 7:15 AM | 0 | 0 | 0 | 5 | | | | | 0 | 6 | 318 | 0 | 0 | 0 | 197 | 0 | 526 | 2,368 | 0 | | 0 | 0 |
| 7:30 AM | 0 | 0 | 0 | 8 | | | | | 0 | 2 | 384 | 0 | 0 | 0 | 202 | 7 | 603 | 2,487 | 1 | | 0 | 0 |
| 7:45 AM | 0 | 2 | 0 | 5 | | | | | 0 | 9 | 401 | 0 | 0 | 0 | 267 | 0 | 684 | 2,463 | 0 | | 0 | 0 |
| 8:00 AM | 0 | 1 | 0 | 4 | | | | | 0 | 6 | 296 | 0 | 0 | 0 | 246 | 2 | 555 | 2,380 | 0 | | 0 | 0 |
| 8:15 AM | 0 | 2 | 0 | 1 | | | | | 0 | 7 | 376 | 0 | 0 | 0 | 254 | 5 | 645 | | 0 | | 0 | 0 |
| 8:30 AM | 0 | 2 | 0 | 5 | | | | | 0 | 9 | 316 | 0 | 0 | 0 | 244 | 3 | 579 | | 0 | | 0 | 0 |
| 8:45 AM | 0 | 1 | 0 | 9 | | | | | 0 | 15 | 308 | 0 | 0 | 0 | 266 | 2 | 601 | | 0 | | 0 | 0 |
| Count Total | 0 | 8 | 0 | 41 | | | | | 0 | 56 | 2,669 | 0 | 0 | 0 | 1,818 | 23 | 4,615 | | 2 | | 0 | 0 |
| Peak Hour | 0 | 5 | 0 | 18 | | | | | 0 | 24 | 1,457 | 0 | 0 | 0 | 969 | 14 | 2,487 | | 1 | | 0 | 0 |

All Traffic Data Services Inc.

(303) 216-2439
www.alltrafficdata.net

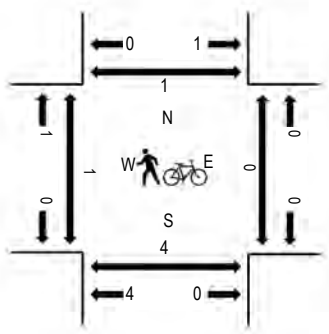
**Location:** 5 UNIVERSITY BLVD & EASTER AVE AM
**Date:** Tuesday, July 30, 2019
**Peak Hour:** 07:30 AM - 08:30 AM
**Peak 15-Minutes:** 07:45 AM - 08:00 AM

## Peak Hour - All Vehicles




Note: Total study counts contained in parentheses.

## Peak Hour - Pedestrians/Bicycles on Crosswalk




## Traffic Counts

| Interval Start Time | EASTER AVE Eastbound | | | | EASTER AVE Westbound | | | | UNIVERSITY BLVD Northbound | | | | UNIVERSITY BLVD Southbound | | | | | Rolling Hour | Pedestrian Crossings | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | Total | | West | East | South | North |
| 7:00 AM | 0 | 14 | 0 | 8 | 0 | 7 | 1 | 11 | 0 | 15 | 252 | 0 | 0 | 3 | 132 | 3 | 446 | 2,423 | 0 | 0 | 1 | 0 |
| 7:15 AM | 0 | 6 | 1 | 7 | 0 | 9 | 0 | 8 | 0 | 17 | 318 | 2 | 0 | 0 | 187 | 8 | 563 | 2,616 | 0 | 0 | 0 | 0 |
| 7:30 AM | 0 | 14 | 0 | 13 | 0 | 13 | 3 | 9 | 0 | 15 | 358 | 4 | 0 | 0 | 219 | 8 | 656 | 2,758 | 1 | 0 | 0 | 1 |
| 7:45 AM | 0 | 10 | 0 | 13 | 0 | 15 | 1 | 11 | 0 | 24 | 379 | 9 | 0 | 2 | 287 | 7 | 758 | 2,722 | 0 | 0 | 3 | 0 |
| 8:00 AM | 0 | 19 | 4 | 6 | 0 | 12 | 2 | 6 | 0 | 22 | 309 | 8 | 0 | 4 | 238 | 9 | 639 | 2,634 | 0 | 0 | 1 | 0 |
| 8:15 AM | 0 | 13 | 0 | 13 | 0 | 13 | 4 | 7 | 0 | 27 | 368 | 10 | 0 | 1 | 238 | 11 | 705 | | 0 | 0 | 0 | 0 |
| 8:30 AM | 0 | 12 | 1 | 12 | 0 | 12 | 2 | 5 | 0 | 14 | 310 | 7 | 0 | 3 | 232 | 10 | 620 | | 0 | 0 | 0 | 2 |
| 8:45 AM | 0 | 10 | 0 | 10 | 0 | 20 | 6 | 5 | 0 | 36 | 309 | 6 | 0 | 1 | 260 | 7 | 670 | | 0 | 0 | 1 | 1 |
| Count Total | 0 | 98 | 6 | 82 | 0 | 101 | 19 | 62 | 0 | 170 | 2,603 | 46 | 0 | 14 | 1,793 | 63 | 5,057 | | 1 | 0 | 6 | 4 |
| Peak Hour | 0 | 56 | 4 | 45 | 0 | 53 | 10 | 33 | 0 | 88 | 1,414 | 31 | 0 | 7 | 982 | 35 | 2,758 | | 1 | 0 | 4 | 1 |

All Traffic Data Services Inc.

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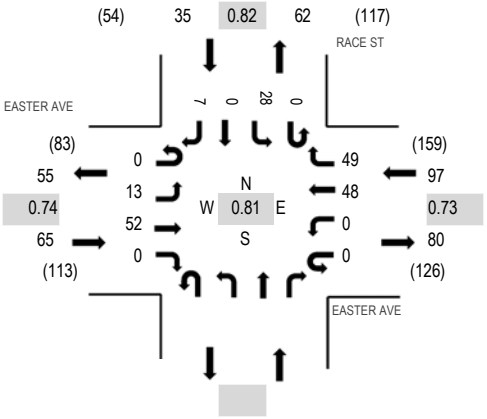
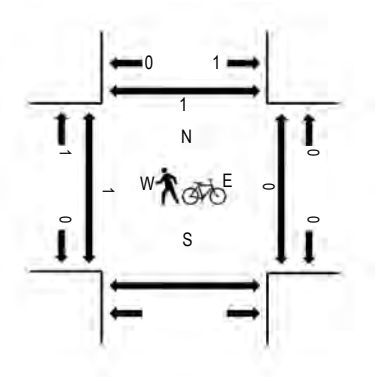
**Location:** 6 RACE ST & EASTER AVE AM
**Date:** Tuesday, July 30, 2019
**Peak Hour:** 08:00 AM - 09:00 AM
**Peak 15-Minutes:** 08:00 AM - 08:15 AM

## Peak Hour - All Vehicles




Note: Total study counts contained in parentheses.

## Peak Hour - Pedestrians/Bicycles on Crosswalk




## Traffic Counts

| Interval Start Time | EASTER AVE Eastbound | | | | EASTER AVE Westbound | | | | Northbound | | | | RACE ST Southbound | | | | Total | Rolling Hour | Pedestrian Crossings | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | | | West | East | South North |
| 7:00 AM | 0 | 7 | 9 | 0 | 0 | 0 | 6 | 9 | | | | | 0 | 2 | 0 | 0 | 33 | 129 | 0 | 0 | 1 |
| 7:15 AM | 0 | 2 | 6 | 0 | 0 | 0 | 6 | 7 | | | | | 0 | 1 | 0 | 1 | 23 | 157 | 0 | 0 | 0 |
| 7:30 AM | 0 | 1 | 8 | 0 | 0 | 0 | 7 | 9 | | | | | 0 | 6 | 0 | 2 | 33 | 179 | 0 | 0 | 0 |
| 7:45 AM | 0 | 6 | 9 | 0 | 0 | 0 | 4 | 14 | | | | | 0 | 5 | 0 | 2 | 40 | 186 | 0 | 0 | 0 |
| 8:00 AM | 0 | 5 | 18 | 0 | 0 | 0 | 19 | 8 | | | | | 0 | 8 | 0 | 3 | 61 | 197 | 0 | 0 | 0 |
| 8:15 AM | 0 | 1 | 15 | 0 | 0 | 0 | 14 | 7 | | | | | 0 | 7 | 0 | 1 | 45 | | 0 | 0 | 0 |
| 8:30 AM | 0 | 3 | 11 | 0 | 0 | 0 | 5 | 11 | | | | | 0 | 8 | 0 | 2 | 40 | | 1 | 0 | 0 |
| 8:45 AM | 0 | 4 | 8 | 0 | 0 | 0 | 10 | 23 | | | | | 0 | 5 | 0 | 1 | 51 | | 0 | 0 | 1 |
| Count Total | 0 | 29 | 84 | 0 | 0 | 0 | 71 | 88 | | | | | 0 | 42 | 0 | 12 | 326 | | 1 | 0 | 2 |
| Peak Hour | 0 | 13 | 52 | 0 | 0 | 0 | 48 | 49 | | | | | 0 | 28 | 0 | 7 | 197 | | 1 | 0 | 1 |

All Traffic Data Services Inc.

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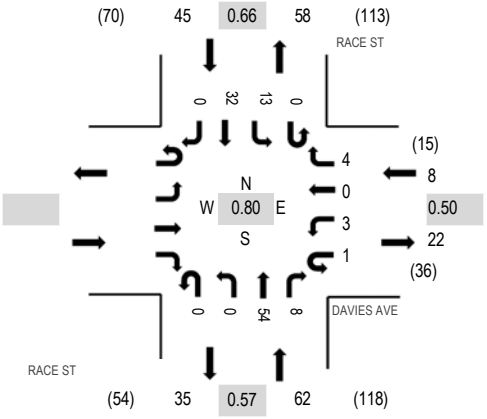
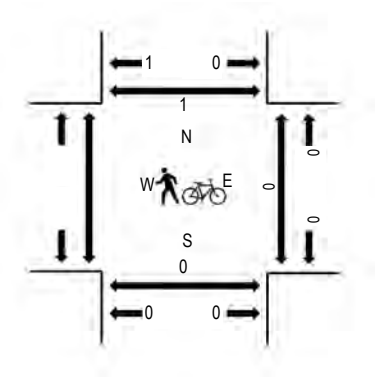
**Location:** 7 RACE ST & DAVIES AVE AM
**Date:** Tuesday, July 30, 2019
**Peak Hour:** 08:00 AM - 09:00 AM
**Peak 15-Minutes:** 08:45 AM - 09:00 AM

## Peak Hour - All Vehicles




Note: Total study counts contained in parentheses.

## Peak Hour - Pedestrians/Bicycles on Crosswalk




## Traffic Counts

| Interval Start Time | Eastbound U-Turn | Eastbound Left | Eastbound Thru | Eastbound Right | DAVIES AVE Westbound U-Turn | DAVIES AVE Westbound Left | DAVIES AVE Westbound Thru | DAVIES AVE Westbound Right | RACE ST Northbound U-Turn | RACE ST Northbound Left | RACE ST Northbound Thru | RACE ST Northbound Right | RACE ST Southbound U-Turn | RACE ST Southbound Left | RACE ST Southbound Thru | RACE ST Southbound Right | Total | Rolling Hour | Pedestrian Crossings West | Pedestrian Crossings East | Pedestrian Crossings South | Pedestrian Crossings North |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7:00 AM | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 13 | 3 | 0 | 0 | 2 | 0 | 18 | 88 | | 1 | 0 | 1 |
| 7:15 AM | | | | | 0 | 1 | 0 | 1 | 0 | 0 | 9 | 1 | 0 | 2 | 1 | 0 | 15 | 103 | | 1 | 0 | 0 |
| 7:30 AM | | | | | 0 | 1 | 0 | 2 | 0 | 0 | 10 | 0 | 0 | 3 | 7 | 0 | 23 | 104 | | 0 | 0 | 0 |
| 7:45 AM | | | | | 0 | 0 | 0 | 2 | 0 | 0 | 18 | 2 | 0 | 3 | 7 | 0 | 32 | 111 | | 0 | 0 | 1 |
| 8:00 AM | | | | | 0 | 1 | 0 | 0 | 0 | 0 | 9 | 4 | 0 | 8 | 11 | 0 | 33 | 115 | | 0 | 0 | 0 |
| 8:15 AM | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 2 | 7 | 0 | 16 | | | 0 | 0 | 0 |
| 8:30 AM | | | | | 0 | 1 | 0 | 2 | 0 | 0 | 13 | 2 | 0 | 3 | 9 | 0 | 30 | | | 0 | 0 | 1 |
| 8:45 AM | | | | | 1 | 1 | 0 | 2 | 0 | 0 | 25 | 2 | 0 | 0 | 5 | 0 | 36 | | | 0 | 0 | 0 |
| Count Total | | | | | 1 | 5 | 0 | 9 | 0 | 0 | 104 | 14 | 0 | 21 | 49 | 0 | 203 | | | 2 | 0 | 3 |
| Peak Hour | | | | | 1 | 3 | 0 | 4 | 0 | 0 | 54 | 8 | 0 | 13 | 32 | 0 | 115 | | | 0 | 0 | 1 |

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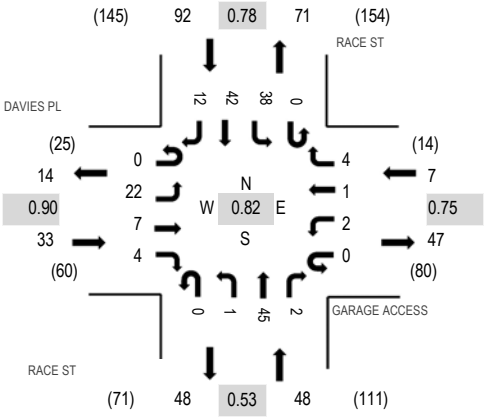
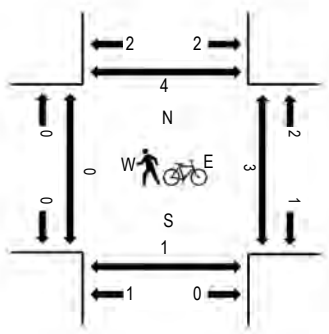
**Location:** 8 RACE ST & GARAGE ACCESS AM
**Date:** Tuesday, July 30, 2019
**Peak Hour:** 07:30 AM - 08:30 AM
**Peak 15-Minutes:** 07:45 AM - 08:00 AM

## Peak Hour - All Vehicles




Note: Total study counts contained in parentheses.

## Peak Hour - Pedestrians/Bicycles on Crosswalk




## Traffic Counts

| Interval Start Time | DAVIES PL Eastbound | | | | GARAGE ACCESS Westbound | | | | RACE ST Northbound | | | | RACE ST Southbound | | | | Total | Rolling Hour | Pedestrian Crossings | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | | | West | East | South | North |
| 7:00 AM | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 10 | 1 | 0 | 4 | 3 | 1 | 24 | 151 | 1 | 0 | 0 | 2 |
| 7:15 AM | 0 | 5 | 1 | 0 | 0 | 0 | 0 | 3 | 0 | 1 | 10 | 0 | 0 | 5 | 2 | 4 | 31 | 172 | 0 | 0 | 0 | 2 |
| 7:30 AM | 0 | 8 | 1 | 2 | 0 | 0 | 1 | 1 | 0 | 0 | 10 | 1 | 0 | 8 | 8 | 1 | 41 | 180 | 0 | 1 | 0 | 3 |
| 7:45 AM | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 19 | 1 | 0 | 12 | 10 | 8 | 55 | 179 | 0 | 0 | 0 | 1 |
| 8:00 AM | 0 | 3 | 4 | 1 | 0 | 2 | 0 | 1 | 0 | 1 | 8 | 0 | 0 | 10 | 15 | 0 | 45 | 179 | 0 | 0 | 1 | 0 |
| 8:15 AM | 0 | 7 | 2 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 8 | 0 | 0 | 8 | 9 | 3 | 39 | | 0 | 2 | 0 | 0 |
| 8:30 AM | 0 | 6 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | 2 | 0 | 7 | 11 | 0 | 40 | | 1 | 2 | 0 | 2 |
| 8:45 AM | 0 | 6 | 2 | 1 | 0 | 0 | 1 | 2 | 0 | 0 | 26 | 1 | 0 | 8 | 5 | 3 | 55 | | 0 | 0 | 0 | 0 |
| Count Total | 0 | 42 | 12 | 6 | 0 | 2 | 2 | 10 | 0 | 3 | 102 | 6 | 0 | 62 | 63 | 20 | 330 | | 2 | 5 | 1 | 10 |
| Peak Hour | 0 | 22 | 7 | 4 | 0 | 2 | 1 | 4 | 0 | 1 | 45 | 2 | 0 | 38 | 42 | 12 | 180 | | 0 | 3 | 1 | 4 |

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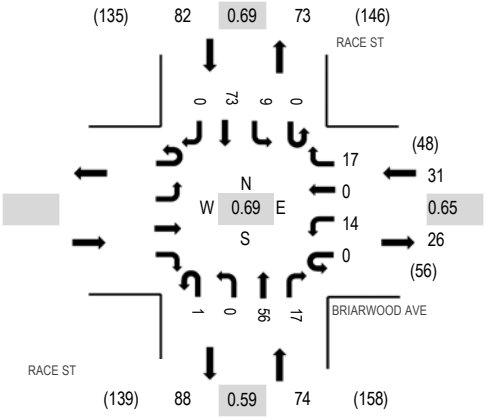
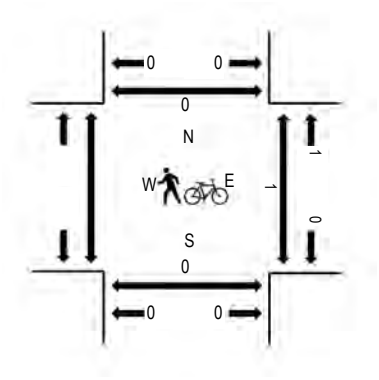
**Location:** 9 RACE ST & BRIARWOOD AVE AM
**Date:** Tuesday, July 30, 2019
**Peak Hour:** 07:30 AM - 08:30 AM
**Peak 15-Minutes:** 07:45 AM - 08:00 AM

## Peak Hour - All Vehicles




Note: Total study counts contained in parentheses.

## Peak Hour - Pedestrians/Bicycles on Crosswalk




## Traffic Counts

| Interval Start Time | Eastbound U-Turn | Eastbound Left | Eastbound Thru | Eastbound Right | BRIARWOOD AVE Westbound U-Turn | Westbound Left | Westbound Thru | Westbound Right | RACE ST Northbound U-Turn | Northbound Left | Northbound Thru | Northbound Right | RACE ST Southbound U-Turn | Southbound Left | Southbound Thru | Southbound Right | Total | Rolling Hour | Pedestrian Crossings West | East | South | North |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7:00 AM | | | | | 0 | 0 | 0 | 3 | 0 | 0 | 11 | 5 | 0 | 1 | 6 | 0 | 26 | 170 | | 0 | 0 | 0 |
| 7:15 AM | | | | | 0 | 1 | 0 | 3 | 0 | 0 | 12 | 4 | 0 | 5 | 11 | 0 | 36 | 183 | | 0 | 0 | 0 |
| 7:30 AM | | | | | 0 | 1 | 0 | 1 | 0 | 0 | 16 | 5 | 0 | 1 | 16 | 0 | 40 | 187 | | 0 | 0 | 0 |
| 7:45 AM | | | | | 0 | 5 | 0 | 8 | 0 | 0 | 21 | 4 | 0 | 3 | 27 | 0 | 68 | 185 | | 0 | 0 | 0 |
| 8:00 AM | | | | | 0 | 2 | 0 | 5 | 0 | 0 | 7 | 5 | 0 | 1 | 19 | 0 | 39 | 171 | | 1 | 0 | 0 |
| 8:15 AM | | | | | 0 | 6 | 0 | 3 | 1 | 0 | 12 | 3 | 0 | 4 | 11 | 0 | 40 | | | 0 | 0 | 0 |
| 8:30 AM | | | | | 0 | 1 | 0 | 4 | 0 | 0 | 16 | 2 | 0 | 0 | 15 | 0 | 38 | | | 0 | 0 | 0 |
| 8:45 AM | | | | | 0 | 2 | 0 | 3 | 0 | 0 | 21 | 13 | 0 | 0 | 15 | 0 | 54 | | | 0 | 0 | 0 |
| Count Total | | | | | 0 | 18 | 0 | 30 | 1 | 0 | 116 | 41 | 0 | 15 | 120 | 0 | 341 | | | 1 | 0 | 0 |
| Peak Hour | | | | | 0 | 14 | 0 | 17 | 1 | 0 | 56 | 17 | 0 | 9 | 73 | 0 | 187 | | | 1 | 0 | 0 |

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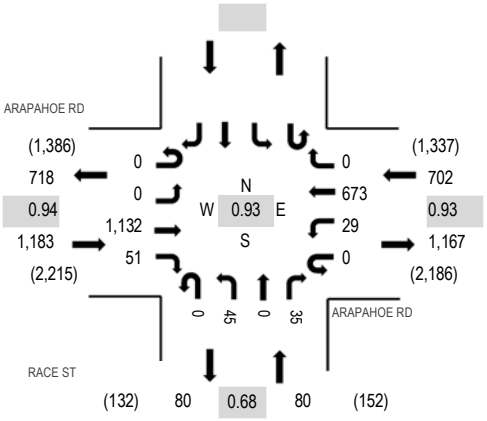
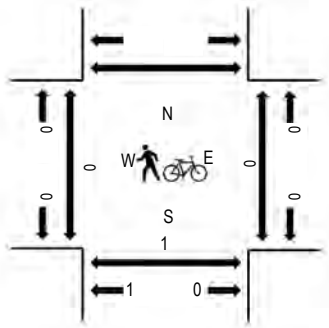
**Location:** 10 RACE ST & ARAPAHOE RD AM
**Date:** Tuesday, July 30, 2019
**Peak Hour:** 07:30 AM - 08:30 AM
**Peak 15-Minutes:** 07:45 AM - 08:00 AM

## Peak Hour - All Vehicles




Note: Total study counts contained in parentheses.

## Peak Hour - Pedestrians/Bicycles on Crosswalk




## Traffic Counts

| Interval Start Time | ARAPAHOE RD Eastbound | | | | ARAPAHOE RD Westbound | | | | RACE ST Northbound | | | | Southbound | | | | Total | Rolling Hour | Pedestrian Crossings | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | | | West | East | South | North |
| 7:00 AM | 0 | 0 | 222 | 4 | 0 | 2 | 113 | 0 | 0 | 7 | 0 | 5 | | | | | 353 | 1,856 | 0 | 0 | 0 | |
| 7:15 AM | 0 | 0 | 273 | 11 | 0 | 3 | 156 | 0 | 0 | 11 | 0 | 4 | | | | | 458 | 1,951 | 0 | 1 | 0 | |
| 7:30 AM | 0 | 0 | 304 | 9 | 0 | 7 | 181 | 0 | 0 | 8 | 0 | 10 | | | | | 519 | 1,965 | 0 | 0 | 0 | |
| 7:45 AM | 0 | 0 | 292 | 19 | 0 | 9 | 176 | 0 | 0 | 18 | 0 | 12 | | | | | 526 | 1,935 | 0 | 0 | 0 | |
| 8:00 AM | 0 | 0 | 254 | 12 | 0 | 6 | 160 | 0 | 0 | 10 | 0 | 6 | | | | | 448 | 1,848 | 0 | 0 | 0 | |
| 8:15 AM | 0 | 0 | 282 | 11 | 0 | 7 | 156 | 0 | 0 | 9 | 0 | 7 | | | | | 472 | | 0 | 0 | 1 | |
| 8:30 AM | 0 | 0 | 273 | 10 | 0 | 7 | 179 | 0 | 0 | 13 | 0 | 7 | | | | | 489 | | 0 | 0 | 1 | |
| 8:45 AM | 0 | 0 | 227 | 12 | 0 | 3 | 172 | 0 | 0 | 17 | 0 | 8 | | | | | 439 | | 0 | 0 | 0 | |
| Count Total | 0 | 0 | 2,127 | 88 | 0 | 44 | 1,293 | 0 | 0 | 93 | 0 | 59 | | | | | 3,704 | | 0 | 1 | 2 | |
| Peak Hour | 0 | 0 | 1,132 | 51 | 0 | 29 | 673 | 0 | 0 | 45 | 0 | 35 | | | | | 1,965 | | 0 | 0 | 1 | |

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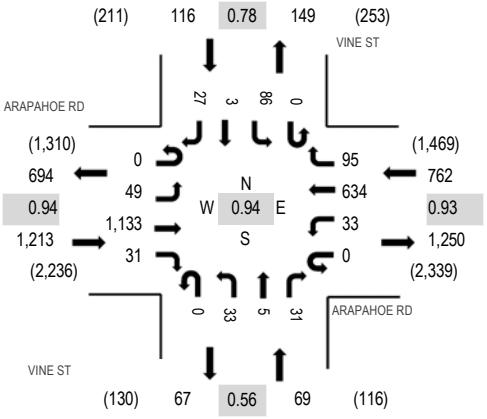
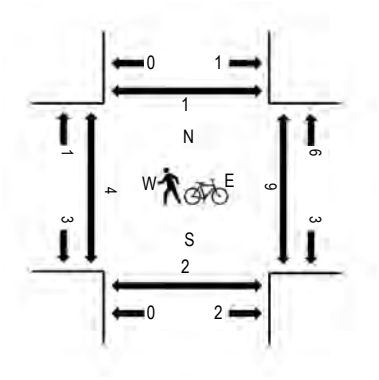
**Location:** 11 VINE ST & ARAPAHOE RD AM
**Date:** Tuesday, July 30, 2019
**Peak Hour:** 07:30 AM - 08:30 AM
**Peak 15-Minutes:** 07:45 AM - 08:00 AM

## Peak Hour - All Vehicles




Note: Total study counts contained in parentheses.

## Peak Hour - Pedestrians/Bicycles on Crosswalk




## Traffic Counts

| Interval Start Time | ARAPAHOE RD Eastbound | | | | ARAPAHOE RD Westbound | | | | VINE ST Northbound | | | | VINE ST Southbound | | | | | Rolling Hour | Pedestrian Crossings | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | Total | | West | East | South | North |
| 7:00 AM | 0 | 5 | 213 | 0 | 1 | 8 | 107 | 9 | 0 | 1 | 0 | 6 | 0 | 16 | 1 | 2 | 369 | 1,984 | 0 | 0 | 0 | 0 |
| 7:15 AM | 1 | 3 | 271 | 4 | 0 | 10 | 144 | 20 | 0 | 3 | 1 | 9 | 0 | 16 | 1 | 5 | 488 | 2,097 | 0 | 0 | 0 | 0 |
| 7:30 AM | 0 | 11 | 289 | 4 | 0 | 4 | 157 | 22 | 0 | 17 | 3 | 11 | 0 | 24 | 2 | 7 | 551 | 2,160 | 1 | 0 | 1 | 0 |
| 7:45 AM | 0 | 18 | 287 | 11 | 0 | 11 | 172 | 27 | 0 | 5 | 0 | 7 | 0 | 29 | 1 | 8 | 576 | 2,133 | 0 | 2 | 0 | 0 |
| 8:00 AM | 0 | 8 | 254 | 8 | 0 | 7 | 148 | 20 | 0 | 5 | 2 | 5 | 0 | 19 | 0 | 6 | 482 | 2,048 | 2 | 3 | 0 | 1 |
| 8:15 AM | 0 | 12 | 303 | 8 | 0 | 11 | 157 | 26 | 0 | 6 | 0 | 8 | 0 | 14 | 0 | 6 | 551 | | 0 | 1 | 0 | 0 |
| 8:30 AM | 0 | 10 | 258 | 4 | 2 | 9 | 169 | 24 | 0 | 5 | 0 | 8 | 0 | 27 | 3 | 5 | 524 | | 3 | 0 | 0 | 0 |
| 8:45 AM | 0 | 10 | 238 | 6 | 0 | 17 | 166 | 21 | 0 | 3 | 1 | 10 | 0 | 14 | 0 | 5 | 491 | | 1 | 2 | 0 | 0 |
| Count Total | 1 | 77 | 2,113 | 45 | 3 | 77 | 1,220 | 169 | 0 | 45 | 7 | 64 | 0 | 159 | 8 | 44 | 4,032 | | 7 | 8 | 1 | 1 |
| Peak Hour | 0 | 49 | 1,133 | 31 | 0 | 33 | 634 | 95 | 0 | 33 | 5 | 31 | 0 | 86 | 3 | 27 | 2,160 | | 3 | 6 | 1 | 1 |

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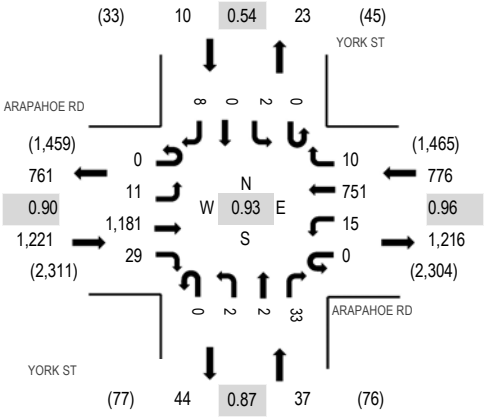
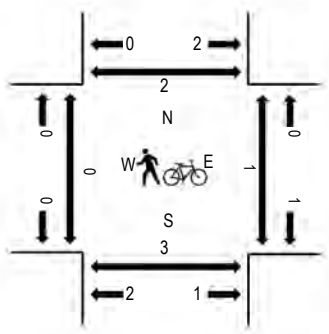
**Location:** 12 YORK ST & ARAPAHOE RD AM
**Date:** Tuesday, July 30, 2019
**Peak Hour:** 07:30 AM - 08:30 AM
**Peak 15-Minutes:** 07:45 AM - 08:00 AM

## Peak Hour - All Vehicles




Note: Total study counts contained in parentheses.

## Peak Hour - Pedestrians/Bicycles on Crosswalk




## Traffic Counts

| Interval Start Time | ARAPAHOE RD Eastbound | | | | ARAPAHOE RD Westbound | | | | YORK ST Northbound | | | | YORK ST Southbound | | | | Total | Rolling Hour | Pedestrian Crossings | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | | | West | East | South | North |
| 7:00 AM | 0 | 1 | 219 | 5 | 0 | 2 | 124 | 0 | 0 | 1 | 0 | 6 | 0 | 1 | 0 | 5 | 364 | 1,925 | 0 | 0 | 1 | 0 |
| 7:15 AM | 0 | 4 | 311 | 3 | 0 | 2 | 166 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 490 | 2,018 | 0 | 0 | 0 | 0 |
| 7:30 AM | 0 | 0 | 316 | 3 | 0 | 1 | 192 | 3 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 1 | 520 | 2,044 | 0 | 0 | 1 | 0 |
| 7:45 AM | 0 | 5 | 330 | 5 | 0 | 4 | 195 | 3 | 0 | 0 | 0 | 9 | 0 | 0 | 0 | 0 | 551 | 2,033 | 0 | 0 | 0 | 0 |
| 8:00 AM | 0 | 4 | 240 | 5 | 0 | 4 | 188 | 3 | 0 | 0 | 2 | 9 | 0 | 1 | 0 | 1 | 457 | 1,960 | 0 | 0 | 0 | 1 |
| 8:15 AM | 0 | 2 | 295 | 16 | 0 | 6 | 176 | 1 | 0 | 2 | 0 | 11 | 0 | 1 | 0 | 6 | 516 | | 0 | 1 | 0 | 1 |
| 8:30 AM | 0 | 6 | 266 | 8 | 1 | 3 | 199 | 1 | 0 | 1 | 0 | 12 | 0 | 2 | 0 | 10 | 509 | | 0 | 0 | 0 | 0 |
| 8:45 AM | 0 | 9 | 254 | 4 | 1 | 6 | 183 | 1 | 0 | 5 | 0 | 10 | 0 | 1 | 0 | 4 | 478 | | 0 | 0 | 0 | 1 |
| Count Total | 0 | 31 | 2,231 | 49 | 2 | 28 | 1,423 | 12 | 0 | 9 | 2 | 65 | 0 | 6 | 0 | 27 | 3,885 | | 0 | 1 | 2 | 3 |
| Peak Hour | 0 | 11 | 1,181 | 29 | 0 | 15 | 751 | 10 | 0 | 2 | 2 | 33 | 0 | 2 | 0 | 8 | 2,044 | | 0 | 1 | 1 | 2 |

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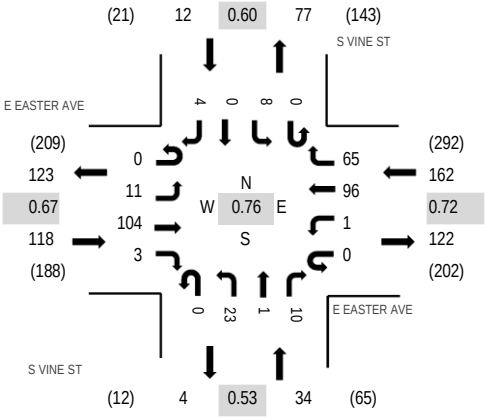
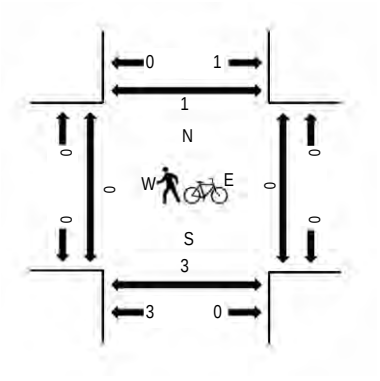
**Location:** 1 S VINE ST & E EASTER AVE AM
**Date and Start Time:** Wednesday, December 5, 2018
**Peak Hour:** 08:00 AM - 09:00 AM
**Peak 15-Minutes:** 08:45 AM - 09:00 AM

## Peak Hour - All Vehicles




Note: Total study counts contained in parentheses.

## Peak Hour - Pedestrians/Bicycles on Crosswalk




## Traffic Counts

| Interval Start Time | E EASTER AVE Eastbound | | | | E EASTER AVE Westbound | | | | S VINE ST Northbound | | | | S VINE ST Southbound | | | | Total | Rolling Hour | Pedestrain Crossings | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | | | West | East | South | North |
| 7:00 AM | 0 | 0 | 11 | 1 | 0 | 0 | 12 | 10 | 0 | 4 | 5 | 4 | 0 | 3 | 0 | 1 | 51 | 240 | 0 | 0 | 0 | 0 |
| 7:15 AM | 0 | 1 | 15 | 3 | 0 | 0 | 19 | 9 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 1 | 52 | 258 | 0 | 0 | 1 | 0 |
| 7:30 AM | 0 | 0 | 19 | 0 | 0 | 1 | 14 | 21 | 0 | 3 | 0 | 6 | 0 | 3 | 0 | 0 | 67 | 277 | 0 | 0 | 0 | 0 |
| 7:45 AM | 0 | 1 | 16 | 3 | 0 | 0 | 25 | 19 | 0 | 4 | 0 | 1 | 0 | 0 | 0 | 1 | 70 | 289 | 0 | 0 | 5 | 0 |
| 8:00 AM | 0 | 3 | 28 | 0 | 0 | 0 | 20 | 12 | 0 | 2 | 0 | 1 | 0 | 2 | 0 | 1 | 69 | 326 | 0 | 0 | 0 | 0 |
| 8:15 AM | 0 | 2 | 15 | 0 | 0 | 0 | 25 | 15 | 0 | 5 | 0 | 4 | 0 | 4 | 0 | 1 | 71 | | 0 | 0 | 0 | 0 |
| 8:30 AM | 0 | 2 | 23 | 1 | 0 | 1 | 16 | 17 | 0 | 10 | 1 | 5 | 0 | 2 | 0 | 1 | 79 | | 0 | 0 | 0 | 0 |
| 8:45 AM | 0 | 4 | 38 | 2 | 0 | 0 | 35 | 21 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 1 | 107 | | 0 | 0 | 3 | 1 |
| Count Total | 0 | 13 | 165 | 10 | 0 | 2 | 166 | 124 | 0 | 36 | 6 | 23 | 0 | 14 | 0 | 7 | 566 | | 0 | 0 | 9 | 1 |
| Peak Hour | 0 | 11 | 104 | 3 | 0 | 1 | 96 | 65 | 0 | 23 | 1 | 10 | 0 | 8 | 0 | 4 | 326 | | 0 | 0 | 3 | 1 |

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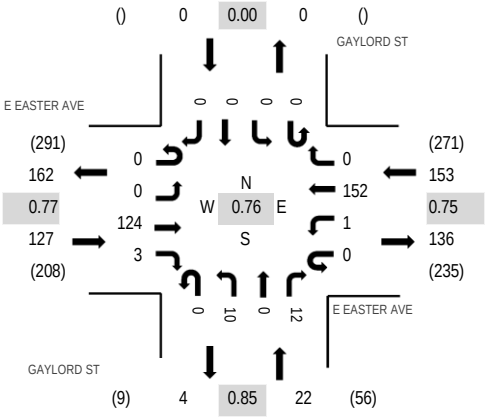
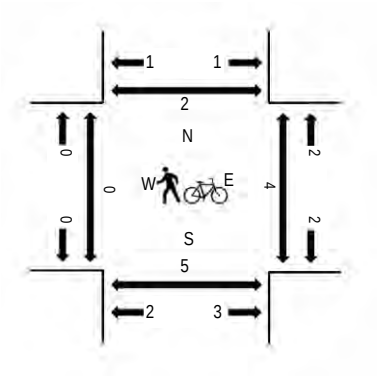
**Location:** 2 GAYLORD ST & E EASTER AVE AM
**Date and Start Time:** Wednesday, December 5, 2018
**Peak Hour:** 08:00 AM - 09:00 AM
**Peak 15-Minutes:** 08:45 AM - 09:00 AM

## Peak Hour - All Vehicles




Note: Total study counts contained in parentheses.

## Peak Hour - Pedestrians/Bicycles on Crosswalk




## Traffic Counts

| Interval Start Time | E EASTER AVE Eastbound | | | | E EASTER AVE Westbound | | | | GAYLORD ST Northbound | | | | GAYLORD ST Southbound | | | | Total | Rolling Hour | Pedestrain Crossings | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | | | West | East | South | North |
| 7:00 AM | 0 | 0 | 19 | 1 | 0 | 1 | 20 | 0 | 0 | 3 | 0 | 3 | 0 | 0 | 0 | 0 | 47 | 233 | 0 | 1 | 0 | 0 |
| 7:15 AM | 0 | 0 | 15 | 1 | 0 | 0 | 22 | 0 | 0 | 4 | 0 | 6 | 0 | 0 | 0 | 0 | 48 | 253 | 0 | 0 | 1 | 0 |
| 7:30 AM | 0 | 0 | 26 | 0 | 0 | 1 | 36 | 0 | 0 | 2 | 0 | 8 | 0 | 0 | 0 | 0 | 73 | 273 | 0 | 0 | 0 | 0 |
| 7:45 AM | 0 | 0 | 18 | 1 | 0 | 0 | 38 | 0 | 0 | 4 | 0 | 4 | 0 | 0 | 0 | 0 | 65 | 267 | 1 | 0 | 1 | 0 |
| 8:00 AM | 0 | 0 | 30 | 1 | 0 | 0 | 31 | 0 | 0 | 2 | 0 | 3 | 0 | 0 | 0 | 0 | 67 | 302 | 0 | 1 | 0 | 0 |
| 8:15 AM | 0 | 0 | 24 | 0 | 0 | 0 | 38 | 0 | 0 | 1 | 0 | 5 | 0 | 0 | 0 | 0 | 68 | | 0 | 1 | 0 | 0 |
| 8:30 AM | 0 | 0 | 30 | 1 | 0 | 1 | 32 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 67 | | 0 | 1 | 5 | 0 |
| 8:45 AM | 0 | 0 | 40 | 1 | 0 | 0 | 51 | 0 | 0 | 5 | 0 | 3 | 0 | 0 | 0 | 0 | 100 | | 0 | 1 | 0 | 2 |
| Count Total | 0 | 0 | 202 | 6 | 0 | 3 | 268 | 0 | 0 | 23 | 0 | 33 | 0 | 0 | 0 | 0 | 535 | | 1 | 5 | 7 | 2 |
| Peak Hour | 0 | 0 | 124 | 3 | 0 | 1 | 152 | 0 | 0 | 10 | 0 | 12 | 0 | 0 | 0 | 0 | 302 | | 0 | 4 | 5 | 2 |

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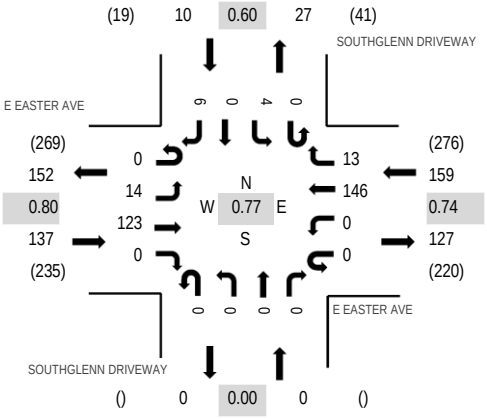
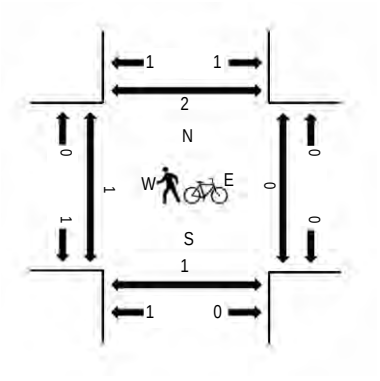
**Location:** 3 SOUTHGLENN DRIVEWAY & E EASTER AVE AM
**Date and Start Time:** Wednesday, December 5, 2018
**Peak Hour:** 08:00 AM - 09:00 AM
**Peak 15-Minutes:** 08:45 AM - 09:00 AM

## Peak Hour - All Vehicles




Note: Total study counts contained in parentheses.

## Peak Hour - Pedestrians/Bicycles on Crosswalk




## Traffic Counts

| Interval Start Time | E EASTER AVE Eastbound | | | | E EASTER AVE Westbound | | | | SOUTHGLENN DRIVEWAY Northbound | | | | SOUTHGLENN DRIVEWAY Southbound | | | | Total | Rolling Hour | Pedestrain Crossings | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | | | West | East | South | North |
| 7:00 AM | 0 | 2 | 19 | 0 | 0 | 0 | 19 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 42 | 224 | 1 | 0 | 0 | 0 |
| 7:15 AM | 0 | 1 | 20 | 0 | 0 | 0 | 22 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 46 | 249 | 0 | 0 | 0 | 0 |
| 7:30 AM | 0 | 3 | 31 | 0 | 0 | 0 | 35 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 72 | 275 | 0 | 0 | 0 | 1 |
| 7:45 AM | 0 | 2 | 20 | 0 | 0 | 0 | 35 | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 3 | 64 | 270 | 0 | 0 | 1 | 0 |
| 8:00 AM | 0 | 3 | 30 | 0 | 0 | 0 | 28 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 67 | 306 | 0 | 0 | 0 | 0 |
| 8:15 AM | 0 | 3 | 27 | 0 | 0 | 0 | 38 | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 72 | | 0 | 0 | 0 | 0 |
| 8:30 AM | 0 | 4 | 27 | 0 | 0 | 0 | 32 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 1 | 67 | | 0 | 0 | 1 | 0 |
| 8:45 AM | 0 | 4 | 39 | 0 | 0 | 0 | 48 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 100 | | 1 | 0 | 0 | 2 |
| Count Total | 0 | 22 | 213 | 0 | 0 | 0 | 257 | 19 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 12 | 530 | | 2 | 0 | 2 | 3 |
| Peak Hour | 0 | 14 | 123 | 0 | 0 | 0 | 146 | 13 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 6 | 306 | | 1 | 0 | 1 | 2 |

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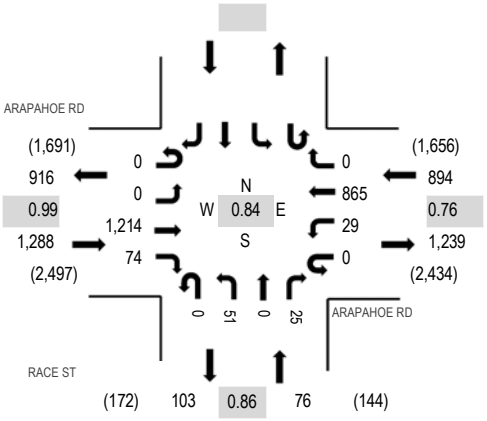
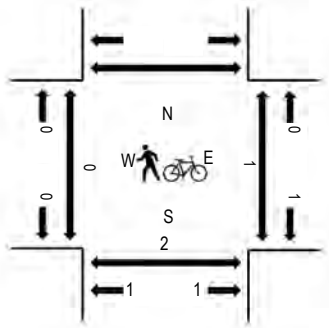
**Location:** 1 RACE ST & ARAPAHOE RD AM
**Date:** Wednesday, August 21, 2019
**Peak Hour:** 08:00 AM - 09:00 AM
**Peak 15-Minutes:** 08:45 AM - 09:00 AM

## Peak Hour - All Vehicles




Note: Total study counts contained in parentheses.

## Peak Hour - Pedestrians/Bicycles on Crosswalk




## Traffic Counts

| Interval Start Time | ARAPAHOE RD Eastbound | | | | ARAPAHOE RD Westbound | | | | RACE ST Northbound | | | | Southbound | | | | Total | Rolling Hour | Pedestrian Crossings | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | | | West | East | South | North |
| 7:00 AM | 0 | 0 | 239 | 7 | 0 | 4 | 151 | 0 | 0 | 4 | 0 | 5 | | | | | 410 | 2,039 | 0 | 0 | 0 | |
| 7:15 AM | 0 | 0 | 308 | 9 | 0 | 9 | 169 | 0 | 0 | 10 | 0 | 7 | | | | | 512 | 2,118 | 0 | 0 | 0 | |
| 7:30 AM | 0 | 0 | 311 | 13 | 0 | 7 | 211 | 0 | 0 | 12 | 0 | 8 | | | | | 562 | 2,142 | 0 | 0 | 0 | |
| 7:45 AM | 0 | 0 | 309 | 13 | 0 | 7 | 204 | 0 | 0 | 14 | 0 | 8 | | | | | 555 | 2,142 | 0 | 0 | 0 | |
| 8:00 AM | 0 | 0 | 298 | 21 | 0 | 8 | 148 | 0 | 0 | 9 | 0 | 5 | | | | | 489 | 2,258 | 0 | 0 | 0 | |
| 8:15 AM | 0 | 0 | 312 | 13 | 0 | 9 | 182 | 0 | 0 | 12 | 0 | 8 | | | | | 536 | | 0 | 0 | 0 | |
| 8:30 AM | 0 | 0 | 270 | 16 | 0 | 7 | 246 | 0 | 0 | 16 | 0 | 7 | | | | | 562 | | 0 | 0 | 1 | |
| 8:45 AM | 0 | 0 | 334 | 24 | 0 | 5 | 289 | 0 | 0 | 14 | 0 | 5 | | | | | 671 | | 0 | 0 | 0 | |
| Count Total | 0 | 0 | 2,381 | 116 | 0 | 56 | 1,600 | 0 | 0 | 91 | 0 | 53 | | | | | 4,297 | | 0 | 0 | 1 | |
| Peak Hour | 0 | 0 | 1,214 | 74 | 0 | 29 | 865 | 0 | 0 | 51 | 0 | 25 | | | | | 2,258 | | 0 | 0 | 1 | |

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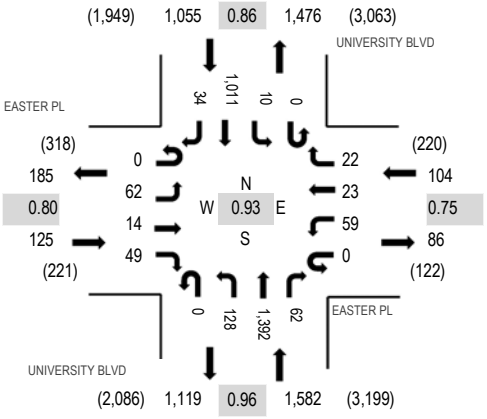
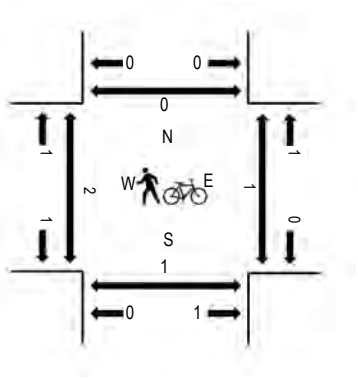
**Location:** 2 UNIVERSITY BLVD & EASTER PL AM
**Date:** Wednesday, August 21, 2019
**Peak Hour:** 08:00 AM - 09:00 AM
**Peak 15-Minutes:** 08:45 AM - 09:00 AM

## Peak Hour - All Vehicles




Note: Total study counts contained in parentheses.

## Peak Hour - Pedestrians/Bicycles on Crosswalk




## Traffic Counts

| Interval Start Time | EASTER PL Eastbound | | | | EASTER PL Westbound | | | | UNIVERSITY BLVD Northbound | | | | UNIVERSITY BLVD Southbound | | | | Total | Rolling Hour | Pedestrian Crossings | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | | | West | East | South | North |
| 7:00 AM | 0 | 10 | 0 | 8 | 0 | 13 | 1 | 11 | 0 | 18 | 373 | 6 | 0 | 2 | 167 | 8 | 617 | 2,723 | 0 | 0 | 0 | 0 |
| 7:15 AM | 0 | 16 | 0 | 9 | 0 | 17 | 0 | 11 | 0 | 16 | 361 | 8 | 0 | 0 | 210 | 6 | 654 | 2,810 | 0 | 0 | 1 | 0 |
| 7:30 AM | 0 | 10 | 0 | 13 | 0 | 13 | 3 | 8 | 0 | 25 | 397 | 5 | 0 | 2 | 211 | 9 | 696 | 2,843 | 0 | 0 | 1 | 1 |
| 7:45 AM | 0 | 14 | 2 | 14 | 0 | 26 | 2 | 11 | 0 | 32 | 365 | 11 | 0 | 0 | 266 | 13 | 756 | 2,853 | 0 | 0 | 2 | 0 |
| 8:00 AM | 0 | 20 | 2 | 16 | 0 | 17 | 4 | 5 | 0 | 29 | 381 | 4 | 0 | 3 | 213 | 10 | 704 | 2,866 | 1 | 0 | 0 | 0 |
| 8:15 AM | 0 | 14 | 5 | 9 | 0 | 11 | 4 | 4 | 0 | 24 | 330 | 7 | 0 | 2 | 267 | 10 | 687 | | 0 | 1 | 1 | 0 |
| 8:30 AM | 0 | 12 | 2 | 6 | 0 | 15 | 6 | 8 | 0 | 35 | 344 | 33 | 0 | 3 | 237 | 5 | 706 | | 0 | 0 | 0 | 0 |
| 8:45 AM | 0 | 16 | 5 | 18 | 0 | 16 | 9 | 5 | 0 | 40 | 337 | 18 | 0 | 2 | 294 | 9 | 769 | | 0 | 0 | 0 | 0 |
| Count Total | 0 | 112 | 16 | 93 | 0 | 128 | 29 | 63 | 0 | 219 | 2,888 | 92 | 0 | 14 | 1,865 | 70 | 5,589 | | 1 | 1 | 5 | 1 |
| Peak Hour | 0 | 62 | 14 | 49 | 0 | 59 | 23 | 22 | 0 | 128 | 1,392 | 62 | 0 | 10 | 1,011 | 34 | 2,866 | | 1 | 1 | 1 | 0 |

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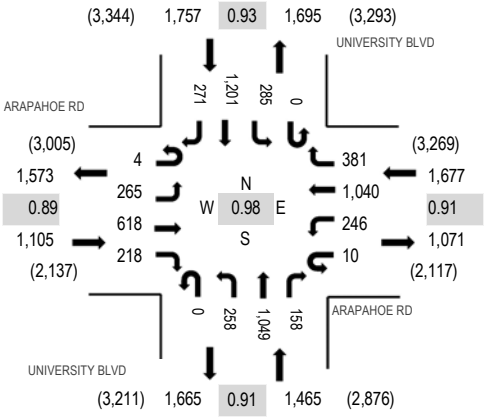
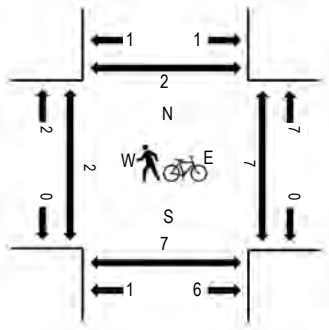
**Location:** 1 UNIVERSITY BLVD & ARAPAHOE RD PM
**Date:** Tuesday, July 30, 2019
**Peak Hour:** 04:45 PM - 05:45 PM
**Peak 15-Minutes:** 05:15 PM - 05:30 PM

## Peak Hour - All Vehicles




Note: Total study counts contained in parentheses.

## Peak Hour - Pedestrians/Bicycles on Crosswalk




## Traffic Counts

| Interval Start Time | ARAPAHOE RD Eastbound | | | | ARAPAHOE RD Westbound | | | | UNIVERSITY BLVD Northbound | | | | UNIVERSITY BLVD Southbound | | | | Total | Rolling Hour | Pedestrian Crossings | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | | | West | East | South | North |
| 4:00 PM | 0 | 53 | 133 | 45 | 1 | 52 | 188 | 82 | 0 | 76 | 236 | 43 | 0 | 81 | 263 | 54 | 1,307 | 5,679 | 0 | 0 | 0 | 0 |
| 4:15 PM | 0 | 90 | 146 | 50 | 1 | 85 | 257 | 124 | 0 | 71 | 248 | 44 | 0 | 72 | 256 | 65 | 1,509 | 5,838 | 0 | 0 | 0 | 0 |
| 4:30 PM | 0 | 53 | 149 | 48 | 1 | 60 | 234 | 101 | 0 | 66 | 233 | 38 | 0 | 64 | 278 | 56 | 1,381 | 5,865 | 0 | 0 | 0 | 2 |
| 4:45 PM | 0 | 47 | 153 | 53 | 5 | 52 | 262 | 93 | 0 | 71 | 234 | 42 | 0 | 67 | 321 | 82 | 1,482 | 6,004 | 0 | 0 | 0 | 1 |
| 5:00 PM | 2 | 77 | 157 | 62 | 0 | 71 | 252 | 97 | 0 | 48 | 255 | 36 | 0 | 63 | 286 | 60 | 1,466 | 5,947 | 0 | 3 | 2 | 0 |
| 5:15 PM | 1 | 78 | 183 | 53 | 2 | 62 | 263 | 85 | 0 | 60 | 268 | 45 | 0 | 87 | 284 | 65 | 1,536 | | 0 | 4 | 5 | 0 |
| 5:30 PM | 1 | 63 | 125 | 50 | 3 | 61 | 263 | 106 | 0 | 79 | 292 | 35 | 0 | 68 | 310 | 64 | 1,520 | | 2 | 0 | 0 | 1 |
| 5:45 PM | 0 | 56 | 155 | 54 | 2 | 61 | 254 | 89 | 0 | 73 | 233 | 50 | 0 | 66 | 294 | 38 | 1,425 | | 0 | 0 | 0 | 1 |
| Count Total | 4 | 517 | 1,201 | 415 | 15 | 504 | 1,973 | 777 | 0 | 544 | 1,999 | 333 | 0 | 568 | 2,292 | 484 | 11,626 | | 2 | 7 | 7 | 5 |
| Peak Hour | 4 | 265 | 618 | 218 | 10 | 246 | 1,040 | 381 | 0 | 258 | 1,049 | 158 | 0 | 285 | 1,201 | 271 | 6,004 | | 2 | 7 | 7 | 2 |

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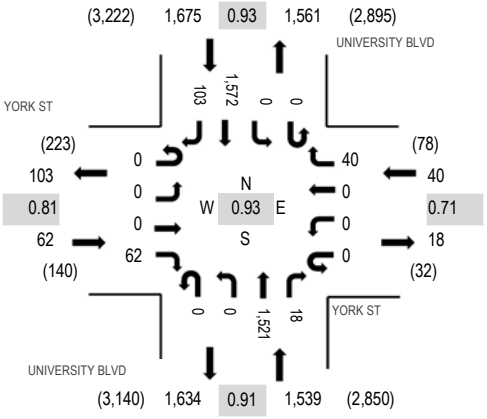
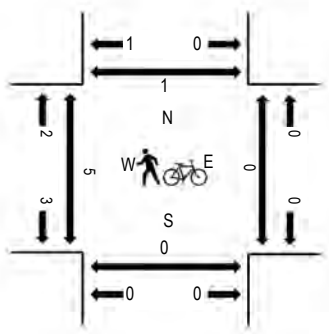
**Location:** 2 UNIVERSITY BLVD & YORK ST PM
**Date:** Tuesday, July 30, 2019
**Peak Hour:** 05:00 PM - 06:00 PM
**Peak 15-Minutes:** 05:15 PM - 05:30 PM

## Peak Hour - All Vehicles




Note: Total study counts contained in parentheses.

## Peak Hour - Pedestrians/Bicycles on Crosswalk




## Traffic Counts

| Interval Start Time | YORK ST Eastbound | | | | YORK ST Westbound | | | | UNIVERSITY BLVD Northbound | | | | UNIVERSITY BLVD Southbound | | | | Total | Rolling Hour | Pedestrian Crossings | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | | | West | East | South | North |
| 4:00 PM | 0 | 0 | 0 | 24 | 0 | 0 | 0 | 11 | 0 | 0 | 317 | 4 | 0 | 0 | 332 | 22 | 710 | 2,974 | 1 | 0 | 0 | 0 |
| 4:15 PM | 0 | 0 | 0 | 22 | 0 | 0 | 0 | 7 | 0 | 0 | 304 | 4 | 0 | 0 | 398 | 35 | 770 | 3,074 | 0 | 0 | 0 | 0 |
| 4:30 PM | 0 | 0 | 0 | 19 | 0 | 0 | 1 | 8 | 0 | 0 | 356 | 3 | 0 | 0 | 329 | 33 | 749 | 3,200 | 1 | 0 | 0 | 0 |
| 4:45 PM | 0 | 0 | 0 | 13 | 0 | 0 | 0 | 11 | 0 | 0 | 320 | 3 | 0 | 0 | 369 | 29 | 745 | 3,250 | 0 | 1 | 0 | 0 |
| 5:00 PM | 0 | 0 | 0 | 18 | 0 | 0 | 0 | 11 | 0 | 0 | 391 | 4 | 0 | 0 | 360 | 26 | 810 | 3,316 | 2 | 0 | 0 | 1 |
| 5:15 PM | 0 | 0 | 0 | 14 | 0 | 0 | 0 | 6 | 0 | 0 | 423 | 2 | 0 | 0 | 423 | 28 | 896 | | 0 | 0 | 0 | 0 |
| 5:30 PM | 0 | 0 | 0 | 17 | 0 | 0 | 0 | 9 | 0 | 0 | 373 | 3 | 0 | 0 | 371 | 26 | 799 | | 0 | 0 | 0 | 0 |
| 5:45 PM | 0 | 0 | 0 | 13 | 0 | 0 | 0 | 14 | 0 | 0 | 334 | 9 | 0 | 0 | 418 | 23 | 811 | | 1 | 0 | 0 | 0 |
| Count Total | 0 | 0 | 0 | 140 | 0 | 0 | 1 | 77 | 0 | 0 | 2,818 | 32 | 0 | 0 | 3,000 | 222 | 6,290 | | 5 | 1 | 0 | 1 |
| Peak Hour | 0 | 0 | 0 | 62 | 0 | 0 | 0 | 40 | 0 | 0 | 1,521 | 18 | 0 | 0 | 1,572 | 103 | 3,316 | | 3 | 0 | 0 | 1 |

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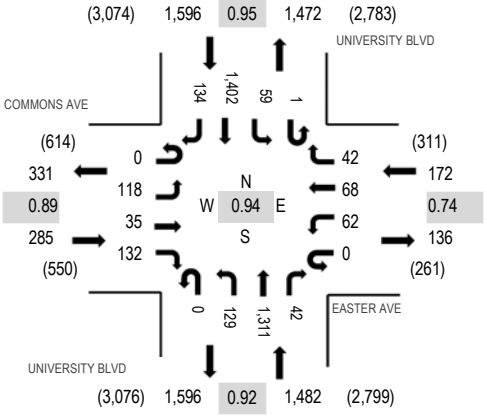
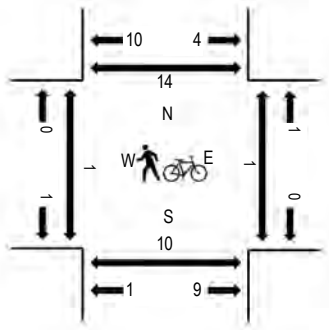
**Location:** 3 UNIVERSITY BLVD & EASTER AVE PM
**Date:** Tuesday, July 30, 2019
**Peak Hour:** 04:45 PM - 05:45 PM
**Peak 15-Minutes:** 05:15 PM - 05:30 PM

## Peak Hour - All Vehicles




Note: Total study counts contained in parentheses.

## Peak Hour - Pedestrians/Bicycles on Crosswalk




## Traffic Counts

| Interval Start Time | COMMONS AVE Eastbound | | | | EASTER AVE Westbound | | | | UNIVERSITY BLVD Northbound | | | | UNIVERSITY BLVD Southbound | | | | Total | Rolling Hour | Pedestrian Crossings | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | | | West | East | South | North |
| 4:00 PM | 0 | 34 | 5 | 33 | 0 | 24 | 9 | 15 | 0 | 30 | 323 | 13 | 0 | 15 | 292 | 30 | 823 | 3,291 | 0 | 0 | 0 | 1 |
| 4:15 PM | 0 | 22 | 7 | 25 | 0 | 13 | 8 | 10 | 0 | 32 | 300 | 12 | 0 | 15 | 311 | 36 | 791 | 3,349 | 0 | 1 | 1 | 4 |
| 4:30 PM | 0 | 29 | 9 | 31 | 0 | 14 | 8 | 9 | 0 | 35 | 275 | 7 | 0 | 16 | 339 | 26 | 798 | 3,501 | 0 | 0 | 0 | 2 |
| 4:45 PM | 0 | 27 | 11 | 32 | 0 | 9 | 16 | 11 | 0 | 32 | 338 | 10 | 0 | 14 | 346 | 33 | 879 | 3,535 | 0 | 0 | 0 | 6 |
| 5:00 PM | 0 | 29 | 6 | 45 | 0 | 12 | 14 | 7 | 0 | 39 | 320 | 9 | 1 | 12 | 356 | 31 | 881 | 3,443 | 0 | 0 | 4 | 4 |
| 5:15 PM | 0 | 35 | 10 | 17 | 0 | 20 | 22 | 16 | 0 | 36 | 357 | 9 | 0 | 18 | 374 | 29 | 943 | | 1 | 0 | 1 | 2 |
| 5:30 PM | 0 | 27 | 8 | 38 | 0 | 21 | 16 | 8 | 0 | 22 | 296 | 14 | 0 | 15 | 326 | 41 | 832 | | 0 | 1 | 2 | 1 |
| 5:45 PM | 0 | 33 | 11 | 26 | 0 | 9 | 12 | 8 | 0 | 28 | 253 | 9 | 0 | 6 | 363 | 29 | 787 | | 0 | 0 | 0 | 0 |
| Count Total | 0 | 236 | 67 | 247 | 0 | 122 | 105 | 84 | 0 | 254 | 2,462 | 83 | 1 | 111 | 2,707 | 255 | 6,734 | | 1 | 2 | 8 | 20 |
| Peak Hour | 0 | 118 | 35 | 132 | 0 | 62 | 68 | 42 | 0 | 129 | 1,311 | 42 | 1 | 59 | 1,402 | 134 | 3,535 | | 1 | 1 | 7 | 13 |

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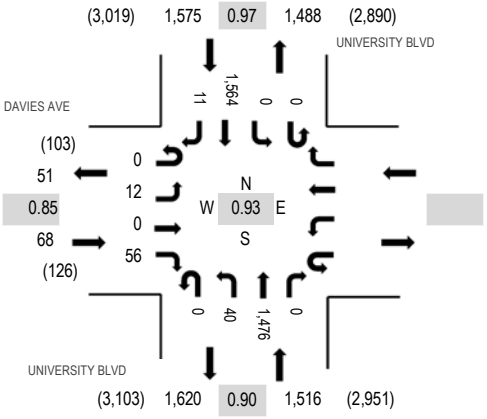
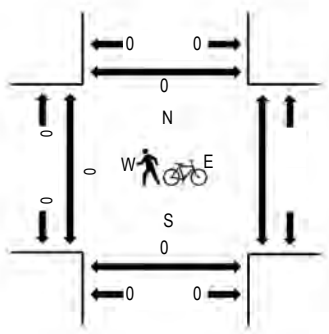
**Location:** 4 UNIVERSITY BLVD & DAVIES AVE PM
**Date:** Tuesday, July 30, 2019
**Peak Hour:** 05:00 PM - 06:00 PM
**Peak 15-Minutes:** 05:15 PM - 05:30 PM

## Peak Hour - All Vehicles




Note: Total study counts contained in parentheses.

## Peak Hour - Pedestrians/Bicycles on Crosswalk




## Traffic Counts

| Interval Start Time | DAVIES AVE Eastbound U-Turn | Eastbound Left | Eastbound Thru | Eastbound Right | Westbound U-Turn | Westbound Left | Westbound Thru | Westbound Right | UNIVERSITY BLVD Northbound U-Turn | Northbound Left | Northbound Thru | Northbound Right | UNIVERSITY BLVD Southbound U-Turn | Southbound Left | Southbound Thru | Southbound Right | Total | Rolling Hour | Pedestrian Crossings West | East | South | North |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4:00 PM | 0 | 2 | 0 | 13 | | | | | 0 | 7 | 354 | 0 | 0 | 0 | 341 | 5 | 722 | 2,937 | 1 | | 0 | 0 |
| 4:15 PM | 0 | 5 | 0 | 13 | | | | | 0 | 11 | 349 | 0 | 0 | 0 | 330 | 2 | 710 | 2,979 | 0 | | 0 | 0 |
| 4:30 PM | 0 | 0 | 0 | 11 | | | | | 0 | 14 | 323 | 0 | 0 | 0 | 384 | 1 | 733 | 3,115 | 0 | | 0 | 0 |
| 4:45 PM | 0 | 0 | 0 | 14 | | | | | 0 | 8 | 369 | 0 | 0 | 0 | 377 | 4 | 772 | 3,155 | 0 | | 0 | 0 |
| 5:00 PM | 0 | 4 | 0 | 9 | | | | | 0 | 10 | 348 | 0 | 0 | 0 | 392 | 1 | 764 | 3,159 | 0 | | 0 | 0 |
| 5:15 PM | 0 | 1 | 0 | 16 | | | | | 0 | 10 | 413 | 0 | 0 | 0 | 402 | 4 | 846 | | 0 | | 0 | 0 |
| 5:30 PM | 0 | 4 | 0 | 14 | | | | | 0 | 11 | 358 | 0 | 0 | 0 | 383 | 3 | 773 | | 0 | | 0 | 0 |
| 5:45 PM | 0 | 3 | 0 | 17 | | | | | 0 | 9 | 357 | 0 | 0 | 0 | 387 | 3 | 776 | | 0 | | 0 | 0 |
| Count Total | 0 | 19 | 0 | 107 | | | | | 0 | 80 | 2,871 | 0 | 0 | 0 | 2,996 | 23 | 6,096 | | 1 | | 0 | 0 |
| Peak Hour | 0 | 12 | 0 | 56 | | | | | 0 | 40 | 1,476 | 0 | 0 | 0 | 1,564 | 11 | 3,159 | | 0 | | 0 | 0 |

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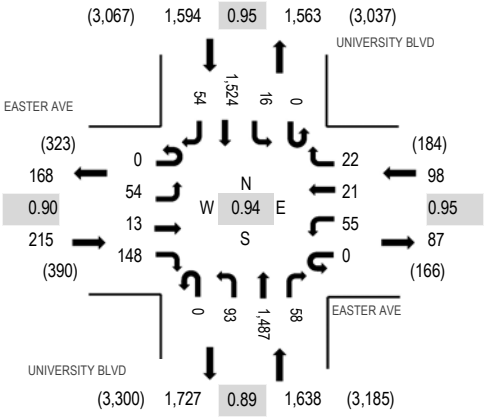
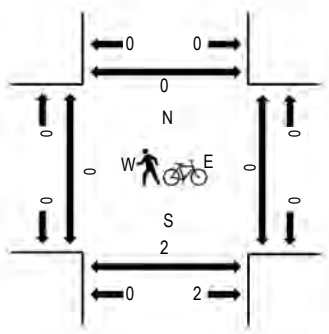
**Location:** 5 UNIVERSITY BLVD & EASTER AVE PM
**Date:** Tuesday, July 30, 2019
**Peak Hour:** 04:45 PM - 05:45 PM
**Peak 15-Minutes:** 05:15 PM - 05:30 PM

## Peak Hour - All Vehicles




Note: Total study counts contained in parentheses.

## Peak Hour - Pedestrians/Bicycles on Crosswalk




## Traffic Counts

| Interval Start Time | EASTER AVE Eastbound | | | | EASTER AVE Westbound | | | | UNIVERSITY BLVD Northbound | | | | UNIVERSITY BLVD Southbound | | | | Total | Rolling Hour | Pedestrian Crossings | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | | | West | East | South | North |
| 4:00 PM | 0 | 14 | 2 | 34 | 0 | 8 | 1 | 5 | 0 | 23 | 339 | 15 | 0 | 6 | 335 | 10 | 792 | 3,290 | 2 | 0 | 1 | 0 |
| 4:15 PM | 0 | 9 | 3 | 27 | 0 | 14 | 6 | 6 | 0 | 22 | 372 | 10 | 0 | 7 | 318 | 15 | 809 | 3,366 | 0 | 1 | 0 | 0 |
| 4:30 PM | 0 | 8 | 5 | 31 | 0 | 17 | 3 | 6 | 0 | 15 | 334 | 10 | 0 | 3 | 374 | 16 | 822 | 3,503 | 1 | 0 | 0 | 0 |
| 4:45 PM | 0 | 17 | 1 | 38 | 0 | 14 | 3 | 6 | 0 | 21 | 375 | 12 | 0 | 5 | 359 | 16 | 867 | 3,545 | 0 | 0 | 1 | 0 |
| 5:00 PM | 0 | 11 | 5 | 44 | 0 | 12 | 6 | 6 | 0 | 22 | 350 | 11 | 0 | 5 | 384 | 12 | 868 | 3,536 | 0 | 0 | 0 | 0 |
| 5:15 PM | 0 | 9 | 3 | 29 | 0 | 17 | 3 | 3 | 0 | 26 | 415 | 19 | 0 | 2 | 410 | 10 | 946 | | 0 | 0 | 1 | 0 |
| 5:30 PM | 0 | 17 | 4 | 37 | 0 | 12 | 9 | 7 | 0 | 24 | 347 | 16 | 0 | 4 | 371 | 16 | 864 | | 0 | 0 | 0 | 0 |
| 5:45 PM | 0 | 8 | 2 | 32 | 0 | 10 | 4 | 6 | 0 | 29 | 367 | 11 | 0 | 5 | 373 | 11 | 858 | | 1 | 0 | 1 | 1 |
| Count Total | 0 | 93 | 25 | 272 | 0 | 104 | 35 | 45 | 0 | 182 | 2,899 | 104 | 0 | 37 | 2,924 | 106 | 6,826 | | 4 | 1 | 4 | 1 |
| Peak Hour | 0 | 54 | 13 | 148 | 0 | 55 | 21 | 22 | 0 | 93 | 1,487 | 58 | 0 | 16 | 1,524 | 54 | 3,545 | | 0 | 0 | 2 | 0 |

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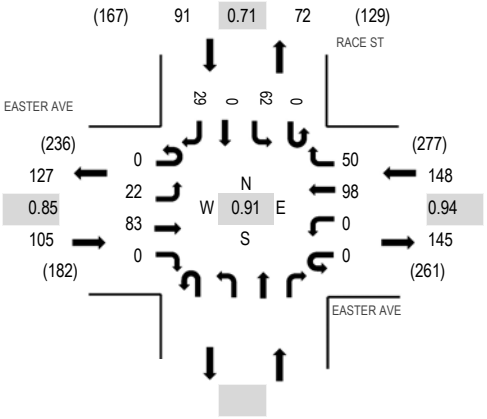
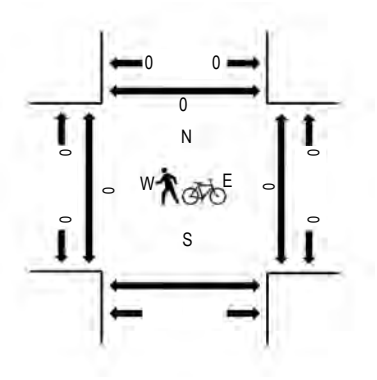
**Location:** 6 RACE ST & EASTER AVE PM
**Date:** Tuesday, July 30, 2019
**Peak Hour:** 05:00 PM - 06:00 PM
**Peak 15-Minutes:** 05:00 PM - 05:15 PM

## Peak Hour - All Vehicles




Note: Total study counts contained in parentheses.

## Peak Hour - Pedestrians/Bicycles on Crosswalk




## Traffic Counts

| Interval Start Time | EASTER AVE Eastbound | | | | EASTER AVE Westbound | | | | Northbound | | | | RACE ST Southbound | | | | Total | Rolling Hour | Pedestrian Crossings | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | | | West | East | South | North |
| 4:00 PM | 0 | 4 | 10 | 0 | 0 | 0 | 23 | 8 | | | | | 0 | 14 | 0 | 7 | 66 | 282 | 0 | 0 | | 0 |
| 4:15 PM | 0 | 4 | 16 | 0 | 0 | 0 | 23 | 11 | | | | | 0 | 17 | 0 | 4 | 75 | 310 | 0 | 0 | | 1 |
| 4:30 PM | 0 | 6 | 18 | 0 | 0 | 0 | 15 | 13 | | | | | 0 | 8 | 0 | 4 | 64 | 322 | 0 | 0 | | 0 |
| 4:45 PM | 0 | 3 | 16 | 0 | 1 | 0 | 27 | 8 | | | | | 0 | 16 | 0 | 6 | 77 | 341 | 0 | 0 | | 0 |
| 5:00 PM | 0 | 5 | 16 | 0 | 0 | 0 | 30 | 11 | | | | | 0 | 20 | 0 | 12 | 94 | 344 | 0 | 0 | | 0 |
| 5:15 PM | 0 | 5 | 23 | 0 | 0 | 0 | 27 | 11 | | | | | 0 | 13 | 0 | 8 | 87 | | 0 | 0 | | 0 |
| 5:30 PM | 0 | 2 | 29 | 0 | 0 | 0 | 24 | 15 | | | | | 0 | 9 | 0 | 4 | 83 | | 0 | 0 | | 0 |
| 5:45 PM | 0 | 10 | 15 | 0 | 0 | 0 | 17 | 13 | | | | | 0 | 20 | 0 | 5 | 80 | | 0 | 0 | | 0 |
| Count Total | 0 | 39 | 143 | 0 | 1 | 0 | 186 | 90 | | | | | 0 | 117 | 0 | 50 | 626 | | 0 | 0 | | 1 |
| Peak Hour | 0 | 22 | 83 | 0 | 0 | 0 | 98 | 50 | | | | | 0 | 62 | 0 | 29 | 344 | | 0 | 0 | | 0 |

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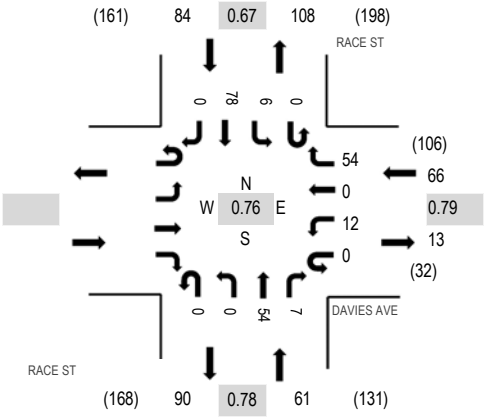
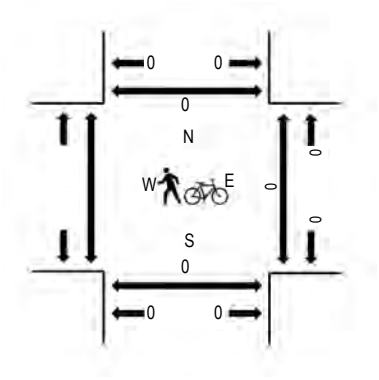
**Location:** 7 RACE ST & DAVIES AVE PM
**Date:** Tuesday, July 30, 2019
**Peak Hour:** 04:15 PM - 05:15 PM
**Peak 15-Minutes:** 05:00 PM - 05:15 PM

## Peak Hour - All Vehicles




Note: Total study counts contained in parentheses.

## Peak Hour - Pedestrians/Bicycles on Crosswalk




## Traffic Counts

| Interval Start Time | Eastbound | | | | DAVIES AVE Westbound | | | | RACE ST Northbound | | | | RACE ST Southbound | | | | Total | Rolling Hour | Pedestrian Crossings | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | | | West | East | South | North |
| 4:00 PM | | | | | 0 | 3 | 0 | 10 | 0 | 0 | 9 | 4 | 0 | 4 | 18 | 0 | 48 | 190 | | 0 | 0 | 0 |
| 4:15 PM | | | | | 0 | 3 | 0 | 13 | 0 | 0 | 14 | 1 | 0 | 2 | 18 | 0 | 51 | 211 | | 0 | 0 | 0 |
| 4:30 PM | | | | | 0 | 2 | 0 | 10 | 0 | 0 | 17 | 3 | 0 | 3 | 11 | 0 | 46 | 208 | | 0 | 0 | 0 |
| 4:45 PM | | | | | 0 | 5 | 0 | 12 | 0 | 0 | 10 | 1 | 0 | 0 | 17 | 0 | 45 | 200 | | 0 | 0 | 0 |
| 5:00 PM | | | | | 0 | 2 | 0 | 19 | 0 | 0 | 13 | 2 | 0 | 1 | 32 | 0 | 69 | 208 | | 0 | 0 | 0 |
| 5:15 PM | | | | | 0 | 4 | 0 | 10 | 0 | 0 | 14 | 3 | 0 | 1 | 16 | 0 | 48 | | | 0 | 0 | 0 |
| 5:30 PM | | | | | 0 | 0 | 0 | 7 | 0 | 0 | 15 | 2 | 0 | 1 | 13 | 0 | 38 | | | 0 | 0 | 0 |
| 5:45 PM | | | | | 0 | 1 | 0 | 5 | 0 | 0 | 20 | 3 | 0 | 1 | 23 | 0 | 53 | | | 0 | 0 | 0 |
| Count Total | | | | | 0 | 20 | 0 | 86 | 0 | 0 | 112 | 19 | 0 | 13 | 148 | 0 | 398 | | | 0 | 0 | 0 |
| Peak Hour | | | | | 0 | 12 | 0 | 54 | 0 | 0 | 54 | 7 | 0 | 6 | 78 | 0 | 211 | | | 0 | 0 | 0 |

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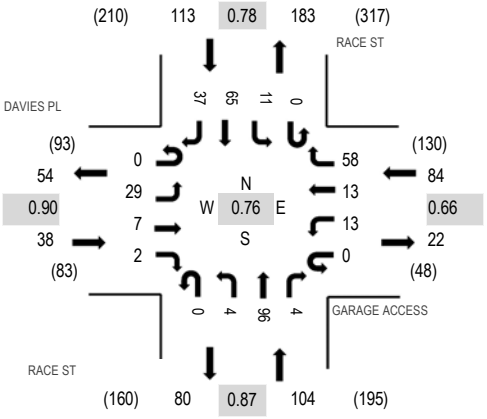
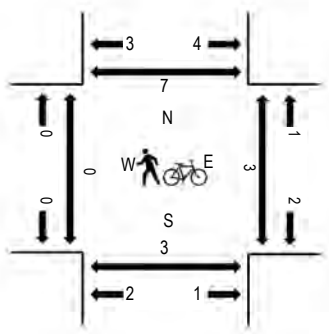
**Location:** 8 RACE ST & GARAGE ACCESS PM
**Date:** Tuesday, July 30, 2019
**Peak Hour:** 04:30 PM - 05:30 PM
**Peak 15-Minutes:** 05:00 PM - 05:15 PM

## Peak Hour - All Vehicles




Note: Total study counts contained in parentheses.

## Peak Hour - Pedestrians/Bicycles on Crosswalk




## Traffic Counts

| Interval Start Time | DAVIES PL Eastbound | | | | GARAGE ACCESS Westbound | | | | RACE ST Northbound | | | | RACE ST Southbound | | | | Total | Rolling Hour | Pedestrian Crossings | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | | | West | East | South | North |
| 4:00 PM | 0 | 5 | 3 | 3 | 0 | 4 | 2 | 8 | 0 | 2 | 15 | 0 | 0 | 2 | 15 | 6 | 65 | 281 | 0 | 1 | 0 | 1 |
| 4:15 PM | 0 | 4 | 2 | 2 | 0 | 3 | 1 | 9 | 0 | 2 | 27 | 0 | 0 | 3 | 15 | 6 | 74 | 328 | 0 | 1 | 0 | 0 |
| 4:30 PM | 0 | 9 | 2 | 1 | 0 | 1 | 0 | 14 | 0 | 0 | 24 | 2 | 0 | 3 | 12 | 11 | 79 | 339 | 0 | 0 | 0 | 0 |
| 4:45 PM | 0 | 3 | 1 | 1 | 0 | 2 | 3 | 5 | 0 | 2 | 18 | 2 | 0 | 4 | 15 | 7 | 63 | 323 | 0 | 0 | 0 | 4 |
| 5:00 PM | 0 | 11 | 2 | 0 | 0 | 7 | 4 | 21 | 0 | 2 | 29 | 0 | 0 | 3 | 24 | 9 | 112 | 337 | 0 | 2 | 1 | 2 |
| 5:15 PM | 0 | 6 | 2 | 0 | 0 | 3 | 6 | 18 | 0 | 0 | 25 | 0 | 0 | 1 | 14 | 10 | 85 | | 0 | 1 | 2 | 1 |
| 5:30 PM | 0 | 7 | 5 | 1 | 0 | 2 | 0 | 4 | 0 | 1 | 20 | 0 | 0 | 1 | 11 | 11 | 63 | | 0 | 0 | 0 | 0 |
| 5:45 PM | 1 | 8 | 4 | 0 | 0 | 3 | 3 | 7 | 0 | 1 | 20 | 3 | 0 | 3 | 21 | 3 | 77 | | 0 | 2 | 0 | 0 |
| Count Total | 1 | 53 | 21 | 8 | 0 | 25 | 19 | 86 | 0 | 10 | 178 | 7 | 0 | 20 | 127 | 63 | 618 | | 0 | 7 | 3 | 8 |
| Peak Hour | 0 | 29 | 7 | 2 | 0 | 13 | 13 | 58 | 0 | 4 | 96 | 4 | 0 | 11 | 65 | 37 | 339 | | 0 | 3 | 3 | 7 |

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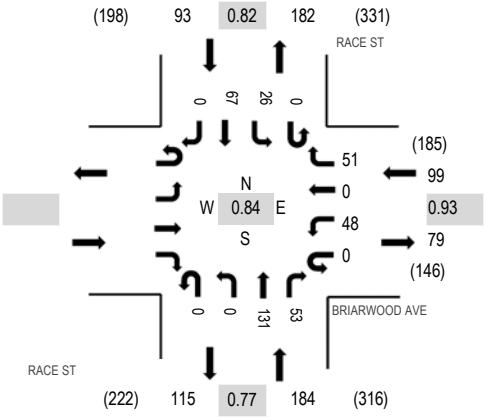
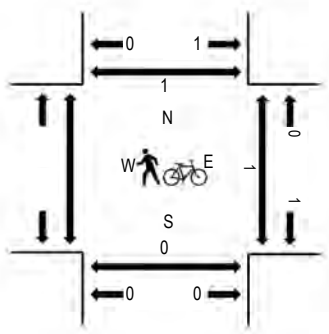
**Location:** 9 RACE ST & BRIARWOOD AVE PM
**Date:** Tuesday, July 30, 2019
**Peak Hour:** 04:30 PM - 05:30 PM
**Peak 15-Minutes:** 05:00 PM - 05:15 PM

## Peak Hour - All Vehicles




Note: Total study counts contained in parentheses.

## Peak Hour - Pedestrians/Bicycles on Crosswalk




## Traffic Counts

| Interval Start Time | Eastbound U-Turn | Eastbound Left | Eastbound Thru | Eastbound Right | BRIARWOOD AVE Westbound U-Turn | BRIARWOOD AVE Westbound Left | BRIARWOOD AVE Westbound Thru | BRIARWOOD AVE Westbound Right | RACE ST Northbound U-Turn | RACE ST Northbound Left | RACE ST Northbound Thru | RACE ST Northbound Right | RACE ST Southbound U-Turn | RACE ST Southbound Left | RACE ST Southbound Thru | RACE ST Southbound Right | Total | Rolling Hour | Pedestrian Crossings West | Pedestrian Crossings East | Pedestrian Crossings South | Pedestrian Crossings North |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4:00 PM | | | | | 0 | 7 | 0 | 9 | 0 | 0 | 25 | 6 | 0 | 4 | 17 | 0 | 68 | 331 | | 0 | 0 | 0 |
| 4:15 PM | | | | | 0 | 5 | 0 | 14 | 0 | 0 | 31 | 8 | 0 | 11 | 22 | 0 | 91 | 375 | | 1 | 0 | 0 |
| 4:30 PM | | | | | 0 | 9 | 0 | 13 | 0 | 0 | 32 | 15 | 0 | 12 | 17 | 0 | 98 | 376 | | 0 | 0 | 0 |
| 4:45 PM | | | | | 0 | 11 | 0 | 13 | 0 | 0 | 20 | 8 | 0 | 5 | 17 | 0 | 74 | 355 | | 1 | 0 | 1 |
| 5:00 PM | | | | | 0 | 16 | 0 | 12 | 0 | 0 | 43 | 17 | 0 | 4 | 20 | 0 | 112 | 368 | | 0 | 0 | 0 |
| 5:15 PM | | | | | 0 | 12 | 0 | 13 | 0 | 0 | 36 | 13 | 0 | 5 | 13 | 0 | 92 | | | 0 | 0 | 0 |
| 5:30 PM | | | | | 0 | 11 | 0 | 13 | 0 | 0 | 22 | 7 | 0 | 9 | 15 | 0 | 77 | | | 0 | 0 | 0 |
| 5:45 PM | | | | | 0 | 12 | 0 | 15 | 0 | 0 | 20 | 13 | 0 | 9 | 18 | 0 | 87 | | | 0 | 0 | 0 |
| Count Total | | | | | 0 | 83 | 0 | 102 | 0 | 0 | 229 | 87 | 0 | 59 | 139 | 0 | 699 | | | 2 | 0 | 1 |
| Peak Hour | | | | | 0 | 48 | 0 | 51 | 0 | 0 | 131 | 53 | 0 | 26 | 67 | 0 | 376 | | | 1 | 0 | 1 |

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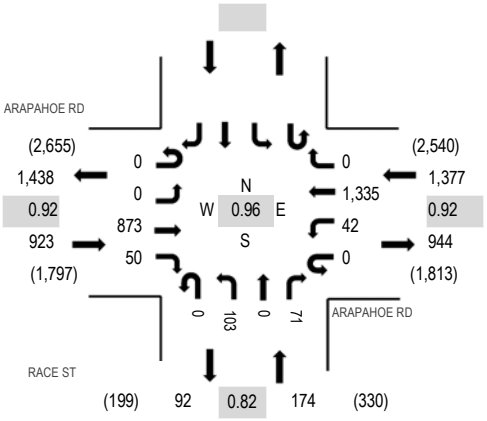
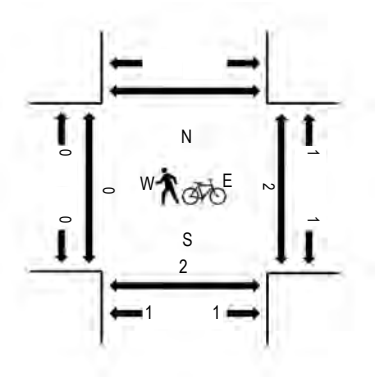
**Location:** 10 RACE ST & ARAPAHOE RD PM
**Date:** Tuesday, July 30, 2019
**Peak Hour:** 04:45 PM - 05:45 PM
**Peak 15-Minutes:** 05:15 PM - 05:30 PM

## Peak Hour - All Vehicles




Note: Total study counts contained in parentheses.

## Peak Hour - Pedestrians/Bicycles on Crosswalk




## Traffic Counts

| Interval Start Time | ARAPAHOE RD Eastbound | | | | ARAPAHOE RD Westbound | | | | RACE ST Northbound | | | | Southbound | | | | Total | Rolling Hour | Pedestrian Crossings | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | | | West | East | South | North |
| 4:00 PM | 0 | 0 | 179 | 12 | 0 | 7 | 253 | 0 | 0 | 17 | 0 | 17 | | | | | 485 | 2,256 | 0 | 0 | 0 | |
| 4:15 PM | 0 | 0 | 210 | 23 | 0 | 13 | 296 | 0 | 0 | 29 | 0 | 16 | | | | | 587 | 2,384 | 0 | 0 | 1 | |
| 4:30 PM | 0 | 0 | 208 | 20 | 0 | 7 | 274 | 0 | 0 | 26 | 0 | 20 | | | | | 555 | 2,440 | 2 | 0 | 2 | |
| 4:45 PM | 0 | 0 | 211 | 12 | 0 | 13 | 360 | 0 | 0 | 24 | 0 | 9 | | | | | 629 | 2,474 | 0 | 0 | 0 | |
| 5:00 PM | 0 | 0 | 226 | 12 | 0 | 11 | 310 | 0 | 0 | 32 | 0 | 22 | | | | | 613 | 2,411 | 0 | 1 | 1 | |
| 5:15 PM | 0 | 0 | 248 | 11 | 0 | 8 | 333 | 0 | 0 | 21 | 0 | 22 | | | | | 643 | | 0 | 0 | 0 | |
| 5:30 PM | 0 | 0 | 188 | 15 | 0 | 10 | 332 | 0 | 0 | 26 | 0 | 18 | | | | | 589 | | 0 | 0 | 1 | |
| 5:45 PM | 0 | 0 | 203 | 19 | 0 | 6 | 307 | 0 | 0 | 15 | 0 | 16 | | | | | 566 | | 1 | 0 | 0 | |
| Count Total | 0 | 0 | 1,673 | 124 | 0 | 75 | 2,465 | 0 | 0 | 190 | 0 | 140 | | | | | 4,667 | | 3 | 1 | 5 | |
| Peak Hour | 0 | 0 | 873 | 50 | 0 | 42 | 1,335 | 0 | 0 | 103 | 0 | 71 | | | | | 2,474 | | 0 | 1 | 2 | |

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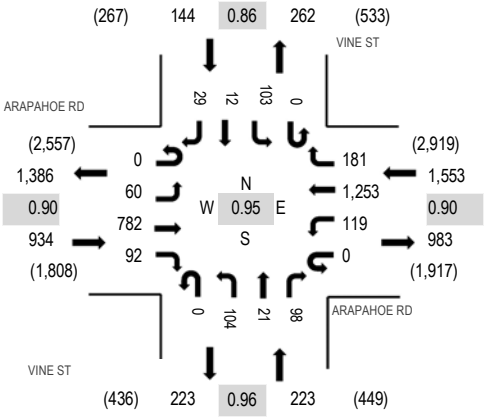
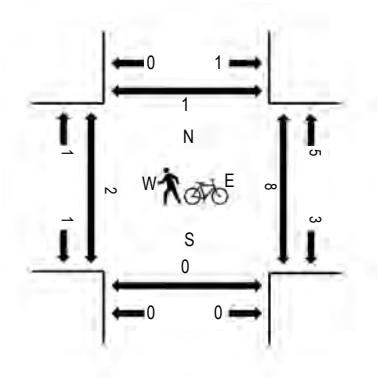
**Location:** 11 VINE ST & ARAPAHOE RD PM
**Date:** Tuesday, July 30, 2019
**Peak Hour:** 04:45 PM - 05:45 PM
**Peak 15-Minutes:** 04:45 PM - 05:00 PM

## Peak Hour - All Vehicles




Note: Total study counts contained in parentheses.

## Peak Hour - Pedestrians/Bicycles on Crosswalk




## Traffic Counts

| Interval Start Time | ARAPAHOE RD Eastbound | | | | ARAPAHOE RD Westbound | | | | VINE ST Northbound | | | | VINE ST Southbound | | | | Total | Rolling Hour | Pedestrian Crossings | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | | | West | East | South | North |
| 4:00 PM | 0 | 7 | 180 | 15 | 0 | 40 | 232 | 44 | 0 | 29 | 9 | 24 | 0 | 24 | 4 | 6 | 614 | 2,679 | 0 | 0 | 0 | 0 |
| 4:15 PM | 0 | 17 | 189 | 24 | 2 | 30 | 280 | 52 | 0 | 20 | 6 | 36 | 0 | 22 | 6 | 7 | 691 | 2,752 | 1 | 0 | 1 | 0 |
| 4:30 PM | 0 | 20 | 180 | 19 | 2 | 23 | 241 | 45 | 0 | 32 | 8 | 16 | 0 | 23 | 3 | 7 | 619 | 2,790 | 2 | 1 | 2 | 1 |
| 4:45 PM | 0 | 18 | 197 | 18 | 0 | 41 | 327 | 64 | 0 | 26 | 5 | 27 | 0 | 23 | 2 | 7 | 755 | 2,854 | 0 | 0 | 0 | 0 |
| 5:00 PM | 0 | 11 | 204 | 22 | 0 | 33 | 289 | 35 | 0 | 25 | 6 | 24 | 0 | 25 | 3 | 10 | 687 | 2,764 | 0 | 0 | 0 | 0 |
| 5:15 PM | 0 | 14 | 224 | 29 | 0 | 19 | 320 | 43 | 0 | 24 | 5 | 19 | 0 | 25 | 4 | 3 | 729 | | 1 | 6 | 0 | 1 |
| 5:30 PM | 0 | 17 | 157 | 23 | 0 | 26 | 317 | 39 | 0 | 29 | 5 | 28 | 0 | 30 | 3 | 9 | 683 | | 0 | 1 | 0 | 0 |
| 5:45 PM | 0 | 11 | 197 | 15 | 0 | 29 | 299 | 47 | 0 | 13 | 5 | 28 | 0 | 11 | 5 | 5 | 665 | | 0 | 2 | 0 | 2 |
| Count Total | 0 | 115 | 1,528 | 165 | 4 | 241 | 2,305 | 369 | 0 | 198 | 49 | 202 | 0 | 183 | 30 | 54 | 5,443 | | 4 | 10 | 3 | 4 |
| Peak Hour | 0 | 60 | 782 | 92 | 0 | 119 | 1,253 | 181 | 0 | 104 | 21 | 98 | 0 | 103 | 12 | 29 | 2,854 | | 1 | 7 | 0 | 1 |

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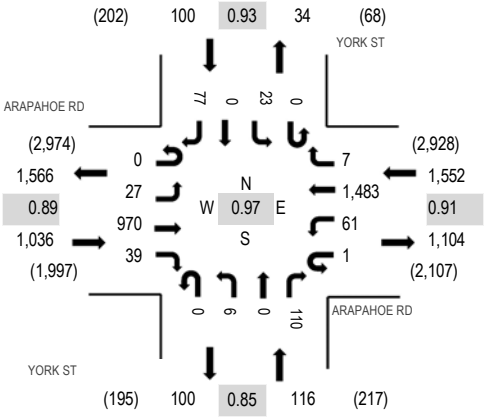
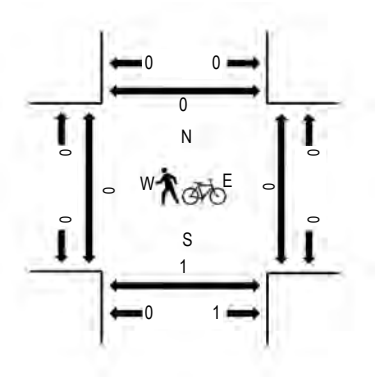
**Location:** 12 YORK ST & ARAPAHOE RD PM
**Date:** Tuesday, July 30, 2019
**Peak Hour:** 04:45 PM - 05:45 PM
**Peak 15-Minutes:** 04:45 PM - 05:00 PM

## Peak Hour - All Vehicles




Note: Total study counts contained in parentheses.

## Peak Hour - Pedestrians/Bicycles on Crosswalk



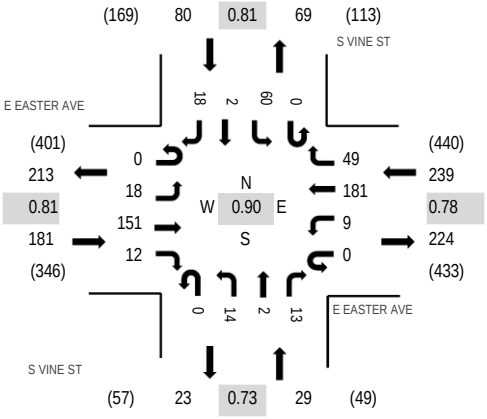

## Traffic Counts

| Interval Start Time | ARAPAHOE RD Eastbound | | | | ARAPAHOE RD Westbound | | | | YORK ST Northbound | | | | YORK ST Southbound | | | | Total | Rolling Hour | Pedestrian Crossings | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | | | West | East | South | North |
| 4:00 PM | 0 | 12 | 199 | 12 | 2 | 15 | 295 | 0 | 0 | 0 | 0 | 26 | 0 | 3 | 2 | 21 | 587 | 2,627 | 0 | 0 | 1 | 0 |
| 4:15 PM | 0 | 7 | 249 | 13 | 0 | 9 | 360 | 2 | 0 | 0 | 0 | 22 | 0 | 4 | 0 | 24 | 690 | 2,723 | 0 | 0 | 1 | 0 |
| 4:30 PM | 0 | 5 | 204 | 14 | 1 | 13 | 331 | 1 | 0 | 2 | 1 | 27 | 0 | 6 | 0 | 20 | 625 | 2,742 | 0 | 0 | 0 | 1 |
| 4:45 PM | 0 | 4 | 242 | 7 | 0 | 17 | 408 | 0 | 0 | 2 | 0 | 22 | 0 | 6 | 0 | 17 | 725 | 2,804 | 0 | 0 | 0 | 0 |
| 5:00 PM | 0 | 6 | 253 | 8 | 0 | 3 | 351 | 4 | 0 | 1 | 0 | 30 | 0 | 7 | 0 | 20 | 683 | 2,717 | 0 | 0 | 0 | 0 |
| 5:15 PM | 0 | 10 | 266 | 15 | 1 | 16 | 352 | 0 | 0 | 1 | 0 | 26 | 0 | 5 | 0 | 17 | 709 | | 0 | 0 | 1 | 0 |
| 5:30 PM | 0 | 7 | 209 | 9 | 0 | 25 | 372 | 3 | 0 | 2 | 0 | 32 | 0 | 5 | 0 | 23 | 687 | | 0 | 0 | 0 | 0 |
| 5:45 PM | 0 | 5 | 234 | 7 | 1 | 9 | 336 | 1 | 0 | 2 | 0 | 21 | 0 | 4 | 1 | 17 | 638 | | 0 | 0 | 0 | 3 |
| Count Total | 0 | 56 | 1,856 | 85 | 5 | 107 | 2,805 | 11 | 0 | 10 | 1 | 206 | 0 | 40 | 3 | 159 | 5,344 | | 0 | 0 | 3 | 4 |
| Peak Hour | 0 | 27 | 970 | 39 | 1 | 61 | 1,483 | 7 | 0 | 6 | 0 | 110 | 0 | 23 | 0 | 77 | 2,804 | | 0 | 0 | 1 | 0 |

All Traffic Data Services Inc.
(303) 216-2439
www.alltrafficdata.net

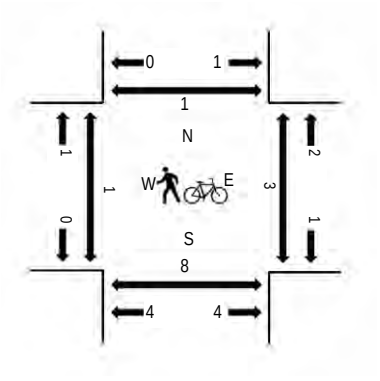
**Location:** 1 S VINE ST & E EASTER AVE PM
**Date and Start Time:** Wednesday, December 5, 2018
**Peak Hour:** 04:00 PM - 05:00 PM
**Peak 15-Minutes:** 04:00 PM - 04:15 PM

## Peak Hour - All Vehicles




Note: Total study counts contained in parentheses.

## Peak Hour - Pedestrians/Bicycles on Crosswalk




## Traffic Counts

| Interval Start Time | E EASTER AVE Eastbound | | | | E EASTER AVE Westbound | | | | S VINE ST Northbound | | | | S VINE ST Southbound | | | | Total | Rolling Hour | Pedestrain Crossings | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | | | West | East | South | North |
| 4:00 PM | 0 | 8 | 44 | 4 | 0 | 3 | 39 | 12 | 0 | 4 | 1 | 5 | 0 | 22 | 2 | 3 | 147 | 529 | 1 | 0 | 4 | 1 |
| 4:15 PM | 0 | 2 | 37 | 2 | 0 | 3 | 31 | 8 | 0 | 3 | 1 | 3 | 0 | 10 | 0 | 6 | 106 | 516 | 0 | 2 | 0 | 0 |
| 4:30 PM | 0 | 5 | 42 | 2 | 0 | 2 | 52 | 12 | 0 | 4 | 0 | 3 | 0 | 15 | 0 | 3 | 140 | 520 | 0 | 0 | 1 | 0 |
| 4:45 PM | 0 | 3 | 28 | 4 | 0 | 1 | 59 | 17 | 0 | 3 | 0 | 2 | 0 | 13 | 0 | 6 | 136 | 489 | 0 | 0 | 1 | 0 |
| 5:00 PM | 0 | 5 | 39 | 6 | 0 | 3 | 39 | 7 | 0 | 4 | 1 | 2 | 0 | 22 | 1 | 5 | 134 | 475 | 0 | 0 | 0 | 0 |
| 5:15 PM | 0 | 1 | 34 | 5 | 0 | 3 | 32 | 5 | 0 | 2 | 2 | 1 | 0 | 19 | 1 | 5 | 110 | | 0 | 1 | 1 | 0 |
| 5:30 PM | 0 | 0 | 29 | 6 | 0 | 2 | 48 | 5 | 0 | 0 | 0 | 0 | 0 | 15 | 1 | 3 | 109 | | 0 | 1 | 0 | 0 |
| 5:45 PM | 0 | 3 | 33 | 4 | 0 | 2 | 42 | 13 | 0 | 5 | 2 | 1 | 0 | 14 | 0 | 3 | 122 | | 0 | 0 | 0 | 0 |
| Count Total | 0 | 27 | 286 | 33 | 0 | 19 | 342 | 79 | 0 | 25 | 7 | 17 | 0 | 130 | 5 | 34 | 1,004 | | 1 | 4 | 7 | 1 |
| Peak Hour | 0 | 18 | 151 | 12 | 0 | 9 | 181 | 49 | 0 | 14 | 2 | 13 | 0 | 60 | 2 | 18 | 529 | | 1 | 2 | 6 | 1 |

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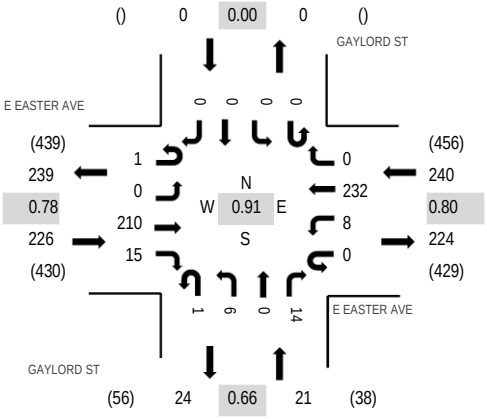
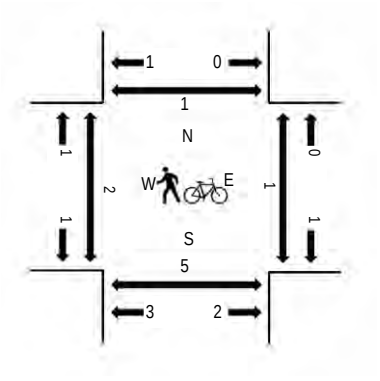
**Location:** 2 GAYLORD ST & E EASTER AVE PM
**Date and Start Time:** Wednesday, December 5, 2018
**Peak Hour:** 04:00 PM - 05:00 PM
**Peak 15-Minutes:** 04:30 PM - 04:45 PM

## Peak Hour - All Vehicles




Note: Total study counts contained in parentheses.

## Peak Hour - Pedestrians/Bicycles on Crosswalk




## Traffic Counts

| Interval Start Time | E EASTER AVE Eastbound | | | | E EASTER AVE Westbound | | | | GAYLORD ST Northbound | | | | GAYLORD ST Southbound | | | | Total | Rolling Hour | Pedestrain Crossings | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | | | West | East | South | North |
| 4:00 PM | 1 | 0 | 65 | 6 | 0 | 3 | 52 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 129 | 487 | 1 | 0 | 0 | 1 |
| 4:15 PM | 0 | 0 | 46 | 4 | 0 | 3 | 39 | 0 | 1 | 3 | 0 | 2 | 0 | 0 | 0 | 0 | 98 | 475 | 0 | 1 | 3 | 0 |
| 4:30 PM | 0 | 0 | 55 | 4 | 0 | 2 | 65 | 0 | 0 | 3 | 0 | 5 | 0 | 0 | 0 | 0 | 134 | 483 | 0 | 0 | 0 | 0 |
| 4:45 PM | 0 | 0 | 44 | 1 | 0 | 0 | 76 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 126 | 456 | 1 | 0 | 0 | 0 |
| 5:00 PM | 0 | 0 | 59 | 3 | 0 | 6 | 47 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 117 | 437 | 1 | 0 | 0 | 0 |
| 5:15 PM | 0 | 0 | 52 | 4 | 0 | 4 | 42 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 106 | | 0 | 0 | 0 | 0 |
| 5:30 PM | 0 | 0 | 41 | 2 | 0 | 8 | 52 | 0 | 0 | 1 | 0 | 3 | 0 | 0 | 0 | 0 | 107 | | 0 | 0 | 0 | 0 |
| 5:45 PM | 0 | 0 | 39 | 4 | 0 | 1 | 56 | 0 | 0 | 1 | 0 | 6 | 0 | 0 | 0 | 0 | 107 | | 0 | 0 | 1 | 1 |
| Count Total | 1 | 0 | 401 | 28 | 0 | 27 | 429 | 0 | 1 | 9 | 0 | 28 | 0 | 0 | 0 | 0 | 924 | | 3 | 1 | 4 | 2 |
| Peak Hour | 1 | 0 | 210 | 15 | 0 | 8 | 232 | 0 | 1 | 6 | 0 | 14 | 0 | 0 | 0 | 0 | 487 | | 2 | 1 | 3 | 1 |

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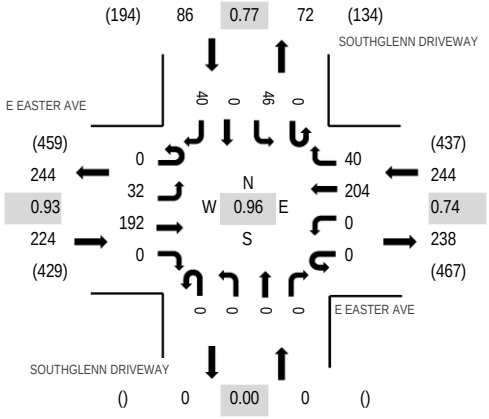
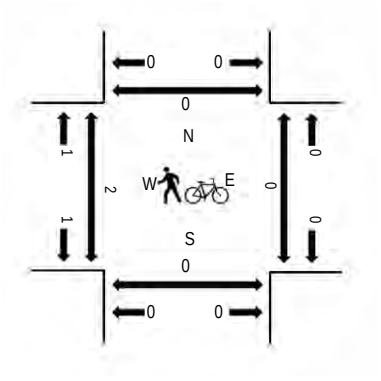
**Location:** 3 SOUTHGLENN DRIVEWAY & E EASTER AVE PM
**Date and Start Time:** Wednesday, December 5, 2018
**Peak Hour:** 04:30 PM - 05:30 PM
**Peak 15-Minutes:** 04:45 PM - 05:00 PM

## Peak Hour - All Vehicles




Note: Total study counts contained in parentheses.

## Peak Hour - Pedestrians/Bicycles on Crosswalk




## Traffic Counts

| Interval Start Time | E EASTER AVE Eastbound | | | | E EASTER AVE Westbound | | | | SOUTHGLENN DRIVEWAY Northbound | | | | SOUTHGLENN DRIVEWAY Southbound | | | | | Rolling Hour | Pedestrain Crossings | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | Total | | West | East | South | North |
| 4:00 PM | 0 | 7 | 60 | 0 | 0 | 0 | 43 | 9 | 0 | 0 | 0 | 0 | 0 | 15 | 0 | 12 | 146 | 547 | 1 | 0 | 0 | 1 |
| 4:15 PM | 0 | 8 | 40 | 0 | 0 | 0 | 30 | 9 | 0 | 0 | 0 | 0 | 0 | 16 | 0 | 12 | 115 | 538 | 0 | 0 | 2 | 0 |
| 4:30 PM | 0 | 9 | 51 | 0 | 0 | 0 | 51 | 7 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 16 | 141 | 554 | 0 | 0 | 0 | 0 |
| 4:45 PM | 0 | 10 | 38 | 0 | 0 | 0 | 70 | 12 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 7 | 145 | 538 | 1 | 0 | 0 | 0 |
| 5:00 PM | 0 | 5 | 55 | 0 | 0 | 0 | 44 | 8 | 0 | 0 | 0 | 0 | 0 | 15 | 0 | 10 | 137 | 513 | 1 | 0 | 0 | 0 |
| 5:15 PM | 0 | 8 | 48 | 0 | 0 | 0 | 39 | 13 | 0 | 0 | 0 | 0 | 0 | 16 | 0 | 7 | 131 | | 0 | 0 | 0 | 0 |
| 5:30 PM | 0 | 12 | 33 | 0 | 0 | 0 | 40 | 7 | 0 | 0 | 0 | 0 | 0 | 13 | 0 | 20 | 125 | | 0 | 0 | 0 | 0 |
| 5:45 PM | 0 | 4 | 41 | 0 | 0 | 0 | 49 | 6 | 0 | 0 | 0 | 0 | 0 | 11 | 0 | 9 | 120 | | 0 | 0 | 0 | 0 |
| Count Total | 0 | 63 | 366 | 0 | 0 | 0 | 366 | 71 | 0 | 0 | 0 | 0 | 0 | 101 | 0 | 93 | 1,060 | | 3 | 0 | 2 | 1 |
| Peak Hour | 0 | 32 | 192 | 0 | 0 | 0 | 204 | 40 | 0 | 0 | 0 | 0 | 0 | 46 | 0 | 40 | 554 | | 2 | 0 | 0 | 0 |

All Traffic Data Services Inc.

(303) 216-2439
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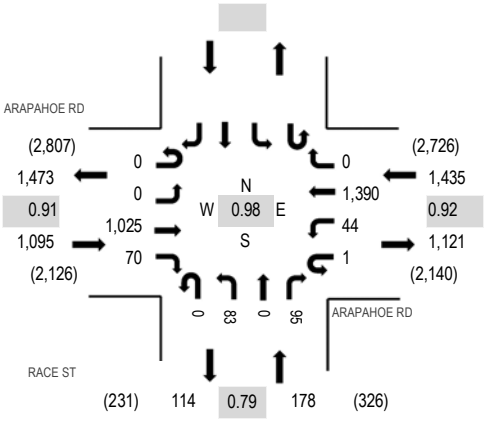
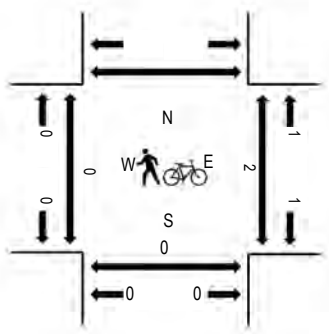
**Location:** 1 RACE ST & ARAPAHOE RD PM
**Date:** Wednesday, August 21, 2019
**Peak Hour:** 04:45 PM - 05:45 PM
**Peak 15-Minutes:** 05:15 PM - 05:30 PM

## Peak Hour - All Vehicles




Note: Total study counts contained in parentheses.

## Peak Hour - Pedestrians/Bicycles on Crosswalk




## Traffic Counts

| Interval Start Time | ARAPAHOE RD Eastbound | | | | ARAPAHOE RD Westbound | | | | RACE ST Northbound | | | | Southbound | | | | Total | Rolling Hour | Pedestrian Crossings | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | | | West | East | South | North |
| 4:00 PM | 0 | 0 | 234 | 20 | 0 | 11 | 274 | 0 | 0 | 16 | 0 | 22 | | | | | 577 | 2,517 | 0 | 0 | 1 | |
| 4:15 PM | 0 | 0 | 238 | 20 | 0 | 9 | 343 | 0 | 0 | 17 | 0 | 18 | | | | | 645 | 2,611 | 0 | 2 | 2 | |
| 4:30 PM | 0 | 0 | 251 | 23 | 0 | 4 | 312 | 0 | 0 | 19 | 0 | 11 | | | | | 620 | 2,659 | 1 | 1 | 1 | |
| 4:45 PM | 0 | 0 | 241 | 14 | 1 | 15 | 370 | 0 | 0 | 17 | 0 | 17 | | | | | 675 | 2,708 | 0 | 0 | 0 | |
| 5:00 PM | 0 | 0 | 258 | 13 | 0 | 9 | 341 | 0 | 0 | 25 | 0 | 25 | | | | | 671 | 2,661 | 0 | 1 | 0 | |
| 5:15 PM | 0 | 0 | 244 | 23 | 0 | 12 | 380 | 0 | 0 | 14 | 0 | 20 | | | | | 693 | | 0 | 0 | 0 | |
| 5:30 PM | 0 | 0 | 282 | 20 | 0 | 8 | 299 | 0 | 0 | 27 | 0 | 33 | | | | | 669 | | 0 | 1 | 0 | |
| 5:45 PM | 0 | 0 | 226 | 19 | 0 | 11 | 327 | 0 | 0 | 26 | 0 | 19 | | | | | 628 | | 0 | 2 | 3 | |
| Count Total | 0 | 0 | 1,974 | 152 | 1 | 79 | 2,646 | 0 | 0 | 161 | 0 | 165 | | | | | 5,178 | | 1 | 7 | 7 | |
| Peak Hour | 0 | 0 | 1,025 | 70 | 1 | 44 | 1,390 | 0 | 0 | 83 | 0 | 95 | | | | | 2,708 | | 0 | 2 | 0 | |

All Traffic Data Services Inc.

(303) 216-2439
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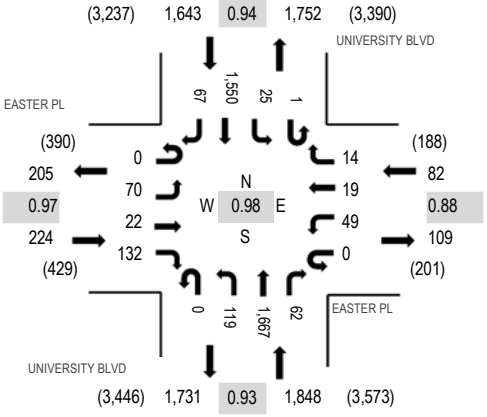
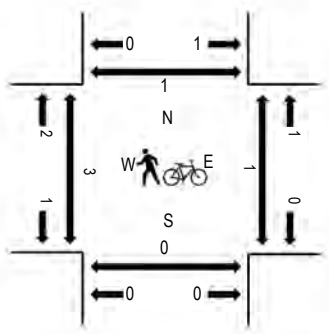
**Location:** 2 UNIVERSITY BLVD & EASTER PL PM
**Date:** Wednesday, August 21, 2019
**Peak Hour:** 05:00 PM - 06:00 PM
**Peak 15-Minutes:** 05:30 PM - 05:45 PM

## Peak Hour - All Vehicles




Note: Total study counts contained in parentheses.

## Peak Hour - Pedestrians/Bicycles on Crosswalk




## Traffic Counts

| Interval Start Time | EASTER PL Eastbound | | | | EASTER PL Westbound | | | | UNIVERSITY BLVD Northbound | | | | UNIVERSITY BLVD Southbound | | | | Total | Rolling Hour | Pedestrian Crossings | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | | | West | East | South | North |
| 4:00 PM | 0 | 16 | 6 | 33 | 0 | 11 | 6 | 4 | 0 | 23 | 374 | 18 | 1 | 6 | 378 | 9 | 885 | 3,630 | 1 | 0 | 1 | 0 |
| 4:15 PM | 0 | 14 | 7 | 31 | 0 | 13 | 6 | 7 | 0 | 22 | 383 | 14 | 0 | 5 | 346 | 18 | 866 | 3,690 | 2 | 0 | 0 | 0 |
| 4:30 PM | 0 | 2 | 6 | 33 | 0 | 17 | 7 | 5 | 0 | 26 | 430 | 14 | 0 | 4 | 411 | 13 | 968 | 3,786 | 0 | 0 | 0 | 0 |
| 4:45 PM | 0 | 13 | 2 | 42 | 0 | 16 | 10 | 4 | 0 | 33 | 385 | 3 | 0 | 7 | 384 | 12 | 911 | 3,783 | 1 | 1 | 0 | 0 |
| 5:00 PM | 0 | 14 | 7 | 35 | 0 | 8 | 6 | 4 | 0 | 23 | 461 | 11 | 0 | 2 | 356 | 18 | 945 | 3,797 | 1 | 0 | 0 | 0 |
| 5:15 PM | 0 | 18 | 6 | 33 | 0 | 11 | 3 | 2 | 0 | 28 | 405 | 17 | 1 | 9 | 412 | 17 | 962 | | 0 | 0 | 0 | 1 |
| 5:30 PM | 0 | 14 | 6 | 39 | 0 | 15 | 6 | 6 | 0 | 34 | 433 | 18 | 0 | 8 | 369 | 17 | 965 | | 1 | 0 | 0 | 0 |
| 5:45 PM | 0 | 24 | 3 | 25 | 0 | 15 | 4 | 2 | 0 | 34 | 368 | 16 | 0 | 6 | 413 | 15 | 925 | | 0 | 0 | 0 | 0 |
| Count Total | 0 | 115 | 43 | 271 | 0 | 106 | 48 | 34 | 0 | 223 | 3,239 | 111 | 2 | 47 | 3,069 | 119 | 7,427 | | 6 | 1 | 1 | 1 |
| Peak Hour | 0 | 70 | 22 | 132 | 0 | 49 | 19 | 14 | 0 | 119 | 1,667 | 62 | 1 | 25 | 1,550 | 67 | 3,797 | | 2 | 0 | 0 | 1 |

# APPENDIX B. EXISTING CONDITION OPERATIONAL ANALYSIS WORKSHEETS

| Lane Group | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 1241 | 57 | 32 | 737 | 48 | 35 |
| Future Volume (vph) | 1241 | 57 | 32 | 737 | 48 | 35 |
| Turn Type | NA | Perm | pm+pt | NA | Prot | Perm |
| Protected Phases | 2 | | 1 | 6 | 8 | |
| Permitted Phases | | 2 | 6 | | | 8 |
| Detector Phase | 2 | 2 | 1 | 6 | 8 | 8 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 17.0 | 17.0 | 3.0 | 17.0 | 5.0 | 5.0 |
| Minimum Split (s) | 23.0 | 23.0 | 7.0 | 23.0 | 30.0 | 30.0 |
| Total Split (s) | 76.0 | 76.0 | 12.0 | 88.0 | 32.0 | 32.0 |
| Total Split (%) | 63.3% | 63.3% | 10.0% | 73.3% | 26.7% | 26.7% |
| Yellow Time (s) | 4.0 | 4.0 | 3.0 | 4.0 | 3.0 | 3.0 |
| All-Red Time (s) | 2.0 | 2.0 | 1.0 | 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) | 6.0 | 6.0 | 4.0 | 6.0 | 5.0 | 5.0 |
| Lead/Lag | Lag | Lag | Lead | | | |
| Lead-Lag Optimize? | Yes | Yes | Yes | | | |
| Recall Mode | C-Min | C-Min | None | C-Min | None | None |
| Act Effct Green (s) | 96.0 | 96.0 | 102.4 | 101.6 | 10.6 | 10.6 |
| Actuated g/C Ratio | 0.80 | 0.80 | 0.85 | 0.85 | 0.09 | 0.09 |
| v/c Ratio | 0.45 | 0.05 | 0.09 | 0.17 | 0.31 | 0.21 |
| Control Delay | 6.8 | 3.6 | 1.9 | 2.0 | 53.4 | 16.3 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 6.8 | 3.6 | 1.9 | 2.0 | 53.4 | 16.3 |
| LOS | A | A | A | A | D | B |
| Approach Delay | 6.6 | | | 2.0 | 37.7 | |
| Approach LOS | A | | | A | D | |

| Intersection Summary | |
|---|---|
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 111 (93%), Referenced to phase 2:EBT and 6:WBTL, Start of 1st Green | |
| Natural Cycle: 70 | |
| Control Type: Actuated-Coordinated | |
| Maximum v/c Ratio: 0.45 | |
| Intersection Signal Delay: 6.2 | Intersection LOS: A |
| Intersection Capacity Utilization 50.2% | ICU Level of Service A |
| Analysis Period (min) 15 | |

Splits and Phases: 1: Race St & Arapahoe Rd

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 1241 | 57 | 32 | 737 | 48 | 35 |
| Future Volume (veh/h) | 1241 | 57 | 32 | 737 | 48 | 35 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | | 1.00 | 1.00 | | 1.00 | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | No | | | No | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 1266 | 58 | 33 | 752 | 49 | 36 |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 2901 | 1288 | 386 | 4424 | 75 | 67 |
| Arrive On Green | 0.82 | 0.82 | 0.02 | 0.87 | 0.04 | 0.04 |
| Sat Flow, veh/h | 3647 | 1578 | 1781 | 5274 | 1781 | 1585 |
| Grp Volume(v), veh/h | 1266 | 58 | 33 | 752 | 49 | 36 |
| Grp Sat Flow(s),veh/h/ln | 1777 | 1578 | 1781 | 1702 | 1781 | 1585 |
| Q Serve(g_s), s | 12.2 | 0.8 | 0.3 | 2.8 | 3.3 | 2.7 |
| Cycle Q Clear(g_c), s | 12.2 | 0.8 | 0.3 | 2.8 | 3.3 | 2.7 |
| Prop In Lane | | 1.00 | 1.00 | | 1.00 | 1.00 |
| Lane Grp Cap(c), veh/h | 2901 | 1288 | 386 | 4424 | 75 | 67 |
| V/C Ratio(X) | 0.44 | 0.05 | 0.09 | 0.17 | 0.66 | 0.54 |
| Avail Cap(c_a), veh/h | 2901 | 1288 | 475 | 4424 | 401 | 357 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.98 | 0.98 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 3.1 | 2.1 | 2.3 | 1.3 | 56.6 | 56.3 |
| Incr Delay (d2), s/veh | 0.5 | 0.1 | 0.0 | 0.1 | 3.6 | 2.5 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 2.9 | 0.2 | 0.1 | 0.4 | 1.5 | 1.1 |
| Unsig. Movement Delay, s/veh | | | | | | |
| LnGrp Delay(d),s/veh | 3.6 | 2.2 | 2.3 | 1.3 | 60.2 | 58.9 |
| LnGrp LOS | A | A | A | A | E | E |
| Approach Vol, veh/h | 1324 | | | 785 | 85 | |
| Approach Delay, s/veh | 3.6 | | | 1.4 | 59.7 | |
| Approach LOS | A | | | A | E | |

| Timer - Assigned Phs | 1 | 2 | | | | 6 | 8 |
|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 6.0 | 104.0 | | | | 110.0 | 10.0 |
| Change Period (Y+Rc), s | 4.0 | 6.0 | | | | 6.0 | 5.0 |
| Max Green Setting (Gmax), s | 8.0 | 70.0 | | | | 82.0 | 27.0 |
| Max Q Clear Time (g_c+I1), s | 2.3 | 14.2 | | | | 4.8 | 5.3 |
| Green Ext Time (p_c), s | 0.0 | 7.3 | | | | 3.8 | 0.1 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 5.0 |
| HCM 6th LOS | A |

| Lane Group | EBL | EBT | WBL | WBT | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | |
| Traffic Volume (vph) | 49 | 1178 | 52 | 699 | 43 | 6 | 41 | 87 | 4 | 27 |
| Future Volume (vph) | 49 | 1178 | 52 | 699 | 43 | 6 | 41 | 87 | 4 | 27 |
| Turn Type | pm+pt | NA | pm+pt | NA | Perm | NA | Perm | Perm | NA | Perm |
| Protected Phases | 5 | 2 | 1 | 6 | | 8 | | | 4 | |
| Permitted Phases | 2 | | 6 | | 8 | | 8 | 4 | | 4 |
| Detector Phase | 5 | 2 | 1 | 6 | 8 | 8 | 8 | 4 | 4 | 4 |
| Switch Phase | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 17.0 | 3.0 | 17.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Minimum Split (s) | 7.0 | 26.0 | 7.0 | 23.0 | 35.0 | 35.0 | 35.0 | 34.0 | 34.0 | 34.0 |
| Total Split (s) | 12.0 | 73.0 | 12.0 | 73.0 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 |
| Total Split (%) | 10.0% | 60.8% | 10.0% | 60.8% | 29.2% | 29.2% | 29.2% | 29.2% | 29.2% | 29.2% |
| Yellow Time (s) | 3.0 | 4.0 | 3.0 | 4.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| All-Red Time (s) | 1.0 | 2.0 | 1.0 | 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) | 4.0 | 6.0 | 4.0 | 6.0 | | 5.0 | 5.0 | | 5.0 | 5.0 |
| Lead/Lag | Lead | Lag | Lead | Lag | | | | | | |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | | | | | | |
| Recall Mode | None | C-Min | None | C-Min | None | None | None | None | None | None |
| Act Effct Green (s) | 93.2 | 86.8 | 93.3 | 86.8 | | 14.2 | 14.2 | | 14.6 | 14.6 |
| Actuated g/C Ratio | 0.78 | 0.72 | 0.78 | 0.72 | | 0.12 | 0.12 | | 0.12 | 0.12 |
| v/c Ratio | 0.10 | 0.35 | 0.17 | 0.23 | | 0.36 | 0.18 | | 0.62 | 0.11 |
| Control Delay | 4.7 | 10.3 | 10.5 | 16.6 | | 52.8 | 6.0 | | 65.1 | 1.2 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 |
| Total Delay | 4.7 | 10.3 | 10.5 | 16.6 | | 52.8 | 6.0 | | 65.1 | 1.2 |
| LOS | A | B | B | B | | D | A | | E | A |
| Approach Delay | | 10.1 | | 16.2 | | 31.4 | | | 50.7 | |
| Approach LOS | | B | | B | | C | | | D | |

| Intersection Summary | |
|---|---|
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 63 (53%), Referenced to phase 2:EBTL and 6:WBTL, Start of 1st Green | |
| Natural Cycle: 70 | |
| Control Type: Actuated-Coordinated | |
| Maximum v/c Ratio: 0.62 | |
| Intersection Signal Delay: 15.2 | Intersection LOS: B |
| Intersection Capacity Utilization 53.5% | ICU Level of Service A |
| Analysis Period (min) 15 | |

Splits and Phases: 2: Vine St & Arapahoe Rd

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 49 | 1178 | 49 | 52 | 699 | 95 | 43 | 6 | 41 | 87 | 4 | 27 |
| Future Volume (veh/h) | 49 | 1178 | 49 | 52 | 699 | 95 | 43 | 6 | 41 | 87 | 4 | 27 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 0.99 | 1.00 | | 0.99 | 1.00 | | 0.99 | 1.00 | | 0.99 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 52 | 1240 | 52 | 55 | 736 | 100 | 45 | 6 | 43 | 92 | 4 | 28 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 495 | 3019 | 127 | 359 | 2737 | 369 | 56 | 4 | 392 | 59 | 1 | 392 |
| Arrive On Green | 0.05 | 1.00 | 1.00 | 0.05 | 1.00 | 1.00 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 |
| Sat Flow, veh/h | 1781 | 5024 | 211 | 1781 | 4547 | 613 | 0 | 17 | 1568 | 0 | 5 | 1568 |
| Grp Volume(v), veh/h | 52 | 840 | 452 | 55 | 549 | 287 | 51 | 0 | 43 | 96 | 0 | 28 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1702 | 1831 | 1781 | 1702 | 1756 | 17 | 0 | 1568 | 5 | 0 | 1568 |
| Q Serve(g_s), s | 1.4 | 0.0 | 0.0 | 1.4 | 0.0 | 0.0 | 0.0 | 0.0 | 2.5 | 0.0 | 0.0 | 1.6 |
| Cycle Q Clear(g_c), s | 1.4 | 0.0 | 0.0 | 1.4 | 0.0 | 0.0 | 30.0 | 0.0 | 2.5 | 30.0 | 0.0 | 1.6 |
| Prop In Lane | 1.00 | | 0.12 | 1.00 | | 0.35 | 0.88 | | 1.00 | 0.96 | | 1.00 |
| Lane Grp Cap(c), veh/h | 495 | 2045 | 1100 | 359 | 2049 | 1057 | 61 | 0 | 392 | 60 | 0 | 392 |
| V/C Ratio(X) | 0.10 | 0.41 | 0.41 | 0.15 | 0.27 | 0.27 | 0.84 | 0.00 | 0.11 | 1.60 | 0.00 | 0.07 |
| Avail Cap(c_a), veh/h | 573 | 2045 | 1100 | 435 | 2049 | 1057 | 61 | 0 | 392 | 60 | 0 | 392 |
| HCM Platoon Ratio | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.90 | 0.90 | 0.90 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 8.5 | 0.0 | 0.0 | 8.5 | 0.0 | 0.0 | 57.6 | 0.0 | 34.7 | 59.3 | 0.0 | 34.4 |
| Incr Delay (d2), s/veh | 0.0 | 0.6 | 1.0 | 0.1 | 0.3 | 0.6 | 60.4 | 0.0 | 0.0 | 333.3 | 0.0 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.5 | 0.2 | 0.3 | 0.5 | 0.1 | 0.2 | 2.6 | 0.0 | 1.0 | 7.4 | 0.0 | 0.6 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 8.6 | 0.6 | 1.0 | 8.6 | 0.3 | 0.6 | 117.9 | 0.0 | 34.7 | 392.6 | 0.0 | 34.4 |
| LnGrp LOS | A | A | A | A | A | A | F | A | C | F | A | C |
| Approach Vol, veh/h | | 1344 | | | 891 | | | 94 | | | 124 | |
| Approach Delay, s/veh | | 1.0 | | | 0.9 | | | 79.9 | | | 311.7 | |
| Approach LOS | | A | | | A | | | E | | | F | |

| Timer - Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 6.9 | 78.1 | | 35.0 | 6.8 | 78.2 | | 35.0 |
| Change Period (Y+Rc), s | 4.0 | 6.0 | | 5.0 | 4.0 | 6.0 | | 5.0 |
| Max Green Setting (Gmax), s | 8.0 | 67.0 | | 30.0 | 8.0 | 67.0 | | 30.0 |
| Max Q Clear Time (g_c+I1), s | 3.4 | 2.0 | | 32.0 | 3.4 | 2.0 | | 32.0 |
| Green Ext Time (p_c), s | 0.0 | 6.8 | | 0.0 | 0.0 | 3.9 | | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 19.7 |
| HCM 6th LOS | B |

| 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 | 11 | 1266 | 29 | 22 | 836 | 10 | 2 | 2 | 38 | 2 | 0 | 8 |
| Future Vol, veh/h | 11 | 1266 | 29 | 22 | 836 | 10 | 2 | 2 | 38 | 2 | 0 | 8 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | 150 | - | 0 | 100 | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 12 | 1376 | 32 | 24 | 909 | 11 | 2 | 2 | 41 | 2 | 0 | 9 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 920 | 0 | 0 | 1408 | 0 | 0 | 1812 | 2368 | 688 | 1538 | 2395 | 460 |
| Stage 1 | - | - | - | - | - | - | 1400 | 1400 | - | 963 | 963 | - |
| Stage 2 | - | - | - | - | - | - | 412 | 968 | - | 575 | 1432 | - |
| Critical Hdwy | 5.34 | - | - | 5.34 | - | - | 6.44 | 6.54 | 7.14 | 6.44 | 6.54 | 7.14 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 7.34 | 5.54 | - | 7.34 | 5.54 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.74 | 5.54 | - | 6.74 | 5.54 | - |
| Follow-up Hdwy | 3.12 | - | - | 3.12 | - | - | 3.82 | 4.02 | 3.92 | 3.82 | 4.02 | 3.92 |
| Pot Cap-1 Maneuver | 880 | - | - | *791 | - | - | *462 | *360 | *629 | *462 | 336 | *738 |
| Stage 1 | - | - | - | - | - | - | *646 | *614 | - | *648 | 650 | - |
| Stage 2 | - | - | - | - | - | - | *757 | *646 | - | *646 | 597 | - |
| Platoon blocked, % | 1 | - | - | 1 | - | - | 1 | 1 | 1 | 1 | 1 | 1 |
| Mov Cap-1 Maneuver | 880 | - | - | *791 | - | - | *441 | *344 | *629 | *415 | 321 | *738 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | *441 | *344 | - | *415 | 321 | - |
| Stage 1 | - | - | - | - | - | - | *637 | *606 | - | *639 | 631 | - |
| Stage 2 | - | - | - | - | - | - | *726 | *627 | - | *593 | 589 | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 0.1 | 0.2 | 11.6 | 10.7 |
| HCM LOS | | | B | B |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 594 | 880 | - | - | * 791 | - | - | 639 |
| HCM Lane V/C Ratio | 0.077 | 0.014 | - | - | 0.03 | - | - | 0.017 |
| HCM Control Delay (s) | 11.6 | 9.1 | - | - | 9.7 | - | - | 10.7 |
| HCM Lane LOS | B | A | - | - | A | - | - | B |
| HCM 95th %tile Q(veh) | 0.2 | 0 | - | - | 0.1 | - | - | 0.1 |

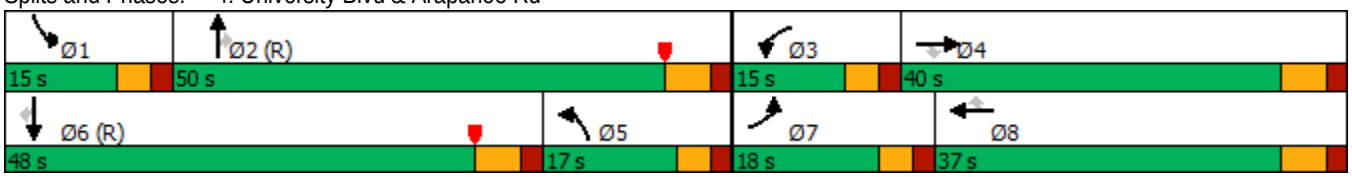
Notes

~: 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) | 192 | 951 | 163 | 210 | 564 | 376 | 184 | 1203 | 184 | 241 | 806 | 119 |
| Future Volume (vph) | 192 | 951 | 163 | 210 | 564 | 376 | 184 | 1203 | 184 | 241 | 806 | 119 |
| Turn Type | Prot | NA | Perm | Prot | NA | Perm | Prot | NA | Perm | Prot | NA | Perm |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | | | 4 | | | 8 | | | 2 | | | 6 |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | 8 | 5 | 2 | 2 | 1 | 6 | 6 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 | 3.0 | 10.0 | 10.0 | 3.0 | 10.0 | 10.0 |
| Minimum Split (s) | 8.0 | 39.0 | 39.0 | 8.0 | 37.0 | 37.0 | 8.0 | 35.0 | 35.0 | 8.0 | 40.0 | 40.0 |
| Total Split (s) | 18.0 | 40.0 | 40.0 | 15.0 | 37.0 | 37.0 | 17.0 | 50.0 | 50.0 | 15.0 | 48.0 | 48.0 |
| Total Split (%) | 15.0% | 33.3% | 33.3% | 12.5% | 30.8% | 30.8% | 14.2% | 41.7% | 41.7% | 12.5% | 40.0% | 40.0% |
| Yellow Time (s) | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 |
| 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 | 0.0 |
| Total Lost Time (s) | 5.0 | 6.0 | 6.0 | 5.0 | 6.0 | 6.0 | 5.0 | 6.0 | 6.0 | 5.0 | 6.0 | 6.0 |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lag | Lag | Lag | Lead | Lead | Lead |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | None | None | None | None | None | None | C-Min | C-Min | None | C-Min | C-Min |
| Act Effct Green (s) | 10.6 | 29.5 | 29.5 | 9.6 | 28.6 | 28.6 | 19.7 | 48.9 | 48.9 | 10.0 | 39.1 | 39.1 |
| Actuated g/C Ratio | 0.09 | 0.25 | 0.25 | 0.08 | 0.24 | 0.24 | 0.16 | 0.41 | 0.41 | 0.08 | 0.33 | 0.33 |
| v/c Ratio | 0.66 | 0.79 | 0.33 | 0.79 | 0.49 | 0.73 | 0.34 | 0.61 | 0.26 | 0.88 | 0.51 | 0.21 |
| Control Delay | 55.8 | 45.1 | 13.1 | 75.0 | 40.6 | 27.5 | 40.3 | 23.6 | 3.5 | 84.8 | 34.1 | 5.4 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 55.8 | 45.1 | 13.1 | 75.0 | 40.6 | 27.5 | 40.3 | 23.6 | 3.5 | 84.8 | 34.1 | 5.4 |
| LOS | E | D | B | E | D | C | D | C | A | F | C | A |
| Approach Delay | | 42.7 | | | 42.6 | | | 23.2 | | | 41.6 | |
| Approach LOS | | D | | | D | | | C | | | D | |

| Intersection Summary | |
|---|---|
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 38 (32%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow | |
| Natural Cycle: 95 | |
| Control Type: Actuated-Coordinated | |
| Maximum v/c Ratio: 0.88 | |
| Intersection Signal Delay: 36.5 | Intersection LOS: D |
| Intersection Capacity Utilization 75.1% | ICU Level of Service D |
| Analysis Period (min) 15 | |

Splits and Phases: 4: University Blvd & Arapahoe Rd



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 192 | 951 | 163 | 210 | 564 | 376 | 184 | 1203 | 184 | 241 | 806 | 119 |
| Future Volume (veh/h) | 192 | 951 | 163 | 210 | 564 | 376 | 184 | 1203 | 184 | 241 | 806 | 119 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 0.99 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.99 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 200 | 991 | 170 | 219 | 588 | 0 | 192 | 1253 | 192 | 251 | 840 | 124 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 253 | 1159 | 357 | 273 | 1189 | | 860 | 2182 | 675 | 288 | 1295 | 400 |
| Arrive On Green | 0.15 | 0.45 | 0.45 | 0.08 | 0.23 | 0.00 | 0.25 | 0.43 | 0.43 | 0.08 | 0.25 | 0.25 |
| Sat Flow, veh/h | 3456 | 5106 | 1575 | 3456 | 5106 | 1585 | 3456 | 5106 | 1579 | 3456 | 5106 | 1576 |
| Grp Volume(v), veh/h | 200 | 991 | 170 | 219 | 588 | 0 | 192 | 1253 | 192 | 251 | 840 | 124 |
| Grp Sat Flow(s),veh/h/ln | 1728 | 1702 | 1575 | 1728 | 1702 | 1585 | 1728 | 1702 | 1579 | 1728 | 1702 | 1576 |
| Q Serve(g_s), s | 6.7 | 20.8 | 5.0 | 7.5 | 12.0 | 0.0 | 5.3 | 22.3 | 9.5 | 8.6 | 17.6 | 6.0 |
| Cycle Q Clear(g_c), s | 6.7 | 20.8 | 5.0 | 7.5 | 12.0 | 0.0 | 5.3 | 22.3 | 9.5 | 8.6 | 17.6 | 6.0 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 253 | 1159 | 357 | 273 | 1189 | | 860 | 2182 | 675 | 288 | 1295 | 400 |
| V/C Ratio(X) | 0.79 | 0.86 | 0.48 | 0.80 | 0.49 | | 0.22 | 0.57 | 0.28 | 0.87 | 0.65 | 0.31 |
| Avail Cap(c_a), veh/h | 374 | 1447 | 446 | 288 | 1319 | | 860 | 2182 | 675 | 288 | 1787 | 551 |
| HCM Platoon Ratio | 2.00 | 2.00 | 2.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 50.3 | 31.0 | 8.4 | 54.3 | 39.9 | 0.0 | 35.9 | 26.1 | 22.4 | 54.4 | 40.0 | 22.0 |
| Incr Delay (d2), s/veh | 3.7 | 3.7 | 0.4 | 13.0 | 0.1 | 0.0 | 0.0 | 1.1 | 1.1 | 23.1 | 2.5 | 2.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 2.8 | 6.8 | 2.9 | 3.7 | 5.0 | 0.0 | 2.2 | 8.9 | 3.7 | 4.6 | 7.5 | 3.1 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 54.0 | 34.7 | 8.7 | 67.3 | 40.0 | 0.0 | 35.9 | 27.2 | 23.5 | 77.5 | 42.5 | 24.0 |
| LnGrp LOS | D | C | A | E | D | | D | C | C | E | D | C |
| Approach Vol, veh/h | | 1361 | | | 807 | A | | 1637 | | | 1215 | |
| Approach Delay, s/veh | | 34.3 | | | 47.4 | | | 27.8 | | | 47.9 | |
| Approach LOS | | C | | | D | | | C | | | D | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 15.0 | 57.3 | 14.5 | 33.2 | 35.9 | 36.4 | 13.8 | 33.9 |
| Change Period (Y+Rc), s | 5.0 | 6.0 | 5.0 | 6.0 | 6.0 | * 6 | 5.0 | 6.0 |
| Max Green Setting (Gmax), s | 10.0 | 44.0 | 10.0 | 34.0 | 12.0 | * 42 | 13.0 | 31.0 |
| Max Q Clear Time (g_c+I1), s | 10.6 | 24.3 | 9.5 | 22.8 | 7.3 | 19.6 | 8.7 | 14.0 |
| Green Ext Time (p_c), s | 0.0 | 14.2 | 0.0 | 3.9 | 0.1 | 10.8 | 0.1 | 2.4 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 37.6 |
| HCM 6th LOS | D |

Notes

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

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.1 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | ↱ | | | ↱ | | ↑↑↑↳ | | | ↑↑↑ | ↱ |
| Traffic Vol, veh/h | 0 | 0 | 21 | 0 | 0 | 9 | 0 | 1583 | 2 | 0 | 1121 | 57 |
| Future Vol, veh/h | 0 | 0 | 21 | 0 | 0 | 9 | 0 | 1583 | 2 | 0 | 1121 | 57 |
| 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 | - | - | 0 | - | - | 0 | - | - | - | - | - | 0 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 | 100 | 100 | 92 | 92 | 100 | 100 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 0 | 23 | 0 | 0 | 10 | 0 | 1583 | 2 | 0 | 1121 | 57 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | - | - | 561 | - | - | 793 | - | 0 | 0 | - | - | 0 |
| Stage 1 | - | - | - | - | - | - | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - | - | - | - | - | - | - |
| Critical Hdwy | - | - | 7.14 | - | - | 7.14 | - | - | - | - | - | - |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | - | - | - | - | - | - |
| Follow-up Hdwy | - | - | 3.92 | - | - | 3.92 | - | - | - | - | - | - |
| Pot Cap-1 Maneuver | 0 | 0 | *675 | 0 | 0 | 284 | 0 | - | - | 0 | - | - |
| Stage 1 | 0 | 0 | - | 0 | 0 | - | 0 | - | - | 0 | - | - |
| Stage 2 | 0 | 0 | - | 0 | 0 | - | 0 | - | - | 0 | - | - |
| Platoon blocked, % | | | 1 | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | - | - | *675 | - | - | 284 | - | - | - | - | - | - |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | - | - | - | - | - | - |
| Stage 1 | - | - | - | - | - | - | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 10.5 | 18.1 | 0 | 0 |
| HCM LOS | B | C | | |

| Minor Lane/Major Mvmt | NBT | NBR | EBLn1 | WBLn1 | SBT | SBR |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 675 | 284 | - | - |
| HCM Lane V/C Ratio | - | - | 0.034 | 0.034 | - | - |
| HCM Control Delay (s) | - | - | 10.5 | 18.1 | - | - |
| HCM Lane LOS | - | - | B | C | - | - |
| HCM 95th %tile Q(veh) | - | - | 0.1 | 0.1 | - | - |

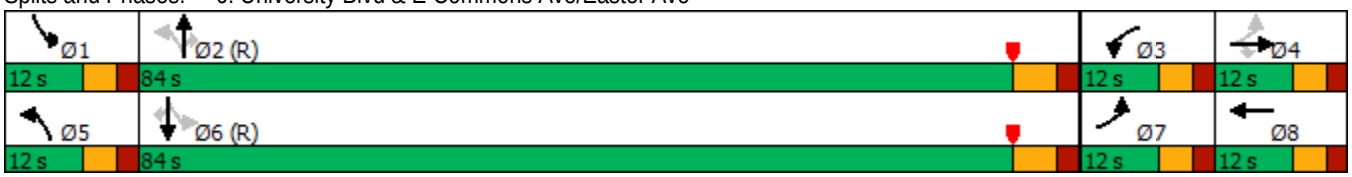
Notes

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

| Lane Group | EBL | EBT | EBR | WBL | WBT | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | |
| Traffic Volume (vph) | 61 | 5 | 46 | 53 | 12 | 97 | 1478 | 31 | 7 | 1073 | 47 |
| Future Volume (vph) | 61 | 5 | 46 | 53 | 12 | 97 | 1478 | 31 | 7 | 1073 | 47 |
| Turn Type | pm+pt | NA | Perm | Prot | NA | pm+pt | NA | Perm | pm+pt | NA | Perm |
| Protected Phases | 7 | 4 | | 3 | 8 | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | 4 | | | 2 | | 2 | 6 | | 6 |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | 5 | 2 | 2 | 1 | 6 | 6 |
| Switch Phase | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 3.0 | 4.0 | 3.0 | 3.0 | 5.0 | 5.0 | 3.0 | 5.0 | 5.0 |
| Minimum Split (s) | 8.0 | 35.0 | 35.0 | 9.0 | 32.0 | 8.0 | 24.0 | 24.0 | 8.0 | 29.0 | 29.0 |
| Total Split (s) | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 84.0 | 84.0 | 12.0 | 84.0 | 84.0 |
| Total Split (%) | 10.0% | 10.0% | 10.0% | 10.0% | 10.0% | 10.0% | 70.0% | 70.0% | 10.0% | 70.0% | 70.0% |
| Yellow Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 |
| 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) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 6.0 | 6.0 | 5.0 | 6.0 | 6.0 |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lead | Lag | Lag | Lead | Lag | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | None | None | None | None | None | C-Min | C-Min | None | C-Min | C-Min |
| Act Effct Green (s) | 10.9 | 5.6 | 5.6 | 7.6 | 6.7 | 95.4 | 94.2 | 94.2 | 89.4 | 83.8 | 83.8 |
| Actuated g/C Ratio | 0.09 | 0.05 | 0.05 | 0.06 | 0.06 | 0.80 | 0.78 | 0.78 | 0.74 | 0.70 | 0.70 |
| v/c Ratio | 0.24 | 0.07 | 0.29 | 0.54 | 0.41 | 0.34 | 0.61 | 0.03 | 0.04 | 0.50 | 0.05 |
| Control Delay | 46.2 | 55.6 | 3.8 | 72.9 | 33.7 | 5.3 | 6.1 | 0.0 | 2.7 | 7.1 | 0.2 |
| 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 | 46.2 | 55.6 | 3.8 | 72.9 | 33.7 | 5.3 | 6.2 | 0.0 | 2.7 | 7.1 | 0.2 |
| LOS | D | E | A | E | C | A | A | A | A | A | A |
| Approach Delay | | 29.2 | | | 54.9 | | 6.0 | | | 6.8 | |
| Approach LOS | | C | | | D | | A | | | A | |

| Intersection Summary | |
|---|---|
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 50 (42%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow | |
| Natural Cycle: 105 | |
| Control Type: Actuated-Coordinated | |
| Maximum v/c Ratio: 0.61 | |
| Intersection Signal Delay: 8.8 | Intersection LOS: A |
| Intersection Capacity Utilization 70.1% | ICU Level of Service C |
| Analysis Period (min) 15 | |

Splits and Phases: 6: University Blvd & E Commons Ave/Easter Ave



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 61 | 5 | 46 | 53 | 12 | 33 | 97 | 1478 | 31 | 7 | 1073 | 47 |
| Future Volume (veh/h) | 61 | 5 | 46 | 53 | 12 | 33 | 97 | 1478 | 31 | 7 | 1073 | 47 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 0.91 | | 1.00 | 1.00 | | 0.94 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 70 | 6 | 0 | 61 | 14 | 38 | 111 | 1699 | 36 | 8 | 1233 | 0 |
| Peak Hour Factor | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 277 | 75 | | 78 | 22 | 59 | 369 | 2613 | 1161 | 268 | 2514 | |
| Arrive On Green | 0.03 | 0.04 | 0.00 | 0.04 | 0.05 | 0.05 | 0.07 | 1.00 | 1.00 | 0.01 | 0.71 | 0.00 |
| Sat Flow, veh/h | 3456 | 1870 | 1585 | 1781 | 423 | 1148 | 1781 | 3554 | 1580 | 1781 | 3554 | 1585 |
| Grp Volume(v), veh/h | 70 | 6 | 0 | 61 | 0 | 52 | 111 | 1699 | 36 | 8 | 1233 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1728 | 1870 | 1585 | 1781 | 0 | 1571 | 1781 | 1777 | 1580 | 1781 | 1777 | 1585 |
| Q Serve(g_s), s | 2.3 | 0.4 | 0.0 | 4.1 | 0.0 | 3.9 | 2.1 | 0.0 | 0.0 | 0.2 | 18.7 | 0.0 |
| Cycle Q Clear(g_c), s | 2.3 | 0.4 | 0.0 | 4.1 | 0.0 | 3.9 | 2.1 | 0.0 | 0.0 | 0.2 | 18.7 | 0.0 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.73 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 277 | 75 | | 78 | 0 | 81 | 369 | 2613 | 1161 | 268 | 2514 | |
| V/C Ratio(X) | 0.25 | 0.08 | | 0.78 | 0.00 | 0.64 | 0.30 | 0.65 | 0.03 | 0.03 | 0.49 | |
| Avail Cap(c_a), veh/h | 367 | 109 | | 104 | 0 | 92 | 413 | 2613 | 1161 | 361 | 2514 | |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 2.00 | 2.00 | 2.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 52.7 | 55.5 | 0.0 | 56.8 | 0.0 | 55.8 | 6.0 | 0.0 | 0.0 | 5.0 | 7.9 | 0.0 |
| Incr Delay (d2), s/veh | 0.2 | 0.2 | 0.0 | 23.1 | 0.0 | 7.8 | 0.2 | 1.3 | 0.0 | 0.0 | 0.7 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 1.0 | 0.2 | 0.0 | 2.3 | 0.0 | 1.7 | 0.6 | 0.5 | 0.0 | 0.1 | 6.3 | 0.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 52.9 | 55.6 | 0.0 | 79.8 | 0.0 | 63.7 | 6.1 | 1.3 | 0.0 | 5.0 | 8.6 | 0.0 |
| LnGrp LOS | D | E | | E | A | E | A | A | A | A | A | |
| Approach Vol, veh/h | | 76 | A | | 113 | | | 1846 | | | 1241 | A |
| Approach Delay, s/veh | | 53.1 | | | 72.4 | | | 1.5 | | | 8.5 | |
| Approach LOS | | D | | | E | | | A | | | A | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 5.7 | 94.2 | 10.3 | 9.8 | 9.0 | 90.9 | 8.9 | 11.2 |
| Change Period (Y+Rc), s | 5.0 | 6.0 | 5.0 | 5.0 | 5.0 | 6.0 | 5.0 | 5.0 |
| Max Green Setting (Gmax), s | 7.0 | 78.0 | 7.0 | 7.0 | 7.0 | 78.0 | 7.0 | 7.0 |
| Max Q Clear Time (g_c+I1), s | 2.2 | 2.0 | 6.1 | 2.4 | 4.1 | 20.7 | 4.3 | 5.9 |
| Green Ext Time (p_c), s | 0.0 | 48.8 | 0.0 | 0.0 | 0.0 | 25.4 | 0.0 | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 7.8 |
| HCM 6th LOS | A |

**Notes**

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

Unsignalized Delay for [EBR, SBR] is excluded from calculations of the approach delay and intersection delay.

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.3 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 8 | 23 | 33 | 1609 | 1159 | 14 |
| Future Vol, veh/h | 8 | 23 | 33 | 1609 | 1159 | 14 |
| 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 | - | 120 | - | - | 0 |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 100 | 100 | 100 | 100 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 9 | 25 | 33 | 1609 | 1159 | 14 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 2030 | 580 | 1173 | 0 | - | 0 |
| Stage 1 | 1159 | - | - | - | - | - |
| Stage 2 | 871 | - | - | - | - | - |
| Critical Hdwy | 6.84 | 6.94 | 4.14 | - | - | - |
| Critical Hdwy Stg 1 | 5.84 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.84 | - | - | - | - | - |
| Follow-up Hdwy | 3.52 | 3.32 | 2.22 | - | - | - |
| Pot Cap-1 Maneuver | *259 | *618 | *925 | - | - | - |
| Stage 1 | *584 | - | - | - | - | - |
| Stage 2 | *391 | - | - | - | - | - |
| Platoon blocked, % | 1 | 1 | 1 | - | - | - |
| Mov Cap-1 Maneuver | *250 | *618 | *925 | - | - | - |
| Mov Cap-2 Maneuver | *250 | - | - | - | - | - |
| Stage 1 | *563 | - | - | - | - | - |
| Stage 2 | *391 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 13.7 | 0.2 | 0 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | * 925 | - | 448 | - | - |
| HCM Lane V/C Ratio | 0.036 | - | 0.075 | - | - |
| HCM Control Delay (s) | 9 | - | 13.7 | - | - |
| HCM Lane LOS | A | - | B | - | - |
| HCM 95th %tile Q(veh) | 0.1 | - | 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 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | |
| Traffic Volume (vph) | 62 | 17 | 63 | 26 | 27 | 64 | 152 | 1516 | 26 | 1121 | 34 |
| Future Volume (vph) | 62 | 17 | 63 | 26 | 27 | 64 | 152 | 1516 | 26 | 1121 | 34 |
| Turn Type | Perm | NA | Perm | Perm | NA | Perm | pm+pt | NA | Perm | NA | Perm |
| Protected Phases | | 4 | | | 8 | | 5 | 2 | | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | 8 | 2 | | 6 | | 6 |
| Detector Phase | 4 | 4 | 4 | 8 | 8 | 8 | 5 | 2 | 6 | 6 | 6 |
| Switch Phase | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Minimum Split (s) | 36.0 | 36.0 | 36.0 | 40.0 | 40.0 | 40.0 | 8.0 | 29.0 | 32.0 | 32.0 | 32.0 |
| Total Split (s) | 23.0 | 23.0 | 23.0 | 23.0 | 23.0 | 23.0 | 12.0 | 97.0 | 85.0 | 85.0 | 85.0 |
| Total Split (%) | 19.2% | 19.2% | 19.2% | 19.2% | 19.2% | 19.2% | 10.0% | 80.8% | 70.8% | 70.8% | 70.8% |
| Yellow Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| 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) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 6.0 | 6.0 | 6.0 | 6.0 |
| Lead/Lag | | | | | | | Lead | | Lag | Lag | Lag |
| Lead-Lag Optimize? | | | | | | | Yes | | Yes | Yes | Yes |
| Recall Mode | None | None | None | None | None | None | None | C-Min | C-Min | C-Min | C-Min |
| Act Effct Green (s) | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 99.0 | 98.0 | 86.9 | 86.9 | 86.9 |
| Actuated g/C Ratio | 0.09 | 0.09 | 0.09 | 0.09 | 0.09 | 0.09 | 0.82 | 0.82 | 0.72 | 0.72 | 0.72 |
| v/c Ratio | 0.56 | 0.11 | 0.34 | 0.23 | 0.18 | 0.35 | 0.50 | 0.60 | 0.17 | 0.49 | 0.03 |
| Control Delay | 67.9 | 48.6 | 14.7 | 52.6 | 50.2 | 15.0 | 7.5 | 5.5 | 7.8 | 9.9 | 0.5 |
| 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 | 67.9 | 48.6 | 14.7 | 52.6 | 50.2 | 15.0 | 7.5 | 5.5 | 7.8 | 9.9 | 0.5 |
| LOS | E | D | B | D | D | B | A | A | A | A | A |
| Approach Delay | | 42.0 | | | 31.4 | | | 5.7 | | 9.6 | |
| Approach LOS | | D | | | C | | | A | | A | |

| Intersection Summary | |
|---|---|
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 66 (55%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow | |
| Natural Cycle: 90 | |
| Control Type: Actuated-Coordinated | |
| Maximum v/c Ratio: 0.60 | |
| Intersection Signal Delay: 9.7 | Intersection LOS: A |
| Intersection Capacity Utilization 73.1% | ICU Level of Service D |
| Analysis Period (min) 15 | |

Splits and Phases: 8: University Blvd & Easter Pl

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 62 | 17 | 63 | 26 | 27 | 64 | 152 | 1516 | 24 | 26 | 1121 | 34 |
| Future Volume (veh/h) | 62 | 17 | 63 | 26 | 27 | 64 | 152 | 1516 | 24 | 26 | 1121 | 34 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 0.98 | | 0.97 | 0.98 | | 0.97 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 70 | 19 | 71 | 29 | 30 | 72 | 171 | 1703 | 27 | 29 | 1260 | 38 |
| Peak Hour Factor | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 172 | 193 | 159 | 180 | 193 | 159 | 439 | 2883 | 46 | 236 | 2571 | 1141 |
| Arrive On Green | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.04 | 0.81 | 0.81 | 1.00 | 1.00 | 1.00 |
| Sat Flow, veh/h | 1265 | 1870 | 1543 | 1278 | 1870 | 1543 | 1781 | 3580 | 57 | 280 | 3554 | 1577 |
| Grp Volume(v), veh/h | 70 | 19 | 71 | 29 | 30 | 72 | 171 | 844 | 886 | 29 | 1260 | 38 |
| Grp Sat Flow(s),veh/h/ln | 1265 | 1870 | 1543 | 1278 | 1870 | 1543 | 1781 | 1777 | 1860 | 280 | 1777 | 1577 |
| Q Serve(g_s), s | 6.4 | 1.1 | 5.2 | 2.5 | 1.8 | 5.3 | 2.8 | 21.1 | 21.3 | 1.9 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 8.2 | 1.1 | 5.2 | 3.6 | 1.8 | 5.3 | 2.8 | 21.1 | 21.3 | 13.4 | 0.0 | 0.0 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.03 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 172 | 193 | 159 | 180 | 193 | 159 | 439 | 1431 | 1498 | 236 | 2571 | 1141 |
| V/C Ratio(X) | 0.41 | 0.10 | 0.45 | 0.16 | 0.16 | 0.45 | 0.39 | 0.59 | 0.59 | 0.12 | 0.49 | 0.03 |
| Avail Cap(c_a), veh/h | 231 | 281 | 232 | 240 | 281 | 232 | 471 | 1431 | 1498 | 236 | 2571 | 1141 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 2.00 | 2.00 | 2.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 52.8 | 48.8 | 50.6 | 50.4 | 49.1 | 50.6 | 3.2 | 4.3 | 4.3 | 0.9 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 0.6 | 0.1 | 0.7 | 0.2 | 0.1 | 0.8 | 0.2 | 1.8 | 1.7 | 1.1 | 0.7 | 0.1 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 2.1 | 0.5 | 2.1 | 0.8 | 0.8 | 2.1 | 0.7 | 5.4 | 5.7 | 0.1 | 0.2 | 0.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 53.4 | 48.9 | 51.3 | 50.6 | 49.2 | 51.4 | 3.4 | 6.1 | 6.1 | 1.9 | 0.7 | 0.1 |
| LnGrp LOS | D | D | D | D | D | D | A | A | A | A | A | A |
| Approach Vol, veh/h | | 160 | | | 131 | | | 1901 | | | 1327 | |
| Approach Delay, s/veh | | 51.9 | | | 50.7 | | | 5.9 | | | 0.7 | |
| Approach LOS | | D | | | D | | | A | | | A | |

| Timer - Assigned Phs | | 2 | | 4 | 5 | 6 | | 8 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | | 102.6 | | 17.4 | 9.8 | 92.8 | | 17.4 | | | | |
| Change Period (Y+Rc), s | | 6.0 | | 5.0 | 5.0 | 6.0 | | 5.0 | | | | |
| Max Green Setting (Gmax), s | | 91.0 | | 18.0 | 7.0 | 79.0 | | 18.0 | | | | |
| Max Q Clear Time (g_c+I1), s | | 23.3 | | 10.2 | 4.8 | 15.4 | | 7.3 | | | | |
| Green Ext Time (p_c), s | | 44.7 | | 0.2 | 0.0 | 30.3 | | 0.2 | | | | |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 7.7 |
| HCM 6th LOS | A |

Notes

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

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

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 15 | 123 | 172 | 28 | 19 | 7 |
| Future Vol, veh/h | 15 | 123 | 172 | 28 | 19 | 7 |
| 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 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 16 | 134 | 187 | 30 | 21 | 8 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 217 | 0 | - | 0 | 368 | 202 |
| Stage 1 | - | - | - | - | 202 | - |
| Stage 2 | - | - | - | - | 166 | - |
| Critical Hdwy | 4.12 | - | - | - | 6.42 | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.42 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.42 | - |
| Follow-up Hdwy | 2.218 | - | - | - | 3.518 | 3.318 |
| Pot Cap-1 Maneuver | 1353 | - | - | - | 632 | 839 |
| Stage 1 | - | - | - | - | 832 | - |
| Stage 2 | - | - | - | - | 863 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | 1353 | - | - | - | 624 | 839 |
| Mov Cap-2 Maneuver | - | - | - | - | 624 | - |
| Stage 1 | - | - | - | - | 821 | - |
| Stage 2 | - | - | - | - | 863 | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 0.8 | 0 | 10.6 |
| HCM LOS | | | B |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|
| Capacity (veh/h) | 1353 | - | - | - | 670 |
| HCM Lane V/C Ratio | 0.012 | - | - | - | 0.042 |
| HCM Control Delay (s) | 7.7 | 0 | - | - | 10.6 |
| HCM Lane LOS | A | A | - | - | B |
| HCM 95th %tile Q(veh) | 0 | - | - | - | 0.1 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.7 |

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 125 | 3 | 2 | 177 | 10 | 13 |
| Future Vol, veh/h | 125 | 3 | 2 | 177 | 10 | 13 |
| 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 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 136 | 3 | 2 | 192 | 11 | 14 |

| Major/Minor | Major1 | | Major2 | | Minor1 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 0 | 0 | 139 | 0 | 334 | 138 |
| Stage 1 | - | - | - | - | 138 | - |
| Stage 2 | - | - | - | - | 196 | - |
| Critical Hdwy | - | - | 4.12 | - | 6.42 | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.42 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.42 | - |
| Follow-up Hdwy | - | - | 2.218 | - | 3.518 | 3.318 |
| Pot Cap-1 Maneuver | - | - | 1445 | - | 661 | 910 |
| Stage 1 | - | - | - | - | 889 | - |
| Stage 2 | - | - | - | - | 837 | - |
| Platoon blocked, % | - | - | | - | | |
| Mov Cap-1 Maneuver | - | - | 1445 | - | 660 | 910 |
| Mov Cap-2 Maneuver | - | - | - | - | 660 | - |
| Stage 1 | - | - | - | - | 889 | - |
| Stage 2 | - | - | - | - | 835 | - |

| Approach | EB | WB | NB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 0.1 | 9.8 |
| HCM LOS | | | A |

| Minor Lane/Major Mvmt | NBLn1 | EBT | EBR | WBL | WBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | 781 | - | - | 1445 | - |
| HCM Lane V/C Ratio | 0.032 | - | - | 0.002 | - |
| HCM Control Delay (s) | 9.8 | - | - | 7.5 | 0 |
| HCM Lane LOS | A | - | - | A | A |
| HCM 95th %tile Q(veh) | 0.1 | - | - | 0 | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 1.7 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 13 | 110 | 3 | 1 | 121 | 65 | 23 | 2 | 10 | 8 | 0 | 5 |
| Future Vol, veh/h | 13 | 110 | 3 | 1 | 121 | 65 | 23 | 2 | 10 | 8 | 0 | 5 |
| 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 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 14 | 120 | 3 | 1 | 132 | 71 | 25 | 2 | 11 | 9 | 0 | 5 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 203 | 0 | 0 | 123 | 0 | 0 | 322 | 355 | 122 | 326 | 321 | 168 |
| Stage 1 | - | - | - | - | - | - | 150 | 150 | - | 170 | 170 | - |
| Stage 2 | - | - | - | - | - | - | 172 | 205 | - | 156 | 151 | - |
| Critical Hdwy | 4.12 | - | - | 4.12 | - | - | 7.12 | 6.52 | 6.22 | 7.12 | 6.52 | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.12 | 5.52 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.12 | 5.52 | - |
| Follow-up Hdwy | 2.218 | - | - | 2.218 | - | - | 3.518 | 4.018 | 3.318 | 3.518 | 4.018 | 3.318 |
| Pot Cap-1 Maneuver | 1369 | - | - | 1464 | - | - | 631 | 571 | 929 | 627 | 596 | 876 |
| Stage 1 | - | - | - | - | - | - | 853 | 773 | - | 832 | 758 | - |
| Stage 2 | - | - | - | - | - | - | 830 | 732 | - | 846 | 772 | - |
| Platoon blocked, % | | - | - | | - | - | | | | | | |
| Mov Cap-1 Maneuver | 1369 | - | - | 1464 | - | - | 622 | 564 | 929 | 612 | 589 | 876 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 622 | 564 | - | 612 | 589 | - |
| Stage 1 | - | - | - | - | - | - | 844 | 764 | - | 823 | 757 | - |
| Stage 2 | - | - | - | - | - | - | 824 | 731 | - | 825 | 764 | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 0.8 | 0 | 10.6 | 10.3 |
| HCM LOS | | | B | B |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 682 | 1369 | - | - | 1464 | - | - | 692 |
| HCM Lane V/C Ratio | 0.056 | 0.01 | - | - | 0.001 | - | - | 0.02 |
| HCM Control Delay (s) | 10.6 | 7.7 | 0 | - | 7.5 | - | - | 10.3 |
| HCM Lane LOS | B | A | A | - | A | - | - | B |
| HCM 95th %tile Q(veh) | 0.2 | 0 | - | - | 0 | - | - | 0.1 |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 7.8 |
| Intersection LOS | A |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 14 | 98 | 100 | 49 | 28 | 8 |
| Future Vol, veh/h | 14 | 98 | 100 | 49 | 28 | 8 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 15 | 107 | 109 | 53 | 30 | 9 |
| Number of Lanes | 0 | 1 | 1 | 0 | 1 | 0 |

| Approach | EB | WB | SB |
|---|---|---|---|
| Opposing Approach | WB | EB | |
| Opposing Lanes | 1 | 1 | 0 |
| Conflicting Approach Left | SB | | WB |
| Conflicting Lanes Left | 1 | 0 | 1 |
| Conflicting Approach Right | | SB | EB |
| Conflicting Lanes Right | 0 | 1 | 1 |
| HCM Control Delay | 7.9 | 7.8 | 7.8 |
| HCM LOS | A | A | A |

| Lane | EBLn1 | WBLn1 | SBLn1 |
|---|---|---|---|
| Vol Left, % | 12% | 0% | 78% |
| Vol Thru, % | 88% | 67% | 0% |
| Vol Right, % | 0% | 33% | 22% |
| Sign Control | Stop | Stop | Stop |
| Traffic Vol by Lane | 112 | 149 | 36 |
| LT Vol | 14 | 0 | 28 |
| Through Vol | 98 | 100 | 0 |
| RT Vol | 0 | 49 | 8 |
| Lane Flow Rate | 122 | 162 | 39 |
| Geometry Grp | 1 | 1 | 1 |
| Degree of Util (X) | 0.14 | 0.175 | 0.05 |
| Departure Headway (Hd) | 4.15 | 3.897 | 4.555 |
| Convergence, Y/N | Yes | Yes | Yes |
| Cap | 857 | 913 | 791 |
| Service Time | 2.207 | 1.954 | 2.555 |
| HCM Lane V/C Ratio | 0.142 | 0.177 | 0.049 |
| HCM Control Delay | 7.9 | 7.8 | 7.8 |
| HCM Lane LOS | A | A | A |
| HCM 95th-tile Q | 0.5 | 0.6 | 0.2 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 1.5 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 5 | 4 | 54 | 8 | 13 | 31 |
| Future Vol, veh/h | 5 | 4 | 54 | 8 | 13 | 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 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 5 | 4 | 59 | 9 | 14 | 34 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 126 | 64 | 0 | 0 | 68 | 0 |
| Stage 1 | 64 | - | - | - | - | - |
| Stage 2 | 62 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | - | - | 4.12 | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | - | - | 2.218 | - |
| Pot Cap-1 Maneuver | 869 | 1000 | - | - | 1533 | - |
| Stage 1 | 959 | - | - | - | - | - |
| Stage 2 | 961 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 861 | 1000 | - | - | 1533 | - |
| Mov Cap-2 Maneuver | 861 | - | - | - | - | - |
| Stage 1 | 959 | - | - | - | - | - |
| Stage 2 | 952 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 9 | 0 | 2.2 |
| HCM LOS | A | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 918 | 1533 | - |
| HCM Lane V/C Ratio | - | - | 0.011 | 0.009 | - |
| HCM Control Delay (s) | - | - | 9 | 7.4 | 0 |
| HCM Lane LOS | - | - | A | A | A |
| HCM 95th %tile Q(veh) | - | - | 0 | 0 | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 3.7 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 21 | 8 | 4 | 2 | 2 | 4 | 1 | 55 | 2 | 38 | 38 | 12 |
| Future Vol, veh/h | 21 | 8 | 4 | 2 | 2 | 4 | 1 | 55 | 2 | 38 | 38 | 12 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 23 | 9 | 4 | 2 | 2 | 4 | 1 | 60 | 2 | 41 | 41 | 13 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 196 | 194 | 48 | 199 | 199 | 61 | 54 | 0 | 0 | 62 | 0 | 0 |
| Stage 1 | 130 | 130 | - | 63 | 63 | - | - | - | - | - | - | - |
| Stage 2 | 66 | 64 | - | 136 | 136 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.12 | 6.52 | 6.22 | 7.12 | 6.52 | 6.22 | 4.12 | - | - | 4.12 | - | - |
| Critical Hdwy Stg 1 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 4.018 | 3.318 | 3.518 | 4.018 | 3.318 | 2.218 | - | - | 2.218 | - | - |
| Pot Cap-1 Maneuver | 763 | 701 | 1021 | 760 | 697 | 1004 | 1551 | - | - | 1541 | - | - |
| Stage 1 | 874 | 789 | - | 948 | 842 | - | - | - | - | - | - | - |
| Stage 2 | 945 | 842 | - | 867 | 784 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | 742 | 681 | 1021 | 733 | 677 | 1004 | 1551 | - | - | 1541 | - | - |
| Mov Cap-2 Maneuver | 742 | 681 | - | 733 | 677 | - | - | - | - | - | - | - |
| Stage 1 | 873 | 768 | - | 947 | 841 | - | - | - | - | - | - | - |
| Stage 2 | 938 | 841 | - | 830 | 763 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 10 | 9.4 | 0.1 | 3.2 |
| HCM LOS | B | A | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 1551 | - | - | 751 | 828 | 1541 | - | - |
| HCM Lane V/C Ratio | 0.001 | - | - | 0.048 | 0.011 | 0.027 | - | - |
| HCM Control Delay (s) | 7.3 | 0 | - | 10 | 9.4 | 7.4 | 0 | - |
| HCM Lane LOS | A | A | - | B | A | A | A | - |
| HCM 95th %tile Q(veh) | 0 | - | - | 0.1 | 0 | 0.1 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 2.1 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 14 | 20 | 63 | 17 | 15 | 74 |
| Future Vol, veh/h | 14 | 20 | 63 | 17 | 15 | 74 |
| 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 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 15 | 22 | 68 | 18 | 16 | 80 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 189 | 77 | 0 | 0 | 86 | 0 |
| Stage 1 | 77 | - | - | - | - | - |
| Stage 2 | 112 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | - | - | 4.12 | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | - | - | 2.218 | - |
| Pot Cap-1 Maneuver | 800 | 984 | - | - | 1510 | - |
| Stage 1 | 946 | - | - | - | - | - |
| Stage 2 | 913 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 791 | 984 | - | - | 1510 | - |
| Mov Cap-2 Maneuver | 791 | - | - | - | - | - |
| Stage 1 | 946 | - | - | - | - | - |
| Stage 2 | 903 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 9.2 | 0 | 1.2 |
| HCM LOS | A | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 894 | 1510 | - |
| HCM Lane V/C Ratio | - | - | 0.041 | 0.011 | - |
| HCM Control Delay (s) | - | - | 9.2 | 7.4 | 0 |
| HCM Lane LOS | - | - | A | A | A |
| HCM 95th %tile Q(veh) | - | - | 0.1 | 0 | - |

| Lane Group | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 1045 | 65 | 42 | 1522 | 135 | 76 |
| Future Volume (vph) | 1045 | 65 | 42 | 1522 | 135 | 76 |
| Turn Type | NA | Perm | pm+pt | NA | Prot | Perm |
| Protected Phases | 2 | | 1 | 6 | 8 | |
| Permitted Phases | | 2 | 6 | | | 8 |
| Detector Phase | 2 | 2 | 1 | 6 | 8 | 8 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 17.0 | 17.0 | 3.0 | 17.0 | 5.0 | 5.0 |
| Minimum Split (s) | 23.0 | 23.0 | 7.0 | 23.0 | 30.0 | 30.0 |
| Total Split (s) | 76.0 | 76.0 | 13.0 | 89.0 | 31.0 | 31.0 |
| Total Split (%) | 63.3% | 63.3% | 10.8% | 74.2% | 25.8% | 25.8% |
| Yellow Time (s) | 4.0 | 4.0 | 3.0 | 4.0 | 3.0 | 3.0 |
| All-Red Time (s) | 2.0 | 2.0 | 1.0 | 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) | 6.0 | 6.0 | 4.0 | 6.0 | 5.0 | 5.0 |
| Lead/Lag | Lag | Lag | Lead | | | |
| Lead-Lag Optimize? | Yes | Yes | Yes | | | |
| Recall Mode | C-Min | C-Min | None | C-Min | None | None |
| Act Effct Green (s) | 86.5 | 86.5 | 96.0 | 94.0 | 15.0 | 15.0 |
| Actuated g/C Ratio | 0.72 | 0.72 | 0.80 | 0.78 | 0.12 | 0.12 |
| v/c Ratio | 0.43 | 0.06 | 0.11 | 0.40 | 0.64 | 0.30 |
| Control Delay | 8.5 | 3.8 | 6.9 | 9.7 | 61.9 | 12.1 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 8.5 | 3.8 | 6.9 | 9.8 | 61.9 | 12.1 |
| LOS | A | A | A | A | E | B |
| Approach Delay | 8.3 | | | 9.7 | 44.0 | |
| Approach LOS | A | | | A | D | |

| Intersection Summary | |
|---|---|
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 31 (26%), Referenced to phase 2:EBT and 6:WBTL, Start of 1st Green | |
| Natural Cycle: 60 | |
| Control Type: Actuated-Coordinated | |
| Maximum v/c Ratio: 0.64 | |
| Intersection Signal Delay: 11.6 | Intersection LOS: B |
| Intersection Capacity Utilization 53.6% | ICU Level of Service A |
| Analysis Period (min) 15 | |

Splits and Phases: 1: S Race St & Arapahoe Rd

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 1045 | 65 | 42 | 1522 | 135 | 76 |
| Future Volume (veh/h) | 1045 | 65 | 42 | 1522 | 135 | 76 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | | 1.00 | 1.00 | | 1.00 | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | No | | | No | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 1089 | 68 | 44 | 1585 | 141 | 79 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 2698 | 1198 | 411 | 4145 | 172 | 153 |
| Arrive On Green | 0.76 | 0.76 | 0.04 | 1.00 | 0.10 | 0.10 |
| Sat Flow, veh/h | 3647 | 1578 | 1781 | 5274 | 1781 | 1585 |
| Grp Volume(v), veh/h | 1089 | 68 | 44 | 1585 | 141 | 79 |
| Grp Sat Flow(s),veh/h/ln | 1777 | 1578 | 1781 | 1702 | 1781 | 1585 |
| Q Serve(g_s), s | 12.8 | 1.3 | 0.6 | 0.0 | 9.3 | 5.7 |
| Cycle Q Clear(g_c), s | 12.8 | 1.3 | 0.6 | 0.0 | 9.3 | 5.7 |
| Prop In Lane | | 1.00 | 1.00 | | 1.00 | 1.00 |
| Lane Grp Cap(c), veh/h | 2698 | 1198 | 411 | 4145 | 172 | 153 |
| V/C Ratio(X) | 0.40 | 0.06 | 0.11 | 0.38 | 0.82 | 0.52 |
| Avail Cap(c_a), veh/h | 2698 | 1198 | 511 | 4145 | 386 | 343 |
| HCM Platoon Ratio | 1.00 | 1.00 | 2.00 | 2.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.86 | 0.86 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 5.0 | 3.6 | 3.5 | 0.0 | 53.2 | 51.5 |
| Incr Delay (d2), s/veh | 0.5 | 0.1 | 0.0 | 0.2 | 3.7 | 1.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 3.8 | 0.4 | 0.2 | 0.1 | 4.3 | 2.3 |
| Unsig. Movement Delay, s/veh | | | | | | |
| LnGrp Delay(d),s/veh | 5.5 | 3.7 | 3.5 | 0.2 | 56.8 | 52.5 |
| LnGrp LOS | A | A | A | A | E | D |
| Approach Vol, veh/h | 1157 | | | 1629 | 220 | |
| Approach Delay, s/veh | 5.4 | | | 0.3 | 55.3 | |
| Approach LOS | A | | | A | E | |

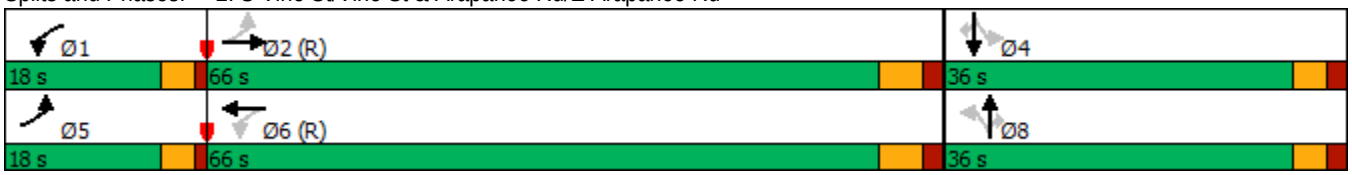
| Timer - Assigned Phs | 1 | 2 | | | | 6 | 8 |
|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 6.3 | 97.1 | | | | 103.4 | 16.6 |
| Change Period (Y+Rc), s | 4.0 | 6.0 | | | | 6.0 | 5.0 |
| Max Green Setting (Gmax), s | 9.0 | 70.0 | | | | 83.0 | 26.0 |
| Max Q Clear Time (g_c+I1), s | 2.6 | 14.8 | | | | 2.0 | 11.3 |
| Green Ext Time (p_c), s | 0.0 | 5.8 | | | | 10.8 | 0.3 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 6.3 |
| HCM 6th LOS | A |

| Lane Group | EBL | EBT | WBL | WBT | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | |
| Traffic Volume (vph) | 60 | 924 | 165 | 1385 | 150 | 24 | 144 | 103 | 15 | 29 |
| Future Volume (vph) | 60 | 924 | 165 | 1385 | 150 | 24 | 144 | 103 | 15 | 29 |
| Turn Type | pm+pt | NA | pm+pt | NA | Perm | NA | Perm | Perm | NA | Perm |
| Protected Phases | 5 | 2 | 1 | 6 | | 8 | | | 4 | |
| Permitted Phases | 2 | | 6 | | 8 | | 8 | 4 | | 4 |
| Detector Phase | 5 | 2 | 1 | 6 | 8 | 8 | 8 | 4 | 4 | 4 |
| Switch Phase | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 17.0 | 3.0 | 17.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Minimum Split (s) | 7.0 | 26.0 | 7.0 | 23.0 | 35.0 | 35.0 | 35.0 | 34.0 | 34.0 | 34.0 |
| Total Split (s) | 18.0 | 66.0 | 18.0 | 66.0 | 36.0 | 36.0 | 36.0 | 36.0 | 36.0 | 36.0 |
| Total Split (%) | 15.0% | 55.0% | 15.0% | 55.0% | 30.0% | 30.0% | 30.0% | 30.0% | 30.0% | 30.0% |
| Yellow Time (s) | 3.0 | 4.0 | 3.0 | 4.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| All-Red Time (s) | 1.0 | 2.0 | 1.0 | 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) | 4.0 | 6.0 | 4.0 | 6.0 | | 5.0 | 5.0 | | 5.0 | 5.0 |
| Lead/Lag | Lead | Lag | Lead | Lag | | | | | | |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | | | | | | |
| Recall Mode | None | C-Min | None | C-Min | None | None | None | None | None | None |
| Act Effct Green (s) | 81.0 | 73.2 | 88.0 | 78.3 | | 22.7 | 22.7 | | 22.7 | 22.7 |
| Actuated g/C Ratio | 0.68 | 0.61 | 0.73 | 0.65 | | 0.19 | 0.19 | | 0.19 | 0.19 |
| v/c Ratio | 0.29 | 0.37 | 0.45 | 0.51 | | 0.86 | 0.37 | | 0.77 | 0.09 |
| Control Delay | 9.1 | 5.9 | 16.9 | 6.6 | | 80.7 | 8.2 | | 73.6 | 1.7 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 |
| Total Delay | 9.1 | 5.9 | 16.9 | 6.6 | | 80.7 | 8.2 | | 73.6 | 1.7 |
| LOS | A | A | B | A | | F | A | | E | A |
| Approach Delay | | 6.1 | | 7.5 | | 47.8 | | | 59.2 | |
| Approach LOS | | A | | A | | D | | | E | |

| Intersection Summary | |
|---|---|
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 43 (36%), Referenced to phase 2:EBTL and 6:WBTL, Start of 1st Green | |
| Natural Cycle: 70 | |
| Control Type: Actuated-Coordinated | |
| Maximum v/c Ratio: 0.86 | |
| Intersection Signal Delay: 13.2 | Intersection LOS: B |
| Intersection Capacity Utilization 64.3% | ICU Level of Service C |
| Analysis Period (min) 15 | |

Splits and Phases: 2: S Vine St/Vine St & Arapahoe Rd/E Arapahoe Rd



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 60 | 924 | 137 | 165 | 1385 | 181 | 150 | 24 | 144 | 103 | 15 | 29 |
| Future Volume (veh/h) | 60 | 924 | 137 | 165 | 1385 | 181 | 150 | 24 | 144 | 103 | 15 | 29 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 0.99 | 1.00 | | 0.99 | 1.00 | | 0.99 | 1.00 | | 0.99 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 63 | 973 | 144 | 174 | 1458 | 191 | 158 | 25 | 152 | 108 | 16 | 31 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 279 | 2501 | 369 | 447 | 2686 | 352 | 56 | 0 | 405 | 56 | 5 | 405 |
| Arrive On Green | 0.06 | 1.00 | 1.00 | 0.12 | 1.00 | 1.00 | 0.26 | 0.26 | 0.26 | 0.26 | 0.26 | 0.26 |
| Sat Flow, veh/h | 1781 | 4488 | 662 | 1781 | 4565 | 598 | 0 | 0 | 1568 | 0 | 18 | 1568 |
| Grp Volume(v), veh/h | 63 | 737 | 380 | 174 | 1087 | 562 | 183 | 0 | 152 | 124 | 0 | 31 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1702 | 1746 | 1781 | 1702 | 1759 | 0 | 0 | 1568 | 18 | 0 | 1568 |
| Q Serve(g_s), s | 1.8 | 0.0 | 0.0 | 5.0 | 0.0 | 0.0 | 0.0 | 0.0 | 9.6 | 0.0 | 0.0 | 1.8 |
| Cycle Q Clear(g_c), s | 1.8 | 0.0 | 0.0 | 5.0 | 0.0 | 0.0 | 31.0 | 0.0 | 9.6 | 31.0 | 0.0 | 1.8 |
| Prop In Lane | 1.00 | | 0.38 | 1.00 | | 0.34 | 0.86 | | 1.00 | 0.87 | | 1.00 |
| Lane Grp Cap(c), veh/h | 279 | 1897 | 973 | 447 | 2003 | 1035 | 56 | 0 | 405 | 61 | 0 | 405 |
| V/C Ratio(X) | 0.23 | 0.39 | 0.39 | 0.39 | 0.54 | 0.54 | 3.27 | 0.00 | 0.38 | 2.04 | 0.00 | 0.08 |
| Avail Cap(c_a), veh/h | 437 | 1897 | 973 | 549 | 2003 | 1035 | 56 | 0 | 405 | 61 | 0 | 405 |
| HCM Platoon Ratio | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.91 | 0.91 | 0.91 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 10.4 | 0.0 | 0.0 | 8.5 | 0.0 | 0.0 | 60.0 | 0.0 | 36.5 | 57.7 | 0.0 | 33.7 |
| Incr Delay (d2), s/veh | 0.1 | 0.5 | 1.1 | 0.2 | 1.1 | 2.0 | 1067.6 | 0.0 | 0.2 | 520.8 | 0.0 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.7 | 0.1 | 0.3 | 1.7 | 0.3 | 0.6 | 18.3 | 0.0 | 3.7 | 10.6 | 0.0 | 0.7 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 10.5 | 0.5 | 1.1 | 8.7 | 1.1 | 2.0 | 1127.6 | 0.0 | 36.8 | 578.5 | 0.0 | 33.7 |
| LnGrp LOS | B | A | A | A | A | A | F | A | D | F | A | C |
| Approach Vol, veh/h | | 1180 | | | 1823 | | | 335 | | | 155 | |
| Approach Delay, s/veh | | 1.2 | | | 2.1 | | | 632.6 | | | 469.5 | |
| Approach LOS | | A | | | A | | | F | | | F | |

| Timer - Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 11.1 | 72.9 | | 36.0 | 7.4 | 76.6 | | 36.0 |
| Change Period (Y+Rc), s | 4.0 | 6.0 | | 5.0 | 4.0 | 6.0 | | 5.0 |
| Max Green Setting (Gmax), s | 14.0 | 60.0 | | 31.0 | 14.0 | 60.0 | | 31.0 |
| Max Q Clear Time (g_c+I1), s | 7.0 | 2.0 | | 33.0 | 3.8 | 2.0 | | 33.0 |
| Green Ext Time (p_c), s | 0.1 | 5.6 | | 0.0 | 0.0 | 10.3 | | 0.0 |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 6th Ctrl Delay | | | 83.0 |
| HCM 6th LOS | | | F |

| Intersection | |
|---|---|
| Int Delay, s/veh | 1.5 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 27 | 1105 | 39 | 80 | 1650 | 7 | 6 | 0 | 132 | 23 | 0 | 77 |
| Future Vol, veh/h | 27 | 1105 | 39 | 80 | 1650 | 7 | 6 | 0 | 132 | 23 | 0 | 77 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | 150 | - | 0 | 100 | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 29 | 1201 | 42 | 87 | 1793 | 8 | 7 | 0 | 143 | 25 | 0 | 84 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 1801 | 0 | 0 | 1243 | 0 | 0 | 2150 | 3234 | 601 | 2509 | 3272 | 901 |
| Stage 1 | - | - | - | - | - | - | 1259 | 1259 | - | 1971 | 1971 | - |
| Stage 2 | - | - | - | - | - | - | 891 | 1975 | - | 538 | 1301 | - |
| Critical Hdwy | 5.34 | - | - | 5.34 | - | - | 6.44 | 6.54 | 7.14 | 6.44 | 6.54 | 7.14 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 7.34 | 5.54 | - | 7.34 | 5.54 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.74 | 5.54 | - | 6.74 | 5.54 | - |
| Follow-up Hdwy | 3.12 | - | - | 3.12 | - | - | 3.82 | 4.02 | 3.92 | 3.82 | 4.02 | 3.92 |
| Pot Cap-1 Maneuver | *682 | - | - | 795 | - | - | *306 | 133 | *673 | *306 | 114 | *542 |
| Stage 1 | - | - | - | - | - | - | *610 | 606 | - | *396 | 424 | - |
| Stage 2 | - | - | - | - | - | - | *557 | 421 | - | *690 | 572 | - |
| Platoon blocked, % | 1 | - | - | 1 | - | - | 1 | 1 | 1 | 1 | 1 | 1 |
| Mov Cap-1 Maneuver | *682 | - | - | 795 | - | - | *230 | 113 | *673 | *214 | 97 | *542 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | *230 | 113 | - | *214 | 97 | - |
| Stage 1 | - | - | - | - | - | - | *584 | 580 | - | *379 | 377 | - |
| Stage 2 | - | - | - | - | - | - | *419 | 375 | - | *520 | 548 | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 0.2 | 0.5 | 12.6 | 17.3 |
| HCM LOS | | | B | C |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 621 | * 682 | - | - | 795 | - | - | 401 |
| HCM Lane V/C Ratio | 0.242 | 0.043 | - | - | 0.109 | - | - | 0.271 |
| HCM Control Delay (s) | 12.6 | 10.5 | - | - | 10.1 | - | - | 17.3 |
| HCM Lane LOS | B | B | - | - | B | - | - | C |
| HCM 95th %tile Q(veh) | 0.9 | 0.1 | - | - | 0.4 | - | - | 1.1 |

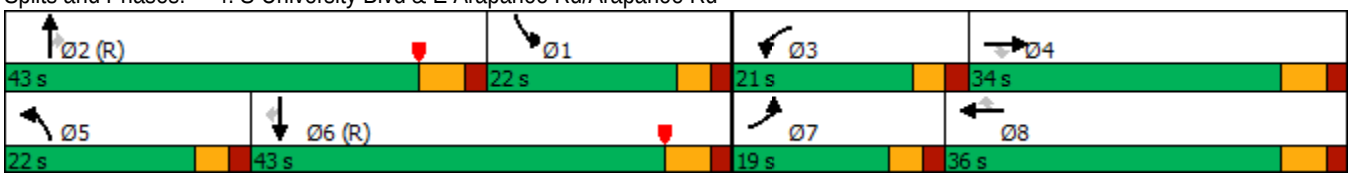
Notes

~: 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) | 313 | 714 | 235 | 297 | 1168 | 411 | 184 | 1203 | 184 | 241 | 806 | 119 |
| Future Volume (vph) | 313 | 714 | 235 | 297 | 1168 | 411 | 184 | 1203 | 184 | 241 | 806 | 119 |
| Turn Type | Prot | NA | Perm | Prot | NA | Perm | Prot | NA | Perm | Prot | NA | Perm |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | | | 4 | | | 8 | | | 2 | | | 6 |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | 8 | 5 | 2 | 2 | 1 | 6 | 6 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 | 3.0 | 10.0 | 10.0 | 3.0 | 10.0 | 10.0 |
| Minimum Split (s) | 8.0 | 39.0 | 39.0 | 8.0 | 37.0 | 37.0 | 8.0 | 35.0 | 35.0 | 8.0 | 40.0 | 40.0 |
| Total Split (s) | 19.0 | 34.0 | 34.0 | 21.0 | 36.0 | 36.0 | 22.0 | 43.0 | 43.0 | 22.0 | 43.0 | 43.0 |
| Total Split (%) | 15.8% | 28.3% | 28.3% | 17.5% | 30.0% | 30.0% | 18.3% | 35.8% | 35.8% | 18.3% | 35.8% | 35.8% |
| Yellow Time (s) | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 |
| 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 | 0.0 |
| Total Lost Time (s) | 5.0 | 6.0 | 6.0 | 5.0 | 6.0 | 6.0 | 5.0 | 6.0 | 6.0 | 5.0 | 6.0 | 6.0 |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lead | Lead | Lead | Lag | Lag | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | None | None | None | None | None | None | C-Min | C-Min | None | C-Min | C-Min |
| Act Effct Green (s) | 13.4 | 29.5 | 29.5 | 14.0 | 30.0 | 30.0 | 11.1 | 41.6 | 41.6 | 13.0 | 43.5 | 43.5 |
| Actuated g/C Ratio | 0.11 | 0.25 | 0.25 | 0.12 | 0.25 | 0.25 | 0.09 | 0.35 | 0.35 | 0.11 | 0.36 | 0.36 |
| v/c Ratio | 0.85 | 0.60 | 0.43 | 0.77 | 0.96 | 0.70 | 0.61 | 0.71 | 0.29 | 0.68 | 0.46 | 0.19 |
| Control Delay | 80.3 | 39.2 | 8.7 | 64.9 | 61.5 | 19.7 | 48.2 | 30.3 | 6.0 | 60.6 | 30.7 | 5.6 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 80.3 | 39.2 | 8.7 | 64.9 | 61.5 | 19.7 | 48.2 | 30.3 | 6.0 | 60.6 | 30.7 | 5.6 |
| LOS | F | D | A | E | E | B | D | C | A | E | C | A |
| Approach Delay | | 43.7 | | | 52.9 | | | 29.6 | | | 34.3 | |
| Approach LOS | | D | | | D | | | C | | | C | |

| Intersection Summary | |
|---|---|
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 103 (86%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow | |
| Natural Cycle: 95 | |
| Control Type: Actuated-Coordinated | |
| Maximum v/c Ratio: 0.96 | |
| Intersection Signal Delay: 41.0 | Intersection LOS: D |
| Intersection Capacity Utilization 80.9% | ICU Level of Service D |
| Analysis Period (min) 15 | |

Splits and Phases: 4: S University Blvd & E Arapahoe Rd/Arapahoe Rd



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 313 | 714 | 235 | 297 | 1168 | 411 | 184 | 1203 | 184 | 241 | 806 | 119 |
| Future Volume (veh/h) | 313 | 714 | 235 | 297 | 1168 | 411 | 184 | 1203 | 184 | 241 | 806 | 119 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 0.99 | 1.00 | | 1.00 | 1.00 | | 0.99 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 326 | 744 | 245 | 309 | 1217 | 0 | 192 | 1253 | 192 | 251 | 840 | 124 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 381 | 1300 | 401 | 365 | 1277 | | 252 | 1520 | 469 | 520 | 1958 | 606 |
| Arrive On Green | 0.07 | 0.17 | 0.17 | 0.11 | 0.25 | 0.00 | 0.07 | 0.30 | 0.30 | 0.15 | 0.38 | 0.38 |
| Sat Flow, veh/h | 3456 | 5106 | 1576 | 3456 | 5106 | 1585 | 3456 | 5106 | 1577 | 3456 | 5106 | 1579 |
| Grp Volume(v), veh/h | 326 | 744 | 245 | 309 | 1217 | 0 | 192 | 1253 | 192 | 251 | 840 | 124 |
| Grp Sat Flow(s),veh/h/ln | 1728 | 1702 | 1576 | 1728 | 1702 | 1585 | 1728 | 1702 | 1577 | 1728 | 1702 | 1579 |
| Q Serve(g_s), s | 11.2 | 16.1 | 17.3 | 10.5 | 28.2 | 0.0 | 6.5 | 27.4 | 8.4 | 8.0 | 14.6 | 6.3 |
| Cycle Q Clear(g_c), s | 11.2 | 16.1 | 17.3 | 10.5 | 28.2 | 0.0 | 6.5 | 27.4 | 8.4 | 8.0 | 14.6 | 6.3 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 381 | 1300 | 401 | 365 | 1277 | | 252 | 1520 | 469 | 520 | 1958 | 606 |
| V/C Ratio(X) | 0.86 | 0.57 | 0.61 | 0.85 | 0.95 | | 0.76 | 0.82 | 0.41 | 0.48 | 0.43 | 0.20 |
| Avail Cap(c_a), veh/h | 403 | 1300 | 401 | 461 | 1277 | | 490 | 1574 | 486 | 520 | 1958 | 606 |
| HCM Platoon Ratio | 0.67 | 0.67 | 0.67 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 54.6 | 43.8 | 44.3 | 52.7 | 44.3 | 0.0 | 54.6 | 39.2 | 17.4 | 46.7 | 27.3 | 24.7 |
| Incr Delay (d2), s/veh | 14.7 | 0.4 | 2.0 | 9.4 | 15.3 | 0.0 | 1.8 | 5.2 | 2.6 | 0.3 | 0.7 | 0.8 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 5.8 | 7.1 | 7.2 | 5.0 | 13.5 | 0.0 | 2.9 | 11.8 | 3.3 | 3.4 | 5.9 | 2.5 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 69.3 | 44.2 | 46.2 | 62.1 | 59.6 | 0.0 | 56.4 | 44.4 | 20.0 | 47.0 | 28.0 | 25.5 |
| LnGrp LOS | E | D | D | E | E | | E | D | C | D | C | C |
| Approach Vol, veh/h | | 1315 | | | 1526 | A | | 1637 | | | 1215 | |
| Approach Delay, s/veh | | 50.8 | | | 60.1 | | | 43.0 | | | 31.6 | |
| Approach LOS | | D | | | E | | | D | | | C | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 24.0 | 41.7 | 17.7 | 36.5 | 13.7 | 52.0 | 18.2 | 36.0 |
| Change Period (Y+Rc), s | 6.0 | * 6 | 5.0 | 6.0 | 5.0 | 6.0 | 5.0 | 6.0 |
| Max Green Setting (Gmax), s | 17.0 | * 37 | 16.0 | 28.0 | 17.0 | 37.0 | 14.0 | 30.0 |
| Max Q Clear Time (g_c+I1), s | 10.0 | 29.4 | 12.5 | 19.3 | 8.5 | 16.6 | 13.2 | 30.2 |
| Green Ext Time (p_c), s | 0.2 | 6.3 | 0.2 | 2.7 | 0.2 | 10.2 | 0.0 | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 46.9 |
| HCM 6th LOS | D |

Notes

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

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

| 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 | 0 | 0 | 77 | 0 | 0 | 40 | 0 | 1583 | 2 | 0 | 1121 | 57 |
| Future Vol, veh/h | 0 | 0 | 77 | 0 | 0 | 40 | 0 | 1583 | 2 | 0 | 1121 | 57 |
| 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 | - | - | 0 | - | - | 0 | - | - | - | - | - | 0 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 | 100 | 100 | 92 | 92 | 100 | 100 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 0 | 84 | 0 | 0 | 43 | 0 | 1583 | 2 | 0 | 1121 | 57 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | - | - | 561 | - | - | 793 | - | 0 | 0 | - | - | 0 |
| Stage 1 | - | - | - | - | - | - | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - | - | - | - | - | - | - |
| Critical Hdwy | - | - | 7.14 | - | - | 7.14 | - | - | - | - | - | - |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | - | - | - | - | - | - |
| Follow-up Hdwy | - | - | 3.92 | - | - | 3.92 | - | - | - | - | - | - |
| Pot Cap-1 Maneuver | 0 | 0 | *675 | 0 | 0 | 284 | 0 | - | - | 0 | - | - |
| Stage 1 | 0 | 0 | - | 0 | 0 | - | 0 | - | - | 0 | - | - |
| Stage 2 | 0 | 0 | - | 0 | 0 | - | 0 | - | - | 0 | - | - |
| Platoon blocked, % | | | 1 | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | - | - | *675 | - | - | 284 | - | - | - | - | - | - |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | - | - | - | - | - | - |
| Stage 1 | - | - | - | - | - | - | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 11.1 | 20 | 0 | 0 |
| HCM LOS | B | C | | |

| Minor Lane/Major Mvmt | NBT | NBR | EBLn1 | WBLn1 | SBT | SBR |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 675 | 284 | - | - |
| HCM Lane V/C Ratio | - | - | 0.124 | 0.153 | - | - |
| HCM Control Delay (s) | - | - | 11.1 | 20 | - | - |
| HCM Lane LOS | - | - | B | C | - | - |
| HCM 95th %tile Q(veh) | - | - | 0.4 | 0.5 | - | - |

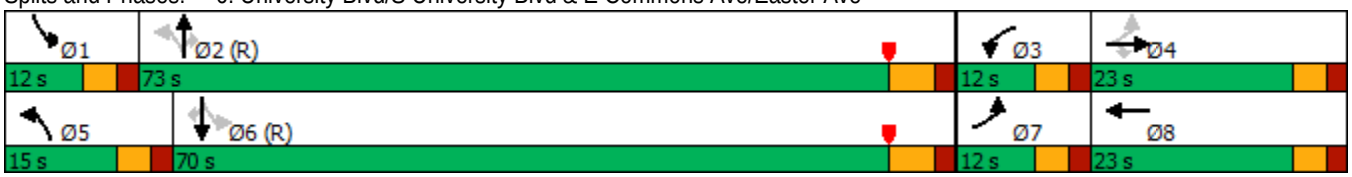
Notes

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

| Lane Group | EBL | EBT | EBR | WBL | WBT | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | |
| Traffic Volume (vph) | 140 | 41 | 138 | 62 | 74 | 150 | 1431 | 42 | 60 | 1517 | 164 |
| Future Volume (vph) | 140 | 41 | 138 | 62 | 74 | 150 | 1431 | 42 | 60 | 1517 | 164 |
| Turn Type | pm+pt | NA | Perm | Prot | NA | pm+pt | NA | Perm | pm+pt | NA | Perm |
| Protected Phases | 7 | 4 | | 3 | 8 | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | 4 | | | 2 | | 2 | 6 | | 6 |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | 5 | 2 | 2 | 1 | 6 | 6 |
| Switch Phase | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 3.0 | 4.0 | 3.0 | 3.0 | 5.0 | 5.0 | 3.0 | 5.0 | 5.0 |
| Minimum Split (s) | 8.0 | 35.0 | 35.0 | 9.0 | 32.0 | 8.0 | 24.0 | 24.0 | 8.0 | 29.0 | 29.0 |
| Total Split (s) | 12.0 | 23.0 | 23.0 | 12.0 | 23.0 | 15.0 | 73.0 | 73.0 | 12.0 | 70.0 | 70.0 |
| Total Split (%) | 10.0% | 19.2% | 19.2% | 10.0% | 19.2% | 12.5% | 60.8% | 60.8% | 10.0% | 58.3% | 58.3% |
| Yellow Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 |
| 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) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 6.0 | 6.0 | 5.0 | 6.0 | 6.0 |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lead | Lag | Lag | Lead | Lag | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | None | None | None | None | None | C-Min | C-Min | None | C-Min | C-Min |
| Act Effct Green (s) | 20.9 | 15.3 | 15.3 | 6.9 | 12.9 | 84.1 | 75.1 | 75.1 | 76.6 | 69.7 | 69.7 |
| Actuated g/C Ratio | 0.17 | 0.13 | 0.13 | 0.06 | 0.11 | 0.70 | 0.63 | 0.63 | 0.64 | 0.58 | 0.58 |
| v/c Ratio | 0.42 | 0.20 | 0.51 | 0.70 | 0.65 | 0.86 | 0.74 | 0.05 | 0.40 | 0.85 | 0.19 |
| Control Delay | 41.9 | 48.8 | 18.7 | 88.8 | 57.2 | 68.7 | 16.7 | 0.1 | 13.6 | 29.0 | 4.5 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 41.9 | 48.8 | 18.7 | 88.8 | 57.2 | 68.7 | 16.8 | 0.1 | 13.6 | 29.0 | 4.5 |
| LOS | D | D | B | F | E | E | B | A | B | C | A |
| Approach Delay | | 32.7 | | | 68.2 | | 21.1 | | | 26.1 | |
| Approach LOS | | C | | | E | | C | | | C | |

| Intersection Summary | |
|---|---|
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 74 (62%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow | |
| Natural Cycle: 115 | |
| Control Type: Actuated-Coordinated | |
| Maximum v/c Ratio: 0.86 | |
| Intersection Signal Delay: 26.5 | Intersection LOS: C |
| Intersection Capacity Utilization 76.5% | ICU Level of Service D |
| Analysis Period (min) 15 | |

Splits and Phases: 6: University Blvd/S University Blvd & E Commons Ave/Easter Ave



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 140 | 41 | 138 | 62 | 74 | 42 | 150 | 1431 | 42 | 60 | 1517 | 164 |
| Future Volume (veh/h) | 140 | 41 | 138 | 62 | 74 | 42 | 150 | 1431 | 42 | 60 | 1517 | 164 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 0.97 | | 1.00 | 1.00 | | 0.97 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 161 | 47 | 0 | 71 | 85 | 48 | 172 | 1645 | 48 | 69 | 1744 | 0 |
| Peak Hour Factor | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 404 | 218 | | 91 | 122 | 69 | 219 | 2235 | 993 | 286 | 2139 | |
| Arrive On Green | 0.06 | 0.12 | 0.00 | 0.05 | 0.11 | 0.11 | 0.11 | 1.00 | 1.00 | 0.03 | 0.60 | 0.00 |
| Sat Flow, veh/h | 3456 | 1870 | 1585 | 1781 | 1109 | 626 | 1781 | 3554 | 1579 | 1781 | 3554 | 1585 |
| Grp Volume(v), veh/h | 161 | 47 | 0 | 71 | 0 | 133 | 172 | 1645 | 48 | 69 | 1744 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1728 | 1870 | 1585 | 1781 | 0 | 1735 | 1781 | 1777 | 1579 | 1781 | 1777 | 1585 |
| Q Serve(g_s), s | 4.9 | 2.7 | 0.0 | 4.7 | 0.0 | 8.9 | 4.6 | 0.0 | 0.0 | 1.8 | 46.0 | 0.0 |
| Cycle Q Clear(g_c), s | 4.9 | 2.7 | 0.0 | 4.7 | 0.0 | 8.9 | 4.6 | 0.0 | 0.0 | 1.8 | 46.0 | 0.0 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.36 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 404 | 218 | | 91 | 0 | 192 | 219 | 2235 | 993 | 286 | 2139 | |
| V/C Ratio(X) | 0.40 | 0.22 | | 0.78 | 0.00 | 0.69 | 0.78 | 0.74 | 0.05 | 0.24 | 0.82 | |
| Avail Cap(c_a), veh/h | 408 | 281 | | 104 | 0 | 260 | 269 | 2235 | 993 | 339 | 2139 | |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 2.00 | 2.00 | 2.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 44.0 | 48.0 | 0.0 | 56.3 | 0.0 | 51.4 | 23.3 | 0.0 | 0.0 | 8.5 | 18.7 | 0.0 |
| Incr Delay (d2), s/veh | 0.2 | 0.2 | 0.0 | 28.2 | 0.0 | 2.1 | 9.2 | 2.2 | 0.1 | 0.2 | 3.6 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 2.1 | 1.3 | 0.0 | 2.9 | 0.0 | 4.0 | 3.3 | 0.7 | 0.0 | 0.7 | 18.1 | 0.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 44.2 | 48.2 | 0.0 | 84.5 | 0.0 | 53.5 | 32.5 | 2.2 | 0.1 | 8.7 | 22.2 | 0.0 |
| LnGrp LOS | D | D | | F | A | D | C | A | A | A | C | |
| Approach Vol, veh/h | | 208 | A | | 204 | | | 1865 | | | 1813 | A |
| Approach Delay, s/veh | | 45.1 | | | 64.3 | | | 4.9 | | | 21.7 | |
| Approach LOS | | D | | | E | | | A | | | C | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 8.4 | 81.5 | 11.1 | 19.0 | 11.7 | 78.2 | 11.9 | 18.3 |
| Change Period (Y+Rc), s | 5.0 | 6.0 | 5.0 | 5.0 | 5.0 | 6.0 | 5.0 | 5.0 |
| Max Green Setting (Gmax), s | 7.0 | 67.0 | 7.0 | 18.0 | 10.0 | 64.0 | 7.0 | 18.0 |
| Max Q Clear Time (g_c+I1), s | 3.8 | 2.0 | 6.7 | 4.7 | 6.6 | 48.0 | 6.9 | 10.9 |
| Green Ext Time (p_c), s | 0.0 | 42.4 | 0.0 | 0.1 | 0.1 | 14.2 | 0.0 | 0.2 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 17.4 |
| HCM 6th LOS | B |

Notes

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

Unsignalized Delay for [EBR, SBR] is excluded from calculations of the approach delay and intersection delay.

| Intersection | |
|---|---|
| Int Delay, s/veh | 17.8 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 27 | 78 | 61 | 1615 | 1707 | 11 |
| Future Vol, veh/h | 27 | 78 | 61 | 1615 | 1707 | 11 |
| 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 | - | 120 | - | - | 0 |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 100 | 100 | 100 | 100 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 29 | 85 | 61 | 1615 | 1707 | 11 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 2637 | 854 | 1718 | 0 | - | 0 |
| Stage 1 | 1707 | - | - | - | - | - |
| Stage 2 | 930 | - | - | - | - | - |
| Critical Hdwy | 6.84 | 6.94 | 4.14 | - | - | - |
| Critical Hdwy Stg 1 | 5.84 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.84 | - | - | - | - | - |
| Follow-up Hdwy | 3.52 | 3.32 | 2.22 | - | - | - |
| Pot Cap-1 Maneuver | *~ 21 | *389 | *582 | - | - | - |
| Stage 1 | *367 | - | - | - | - | - |
| Stage 2 | *391 | - | - | - | - | - |
| Platoon blocked, % | 1 | 1 | 1 | - | - | - |
| Mov Cap-1 Maneuver | *~ 18 | *389 | *582 | - | - | - |
| Mov Cap-2 Maneuver | *~ 18 | - | - | - | - | - |
| Stage 1 | *329 | - | - | - | - | - |
| Stage 2 | *391 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | $ 541.9 | 0.4 | 0 |
| HCM LOS | F | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | * 582 | - | 62 | - | - |
| HCM Lane V/C Ratio | 0.105 | - | 1.841 | - | - |
| HCM Control Delay (s) | 11.9 | - | $ 541.9 | - | - |
| HCM Lane LOS | B | - | F | - | - |
| HCM 95th %tile Q(veh) | 0.3 | - | 10.6 | - | - |

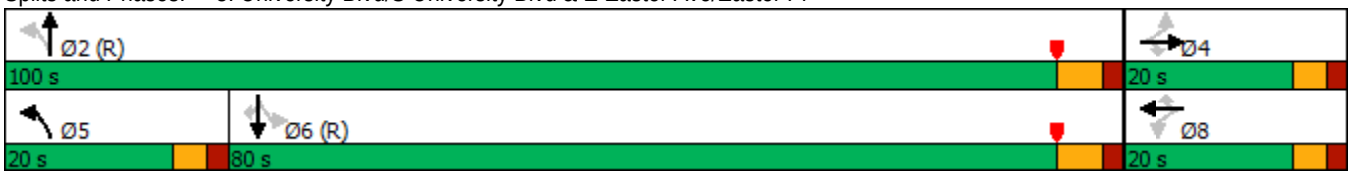
Notes

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

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | |
| Traffic Volume (vph) | 75 | 34 | 200 | 55 | 28 | 22 | 186 | 1580 | 16 | 1693 | 75 |
| Future Volume (vph) | 75 | 34 | 200 | 55 | 28 | 22 | 186 | 1580 | 16 | 1693 | 75 |
| Turn Type | Perm | NA | Perm | Perm | NA | Perm | pm+pt | NA | Perm | NA | Perm |
| Protected Phases | | 4 | | | 8 | | 5 | 2 | | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | 8 | 2 | | 6 | | 6 |
| Detector Phase | 4 | 4 | 4 | 8 | 8 | 8 | 5 | 2 | 6 | 6 | 6 |
| Switch Phase | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Minimum Split (s) | 36.0 | 36.0 | 36.0 | 40.0 | 40.0 | 40.0 | 8.0 | 29.0 | 32.0 | 32.0 | 32.0 |
| Total Split (s) | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 100.0 | 80.0 | 80.0 | 80.0 |
| Total Split (%) | 16.7% | 16.7% | 16.7% | 16.7% | 16.7% | 16.7% | 16.7% | 83.3% | 66.7% | 66.7% | 66.7% |
| Yellow Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| 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) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 6.0 | 6.0 | 6.0 | 6.0 |
| Lead/Lag | | | | | | | Lead | | Lag | Lag | Lag |
| Lead-Lag Optimize? | | | | | | | Yes | | Yes | Yes | Yes |
| Recall Mode | None | None | None | None | None | None | None | C-Min | C-Min | C-Min | C-Min |
| Act Effct Green (s) | 11.3 | 11.3 | 11.3 | 11.3 | 11.3 | 11.3 | 98.7 | 97.7 | 80.6 | 80.6 | 80.6 |
| Actuated g/C Ratio | 0.09 | 0.09 | 0.09 | 0.09 | 0.09 | 0.09 | 0.82 | 0.81 | 0.67 | 0.67 | 0.67 |
| v/c Ratio | 0.66 | 0.22 | 0.69 | 0.49 | 0.18 | 0.12 | 0.85 | 0.64 | 0.12 | 0.80 | 0.08 |
| Control Delay | 75.5 | 51.6 | 22.0 | 63.5 | 50.7 | 1.1 | 59.6 | 5.9 | 7.4 | 7.8 | 1.1 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 |
| Total Delay | 75.5 | 51.6 | 22.0 | 63.5 | 50.7 | 1.1 | 59.6 | 5.9 | 7.4 | 7.9 | 1.1 |
| LOS | E | D | C | E | D | A | E | A | A | A | A |
| Approach Delay | | 38.2 | | | 46.9 | | | 11.4 | | 7.6 | |
| Approach LOS | | D | | | D | | | B | | A | |

| Intersection Summary | |
|---|---|
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 82 (68%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow | |
| Natural Cycle: 130 | |
| Control Type: Actuated-Coordinated | |
| Maximum v/c Ratio: 0.85 | |
| Intersection Signal Delay: 12.7 | Intersection LOS: B |
| Intersection Capacity Utilization 83.7% | ICU Level of Service E |
| Analysis Period (min) 15 | |

Splits and Phases: 8: University Blvd/S University Blvd & E Easter Ave/Easter Pl



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 75 | 34 | 200 | 55 | 28 | 22 | 186 | 1580 | 58 | 16 | 1693 | 75 |
| Future Volume (veh/h) | 75 | 34 | 200 | 55 | 28 | 22 | 186 | 1580 | 58 | 16 | 1693 | 75 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 0.98 | | 0.98 | 0.99 | | 0.98 | 1.00 | | 1.00 | 1.00 | | 0.99 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 84 | 38 | 225 | 62 | 31 | 25 | 209 | 1775 | 65 | 18 | 1902 | 84 |
| Peak Hour Factor | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 206 | 234 | 194 | 178 | 234 | 194 | 299 | 2739 | 100 | 200 | 2459 | 1091 |
| Arrive On Green | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.05 | 0.78 | 0.78 | 1.00 | 1.00 | 1.00 |
| Sat Flow, veh/h | 1322 | 1870 | 1551 | 1101 | 1870 | 1551 | 1781 | 3496 | 127 | 252 | 3554 | 1577 |
| Grp Volume(v), veh/h | 84 | 38 | 225 | 62 | 31 | 25 | 209 | 898 | 942 | 18 | 1902 | 84 |
| Grp Sat Flow(s),veh/h/ln | 1322 | 1870 | 1551 | 1101 | 1870 | 1551 | 1781 | 1777 | 1847 | 252 | 1777 | 1577 |
| Q Serve(g_s), s | 7.2 | 2.2 | 15.0 | 6.4 | 1.8 | 1.7 | 3.9 | 26.5 | 27.1 | 1.9 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 9.0 | 2.2 | 15.0 | 8.6 | 1.8 | 1.7 | 3.9 | 26.5 | 27.1 | 18.0 | 0.0 | 0.0 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.07 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 206 | 234 | 194 | 178 | 234 | 194 | 299 | 1392 | 1447 | 200 | 2459 | 1091 |
| V/C Ratio(X) | 0.41 | 0.16 | 1.16 | 0.35 | 0.13 | 0.13 | 0.70 | 0.64 | 0.65 | 0.09 | 0.77 | 0.08 |
| Avail Cap(c_a), veh/h | 206 | 234 | 194 | 178 | 234 | 194 | 434 | 1392 | 1447 | 200 | 2459 | 1091 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 2.00 | 2.00 | 2.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 50.7 | 46.9 | 52.5 | 50.7 | 46.7 | 46.7 | 4.4 | 5.7 | 5.8 | 1.7 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 0.5 | 0.1 | 114.6 | 0.4 | 0.1 | 0.1 | 1.1 | 2.3 | 2.3 | 0.9 | 2.4 | 0.1 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 2.4 | 1.0 | 12.0 | 1.8 | 0.8 | 0.7 | 1.1 | 7.5 | 7.9 | 0.1 | 0.8 | 0.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 51.2 | 47.0 | 167.1 | 51.2 | 46.8 | 46.8 | 5.5 | 8.0 | 8.0 | 2.6 | 2.4 | 0.1 |
| LnGrp LOS | D | D | F | D | D | D | A | A | A | A | A | A |
| Approach Vol, veh/h | | 347 | | | 118 | | | 2049 | | | 2004 | |
| Approach Delay, s/veh | | 125.9 | | | 49.1 | | | 7.8 | | | 2.3 | |
| Approach LOS | | F | | | D | | | A | | | A | |

| Timer - Assigned Phs | | 2 | | 4 | 5 | 6 | | 8 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | | 100.0 | | 20.0 | 11.0 | 89.0 | | 20.0 | | | | |
| Change Period (Y+Rc), s | | 6.0 | | 5.0 | 5.0 | 6.0 | | 5.0 | | | | |
| Max Green Setting (Gmax), s | | 94.0 | | 15.0 | 15.0 | 74.0 | | 15.0 | | | | |
| Max Q Clear Time (g_c+I1), s | | 29.1 | | 17.0 | 5.9 | 20.0 | | 10.6 | | | | |
| Green Ext Time (p_c), s | | 47.6 | | 0.0 | 0.1 | 44.6 | | 0.1 | | | | |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 15.5 |
| HCM 6th LOS | B |

Notes

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

| Intersection | |
|---|---|
| Int Delay, s/veh | 3.9 |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 35 | 192 | 180 | 111 | 117 | 43 |
| Future Vol, veh/h | 35 | 192 | 180 | 111 | 117 | 43 |
| 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 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 38 | 209 | 196 | 121 | 127 | 47 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 317 | 0 | - | 0 | 542 | 257 |
| Stage 1 | - | - | - | - | 257 | - |
| Stage 2 | - | - | - | - | 285 | - |
| Critical Hdwy | 4.12 | - | - | - | 6.42 | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.42 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.42 | - |
| Follow-up Hdwy | 2.218 | - | - | - | 3.518 | 3.318 |
| Pot Cap-1 Maneuver | 1243 | - | - | - | 501 | 782 |
| Stage 1 | - | - | - | - | 786 | - |
| Stage 2 | - | - | - | - | 763 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | 1243 | - | - | - | 483 | 782 |
| Mov Cap-2 Maneuver | - | - | - | - | 483 | - |
| Stage 1 | - | - | - | - | 758 | - |
| Stage 2 | - | - | - | - | 763 | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 1.2 | 0 | 14.9 |
| HCM LOS | | | B |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|
| Capacity (veh/h) | 1243 | - | - | - | 538 |
| HCM Lane V/C Ratio | 0.031 | - | - | - | 0.323 |
| HCM Control Delay (s) | 8 | 0 | - | - | 14.9 |
| HCM Lane LOS | A | A | - | - | B |
| HCM 95th %tile Q(veh) | 0.1 | - | - | - | 1.4 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.7 |

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 210 | 15 | 11 | 212 | 7 | 17 |
| Future Vol, veh/h | 210 | 15 | 11 | 212 | 7 | 17 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 228 | 16 | 12 | 230 | 8 | 18 |

| Major/Minor | Major1 | | Major2 | | Minor1 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 0 | 0 | 244 | 0 | 490 | 236 |
| Stage 1 | - | - | - | - | 236 | - |
| Stage 2 | - | - | - | - | 254 | - |
| Critical Hdwy | - | - | 4.12 | - | 6.42 | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.42 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.42 | - |
| Follow-up Hdwy | - | - | 2.218 | - | 3.518 | 3.318 |
| Pot Cap-1 Maneuver | - | - | 1322 | - | 537 | 803 |
| Stage 1 | - | - | - | - | 803 | - |
| Stage 2 | - | - | - | - | 788 | - |
| Platoon blocked, % | - | - | | - | | |
| Mov Cap-1 Maneuver | - | - | 1322 | - | 532 | 803 |
| Mov Cap-2 Maneuver | - | - | - | - | 532 | - |
| Stage 1 | - | - | - | - | 803 | - |
| Stage 2 | - | - | - | - | 780 | - |

| Approach | EB | WB | NB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 0.4 | 10.4 |
| HCM LOS | | | B |

| Minor Lane/Major Mvmt | NBLn1 | EBT | EBR | WBL | WBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | 699 | - | - | 1322 | - |
| HCM Lane V/C Ratio | 0.037 | - | - | 0.009 | - |
| HCM Control Delay (s) | 10.4 | - | - | 7.7 | 0 |
| HCM Lane LOS | B | - | - | A | A |
| HCM 95th %tile Q(veh) | 0.1 | - | - | 0 | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 3.3 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 24 | 153 | 12 | 9 | 161 | 49 | 14 | 5 | 12 | 60 | 5 | 24 |
| Future Vol, veh/h | 24 | 153 | 12 | 9 | 161 | 49 | 14 | 5 | 12 | 60 | 5 | 24 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 26 | 166 | 13 | 10 | 175 | 53 | 15 | 5 | 13 | 65 | 5 | 26 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 228 | 0 | 0 | 179 | 0 | 0 | 462 | 473 | 173 | 456 | 453 | 202 |
| Stage 1 | - | - | - | - | - | - | 225 | 225 | - | 222 | 222 | - |
| Stage 2 | - | - | - | - | - | - | 237 | 248 | - | 234 | 231 | - |
| Critical Hdwy | 4.12 | - | - | 4.12 | - | - | 7.12 | 6.52 | 6.22 | 7.12 | 6.52 | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.12 | 5.52 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.12 | 5.52 | - |
| Follow-up Hdwy | 2.218 | - | - | 2.218 | - | - | 3.518 | 4.018 | 3.318 | 3.518 | 4.018 | 3.318 |
| Pot Cap-1 Maneuver | 1340 | - | - | 1397 | - | - | 510 | 490 | 871 | 515 | 503 | 839 |
| Stage 1 | - | - | - | - | - | - | 778 | 718 | - | 780 | 720 | - |
| Stage 2 | - | - | - | - | - | - | 766 | 701 | - | 769 | 713 | - |
| Platoon blocked, % | | - | - | | - | - | | | | | | |
| Mov Cap-1 Maneuver | 1340 | - | - | 1397 | - | - | 479 | 475 | 871 | 491 | 488 | 839 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 479 | 475 | - | 491 | 488 | - |
| Stage 1 | - | - | - | - | - | - | 761 | 702 | - | 763 | 714 | - |
| Stage 2 | - | - | - | - | - | - | 731 | 695 | - | 735 | 697 | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 1 | 0.3 | 11.6 | 12.9 |
| HCM LOS | | | B | B |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 579 | 1340 | - | - | 1397 | - | - | 553 |
| HCM Lane V/C Ratio | 0.058 | 0.019 | - | - | 0.007 | - | - | 0.175 |
| HCM Control Delay (s) | 11.6 | 7.7 | 0 | - | 7.6 | 0 | - | 12.9 |
| HCM Lane LOS | B | A | A | - | A | A | - | B |
| HCM 95th %tile Q(veh) | 0.2 | 0.1 | - | - | 0 | - | - | 0.6 |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 8.6 |
| Intersection LOS | A |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 25 | 127 | 149 | 50 | 62 | 28 |
| Future Vol, veh/h | 25 | 127 | 149 | 50 | 62 | 28 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 27 | 138 | 162 | 54 | 67 | 30 |
| Number of Lanes | 0 | 1 | 1 | 0 | 1 | 0 |

| Approach | EB | WB | SB |
|---|---|---|---|
| Opposing Approach | WB | EB | |
| Opposing Lanes | 1 | 1 | 0 |
| Conflicting Approach Left | SB | | WB |
| Conflicting Lanes Left | 1 | 0 | 1 |
| Conflicting Approach Right | | SB | EB |
| Conflicting Lanes Right | 0 | 1 | 1 |
| HCM Control Delay | 8.6 | 8.6 | 8.4 |
| HCM LOS | A | A | A |

| Lane | EBLn1 | WBLn1 | SBLn1 |
|---|---|---|---|
| Vol Left, % | 16% | 0% | 69% |
| Vol Thru, % | 84% | 75% | 0% |
| Vol Right, % | 0% | 25% | 31% |
| Sign Control | Stop | Stop | Stop |
| Traffic Vol by Lane | 152 | 199 | 90 |
| LT Vol | 25 | 0 | 62 |
| Through Vol | 127 | 149 | 0 |
| RT Vol | 0 | 50 | 28 |
| Lane Flow Rate | 165 | 216 | 98 |
| Geometry Grp | 1 | 1 | 1 |
| Degree of Util (X) | 0.203 | 0.252 | 0.128 |
| Departure Headway (Hd) | 4.427 | 4.201 | 4.717 |
| Convergence, Y/N | Yes | Yes | Yes |
| Cap | 813 | 857 | 761 |
| Service Time | 2.443 | 2.215 | 2.739 |
| HCM Lane V/C Ratio | 0.203 | 0.252 | 0.129 |
| HCM Control Delay | 8.6 | 8.6 | 8.4 |
| HCM Lane LOS | A | A | A |
| HCM 95th-tile Q | 0.8 | 1 | 0.4 |

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

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 15 | 54 | 65 | 10 | 6 | 75 |
| Future Vol, veh/h | 15 | 54 | 65 | 10 | 6 | 75 |
| 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 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 16 | 59 | 71 | 11 | 7 | 82 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 173 | 77 | 0 | 0 | 82 | 0 |
| Stage 1 | 77 | - | - | - | - | - |
| Stage 2 | 96 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | - | - | 4.12 | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | - | - | 2.218 | - |
| Pot Cap-1 Maneuver | 817 | 984 | - | - | 1515 | - |
| Stage 1 | 946 | - | - | - | - | - |
| Stage 2 | 928 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 813 | 984 | - | - | 1515 | - |
| Mov Cap-2 Maneuver | 813 | - | - | - | - | - |
| Stage 1 | 946 | - | - | - | - | - |
| Stage 2 | 923 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 9.2 | 0 | 0.5 |
| HCM LOS | A | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 941 | 1515 | - |
| HCM Lane V/C Ratio | - | - | 0.08 | 0.004 | - |
| HCM Control Delay (s) | - | - | 9.2 | 7.4 | 0 |
| HCM Lane LOS | - | - | A | A | A |
| HCM 95th %tile Q(veh) | - | - | 0.3 | 0 | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 4 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 29 | 10 | 2 | 13 | 16 | 58 | 4 | 111 | 4 | 11 | 66 | 37 |
| Future Vol, veh/h | 29 | 10 | 2 | 13 | 16 | 58 | 4 | 111 | 4 | 11 | 66 | 37 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 32 | 11 | 2 | 14 | 17 | 63 | 4 | 121 | 4 | 12 | 72 | 40 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 287 | 249 | 92 | 254 | 267 | 123 | 112 | 0 | 0 | 125 | 0 | 0 |
| Stage 1 | 116 | 116 | - | 131 | 131 | - | - | - | - | - | - | - |
| Stage 2 | 171 | 133 | - | 123 | 136 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.12 | 6.52 | 6.22 | 7.12 | 6.52 | 6.22 | 4.12 | - | - | 4.12 | - | - |
| Critical Hdwy Stg 1 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 4.018 | 3.318 | 3.518 | 4.018 | 3.318 | 2.218 | - | - | 2.218 | - | - |
| Pot Cap-1 Maneuver | 665 | 654 | 965 | 699 | 639 | 928 | 1478 | - | - | 1462 | - | - |
| Stage 1 | 889 | 800 | - | 873 | 788 | - | - | - | - | - | - | - |
| Stage 2 | 831 | 786 | - | 881 | 784 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | 601 | 646 | 965 | 682 | 631 | 928 | 1478 | - | - | 1462 | - | - |
| Mov Cap-2 Maneuver | 601 | 646 | - | 682 | 631 | - | - | - | - | - | - | - |
| Stage 1 | 886 | 793 | - | 870 | 786 | - | - | - | - | - | - | - |
| Stage 2 | 755 | 784 | - | 859 | 777 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 11.2 | 10 | 0.3 | 0.7 |
| HCM LOS | B | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 1478 | - | - | 623 | 814 | 1462 | - | - |
| HCM Lane V/C Ratio | 0.003 | - | - | 0.072 | 0.116 | 0.008 | - | - |
| HCM Control Delay (s) | 7.4 | 0 | - | 11.2 | 10 | 7.5 | 0 | - |
| HCM Lane LOS | A | A | - | B | B | A | A | - |
| HCM 95th %tile Q(veh) | 0 | - | - | 0.2 | 0.4 | 0 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 3.7 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 48 | 66 | 145 | 53 | 41 | 66 |
| Future Vol, veh/h | 48 | 66 | 145 | 53 | 41 | 66 |
| 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 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 52 | 72 | 158 | 58 | 45 | 72 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 349 | 187 | 0 | 0 | 216 | 0 |
| Stage 1 | 187 | - | - | - | - | - |
| Stage 2 | 162 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | - | - | 4.12 | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | - | - | 2.218 | - |
| Pot Cap-1 Maneuver | 648 | 855 | - | - | 1354 | - |
| Stage 1 | 845 | - | - | - | - | - |
| Stage 2 | 867 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 625 | 855 | - | - | 1354 | - |
| Mov Cap-2 Maneuver | 625 | - | - | - | - | - |
| Stage 1 | 845 | - | - | - | - | - |
| Stage 2 | 837 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 10.8 | 0 | 3 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 740 | 1354 | - |
| HCM Lane V/C Ratio | - | - | 0.167 | 0.033 | - |
| HCM Control Delay (s) | - | - | 10.8 | 7.7 | 0 |
| HCM Lane LOS | - | - | B | A | A |
| HCM 95th %tile Q(veh) | - | - | 0.6 | 0.1 | - |

# APPENDIX C. SAFETY ANALYSIS

# Streets at Southglenn Safety Analysis

A safety review was completed for the fifteen study area intersections to address City of Centennial TIS requirements. The safety review focused on understanding the magnitude and nature of safety problems within the project limits and related crash causality to roadway geometrics, roadside features, traffic control devices, traffic operations, driver behavior, and vehicle type. To uniformly evaluate across all data sources, the crash history of each facility was prepared using five years of data from January 1, 2013 through December 31, 2017. DiExSys™ Vision Zero Suite software was used in performing the safety review for each intersection. The software is a sophisticated and comprehensive suite of analytical tools designed to provide decision support analysis and to incorporate methodology consistent with the Highway Safety Manual (HSM). An assessment of the safety problems at the intersections of interest was refined using the Safety Performance Function (SPF) methodology when data was available. Development of the SPF allows for the determination of the Levels of Service of Safety (LOSS). The concept of LOSS uses qualitative measures that characterize safety of a roadway segment in reference to its expected performance and severity. If the LOSS predicted by the SPF represents a normal or expected number of crashes at a specific level of average daily traffic (ADT), then the degree of deviation from the norm can be stratified to represent specific levels of safety.

The range of LOSS values and their qualitative descriptions are as follows:

- LOSS-I – indicates low potential for crash reduction
- LOSS-II – indicates better than expected safety performance
- LOSS-III – indicates less than expected safety performance
- LOSS-IV – indicates high potential for crash reduction

Gradual change in the degree of deviation of the LOSS boundary line from the fitted model mean reflects the observed increase of variability in crashes as ADT increases. LOSS reflects how the intersection is performing considering its expected crash frequency at a specific level of daily traffic. It only provides a crash frequency comparison with the expected norm. It does not, however, provide any information related to the nature of the safety problem itself. If a safety problem is present, LOSS will only describe its magnitude from a frequency standpoint.

The first step in the process was to evaluate the overall number of collisions in the study area. **Table 3** summarizes crash frequency for each intersection within the study area during the five-year study period. As shown, most of intersection-related crashes occurred at the signalized intersection of S University Boulevard and E Arapahoe Road. Of the 273 total crashes that occurred in the study area, zero crashes resulted in fatalities (FAT), 38 crashes resulted in injury (INJ), and 235 crashes were property damage only (PDO). IT should be noted that the City typically requests a three-year crash study. However, given the zero volumes along S Race St and E Easter Ave, the crash study was expanded to reflect a five-year history.

The intersections within the project area that had greater than five crashes reported within the study timeframe was tested for the presence of patterns related to crash type, severity, direction of travel, road conditions, spatial distribution of crashes, time of day, and behavior attributes. These diagnostic norms were developed using the same data points as the SPF analysis. Locations with five or fewer crashes within the timeframe are noted to not have a crash pattern and do not need additional diagnostics.

The decision to analyze intersections over five crashes is due to the crash distribution within the project site. The seven intersections with five or more crashes experienced the majority of the traffic and therefore are the intersections that pose the greatest danger to public safety. The following report will elaborate on each intersections geometry and include safety analysis for the intersections of concern.

**Table 3. Crash Results for Project Site Intersections**

| Intersection | Signalized | Number of Legs | Reported Crashes January 2013 – December 2017 | | | |
|---|---|---|---|---|---|---|
| | | | Total | PDO | Injury | Fatality |
| S University Boulevard and E Easter Pl | Yes | 4 | 32 | 29 | 3 | 0 |
| S University Boulevard and E Davies Ave | No | 3 | 10 | 8 | 2 | 0 |
| S University Boulevard and E Commons Ave | Yes | 4 | 33 | 26 | 7 | 0 |
| S University Boulevard and S York St | No | 4 | 16 | 15 | 1 | 0 |
| S University Boulevard and E Arapahoe Road | Yes | 4 | 137 | 123 | 14 | 0 |
| E Arapahoe Road and S York St | No | 4 | 4 | 3 | 1 | 0 |
| E Arapahoe Road and S Vine St | Yes | 4 | 26 | 21 | 5 | 0 |
| E Arapahoe Road and S Race St | Yes | 3 | 9 | 5 | 4 | 0 |
| S Race St and E Briarwood Ave | No | 3 | 1 | 1 | 0 | 0 |
| S Race St and E Davies Pl | No | 4 | 1 | 1 | 0 | 0 |
| S Race St and E Davies Ave | No | 3 | 1 | 1 | 0 | 0 |
| S Race St and E Easter Ave | No | 3 | 1 | 0 | 1 | 0 |
| Easter Ave and Vine Street | No | 4 | 1 | 1 | 0 | 0 |
| Easter Ave and Gaylord Street | No | 3 | 1 | 1 | 0 | 0 |
| Easter Ave and S York Street (Mall Dwy) | No | 3 | 0 | 0 | 0 | 0 |
| **Total Study Area Reported Crashes** | | | **273** | **235** | **38** | **0** |

Note: PDO = Property Damage Only

**Table 4. Safety Results for Project Site Intersections**

| Intersection | LOSS | LOSS (Inj + Fatal) |
|---|---|---|
| S University Boulevard and E Easter Pl | II | I |
| S University Boulevard and E Davies Ave | III | II |
| S University Boulevard and E Commons Ave | II | II |
| S University Boulevard and S York St | II | II |
| S University Boulevard and E Arapahoe Road | IV | II |
| E Arapahoe Road and S York St | I | II |
| E Arapahoe Road and S Vine St | I | II |
| E Arapahoe Road and S Race St | I | II |
| S Race St and E Briarwood Ave | III | II |
| S Race St and E Davies Pl | III | II |
| S Race St and E Davies Ave | III | II |
| S Race St and E Easter Ave | III | III |
| Easter Ave and Vine Street | III | II |
| Easter Ave and Gaylord Street | II | II |
| Easter Ave and S York Street (Mall Dwy) | II | II |

### *S University Boulevard and E Easter Pl*

The intersection of S University Boulevard and E Easter Ave is a four-leg, signalized intersection. 32 crashes were observed at the intersection during the study period. Therefore, the intersection was analyzed for crash patterns.

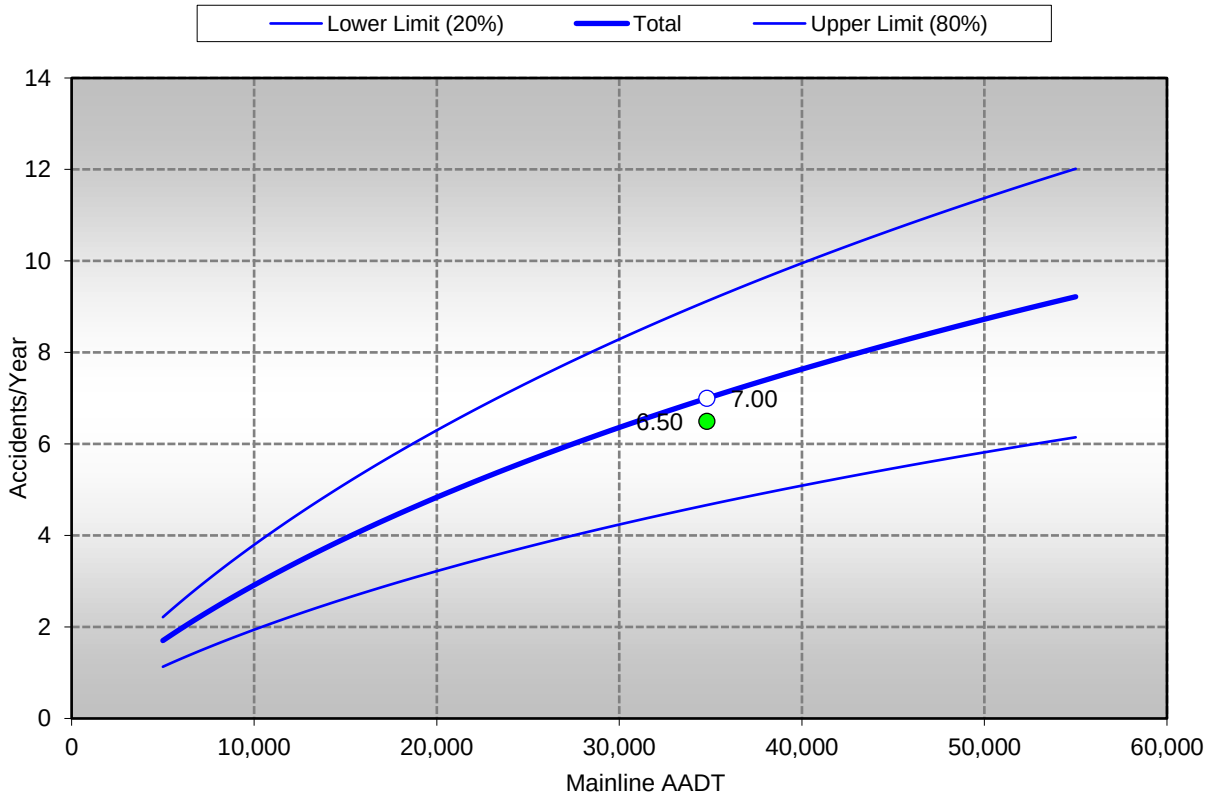
Safety Performance Function Analysis

For this intersection, an average of nearly seven crashes was observed per year during the study period (uncorrected). Figure 1 shows that the observed crash frequency is below the expected value for an urban four-lane divided signalized four-leg intersection. This indicates that the intersection operates with better than expected safety performance (LOSS II).

Crash History

During the five-year study period, there were 32 reported crashes at the intersection of S University Boulevard and Easter Pl. Figure 2 displays a graphical representation of the crash type distribution for this location. Based on the information from the CDOT DiExSys™ Roadway Safety Systems, the frequency of all crash types is expected, and no single type exceeds a statistical norm expected for the four-leg signalized intersection.

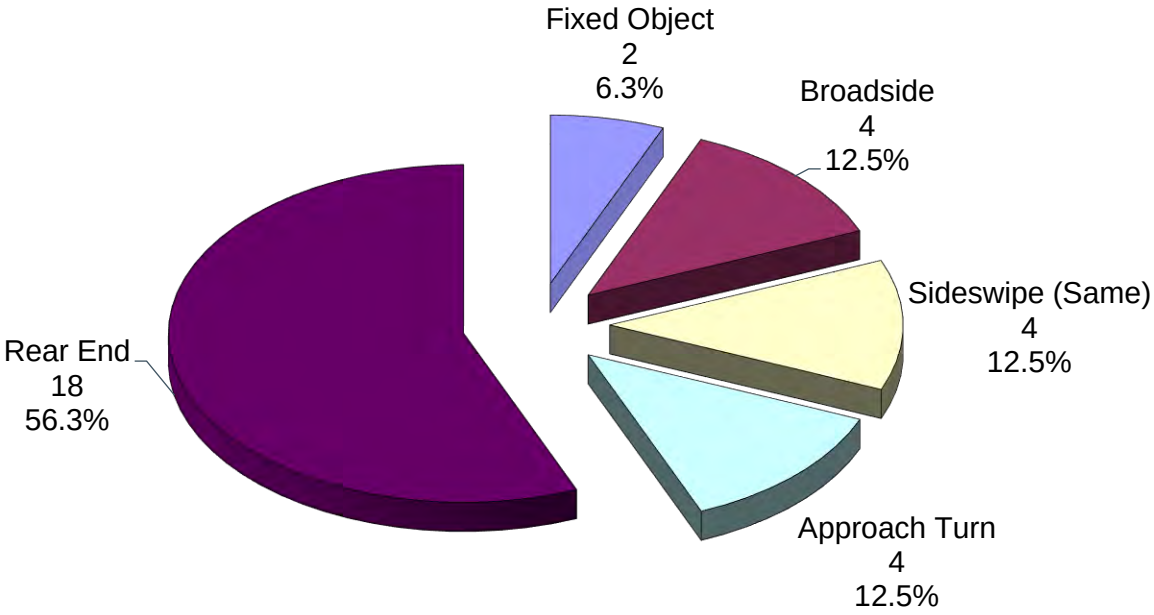
**Figure 1. SPF for S University Boulevard & E Easter Pl**




Observations and Recommendations

The frequency of all crash types is expected for a four-leg signalized intersection with an AADT greater than 35,000. The crash types for the intersection of S University Boulevard and Easter Pl is illustrated below in Figure 2.

**Figure 2. Crash Distribution by Type for S University Boulevard & E Easter Pl**



### *S University Boulevard and E Davies Ave*

The intersection of S University Boulevard and E Davies Ave is a three-leg, unsignalized intersection. During the study period, 10 crashes were recorded. Therefore, the intersection was analyzed for crash patterns.

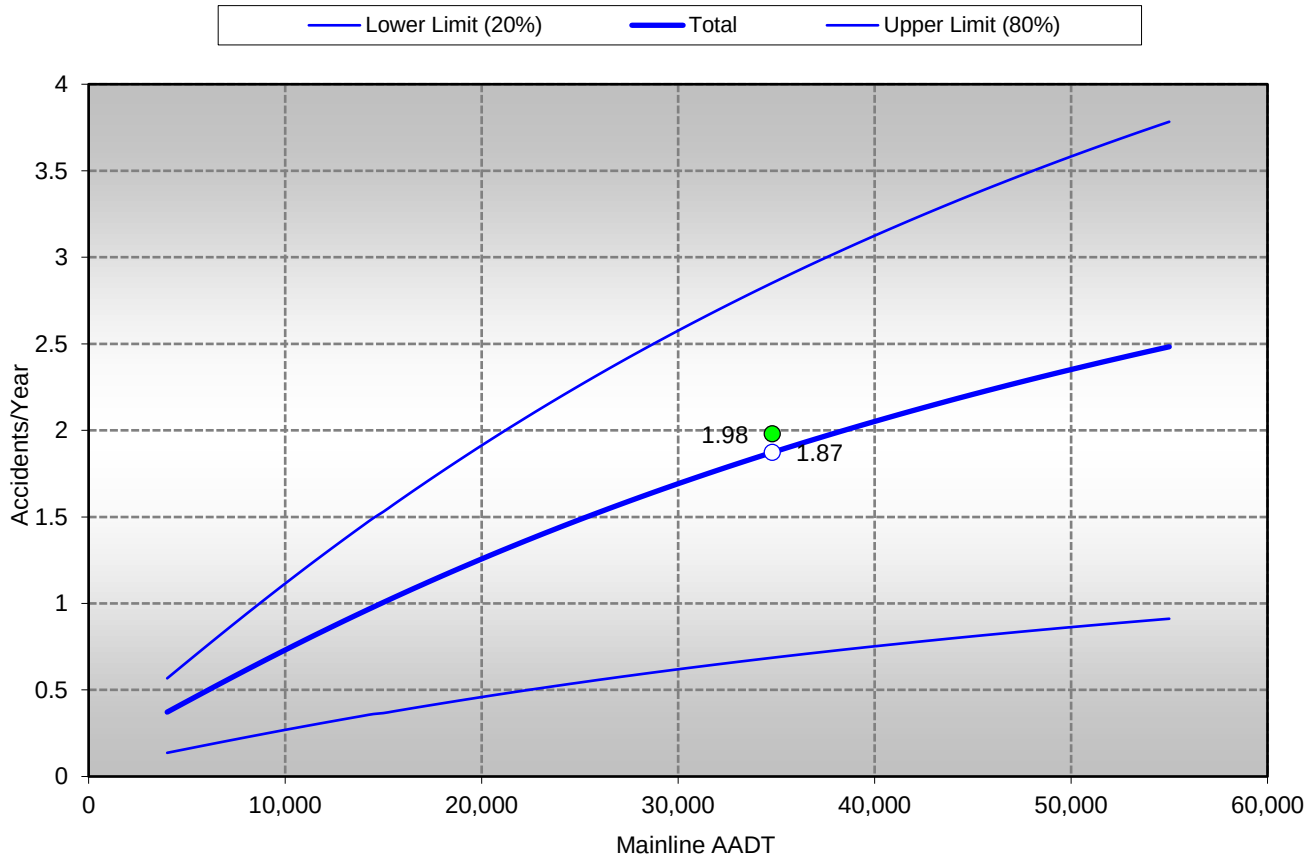
Safety Performance Function Analysis

For this intersection, an average of less than 2 crashes were observed per year during the study period (uncorrected). Figure 3 displays that the observed crash frequency is above the expected value for an urban four-lane divided unsignalized three-leg intersection. This indicates less than expected safety performance (LOSS III).

Crash History

During the five-year study period, there were 10 reported crashes at the intersection of S University Boulevard and E Davies Ave. Figure 4 displays a graphical representation of the crash type distribution for this location. Based on the information from the CDOT DiExSys™ Roadway Safety Systems the frequency of approach turn crashes is higher than expected for this intersection.

**Figure 3. SPF for S University Boulevard & E Davies Ave**

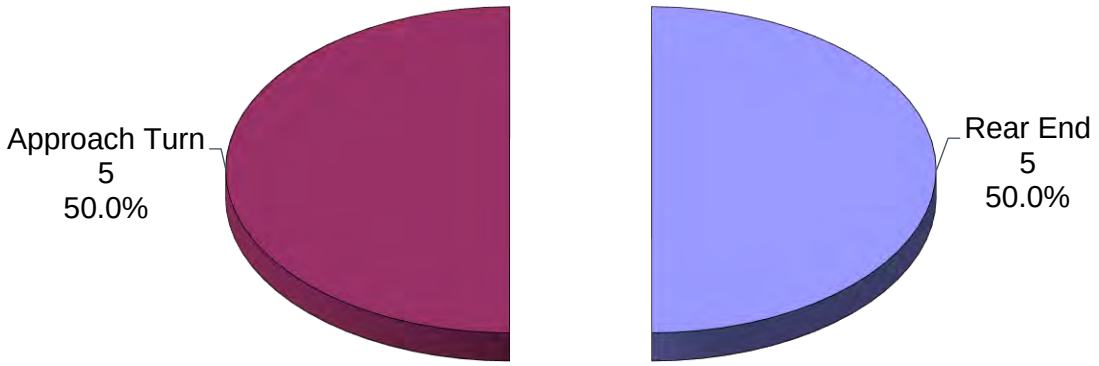


Observations and Recommendations

The frequency of approach turn crashes is higher than expected for this intersection. Approach Turn crashes occurred during dry conditions and involved two vehicles. The crashes occurred mostly during daytime with dry road conditions. Two injuries occurred at the intersection due to approach turn crashes. Based on the information from CDOT DiExSys™ Roadway Safety Systems the expected percentage of approach turn crashes at this specific intersection geometry is 12%. The percentage of approach turn crashes observed at this intersection was 50%, this indicates an issue regarding the movement of vehicles turning left across the mainline from both the northbound and eastbound approach. Based on the information from the CDOT DiExSys™ Roadway Safety Systems Direct Diagnostics, the frequency of approach crashes at this intersection is in the 99.96th percentile. See Appendix G for the direct diagnostics output.

Approach Turn crashes can be reduced by restricting the S University Blvd and E Davies Ave intersection to Right In-Right Out (RiRo) movements. Left turns across the mainline from the northbound and eastbound approach would be restricted and therefore the above average approach-turn crash frequency and the related injuries would be reduced.

**Figure 4. Crash Distribution by Type for S University Boulevard & E Davies Ave**



### *S University Boulevard and E Commons Ave*

The intersection of S University Boulevard and E Commons Ave is a divided four-leg signalized intersection. During the study period, 33 crashes were recorded. Therefore, the intersection was analyzed for crash patterns.

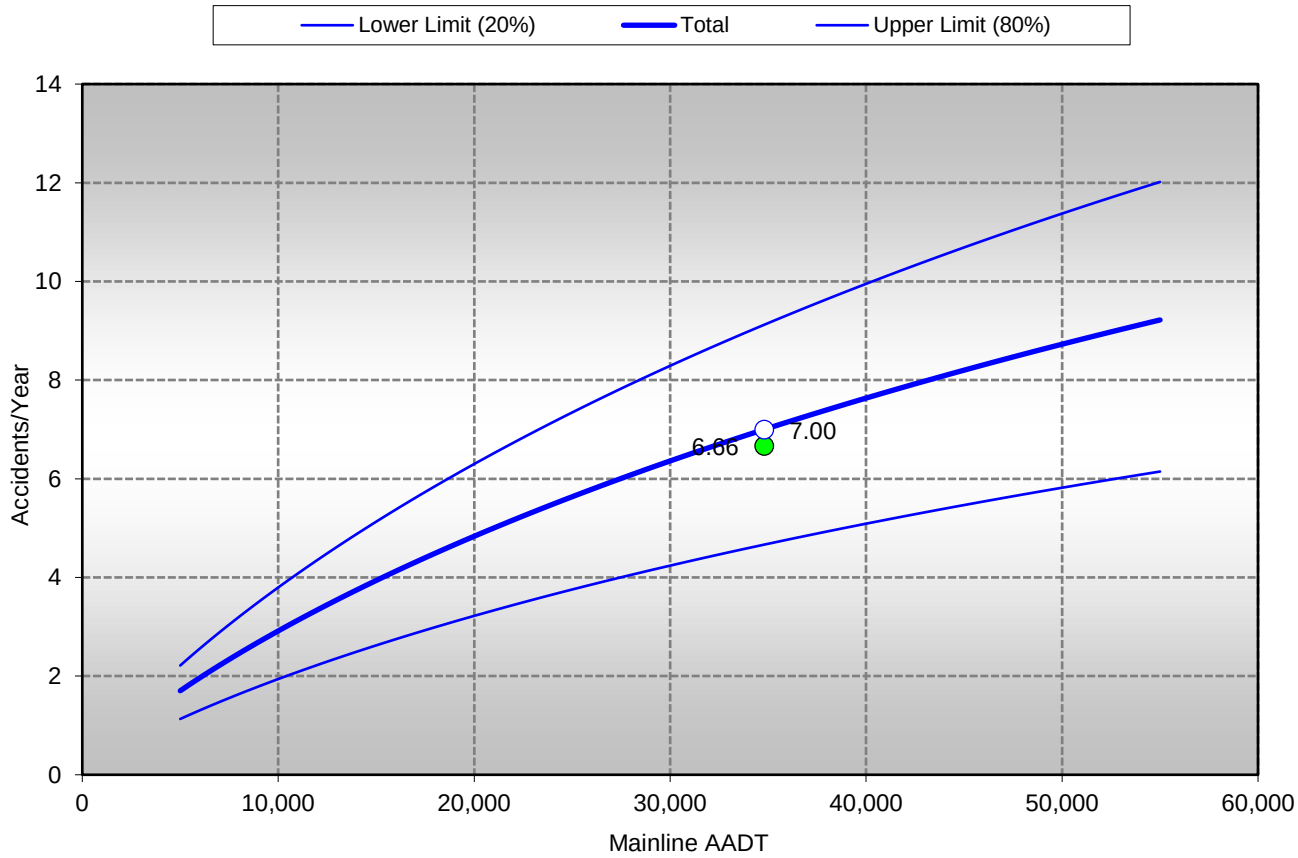
Safety Performance Function Analysis

For this intersection, an average of nearly seven crashes was observed per year during the study period (uncorrected). Figure 5 shows that the observed crash frequency is above the expected value for an urban four-lane divided signalized four-leg intersection. This indicates that the intersection operates with better than expected safety performance (LOSS II).

Crash History

During the five-year study period, there were 33 reported crashes at the intersection of S University Boulevard and E Commons Ave. Figure 6 displays a graphical representation of the crash type distribution for this location. Based on the information from the CDOT DiExSys™ Roadway Safety Systems the frequency of approach turn crashes and crashes involving pedestrians is higher than expected.

***Figure 5. SPF for S University Boulevard & E Commons Ave***




Observations and Recommendations

The frequency of approach turn crashes is higher than expected for this intersection. Approach Turn crashes occurred during dry conditions and involved two vehicles. The crashes occurred mostly during daytime with dry road conditions. Two injuries occurred at the intersection due to approach turn crashes.

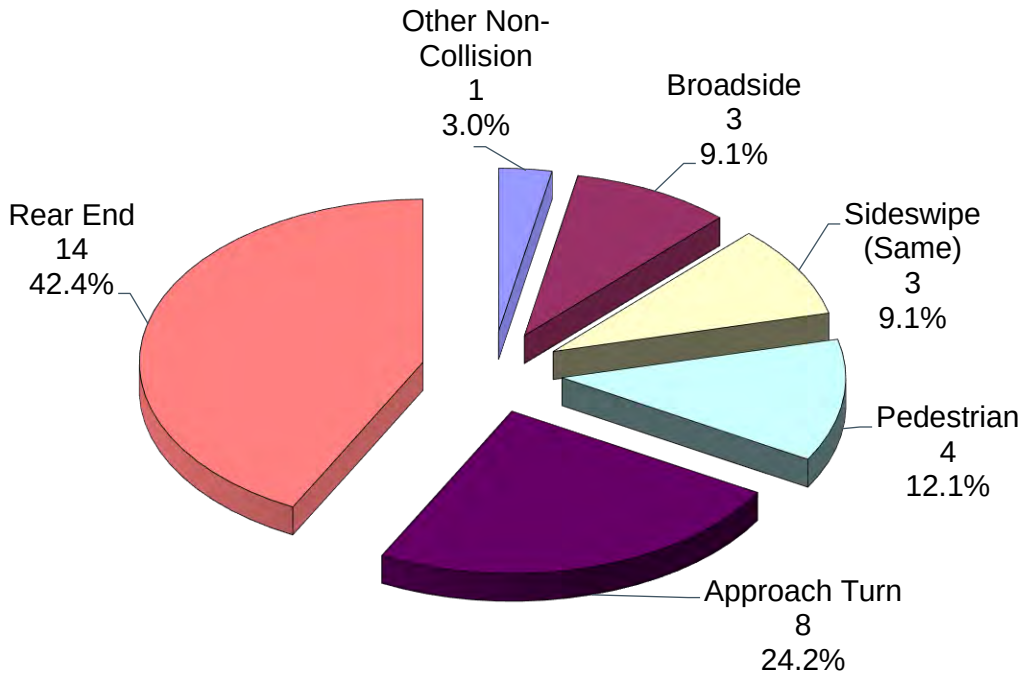
Based on the information from CDOT DiExSys™ Roadway Safety Systems the expected percentage of approach turn crashes at this specific intersection geometry is 15.8%. The percentage of approach turn crashes observed at this intersection was 24.2%. Based on the information from the CDOT DiExSys™ Roadway Safety Systems Direct Diagnostics, the frequency of approach turn crashes does not exceed the 95th percentile. See Appendix G for the direct diagnostics output.

Approach Turn crashes at the University Blvd and Commons Ave intersection have all been identified as left turn movements on the northbound approach and all occurred between the years of 2013 to 2017. The City of Centennial in the year 2018 introduced flashing yellow arrows to the 5-section signal heads on the northbound and southbound approaches and changed the permitted left turn lanes on the east and west bound approaches to protected left turns. According to the Crash Modification Factors Clearinghouse a flashing yellow arrow with supplemental traffic signals installation decreases accident probability by 14.3%. Since the flashing yellow left turn arrow implementation, no crashes have been recorded.

The frequency of crashes including pedestrians is higher than expected for this intersection. Thee crashes within the three-year study period included pedestrians. A typical two lane three-leg divided unsignalized intersection predicts a norm of 1.2% for pedestrians crashes out of all crash types. An estimated 12% of all crashes at this intersection are pedestrian related accidents. Based on the information from the CDOT DiExSys™ Roadway Safety Systems Direct Diagnostics, the frequency of pedestrians related crashes is in the 99.97th percentile. See Appendix G for the direct diagnostics output.

Pedestrian related crashes at the University Blvd and Commons Ave intersection have all been identified as vehicles making right turns. The current site has signage installed mandating vehicle drivers to yield to pedestrians crossing from the sidewalk onto the pedestrian islands. To further protect pedestrians and lower the frequency of pedestrian related accidents at this intersection raised walkways between the sidewalk and the pedestrian islands. The raised walkways would reduce vehicle speed and increase vehicle driver's ability to identify crossing pedestrians.

***Figure 6. Crash Distribution by Type for S University Boulevard & E Davies Ave***



### *S University Boulevard and S York Street*

The intersection of S University Boulevard and S York St is a divided three-leg unsignalized intersection with a Right In-Right Out (RiRo) restriction on the southbound approach. During the study period, 16 crashes were recorded. Therefore, the intersection was analyzed for crash patterns.

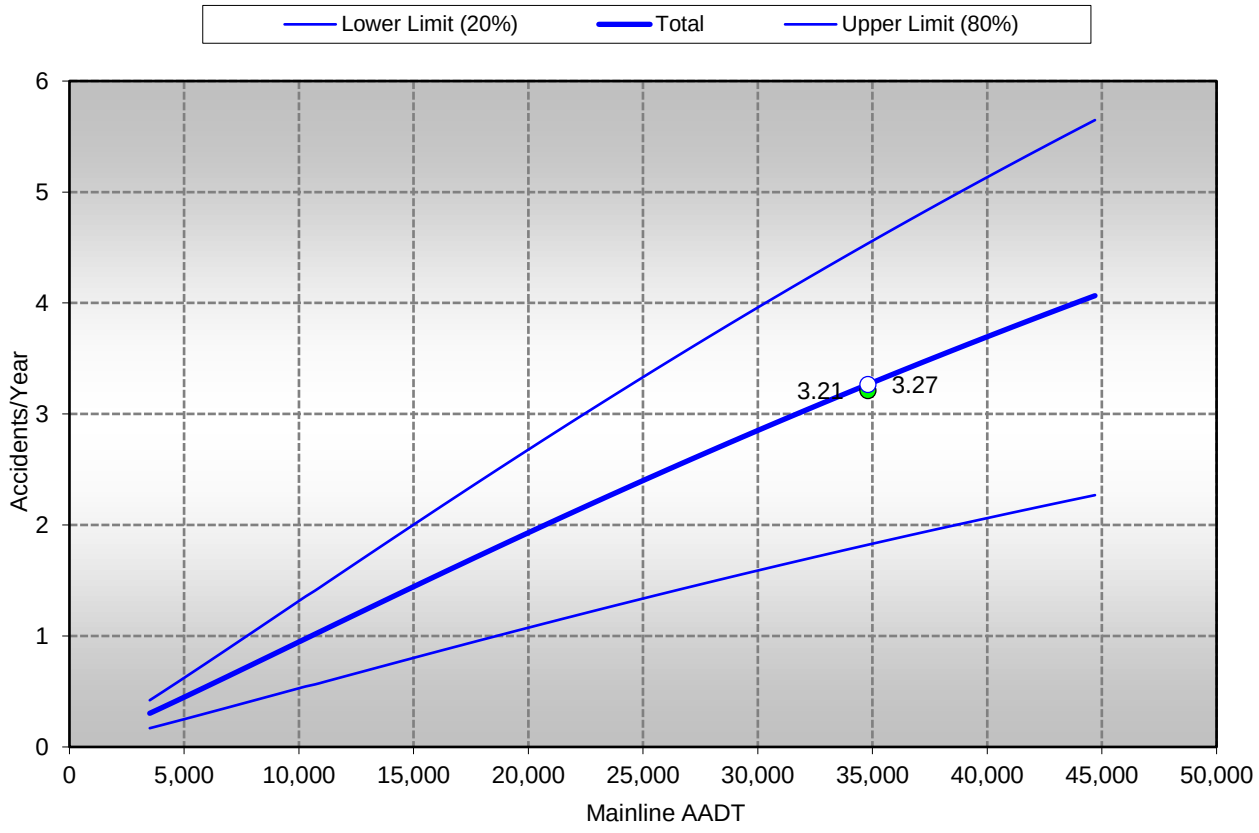
Safety Performance Function Analysis

For this intersection, an average of nearly three crashes was observed per year during the study period (uncorrected). Figure 7 shows that the observed crash frequency is below the expected value for an urban four-lane divided three-leg unsignalized intersection. This indicates that the intersection operates with better than expected safety performance (LOSS II).

Crash History

During the five-year study period, there were 16 reported crashes at the intersection of S University Boulevard and S York St. Figure 8 displays a graphical representation of the crash type distribution for this location. Based on the information from the CDOT DiExSys™ Roadway Safety Systems the frequency of rear end crashes is higher than expected.

***Figure 7. SPF for S University Boulevard & S York St***

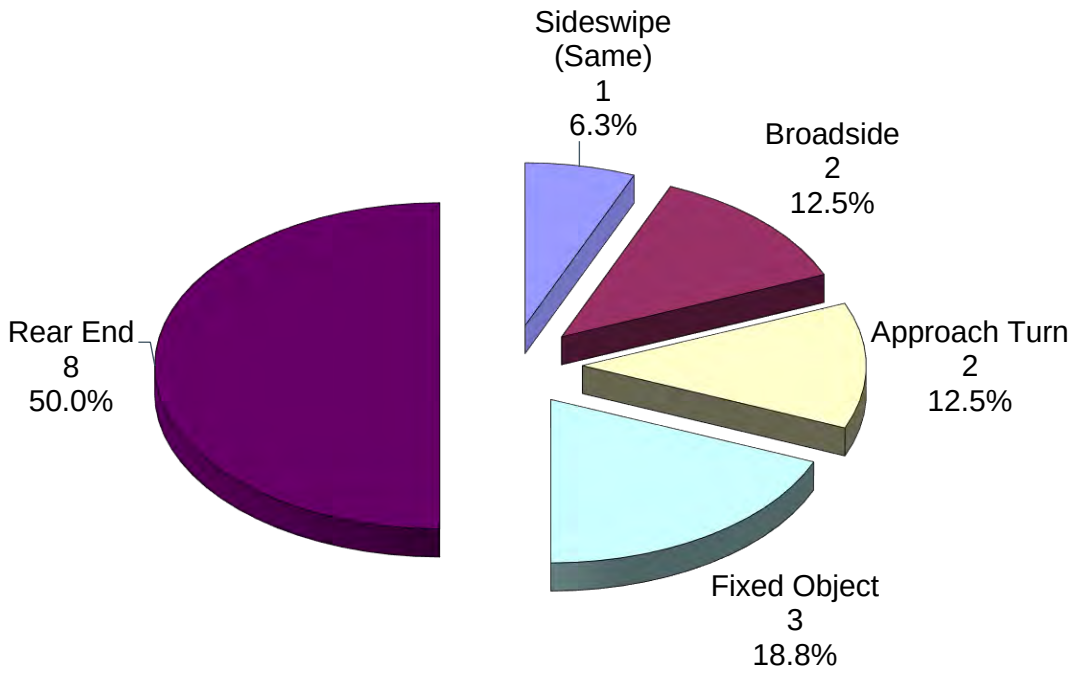


Observations and Recommendations

The frequency of rear-end crashes is higher than expected for this intersection. The majority of Rear-end crashes occurred during dry conditions, with one crash occurring during icy conditions and one during snowy conditions. The crashes occurred mostly during peak traffic hours. No injuries occurred at the intersection due to rear-end crashes. Based on the information from CDOT DiExSys™ Roadway Safety Systems the expected percentage of approach turn crashes at this specific intersection geometry is 32.2%. The percentage of approach turn crashes observed at this intersection was 50%. Based on the information from the CDOT DiExSys™ Roadway Safety Systems Direct Diagnostics, the frequency of approach crashes is in the 95.93th percentile. See Appendix G for the direct diagnostics output.

The rear-end crashes are not likely due to the intersection geometry. The majority of the crashes occurred during congestion in peak commute hours and/or with varying weather conditions. Crashes occurring at this intersection could be from potential queuing during peak hour traffic congestion on the northbound approach of the S University Blvd and E Arapahoe Rd intersection.

***Figure 8. Crash Distribution by Type for S University Boulevard & S York St***



### *S University Boulevard and E Arapahoe Road*

The intersection of S University Boulevard and E Arapahoe Road is four-leg signalized intersection. During the study period, 137 crashes were recorded. Therefore, the intersection was analyzed for crash patterns.

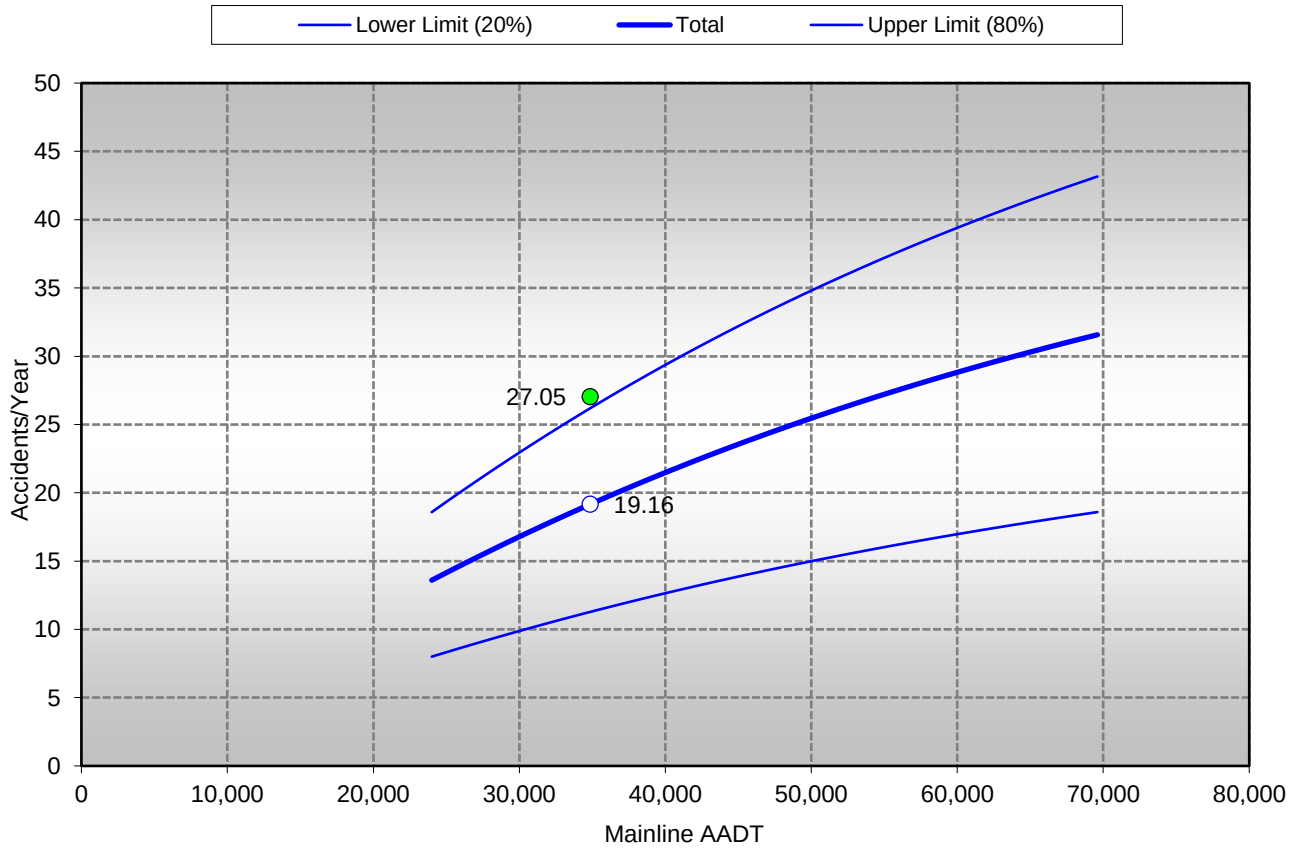
Safety Performance Function Analysis

For this intersection, an average of nearly 28 crashes was observed per year during the study period (uncorrected). Figure 9 shows that the observed crash frequency is above the expected value for an urban six-lane divided signalized four-leg intersection. This indicates that the intersection operates with high potential for crash reduction (LOSS IV).

Crash History

During the five-year study period, there were 137 reported crashes at the intersection of S University Boulevard and E Arapahoe Rd. Figure 10 displays a graphical representation of the crash type distribution for this location. Based on the information from the CDOT DiExSys™ Roadway Safety Systems the frequency of sideswipe (same direction) crashes is higher than expected.

***Figure 9. SPF for S University Boulevard & E Arapahoe Road***

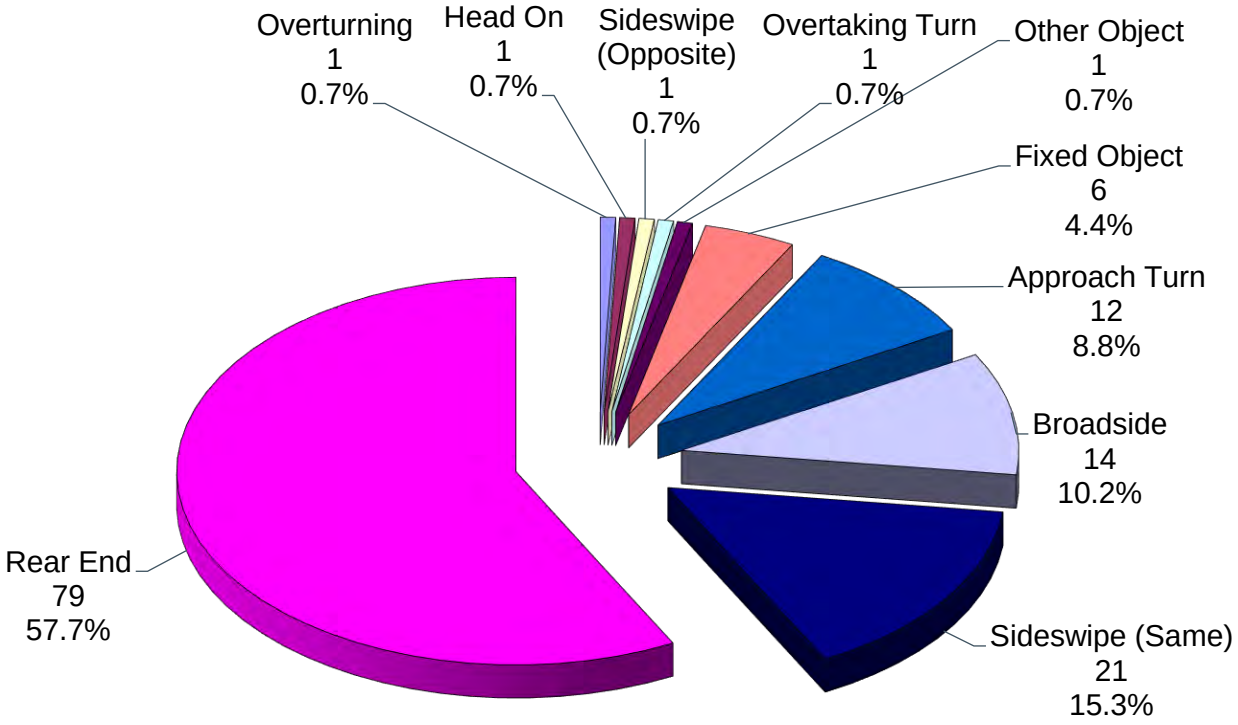


Observations and Recommendations

The frequency of sideswipe (same direction) crashes is higher than expected for this intersection. The recorded sideswipe crashes occurred most commonly during dry weather and during daytime. Only one of the twenty-two sideswipe crashes resulted in injury, with the rest being a property damage only. Based on the information from the CDOT DiExSys™ Roadway Safety Systems the expected percentage for sideswipe crashes at this intersection sideswipe crashes should represent 10.6% of all crashes. At the intersection of Arapahoe Rd and University Blvd the sideswipe crashes represent 15.3% within the five-year time period. The twenty-two sideswipe crashes were distributed by direction and are as follows: ten crashes involved SB vehicles, six crashes involved NB vehicles, four crashes involved WB vehicles, and one crashes involved an EB vehicles. The majority of the sideswipe crashes involved vehicles going straight. Based on the information from the CDOT DiExSys™ Roadway Safety Systems Direct Diagnostics, the frequency of sideswipe (same direction) crashes is in the 96.95 percentile. See Appendix G for the direct diagnostics output.

This array of roadway conditions, travel directions, and vehicle maneuvers shows that although the frequency of sideswipe crashes is high, there is no definitive pattern related to a feature of the intersection and can be attributed to the reduction of lanes of lanes and/or congestion.

***Figure 10. Crash Distribution by Type for S University Boulevard & E Arapahoe Road***



### *E Arapahoe Road and S Vine St*

The intersection of E Arapahoe Road and S Vine St is four-leg signalized intersection. During the study period, 26 crashes were recorded. Therefore, the intersection was analyzed for crash patterns.

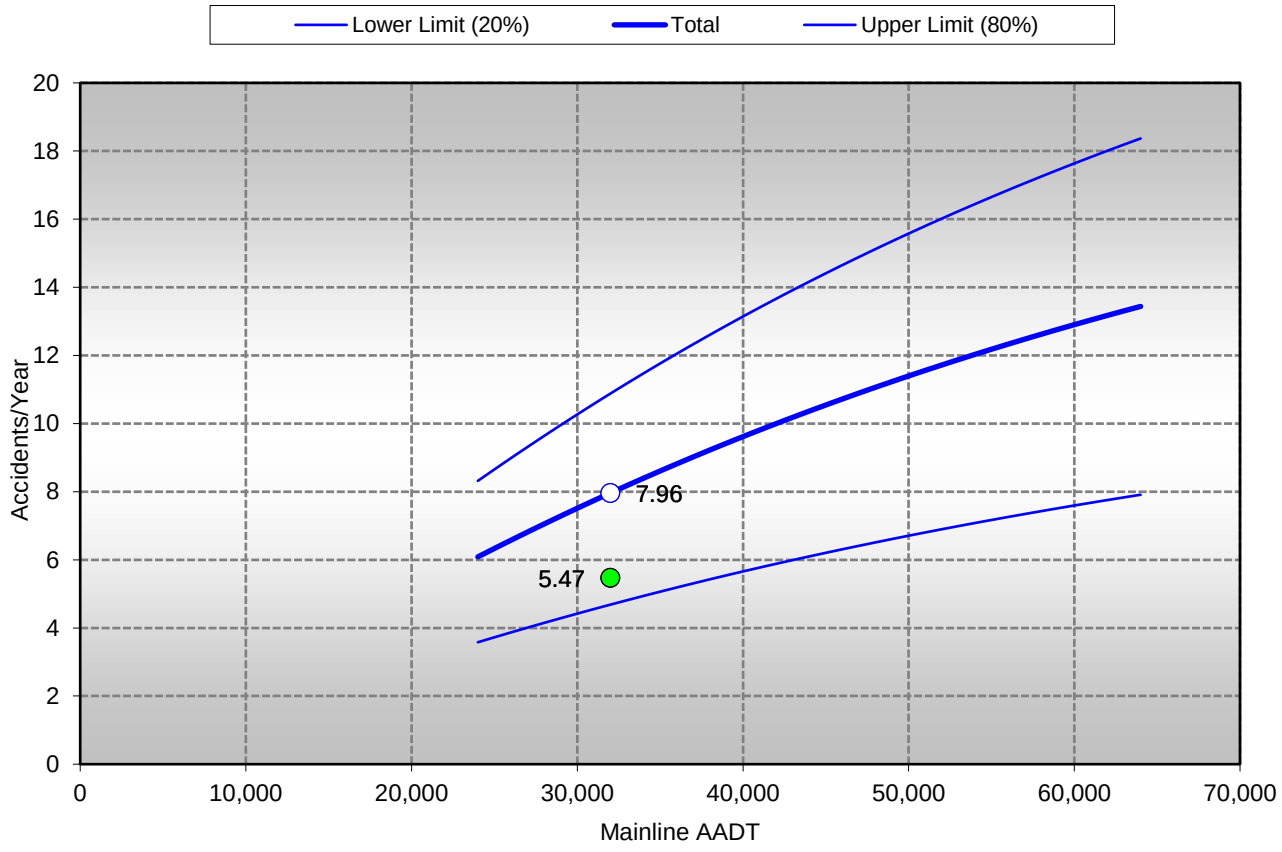
Safety Performance Function Analysis

For this intersection, an average of nearly 5 crashes was observed per year during the study period (uncorrected). Figure 11 shows that this observed crash frequency is below the expected value for an urban four-lane divided signalized four-leg intersection. This indicates that the intersection operates with better than expected level of safety (LOSS II).

Crash History

During the five-year study period, there were 26 reported crashes at the intersection of E Arapahoe Rd and S Vine St. Figure 12 displays a graphical representation of the crash type distribution for this location. Based on the information from the CDOT DiExSys™ Roadway Safety Systems the frequency of approach turn crashes and sideswipe (same direction) crashes is higher than expected.

***Figure 11. SPF for E Arapahoe Road & S Vine St***



Observations and Recommendations

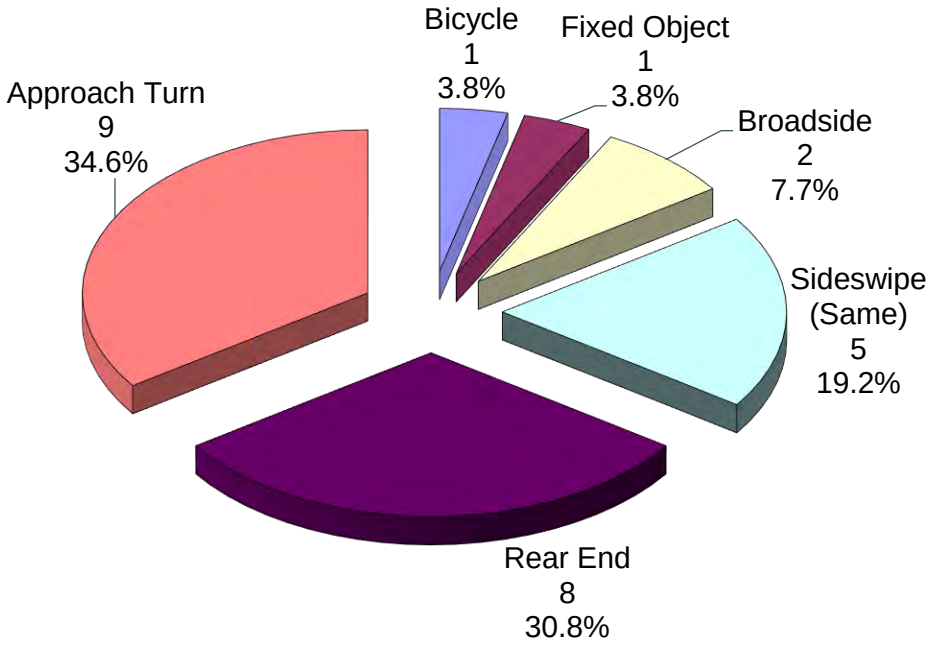
The frequency of approach turn crashes is higher than expected for this intersection. The majority of the approach turn crashes occurred during dry weather conditions and involved two vehicles. The crashes occurred during daytime with dry road conditions with the exception of one wet road accident. Two injuries occurred at the intersection due to approach turn crashes. Based on the information from CDOT DiExSys™ Roadway Safety Systems the expected percentage of approach turn crashes at this specific intersection geometry is 17.2%. The percentage of approach turn crashes observed at this intersection was 34.6%. According to the information acquired from the CDOT DiExSys™ Roadway Safety Systems Direct Diagnostics, the frequency of approach turn crashes is in the 99.19$^{th}$ percentile. See Appendix J for the direct diagnostics output.

Approach Turn crashes at the Arapahoe Rd and Vine St intersection have been identified as left turn movements. The majority of the approach turn crashes occur as vehicles turn onto the mainline. For both the northbound and southbound approach of Vine St the left turns are permitted but not protected. The vehicles leaving Vine St and turning onto Arapahoe Road are crossing the majority of the vehicle traffic. Introducing a protected left turn for the NB and SB approaches on Vine St would reduce approach turn crashes at this intersection.

The frequency of sideswipe (same direction) crashes is higher than expected for this intersection. The majority of the sideswipe crashes at this intersection are due to vehicles changing lanes. Based on the information from CDOT DiExSys™ Roadway Safety Systems the expected percentage of approach turn crashes at this specific intersection geometry is 10.6%. The percentage of approach turn crashes observed at this intersection was 19.2%. According to the information acquired from the CDOT DiExSys™ Roadway Safety Systems Direct Diagnostics, the frequency of approach turn crashes is in the 95$^{th}$ percentile. See Appendix G for the direct diagnostics output.

Sideswipe (same direction) crashes at the Arapahoe Rd and Vine St intersection have been identified as vehicle changing lanes. This can most likely be attributed to the addition of a thru lane as vehicles travel eastbound through the intersection.

***Figure 12. Crash Distribution by Type E Arapahoe Road & S Vine St***



### *E Arapahoe Road and S Race St*

The intersection of E Arapahoe Road and S Race St is three-leg signalized intersection. During the study period, nine crashes were recorded. Therefore, the intersection was analyzed for crash patterns.

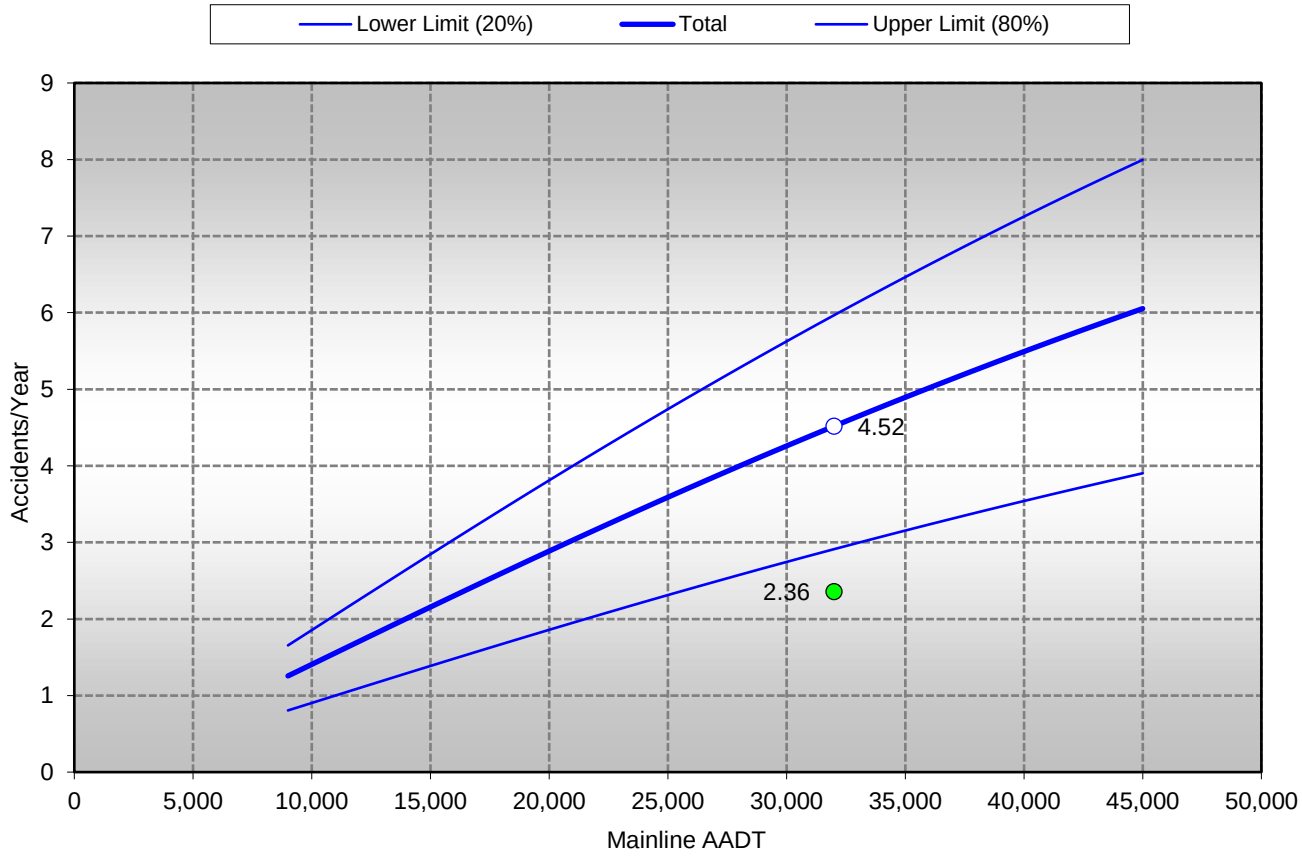
Safety Performance Function Analysis

For this intersection, an average of nearly two crashes was observed per year during the study period (uncorrected). Figure 13 shows that this observed crash frequency is below the expected value for an urban four-lane divided signalized three-leg intersection. This indicates that the intersection operates with better than expected level of safety (LOSS I).

Crash History

During the three-year study period, there were nine reported crashes at the intersection of E Arapahoe Rd and S Race St. Figure 14 displays a graphical representation of the crash type distribution for this location. Based on the information from the CDOT DiExSys™ Roadway Safety Systems the frequency of all crash types is expected, and no single type exceeds a statistical norm expected for the three-leg signalized intersection.

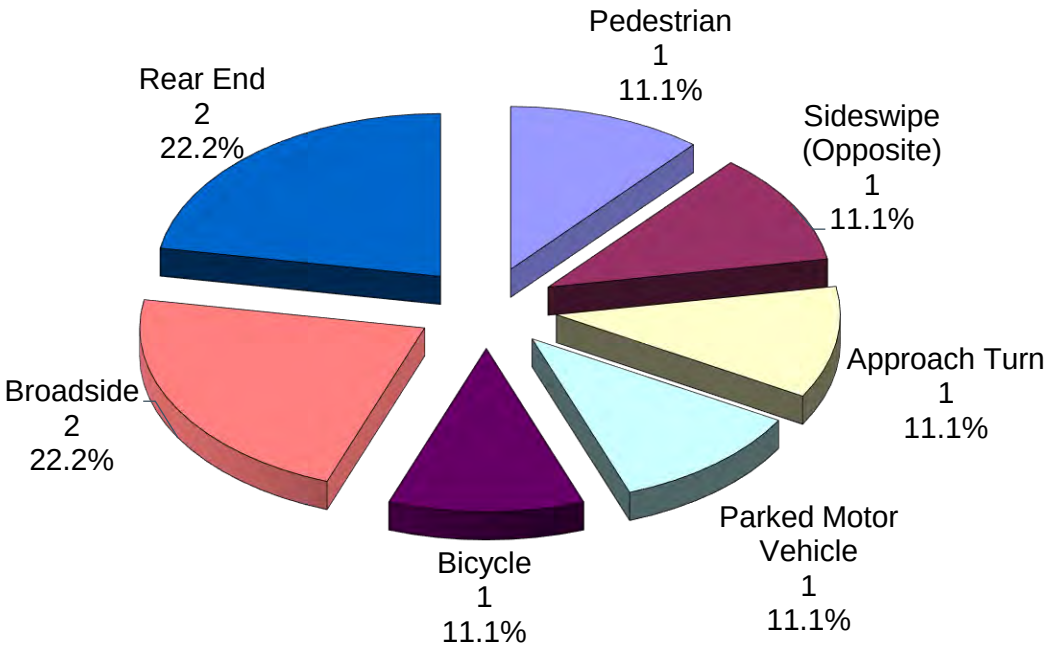
**Figure 13. SPF for E Arapahoe Road & S Vine St**



Observations and Recommendations

The frequency of all crash types for this three-leg signalized intersection with an AADT less than 35,000 is expected. The crash types for the intersection of E Arapahoe Road and S Race St are illustrated below in Figure 14.

**Figure 14. Crash Distribution by Type E Arapahoe Road & S Vine St**



The following intersections experienced less than five crashes during the three-year study period.

***E Arapahoe Road and S York St***

The intersection of E Arapahoe Road and S York St is four-leg unsignalized intersection.
During the study period, four crashes were recorded. Two of the crashes reported at this intersection were approach turn crashes between two vehicles. The result of both crashes was property damage. The other two crashes observed at this intersection were a broadside crash and a rear-end crash.

***S Race St and E Briarwood Ave***

The intersection of S Race St and E Briarwood Ave is three-leg unsignalized intersection. During the study period, one crash was recorded. The single crash reported at this intersection was a parked car crash between two vehicles. The result of the crash was property damage.

***S Race St and E Davies Ave***

The intersection of S Race St and E Davies Ave is three-leg unsignalized intersection. During the study period, one crash was recorded. The single crash reported at this intersection was a parked car crash between two vehicles. The result of the crash was property damage.

***S Race St and E Easter Ave***

The intersection of S Race St and E Easter Ave is three-leg unsignalized intersection. During the study period, one crash was recorded. The single crash reported at this intersection was a broadside crash between two vehicles. The result of the crash was injury.

***Easter Ave and S Vine St***

The intersection of E Easter Ave and S Vine St is three-leg unsignalized intersection. During the study period, one crash was recorded. The single crash reported at this intersection was a broadside crash between two vehicles. The result of the crash was property damage.

***S Race St and E Davies Pl (Garage Access)***

The intersection of S Race St and E Briarwood Ave is four-leg unsignalized intersection. During the study period, one crash was recorded. The single crash reported was a broadside crash. The result of the crash was property damage.

***Easter Ave and Gaylord St***

The intersection of E Easter Ave and Gaylord St is three-leg unsignalized intersection. During the study period, one crash was recorded. The single crash reported was an overtaking turn. The result of the crash was property damage.

***Easter Ave and S York St***

The intersection of E Easter Ave and S York St is three-leg unsignalized intersection. During the study period, no crashes were recorded.

# APPENDIX D. BACKGROUND TRAFFIC OPERATIONAL ANALYSIS WORKSHEETS

# Timings
## 1: Race St & Arapahoe Rd

11/04/2019

| Lane Group | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 1259 | 58 | 32 | 748 | 49 | 36 |
| Future Volume (vph) | 1259 | 58 | 32 | 748 | 49 | 36 |
| Turn Type | NA | Perm | pm+pt | NA | Prot | Perm |
| Protected Phases | 2 | | 1 | 6 | 8 | |
| Permitted Phases | | 2 | 6 | | | 8 |
| Detector Phase | 2 | 2 | 1 | 6 | 8 | 8 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 17.0 | 17.0 | 3.0 | 17.0 | 5.0 | 5.0 |
| Minimum Split (s) | 23.0 | 23.0 | 7.0 | 23.0 | 30.0 | 30.0 |
| Total Split (s) | 76.0 | 76.0 | 12.0 | 88.0 | 32.0 | 32.0 |
| Total Split (%) | 63.3% | 63.3% | 10.0% | 73.3% | 26.7% | 26.7% |
| Yellow Time (s) | 4.0 | 4.0 | 3.0 | 4.0 | 3.0 | 3.0 |
| All-Red Time (s) | 2.0 | 2.0 | 1.0 | 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) | 6.0 | 6.0 | 4.0 | 6.0 | 5.0 | 5.0 |
| Lead/Lag | Lag | Lag | Lead | | | |
| Lead-Lag Optimize? | Yes | Yes | Yes | | | |
| Recall Mode | C-Min | C-Min | None | C-Min | None | None |
| Act Effct Green (s) | 96.0 | 96.0 | 102.3 | 101.5 | 10.7 | 10.7 |
| Actuated g/C Ratio | 0.80 | 0.80 | 0.85 | 0.85 | 0.09 | 0.09 |
| v/c Ratio | 0.45 | 0.05 | 0.09 | 0.18 | 0.32 | 0.22 |
| Control Delay | 6.8 | 3.7 | 1.8 | 1.2 | 53.5 | 16.2 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 6.8 | 3.7 | 1.8 | 1.2 | 53.5 | 16.2 |
| LOS | A | A | A | A | D | B |
| Approach Delay | 6.7 | | | 1.2 | 37.6 | |
| Approach LOS | A | | | A | D | |

| Intersection Summary | |
|---|---|
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 111 (93%), Referenced to phase 2:EBT and 6:WBTL, Start of 1st Green | |
| Natural Cycle: 70 | |
| Control Type: Actuated-Coordinated | |
| Maximum v/c Ratio: 0.45 | |
| Intersection Signal Delay: 6.0 | Intersection LOS: A |
| Intersection Capacity Utilization 50.7% | ICU Level of Service A |
| Analysis Period (min) 15 | |

Splits and Phases: 1: Race St & Arapahoe Rd

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 1259 | 58 | 32 | 748 | 49 | 36 |
| Future Volume (veh/h) | 1259 | 58 | 32 | 748 | 49 | 36 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | | 1.00 | 1.00 | | 1.00 | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | No | | | No | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 1285 | 59 | 33 | 763 | 50 | 37 |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 2899 | 1287 | 379 | 4420 | 76 | 68 |
| Arrive On Green | 0.82 | 0.82 | 0.02 | 0.87 | 0.04 | 0.04 |
| Sat Flow, veh/h | 3647 | 1578 | 1781 | 5274 | 1781 | 1585 |
| Grp Volume(v), veh/h | 1285 | 59 | 33 | 763 | 50 | 37 |
| Grp Sat Flow(s),veh/h/ln | 1777 | 1578 | 1781 | 1702 | 1781 | 1585 |
| Q Serve(g_s), s | 12.5 | 0.9 | 0.3 | 2.8 | 3.3 | 2.7 |
| Cycle Q Clear(g_c), s | 12.5 | 0.9 | 0.3 | 2.8 | 3.3 | 2.7 |
| Prop In Lane | | 1.00 | 1.00 | | 1.00 | 1.00 |
| Lane Grp Cap(c), veh/h | 2899 | 1287 | 379 | 4420 | 76 | 68 |
| V/C Ratio(X) | 0.44 | 0.05 | 0.09 | 0.17 | 0.66 | 0.55 |
| Avail Cap(c_a), veh/h | 2899 | 1287 | 468 | 4420 | 401 | 357 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.98 | 0.98 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 3.2 | 2.1 | 2.4 | 1.3 | 56.6 | 56.3 |
| Incr Delay (d2), s/veh | 0.5 | 0.1 | 0.0 | 0.1 | 3.6 | 2.5 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 3.0 | 0.2 | 0.1 | 0.4 | 1.6 | 1.1 |
| Unsig. Movement Delay, s/veh | | | | | | |
| LnGrp Delay(d),s/veh | 3.7 | 2.2 | 2.4 | 1.4 | 60.1 | 58.8 |
| LnGrp LOS | A | A | A | A | E | E |
| Approach Vol, veh/h | 1344 | | | 796 | 87 | |
| Approach Delay, s/veh | 3.6 | | | 1.4 | 59.6 | |
| Approach LOS | A | | | A | E | |

| Timer - Assigned Phs | 1 | 2 | | | | 6 | 8 |
|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 6.0 | 103.9 | | | | 109.9 | 10.1 |
| Change Period (Y+Rc), s | 4.0 | 6.0 | | | | 6.0 | 5.0 |
| Max Green Setting (Gmax), s | 8.0 | 70.0 | | | | 82.0 | 27.0 |
| Max Q Clear Time (g_c+I1), s | 2.3 | 14.5 | | | | 4.8 | 5.3 |
| Green Ext Time (p_c), s | 0.0 | 7.4 | | | | 3.8 | 0.1 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 5.0 |
| HCM 6th LOS | A |

| Lane Group | EBL | EBT | WBL | WBT | NBT | NBR | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | |
| Traffic Volume (vph) | 50 | 1196 | 53 | 710 | 6 | 42 | 4 | 27 |
| Future Volume (vph) | 50 | 1196 | 53 | 710 | 6 | 42 | 4 | 27 |
| Turn Type | pm+pt | NA | pm+pt | NA | NA | Perm | NA | Perm |
| Protected Phases | 5 | 2 | 1 | 6 | 8 | | 4 | |
| Permitted Phases | 2 | | 6 | | | 8 | | 4 |
| Detector Phase | 5 | 2 | 1 | 6 | 8 | 8 | 4 | 4 |
| Switch Phase | | | | | | | | |
| Minimum Initial (s) | 3.0 | 17.0 | 3.0 | 17.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Minimum Split (s) | 7.0 | 26.0 | 7.0 | 23.0 | 35.0 | 35.0 | 34.0 | 34.0 |
| Total Split (s) | 12.0 | 72.0 | 12.0 | 72.0 | 18.0 | 18.0 | 18.0 | 18.0 |
| Total Split (%) | 10.0% | 60.0% | 10.0% | 60.0% | 15.0% | 15.0% | 15.0% | 15.0% |
| Yellow Time (s) | 3.0 | 4.0 | 3.0 | 4.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| All-Red Time (s) | 1.0 | 2.0 | 1.0 | 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) | 4.0 | 6.0 | 4.0 | 6.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Lead/Lag | Lead | Lag | Lead | Lag | | | | |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | | | | |
| Recall Mode | None | C-Min | None | C-Min | None | None | None | None |
| Act Effct Green (s) | 86.0 | 79.3 | 86.1 | 79.4 | 8.3 | 8.3 | 10.4 | 10.4 |
| Actuated g/C Ratio | 0.72 | 0.66 | 0.72 | 0.66 | 0.07 | 0.07 | 0.09 | 0.09 |
| v/c Ratio | 0.11 | 0.39 | 0.19 | 0.26 | 0.42 | 0.21 | 0.63 | 0.12 |
| Control Delay | 6.8 | 10.2 | 3.8 | 2.2 | 62.7 | 2.3 | 70.6 | 1.0 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 6.8 | 10.2 | 3.8 | 2.2 | 62.7 | 2.3 | 70.6 | 1.0 |
| LOS | A | B | A | A | E | A | E | A |
| Approach Delay | | 10.1 | | 2.3 | 35.0 | | 55.0 | |
| Approach LOS | | B | | A | D | | E | |

| Intersection Summary | |
|---|---|
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 102 (85%), Referenced to phase 2:EBTL and 6:WBTL, Start of 1st Green | |
| Natural Cycle: 105 | |
| Control Type: Actuated-Coordinated | |
| Maximum v/c Ratio: 0.63 | |
| Intersection Signal Delay: 10.5 | Intersection LOS: B |
| Intersection Capacity Utilization 53.9% | ICU Level of Service A |
| Analysis Period (min) 15 | |

Splits and Phases: 2: Vine St & Arapahoe Rd

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 50 | 1196 | 50 | 53 | 710 | 96 | 44 | 6 | 42 | 88 | 4 | 27 |
| Future Volume (veh/h) | 50 | 1196 | 50 | 53 | 710 | 96 | 44 | 6 | 42 | 88 | 4 | 27 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 0.99 | 1.00 | | 0.99 | 1.00 | | 0.95 | 1.00 | | 0.96 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 53 | 1259 | 53 | 56 | 747 | 101 | 46 | 6 | 44 | 93 | 4 | 28 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 541 | 3428 | 144 | 386 | 3109 | 417 | 85 | 11 | 80 | 129 | 6 | 115 |
| Arrive On Green | 0.04 | 1.00 | 1.00 | 0.04 | 1.00 | 1.00 | 0.05 | 0.05 | 0.05 | 0.08 | 0.08 | 0.08 |
| Sat Flow, veh/h | 1781 | 5024 | 211 | 1781 | 4550 | 610 | 1584 | 207 | 1505 | 1711 | 74 | 1528 |
| Grp Volume(v), veh/h | 53 | 853 | 459 | 56 | 557 | 291 | 52 | 0 | 44 | 97 | 0 | 28 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1702 | 1831 | 1781 | 1702 | 1757 | 1791 | 0 | 1505 | 1785 | 0 | 1528 |
| Q Serve(g_s), s | 1.1 | 0.0 | 0.0 | 1.2 | 0.0 | 0.0 | 3.4 | 0.0 | 3.4 | 6.4 | 0.0 | 2.1 |
| Cycle Q Clear(g_c), s | 1.1 | 0.0 | 0.0 | 1.2 | 0.0 | 0.0 | 3.4 | 0.0 | 3.4 | 6.4 | 0.0 | 2.1 |
| Prop In Lane | 1.00 | | 0.12 | 1.00 | | 0.35 | 0.88 | | 1.00 | 0.96 | | 1.00 |
| Lane Grp Cap(c), veh/h | 541 | 2323 | 1249 | 386 | 2326 | 1200 | 96 | 0 | 80 | 134 | 0 | 115 |
| V/C Ratio(X) | 0.10 | 0.37 | 0.37 | 0.15 | 0.24 | 0.24 | 0.54 | 0.00 | 0.55 | 0.72 | 0.00 | 0.24 |
| Avail Cap(c_a), veh/h | 621 | 2323 | 1249 | 464 | 2326 | 1200 | 194 | 0 | 163 | 193 | 0 | 166 |
| HCM Platoon Ratio | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.89 | 0.89 | 0.89 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 5.3 | 0.0 | 0.0 | 5.3 | 0.0 | 0.0 | 55.4 | 0.0 | 55.4 | 54.3 | 0.0 | 52.3 |
| Incr Delay (d2), s/veh | 0.0 | 0.4 | 0.7 | 0.1 | 0.2 | 0.5 | 1.8 | 0.0 | 2.2 | 2.8 | 0.0 | 0.4 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.4 | 0.1 | 0.3 | 0.4 | 0.1 | 0.2 | 1.6 | 0.0 | 1.4 | 3.0 | 0.0 | 0.8 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 5.3 | 0.4 | 0.7 | 5.3 | 0.2 | 0.5 | 57.2 | 0.0 | 57.5 | 57.1 | 0.0 | 52.7 |
| LnGrp LOS | A | A | A | A | A | A | E | A | E | E | A | D |
| Approach Vol, veh/h | | 1365 | | | 904 | | | 96 | | | 125 | |
| Approach Delay, s/veh | | 0.7 | | | 0.6 | | | 57.3 | | | 56.1 | |
| Approach LOS | | A | | | A | | | E | | | E | |

| Timer - Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 6.7 | 87.9 | | 14.0 | 6.6 | 88.0 | | 11.4 |
| Change Period (Y+Rc), s | 4.0 | 6.0 | | 5.0 | 4.0 | 6.0 | | 5.0 |
| Max Green Setting (Gmax), s | 8.0 | 66.0 | | 13.0 | 8.0 | 66.0 | | 13.0 |
| Max Q Clear Time (g_c+I1), s | 3.2 | 2.0 | | 8.4 | 3.1 | 2.0 | | 5.4 |
| Green Ext Time (p_c), s | 0.0 | 7.0 | | 0.1 | 0.0 | 3.9 | | 0.1 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 5.6 |
| HCM 6th LOS | A |

Notes

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

| 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 | 11 | 1285 | 29 | 22 | 851 | 10 | 0 | 0 | 39 | 0 | 0 | 8 |
| Future Vol, veh/h | 11 | 1285 | 29 | 22 | 851 | 10 | 0 | 0 | 39 | 0 | 0 | 8 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | 150 | - | 0 | 100 | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 12 | 1397 | 32 | 24 | 925 | 11 | 0 | 0 | 42 | 0 | 0 | 9 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 936 | 0 | 0 | 1429 | 0 | 0 | - | 2405 | 699 | - | 2432 | 468 |
| Stage 1 | - | - | - | - | - | - | - | 1421 | - | - | 979 | - |
| Stage 2 | - | - | - | - | - | - | - | 984 | - | - | 1453 | - |
| Critical Hdwy | 5.34 | - | - | 5.34 | - | - | - | 6.54 | 7.14 | - | 6.54 | 7.14 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | - | 5.54 | - | - | 5.54 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | - | 5.54 | - | - | 5.54 | - |
| Follow-up Hdwy | 3.12 | - | - | 3.12 | - | - | - | 4.02 | 3.92 | - | 4.02 | 3.92 |
| Pot Cap-1 Maneuver | 862 | - | - | 771 | - | - | 0 | 327 | *629 | 0 | 305 | *738 |
| Stage 1 | - | - | - | - | - | - | 0 | 607 | - | 0 | 637 | - |
| Stage 2 | - | - | - | - | - | - | 0 | 633 | - | 0 | 579 | - |
| Platoon blocked, % | 1 | - | - | 1 | - | - | | 1 | 1 | | 1 | 1 |
| Mov Cap-1 Maneuver | 862 | - | - | 771 | - | - | - | 312 | *629 | - | 291 | *738 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | - | 312 | - | - | 291 | - |
| Stage 1 | - | - | - | - | - | - | - | 598 | - | - | 618 | - |
| Stage 2 | - | - | - | - | - | - | - | 614 | - | - | 571 | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 0.1 | 0.2 | 11.1 | 9.9 |
| HCM LOS | | | B | A |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 629 | 862 | - | - | 771 | - | - | 738 |
| HCM Lane V/C Ratio | 0.067 | 0.014 | - | - | 0.031 | - | - | 0.012 |
| HCM Control Delay (s) | 11.1 | 9.2 | - | - | 9.8 | - | - | 9.9 |
| HCM Lane LOS | B | A | - | - | A | - | - | A |
| HCM 95th %tile Q(veh) | 0.2 | 0 | - | - | 0.1 | - | - | 0 |

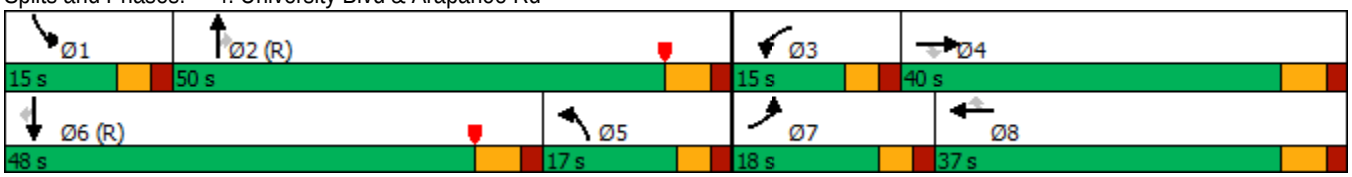
Notes

~: 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) | 195 | 963 | 166 | 213 | 573 | 382 | 188 | 1221 | 187 | 246 | 818 | 121 |
| Future Volume (vph) | 195 | 963 | 166 | 213 | 573 | 382 | 188 | 1221 | 187 | 246 | 818 | 121 |
| Turn Type | Prot | NA | Perm | Prot | NA | Perm | Prot | NA | Perm | Prot | NA | Perm |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | | | 4 | | | 8 | | | 2 | | | 6 |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | 8 | 5 | 2 | 2 | 1 | 6 | 6 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 | 3.0 | 10.0 | 10.0 | 3.0 | 10.0 | 10.0 |
| Minimum Split (s) | 8.0 | 39.0 | 39.0 | 8.0 | 37.0 | 37.0 | 8.0 | 35.0 | 35.0 | 8.0 | 40.0 | 40.0 |
| Total Split (s) | 18.0 | 40.0 | 40.0 | 15.0 | 37.0 | 37.0 | 17.0 | 50.0 | 50.0 | 15.0 | 48.0 | 48.0 |
| Total Split (%) | 15.0% | 33.3% | 33.3% | 12.5% | 30.8% | 30.8% | 14.2% | 41.7% | 41.7% | 12.5% | 40.0% | 40.0% |
| Yellow Time (s) | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 |
| 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 | 0.0 |
| Total Lost Time (s) | 5.0 | 6.0 | 6.0 | 5.0 | 6.0 | 6.0 | 5.0 | 6.0 | 6.0 | 5.0 | 6.0 | 6.0 |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lag | Lag | Lag | Lead | Lead | Lead |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | None | None | None | None | None | None | C-Min | C-Min | None | C-Min | C-Min |
| Act Effct Green (s) | 10.7 | 29.8 | 29.8 | 9.7 | 28.8 | 28.8 | 19.6 | 48.5 | 48.5 | 10.0 | 38.9 | 38.9 |
| Actuated g/C Ratio | 0.09 | 0.25 | 0.25 | 0.08 | 0.24 | 0.24 | 0.16 | 0.40 | 0.40 | 0.08 | 0.32 | 0.32 |
| v/c Ratio | 0.67 | 0.80 | 0.34 | 0.80 | 0.49 | 0.74 | 0.35 | 0.62 | 0.26 | 0.90 | 0.52 | 0.21 |
| Control Delay | 75.1 | 39.8 | 7.3 | 75.7 | 40.5 | 28.4 | 40.6 | 24.1 | 3.3 | 86.8 | 34.3 | 5.6 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 75.1 | 39.8 | 7.3 | 75.7 | 40.5 | 28.4 | 40.6 | 24.1 | 3.3 | 86.8 | 34.3 | 5.6 |
| LOS | E | D | A | E | D | C | D | C | A | F | C | A |
| Approach Delay | | 40.9 | | | 43.0 | | | 23.6 | | | 42.2 | |
| Approach LOS | | D | | | D | | | C | | | D | |

| Intersection Summary | |
|---|---|
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 38 (32%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow | |
| Natural Cycle: 95 | |
| Control Type: Actuated-Coordinated | |
| Maximum v/c Ratio: 0.90 | |
| Intersection Signal Delay: 36.4 | Intersection LOS: D |
| Intersection Capacity Utilization 75.6% | ICU Level of Service D |
| Analysis Period (min) 15 | |

Splits and Phases: 4: University Blvd & Arapahoe Rd



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 195 | 963 | 166 | 213 | 573 | 382 | 188 | 1221 | 187 | 246 | 818 | 121 |
| Future Volume (veh/h) | 195 | 963 | 166 | 213 | 573 | 382 | 188 | 1221 | 187 | 246 | 818 | 121 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 0.99 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.99 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 203 | 1003 | 173 | 222 | 597 | 0 | 196 | 1272 | 195 | 256 | 852 | 126 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 262 | 1235 | 381 | 276 | 1256 | | 796 | 2101 | 650 | 288 | 1309 | 404 |
| Arrive On Green | 0.03 | 0.08 | 0.08 | 0.08 | 0.25 | 0.00 | 0.23 | 0.41 | 0.41 | 0.08 | 0.26 | 0.26 |
| Sat Flow, veh/h | 3456 | 5106 | 1575 | 3456 | 5106 | 1585 | 3456 | 5106 | 1579 | 3456 | 5106 | 1576 |
| Grp Volume(v), veh/h | 203 | 1003 | 173 | 222 | 597 | 0 | 196 | 1272 | 195 | 256 | 852 | 126 |
| Grp Sat Flow(s),veh/h/ln | 1728 | 1702 | 1575 | 1728 | 1702 | 1585 | 1728 | 1702 | 1579 | 1728 | 1702 | 1576 |
| Q Serve(g_s), s | 7.0 | 23.2 | 7.1 | 7.6 | 12.0 | 0.0 | 5.6 | 23.4 | 9.9 | 8.8 | 17.9 | 6.0 |
| Cycle Q Clear(g_c), s | 7.0 | 23.2 | 7.1 | 7.6 | 12.0 | 0.0 | 5.6 | 23.4 | 9.9 | 8.8 | 17.9 | 6.0 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 262 | 1235 | 381 | 276 | 1256 | | 796 | 2101 | 650 | 288 | 1309 | 404 |
| V/C Ratio(X) | 0.78 | 0.81 | 0.45 | 0.80 | 0.48 | | 0.25 | 0.61 | 0.30 | 0.89 | 0.65 | 0.31 |
| Avail Cap(c_a), veh/h | 374 | 1447 | 446 | 288 | 1319 | | 796 | 2101 | 650 | 288 | 1787 | 552 |
| HCM Platoon Ratio | 0.33 | 0.33 | 0.33 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 57.5 | 52.5 | 15.2 | 54.3 | 38.6 | 0.0 | 37.7 | 27.7 | 23.7 | 54.5 | 39.8 | 21.7 |
| Incr Delay (d2), s/veh | 3.6 | 2.7 | 0.3 | 13.4 | 0.1 | 0.0 | 0.1 | 1.3 | 1.2 | 26.1 | 2.5 | 2.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 3.3 | 10.9 | 2.7 | 3.8 | 5.0 | 0.0 | 2.3 | 9.5 | 3.9 | 4.8 | 7.6 | 3.1 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 61.1 | 55.2 | 15.5 | 67.7 | 38.7 | 0.0 | 37.7 | 29.0 | 24.9 | 80.6 | 42.4 | 23.7 |
| LnGrp LOS | E | E | B | E | D | | D | C | C | F | D | C |
| Approach Vol, veh/h | | 1379 | | | 819 | A | | 1663 | | | 1234 | |
| Approach Delay, s/veh | | 51.1 | | | 46.6 | | | 29.5 | | | 48.4 | |
| Approach LOS | | D | | | D | | | C | | | D | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 15.0 | 55.4 | 14.6 | 35.0 | 33.6 | 36.8 | 14.1 | 35.5 |
| Change Period (Y+Rc), s | 5.0 | 6.0 | 5.0 | 6.0 | 6.0 | * 6 | 5.0 | 6.0 |
| Max Green Setting (Gmax), s | 10.0 | 44.0 | 10.0 | 34.0 | 12.0 | * 42 | 13.0 | 31.0 |
| Max Q Clear Time (g_c+I1), s | 10.8 | 25.4 | 9.6 | 25.2 | 7.6 | 19.9 | 9.0 | 14.0 |
| Green Ext Time (p_c), s | 0.0 | 13.7 | 0.0 | 3.5 | 0.1 | 10.9 | 0.1 | 2.5 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 42.7 |
| HCM 6th LOS | D |

Notes

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

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.1 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | ↱ | | | ↱ | | ↑↑↑↳ | | | ↑↑↑ | ↱ |
| Traffic Vol, veh/h | 0 | 0 | 21 | 0 | 0 | 9 | 0 | 1611 | 2 | 0 | 1138 | 58 |
| Future Vol, veh/h | 0 | 0 | 21 | 0 | 0 | 9 | 0 | 1611 | 2 | 0 | 1138 | 58 |
| 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 | - | - | 0 | - | - | 0 | - | - | - | - | - | 0 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 | 100 | 100 | 92 | 92 | 100 | 100 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 0 | 23 | 0 | 0 | 10 | 0 | 1611 | 2 | 0 | 1138 | 58 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | - | - | 569 | - | - | 807 | - | 0 | 0 | - | - | 0 |
| Stage 1 | - | - | - | - | - | - | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - | - | - | - | - | - | - |
| Critical Hdwy | - | - | 7.14 | - | - | 7.14 | - | - | - | - | - | - |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | - | - | - | - | - | - |
| Follow-up Hdwy | - | - | 3.92 | - | - | 3.92 | - | - | - | - | - | - |
| Pot Cap-1 Maneuver | 0 | 0 | *653 | 0 | 0 | 279 | 0 | - | - | 0 | - | - |
| Stage 1 | 0 | 0 | - | 0 | 0 | - | 0 | - | - | 0 | - | - |
| Stage 2 | 0 | 0 | - | 0 | 0 | - | 0 | - | - | 0 | - | - |
| Platoon blocked, % | | | 1 | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | - | - | *653 | - | - | 279 | - | - | - | - | - | - |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | - | - | - | - | - | - |
| Stage 1 | - | - | - | - | - | - | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 10.7 | 18.4 | 0 | 0 |
| HCM LOS | B | C | | |

| Minor Lane/Major Mvmt | NBT | NBR | EBLn1 | WBLn1 | SBT | SBR |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 653 | 279 | - | - |
| HCM Lane V/C Ratio | - | - | 0.035 | 0.035 | - | - |
| HCM Control Delay (s) | - | - | 10.7 | 18.4 | - | - |
| HCM Lane LOS | - | - | B | C | - | - |
| HCM 95th %tile Q(veh) | - | - | 0.1 | 0.1 | - | - |

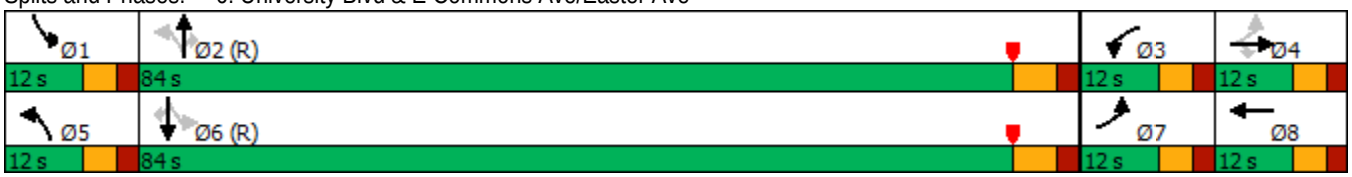
Notes

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

| Lane Group | EBL | EBT | EBR | WBL | WBT | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | |
| Traffic Volume (vph) | 66 | 5 | 47 | 54 | 12 | 98 | 1500 | 31 | 7 | 1089 | 48 |
| Future Volume (vph) | 66 | 5 | 47 | 54 | 12 | 98 | 1500 | 31 | 7 | 1089 | 48 |
| Turn Type | pm+pt | NA | Perm | Prot | NA | pm+pt | NA | Perm | pm+pt | NA | Perm |
| Protected Phases | 7 | 4 | | 3 | 8 | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | 4 | | | 2 | | 2 | 6 | | 6 |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | 5 | 2 | 2 | 1 | 6 | 6 |
| Switch Phase | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 3.0 | 4.0 | 3.0 | 3.0 | 5.0 | 5.0 | 3.0 | 5.0 | 5.0 |
| Minimum Split (s) | 8.0 | 35.0 | 35.0 | 9.0 | 32.0 | 8.0 | 24.0 | 24.0 | 8.0 | 29.0 | 29.0 |
| Total Split (s) | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 84.0 | 84.0 | 12.0 | 84.0 | 84.0 |
| Total Split (%) | 10.0% | 10.0% | 10.0% | 10.0% | 10.0% | 10.0% | 70.0% | 70.0% | 10.0% | 70.0% | 70.0% |
| Yellow Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 |
| 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) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 6.0 | 6.0 | 5.0 | 6.0 | 6.0 |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lead | Lag | Lag | Lead | Lag | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | None | None | None | None | None | C-Min | C-Min | None | C-Min | C-Min |
| Act Effct Green (s) | 11.0 | 5.6 | 5.6 | 7.2 | 6.2 | 95.8 | 94.6 | 94.6 | 89.9 | 84.3 | 84.3 |
| Actuated g/C Ratio | 0.09 | 0.05 | 0.05 | 0.06 | 0.05 | 0.80 | 0.79 | 0.79 | 0.75 | 0.70 | 0.70 |
| v/c Ratio | 0.26 | 0.07 | 0.29 | 0.58 | 0.44 | 0.35 | 0.62 | 0.03 | 0.04 | 0.50 | 0.05 |
| Control Delay | 46.9 | 55.6 | 3.9 | 77.4 | 35.4 | 5.4 | 6.0 | 0.0 | 2.6 | 6.9 | 0.2 |
| 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 | 46.9 | 55.6 | 3.9 | 77.4 | 35.4 | 5.4 | 6.1 | 0.0 | 2.6 | 6.9 | 0.2 |
| LOS | D | E | A | E | D | A | A | A | A | A | A |
| Approach Delay | | 30.2 | | | 58.2 | | 5.9 | | | 6.6 | |
| Approach LOS | | C | | | E | | A | | | A | |

| Intersection Summary | |
|---|---|
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 50 (42%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow | |
| Natural Cycle: 105 | |
| Control Type: Actuated-Coordinated | |
| Maximum v/c Ratio: 0.62 | |
| Intersection Signal Delay: 8.9 | Intersection LOS: A |
| Intersection Capacity Utilization 70.7% | ICU Level of Service C |
| Analysis Period (min) 15 | |

Splits and Phases: 6: University Blvd & E Commons Ave/Easter Ave



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 66 | 5 | 47 | 54 | 12 | 33 | 98 | 1500 | 31 | 7 | 1089 | 48 |
| Future Volume (veh/h) | 66 | 5 | 47 | 54 | 12 | 33 | 98 | 1500 | 31 | 7 | 1089 | 48 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 0.91 | | 1.00 | 1.00 | | 0.94 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 76 | 6 | 0 | 62 | 14 | 38 | 113 | 1724 | 36 | 8 | 1252 | 0 |
| Peak Hour Factor | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 285 | 77 | | 80 | 22 | 59 | 362 | 2605 | 1158 | 262 | 2504 | |
| Arrive On Green | 0.03 | 0.04 | 0.00 | 0.04 | 0.05 | 0.05 | 0.07 | 1.00 | 1.00 | 0.01 | 0.70 | 0.00 |
| Sat Flow, veh/h | 3456 | 1870 | 1585 | 1781 | 423 | 1148 | 1781 | 3554 | 1580 | 1781 | 3554 | 1585 |
| Grp Volume(v), veh/h | 76 | 6 | 0 | 62 | 0 | 52 | 113 | 1724 | 36 | 8 | 1252 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1728 | 1870 | 1585 | 1781 | 0 | 1571 | 1781 | 1777 | 1580 | 1781 | 1777 | 1585 |
| Q Serve(g_s), s | 2.5 | 0.4 | 0.0 | 4.1 | 0.0 | 3.9 | 2.2 | 0.0 | 0.0 | 0.2 | 19.3 | 0.0 |
| Cycle Q Clear(g_c), s | 2.5 | 0.4 | 0.0 | 4.1 | 0.0 | 3.9 | 2.2 | 0.0 | 0.0 | 0.2 | 19.3 | 0.0 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.73 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 285 | 77 | | 80 | 0 | 81 | 362 | 2605 | 1158 | 262 | 2504 | |
| V/C Ratio(X) | 0.27 | 0.08 | | 0.78 | 0.00 | 0.64 | 0.31 | 0.66 | 0.03 | 0.03 | 0.50 | |
| Avail Cap(c_a), veh/h | 367 | 109 | | 104 | 0 | 92 | 405 | 2605 | 1158 | 356 | 2504 | |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 2.00 | 2.00 | 2.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 52.4 | 55.3 | 0.0 | 56.7 | 0.0 | 55.8 | 6.2 | 0.0 | 0.0 | 5.0 | 8.1 | 0.0 |
| Incr Delay (d2), s/veh | 0.2 | 0.2 | 0.0 | 23.6 | 0.0 | 7.8 | 0.2 | 1.3 | 0.0 | 0.0 | 0.7 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 1.1 | 0.2 | 0.0 | 2.4 | 0.0 | 1.7 | 0.6 | 0.5 | 0.0 | 0.1 | 6.5 | 0.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 52.6 | 55.5 | 0.0 | 80.4 | 0.0 | 63.7 | 6.4 | 1.3 | 0.0 | 5.1 | 8.8 | 0.0 |
| LnGrp LOS | D | E | | F | A | E | A | A | A | A | A | |
| Approach Vol, veh/h | | 82 | A | | 114 | | | 1873 | | | 1260 | A |
| Approach Delay, s/veh | | 52.8 | | | 72.7 | | | 1.6 | | | 8.8 | |
| Approach LOS | | D | | | E | | | A | | | A | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 5.7 | 94.0 | 10.4 | 10.0 | 9.1 | 90.6 | 9.2 | 11.2 |
| Change Period (Y+Rc), s | 5.0 | 6.0 | 5.0 | 5.0 | 5.0 | 6.0 | 5.0 | 5.0 |
| Max Green Setting (Gmax), s | 7.0 | 78.0 | 7.0 | 7.0 | 7.0 | 78.0 | 7.0 | 7.0 |
| Max Q Clear Time (g_c+I1), s | 2.2 | 2.0 | 6.1 | 2.4 | 4.2 | 21.3 | 4.5 | 5.9 |
| Green Ext Time (p_c), s | 0.0 | 49.8 | 0.0 | 0.0 | 0.0 | 25.9 | 0.0 | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 8.0 |
| HCM 6th LOS | A |

Notes

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

Unsignalized Delay for [EBR, SBR] is excluded from calculations of the approach delay and intersection delay.

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.3 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 8 | 23 | 33 | 1633 | 1176 | 14 |
| Future Vol, veh/h | 8 | 23 | 33 | 1633 | 1176 | 14 |
| 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 | - | 120 | - | - | 0 |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 100 | 100 | 100 | 100 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 9 | 25 | 33 | 1633 | 1176 | 14 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 2059 | 588 | 1190 | 0 | - | 0 |
| Stage 1 | 1176 | - | - | - | - | - |
| Stage 2 | 883 | - | - | - | - | - |
| Critical Hdwy | 6.84 | 6.94 | 4.14 | - | - | - |
| Critical Hdwy Stg 1 | 5.84 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.84 | - | - | - | - | - |
| Follow-up Hdwy | 3.52 | 3.32 | 2.22 | - | - | - |
| Pot Cap-1 Maneuver | *259 | *593 | *887 | - | - | - |
| Stage 1 | *560 | - | - | - | - | - |
| Stage 2 | *391 | - | - | - | - | - |
| Platoon blocked, % | 1 | 1 | 1 | - | - | - |
| Mov Cap-1 Maneuver | *249 | *593 | *887 | - | - | - |
| Mov Cap-2 Maneuver | *249 | - | - | - | - | - |
| Stage 1 | *539 | - | - | - | - | - |
| Stage 2 | *391 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 13.9 | 0.2 | 0 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | * 887 | - | 437 | - | - |
| HCM Lane V/C Ratio | 0.037 | - | 0.077 | - | - |
| HCM Control Delay (s) | 9.2 | - | 13.9 | - | - |
| HCM Lane LOS | A | - | B | - | - |
| HCM 95th %tile Q(veh) | 0.1 | - | 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 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | |
| Traffic Volume (vph) | 63 | 17 | 64 | 26 | 27 | 65 | 154 | 1539 | 26 | 1138 | 35 |
| Future Volume (vph) | 63 | 17 | 64 | 26 | 27 | 65 | 154 | 1539 | 26 | 1138 | 35 |
| Turn Type | Perm | NA | Perm | Perm | NA | Perm | pm+pt | NA | Perm | NA | Perm |
| Protected Phases | | 4 | | | 8 | | 5 | 2 | | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | 8 | 2 | | 6 | | 6 |
| Detector Phase | 4 | 4 | 4 | 8 | 8 | 8 | 5 | 2 | 6 | 6 | 6 |
| Switch Phase | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Minimum Split (s) | 36.0 | 36.0 | 36.0 | 40.0 | 40.0 | 40.0 | 8.0 | 29.0 | 32.0 | 32.0 | 32.0 |
| Total Split (s) | 23.0 | 23.0 | 23.0 | 23.0 | 23.0 | 23.0 | 12.0 | 97.0 | 85.0 | 85.0 | 85.0 |
| Total Split (%) | 19.2% | 19.2% | 19.2% | 19.2% | 19.2% | 19.2% | 10.0% | 80.8% | 70.8% | 70.8% | 70.8% |
| Yellow Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| 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) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 6.0 | 6.0 | 6.0 | 6.0 |
| Lead/Lag | | | | | | | Lead | | Lag | Lag | Lag |
| Lead-Lag Optimize? | | | | | | | Yes | | Yes | Yes | Yes |
| Recall Mode | None | None | None | None | None | None | None | C-Min | C-Min | C-Min | C-Min |
| Act Effct Green (s) | 11.1 | 11.1 | 11.1 | 11.1 | 11.1 | 11.1 | 98.9 | 97.9 | 86.9 | 86.9 | 86.9 |
| Actuated g/C Ratio | 0.09 | 0.09 | 0.09 | 0.09 | 0.09 | 0.09 | 0.82 | 0.82 | 0.72 | 0.72 | 0.72 |
| v/c Ratio | 0.57 | 0.11 | 0.34 | 0.23 | 0.18 | 0.35 | 0.51 | 0.61 | 0.17 | 0.50 | 0.04 |
| Control Delay | 68.3 | 48.6 | 15.0 | 52.5 | 50.1 | 15.4 | 8.0 | 5.6 | 7.6 | 9.3 | 0.4 |
| 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 | 68.3 | 48.6 | 15.0 | 52.5 | 50.1 | 15.4 | 8.0 | 5.6 | 7.6 | 9.3 | 0.4 |
| LOS | E | D | B | D | D | B | A | A | A | A | A |
| Approach Delay | | 42.3 | | | 31.4 | | | 5.8 | | 9.0 | |
| Approach LOS | | D | | | C | | | A | | A | |

| Intersection Summary | |
|---|---|
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 66 (55%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow | |
| Natural Cycle: 90 | |
| Control Type: Actuated-Coordinated | |
| Maximum v/c Ratio: 0.61 | |
| Intersection Signal Delay: 9.6 | Intersection LOS: A |
| Intersection Capacity Utilization 73.7% | ICU Level of Service D |
| Analysis Period (min) 15 | |

Splits and Phases: 8: University Blvd & Easter Pl

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 63 | 17 | 64 | 26 | 27 | 65 | 154 | 1539 | 24 | 26 | 1138 | 35 |
| Future Volume (veh/h) | 63 | 17 | 64 | 26 | 27 | 65 | 154 | 1539 | 24 | 26 | 1138 | 35 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 0.98 | | 0.97 | 0.98 | | 0.97 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 71 | 19 | 72 | 29 | 30 | 73 | 173 | 1729 | 27 | 29 | 1279 | 39 |
| Peak Hour Factor | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 172 | 194 | 160 | 180 | 194 | 160 | 433 | 2882 | 45 | 230 | 2568 | 1140 |
| Arrive On Green | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.04 | 0.80 | 0.80 | 1.00 | 1.00 | 1.00 |
| Sat Flow, veh/h | 1264 | 1870 | 1544 | 1277 | 1870 | 1544 | 1781 | 3581 | 56 | 273 | 3554 | 1577 |
| Grp Volume(v), veh/h | 71 | 19 | 72 | 29 | 30 | 73 | 173 | 856 | 900 | 29 | 1279 | 39 |
| Grp Sat Flow(s),veh/h/ln | 1264 | 1870 | 1544 | 1277 | 1870 | 1544 | 1781 | 1777 | 1860 | 273 | 1777 | 1577 |
| Q Serve(g_s), s | 6.5 | 1.1 | 5.3 | 2.5 | 1.8 | 5.3 | 2.8 | 21.8 | 21.9 | 2.1 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 8.3 | 1.1 | 5.3 | 3.6 | 1.8 | 5.3 | 2.8 | 21.8 | 21.9 | 14.2 | 0.0 | 0.0 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.03 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 172 | 194 | 160 | 180 | 194 | 160 | 433 | 1430 | 1497 | 230 | 2568 | 1140 |
| V/C Ratio(X) | 0.41 | 0.10 | 0.45 | 0.16 | 0.15 | 0.46 | 0.40 | 0.60 | 0.60 | 0.13 | 0.50 | 0.03 |
| Avail Cap(c_a), veh/h | 231 | 281 | 232 | 240 | 281 | 232 | 465 | 1430 | 1497 | 230 | 2568 | 1140 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 2.00 | 2.00 | 2.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 52.8 | 48.7 | 50.6 | 50.4 | 49.0 | 50.6 | 3.3 | 4.4 | 4.4 | 1.0 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 0.6 | 0.1 | 0.7 | 0.2 | 0.1 | 0.8 | 0.2 | 1.9 | 1.8 | 1.1 | 0.7 | 0.1 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 2.1 | 0.5 | 2.1 | 0.8 | 0.8 | 2.1 | 0.7 | 5.6 | 5.9 | 0.1 | 0.2 | 0.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 53.3 | 48.8 | 51.3 | 50.5 | 49.1 | 51.4 | 3.5 | 6.3 | 6.2 | 2.1 | 0.7 | 0.1 |
| LnGrp LOS | D | D | D | D | D | D | A | A | A | A | A | A |
| Approach Vol, veh/h | | 162 | | | 132 | | | 1929 | | | 1347 | |
| Approach Delay, s/veh | | 51.9 | | | 50.7 | | | 6.0 | | | 0.7 | |
| Approach LOS | | D | | | D | | | A | | | A | |

| Timer - Assigned Phs | | 2 | | 4 | 5 | 6 | | 8 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | | 102.6 | | 17.4 | 9.9 | 92.7 | | 17.4 | | | | |
| Change Period (Y+Rc), s | | 6.0 | | 5.0 | 5.0 | 6.0 | | 5.0 | | | | |
| Max Green Setting (Gmax), s | | 91.0 | | 18.0 | 7.0 | 79.0 | | 18.0 | | | | |
| Max Q Clear Time (g_c+I1), s | | 23.9 | | 10.3 | 4.8 | 16.2 | | 7.3 | | | | |
| Green Ext Time (p_c), s | | 45.5 | | 0.2 | 0.0 | 30.8 | | 0.2 | | | | |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 7.7 |
| HCM 6th LOS | A |

Notes

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

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

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 15 | 125 | 175 | 28 | 19 | 7 |
| Future Vol, veh/h | 15 | 125 | 175 | 28 | 19 | 7 |
| 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 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 16 | 136 | 190 | 30 | 21 | 8 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 220 | 0 | - | 0 | 373 | 205 |
| Stage 1 | - | - | - | - | 205 | - |
| Stage 2 | - | - | - | - | 168 | - |
| Critical Hdwy | 4.12 | - | - | - | 6.42 | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.42 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.42 | - |
| Follow-up Hdwy | 2.218 | - | - | - | 3.518 | 3.318 |
| Pot Cap-1 Maneuver | 1349 | - | - | - | 628 | 836 |
| Stage 1 | - | - | - | - | 829 | - |
| Stage 2 | - | - | - | - | 862 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | 1349 | - | - | - | 620 | 836 |
| Mov Cap-2 Maneuver | - | - | - | - | 620 | - |
| Stage 1 | - | - | - | - | 818 | - |
| Stage 2 | - | - | - | - | 862 | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 0.8 | 0 | 10.6 |
| HCM LOS | | | B |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|
| Capacity (veh/h) | 1349 | - | - | - | 666 |
| HCM Lane V/C Ratio | 0.012 | - | - | - | 0.042 |
| HCM Control Delay (s) | 7.7 | 0 | - | - | 10.6 |
| HCM Lane LOS | A | A | - | - | B |
| HCM 95th %tile Q(veh) | 0 | - | - | - | 0.1 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.7 |

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 127 | 3 | 2 | 180 | 10 | 13 |
| Future Vol, veh/h | 127 | 3 | 2 | 180 | 10 | 13 |
| 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 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 138 | 3 | 2 | 196 | 11 | 14 |

| Major/Minor | Major1 | | Major2 | | Minor1 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 0 | 0 | 141 | 0 | 340 | 140 |
| Stage 1 | - | - | - | - | 140 | - |
| Stage 2 | - | - | - | - | 200 | - |
| Critical Hdwy | - | - | 4.12 | - | 6.42 | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.42 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.42 | - |
| Follow-up Hdwy | - | - | 2.218 | - | 3.518 | 3.318 |
| Pot Cap-1 Maneuver | - | - | 1442 | - | 656 | 908 |
| Stage 1 | - | - | - | - | 887 | - |
| Stage 2 | - | - | - | - | 834 | - |
| Platoon blocked, % | - | - | | - | | |
| Mov Cap-1 Maneuver | - | - | 1442 | - | 655 | 908 |
| Mov Cap-2 Maneuver | - | - | - | - | 655 | - |
| Stage 1 | - | - | - | - | 887 | - |
| Stage 2 | - | - | - | - | 832 | - |

| Approach | EB | WB | NB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 0.1 | 9.8 |
| HCM LOS | | | A |

| Minor Lane/Major Mvmt | NBLn1 | EBT | EBR | WBL | WBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | 777 | - | - | 1442 | - |
| HCM Lane V/C Ratio | 0.032 | - | - | 0.002 | - |
| HCM Control Delay (s) | 9.8 | - | - | 7.5 | 0 |
| HCM Lane LOS | A | - | - | A | A |
| HCM 95th %tile Q(veh) | 0.1 | - | - | 0 | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 1.7 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 13 | 112 | 3 | 1 | 123 | 66 | 23 | 2 | 10 | 8 | 0 | 5 |
| Future Vol, veh/h | 13 | 112 | 3 | 1 | 123 | 66 | 23 | 2 | 10 | 8 | 0 | 5 |
| 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 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 14 | 122 | 3 | 1 | 134 | 72 | 25 | 2 | 11 | 9 | 0 | 5 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 206 | 0 | 0 | 125 | 0 | 0 | 327 | 360 | 124 | 330 | 325 | 170 |
| Stage 1 | - | - | - | - | - | - | 152 | 152 | - | 172 | 172 | - |
| Stage 2 | - | - | - | - | - | - | 175 | 208 | - | 158 | 153 | - |
| Critical Hdwy | 4.12 | - | - | 4.12 | - | - | 7.12 | 6.52 | 6.22 | 7.12 | 6.52 | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.12 | 5.52 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.12 | 5.52 | - |
| Follow-up Hdwy | 2.218 | - | - | 2.218 | - | - | 3.518 | 4.018 | 3.318 | 3.518 | 4.018 | 3.318 |
| Pot Cap-1 Maneuver | 1365 | - | - | 1462 | - | - | 626 | 567 | 927 | 623 | 593 | 874 |
| Stage 1 | - | - | - | - | - | - | 850 | 772 | - | 830 | 756 | - |
| Stage 2 | - | - | - | - | - | - | 827 | 730 | - | 844 | 771 | - |
| Platoon blocked, % | | - | - | | - | - | | | | | | |
| Mov Cap-1 Maneuver | 1365 | - | - | 1462 | - | - | 617 | 560 | 927 | 608 | 586 | 874 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 617 | 560 | - | 608 | 586 | - |
| Stage 1 | - | - | - | - | - | - | 841 | 764 | - | 821 | 755 | - |
| Stage 2 | - | - | - | - | - | - | 821 | 729 | - | 823 | 763 | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 0.8 | 0 | 10.6 | 10.3 |
| HCM LOS | | | B | B |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 678 | 1365 | - | - | 1462 | - | - | 689 |
| HCM Lane V/C Ratio | 0.056 | 0.01 | - | - | 0.001 | - | - | 0.021 |
| HCM Control Delay (s) | 10.6 | 7.7 | 0 | - | 7.5 | - | - | 10.3 |
| HCM Lane LOS | B | A | A | - | A | - | - | B |
| HCM 95th %tile Q(veh) | 0.2 | 0 | - | - | 0 | - | - | 0.1 |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 7.8 |
| Intersection LOS | A |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 14 | 98 | 102 | 50 | 28 | 8 |
| Future Vol, veh/h | 14 | 98 | 102 | 50 | 28 | 8 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 15 | 107 | 111 | 54 | 30 | 9 |
| Number of Lanes | 0 | 1 | 1 | 0 | 1 | 0 |

| Approach | EB | WB | SB |
|---|---|---|---|
| Opposing Approach | WB | EB | |
| Opposing Lanes | 1 | 1 | 0 |
| Conflicting Approach Left | SB | | WB |
| Conflicting Lanes Left | 1 | 0 | 1 |
| Conflicting Approach Right | | SB | EB |
| Conflicting Lanes Right | 0 | 1 | 1 |
| HCM Control Delay | 7.9 | 7.8 | 7.8 |
| HCM LOS | A | A | A |

| Lane | EBLn1 | WBLn1 | SBLn1 |
|---|---|---|---|
| Vol Left, % | 12% | 0% | 78% |
| Vol Thru, % | 88% | 67% | 0% |
| Vol Right, % | 0% | 33% | 22% |
| Sign Control | Stop | Stop | Stop |
| Traffic Vol by Lane | 112 | 152 | 36 |
| LT Vol | 14 | 0 | 28 |
| Through Vol | 98 | 102 | 0 |
| RT Vol | 0 | 50 | 8 |
| Lane Flow Rate | 122 | 165 | 39 |
| Geometry Grp | 1 | 1 | 1 |
| Degree of Util (X) | 0.14 | 0.179 | 0.05 |
| Departure Headway (Hd) | 4.153 | 3.897 | 4.562 |
| Convergence, Y/N | Yes | Yes | Yes |
| Cap | 857 | 914 | 790 |
| Service Time | 2.211 | 1.954 | 2.562 |
| HCM Lane V/C Ratio | 0.142 | 0.181 | 0.049 |
| HCM Control Delay | 7.9 | 7.8 | 7.8 |
| HCM Lane LOS | A | A | A |
| HCM 95th-tile Q | 0.5 | 0.6 | 0.2 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 1.5 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 5 | 4 | 55 | 8 | 13 | 31 |
| Future Vol, veh/h | 5 | 4 | 55 | 8 | 13 | 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 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 5 | 4 | 60 | 9 | 14 | 34 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 127 | 65 | 0 | 0 | 69 | 0 |
| Stage 1 | 65 | - | - | - | - | - |
| Stage 2 | 62 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | - | - | 4.12 | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | - | - | 2.218 | - |
| Pot Cap-1 Maneuver | 868 | 999 | - | - | 1532 | - |
| Stage 1 | 958 | - | - | - | - | - |
| Stage 2 | 961 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 860 | 999 | - | - | 1532 | - |
| Mov Cap-2 Maneuver | 860 | - | - | - | - | - |
| Stage 1 | 958 | - | - | - | - | - |
| Stage 2 | 952 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 9 | 0 | 2.2 |
| HCM LOS | A | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 917 | 1532 | - |
| HCM Lane V/C Ratio | - | - | 0.011 | 0.009 | - |
| HCM Control Delay (s) | - | - | 9 | 7.4 | 0 |
| HCM Lane LOS | - | - | A | A | A |
| HCM 95th %tile Q(veh) | - | - | 0 | 0 | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 3.7 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 21 | 8 | 4 | 2 | 2 | 4 | 1 | 56 | 2 | 39 | 39 | 12 |
| Future Vol, veh/h | 21 | 8 | 4 | 2 | 2 | 4 | 1 | 56 | 2 | 39 | 39 | 12 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 23 | 9 | 4 | 2 | 2 | 4 | 1 | 61 | 2 | 42 | 42 | 13 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 200 | 198 | 49 | 203 | 203 | 62 | 55 | 0 | 0 | 63 | 0 | 0 |
| Stage 1 | 133 | 133 | - | 64 | 64 | - | - | - | - | - | - | - |
| Stage 2 | 67 | 65 | - | 139 | 139 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.12 | 6.52 | 6.22 | 7.12 | 6.52 | 6.22 | 4.12 | - | - | 4.12 | - | - |
| Critical Hdwy Stg 1 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 4.018 | 3.318 | 3.518 | 4.018 | 3.318 | 2.218 | - | - | 2.218 | - | - |
| Pot Cap-1 Maneuver | 759 | 698 | 1020 | 755 | 693 | 1003 | 1550 | - | - | 1540 | - | - |
| Stage 1 | 870 | 786 | - | 947 | 842 | - | - | - | - | - | - | - |
| Stage 2 | 943 | 841 | - | 864 | 782 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | 737 | 678 | 1020 | 728 | 673 | 1003 | 1550 | - | - | 1540 | - | - |
| Mov Cap-2 Maneuver | 737 | 678 | - | 728 | 673 | - | - | - | - | - | - | - |
| Stage 1 | 869 | 764 | - | 946 | 841 | - | - | - | - | - | - | - |
| Stage 2 | 936 | 840 | - | 827 | 760 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 10.1 | 9.4 | 0.1 | 3.2 |
| HCM LOS | B | A | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 1550 | - | - | 746 | 824 | 1540 | - | - |
| HCM Lane V/C Ratio | 0.001 | - | - | 0.048 | 0.011 | 0.028 | - | - |
| HCM Control Delay (s) | 7.3 | 0 | - | 10.1 | 9.4 | 7.4 | 0 | - |
| HCM Lane LOS | A | A | - | B | A | A | A | - |
| HCM 95th %tile Q(veh) | 0 | - | - | 0.2 | 0 | 0.1 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 2.1 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 14 | 20 | 64 | 17 | 15 | 75 |
| Future Vol, veh/h | 14 | 20 | 64 | 17 | 15 | 75 |
| 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 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 15 | 22 | 70 | 18 | 16 | 82 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 193 | 79 | 0 | 0 | 88 | 0 |
| Stage 1 | 79 | - | - | - | - | - |
| Stage 2 | 114 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | - | - | 4.12 | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | - | - | 2.218 | - |
| Pot Cap-1 Maneuver | 796 | 981 | - | - | 1508 | - |
| Stage 1 | 944 | - | - | - | - | - |
| Stage 2 | 911 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 787 | 981 | - | - | 1508 | - |
| Mov Cap-2 Maneuver | 787 | - | - | - | - | - |
| Stage 1 | 944 | - | - | - | - | - |
| Stage 2 | 901 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 9.2 | 0 | 1.2 |
| HCM LOS | A | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 891 | 1508 | - |
| HCM Lane V/C Ratio | - | - | 0.041 | 0.011 | - |
| HCM Control Delay (s) | - | - | 9.2 | 7.4 | 0 |
| HCM Lane LOS | - | - | A | A | A |
| HCM 95th %tile Q(veh) | - | - | 0.1 | 0 | - |

| Lane Group | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 1061 | 66 | 43 | 1545 | 137 | 77 |
| Future Volume (vph) | 1061 | 66 | 43 | 1545 | 137 | 77 |
| Turn Type | NA | Perm | pm+pt | NA | Prot | Perm |
| Protected Phases | 2 | | 1 | 6 | 8 | |
| Permitted Phases | | 2 | 6 | | | 8 |
| Detector Phase | 2 | 2 | 1 | 6 | 8 | 8 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 17.0 | 17.0 | 3.0 | 17.0 | 5.0 | 5.0 |
| Minimum Split (s) | 23.0 | 23.0 | 7.0 | 23.0 | 30.0 | 30.0 |
| Total Split (s) | 76.0 | 76.0 | 13.0 | 89.0 | 31.0 | 31.0 |
| Total Split (%) | 63.3% | 63.3% | 10.8% | 74.2% | 25.8% | 25.8% |
| Yellow Time (s) | 4.0 | 4.0 | 3.0 | 4.0 | 3.0 | 3.0 |
| All-Red Time (s) | 2.0 | 2.0 | 1.0 | 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) | 6.0 | 6.0 | 4.0 | 6.0 | 5.0 | 5.0 |
| Lead/Lag | Lag | Lag | Lead | | | |
| Lead-Lag Optimize? | Yes | Yes | Yes | | | |
| Recall Mode | C-Min | C-Min | None | C-Min | None | None |
| Act Effct Green (s) | 86.3 | 86.3 | 95.9 | 93.9 | 15.1 | 15.1 |
| Actuated g/C Ratio | 0.72 | 0.72 | 0.80 | 0.78 | 0.13 | 0.13 |
| v/c Ratio | 0.43 | 0.06 | 0.12 | 0.40 | 0.64 | 0.30 |
| Control Delay | 8.7 | 3.8 | 4.1 | 5.0 | 61.9 | 12.0 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.2 | 0.0 | 0.0 |
| Total Delay | 8.7 | 3.8 | 4.1 | 5.3 | 61.9 | 12.0 |
| LOS | A | A | A | A | E | B |
| Approach Delay | 8.4 | | | 5.2 | 44.0 | |
| Approach LOS | A | | | A | D | |

| Intersection Summary | |
|---|---|
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 31 (26%), Referenced to phase 2:EBT and 6:WBTL, Start of 1st Green | |
| Natural Cycle: 65 | |
| Control Type: Actuated-Coordinated | |
| Maximum v/c Ratio: 0.64 | |
| Intersection Signal Delay: 9.3 | Intersection LOS: A |
| Intersection Capacity Utilization 54.5% | ICU Level of Service A |
| Analysis Period (min) 15 | |

Splits and Phases: 1: S Race St & Arapahoe Rd

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 1061 | 66 | 43 | 1545 | 137 | 77 |
| Future Volume (veh/h) | 1061 | 66 | 43 | 1545 | 137 | 77 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | | 1.00 | 1.00 | | 1.00 | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | No | | | No | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 1105 | 69 | 45 | 1609 | 143 | 80 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 2693 | 1196 | 405 | 4139 | 174 | 155 |
| Arrive On Green | 0.76 | 0.76 | 0.02 | 0.81 | 0.10 | 0.10 |
| Sat Flow, veh/h | 3647 | 1578 | 1781 | 5274 | 1781 | 1585 |
| Grp Volume(v), veh/h | 1105 | 69 | 45 | 1609 | 143 | 80 |
| Grp Sat Flow(s),veh/h/ln | 1777 | 1578 | 1781 | 1702 | 1781 | 1585 |
| Q Serve(g_s), s | 13.1 | 1.3 | 0.6 | 10.5 | 9.5 | 5.8 |
| Cycle Q Clear(g_c), s | 13.1 | 1.3 | 0.6 | 10.5 | 9.5 | 5.8 |
| Prop In Lane | | 1.00 | 1.00 | | 1.00 | 1.00 |
| Lane Grp Cap(c), veh/h | 2693 | 1196 | 405 | 4139 | 174 | 155 |
| V/C Ratio(X) | 0.41 | 0.06 | 0.11 | 0.39 | 0.82 | 0.52 |
| Avail Cap(c_a), veh/h | 2693 | 1196 | 504 | 4139 | 386 | 343 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.79 | 0.79 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 5.1 | 3.7 | 3.7 | 3.1 | 53.1 | 51.4 |
| Incr Delay (d2), s/veh | 0.5 | 0.1 | 0.0 | 0.2 | 3.7 | 1.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 4.0 | 0.4 | 0.2 | 2.6 | 4.4 | 0.0 |
| Unsig. Movement Delay, s/veh | | | | | | |
| LnGrp Delay(d),s/veh | 5.6 | 3.8 | 3.7 | 3.4 | 56.8 | 52.4 |
| LnGrp LOS | A | A | A | A | E | D |
| Approach Vol, veh/h | 1174 | | | 1654 | 223 | |
| Approach Delay, s/veh | 5.5 | | | 3.4 | 55.2 | |
| Approach LOS | A | | | A | E | |

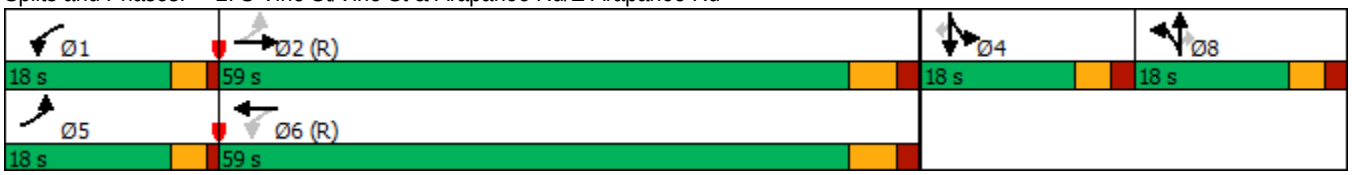
| Timer - Assigned Phs | 1 | 2 | | | | 6 | 8 |
|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 6.3 | 96.9 | | | | 103.3 | 16.7 |
| Change Period (Y+Rc), s | 4.0 | 6.0 | | | | 6.0 | 5.0 |
| Max Green Setting (Gmax), s | 9.0 | 70.0 | | | | 83.0 | 26.0 |
| Max Q Clear Time (g_c+I1), s | 2.6 | 15.1 | | | | 12.5 | 11.5 |
| Green Ext Time (p_c), s | 0.0 | 5.9 | | | | 11.0 | 0.3 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 8.0 |
| HCM 6th LOS | A |

| Lane Group | EBL | EBT | WBL | WBT | NBT | NBR | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | |
| Traffic Volume (vph) | 61 | 938 | 171 | 1406 | 24 | 146 | 15 | 29 |
| Future Volume (vph) | 61 | 938 | 171 | 1406 | 24 | 146 | 15 | 29 |
| Turn Type | pm+pt | NA | pm+pt | NA | NA | Perm | NA | Perm |
| Protected Phases | 5 | 2 | 1 | 6 | 8 | | 4 | |
| Permitted Phases | 2 | | 6 | | | 8 | | 4 |
| Detector Phase | 5 | 2 | 1 | 6 | 8 | 8 | 4 | 4 |
| Switch Phase | | | | | | | | |
| Minimum Initial (s) | 3.0 | 17.0 | 3.0 | 17.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Minimum Split (s) | 7.0 | 26.0 | 7.0 | 23.0 | 35.0 | 35.0 | 34.0 | 34.0 |
| Total Split (s) | 18.0 | 59.0 | 18.0 | 59.0 | 18.0 | 18.0 | 18.0 | 18.0 |
| Total Split (%) | 15.9% | 52.2% | 15.9% | 52.2% | 15.9% | 15.9% | 15.9% | 15.9% |
| Yellow Time (s) | 3.0 | 4.0 | 3.0 | 4.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| All-Red Time (s) | 1.0 | 2.0 | 1.0 | 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) | 4.0 | 6.0 | 4.0 | 6.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Lead/Lag | Lead | Lag | Lead | Lag | | | | |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | | | | |
| Recall Mode | None | C-Min | None | C-Min | None | None | None | None |
| Act Effct Green (s) | 68.0 | 60.0 | 74.3 | 64.7 | 12.9 | 12.9 | 11.2 | 11.2 |
| Actuated g/C Ratio | 0.60 | 0.53 | 0.66 | 0.57 | 0.11 | 0.11 | 0.10 | 0.10 |
| v/c Ratio | 0.33 | 0.43 | 0.53 | 0.59 | 0.91 | 0.49 | 0.72 | 0.12 |
| Control Delay | 12.2 | 16.8 | 13.3 | 17.2 | 94.1 | 13.2 | 71.4 | 1.0 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 12.2 | 16.8 | 13.3 | 17.2 | 94.1 | 13.2 | 71.4 | 1.0 |
| LOS | B | B | B | B | F | B | E | A |
| Approach Delay | | 16.5 | | 16.8 | 57.3 | | 57.6 | |
| Approach LOS | | B | | B | E | | E | |

| Intersection Summary | |
|---|---|
| Cycle Length: 113 | |
| Actuated Cycle Length: 113 | |
| Offset: 28 (25%), Referenced to phase 2:EBTL and 6:WBTL, Start of 1st Green | |
| Natural Cycle: 115 | |
| Control Type: Actuated-Coordinated | |
| Maximum v/c Ratio: 0.91 | |
| Intersection Signal Delay: 22.4 | Intersection LOS: C |
| Intersection Capacity Utilization 64.9% | ICU Level of Service C |
| Analysis Period (min) 15 | |

Splits and Phases: 2: S Vine St/Vine St & Arapahoe Rd/E Arapahoe Rd



# HCM 6th Signalized Intersection Summary
## 2: S Vine St/Vine St & Arapahoe Rd/E Arapahoe Rd

11/04/2019

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 61 | 938 | 139 | 171 | 1406 | 184 | 152 | 24 | 146 | 105 | 15 | 29 |
| Future Volume (veh/h) | 61 | 938 | 139 | 171 | 1406 | 184 | 152 | 24 | 146 | 105 | 15 | 29 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 0.99 | 1.00 | | 0.99 | 1.00 | | 0.98 | 1.00 | | 0.97 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 64 | 987 | 146 | 180 | 1480 | 194 | 160 | 25 | 154 | 111 | 16 | 31 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 231 | 2497 | 369 | 385 | 2683 | 351 | 178 | 28 | 178 | 143 | 21 | 140 |
| Arrive On Green | 0.03 | 0.56 | 0.56 | 0.06 | 0.59 | 0.59 | 0.12 | 0.12 | 0.12 | 0.09 | 0.09 | 0.09 |
| Sat Flow, veh/h | 1781 | 4488 | 662 | 1781 | 4565 | 598 | 1551 | 242 | 1548 | 1566 | 226 | 1538 |
| Grp Volume(v), veh/h | 64 | 748 | 385 | 180 | 1103 | 571 | 185 | 0 | 154 | 127 | 0 | 31 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1702 | 1746 | 1781 | 1702 | 1759 | 1793 | 0 | 1548 | 1792 | 0 | 1538 |
| Q Serve(g_s), s | 1.7 | 14.1 | 14.2 | 4.7 | 22.3 | 22.4 | 11.5 | 0.0 | 11.0 | 7.8 | 0.0 | 2.1 |
| Cycle Q Clear(g_c), s | 1.7 | 14.1 | 14.2 | 4.7 | 22.3 | 22.4 | 11.5 | 0.0 | 11.0 | 7.8 | 0.0 | 2.1 |
| Prop In Lane | 1.00 | | 0.38 | 1.00 | | 0.34 | 0.86 | | 1.00 | 0.87 | | 1.00 |
| Lane Grp Cap(c), veh/h | 231 | 1894 | 972 | 385 | 2001 | 1034 | 206 | 0 | 178 | 164 | 0 | 140 |
| V/C Ratio(X) | 0.28 | 0.39 | 0.40 | 0.47 | 0.55 | 0.55 | 0.90 | 0.00 | 0.86 | 0.78 | 0.00 | 0.22 |
| Avail Cap(c_a), veh/h | 400 | 1894 | 972 | 499 | 2001 | 1034 | 206 | 0 | 178 | 206 | 0 | 177 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.91 | 0.91 | 0.91 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 12.1 | 14.2 | 14.3 | 10.3 | 14.2 | 14.2 | 49.3 | 0.0 | 49.1 | 50.2 | 0.0 | 47.6 |
| Incr Delay (d2), s/veh | 0.2 | 0.6 | 1.1 | 0.3 | 1.1 | 2.1 | 35.1 | 0.0 | 31.9 | 10.2 | 0.0 | 0.3 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.7 | 5.3 | 5.6 | 1.7 | 8.3 | 8.9 | 7.2 | 0.0 | 5.9 | 4.0 | 0.0 | 0.8 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 12.3 | 14.8 | 15.4 | 10.6 | 15.3 | 16.3 | 84.4 | 0.0 | 81.0 | 60.4 | 0.0 | 47.9 |
| LnGrp LOS | B | B | B | B | B | B | F | A | F | E | A | D |
| Approach Vol, veh/h | | 1197 | | | 1854 | | | 339 | | | 158 | |
| Approach Delay, s/veh | | 14.9 | | | 15.2 | | | 82.9 | | | 58.0 | |
| Approach LOS | | B | | | B | | | F | | | E | |

| Timer - Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 10.8 | 68.9 | | 15.3 | 7.3 | 72.4 | | 18.0 |
| Change Period (Y+Rc), s | 4.0 | 6.0 | | 5.0 | 4.0 | 6.0 | | 5.0 |
| Max Green Setting (Gmax), s | 14.0 | 53.0 | | 13.0 | 14.0 | 53.0 | | 13.0 |
| Max Q Clear Time (g_c+I1), s | 6.7 | 16.2 | | 9.8 | 3.7 | 24.4 | | 13.5 |
| Green Ext Time (p_c), s | 0.1 | 5.6 | | 0.1 | 0.0 | 9.4 | | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 23.4 |
| HCM 6th LOS | C |

**Notes**

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

| Intersection | |
|---|---|
| Int Delay, s/veh | 1.2 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 27 | 1122 | 40 | 81 | 1681 | 7 | 0 | 0 | 134 | 0 | 0 | 78 |
| Future Vol, veh/h | 27 | 1122 | 40 | 81 | 1681 | 7 | 0 | 0 | 134 | 0 | 0 | 78 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | 150 | - | 0 | 100 | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 28 | 1157 | 41 | 84 | 1733 | 7 | 0 | 0 | 138 | 0 | 0 | 80 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 1740 | 0 | 0 | 1198 | 0 | 0 | - | 3121 | 579 | - | 3159 | 870 |
| Stage 1 | - | - | - | - | - | - | - | 1213 | - | - | 1905 | - |
| Stage 2 | - | - | - | - | - | - | - | 1908 | - | - | 1254 | - |
| Critical Hdwy | 5.34 | - | - | 5.34 | - | - | - | 6.54 | 7.14 | - | 6.54 | 7.14 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | - | 5.54 | - | - | 5.54 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | - | 5.54 | - | - | 5.54 | - |
| Follow-up Hdwy | 3.12 | - | - | 3.12 | - | - | - | 4.02 | 3.92 | - | 4.02 | 3.92 |
| Pot Cap-1 Maneuver | *655 | - | - | *827 | - | - | 0 | *11 | *658 | 0 | *10 | *521 |
| Stage 1 | - | - | - | - | - | - | 0 | *642 | - | 0 | *508 | - |
| Stage 2 | - | - | - | - | - | - | 0 | *508 | - | 0 | *642 | - |
| Platoon blocked, % | 1 | - | - | 1 | - | - | | | 1 | | | 1 |
| Mov Cap-1 Maneuver | *655 | - | - | *827 | - | - | - | *9 | *658 | - | *9 | *521 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | - | *9 | - | - | *9 | - |
| Stage 1 | - | - | - | - | - | - | - | *614 | - | - | *456 | - |
| Stage 2 | - | - | - | - | - | - | - | *456 | - | - | *614 | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 0.2 | 0.5 | 11.9 | 13.2 |
| HCM LOS | | | B | B |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 658 | * 655 | - | - | * 827 | - | - | 521 |
| HCM Lane V/C Ratio | 0.21 | 0.042 | - | - | 0.101 | - | - | 0.154 |
| HCM Control Delay (s) | 11.9 | 10.7 | - | - | 9.8 | - | - | 13.2 |
| HCM Lane LOS | B | B | - | - | A | - | - | B |
| HCM 95th %tile Q(veh) | 0.8 | 0.1 | - | - | 0.3 | - | - | 0.5 |

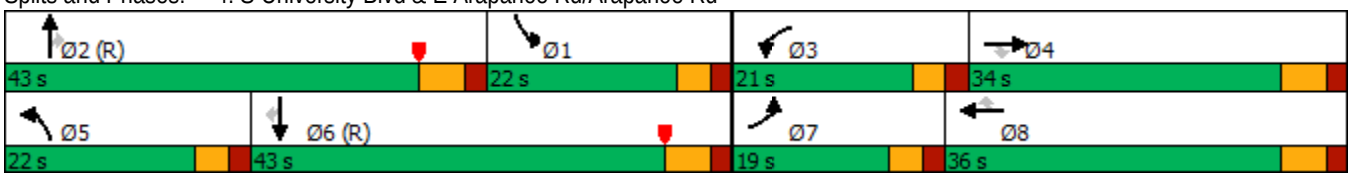
Notes

~: 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) | 317 | 702 | 239 | 302 | 1186 | 418 | 289 | 1165 | 196 | 335 | 1275 | 318 |
| Future Volume (vph) | 317 | 702 | 239 | 302 | 1186 | 418 | 289 | 1165 | 196 | 335 | 1275 | 318 |
| Turn Type | Prot | NA | Perm | Prot | NA | Perm | Prot | NA | Perm | Prot | NA | Perm |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | | | 4 | | | 8 | | | 2 | | | 6 |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | 8 | 5 | 2 | 2 | 1 | 6 | 6 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 | 3.0 | 10.0 | 10.0 | 3.0 | 10.0 | 10.0 |
| Minimum Split (s) | 8.0 | 39.0 | 39.0 | 8.0 | 37.0 | 37.0 | 8.0 | 35.0 | 35.0 | 8.0 | 40.0 | 40.0 |
| Total Split (s) | 19.0 | 34.0 | 34.0 | 21.0 | 36.0 | 36.0 | 22.0 | 43.0 | 43.0 | 22.0 | 43.0 | 43.0 |
| Total Split (%) | 15.8% | 28.3% | 28.3% | 17.5% | 30.0% | 30.0% | 18.3% | 35.8% | 35.8% | 18.3% | 35.8% | 35.8% |
| Yellow Time (s) | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 |
| 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 | 0.0 |
| Total Lost Time (s) | 5.0 | 6.0 | 6.0 | 5.0 | 6.0 | 6.0 | 5.0 | 6.0 | 6.0 | 5.0 | 6.0 | 6.0 |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lead | Lead | Lead | Lag | Lag | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | None | None | None | None | None | None | C-Min | C-Min | None | C-Min | C-Min |
| Act Effct Green (s) | 13.4 | 29.4 | 29.4 | 14.0 | 30.0 | 30.0 | 14.3 | 37.3 | 37.3 | 17.3 | 40.4 | 40.4 |
| Actuated g/C Ratio | 0.11 | 0.24 | 0.24 | 0.12 | 0.25 | 0.25 | 0.12 | 0.31 | 0.31 | 0.14 | 0.34 | 0.34 |
| v/c Ratio | 0.85 | 0.58 | 0.43 | 0.77 | 0.95 | 0.70 | 0.72 | 0.75 | 0.32 | 0.69 | 0.76 | 0.46 |
| Control Delay | 72.4 | 42.2 | 7.2 | 64.7 | 60.6 | 19.5 | 48.0 | 35.1 | 7.5 | 57.1 | 39.6 | 8.2 |
| 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 | 72.4 | 42.2 | 7.2 | 64.7 | 60.6 | 19.5 | 48.0 | 35.1 | 7.5 | 57.1 | 39.6 | 8.2 |
| LOS | E | D | A | E | E | B | D | D | A | E | D | A |
| Approach Delay | | 43.1 | | | 52.2 | | | 34.1 | | | 37.5 | |
| Approach LOS | | D | | | D | | | C | | | D | |

| Intersection Summary | |
|---|---|
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 103 (86%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow | |
| Natural Cycle: 105 | |
| Control Type: Actuated-Coordinated | |
| Maximum v/c Ratio: 0.95 | |
| Intersection Signal Delay: 41.9 | Intersection LOS: D |
| Intersection Capacity Utilization 84.0% | ICU Level of Service E |
| Analysis Period (min) 15 | |

Splits and Phases: 4: S University Blvd & E Arapahoe Rd/Arapahoe Rd



# HCM 6th Signalized Intersection Summary
## 4: S University Blvd & E Arapahoe Rd/Arapahoe Rd

11/04/2019

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 317 | 702 | 239 | 302 | 1186 | 418 | 289 | 1165 | 196 | 335 | 1275 | 318 |
| Future Volume (veh/h) | 317 | 702 | 239 | 302 | 1186 | 418 | 289 | 1165 | 196 | 335 | 1275 | 318 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 0.99 | 1.00 | | 1.00 | 1.00 | | 0.99 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 323 | 716 | 244 | 308 | 1210 | 0 | 295 | 1189 | 200 | 342 | 1301 | 324 |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 377 | 1294 | 399 | 364 | 1276 | | 355 | 1495 | 462 | 542 | 1814 | 561 |
| Arrive On Green | 0.11 | 0.25 | 0.25 | 0.11 | 0.25 | 0.00 | 0.10 | 0.29 | 0.29 | 0.16 | 0.36 | 0.36 |
| Sat Flow, veh/h | 3456 | 5106 | 1576 | 3456 | 5106 | 1585 | 3456 | 5106 | 1577 | 3456 | 5106 | 1578 |
| Grp Volume(v), veh/h | 323 | 716 | 244 | 308 | 1210 | 0 | 295 | 1189 | 200 | 342 | 1301 | 324 |
| Grp Sat Flow(s),veh/h/ln | 1728 | 1702 | 1576 | 1728 | 1702 | 1585 | 1728 | 1702 | 1577 | 1728 | 1702 | 1578 |
| Q Serve(g_s), s | 11.0 | 14.6 | 16.4 | 10.5 | 28.0 | 0.0 | 10.1 | 25.8 | 8.9 | 11.1 | 26.5 | 20.0 |
| Cycle Q Clear(g_c), s | 11.0 | 14.6 | 16.4 | 10.5 | 28.0 | 0.0 | 10.1 | 25.8 | 8.9 | 11.1 | 26.5 | 20.0 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 377 | 1294 | 399 | 364 | 1276 | | 355 | 1495 | 462 | 542 | 1814 | 561 |
| V/C Ratio(X) | 0.86 | 0.55 | 0.61 | 0.85 | 0.95 | | 0.83 | 0.80 | 0.43 | 0.63 | 0.72 | 0.58 |
| Avail Cap(c_a), veh/h | 403 | 1294 | 399 | 461 | 1277 | | 490 | 1574 | 486 | 542 | 1814 | 561 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 52.5 | 38.9 | 39.6 | 52.7 | 44.2 | 0.0 | 52.8 | 39.1 | 17.9 | 47.3 | 33.5 | 31.4 |
| Incr Delay (d2), s/veh | 14.8 | 0.3 | 2.0 | 9.3 | 14.4 | 0.0 | 6.3 | 4.5 | 2.9 | 1.8 | 2.5 | 4.3 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 5.5 | 6.1 | 6.5 | 5.0 | 13.3 | 0.0 | 4.6 | 11.1 | 3.6 | 4.8 | 11.0 | 8.2 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 67.4 | 39.2 | 41.6 | 62.0 | 58.7 | 0.0 | 59.1 | 43.6 | 20.8 | 49.2 | 35.9 | 35.7 |
| LnGrp LOS | E | D | D | E | E | | E | D | C | D | D | D |
| Approach Vol, veh/h | | 1283 | | | 1518 | A | | 1684 | | | 1967 | |
| Approach Delay, s/veh | | 46.7 | | | 59.4 | | | 43.6 | | | 38.2 | |
| Approach LOS | | D | | | E | | | D | | | D | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 24.8 | 41.1 | 17.7 | 36.4 | 17.3 | 48.6 | 18.1 | 36.0 |
| Change Period (Y+Rc), s | 6.0 | * 6 | 5.0 | 6.0 | 5.0 | 6.0 | 5.0 | 6.0 |
| Max Green Setting (Gmax), s | 17.0 | * 37 | 16.0 | 28.0 | 17.0 | 37.0 | 14.0 | 30.0 |
| Max Q Clear Time (g_c+I1), s | 13.1 | 27.8 | 12.5 | 18.4 | 12.1 | 28.5 | 13.0 | 30.0 |
| Green Ext Time (p_c), s | 0.2 | 7.4 | 0.2 | 2.8 | 0.3 | 7.3 | 0.1 | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 46.3 |
| HCM 6th LOS | D |

**Notes**

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

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

| 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 | 0 | 0 | 78 | 0 | 0 | 41 | 0 | 1627 | 18 | 0 | 1705 | 111 |
| Future Vol, veh/h | 0 | 0 | 78 | 0 | 0 | 41 | 0 | 1627 | 18 | 0 | 1705 | 111 |
| 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 | - | - | 0 | - | - | 0 | - | - | - | - | - | 0 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 93 | 93 | 93 | 93 | 93 | 93 | 93 | 93 | 93 | 93 | 93 | 93 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 0 | 84 | 0 | 0 | 44 | 0 | 1749 | 19 | 0 | 1833 | 119 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | - | - | 917 | - | - | 884 | - | 0 | 0 | - | - | 0 |
| Stage 1 | - | - | - | - | - | - | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - | - | - | - | - | - | - |
| Critical Hdwy | - | - | 7.14 | - | - | 7.14 | - | - | - | - | - | - |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | - | - | - | - | - | - |
| Follow-up Hdwy | - | - | 3.92 | - | - | 3.92 | - | - | - | - | - | - |
| Pot Cap-1 Maneuver | 0 | 0 | *524 | 0 | 0 | 248 | 0 | - | - | 0 | - | - |
| Stage 1 | 0 | 0 | - | 0 | 0 | - | 0 | - | - | 0 | - | - |
| Stage 2 | 0 | 0 | - | 0 | 0 | - | 0 | - | - | 0 | - | - |
| Platoon blocked, % | | | 1 | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | - | - | *524 | - | - | 248 | - | - | - | - | - | - |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | - | - | - | - | - | - |
| Stage 1 | - | - | - | - | - | - | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 13.2 | 22.6 | 0 | 0 |
| HCM LOS | B | C | | |

| Minor Lane/Major Mvmt | NBT | NBR | EBLn1 | WBLn1 | SBT | SBR |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 524 | 248 | - | - |
| HCM Lane V/C Ratio | - | - | 0.16 | 0.178 | - | - |
| HCM Control Delay (s) | - | - | 13.2 | 22.6 | - | - |
| HCM Lane LOS | - | - | B | C | - | - |
| HCM 95th %tile Q(veh) | - | - | 0.6 | 0.6 | - | - |

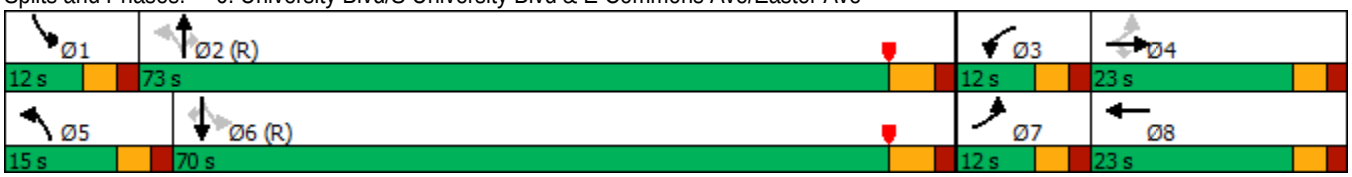
Notes

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

| Lane Group | EBL | EBT | EBR | WBL | WBT | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | |
| Traffic Volume (vph) | 148 | 42 | 149 | 63 | 75 | 152 | 1452 | 43 | 61 | 1540 | 166 |
| Future Volume (vph) | 148 | 42 | 149 | 63 | 75 | 152 | 1452 | 43 | 61 | 1540 | 166 |
| Turn Type | pm+pt | NA | Perm | Prot | NA | pm+pt | NA | Perm | pm+pt | NA | Perm |
| Protected Phases | 7 | 4 | | 3 | 8 | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | 4 | | | 2 | | 2 | 6 | | 6 |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | 5 | 2 | 2 | 1 | 6 | 6 |
| Switch Phase | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 3.0 | 4.0 | 3.0 | 3.0 | 5.0 | 5.0 | 3.0 | 5.0 | 5.0 |
| Minimum Split (s) | 8.0 | 35.0 | 35.0 | 9.0 | 32.0 | 8.0 | 24.0 | 24.0 | 8.0 | 29.0 | 29.0 |
| Total Split (s) | 12.0 | 23.0 | 23.0 | 12.0 | 23.0 | 15.0 | 73.0 | 73.0 | 12.0 | 70.0 | 70.0 |
| Total Split (%) | 10.0% | 19.2% | 19.2% | 10.0% | 19.2% | 12.5% | 60.8% | 60.8% | 10.0% | 58.3% | 58.3% |
| Yellow Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 |
| 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) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 6.0 | 6.0 | 5.0 | 6.0 | 6.0 |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lead | Lag | Lag | Lead | Lag | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | None | None | None | None | None | C-Min | C-Min | None | C-Min | C-Min |
| Act Effct Green (s) | 20.7 | 15.1 | 15.1 | 6.9 | 12.7 | 84.2 | 75.5 | 75.5 | 77.2 | 70.4 | 70.4 |
| Actuated g/C Ratio | 0.17 | 0.13 | 0.13 | 0.06 | 0.11 | 0.70 | 0.63 | 0.63 | 0.64 | 0.59 | 0.59 |
| v/c Ratio | 0.40 | 0.19 | 0.51 | 0.66 | 0.62 | 0.81 | 0.69 | 0.04 | 0.34 | 0.79 | 0.18 |
| Control Delay | 41.7 | 48.8 | 17.7 | 85.1 | 55.6 | 60.4 | 14.9 | 0.1 | 11.8 | 21.3 | 2.8 |
| 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 | 41.7 | 48.8 | 17.7 | 85.1 | 55.6 | 60.4 | 14.9 | 0.1 | 11.8 | 21.3 | 2.8 |
| LOS | D | D | B | F | E | E | B | A | B | C | A |
| Approach Delay | | 32.0 | | | 65.8 | | 18.7 | | | 19.2 | |
| Approach LOS | | C | | | E | | B | | | B | |

| Intersection Summary | |
|---|---|
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 74 (62%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow | |
| Natural Cycle: 105 | |
| Control Type: Actuated-Coordinated | |
| Maximum v/c Ratio: 0.81 | |
| Intersection Signal Delay: 22.3 | Intersection LOS: C |
| Intersection Capacity Utilization 77.2% | ICU Level of Service D |
| Analysis Period (min) 15 | |

Splits and Phases: 6: University Blvd/S University Blvd & E Commons Ave/Easter Ave



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 148 | 42 | 149 | 63 | 75 | 43 | 152 | 1452 | 43 | 61 | 1540 | 166 |
| Future Volume (veh/h) | 148 | 42 | 149 | 63 | 75 | 43 | 152 | 1452 | 43 | 61 | 1540 | 166 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 0.97 | | 1.00 | 1.00 | | 0.97 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 157 | 45 | 0 | 67 | 80 | 46 | 162 | 1545 | 46 | 65 | 1638 | 0 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 404 | 217 | | 86 | 119 | 68 | 237 | 2253 | 1001 | 303 | 2162 | |
| Arrive On Green | 0.06 | 0.12 | 0.00 | 0.05 | 0.11 | 0.11 | 0.11 | 1.00 | 1.00 | 0.03 | 0.61 | 0.00 |
| Sat Flow, veh/h | 3456 | 1870 | 1585 | 1781 | 1100 | 633 | 1781 | 3554 | 1579 | 1781 | 3554 | 1585 |
| Grp Volume(v), veh/h | 157 | 45 | 0 | 67 | 0 | 126 | 162 | 1545 | 46 | 65 | 1638 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1728 | 1870 | 1585 | 1781 | 0 | 1733 | 1781 | 1777 | 1579 | 1781 | 1777 | 1585 |
| Q Serve(g_s), s | 4.8 | 2.6 | 0.0 | 4.5 | 0.0 | 8.4 | 4.3 | 0.0 | 0.0 | 1.7 | 40.2 | 0.0 |
| Cycle Q Clear(g_c), s | 4.8 | 2.6 | 0.0 | 4.5 | 0.0 | 8.4 | 4.3 | 0.0 | 0.0 | 1.7 | 40.2 | 0.0 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.37 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 404 | 217 | | 86 | 0 | 187 | 237 | 2253 | 1001 | 303 | 2162 | |
| V/C Ratio(X) | 0.39 | 0.21 | | 0.78 | 0.00 | 0.67 | 0.68 | 0.69 | 0.05 | 0.21 | 0.76 | |
| Avail Cap(c_a), veh/h | 412 | 281 | | 104 | 0 | 260 | 292 | 2253 | 1001 | 359 | 2162 | |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 2.00 | 2.00 | 2.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 44.3 | 48.1 | 0.0 | 56.5 | 0.0 | 51.5 | 19.7 | 0.0 | 0.0 | 8.3 | 17.1 | 0.0 |
| Incr Delay (d2), s/veh | 0.2 | 0.2 | 0.0 | 26.2 | 0.0 | 1.6 | 2.9 | 1.7 | 0.1 | 0.1 | 2.5 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 2.1 | 1.2 | 0.0 | 2.6 | 0.0 | 3.8 | 2.6 | 0.5 | 0.0 | 0.6 | 15.5 | 0.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 44.5 | 48.2 | 0.0 | 82.7 | 0.0 | 53.1 | 22.6 | 1.7 | 0.1 | 8.4 | 19.6 | 0.0 |
| LnGrp LOS | D | D | | F | A | D | C | A | A | A | B | |
| Approach Vol, veh/h | | 202 | A | | 193 | | | 1753 | | | 1703 | A |
| Approach Delay, s/veh | | 45.3 | | | 63.4 | | | 3.6 | | | 19.2 | |
| Approach LOS | | D | | | E | | | A | | | B | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 8.3 | 82.1 | 10.8 | 18.9 | 11.3 | 79.0 | 11.7 | 17.9 |
| Change Period (Y+Rc), s | 5.0 | 6.0 | 5.0 | 5.0 | 5.0 | 6.0 | 5.0 | 5.0 |
| Max Green Setting (Gmax), s | 7.0 | 67.0 | 7.0 | 18.0 | 10.0 | 64.0 | 7.0 | 18.0 |
| Max Q Clear Time (g_c+I1), s | 3.7 | 2.0 | 6.5 | 4.6 | 6.3 | 42.2 | 6.8 | 10.4 |
| Green Ext Time (p_c), s | 0.0 | 38.9 | 0.0 | 0.1 | 0.1 | 18.1 | 0.0 | 0.2 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 15.7 |
| HCM 6th LOS | B |

Notes

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

Unsignalized Delay for [EBR, SBR] is excluded from calculations of the approach delay and intersection delay.

| Intersection | |
|---|---|
| Int Delay, s/veh | 66.9 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 27 | 79 | 62 | 1639 | 1733 | 11 |
| Future Vol, veh/h | 27 | 79 | 62 | 1639 | 1733 | 11 |
| 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 | - | 120 | - | - | 0 |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 93 | 93 | 93 | 93 | 93 | 93 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 29 | 85 | 67 | 1762 | 1863 | 12 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 2878 | 932 | 1875 | 0 | - | 0 |
| Stage 1 | 1863 | - | - | - | - | - |
| Stage 2 | 1015 | - | - | - | - | - |
| Critical Hdwy | 6.84 | 6.94 | 4.14 | - | - | - |
| Critical Hdwy Stg 1 | 5.84 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.84 | - | - | - | - | - |
| Follow-up Hdwy | 3.52 | 3.32 | 2.22 | - | - | - |
| Pot Cap-1 Maneuver | *~ 6 | *363 | *544 | - | - | - |
| Stage 1 | *343 | - | - | - | - | - |
| Stage 2 | *391 | - | - | - | - | - |
| Platoon blocked, % | 1 | 1 | 1 | - | - | - |
| Mov Cap-1 Maneuver | *~ 6 | *363 | *544 | - | - | - |
| Mov Cap-2 Maneuver | *~ 6 | - | - | - | - | - |
| Stage 1 | *301 | - | - | - | - | - |
| Stage 2 | *391 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, $ | 2234.7 | 0.5 | 0 |
| HCM LOS | F | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | * 544 | - | 22 | - | - |
| HCM Lane V/C Ratio | 0.123 | - | 5.181 | - | - |
| HCM Control Delay (s) | 12.5 | $ | 2234.7 | - | - |
| HCM Lane LOS | B | - | F | - | - |
| HCM 95th %tile Q(veh) | 0.4 | - | 14.5 | - | - |

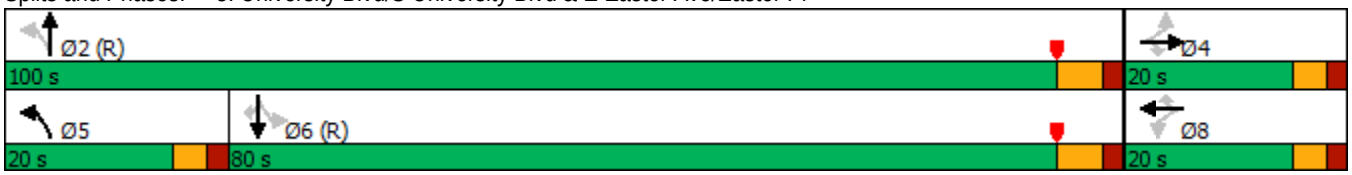
Notes

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

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | |
| Traffic Volume (vph) | 76 | 35 | 203 | 56 | 28 | 22 | 189 | 1604 | 16 | 1719 | 76 |
| Future Volume (vph) | 76 | 35 | 203 | 56 | 28 | 22 | 189 | 1604 | 16 | 1719 | 76 |
| Turn Type | Perm | NA | Perm | Perm | NA | Perm | pm+pt | NA | Perm | NA | Perm |
| Protected Phases | | 4 | | | 8 | | 5 | 2 | | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | 8 | 2 | | 6 | | 6 |
| Detector Phase | 4 | 4 | 4 | 8 | 8 | 8 | 5 | 2 | 6 | 6 | 6 |
| Switch Phase | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Minimum Split (s) | 36.0 | 36.0 | 36.0 | 40.0 | 40.0 | 40.0 | 8.0 | 29.0 | 32.0 | 32.0 | 32.0 |
| Total Split (s) | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 100.0 | 80.0 | 80.0 | 80.0 |
| Total Split (%) | 16.7% | 16.7% | 16.7% | 16.7% | 16.7% | 16.7% | 16.7% | 83.3% | 66.7% | 66.7% | 66.7% |
| Yellow Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| 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) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 6.0 | 6.0 | 6.0 | 6.0 |
| Lead/Lag | | | | | | | Lead | | Lag | Lag | Lag |
| Lead-Lag Optimize? | | | | | | | Yes | | Yes | Yes | Yes |
| Recall Mode | None | None | None | None | None | None | None | C-Min | C-Min | C-Min | C-Min |
| Act Effct Green (s) | 11.1 | 11.1 | 11.1 | 11.1 | 11.1 | 11.1 | 98.9 | 97.9 | 81.2 | 81.2 | 81.2 |
| Actuated g/C Ratio | 0.09 | 0.09 | 0.09 | 0.09 | 0.09 | 0.09 | 0.82 | 0.82 | 0.68 | 0.68 | 0.68 |
| v/c Ratio | 0.65 | 0.22 | 0.67 | 0.48 | 0.17 | 0.11 | 0.79 | 0.62 | 0.10 | 0.76 | 0.08 |
| Control Delay | 74.8 | 51.7 | 19.5 | 63.4 | 50.8 | 1.0 | 45.9 | 5.5 | 5.9 | 5.5 | 0.8 |
| 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 | 74.8 | 51.7 | 19.5 | 63.4 | 50.8 | 1.0 | 45.9 | 5.5 | 5.9 | 5.5 | 0.8 |
| LOS | E | D | B | E | D | A | D | A | A | A | A |
| Approach Delay | | 36.5 | | | 47.4 | | | 9.6 | | 5.3 | |
| Approach LOS | | D | | | D | | | A | | A | |

| Intersection Summary | |
|---|---|
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 82 (68%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow | |
| Natural Cycle: 120 | |
| Control Type: Actuated-Coordinated | |
| Maximum v/c Ratio: 0.79 | |
| Intersection Signal Delay: 10.8 | Intersection LOS: B |
| Intersection Capacity Utilization 84.6% | ICU Level of Service E |
| Analysis Period (min) 15 | |

Splits and Phases: 8: University Blvd/S University Blvd & E Easter Ave/Easter Pl



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 76 | 35 | 203 | 56 | 28 | 22 | 189 | 1604 | 59 | 16 | 1719 | 76 |
| Future Volume (veh/h) | 76 | 35 | 203 | 56 | 28 | 22 | 189 | 1604 | 59 | 16 | 1719 | 76 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 0.98 | | 0.98 | 0.99 | | 0.98 | 1.00 | | 1.00 | 1.00 | | 0.99 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 81 | 37 | 216 | 60 | 30 | 23 | 201 | 1706 | 63 | 17 | 1829 | 81 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 207 | 234 | 194 | 179 | 234 | 194 | 309 | 2738 | 101 | 215 | 2464 | 1094 |
| Arrive On Green | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.05 | 0.78 | 0.78 | 1.00 | 1.00 | 1.00 |
| Sat Flow, veh/h | 1326 | 1870 | 1551 | 1111 | 1870 | 1551 | 1781 | 3495 | 129 | 270 | 3554 | 1577 |
| Grp Volume(v), veh/h | 81 | 37 | 216 | 60 | 30 | 23 | 201 | 864 | 905 | 17 | 1829 | 81 |
| Grp Sat Flow(s),veh/h/ln | 1326 | 1870 | 1551 | 1111 | 1870 | 1551 | 1781 | 1777 | 1847 | 270 | 1777 | 1577 |
| Q Serve(g_s), s | 6.9 | 2.1 | 15.0 | 6.1 | 1.7 | 1.6 | 3.7 | 24.6 | 25.0 | 1.4 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 8.7 | 2.1 | 15.0 | 8.2 | 1.7 | 1.6 | 3.7 | 24.6 | 25.0 | 15.6 | 0.0 | 0.0 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.07 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 207 | 234 | 194 | 179 | 234 | 194 | 309 | 1392 | 1446 | 215 | 2464 | 1094 |
| V/C Ratio(X) | 0.39 | 0.16 | 1.11 | 0.33 | 0.13 | 0.12 | 0.65 | 0.62 | 0.63 | 0.08 | 0.74 | 0.07 |
| Avail Cap(c_a), veh/h | 207 | 234 | 194 | 179 | 234 | 194 | 446 | 1392 | 1446 | 215 | 2464 | 1094 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 2.00 | 2.00 | 2.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 50.5 | 46.9 | 52.5 | 50.5 | 46.7 | 46.6 | 4.1 | 5.5 | 5.5 | 1.3 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 0.4 | 0.1 | 98.6 | 0.4 | 0.1 | 0.1 | 0.9 | 2.1 | 2.1 | 0.7 | 2.1 | 0.1 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 2.4 | 1.0 | 11.2 | 1.7 | 0.8 | 0.6 | 1.1 | 6.9 | 7.3 | 0.1 | 0.7 | 0.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 51.0 | 47.0 | 151.1 | 50.9 | 46.8 | 46.7 | 4.9 | 7.6 | 7.6 | 2.1 | 2.1 | 0.1 |
| LnGrp LOS | D | D | F | D | D | D | A | A | A | A | A | A |
| Approach Vol, veh/h | | 334 | | | 113 | | | 1970 | | | 1927 | |
| Approach Delay, s/veh | | 115.3 | | | 49.0 | | | 7.3 | | | 2.0 | |
| Approach LOS | | F | | | D | | | A | | | A | |

| Timer - Assigned Phs | | 2 | | 4 | 5 | 6 | | 8 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | | 100.0 | | 20.0 | 10.8 | 89.2 | | 20.0 | | | | |
| Change Period (Y+Rc), s | | 6.0 | | 5.0 | 5.0 | 6.0 | | 5.0 | | | | |
| Max Green Setting (Gmax), s | | 94.0 | | 15.0 | 15.0 | 74.0 | | 15.0 | | | | |
| Max Q Clear Time (g_c+I1), s | | 27.0 | | 17.0 | 5.7 | 17.6 | | 10.2 | | | | |
| Green Ext Time (p_c), s | | 46.0 | | 0.0 | 0.1 | 44.5 | | 0.1 | | | | |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 14.3 |
| HCM 6th LOS | B |

Notes

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

| Intersection | |
|---|---|
| Int Delay, s/veh | 3.8 |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 36 | 195 | 183 | 113 | 119 | 44 |
| Future Vol, veh/h | 36 | 195 | 183 | 113 | 119 | 44 |
| 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 | 96 | 96 | 96 | 96 | 96 | 96 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 38 | 203 | 191 | 118 | 124 | 46 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 309 | 0 | - | 0 | 529 | 250 |
| Stage 1 | - | - | - | - | 250 | - |
| Stage 2 | - | - | - | - | 279 | - |
| Critical Hdwy | 4.12 | - | - | - | 6.42 | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.42 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.42 | - |
| Follow-up Hdwy | 2.218 | - | - | - | 3.518 | 3.318 |
| Pot Cap-1 Maneuver | 1252 | - | - | - | 510 | 789 |
| Stage 1 | - | - | - | - | 792 | - |
| Stage 2 | - | - | - | - | 768 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | 1252 | - | - | - | 493 | 789 |
| Mov Cap-2 Maneuver | - | - | - | - | 493 | - |
| Stage 1 | - | - | - | - | 765 | - |
| Stage 2 | - | - | - | - | 768 | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 1.2 | 0 | 14.5 |
| HCM LOS | | | B |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|
| Capacity (veh/h) | 1252 | - | - | - | 549 |
| HCM Lane V/C Ratio | 0.03 | - | - | - | 0.309 |
| HCM Control Delay (s) | 8 | 0 | - | - | 14.5 |
| HCM Lane LOS | A | A | - | - | B |
| HCM 95th %tile Q(veh) | 0.1 | - | - | - | 1.3 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.7 |

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 213 | 15 | 11 | 215 | 7 | 17 |
| Future Vol, veh/h | 213 | 15 | 11 | 215 | 7 | 17 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 91 | 91 | 91 | 91 | 91 | 91 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 234 | 16 | 12 | 236 | 8 | 19 |

| Major/Minor | Major1 | | Major2 | | Minor1 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 0 | 0 | 250 | 0 | 502 | 242 |
| Stage 1 | - | - | - | - | 242 | - |
| Stage 2 | - | - | - | - | 260 | - |
| Critical Hdwy | - | - | 4.12 | - | 6.42 | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.42 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.42 | - |
| Follow-up Hdwy | - | - | 2.218 | - | 3.518 | 3.318 |
| Pot Cap-1 Maneuver | - | - | 1316 | - | 529 | 797 |
| Stage 1 | - | - | - | - | 798 | - |
| Stage 2 | - | - | - | - | 783 | - |
| Platoon blocked, % | - | - | | - | | |
| Mov Cap-1 Maneuver | - | - | 1316 | - | 524 | 797 |
| Mov Cap-2 Maneuver | - | - | - | - | 524 | - |
| Stage 1 | - | - | - | - | 798 | - |
| Stage 2 | - | - | - | - | 775 | - |

| Approach | EB | WB | NB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 0.4 | 10.4 |
| HCM LOS | | | B |

| Minor Lane/Major Mvmt | NBLn1 | EBT | EBR | WBL | WBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | 692 | - | - | 1316 | - |
| HCM Lane V/C Ratio | 0.038 | - | - | 0.009 | - |
| HCM Control Delay (s) | 10.4 | - | - | 7.8 | 0 |
| HCM Lane LOS | B | - | - | A | A |
| HCM 95th %tile Q(veh) | 0.1 | - | - | 0 | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 3.4 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 24 | 155 | 12 | 9 | 163 | 50 | 14 | 5 | 12 | 61 | 4 | 30 |
| Future Vol, veh/h | 24 | 155 | 12 | 9 | 163 | 50 | 14 | 5 | 12 | 61 | 4 | 30 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | - | - | - | - |
| 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 | 2 | 2 | 2 |
| Mvmt Flow | 27 | 172 | 13 | 10 | 181 | 56 | 16 | 6 | 13 | 68 | 4 | 33 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 237 | 0 | 0 | 185 | 0 | 0 | 481 | 490 | 179 | 471 | 468 | 209 |
| Stage 1 | - | - | - | - | - | - | 233 | 233 | - | 229 | 229 | - |
| Stage 2 | - | - | - | - | - | - | 248 | 257 | - | 242 | 239 | - |
| Critical Hdwy | 4.12 | - | - | 4.12 | - | - | 7.12 | 6.52 | 6.22 | 7.12 | 6.52 | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.12 | 5.52 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.12 | 5.52 | - |
| Follow-up Hdwy | 2.218 | - | - | 2.218 | - | - | 3.518 | 4.018 | 3.318 | 3.518 | 4.018 | 3.318 |
| Pot Cap-1 Maneuver | 1330 | - | - | 1390 | - | - | 495 | 479 | 864 | 503 | 493 | 831 |
| Stage 1 | - | - | - | - | - | - | 770 | 712 | - | 774 | 715 | - |
| Stage 2 | - | - | - | - | - | - | 756 | 695 | - | 762 | 708 | - |
| Platoon blocked, % | | - | - | | - | - | | | | | | |
| Mov Cap-1 Maneuver | 1330 | - | - | 1390 | - | - | 461 | 464 | 864 | 479 | 478 | 831 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 461 | 464 | - | 479 | 478 | - |
| Stage 1 | - | - | - | - | - | - | 752 | 696 | - | 756 | 709 | - |
| Stage 2 | - | - | - | - | - | - | 715 | 689 | - | 727 | 692 | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 1 | 0.3 | 11.8 | 13 |
| HCM LOS | | | B | B |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 563 | 1330 | - | - | 1390 | - | - | 553 |
| HCM Lane V/C Ratio | 0.061 | 0.02 | - | - | 0.007 | - | - | 0.191 |
| HCM Control Delay (s) | 11.8 | 7.8 | 0 | - | 7.6 | 0 | - | 13 |
| HCM Lane LOS | B | A | A | - | A | A | - | B |
| HCM 95th %tile Q(veh) | 0.2 | 0.1 | - | - | 0 | - | - | 0.7 |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 8.6 |
| Intersection LOS | A |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 25 | 129 | 151 | 51 | 63 | 28 |
| Future Vol, veh/h | 25 | 129 | 151 | 51 | 63 | 28 |
| Peak Hour Factor | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 27 | 142 | 166 | 56 | 69 | 31 |
| Number of Lanes | 0 | 1 | 1 | 0 | 1 | 0 |

| Approach | EB | WB | SB |
|---|---|---|---|
| Opposing Approach | WB | EB | |
| Opposing Lanes | 1 | 1 | 0 |
| Conflicting Approach Left | SB | | WB |
| Conflicting Lanes Left | 1 | 0 | 1 |
| Conflicting Approach Right | | SB | EB |
| Conflicting Lanes Right | 0 | 1 | 1 |
| HCM Control Delay | 8.6 | 8.7 | 8.5 |
| HCM LOS | A | A | A |

| Lane | EBLn1 | WBLn1 | SBLn1 |
|---|---|---|---|
| Vol Left, % | 16% | 0% | 69% |
| Vol Thru, % | 84% | 75% | 0% |
| Vol Right, % | 0% | 25% | 31% |
| Sign Control | Stop | Stop | Stop |
| Traffic Vol by Lane | 154 | 202 | 91 |
| LT Vol | 25 | 0 | 63 |
| Through Vol | 129 | 151 | 0 |
| RT Vol | 0 | 51 | 28 |
| Lane Flow Rate | 169 | 222 | 100 |
| Geometry Grp | 1 | 1 | 1 |
| Degree of Util (X) | 0.209 | 0.26 | 0.132 |
| Departure Headway (Hd) | 4.439 | 4.21 | 4.741 |
| Convergence, Y/N | Yes | Yes | Yes |
| Cap | 811 | 855 | 757 |
| Service Time | 2.458 | 2.228 | 2.767 |
| HCM Lane V/C Ratio | 0.208 | 0.26 | 0.132 |
| HCM Control Delay | 8.6 | 8.7 | 8.5 |
| HCM Lane LOS | A | A | A |
| HCM 95th-tile Q | 0.8 | 1 | 0.5 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 5.5 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 15 | 55 | 66 | 10 | 6 | 76 |
| Future Vol, veh/h | 15 | 55 | 66 | 10 | 6 | 76 |
| 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 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 76 | 25 | 76 | 76 | 76 | 76 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 20 | 220 | 87 | 13 | 8 | 100 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 210 | 94 | 0 | 0 | 100 | 0 |
| Stage 1 | 94 | - | - | - | - | - |
| Stage 2 | 116 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | - | - | 4.12 | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | - | - | 2.218 | - |
| Pot Cap-1 Maneuver | 778 | 963 | - | - | 1493 | - |
| Stage 1 | 930 | - | - | - | - | - |
| Stage 2 | 909 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 773 | 963 | - | - | 1493 | - |
| Mov Cap-2 Maneuver | 773 | - | - | - | - | - |
| Stage 1 | 930 | - | - | - | - | - |
| Stage 2 | 904 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 10.1 | 0 | 0.5 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 944 | 1493 | - |
| HCM Lane V/C Ratio | - | - | 0.254 | 0.005 | - |
| HCM Control Delay (s) | - | - | 10.1 | 7.4 | 0 |
| HCM Lane LOS | - | - | B | A | A |
| HCM 95th %tile Q(veh) | - | - | 1 | 0 | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 4.2 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 29 | 10 | 2 | 13 | 16 | 59 | 4 | 113 | 4 | 11 | 67 | 38 |
| Future Vol, veh/h | 29 | 10 | 2 | 13 | 16 | 59 | 4 | 113 | 4 | 11 | 67 | 38 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 38 | 13 | 3 | 17 | 21 | 78 | 5 | 149 | 5 | 14 | 88 | 50 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 352 | 305 | 113 | 311 | 328 | 152 | 138 | 0 | 0 | 154 | 0 | 0 |
| Stage 1 | 141 | 141 | - | 162 | 162 | - | - | - | - | - | - | - |
| Stage 2 | 211 | 164 | - | 149 | 166 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.12 | 6.52 | 6.22 | 7.12 | 6.52 | 6.22 | 4.12 | - | - | 4.12 | - | - |
| Critical Hdwy Stg 1 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 4.018 | 3.318 | 3.518 | 4.018 | 3.318 | 2.218 | - | - | 2.218 | - | - |
| Pot Cap-1 Maneuver | 603 | 608 | 940 | 642 | 591 | 894 | 1446 | - | - | 1426 | - | - |
| Stage 1 | 862 | 780 | - | 840 | 764 | - | - | - | - | - | - | - |
| Stage 2 | 791 | 762 | - | 854 | 761 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | 529 | 599 | 940 | 622 | 582 | 894 | 1446 | - | - | 1426 | - | - |
| Mov Cap-2 Maneuver | 529 | 599 | - | 622 | 582 | - | - | - | - | - | - | - |
| Stage 1 | 859 | 771 | - | 837 | 761 | - | - | - | - | - | - | - |
| Stage 2 | 700 | 759 | - | 828 | 753 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 12.2 | 10.5 | 0.2 | 0.7 |
| HCM LOS | B | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 1446 | - | - | 557 | 769 | 1426 | - | - |
| HCM Lane V/C Ratio | 0.004 | - | - | 0.097 | 0.151 | 0.01 | - | - |
| HCM Control Delay (s) | 7.5 | 0 | - | 12.2 | 10.5 | 7.5 | 0 | - |
| HCM Lane LOS | A | A | - | B | B | A | A | - |
| HCM 95th %tile Q(veh) | 0 | - | - | 0.3 | 0.5 | 0 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 3.8 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 49 | 67 | 147 | 54 | 42 | 67 |
| Future Vol, veh/h | 49 | 67 | 147 | 54 | 42 | 67 |
| 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 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 84 | 84 | 84 | 84 | 84 | 84 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 58 | 80 | 175 | 64 | 50 | 80 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 387 | 207 | 0 | 0 | 239 | 0 |
| Stage 1 | 207 | - | - | - | - | - |
| Stage 2 | 180 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | - | - | 4.12 | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | - | - | 2.218 | - |
| Pot Cap-1 Maneuver | 616 | 833 | - | - | 1328 | - |
| Stage 1 | 828 | - | - | - | - | - |
| Stage 2 | 851 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 592 | 833 | - | - | 1328 | - |
| Mov Cap-2 Maneuver | 592 | - | - | - | - | - |
| Stage 1 | 828 | - | - | - | - | - |
| Stage 2 | 818 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 11.3 | 0 | 3 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 711 | 1328 | - |
| HCM Lane V/C Ratio | - | - | 0.194 | 0.038 | - |
| HCM Control Delay (s) | - | - | 11.3 | 7.8 | 0 |
| HCM Lane LOS | - | - | B | A | A |
| HCM 95th %tile Q(veh) | - | - | 0.7 | 0.1 | - |

| Lane Group | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 1378 | 63 | 36 | 818 | 53 | 39 |
| Future Volume (vph) | 1378 | 63 | 36 | 818 | 53 | 39 |
| Turn Type | NA | Perm | pm+pt | NA | Prot | Perm |
| Protected Phases | 2 | | 1 | 6 | 8 | |
| Permitted Phases | | 2 | 6 | | | 8 |
| Detector Phase | 2 | 2 | 1 | 6 | 8 | 8 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 17.0 | 17.0 | 3.0 | 17.0 | 5.0 | 5.0 |
| Minimum Split (s) | 23.0 | 23.0 | 7.0 | 23.0 | 30.0 | 30.0 |
| Total Split (s) | 76.0 | 76.0 | 12.0 | 88.0 | 32.0 | 32.0 |
| Total Split (%) | 63.3% | 63.3% | 10.0% | 73.3% | 26.7% | 26.7% |
| Yellow Time (s) | 4.0 | 4.0 | 3.0 | 4.0 | 3.0 | 3.0 |
| All-Red Time (s) | 2.0 | 2.0 | 1.0 | 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) | 6.0 | 6.0 | 4.0 | 6.0 | 5.0 | 5.0 |
| Lead/Lag | Lag | Lag | Lead | | | |
| Lead-Lag Optimize? | Yes | Yes | Yes | | | |
| Recall Mode | C-Min | C-Min | None | C-Min | None | None |
| Act Effct Green (s) | 95.8 | 95.8 | 102.1 | 101.3 | 10.9 | 10.9 |
| Actuated g/C Ratio | 0.80 | 0.80 | 0.85 | 0.84 | 0.09 | 0.09 |
| v/c Ratio | 0.50 | 0.05 | 0.12 | 0.19 | 0.34 | 0.23 |
| Control Delay | 7.4 | 3.8 | 2.0 | 1.3 | 53.9 | 15.8 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 7.4 | 3.8 | 2.0 | 1.3 | 53.9 | 15.8 |
| LOS | A | A | A | A | D | B |
| Approach Delay | 7.3 | | | 1.4 | 37.7 | |
| Approach LOS | A | | | A | D | |

| Intersection Summary | |
|---|---|
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 111 (93%), Referenced to phase 2:EBT and 6:WBTL, Start of 1st Green | |
| Natural Cycle: 75 | |
| Control Type: Actuated-Coordinated | |
| Maximum v/c Ratio: 0.50 | |
| Intersection Signal Delay: 6.3 | Intersection LOS: A |
| Intersection Capacity Utilization 54.0% | ICU Level of Service A |
| Analysis Period (min) 15 | |

Splits and Phases: 1: Race St & Arapahoe Rd

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 1378 | 63 | 36 | 818 | 53 | 39 |
| Future Volume (veh/h) | 1378 | 63 | 36 | 818 | 53 | 39 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | | 1.00 | 1.00 | | 1.00 | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | No | | | No | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 1406 | 64 | 37 | 835 | 54 | 40 |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 2885 | 1281 | 340 | 4406 | 81 | 72 |
| Arrive On Green | 0.81 | 0.81 | 0.02 | 0.86 | 0.05 | 0.05 |
| Sat Flow, veh/h | 3647 | 1578 | 1781 | 5274 | 1781 | 1585 |
| Grp Volume(v), veh/h | 1406 | 64 | 37 | 835 | 54 | 40 |
| Grp Sat Flow(s),veh/h/ln | 1777 | 1578 | 1781 | 1702 | 1781 | 1585 |
| Q Serve(g_s), s | 14.8 | 1.0 | 0.4 | 3.2 | 3.6 | 3.0 |
| Cycle Q Clear(g_c), s | 14.8 | 1.0 | 0.4 | 3.2 | 3.6 | 3.0 |
| Prop In Lane | | 1.00 | 1.00 | | 1.00 | 1.00 |
| Lane Grp Cap(c), veh/h | 2885 | 1281 | 340 | 4406 | 81 | 72 |
| V/C Ratio(X) | 0.49 | 0.05 | 0.11 | 0.19 | 0.67 | 0.56 |
| Avail Cap(c_a), veh/h | 2885 | 1281 | 427 | 4406 | 401 | 357 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.97 | 0.97 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 3.5 | 2.2 | 2.8 | 1.3 | 56.4 | 56.1 |
| Incr Delay (d2), s/veh | 0.6 | 0.1 | 0.1 | 0.1 | 3.5 | 2.5 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 3.6 | 0.2 | 0.1 | 0.5 | 1.7 | 1.2 |
| Unsig. Movement Delay, s/veh | | | | | | |
| LnGrp Delay(d),s/veh | 4.1 | 2.3 | 2.8 | 1.4 | 59.9 | 58.6 |
| LnGrp LOS | A | A | A | A | E | E |
| Approach Vol, veh/h | 1470 | | | 872 | 94 | |
| Approach Delay, s/veh | 4.0 | | | 1.5 | 59.3 | |
| Approach LOS | A | | | A | E | |

| Timer - Assigned Phs | 1 | 2 | | | | 6 | 8 |
|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 6.1 | 103.4 | | | | 109.6 | 10.4 |
| Change Period (Y+Rc), s | 4.0 | 6.0 | | | | 6.0 | 5.0 |
| Max Green Setting (Gmax), s | 8.0 | 70.0 | | | | 82.0 | 27.0 |
| Max Q Clear Time (g_c+I1), s | 2.4 | 16.8 | | | | 5.2 | 5.6 |
| Green Ext Time (p_c), s | 0.0 | 8.6 | | | | 4.3 | 0.1 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 5.3 |
| HCM 6th LOS | A |

| Lane Group | EBL | EBT | WBL | WBT | NBT | NBR | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | |
| Traffic Volume (vph) | 54 | 1308 | 58 | 776 | 7 | 46 | 4 | 30 |
| Future Volume (vph) | 54 | 1308 | 58 | 776 | 7 | 46 | 4 | 30 |
| Turn Type | pm+pt | NA | pm+pt | NA | NA | Perm | NA | Perm |
| Protected Phases | 5 | 2 | 1 | 6 | 8 | | 4 | |
| Permitted Phases | 2 | | 6 | | | 8 | | 4 |
| Detector Phase | 5 | 2 | 1 | 6 | 8 | 8 | 4 | 4 |
| Switch Phase | | | | | | | | |
| Minimum Initial (s) | 3.0 | 17.0 | 3.0 | 17.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Minimum Split (s) | 7.0 | 26.0 | 7.0 | 23.0 | 35.0 | 35.0 | 34.0 | 34.0 |
| Total Split (s) | 12.0 | 72.0 | 12.0 | 72.0 | 18.0 | 18.0 | 18.0 | 18.0 |
| Total Split (%) | 10.0% | 60.0% | 10.0% | 60.0% | 15.0% | 15.0% | 15.0% | 15.0% |
| Yellow Time (s) | 3.0 | 4.0 | 3.0 | 4.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| All-Red Time (s) | 1.0 | 2.0 | 1.0 | 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) | 4.0 | 6.0 | 4.0 | 6.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Lead/Lag | Lead | Lag | Lead | Lag | | | | |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | | | | |
| Recall Mode | None | C-Min | None | C-Min | None | None | None | None |
| Act Effct Green (s) | 85.4 | 78.6 | 85.6 | 78.7 | 8.6 | 8.6 | 10.7 | 10.7 |
| Actuated g/C Ratio | 0.71 | 0.66 | 0.71 | 0.66 | 0.07 | 0.07 | 0.09 | 0.09 |
| v/c Ratio | 0.13 | 0.43 | 0.23 | 0.28 | 0.46 | 0.23 | 0.67 | 0.13 |
| Control Delay | 8.0 | 11.8 | 5.1 | 2.1 | 63.9 | 2.5 | 72.7 | 1.2 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 8.0 | 11.8 | 5.1 | 2.1 | 63.9 | 2.5 | 72.7 | 1.2 |
| LOS | A | B | A | A | E | A | E | A |
| Approach Delay | | 11.6 | | 2.3 | 36.1 | | 56.1 | |
| Approach LOS | | B | | A | D | | E | |

| Intersection Summary | |
|---|---|
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 102 (85%), Referenced to phase 2:EBTL and 6:WBTL, Start of 1st Green | |
| Natural Cycle: 105 | |
| Control Type: Actuated-Coordinated | |
| Maximum v/c Ratio: 0.67 | |
| Intersection Signal Delay: 11.5 | Intersection LOS: B |
| Intersection Capacity Utilization 56.6% | ICU Level of Service B |
| Analysis Period (min) 15 | |

Splits and Phases: 2: Vine St & Arapahoe Rd

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 54 | 1308 | 54 | 58 | 776 | 105 | 48 | 7 | 46 | 97 | 4 | 30 |
| Future Volume (veh/h) | 54 | 1308 | 54 | 58 | 776 | 105 | 48 | 7 | 46 | 97 | 4 | 30 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 0.99 | 1.00 | | 0.99 | 1.00 | | 0.95 | 1.00 | | 0.97 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 57 | 1377 | 57 | 61 | 817 | 111 | 51 | 7 | 48 | 102 | 4 | 32 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 506 | 3384 | 140 | 354 | 3065 | 414 | 89 | 12 | 85 | 137 | 5 | 122 |
| Arrive On Green | 0.05 | 1.00 | 1.00 | 0.05 | 1.00 | 1.00 | 0.06 | 0.06 | 0.06 | 0.08 | 0.08 | 0.08 |
| Sat Flow, veh/h | 1781 | 5028 | 208 | 1781 | 4546 | 614 | 1575 | 216 | 1509 | 1717 | 67 | 1531 |
| Grp Volume(v), veh/h | 57 | 932 | 502 | 61 | 610 | 318 | 58 | 0 | 48 | 106 | 0 | 32 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1702 | 1832 | 1781 | 1702 | 1756 | 1792 | 0 | 1509 | 1785 | 0 | 1531 |
| Q Serve(g_s), s | 1.2 | 0.0 | 0.0 | 1.3 | 0.0 | 0.0 | 3.8 | 0.0 | 3.7 | 7.0 | 0.0 | 2.4 |
| Cycle Q Clear(g_c), s | 1.2 | 0.0 | 0.0 | 1.3 | 0.0 | 0.0 | 3.8 | 0.0 | 3.7 | 7.0 | 0.0 | 2.4 |
| Prop In Lane | 1.00 | | 0.11 | 1.00 | | 0.35 | 0.88 | | 1.00 | 0.96 | | 1.00 |
| Lane Grp Cap(c), veh/h | 506 | 2291 | 1233 | 354 | 2295 | 1184 | 101 | 0 | 85 | 142 | 0 | 122 |
| V/C Ratio(X) | 0.11 | 0.41 | 0.41 | 0.17 | 0.27 | 0.27 | 0.57 | 0.00 | 0.56 | 0.74 | 0.00 | 0.26 |
| Avail Cap(c_a), veh/h | 584 | 2291 | 1233 | 429 | 2295 | 1184 | 194 | 0 | 164 | 193 | 0 | 166 |
| HCM Platoon Ratio | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.87 | 0.87 | 0.87 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 5.6 | 0.0 | 0.0 | 5.6 | 0.0 | 0.0 | 55.2 | 0.0 | 55.2 | 54.0 | 0.0 | 51.9 |
| Incr Delay (d2), s/veh | 0.0 | 0.5 | 0.9 | 0.1 | 0.3 | 0.6 | 1.9 | 0.0 | 2.2 | 5.9 | 0.0 | 0.4 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.4 | 0.1 | 0.3 | 0.4 | 0.1 | 0.2 | 1.8 | 0.0 | 1.5 | 3.4 | 0.0 | 0.9 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 5.6 | 0.5 | 0.9 | 5.6 | 0.3 | 0.6 | 57.1 | 0.0 | 57.3 | 59.9 | 0.0 | 52.3 |
| LnGrp LOS | A | A | A | A | A | A | E | A | E | E | A | D |
| Approach Vol, veh/h | | 1491 | | | 989 | | | 106 | | | 138 | |
| Approach Delay, s/veh | | 0.8 | | | 0.7 | | | 57.2 | | | 58.2 | |
| Approach LOS | | A | | | A | | | E | | | E | |

| Timer - Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 6.9 | 86.8 | | 14.6 | 6.8 | 86.9 | | 11.8 |
| Change Period (Y+Rc), s | 4.0 | 6.0 | | 5.0 | 4.0 | 6.0 | | 5.0 |
| Max Green Setting (Gmax), s | 8.0 | 66.0 | | 13.0 | 8.0 | 66.0 | | 13.0 |
| Max Q Clear Time (g_c+I1), s | 3.3 | 2.0 | | 9.0 | 3.2 | 2.0 | | 5.8 |
| Green Ext Time (p_c), s | 0.0 | 8.0 | | 0.1 | 0.0 | 4.4 | | 0.1 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 5.9 |
| HCM 6th LOS | A |

Notes

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

| 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 | 12 | 1406 | 32 | 24 | 930 | 11 | 0 | 0 | 42 | 0 | 0 | 9 |
| Future Vol, veh/h | 12 | 1406 | 32 | 24 | 930 | 11 | 0 | 0 | 42 | 0 | 0 | 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 | - | - | None | - | - | None |
| Storage Length | 150 | - | 0 | 100 | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 13 | 1528 | 35 | 26 | 1011 | 12 | 0 | 0 | 46 | 0 | 0 | 10 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 1023 | 0 | 0 | 1563 | 0 | 0 | - | 2629 | 764 | - | 2658 | 512 |
| Stage 1 | - | - | - | - | - | - | - | 1554 | - | - | 1069 | - |
| Stage 2 | - | - | - | - | - | - | - | 1075 | - | - | 1589 | - |
| Critical Hdwy | 5.34 | - | - | 5.34 | - | - | - | 6.54 | 7.14 | - | 6.54 | 7.14 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | - | 5.54 | - | - | 5.54 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | - | 5.54 | - | - | 5.54 | - |
| Follow-up Hdwy | 3.12 | - | - | 3.12 | - | - | - | 4.02 | 3.92 | - | 4.02 | 3.92 |
| Pot Cap-1 Maneuver | 857 | - | - | *737 | - | - | 0 | *356 | *586 | 0 | *326 | *716 |
| Stage 1 | - | - | - | - | - | - | 0 | *572 | - | 0 | *629 | - |
| Stage 2 | - | - | - | - | - | - | 0 | *625 | - | 0 | *572 | - |
| Platoon blocked, % | 1 | - | - | 1 | - | - | | 1 | 1 | | 1 | 1 |
| Mov Cap-1 Maneuver | 857 | - | - | *737 | - | - | - | *338 | *586 | - | *310 | *716 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | - | *338 | - | - | *310 | - |
| Stage 1 | - | - | - | - | - | - | - | *563 | - | - | *607 | - |
| Stage 2 | - | - | - | - | - | - | - | *603 | - | - | *563 | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 0.1 | 0.3 | 11.7 | 10.1 |
| HCM LOS | | | B | B |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 586 | 857 | - | - | * 737 | - | - | 716 |
| HCM Lane V/C Ratio | 0.078 | 0.015 | - | - | 0.035 | - | - | 0.014 |
| HCM Control Delay (s) | 11.7 | 9.3 | - | - | 10.1 | - | - | 10.1 |
| HCM Lane LOS | B | A | - | - | B | - | - | B |
| HCM 95th %tile Q(veh) | 0.3 | 0 | - | - | 0.1 | - | - | 0 |

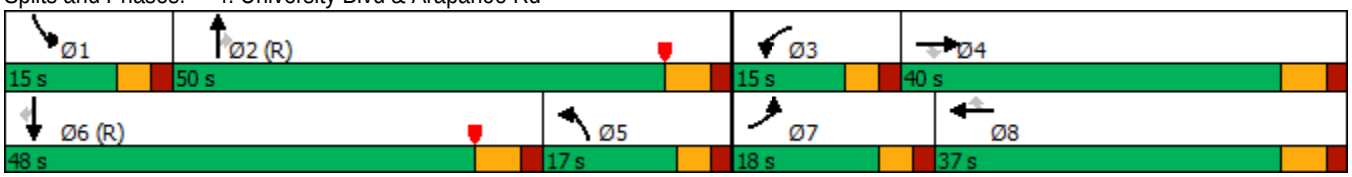
Notes

~: 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) | 215 | 1054 | 181 | 233 | 627 | 417 | 206 | 1338 | 205 | 269 | 895 | 132 |
| Future Volume (vph) | 215 | 1054 | 181 | 233 | 627 | 417 | 206 | 1338 | 205 | 269 | 895 | 132 |
| Turn Type | Prot | NA | Perm | Prot | NA | Perm | Prot | NA | Perm | Prot | NA | Perm |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | | | 4 | | | 8 | | | 2 | | | 6 |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | 8 | 5 | 2 | 2 | 1 | 6 | 6 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 | 3.0 | 10.0 | 10.0 | 3.0 | 10.0 | 10.0 |
| Minimum Split (s) | 8.0 | 39.0 | 39.0 | 8.0 | 37.0 | 37.0 | 8.0 | 35.0 | 35.0 | 8.0 | 40.0 | 40.0 |
| Total Split (s) | 18.0 | 40.0 | 40.0 | 15.0 | 37.0 | 37.0 | 17.0 | 50.0 | 50.0 | 15.0 | 48.0 | 48.0 |
| Total Split (%) | 15.0% | 33.3% | 33.3% | 12.5% | 30.8% | 30.8% | 14.2% | 41.7% | 41.7% | 12.5% | 40.0% | 40.0% |
| Yellow Time (s) | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 |
| 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 | 0.0 |
| Total Lost Time (s) | 5.0 | 6.0 | 6.0 | 5.0 | 6.0 | 6.0 | 5.0 | 6.0 | 6.0 | 5.0 | 6.0 | 6.0 |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lag | Lag | Lag | Lead | Lead | Lead |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | None | None | None | None | None | None | C-Min | C-Min | None | C-Min | C-Min |
| Act Effct Green (s) | 11.2 | 31.6 | 31.6 | 9.9 | 30.3 | 30.3 | 17.9 | 46.5 | 46.5 | 10.0 | 38.6 | 38.6 |
| Actuated g/C Ratio | 0.09 | 0.26 | 0.26 | 0.08 | 0.25 | 0.25 | 0.15 | 0.39 | 0.39 | 0.08 | 0.32 | 0.32 |
| v/c Ratio | 0.70 | 0.82 | 0.34 | 0.86 | 0.51 | 0.79 | 0.42 | 0.71 | 0.29 | 0.98 | 0.57 | 0.23 |
| Control Delay | 76.9 | 41.5 | 7.0 | 82.0 | 39.9 | 33.0 | 42.7 | 26.4 | 3.0 | 103.2 | 35.2 | 5.4 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 76.9 | 41.5 | 7.0 | 82.0 | 39.9 | 33.0 | 42.7 | 26.4 | 3.0 | 103.2 | 35.2 | 5.4 |
| LOS | E | D | A | F | D | C | D | C | A | F | D | A |
| Approach Delay | | 42.4 | | | 45.4 | | | 25.6 | | | 46.3 | |
| Approach LOS | | D | | | D | | | C | | | D | |

| Intersection Summary | |
|---|---|
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 38 (32%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow | |
| Natural Cycle: 95 | |
| Control Type: Actuated-Coordinated | |
| Maximum v/c Ratio: 0.98 | |
| Intersection Signal Delay: 38.8 | Intersection LOS: D |
| Intersection Capacity Utilization 80.0% | ICU Level of Service D |
| Analysis Period (min) 15 | |

Splits and Phases: 4: University Blvd & Arapahoe Rd



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 215 | 1054 | 181 | 233 | 627 | 417 | 206 | 1338 | 205 | 269 | 895 | 132 |
| Future Volume (veh/h) | 215 | 1054 | 181 | 233 | 627 | 417 | 206 | 1338 | 205 | 269 | 895 | 132 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 0.99 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.99 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 224 | 1098 | 189 | 243 | 653 | 0 | 215 | 1394 | 214 | 280 | 932 | 138 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 283 | 1309 | 404 | 288 | 1317 | | 675 | 2010 | 622 | 288 | 1396 | 431 |
| Arrive On Green | 0.03 | 0.08 | 0.08 | 0.08 | 0.26 | 0.00 | 0.20 | 0.39 | 0.39 | 0.08 | 0.27 | 0.27 |
| Sat Flow, veh/h | 3456 | 5106 | 1576 | 3456 | 5106 | 1585 | 3456 | 5106 | 1579 | 3456 | 5106 | 1576 |
| Grp Volume(v), veh/h | 224 | 1098 | 189 | 243 | 653 | 0 | 215 | 1394 | 214 | 280 | 932 | 138 |
| Grp Sat Flow(s),veh/h/ln | 1728 | 1702 | 1576 | 1728 | 1702 | 1585 | 1728 | 1702 | 1579 | 1728 | 1702 | 1576 |
| Q Serve(g_s), s | 7.7 | 25.4 | 8.3 | 8.3 | 13.1 | 0.0 | 6.4 | 27.3 | 11.4 | 9.7 | 19.5 | 6.4 |
| Cycle Q Clear(g_c), s | 7.7 | 25.4 | 8.3 | 8.3 | 13.1 | 0.0 | 6.4 | 27.3 | 11.4 | 9.7 | 19.5 | 6.4 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 283 | 1309 | 404 | 288 | 1317 | | 675 | 2010 | 622 | 288 | 1396 | 431 |
| V/C Ratio(X) | 0.79 | 0.84 | 0.47 | 0.84 | 0.50 | | 0.32 | 0.69 | 0.34 | 0.97 | 0.67 | 0.32 |
| Avail Cap(c_a), veh/h | 374 | 1447 | 446 | 288 | 1319 | | 675 | 2010 | 622 | 288 | 1787 | 552 |
| HCM Platoon Ratio | 0.33 | 0.33 | 0.33 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 57.4 | 52.5 | 17.1 | 54.2 | 37.9 | 0.0 | 41.4 | 30.3 | 25.5 | 54.9 | 38.7 | 20.1 |
| Incr Delay (d2), s/veh | 6.0 | 3.8 | 0.3 | 19.0 | 0.1 | 0.0 | 0.1 | 2.0 | 1.5 | 45.1 | 2.5 | 2.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 3.7 | 12.1 | 3.3 | 4.3 | 5.4 | 0.0 | 2.7 | 11.1 | 4.5 | 5.9 | 8.3 | 3.3 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 63.3 | 56.3 | 17.4 | 73.2 | 38.0 | 0.0 | 41.5 | 32.3 | 27.0 | 100.0 | 41.3 | 22.1 |
| LnGrp LOS | E | E | B | E | D | | D | C | C | F | D | C |
| Approach Vol, veh/h | | 1511 | | | 896 | A | | 1823 | | | 1350 | |
| Approach Delay, s/veh | | 52.5 | | | 47.5 | | | 32.8 | | | 51.5 | |
| Approach LOS | | D | | | D | | | C | | | D | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 15.0 | 53.2 | 15.0 | 36.8 | 29.4 | 38.8 | 14.8 | 36.9 |
| Change Period (Y+Rc), s | 5.0 | 6.0 | 5.0 | 6.0 | 6.0 | * 6 | 5.0 | 6.0 |
| Max Green Setting (Gmax), s | 10.0 | 44.0 | 10.0 | 34.0 | 12.0 | * 42 | 13.0 | 31.0 |
| Max Q Clear Time (g_c+I1), s | 11.7 | 29.3 | 10.3 | 27.4 | 8.4 | 21.5 | 9.7 | 15.1 |
| Green Ext Time (p_c), s | 0.0 | 12.0 | 0.0 | 3.1 | 0.1 | 11.3 | 0.1 | 2.7 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 45.0 |
| HCM 6th LOS | D |

Notes

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

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.2 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | ↱ | | | ↱ | | ↑↑↑↳ | | | ↑↑↑ | ↱ |
| Traffic Vol, veh/h | 0 | 0 | 23 | 0 | 0 | 10 | 0 | 1762 | 2 | 0 | 1245 | 63 |
| Future Vol, veh/h | 0 | 0 | 23 | 0 | 0 | 10 | 0 | 1762 | 2 | 0 | 1245 | 63 |
| 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 | - | - | 0 | - | - | 0 | - | - | - | - | - | 0 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 | 100 | 100 | 92 | 92 | 100 | 100 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 0 | 25 | 0 | 0 | 11 | 0 | 1762 | 2 | 0 | 1245 | 63 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | - | - | 623 | - | - | 882 | - | 0 | 0 | - | - | 0 |
| Stage 1 | - | - | - | - | - | - | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - | - | - | - | - | - | - |
| Critical Hdwy | - | - | 7.14 | - | - | 7.14 | - | - | - | - | - | - |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | - | - | - | - | - | - |
| Follow-up Hdwy | - | - | 3.92 | - | - | 3.92 | - | - | - | - | - | - |
| Pot Cap-1 Maneuver | 0 | 0 | *632 | 0 | 0 | 248 | 0 | - | - | 0 | - | - |
| Stage 1 | 0 | 0 | - | 0 | 0 | - | 0 | - | - | 0 | - | - |
| Stage 2 | 0 | 0 | - | 0 | 0 | - | 0 | - | - | 0 | - | - |
| Platoon blocked, % | | | 1 | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | - | - | *632 | - | - | 248 | - | - | - | - | - | - |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | - | - | - | - | - | - |
| Stage 1 | - | - | - | - | - | - | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 10.9 | 20.2 | 0 | 0 |
| HCM LOS | B | C | | |

| Minor Lane/Major Mvmt | NBT | NBR | EBLn1 | WBLn1 | SBT | SBR |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 632 | 248 | - | - |
| HCM Lane V/C Ratio | - | - | 0.04 | 0.044 | - | - |
| HCM Control Delay (s) | - | - | 10.9 | 20.2 | - | - |
| HCM Lane LOS | - | - | B | C | - | - |
| HCM 95th %tile Q(veh) | - | - | 0.1 | 0.1 | - | - |

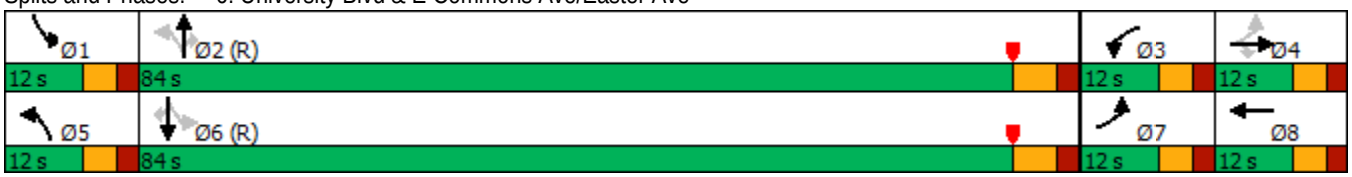
Notes

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

| Lane Group | EBL | EBT | EBR | WBL | WBT | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | |
| Traffic Volume (vph) | 72 | 6 | 51 | 59 | 13 | 108 | 1641 | 34 | 8 | 1191 | 52 |
| Future Volume (vph) | 72 | 6 | 51 | 59 | 13 | 108 | 1641 | 34 | 8 | 1191 | 52 |
| Turn Type | pm+pt | NA | Perm | Prot | NA | pm+pt | NA | Perm | pm+pt | NA | Perm |
| Protected Phases | 7 | 4 | | 3 | 8 | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | 4 | | | 2 | | 2 | 6 | | 6 |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | 5 | 2 | 2 | 1 | 6 | 6 |
| Switch Phase | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 3.0 | 4.0 | 3.0 | 3.0 | 5.0 | 5.0 | 3.0 | 5.0 | 5.0 |
| Minimum Split (s) | 8.0 | 35.0 | 35.0 | 9.0 | 32.0 | 8.0 | 24.0 | 24.0 | 8.0 | 29.0 | 29.0 |
| Total Split (s) | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 84.0 | 84.0 | 12.0 | 84.0 | 84.0 |
| Total Split (%) | 10.0% | 10.0% | 10.0% | 10.0% | 10.0% | 10.0% | 70.0% | 70.0% | 10.0% | 70.0% | 70.0% |
| Yellow Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 |
| 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) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 6.0 | 6.0 | 5.0 | 6.0 | 6.0 |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lead | Lag | Lag | Lead | Lag | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | None | None | None | None | None | C-Min | C-Min | None | C-Min | C-Min |
| Act Effct Green (s) | 11.3 | 5.7 | 5.7 | 6.9 | 5.9 | 96.0 | 94.8 | 94.8 | 90.1 | 84.4 | 84.4 |
| Actuated g/C Ratio | 0.09 | 0.05 | 0.05 | 0.06 | 0.05 | 0.80 | 0.79 | 0.79 | 0.75 | 0.70 | 0.70 |
| v/c Ratio | 0.27 | 0.08 | 0.32 | 0.67 | 0.48 | 0.43 | 0.67 | 0.03 | 0.05 | 0.55 | 0.05 |
| Control Delay | 47.3 | 55.7 | 4.4 | 86.1 | 36.1 | 7.5 | 6.8 | 0.0 | 3.1 | 8.8 | 0.2 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 47.3 | 55.7 | 4.4 | 86.1 | 36.1 | 7.5 | 6.9 | 0.0 | 3.1 | 8.8 | 0.2 |
| LOS | D | E | A | F | D | A | A | A | A | A | A |
| Approach Delay | | 30.7 | | | 63.1 | | 6.8 | | | 8.4 | |
| Approach LOS | | C | | | E | | A | | | A | |

| Intersection Summary | |
|---|---|
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 50 (42%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow | |
| Natural Cycle: 115 | |
| Control Type: Actuated-Coordinated | |
| Maximum v/c Ratio: 0.67 | |
| Intersection Signal Delay: 10.2 | Intersection LOS: B |
| Intersection Capacity Utilization 74.8% | ICU Level of Service D |
| Analysis Period (min) 15 | |

Splits and Phases: 6: University Blvd & E Commons Ave/Easter Ave



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 72 | 6 | 51 | 59 | 13 | 37 | 108 | 1641 | 34 | 8 | 1191 | 52 |
| Future Volume (veh/h) | 72 | 6 | 51 | 59 | 13 | 37 | 108 | 1641 | 34 | 8 | 1191 | 52 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 0.91 | | 1.00 | 1.00 | | 0.94 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 83 | 7 | 0 | 68 | 15 | 43 | 124 | 1886 | 39 | 9 | 1369 | 0 |
| Peak Hour Factor | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 291 | 79 | | 87 | 22 | 63 | 327 | 2585 | 1149 | 233 | 2477 | |
| Arrive On Green | 0.04 | 0.04 | 0.00 | 0.05 | 0.05 | 0.05 | 0.07 | 1.00 | 1.00 | 0.01 | 0.70 | 0.00 |
| Sat Flow, veh/h | 3456 | 1870 | 1585 | 1781 | 406 | 1165 | 1781 | 3554 | 1580 | 1781 | 3554 | 1585 |
| Grp Volume(v), veh/h | 83 | 7 | 0 | 68 | 0 | 58 | 124 | 1886 | 39 | 9 | 1369 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1728 | 1870 | 1585 | 1781 | 0 | 1572 | 1781 | 1777 | 1580 | 1781 | 1777 | 1585 |
| Q Serve(g_s), s | 2.7 | 0.4 | 0.0 | 4.5 | 0.0 | 4.3 | 2.4 | 0.0 | 0.0 | 0.2 | 22.8 | 0.0 |
| Cycle Q Clear(g_c), s | 2.7 | 0.4 | 0.0 | 4.5 | 0.0 | 4.3 | 2.4 | 0.0 | 0.0 | 0.2 | 22.8 | 0.0 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.74 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 291 | 79 | | 87 | 0 | 85 | 327 | 2585 | 1149 | 233 | 2477 | |
| V/C Ratio(X) | 0.29 | 0.09 | | 0.78 | 0.00 | 0.68 | 0.38 | 0.73 | 0.03 | 0.04 | 0.55 | |
| Avail Cap(c_a), veh/h | 364 | 109 | | 104 | 0 | 92 | 365 | 2585 | 1149 | 325 | 2477 | |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 2.00 | 2.00 | 2.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 52.1 | 55.2 | 0.0 | 56.4 | 0.0 | 55.7 | 7.4 | 0.0 | 0.0 | 5.3 | 9.0 | 0.0 |
| Incr Delay (d2), s/veh | 0.2 | 0.2 | 0.0 | 26.7 | 0.0 | 13.4 | 0.3 | 1.9 | 0.1 | 0.0 | 0.9 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 1.2 | 0.2 | 0.0 | 2.7 | 0.0 | 2.1 | 0.7 | 0.7 | 0.0 | 0.1 | 7.8 | 0.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 52.3 | 55.4 | 0.0 | 83.2 | 0.0 | 69.1 | 7.6 | 1.9 | 0.1 | 5.3 | 9.8 | 0.0 |
| LnGrp LOS | D | E | | F | A | E | A | A | A | A | A | |
| Approach Vol, veh/h | | 90 | A | | 126 | | | 2049 | | | 1378 | A |
| Approach Delay, s/veh | | 52.6 | | | 76.7 | | | 2.2 | | | 9.8 | |
| Approach LOS | | D | | | E | | | A | | | A | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 5.8 | 93.3 | 10.9 | 10.1 | 9.4 | 89.7 | 9.4 | 11.5 |
| Change Period (Y+Rc), s | 5.0 | 6.0 | 5.0 | 5.0 | 5.0 | 6.0 | 5.0 | 5.0 |
| Max Green Setting (Gmax), s | 7.0 | 78.0 | 7.0 | 7.0 | 7.0 | 78.0 | 7.0 | 7.0 |
| Max Q Clear Time (g_c+I1), s | 2.2 | 2.0 | 6.5 | 2.4 | 4.4 | 24.8 | 4.7 | 6.3 |
| Green Ext Time (p_c), s | 0.0 | 56.2 | 0.0 | 0.0 | 0.0 | 28.6 | 0.0 | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 8.9 |
| HCM 6th LOS | A |

**Notes**

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

Unsignalized Delay for [EBR, SBR] is excluded from calculations of the approach delay and intersection delay.

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.3 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 9 | 26 | 37 | 1787 | 1287 | 16 |
| Future Vol, veh/h | 9 | 26 | 37 | 1787 | 1287 | 16 |
| 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 | - | 120 | - | - | 0 |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 100 | 100 | 100 | 100 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 10 | 28 | 37 | 1787 | 1287 | 16 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 2255 | 644 | 1303 | 0 | - | 0 |
| Stage 1 | 1287 | - | - | - | - | - |
| Stage 2 | 968 | - | - | - | - | - |
| Critical Hdwy | 6.84 | 6.94 | 4.14 | - | - | - |
| Critical Hdwy Stg 1 | 5.84 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.84 | - | - | - | - | - |
| Follow-up Hdwy | 3.52 | 3.32 | 2.22 | - | - | - |
| Pot Cap-1 Maneuver | *187 | *567 | *849 | - | - | - |
| Stage 1 | *535 | - | - | - | - | - |
| Stage 2 | *319 | - | - | - | - | - |
| Platoon blocked, % | 1 | 1 | 1 | - | - | - |
| Mov Cap-1 Maneuver | *179 | *567 | *849 | - | - | - |
| Mov Cap-2 Maneuver | *179 | - | - | - | - | - |
| Stage 1 | *512 | - | - | - | - | - |
| Stage 2 | *319 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 16 | 0.2 | 0 |
| HCM LOS | C | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | * 849 | - | 364 | - | - |
| HCM Lane V/C Ratio | 0.044 | - | 0.105 | - | - |
| HCM Control Delay (s) | 9.4 | - | 16 | - | - |
| HCM Lane LOS | A | - | C | - | - |
| HCM 95th %tile Q(veh) | 0.1 | - | 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 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | |
| Traffic Volume (vph) | 69 | 19 | 70 | 29 | 30 | 71 | 169 | 1683 | 29 | 1245 | 38 |
| Future Volume (vph) | 69 | 19 | 70 | 29 | 30 | 71 | 169 | 1683 | 29 | 1245 | 38 |
| Turn Type | Perm | NA | Perm | Perm | NA | Perm | pm+pt | NA | Perm | NA | Perm |
| Protected Phases | | 4 | | | 8 | | 5 | 2 | | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | 8 | 2 | | 6 | | 6 |
| Detector Phase | 4 | 4 | 4 | 8 | 8 | 8 | 5 | 2 | 6 | 6 | 6 |
| Switch Phase | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Minimum Split (s) | 36.0 | 36.0 | 36.0 | 40.0 | 40.0 | 40.0 | 8.0 | 29.0 | 32.0 | 32.0 | 32.0 |
| Total Split (s) | 23.0 | 23.0 | 23.0 | 23.0 | 23.0 | 23.0 | 12.0 | 97.0 | 85.0 | 85.0 | 85.0 |
| Total Split (%) | 19.2% | 19.2% | 19.2% | 19.2% | 19.2% | 19.2% | 10.0% | 80.8% | 70.8% | 70.8% | 70.8% |
| Yellow Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| 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) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 6.0 | 6.0 | 6.0 | 6.0 |
| Lead/Lag | | | | | | | Lead | | Lag | Lag | Lag |
| Lead-Lag Optimize? | | | | | | | Yes | | Yes | Yes | Yes |
| Recall Mode | None | None | None | None | None | None | None | C-Min | C-Min | C-Min | C-Min |
| Act Effct Green (s) | 11.5 | 11.5 | 11.5 | 11.5 | 11.5 | 11.5 | 98.5 | 97.5 | 86.1 | 86.1 | 86.1 |
| Actuated g/C Ratio | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.82 | 0.81 | 0.72 | 0.72 | 0.72 |
| v/c Ratio | 0.60 | 0.12 | 0.36 | 0.25 | 0.19 | 0.37 | 0.63 | 0.67 | 0.25 | 0.55 | 0.04 |
| Control Delay | 69.7 | 48.4 | 14.8 | 52.7 | 50.1 | 17.7 | 13.2 | 6.6 | 7.5 | 6.2 | 0.1 |
| 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 | 69.7 | 48.4 | 14.8 | 52.7 | 50.1 | 17.7 | 13.2 | 6.6 | 7.5 | 6.2 | 0.1 |
| LOS | E | D | B | D | D | B | B | A | A | A | A |
| Approach Delay | | 42.8 | | | 33.1 | | | 7.2 | | 6.1 | |
| Approach LOS | | D | | | C | | | A | | A | |

| Intersection Summary | |
|---|---|
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 66 (55%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow | |
| Natural Cycle: 90 | |
| Control Type: Actuated-Coordinated | |
| Maximum v/c Ratio: 0.67 | |
| Intersection Signal Delay: 9.4 | Intersection LOS: A |
| Intersection Capacity Utilization 77.9% | ICU Level of Service D |
| Analysis Period (min) 15 | |

Splits and Phases: 8: University Blvd & Easter Pl

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 69 | 19 | 70 | 29 | 30 | 71 | 169 | 1683 | 27 | 29 | 1245 | 38 |
| Future Volume (veh/h) | 69 | 19 | 70 | 29 | 30 | 71 | 169 | 1683 | 27 | 29 | 1245 | 38 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 0.98 | | 0.98 | 0.98 | | 0.98 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 78 | 21 | 79 | 33 | 34 | 80 | 190 | 1891 | 30 | 33 | 1399 | 43 |
| Peak Hour Factor | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 176 | 205 | 169 | 186 | 205 | 169 | 402 | 2860 | 45 | 193 | 2535 | 1125 |
| Arrive On Green | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.04 | 0.80 | 0.80 | 1.00 | 1.00 | 1.00 |
| Sat Flow, veh/h | 1254 | 1870 | 1546 | 1268 | 1870 | 1546 | 1781 | 3580 | 57 | 233 | 3554 | 1577 |
| Grp Volume(v), veh/h | 78 | 21 | 79 | 33 | 34 | 80 | 190 | 936 | 985 | 33 | 1399 | 43 |
| Grp Sat Flow(s),veh/h/ln | 1254 | 1870 | 1546 | 1268 | 1870 | 1546 | 1781 | 1777 | 1860 | 233 | 1777 | 1577 |
| Q Serve(g_s), s | 7.2 | 1.2 | 5.8 | 2.9 | 2.0 | 5.8 | 3.2 | 26.9 | 27.2 | 4.2 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 9.2 | 1.2 | 5.8 | 4.1 | 2.0 | 5.8 | 3.2 | 26.9 | 27.2 | 21.1 | 0.0 | 0.0 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.03 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 176 | 205 | 169 | 186 | 205 | 169 | 402 | 1420 | 1486 | 193 | 2535 | 1125 |
| V/C Ratio(X) | 0.44 | 0.10 | 0.47 | 0.18 | 0.17 | 0.47 | 0.47 | 0.66 | 0.66 | 0.17 | 0.55 | 0.04 |
| Avail Cap(c_a), veh/h | 227 | 281 | 232 | 237 | 281 | 232 | 428 | 1420 | 1486 | 193 | 2535 | 1125 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 2.00 | 2.00 | 2.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 52.6 | 48.1 | 50.2 | 50.0 | 48.5 | 50.2 | 3.5 | 5.1 | 5.2 | 2.1 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 0.6 | 0.1 | 0.7 | 0.2 | 0.1 | 0.8 | 0.3 | 2.4 | 2.3 | 1.9 | 0.9 | 0.1 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 2.3 | 0.6 | 2.3 | 0.9 | 0.9 | 2.3 | 0.9 | 7.2 | 7.6 | 0.2 | 0.3 | 0.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 53.3 | 48.2 | 50.9 | 50.1 | 48.6 | 51.0 | 3.8 | 7.5 | 7.5 | 4.0 | 0.9 | 0.1 |
| LnGrp LOS | D | D | D | D | D | D | A | A | A | A | A | A |
| Approach Vol, veh/h | | 178 | | | 147 | | | 2111 | | | 1475 | |
| Approach Delay, s/veh | | 51.6 | | | 50.2 | | | 7.2 | | | 0.9 | |
| Approach LOS | | D | | | D | | | A | | | A | |

| Timer - Assigned Phs | | 2 | | 4 | 5 | 6 | | 8 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | | 101.9 | | 18.1 | 10.3 | 91.6 | | 18.1 | | | | |
| Change Period (Y+Rc), s | | 6.0 | | 5.0 | 5.0 | 6.0 | | 5.0 | | | | |
| Max Green Setting (Gmax), s | | 91.0 | | 18.0 | 7.0 | 79.0 | | 18.0 | | | | |
| Max Q Clear Time (g_c+I1), s | | 29.2 | | 11.2 | 5.2 | 23.1 | | 7.8 | | | | |
| Green Ext Time (p_c), s | | 48.4 | | 0.2 | 0.0 | 33.4 | | 0.2 | | | | |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 8.5 |
| HCM 6th LOS | A |

Notes

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

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

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 17 | 137 | 191 | 31 | 21 | 8 |
| Future Vol, veh/h | 17 | 137 | 191 | 31 | 21 | 8 |
| 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 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 18 | 149 | 208 | 34 | 23 | 9 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 242 | 0 | - | 0 | 410 | 225 |
| Stage 1 | - | - | - | - | 225 | - |
| Stage 2 | - | - | - | - | 185 | - |
| Critical Hdwy | 4.12 | - | - | - | 6.42 | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.42 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.42 | - |
| Follow-up Hdwy | 2.218 | - | - | - | 3.518 | 3.318 |
| Pot Cap-1 Maneuver | 1324 | - | - | - | 598 | 814 |
| Stage 1 | - | - | - | - | 812 | - |
| Stage 2 | - | - | - | - | 847 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | 1324 | - | - | - | 589 | 814 |
| Mov Cap-2 Maneuver | - | - | - | - | 589 | - |
| Stage 1 | - | - | - | - | 800 | - |
| Stage 2 | - | - | - | - | 847 | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 0.9 | 0 | 10.9 |
| HCM LOS | | | B |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|
| Capacity (veh/h) | 1324 | - | - | - | 638 |
| HCM Lane V/C Ratio | 0.014 | - | - | - | 0.049 |
| HCM Control Delay (s) | 7.8 | 0 | - | - | 10.9 |
| HCM Lane LOS | A | A | - | - | B |
| HCM 95th %tile Q(veh) | 0 | - | - | - | 0.2 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.7 |

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 139 | 3 | 2 | 197 | 11 | 14 |
| Future Vol, veh/h | 139 | 3 | 2 | 197 | 11 | 14 |
| 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 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 151 | 3 | 2 | 214 | 12 | 15 |

| Major/Minor | Major1 | | Major2 | | Minor1 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 0 | 0 | 154 | 0 | 371 | 153 |
| Stage 1 | - | - | - | - | 153 | - |
| Stage 2 | - | - | - | - | 218 | - |
| Critical Hdwy | - | - | 4.12 | - | 6.42 | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.42 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.42 | - |
| Follow-up Hdwy | - | - | 2.218 | - | 3.518 | 3.318 |
| Pot Cap-1 Maneuver | - | - | 1426 | - | 630 | 893 |
| Stage 1 | - | - | - | - | 875 | - |
| Stage 2 | - | - | - | - | 818 | - |
| Platoon blocked, % | - | - | | - | | |
| Mov Cap-1 Maneuver | - | - | 1426 | - | 629 | 893 |
| Mov Cap-2 Maneuver | - | - | - | - | 629 | - |
| Stage 1 | - | - | - | - | 875 | - |
| Stage 2 | - | - | - | - | 816 | - |

| Approach | EB | WB | NB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 0.1 | 10 |
| HCM LOS | | | B |

| Minor Lane/Major Mvmt | NBLn1 | EBT | EBR | WBL | WBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | 754 | - | - | 1426 | - |
| HCM Lane V/C Ratio | 0.036 | - | - | 0.002 | - |
| HCM Control Delay (s) | 10 | - | - | 7.5 | 0 |
| HCM Lane LOS | B | - | - | A | A |
| HCM 95th %tile Q(veh) | 0.1 | - | - | 0 | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 1.8 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 14 | 122 | 3 | 1 | 134 | 72 | 26 | 2 | 11 | 9 | 0 | 8 |
| Future Vol, veh/h | 14 | 122 | 3 | 1 | 134 | 72 | 26 | 2 | 11 | 9 | 0 | 8 |
| 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 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 15 | 133 | 3 | 1 | 146 | 78 | 28 | 2 | 12 | 10 | 0 | 9 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 224 | 0 | 0 | 136 | 0 | 0 | 357 | 391 | 135 | 359 | 353 | 185 |
| Stage 1 | - | - | - | - | - | - | 165 | 165 | - | 187 | 187 | - |
| Stage 2 | - | - | - | - | - | - | 192 | 226 | - | 172 | 166 | - |
| Critical Hdwy | 4.12 | - | - | 4.12 | - | - | 7.12 | 6.52 | 6.22 | 7.12 | 6.52 | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.12 | 5.52 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.12 | 5.52 | - |
| Follow-up Hdwy | 2.218 | - | - | 2.218 | - | - | 3.518 | 4.018 | 3.318 | 3.518 | 4.018 | 3.318 |
| Pot Cap-1 Maneuver | 1345 | - | - | 1448 | - | - | 598 | 545 | 914 | 596 | 572 | 857 |
| Stage 1 | - | - | - | - | - | - | 837 | 762 | - | 815 | 745 | - |
| Stage 2 | - | - | - | - | - | - | 810 | 717 | - | 830 | 761 | - |
| Platoon blocked, % | | - | - | | - | - | | | | | | |
| Mov Cap-1 Maneuver | 1345 | - | - | 1448 | - | - | 586 | 538 | 914 | 581 | 565 | 857 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 586 | 538 | - | 581 | 565 | - |
| Stage 1 | - | - | - | - | - | - | 827 | 753 | - | 805 | 744 | - |
| Stage 2 | - | - | - | - | - | - | 801 | 716 | - | 807 | 752 | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 0.8 | 0 | 10.9 | 10.4 |
| HCM LOS | | | B | B |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 649 | 1345 | - | - | 1448 | - | - | 685 |
| HCM Lane V/C Ratio | 0.065 | 0.011 | - | - | 0.001 | - | - | 0.027 |
| HCM Control Delay (s) | 10.9 | 7.7 | 0 | - | 7.5 | - | - | 10.4 |
| HCM Lane LOS | B | A | A | - | A | - | - | B |
| HCM 95th %tile Q(veh) | 0.2 | 0 | - | - | 0 | - | - | 0.1 |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 7.9 |
| Intersection LOS | A |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 16 | 109 | 111 | 54 | 31 | 9 |
| Future Vol, veh/h | 16 | 109 | 111 | 54 | 31 | 9 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 17 | 118 | 121 | 59 | 34 | 10 |
| Number of Lanes | 0 | 1 | 1 | 0 | 1 | 0 |

| Approach | EB | WB | SB |
|---|---|---|---|
| Opposing Approach | WB | EB | |
| Opposing Lanes | 1 | 1 | 0 |
| Conflicting Approach Left | SB | | WB |
| Conflicting Lanes Left | 1 | 0 | 1 |
| Conflicting Approach Right | | SB | EB |
| Conflicting Lanes Right | 0 | 1 | 1 |
| HCM Control Delay | 8 | 7.9 | 7.9 |
| HCM LOS | A | A | A |

| Lane | EBLn1 | WBLn1 | SBLn1 |
|---|---|---|---|
| Vol Left, % | 13% | 0% | 78% |
| Vol Thru, % | 87% | 67% | 0% |
| Vol Right, % | 0% | 33% | 23% |
| Sign Control | Stop | Stop | Stop |
| Traffic Vol by Lane | 125 | 165 | 40 |
| LT Vol | 16 | 0 | 31 |
| Through Vol | 109 | 111 | 0 |
| RT Vol | 0 | 54 | 9 |
| Lane Flow Rate | 136 | 179 | 43 |
| Geometry Grp | 1 | 1 | 1 |
| Degree of Util (X) | 0.157 | 0.195 | 0.056 |
| Departure Headway (Hd) | 4.172 | 3.917 | 4.621 |
| Convergence, Y/N | Yes | Yes | Yes |
| Cap | 852 | 908 | 780 |
| Service Time | 2.237 | 1.982 | 2.621 |
| HCM Lane V/C Ratio | 0.16 | 0.197 | 0.055 |
| HCM Control Delay | 8 | 7.9 | 7.9 |
| HCM Lane LOS | A | A | A |
| HCM 95th-tile Q | 0.6 | 0.7 | 0.2 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 1.5 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 6 | 4 | 60 | 9 | 14 | 34 |
| Future Vol, veh/h | 6 | 4 | 60 | 9 | 14 | 34 |
| 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 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 7 | 4 | 65 | 10 | 15 | 37 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 137 | 70 | 0 | 0 | 75 | 0 |
| Stage 1 | 70 | - | - | - | - | - |
| Stage 2 | 67 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | - | - | 4.12 | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | - | - | 2.218 | - |
| Pot Cap-1 Maneuver | 856 | 993 | - | - | 1524 | - |
| Stage 1 | 953 | - | - | - | - | - |
| Stage 2 | 956 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 847 | 993 | - | - | 1524 | - |
| Mov Cap-2 Maneuver | 847 | - | - | - | - | - |
| Stage 1 | 953 | - | - | - | - | - |
| Stage 2 | 946 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 9 | 0 | 2.2 |
| HCM LOS | A | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 900 | 1524 | - |
| HCM Lane V/C Ratio | - | - | 0.012 | 0.01 | - |
| HCM Control Delay (s) | - | - | 9 | 7.4 | 0 |
| HCM Lane LOS | - | - | A | A | A |
| HCM 95th %tile Q(veh) | - | - | 0 | 0 | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 3.7 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 23 | 9 | 4 | 2 | 2 | 4 | 1 | 61 | 2 | 42 | 42 | 13 |
| Future Vol, veh/h | 23 | 9 | 4 | 2 | 2 | 4 | 1 | 61 | 2 | 42 | 42 | 13 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 25 | 10 | 4 | 2 | 2 | 4 | 1 | 66 | 2 | 46 | 46 | 14 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 217 | 215 | 53 | 221 | 221 | 67 | 60 | 0 | 0 | 68 | 0 | 0 |
| Stage 1 | 145 | 145 | - | 69 | 69 | - | - | - | - | - | - | - |
| Stage 2 | 72 | 70 | - | 152 | 152 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.12 | 6.52 | 6.22 | 7.12 | 6.52 | 6.22 | 4.12 | - | - | 4.12 | - | - |
| Critical Hdwy Stg 1 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 4.018 | 3.318 | 3.518 | 4.018 | 3.318 | 2.218 | - | - | 2.218 | - | - |
| Pot Cap-1 Maneuver | 739 | 683 | 1014 | 735 | 678 | 997 | 1544 | - | - | 1533 | - | - |
| Stage 1 | 858 | 777 | - | 941 | 837 | - | - | - | - | - | - | - |
| Stage 2 | 938 | 837 | - | 850 | 772 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | 716 | 661 | 1014 | 706 | 656 | 997 | 1544 | - | - | 1533 | - | - |
| Mov Cap-2 Maneuver | 716 | 661 | - | 706 | 656 | - | - | - | - | - | - | - |
| Stage 1 | 857 | 753 | - | 940 | 836 | - | - | - | - | - | - | - |
| Stage 2 | 931 | 836 | - | 809 | 748 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 10.2 | 9.5 | 0.1 | 3.2 |
| HCM LOS | B | A | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 1544 | - | - | 725 | 809 | 1533 | - | - |
| HCM Lane V/C Ratio | 0.001 | - | - | 0.054 | 0.011 | 0.03 | - | - |
| HCM Control Delay (s) | 7.3 | 0 | - | 10.2 | 9.5 | 7.4 | 0 | - |
| HCM Lane LOS | A | A | - | B | A | A | A | - |
| HCM 95th %tile Q(veh) | 0 | - | - | 0.2 | 0 | 0.1 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 2.1 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 16 | 22 | 70 | 19 | 17 | 82 |
| Future Vol, veh/h | 16 | 22 | 70 | 19 | 17 | 82 |
| 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 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 17 | 24 | 76 | 21 | 18 | 89 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 212 | 87 | 0 | 0 | 97 | 0 |
| Stage 1 | 87 | - | - | - | - | - |
| Stage 2 | 125 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | - | - | 4.12 | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | - | - | 2.218 | - |
| Pot Cap-1 Maneuver | 776 | 971 | - | - | 1496 | - |
| Stage 1 | 936 | - | - | - | - | - |
| Stage 2 | 901 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 766 | 971 | - | - | 1496 | - |
| Mov Cap-2 Maneuver | 766 | - | - | - | - | - |
| Stage 1 | 936 | - | - | - | - | - |
| Stage 2 | 889 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 9.3 | 0 | 1.3 |
| HCM LOS | A | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 873 | 1496 | - |
| HCM Lane V/C Ratio | - | - | 0.047 | 0.012 | - |
| HCM Control Delay (s) | - | - | 9.3 | 7.4 | 0 |
| HCM Lane LOS | - | - | A | A | A |
| HCM 95th %tile Q(veh) | - | - | 0.1 | 0 | - |

| Lane Group | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 1160 | 72 | 47 | 1690 | 150 | 84 |
| Future Volume (vph) | 1160 | 72 | 47 | 1690 | 150 | 84 |
| Turn Type | NA | Perm | pm+pt | NA | Prot | Perm |
| Protected Phases | 2 | | 1 | 6 | 8 | |
| Permitted Phases | | 2 | 6 | | | 8 |
| Detector Phase | 2 | 2 | 1 | 6 | 8 | 8 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 17.0 | 17.0 | 3.0 | 17.0 | 5.0 | 5.0 |
| Minimum Split (s) | 23.0 | 23.0 | 7.0 | 23.0 | 30.0 | 30.0 |
| Total Split (s) | 76.0 | 76.0 | 13.0 | 89.0 | 31.0 | 31.0 |
| Total Split (%) | 63.3% | 63.3% | 10.8% | 74.2% | 25.8% | 25.8% |
| Yellow Time (s) | 4.0 | 4.0 | 3.0 | 4.0 | 3.0 | 3.0 |
| All-Red Time (s) | 2.0 | 2.0 | 1.0 | 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) | 6.0 | 6.0 | 4.0 | 6.0 | 5.0 | 5.0 |
| Lead/Lag | Lag | Lag | Lead | | | |
| Lead-Lag Optimize? | Yes | Yes | Yes | | | |
| Recall Mode | C-Min | C-Min | None | C-Min | None | None |
| Act Effct Green (s) | 85.7 | 85.7 | 95.2 | 93.2 | 15.8 | 15.8 |
| Actuated g/C Ratio | 0.71 | 0.71 | 0.79 | 0.78 | 0.13 | 0.13 |
| v/c Ratio | 0.48 | 0.07 | 0.14 | 0.45 | 0.67 | 0.31 |
| Control Delay | 9.4 | 4.1 | 4.5 | 5.5 | 62.9 | 11.6 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.3 | 0.0 | 0.0 |
| Total Delay | 9.4 | 4.1 | 4.5 | 5.8 | 62.9 | 11.6 |
| LOS | A | A | A | A | E | B |
| Approach Delay | 9.1 | | | 5.8 | 44.4 | |
| Approach LOS | A | | | A | D | |

| Intersection Summary | |
|---|---|
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 31 (26%), Referenced to phase 2:EBT and 6:WBTL, Start of 1st Green | |
| Natural Cycle: 65 | |
| Control Type: Actuated-Coordinated | |
| Maximum v/c Ratio: 0.67 | |
| Intersection Signal Delay: 9.9 | Intersection LOS: A |
| Intersection Capacity Utilization 58.1% | ICU Level of Service B |
| Analysis Period (min) 15 | |

Splits and Phases: 1: S Race St & Arapahoe Rd

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 1160 | 72 | 47 | 1690 | 150 | 84 |
| Future Volume (veh/h) | 1160 | 72 | 47 | 1690 | 150 | 84 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | | 1.00 | 1.00 | | 1.00 | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | No | | | No | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 1208 | 75 | 49 | 1760 | 156 | 88 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 2665 | 1183 | 363 | 4101 | 187 | 167 |
| Arrive On Green | 0.75 | 0.75 | 0.02 | 0.80 | 0.11 | 0.11 |
| Sat Flow, veh/h | 3647 | 1578 | 1781 | 5274 | 1781 | 1585 |
| Grp Volume(v), veh/h | 1208 | 75 | 49 | 1760 | 156 | 88 |
| Grp Sat Flow(s),veh/h/ln | 1777 | 1578 | 1781 | 1702 | 1781 | 1585 |
| Q Serve(g_s), s | 15.5 | 1.5 | 0.7 | 12.4 | 10.3 | 6.3 |
| Cycle Q Clear(g_c), s | 15.5 | 1.5 | 0.7 | 12.4 | 10.3 | 6.3 |
| Prop In Lane | | 1.00 | 1.00 | | 1.00 | 1.00 |
| Lane Grp Cap(c), veh/h | 2665 | 1183 | 363 | 4101 | 187 | 167 |
| V/C Ratio(X) | 0.45 | 0.06 | 0.13 | 0.43 | 0.83 | 0.53 |
| Avail Cap(c_a), veh/h | 2665 | 1183 | 461 | 4101 | 386 | 343 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.73 | 0.73 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 5.7 | 3.9 | 4.2 | 3.5 | 52.7 | 50.9 |
| Incr Delay (d2), s/veh | 0.6 | 0.1 | 0.0 | 0.2 | 3.7 | 1.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 4.8 | 0.4 | 0.2 | 3.2 | 4.8 | 2.6 |
| Unsig. Movement Delay, s/veh | | | | | | |
| LnGrp Delay(d),s/veh | 6.2 | 4.0 | 4.3 | 3.8 | 56.3 | 51.8 |
| LnGrp LOS | A | A | A | A | E | D |
| Approach Vol, veh/h | 1283 | | | 1809 | 244 | |
| Approach Delay, s/veh | 6.1 | | | 3.8 | 54.7 | |
| Approach LOS | A | | | A | D | |

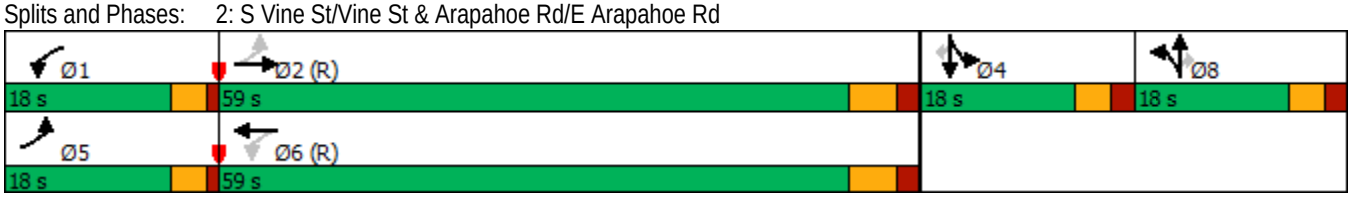
| Timer - Assigned Phs | 1 | 2 | | | | 6 | 8 |
|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 6.4 | 96.0 | | | | 102.4 | 17.6 |
| Change Period (Y+Rc), s | 4.0 | 6.0 | | | | 6.0 | 5.0 |
| Max Green Setting (Gmax), s | 9.0 | 70.0 | | | | 83.0 | 26.0 |
| Max Q Clear Time (g_c+I1), s | 2.7 | 17.5 | | | | 14.4 | 12.3 |
| Green Ext Time (p_c), s | 0.0 | 6.8 | | | | 13.0 | 0.3 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 8.4 |
| HCM 6th LOS | A |

| Lane Group | EBL | EBT | WBL | WBT | NBT | NBR | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | |
| Traffic Volume (vph) | 67 | 1026 | 187 | 1538 | 27 | 160 | 17 | 32 |
| Future Volume (vph) | 67 | 1026 | 187 | 1538 | 27 | 160 | 17 | 32 |
| Turn Type | pm+pt | NA | pm+pt | NA | NA | Perm | NA | Perm |
| Protected Phases | 5 | 2 | 1 | 6 | 8 | | 4 | |
| Permitted Phases | 2 | | 6 | | | 8 | | 4 |
| Detector Phase | 5 | 2 | 1 | 6 | 8 | 8 | 4 | 4 |
| Switch Phase | | | | | | | | |
| Minimum Initial (s) | 3.0 | 17.0 | 3.0 | 17.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Minimum Split (s) | 7.0 | 26.0 | 7.0 | 23.0 | 35.0 | 35.0 | 34.0 | 34.0 |
| Total Split (s) | 18.0 | 59.0 | 18.0 | 59.0 | 18.0 | 18.0 | 18.0 | 18.0 |
| Total Split (%) | 15.9% | 52.2% | 15.9% | 52.2% | 15.9% | 15.9% | 15.9% | 15.9% |
| Yellow Time (s) | 3.0 | 4.0 | 3.0 | 4.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| All-Red Time (s) | 1.0 | 2.0 | 1.0 | 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) | 4.0 | 6.0 | 4.0 | 6.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Lead/Lag | Lead | Lag | Lead | Lag | | | | |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | | | | |
| Recall Mode | None | C-Min | None | C-Min | None | None | None | None |
| Act Effct Green (s) | 66.8 | 58.6 | 74.0 | 63.8 | 13.0 | 13.0 | 11.6 | 11.6 |
| Actuated g/C Ratio | 0.59 | 0.52 | 0.65 | 0.56 | 0.12 | 0.12 | 0.10 | 0.10 |
| v/c Ratio | 0.41 | 0.48 | 0.62 | 0.65 | 1.00 | 0.52 | 0.75 | 0.13 |
| Control Delay | 16.9 | 18.3 | 16.6 | 18.8 | 112.5 | 13.1 | 73.9 | 1.0 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 16.9 | 18.3 | 16.6 | 18.8 | 112.5 | 13.1 | 73.9 | 1.0 |
| LOS | B | B | B | B | F | B | E | A |
| Approach Delay | | 18.2 | | 18.6 | 67.6 | | 59.5 | |
| Approach LOS | | B | | B | E | | E | |

| Intersection Summary | |
|---|---|
| Cycle Length: 113 | |
| Actuated Cycle Length: 113 | |
| Offset: 28 (25%), Referenced to phase 2:EBTL and 6:WBTL, Start of 1st Green | |
| Natural Cycle: 125 | |
| Control Type: Actuated-Coordinated | |
| Maximum v/c Ratio: 1.00 | |
| Intersection Signal Delay: 25.0 | Intersection LOS: C |
| Intersection Capacity Utilization 68.9% | ICU Level of Service C |
| Analysis Period (min) 15 | |

Splits and Phases: 2: S Vine St/Vine St & Arapahoe Rd/E Arapahoe Rd



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 67 | 1026 | 152 | 187 | 1538 | 201 | 167 | 27 | 160 | 114 | 17 | 32 |
| Future Volume (veh/h) | 67 | 1026 | 152 | 187 | 1538 | 201 | 167 | 27 | 160 | 114 | 17 | 32 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 0.99 | 1.00 | | 0.99 | 1.00 | | 0.98 | 1.00 | | 0.97 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 71 | 1080 | 160 | 197 | 1619 | 212 | 176 | 28 | 168 | 120 | 18 | 34 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 209 | 2450 | 363 | 360 | 2647 | 346 | 178 | 28 | 178 | 150 | 23 | 149 |
| Arrive On Green | 0.03 | 0.55 | 0.55 | 0.07 | 0.58 | 0.58 | 0.12 | 0.12 | 0.12 | 0.10 | 0.10 | 0.10 |
| Sat Flow, veh/h | 1781 | 4486 | 664 | 1781 | 4567 | 596 | 1547 | 246 | 1548 | 1559 | 234 | 1541 |
| Grp Volume(v), veh/h | 71 | 819 | 421 | 197 | 1206 | 625 | 204 | 0 | 168 | 138 | 0 | 34 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1702 | 1746 | 1781 | 1702 | 1759 | 1793 | 0 | 1548 | 1792 | 0 | 1541 |
| Q Serve(g_s), s | 2.0 | 16.3 | 16.3 | 5.2 | 26.1 | 26.2 | 12.8 | 0.0 | 12.2 | 8.5 | 0.0 | 2.3 |
| Cycle Q Clear(g_c), s | 2.0 | 16.3 | 16.3 | 5.2 | 26.1 | 26.2 | 12.8 | 0.0 | 12.2 | 8.5 | 0.0 | 2.3 |
| Prop In Lane | 1.00 | | 0.38 | 1.00 | | 0.34 | 0.86 | | 1.00 | 0.87 | | 1.00 |
| Lane Grp Cap(c), veh/h | 209 | 1859 | 954 | 360 | 1973 | 1019 | 206 | 0 | 178 | 173 | 0 | 149 |
| V/C Ratio(X) | 0.34 | 0.44 | 0.44 | 0.55 | 0.61 | 0.61 | 0.99 | 0.00 | 0.94 | 0.80 | 0.00 | 0.23 |
| Avail Cap(c_a), veh/h | 373 | 1859 | 954 | 465 | 1973 | 1019 | 206 | 0 | 178 | 206 | 0 | 177 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.88 | 0.88 | 0.88 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 13.6 | 15.3 | 15.3 | 11.4 | 15.5 | 15.5 | 49.9 | 0.0 | 49.6 | 50.0 | 0.0 | 47.2 |
| Incr Delay (d2), s/veh | 0.3 | 0.7 | 1.3 | 0.5 | 1.4 | 2.8 | 59.2 | 0.0 | 50.6 | 13.9 | 0.0 | 0.3 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.8 | 6.2 | 6.5 | 1.9 | 9.8 | 10.6 | 9.2 | 0.0 | 7.2 | 4.5 | 0.0 | 0.9 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 13.9 | 16.0 | 16.6 | 11.9 | 16.9 | 18.2 | 109.2 | 0.0 | 100.2 | 63.9 | 0.0 | 47.4 |
| LnGrp LOS | B | B | B | B | B | B | F | A | F | E | A | D |
| Approach Vol, veh/h | | 1311 | | | 2028 | | | 372 | | | 172 | |
| Approach Delay, s/veh | | 16.1 | | | 16.8 | | | 105.1 | | | 60.6 | |
| Approach LOS | | B | | | B | | | F | | | E | |

| Timer - Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 11.4 | 67.7 | | 15.9 | 7.6 | 71.5 | | 18.0 |
| Change Period (Y+Rc), s | 4.0 | 6.0 | | 5.0 | 4.0 | 6.0 | | 5.0 |
| Max Green Setting (Gmax), s | 14.0 | 53.0 | | 13.0 | 14.0 | 53.0 | | 13.0 |
| Max Q Clear Time (g_c+I1), s | 7.2 | 18.3 | | 10.5 | 4.0 | 28.2 | | 14.8 |
| Green Ext Time (p_c), s | 0.1 | 6.4 | | 0.1 | 0.0 | 10.2 | | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 27.0 |
| HCM 6th LOS | C |

Notes

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

| Intersection | |
|---|---|
| Int Delay, s/veh | 1.3 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 30 | 1227 | 43 | 24 | 930 | 11 | 0 | 0 | 147 | 0 | 0 | 86 |
| Future Vol, veh/h | 30 | 1227 | 43 | 24 | 930 | 11 | 0 | 0 | 147 | 0 | 0 | 86 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | 150 | - | 0 | 100 | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 31 | 1265 | 44 | 25 | 959 | 11 | 0 | 0 | 152 | 0 | 0 | 89 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 970 | 0 | 0 | 1309 | 0 | 0 | - | 2347 | 633 | - | 2386 | 485 |
| Stage 1 | - | - | - | - | - | - | - | 1327 | - | - | 1015 | - |
| Stage 2 | - | - | - | - | - | - | - | 1020 | - | - | 1371 | - |
| Critical Hdwy | 5.34 | - | - | 5.34 | - | - | - | 6.54 | 7.14 | - | 6.54 | 7.14 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | - | 5.54 | - | - | 5.54 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | - | 5.54 | - | - | 5.54 | - |
| Follow-up Hdwy | 3.12 | - | - | 3.12 | - | - | - | 4.02 | 3.92 | - | 4.02 | 3.92 |
| Pot Cap-1 Maneuver | *900 | - | - | *798 | - | - | 0 | *36 | *635 | 0 | *34 | *716 |
| Stage 1 | - | - | - | - | - | - | 0 | *619 | - | 0 | *674 | - |
| Stage 2 | - | - | - | - | - | - | 0 | *670 | - | 0 | *619 | - |
| Platoon blocked, % | 1 | - | - | 1 | - | - | | | 1 | | | 1 |
| Mov Cap-1 Maneuver | *900 | - | - | *798 | - | - | - | *34 | *635 | - | *32 | *716 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | - | *34 | - | - | *32 | - |
| Stage 1 | - | - | - | - | - | - | - | *598 | - | - | *653 | - |
| Stage 2 | - | - | - | - | - | - | - | *649 | - | - | *598 | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 0.2 | 0.2 | 12.4 | 10.7 |
| HCM LOS | | | B | B |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 635 | * 900 | - | - | * 798 | - | - | 716 |
| HCM Lane V/C Ratio | 0.239 | 0.034 | - | - | 0.031 | - | - | 0.124 |
| HCM Control Delay (s) | 12.4 | 9.1 | - | - | 9.7 | - | - | 10.7 |
| HCM Lane LOS | B | A | - | - | A | - | - | B |
| HCM 95th %tile Q(veh) | 0.9 | 0.1 | - | - | 0.1 | - | - | 0.4 |

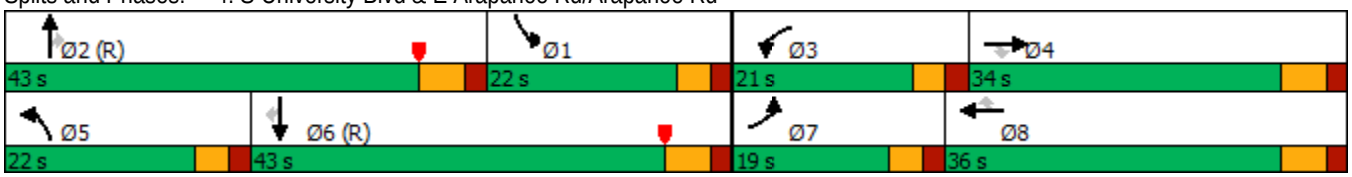
Notes

~: 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) | 213 | 1054 | 181 | 233 | 627 | 417 | 206 | 1338 | 205 | 368 | 1395 | 348 |
| Future Volume (vph) | 213 | 1054 | 181 | 233 | 627 | 417 | 206 | 1338 | 205 | 368 | 1395 | 348 |
| Turn Type | Prot | NA | Perm | Prot | NA | Perm | Prot | NA | Perm | Prot | NA | Perm |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | | | 4 | | | 8 | | | 2 | | | 6 |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | 8 | 5 | 2 | 2 | 1 | 6 | 6 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 | 3.0 | 10.0 | 10.0 | 3.0 | 10.0 | 10.0 |
| Minimum Split (s) | 8.0 | 39.0 | 39.0 | 8.0 | 37.0 | 37.0 | 8.0 | 35.0 | 35.0 | 8.0 | 40.0 | 40.0 |
| Total Split (s) | 19.0 | 34.0 | 34.0 | 21.0 | 36.0 | 36.0 | 22.0 | 43.0 | 43.0 | 22.0 | 43.0 | 43.0 |
| Total Split (%) | 15.8% | 28.3% | 28.3% | 17.5% | 30.0% | 30.0% | 18.3% | 35.8% | 35.8% | 18.3% | 35.8% | 35.8% |
| Yellow Time (s) | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 |
| 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 | 0.0 |
| Total Lost Time (s) | 5.0 | 6.0 | 6.0 | 5.0 | 6.0 | 6.0 | 5.0 | 6.0 | 6.0 | 5.0 | 6.0 | 6.0 |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lead | Lead | Lead | Lag | Lag | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | None | None | None | None | None | None | C-Min | C-Min | None | C-Min | C-Min |
| Act Effct Green (s) | 11.3 | 27.7 | 27.7 | 12.2 | 28.7 | 28.7 | 11.7 | 41.1 | 41.1 | 17.0 | 46.4 | 46.4 |
| Actuated g/C Ratio | 0.09 | 0.23 | 0.23 | 0.10 | 0.24 | 0.24 | 0.10 | 0.34 | 0.34 | 0.14 | 0.39 | 0.39 |
| v/c Ratio | 0.67 | 0.92 | 0.37 | 0.68 | 0.53 | 0.70 | 0.63 | 0.78 | 0.31 | 0.77 | 0.72 | 0.46 |
| Control Delay | 63.1 | 57.7 | 7.5 | 62.0 | 41.4 | 18.7 | 50.3 | 33.7 | 7.5 | 61.4 | 34.9 | 8.4 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 63.1 | 57.7 | 7.5 | 62.0 | 41.4 | 18.7 | 50.3 | 33.7 | 7.5 | 61.4 | 34.9 | 8.4 |
| LOS | E | E | A | E | D | B | D | C | A | E | C | A |
| Approach Delay | | 52.2 | | | 37.8 | | | 32.6 | | | 35.2 | |
| Approach LOS | | D | | | D | | | C | | | D | |

| Intersection Summary | |
|---|---|
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 103 (86%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow | |
| Natural Cycle: 95 | |
| Control Type: Actuated-Coordinated | |
| Maximum v/c Ratio: 0.92 | |
| Intersection Signal Delay: 38.7 | Intersection LOS: D |
| Intersection Capacity Utilization 82.8% | ICU Level of Service E |
| Analysis Period (min) 15 | |

Splits and Phases: 4: S University Blvd & E Arapahoe Rd/Arapahoe Rd



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 213 | 1054 | 181 | 233 | 627 | 417 | 206 | 1338 | 205 | 368 | 1395 | 348 |
| Future Volume (veh/h) | 213 | 1054 | 181 | 233 | 627 | 417 | 206 | 1338 | 205 | 368 | 1395 | 348 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 0.99 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 217 | 1076 | 185 | 238 | 640 | 0 | 210 | 1365 | 209 | 376 | 1423 | 355 |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 274 | 1171 | 361 | 296 | 1203 | | 270 | 1553 | 480 | 654 | 2163 | 669 |
| Arrive On Green | 0.08 | 0.23 | 0.23 | 0.09 | 0.24 | 0.00 | 0.08 | 0.30 | 0.30 | 0.19 | 0.42 | 0.42 |
| Sat Flow, veh/h | 3456 | 5106 | 1575 | 3456 | 5106 | 1585 | 3456 | 5106 | 1577 | 3456 | 5106 | 1579 |
| Grp Volume(v), veh/h | 217 | 1076 | 185 | 238 | 640 | 0 | 210 | 1365 | 209 | 376 | 1423 | 355 |
| Grp Sat Flow(s),veh/h/ln | 1728 | 1702 | 1575 | 1728 | 1702 | 1585 | 1728 | 1702 | 1577 | 1728 | 1702 | 1579 |
| Q Serve(g_s), s | 7.4 | 24.7 | 12.3 | 8.1 | 13.1 | 0.0 | 7.2 | 30.5 | 9.5 | 11.9 | 26.7 | 20.1 |
| Cycle Q Clear(g_c), s | 7.4 | 24.7 | 12.3 | 8.1 | 13.1 | 0.0 | 7.2 | 30.5 | 9.5 | 11.9 | 26.7 | 20.1 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 274 | 1171 | 361 | 296 | 1203 | | 270 | 1553 | 480 | 654 | 2163 | 669 |
| V/C Ratio(X) | 0.79 | 0.92 | 0.51 | 0.81 | 0.53 | | 0.78 | 0.88 | 0.44 | 0.57 | 0.66 | 0.53 |
| Avail Cap(c_a), veh/h | 403 | 1191 | 367 | 461 | 1277 | | 490 | 1574 | 486 | 654 | 2163 | 669 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 54.3 | 45.1 | 40.4 | 53.9 | 40.1 | 0.0 | 54.3 | 39.6 | 18.6 | 44.3 | 27.6 | 25.7 |
| Incr Delay (d2), s/veh | 3.6 | 11.0 | 0.5 | 2.7 | 0.1 | 0.0 | 1.8 | 7.4 | 2.9 | 0.8 | 1.6 | 3.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 3.3 | 11.5 | 4.8 | 3.6 | 5.5 | 0.0 | 3.1 | 13.4 | 3.8 | 5.1 | 10.8 | 7.9 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 57.9 | 56.1 | 40.8 | 56.6 | 40.2 | 0.0 | 56.1 | 47.0 | 21.5 | 45.1 | 29.2 | 28.7 |
| LnGrp LOS | E | E | D | E | D | | E | D | C | D | C | C |
| Approach Vol, veh/h | | 1478 | | | 878 | A | | 1784 | | | 2154 | |
| Approach Delay, s/veh | | 54.5 | | | 44.7 | | | 45.1 | | | 31.9 | |
| Approach LOS | | D | | | D | | | D | | | C | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 28.7 | 42.5 | 15.3 | 33.5 | 14.4 | 56.8 | 14.5 | 34.3 |
| Change Period (Y+Rc), s | 6.0 | * 6 | 5.0 | 6.0 | 5.0 | 6.0 | 5.0 | 6.0 |
| Max Green Setting (Gmax), s | 17.0 | * 37 | 16.0 | 28.0 | 17.0 | 37.0 | 14.0 | 30.0 |
| Max Q Clear Time (g_c+I1), s | 13.9 | 32.5 | 10.1 | 26.7 | 9.2 | 28.7 | 9.4 | 15.1 |
| Green Ext Time (p_c), s | 0.2 | 4.0 | 0.2 | 0.8 | 0.2 | 7.4 | 0.1 | 2.6 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 42.7 |
| HCM 6th LOS | D |

Notes

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

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.2 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 0 | 0 | 23 | 0 | 0 | 10 | 0 | 1762 | 2 | 0 | 1245 | 63 |
| Future Vol, veh/h | 0 | 0 | 23 | 0 | 0 | 10 | 0 | 1762 | 2 | 0 | 1245 | 63 |
| 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 | - | - | 0 | - | - | 0 | - | - | - | - | - | 0 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 93 | 93 | 93 | 93 | 93 | 93 | 93 | 93 | 93 | 93 | 93 | 93 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 0 | 25 | 0 | 0 | 11 | 0 | 1895 | 2 | 0 | 1339 | 68 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | - | - | 670 | - | - | 949 | - | 0 | 0 | - | - | 0 |
| Stage 1 | - | - | - | - | - | - | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - | - | - | - | - | - | - |
| Critical Hdwy | - | - | 7.14 | - | - | 7.14 | - | - | - | - | - | - |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | - | - | - | - | - | - |
| Follow-up Hdwy | - | - | 3.92 | - | - | 3.92 | - | - | - | - | - | - |
| Pot Cap-1 Maneuver | 0 | 0 | *632 | 0 | 0 | 224 | 0 | - | - | 0 | - | - |
| Stage 1 | 0 | 0 | - | 0 | 0 | - | 0 | - | - | 0 | - | - |
| Stage 2 | 0 | 0 | - | 0 | 0 | - | 0 | - | - | 0 | - | - |
| Platoon blocked, % | | | 1 | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | - | - | *632 | - | - | 224 | - | - | - | - | - | - |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | - | - | - | - | - | - |
| Stage 1 | - | - | - | - | - | - | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 10.9 | 21.9 | 0 | 0 |
| HCM LOS | B | C | | |

| Minor Lane/Major Mvmt | NBT | NBR | EBLn1 | WBLn1 | SBT | SBR |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 632 | 224 | - | - |
| HCM Lane V/C Ratio | - | - | 0.039 | 0.048 | - | - |
| HCM Control Delay (s) | - | - | 10.9 | 21.9 | - | - |
| HCM Lane LOS | - | - | B | C | - | - |
| HCM 95th %tile Q(veh) | - | - | 0.1 | 0.1 | - | - |

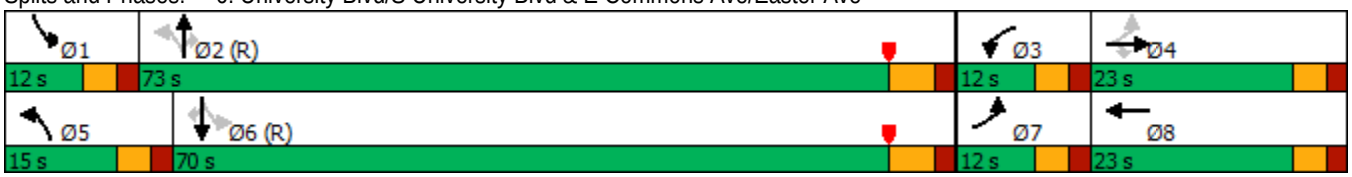
Notes

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

| Lane Group | EBL | EBT | EBR | WBL | WBT | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | |
| Traffic Volume (vph) | 72 | 6 | 51 | 59 | 13 | 108 | 1641 | 34 | 8 | 1191 | 52 |
| Future Volume (vph) | 72 | 6 | 51 | 59 | 13 | 108 | 1641 | 34 | 8 | 1191 | 52 |
| Turn Type | pm+pt | NA | Perm | Prot | NA | pm+pt | NA | Perm | pm+pt | NA | Perm |
| Protected Phases | 7 | 4 | | 3 | 8 | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | 4 | | | 2 | | 2 | 6 | | 6 |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | 5 | 2 | 2 | 1 | 6 | 6 |
| Switch Phase | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 3.0 | 4.0 | 3.0 | 3.0 | 5.0 | 5.0 | 3.0 | 5.0 | 5.0 |
| Minimum Split (s) | 8.0 | 35.0 | 35.0 | 9.0 | 32.0 | 8.0 | 24.0 | 24.0 | 8.0 | 29.0 | 29.0 |
| Total Split (s) | 12.0 | 23.0 | 23.0 | 12.0 | 23.0 | 15.0 | 73.0 | 73.0 | 12.0 | 70.0 | 70.0 |
| Total Split (%) | 10.0% | 19.2% | 19.2% | 10.0% | 19.2% | 12.5% | 60.8% | 60.8% | 10.0% | 58.3% | 58.3% |
| Yellow Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 |
| 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) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 6.0 | 6.0 | 5.0 | 6.0 | 6.0 |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lead | Lag | Lag | Lead | Lag | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | None | None | None | None | None | C-Min | C-Min | None | C-Min | C-Min |
| Act Effct Green (s) | 15.5 | 10.1 | 10.1 | 7.0 | 10.5 | 91.9 | 90.2 | 90.2 | 85.0 | 79.3 | 79.3 |
| Actuated g/C Ratio | 0.13 | 0.08 | 0.08 | 0.06 | 0.09 | 0.77 | 0.75 | 0.75 | 0.71 | 0.66 | 0.66 |
| v/c Ratio | 0.21 | 0.04 | 0.23 | 0.61 | 0.30 | 0.38 | 0.66 | 0.03 | 0.05 | 0.54 | 0.05 |
| Control Delay | 40.4 | 45.8 | 2.2 | 79.5 | 24.1 | 7.1 | 9.4 | 0.0 | 2.6 | 13.6 | 1.8 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 40.4 | 45.8 | 2.2 | 79.5 | 24.1 | 7.1 | 9.5 | 0.0 | 2.6 | 13.6 | 1.8 |
| LOS | D | D | A | E | C | A | A | A | A | B | A |
| Approach Delay | | 25.6 | | | 54.2 | | 9.2 | | | 13.0 | |
| Approach LOS | | C | | | D | | A | | | B | |

| Intersection Summary | |
|---|---|
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 74 (62%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow | |
| Natural Cycle: 105 | |
| Control Type: Actuated-Coordinated | |
| Maximum v/c Ratio: 0.66 | |
| Intersection Signal Delay: 12.8 | Intersection LOS: B |
| Intersection Capacity Utilization 74.8% | ICU Level of Service D |
| Analysis Period (min) 15 | |

Splits and Phases: 6: University Blvd/S University Blvd & E Commons Ave/Easter Ave



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 72 | 6 | 51 | 59 | 13 | 37 | 108 | 1641 | 34 | 8 | 1191 | 52 |
| Future Volume (veh/h) | 72 | 6 | 51 | 59 | 13 | 37 | 108 | 1641 | 34 | 8 | 1191 | 52 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 0.94 | | 1.00 | 1.00 | | 0.96 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 77 | 6 | 0 | 63 | 14 | 39 | 115 | 1746 | 36 | 9 | 1267 | 0 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 358 | 129 | | 81 | 34 | 94 | 341 | 2502 | 1112 | 251 | 2395 | |
| Arrive On Green | 0.03 | 0.07 | 0.00 | 0.05 | 0.08 | 0.08 | 0.07 | 1.00 | 1.00 | 0.01 | 0.67 | 0.00 |
| Sat Flow, veh/h | 3456 | 1870 | 1585 | 1781 | 422 | 1177 | 1781 | 3554 | 1579 | 1781 | 3554 | 1585 |
| Grp Volume(v), veh/h | 77 | 6 | 0 | 63 | 0 | 53 | 115 | 1746 | 36 | 9 | 1267 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1728 | 1870 | 1585 | 1781 | 0 | 1599 | 1781 | 1777 | 1579 | 1781 | 1777 | 1585 |
| Q Serve(g_s), s | 2.5 | 0.4 | 0.0 | 4.2 | 0.0 | 3.8 | 2.4 | 0.0 | 0.0 | 0.2 | 21.7 | 0.0 |
| Cycle Q Clear(g_c), s | 2.5 | 0.4 | 0.0 | 4.2 | 0.0 | 3.8 | 2.4 | 0.0 | 0.0 | 0.2 | 21.7 | 0.0 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.74 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 358 | 129 | | 81 | 0 | 128 | 341 | 2502 | 1112 | 251 | 2395 | |
| V/C Ratio(X) | 0.22 | 0.05 | | 0.78 | 0.00 | 0.41 | 0.34 | 0.70 | 0.03 | 0.04 | 0.53 | |
| Avail Cap(c_a), veh/h | 441 | 281 | | 104 | 0 | 240 | 424 | 2502 | 1112 | 343 | 2395 | |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 2.00 | 2.00 | 2.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 49.4 | 52.2 | 0.0 | 56.7 | 0.0 | 52.5 | 7.7 | 0.0 | 0.0 | 6.2 | 9.9 | 0.0 |
| Incr Delay (d2), s/veh | 0.1 | 0.1 | 0.0 | 24.2 | 0.0 | 0.8 | 0.2 | 1.6 | 0.1 | 0.0 | 0.8 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 1.1 | 0.2 | 0.0 | 2.4 | 0.0 | 1.6 | 0.7 | 0.6 | 0.0 | 0.1 | 7.7 | 0.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 49.5 | 52.2 | 0.0 | 80.9 | 0.0 | 53.3 | 7.9 | 1.6 | 0.1 | 6.2 | 10.7 | 0.0 |
| LnGrp LOS | D | D | | F | A | D | A | A | A | A | B | |
| Approach Vol, veh/h | | 83 | A | | 116 | | | 1897 | | | 1276 | A |
| Approach Delay, s/veh | | 49.7 | | | 68.3 | | | 2.0 | | | 10.7 | |
| Approach LOS | | D | | | E | | | A | | | B | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 5.8 | 90.5 | 10.4 | 13.3 | 9.4 | 86.9 | 9.1 | 14.6 |
| Change Period (Y+Rc), s | 5.0 | 6.0 | 5.0 | 5.0 | 5.0 | 6.0 | 5.0 | 5.0 |
| Max Green Setting (Gmax), s | 7.0 | 67.0 | 7.0 | 18.0 | 10.0 | 64.0 | 7.0 | 18.0 |
| Max Q Clear Time (g_c+I1), s | 2.2 | 2.0 | 6.2 | 2.4 | 4.4 | 23.7 | 4.5 | 5.8 |
| Green Ext Time (p_c), s | 0.0 | 45.6 | 0.0 | 0.0 | 0.1 | 22.2 | 0.0 | 0.1 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 8.7 |
| HCM 6th LOS | A |

Notes

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

Unsignalized Delay for [EBR, SBR] is excluded from calculations of the approach delay and intersection delay.

| Intersection | |
|---|---|
| Int Delay, s/veh | 466.4 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 30 | 87 | 69 | 1793 | 1895 | 12 |
| Future Vol, veh/h | 30 | 87 | 69 | 1793 | 1895 | 12 |
| 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 | - | 120 | - | - | 0 |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 93 | 93 | 93 | 93 | 93 | 93 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 32 | 94 | 74 | 1928 | 2038 | 13 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 3150 | 1019 | 2051 | 0 | - | 0 |
| Stage 1 | 2038 | - | - | - | - | - |
| Stage 2 | 1112 | - | - | - | - | - |
| Critical Hdwy | 6.84 | 6.94 | 4.14 | - | - | - |
| Critical Hdwy Stg 1 | 5.84 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.84 | - | - | - | - | - |
| Follow-up Hdwy | 3.52 | 3.32 | 2.22 | - | - | - |
| Pot Cap-1 Maneuver | *~ 1 | *287 | *429 | - | - | - |
| Stage 1 | *271 | - | - | - | - | - |
| Stage 2 | *319 | - | - | - | - | - |
| Platoon blocked, % | 1 | 1 | 1 | - | - | - |
| Mov Cap-1 Maneuver | *~ 1 | *287 | *429 | - | - | - |
| Mov Cap-2 Maneuver | *~ 1 | - | - | - | - | - |
| Stage 1 | *224 | - | - | - | - | - |
| Stage 2 | *319 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | $ 15482.1 | 0.6 | 0 |
| HCM LOS | F | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | * 429 | - | 4 | - | - |
| HCM Lane V/C Ratio | 0.173 | - | 31.452 | - | - |
| HCM Control Delay (s) | 15.1 | $ | 15482.1 | - | - |
| HCM Lane LOS | C | - | F | - | - |
| HCM 95th %tile Q(veh) | 0.6 | - | 17.9 | - | - |

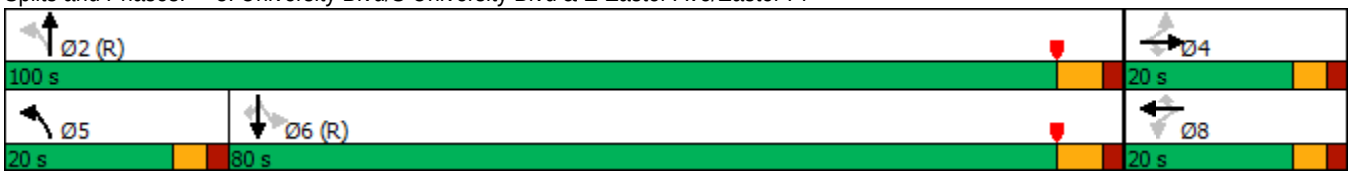
Notes

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

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | |
| Traffic Volume (vph) | 83 | 38 | 222 | 61 | 31 | 24 | 207 | 1754 | 18 | 1880 | 83 |
| Future Volume (vph) | 83 | 38 | 222 | 61 | 31 | 24 | 207 | 1754 | 18 | 1880 | 83 |
| Turn Type | Perm | NA | Perm | Perm | NA | Perm | pm+pt | NA | Perm | NA | Perm |
| Protected Phases | | 4 | | | 8 | | 5 | 2 | | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | 8 | 2 | | 6 | | 6 |
| Detector Phase | 4 | 4 | 4 | 8 | 8 | 8 | 5 | 2 | 6 | 6 | 6 |
| Switch Phase | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Minimum Split (s) | 36.0 | 36.0 | 36.0 | 40.0 | 40.0 | 40.0 | 8.0 | 29.0 | 32.0 | 32.0 | 32.0 |
| Total Split (s) | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 100.0 | 80.0 | 80.0 | 80.0 |
| Total Split (%) | 16.7% | 16.7% | 16.7% | 16.7% | 16.7% | 16.7% | 16.7% | 83.3% | 66.7% | 66.7% | 66.7% |
| Yellow Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| 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) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 6.0 | 6.0 | 6.0 | 6.0 |
| Lead/Lag | | | | | | | Lead | | Lag | Lag | Lag |
| Lead-Lag Optimize? | | | | | | | Yes | | Yes | Yes | Yes |
| Recall Mode | None | None | None | None | None | None | None | C-Min | C-Min | C-Min | C-Min |
| Act Effct Green (s) | 11.6 | 11.6 | 11.6 | 11.6 | 11.6 | 11.6 | 98.4 | 97.4 | 79.7 | 79.7 | 79.7 |
| Actuated g/C Ratio | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.82 | 0.81 | 0.66 | 0.66 | 0.66 |
| v/c Ratio | 0.68 | 0.22 | 0.73 | 0.50 | 0.18 | 0.12 | 0.88 | 0.68 | 0.15 | 0.85 | 0.09 |
| Control Delay | 76.6 | 51.5 | 25.3 | 63.7 | 50.6 | 1.2 | 65.6 | 6.5 | 7.0 | 13.4 | 0.4 |
| 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 | 76.6 | 51.5 | 25.3 | 63.7 | 50.6 | 1.2 | 65.6 | 6.6 | 7.0 | 13.4 | 0.4 |
| LOS | E | D | C | E | D | A | E | A | A | B | A |
| Approach Delay | | 40.6 | | | 47.1 | | | 12.6 | | 12.8 | |
| Approach LOS | | D | | | D | | | B | | B | |

| Intersection Summary | |
|---|---|
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 82 (68%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow | |
| Natural Cycle: 140 | |
| Control Type: Actuated-Coordinated | |
| Maximum v/c Ratio: 0.88 | |
| Intersection Signal Delay: 15.7 | Intersection LOS: B |
| Intersection Capacity Utilization 90.3% | ICU Level of Service E |
| Analysis Period (min) 15 | |

Splits and Phases: 8: University Blvd/S University Blvd & E Easter Ave/Easter Pl



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 83 | 38 | 222 | 61 | 31 | 24 | 207 | 1754 | 64 | 18 | 1880 | 83 |
| Future Volume (veh/h) | 83 | 38 | 222 | 61 | 31 | 24 | 207 | 1754 | 64 | 18 | 1880 | 83 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 0.98 | | 0.98 | 0.99 | | 0.98 | 1.00 | | 1.00 | 1.00 | | 0.99 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 88 | 40 | 236 | 65 | 33 | 26 | 220 | 1866 | 68 | 19 | 2000 | 88 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 204 | 234 | 194 | 175 | 234 | 194 | 288 | 2739 | 99 | 182 | 2452 | 1088 |
| Arrive On Green | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.05 | 0.78 | 0.78 | 1.00 | 1.00 | 1.00 |
| Sat Flow, veh/h | 1319 | 1870 | 1551 | 1088 | 1870 | 1551 | 1781 | 3497 | 127 | 230 | 3554 | 1577 |
| Grp Volume(v), veh/h | 88 | 40 | 236 | 65 | 33 | 26 | 220 | 942 | 992 | 19 | 2000 | 88 |
| Grp Sat Flow(s),veh/h/ln | 1319 | 1870 | 1551 | 1088 | 1870 | 1551 | 1781 | 1777 | 1847 | 230 | 1777 | 1577 |
| Q Serve(g_s), s | 7.6 | 2.3 | 15.0 | 6.8 | 1.9 | 1.8 | 4.1 | 29.4 | 30.1 | 2.6 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 9.5 | 2.3 | 15.0 | 9.1 | 1.9 | 1.8 | 4.1 | 29.4 | 30.1 | 21.5 | 0.0 | 0.0 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.07 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 204 | 234 | 194 | 175 | 234 | 194 | 288 | 1392 | 1447 | 182 | 2452 | 1088 |
| V/C Ratio(X) | 0.43 | 0.17 | 1.22 | 0.37 | 0.14 | 0.13 | 0.76 | 0.68 | 0.69 | 0.10 | 0.82 | 0.08 |
| Avail Cap(c_a), veh/h | 204 | 234 | 194 | 175 | 234 | 194 | 419 | 1392 | 1447 | 182 | 2452 | 1088 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 2.00 | 2.00 | 2.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 51.0 | 46.9 | 52.5 | 51.0 | 46.8 | 46.7 | 8.3 | 6.0 | 6.1 | 2.5 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 0.5 | 0.1 | 135.4 | 0.5 | 0.1 | 0.1 | 2.5 | 2.7 | 2.7 | 1.1 | 3.1 | 0.1 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 2.6 | 1.1 | 13.2 | 1.9 | 0.9 | 0.7 | 1.3 | 8.4 | 8.9 | 0.1 | 1.1 | 0.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 51.5 | 47.1 | 187.9 | 51.5 | 46.9 | 46.8 | 10.8 | 8.7 | 8.7 | 3.6 | 3.1 | 0.1 |
| LnGrp LOS | D | D | F | D | D | D | B | A | A | A | A | A |
| Approach Vol, veh/h | | 364 | | | 124 | | | 2154 | | | 2107 | |
| Approach Delay, s/veh | | 139.5 | | | 49.3 | | | 8.9 | | | 3.0 | |
| Approach LOS | | F | | | D | | | A | | | A | |

| Timer - Assigned Phs | | 2 | | 4 | 5 | 6 | | 8 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | | 100.0 | | 20.0 | 11.2 | 88.8 | | 20.0 | | | | |
| Change Period (Y+Rc), s | | 6.0 | | 5.0 | 5.0 | 6.0 | | 5.0 | | | | |
| Max Green Setting (Gmax), s | | 94.0 | | 15.0 | 15.0 | 74.0 | | 15.0 | | | | |
| Max Q Clear Time (g_c+I1), s | | 32.1 | | 17.0 | 6.1 | 23.5 | | 11.1 | | | | |
| Green Ext Time (p_c), s | | 48.8 | | 0.0 | 0.1 | 43.8 | | 0.1 | | | | |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 17.4 |
| HCM 6th LOS | B |

Notes

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

| Intersection | |
|---|---|
| Int Delay, s/veh | 4.1 |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 39 | 213 | 200 | 123 | 130 | 48 |
| Future Vol, veh/h | 39 | 213 | 200 | 123 | 130 | 48 |
| 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 | 96 | 96 | 96 | 96 | 96 | 96 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 41 | 222 | 208 | 128 | 135 | 50 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 336 | 0 | - | 0 | 576 | 272 |
| Stage 1 | - | - | - | - | 272 | - |
| Stage 2 | - | - | - | - | 304 | - |
| Critical Hdwy | 4.12 | - | - | - | 6.42 | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.42 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.42 | - |
| Follow-up Hdwy | 2.218 | - | - | - | 3.518 | 3.318 |
| Pot Cap-1 Maneuver | 1223 | - | - | - | 479 | 767 |
| Stage 1 | - | - | - | - | 774 | - |
| Stage 2 | - | - | - | - | 748 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | 1223 | - | - | - | 461 | 767 |
| Mov Cap-2 Maneuver | - | - | - | - | 461 | - |
| Stage 1 | - | - | - | - | 745 | - |
| Stage 2 | - | - | - | - | 748 | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 1.2 | 0 | 15.8 |
| HCM LOS | | | C |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|
| Capacity (veh/h) | 1223 | - | - | - | 517 |
| HCM Lane V/C Ratio | 0.033 | - | - | - | 0.359 |
| HCM Control Delay (s) | 8 | 0 | - | - | 15.8 |
| HCM Lane LOS | A | A | - | - | C |
| HCM 95th %tile Q(veh) | 0.1 | - | - | - | 1.6 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.7 |

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 233 | 17 | 12 | 235 | 8 | 19 |
| Future Vol, veh/h | 233 | 17 | 12 | 235 | 8 | 19 |
| 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 | 91 | 91 | 91 | 91 | 91 | 91 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 256 | 19 | 13 | 258 | 9 | 21 |

| Major/Minor | Major1 | | Major2 | | Minor1 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 0 | 0 | 275 | 0 | 550 | 266 |
| Stage 1 | - | - | - | - | 266 | - |
| Stage 2 | - | - | - | - | 284 | - |
| Critical Hdwy | - | - | 4.12 | - | 6.42 | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.42 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.42 | - |
| Follow-up Hdwy | - | - | 2.218 | - | 3.518 | 3.318 |
| Pot Cap-1 Maneuver | - | - | 1288 | - | 496 | 773 |
| Stage 1 | - | - | - | - | 779 | - |
| Stage 2 | - | - | - | - | 764 | - |
| Platoon blocked, % | - | - | | - | | |
| Mov Cap-1 Maneuver | - | - | 1288 | - | 490 | 773 |
| Mov Cap-2 Maneuver | - | - | - | - | 490 | - |
| Stage 1 | - | - | - | - | 779 | - |
| Stage 2 | - | - | - | - | 755 | - |

| Approach | EB | WB | NB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 0.4 | 10.7 |
| HCM LOS | | | B |

| Minor Lane/Major Mvmt | NBLn1 | EBT | EBR | WBL | WBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | 660 | - | - | 1288 | - |
| HCM Lane V/C Ratio | 0.045 | - | - | 0.01 | - |
| HCM Control Delay (s) | 10.7 | - | - | 7.8 | 0 |
| HCM Lane LOS | B | - | - | A | A |
| HCM 95th %tile Q(veh) | 0.1 | - | - | 0 | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 3.6 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 27 | 170 | 13 | 10 | 179 | 54 | 16 | 6 | 13 | 67 | 6 | 27 |
| Future Vol, veh/h | 27 | 170 | 13 | 10 | 179 | 54 | 16 | 6 | 13 | 67 | 6 | 27 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | - | - | - | - |
| 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 | 2 | 2 | 2 |
| Mvmt Flow | 30 | 189 | 14 | 11 | 199 | 60 | 18 | 7 | 14 | 74 | 7 | 30 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 259 | 0 | 0 | 203 | 0 | 0 | 526 | 537 | 196 | 518 | 514 | 229 |
| Stage 1 | - | - | - | - | - | - | 256 | 256 | - | 251 | 251 | - |
| Stage 2 | - | - | - | - | - | - | 270 | 281 | - | 267 | 263 | - |
| Critical Hdwy | 4.12 | - | - | 4.12 | - | - | 7.12 | 6.52 | 6.22 | 7.12 | 6.52 | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.12 | 5.52 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.12 | 5.52 | - |
| Follow-up Hdwy | 2.218 | - | - | 2.218 | - | - | 3.518 | 4.018 | 3.318 | 3.518 | 4.018 | 3.318 |
| Pot Cap-1 Maneuver | 1306 | - | - | 1369 | - | - | 462 | 450 | 845 | 468 | 464 | 810 |
| Stage 1 | - | - | - | - | - | - | 749 | 696 | - | 753 | 699 | - |
| Stage 2 | - | - | - | - | - | - | 736 | 678 | - | 738 | 691 | - |
| Platoon blocked, % | | - | - | | - | - | | | | | | |
| Mov Cap-1 Maneuver | 1306 | - | - | 1369 | - | - | 428 | 434 | 845 | 443 | 448 | 810 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 428 | 434 | - | 443 | 448 | - |
| Stage 1 | - | - | - | - | - | - | 730 | 678 | - | 733 | 693 | - |
| Stage 2 | - | - | - | - | - | - | 696 | 672 | - | 700 | 673 | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 1 | 0.3 | 12.4 | 14.1 |
| HCM LOS | | | B | B |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 526 | 1306 | - | - | 1369 | - | - | 505 |
| HCM Lane V/C Ratio | 0.074 | 0.023 | - | - | 0.008 | - | - | 0.22 |
| HCM Control Delay (s) | 12.4 | 7.8 | 0 | - | 7.7 | 0 | - | 14.1 |
| HCM Lane LOS | B | A | A | - | A | A | - | B |
| HCM 95th %tile Q(veh) | 0.2 | 0.1 | - | - | 0 | - | - | 0.8 |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 8.9 |
| Intersection LOS | A |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 28 | 141 | 165 | 56 | 69 | 31 |
| Future Vol, veh/h | 28 | 141 | 165 | 56 | 69 | 31 |
| Peak Hour Factor | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 31 | 155 | 181 | 62 | 76 | 34 |
| Number of Lanes | 0 | 1 | 1 | 0 | 1 | 0 |

| Approach | EB | WB | SB |
|---|---|---|---|
| Opposing Approach | WB | EB | |
| Opposing Lanes | 1 | 1 | 0 |
| Conflicting Approach Left | SB | | WB |
| Conflicting Lanes Left | 1 | 0 | 1 |
| Conflicting Approach Right | | SB | EB |
| Conflicting Lanes Right | 0 | 1 | 1 |
| HCM Control Delay | 8.9 | 9 | 8.7 |
| HCM LOS | A | A | A |

| Lane | EBLn1 | WBLn1 | SBLn1 |
|---|---|---|---|
| Vol Left, % | 17% | 0% | 69% |
| Vol Thru, % | 83% | 75% | 0% |
| Vol Right, % | 0% | 25% | 31% |
| Sign Control | Stop | Stop | Stop |
| Traffic Vol by Lane | 169 | 221 | 100 |
| LT Vol | 28 | 0 | 69 |
| Through Vol | 141 | 165 | 0 |
| RT Vol | 0 | 56 | 31 |
| Lane Flow Rate | 186 | 243 | 110 |
| Geometry Grp | 1 | 1 | 1 |
| Degree of Util (X) | 0.232 | 0.287 | 0.147 |
| Departure Headway (Hd) | 4.494 | 4.259 | 4.824 |
| Convergence, Y/N | Yes | Yes | Yes |
| Cap | 800 | 845 | 743 |
| Service Time | 2.514 | 2.279 | 2.854 |
| HCM Lane V/C Ratio | 0.233 | 0.288 | 0.148 |
| HCM Control Delay | 8.9 | 9 | 8.7 |
| HCM Lane LOS | A | A | A |
| HCM 95th-tile Q | 0.9 | 1.2 | 0.5 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 5.7 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 17 | 60 | 72 | 11 | 7 | 83 |
| Future Vol, veh/h | 17 | 60 | 72 | 11 | 7 | 83 |
| 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 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 76 | 25 | 76 | 76 | 76 | 76 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 22 | 240 | 95 | 14 | 9 | 109 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 229 | 102 | 0 | 0 | 109 | 0 |
| Stage 1 | 102 | - | - | - | - | - |
| Stage 2 | 127 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | - | - | 4.12 | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | - | - | 2.218 | - |
| Pot Cap-1 Maneuver | 759 | 953 | - | - | 1481 | - |
| Stage 1 | 922 | - | - | - | - | - |
| Stage 2 | 899 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 754 | 953 | - | - | 1481 | - |
| Mov Cap-2 Maneuver | 754 | - | - | - | - | - |
| Stage 1 | 922 | - | - | - | - | - |
| Stage 2 | 894 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 10.4 | 0 | 0.6 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 932 | 1481 | - |
| HCM Lane V/C Ratio | - | - | 0.282 | 0.006 | - |
| HCM Control Delay (s) | - | - | 10.4 | 7.4 | 0 |
| HCM Lane LOS | - | - | B | A | A |
| HCM 95th %tile Q(veh) | - | - | 1.2 | 0 | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 4.3 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 32 | 11 | 2 | 14 | 18 | 64 | 4 | 123 | 4 | 12 | 73 | 41 |
| Future Vol, veh/h | 32 | 11 | 2 | 14 | 18 | 64 | 4 | 123 | 4 | 12 | 73 | 41 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 42 | 14 | 3 | 18 | 24 | 84 | 5 | 162 | 5 | 16 | 96 | 54 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 384 | 332 | 123 | 339 | 357 | 165 | 150 | 0 | 0 | 167 | 0 | 0 |
| Stage 1 | 155 | 155 | - | 175 | 175 | - | - | - | - | - | - | - |
| Stage 2 | 229 | 177 | - | 164 | 182 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.12 | 6.52 | 6.22 | 7.12 | 6.52 | 6.22 | 4.12 | - | - | 4.12 | - | - |
| Critical Hdwy Stg 1 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 4.018 | 3.318 | 3.518 | 4.018 | 3.318 | 2.218 | - | - | 2.218 | - | - |
| Pot Cap-1 Maneuver | 574 | 588 | 928 | 615 | 569 | 879 | 1431 | - | - | 1411 | - | - |
| Stage 1 | 847 | 769 | - | 827 | 754 | - | - | - | - | - | - | - |
| Stage 2 | 774 | 753 | - | 838 | 749 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | 496 | 579 | 928 | 594 | 560 | 879 | 1431 | - | - | 1411 | - | - |
| Mov Cap-2 Maneuver | 496 | 579 | - | 594 | 560 | - | - | - | - | - | - | - |
| Stage 1 | 844 | 760 | - | 824 | 751 | - | - | - | - | - | - | - |
| Stage 2 | 675 | 750 | - | 810 | 740 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 12.7 | 10.8 | 0.2 | 0.7 |
| HCM LOS | B | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 1431 | - | - | 525 | 747 | 1411 | - | - |
| HCM Lane V/C Ratio | 0.004 | - | - | 0.113 | 0.169 | 0.011 | - | - |
| HCM Control Delay (s) | 7.5 | 0 | - | 12.7 | 10.8 | 7.6 | 0 | - |
| HCM Lane LOS | A | A | - | B | B | A | A | - |
| HCM 95th %tile Q(veh) | 0 | - | - | 0.4 | 0.6 | 0 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 3.9 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 53 | 73 | 161 | 59 | 46 | 73 |
| Future Vol, veh/h | 53 | 73 | 161 | 59 | 46 | 73 |
| 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 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 84 | 84 | 84 | 84 | 84 | 84 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 63 | 87 | 192 | 70 | 55 | 87 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 424 | 227 | 0 | 0 | 262 | 0 |
| Stage 1 | 227 | - | - | - | - | - |
| Stage 2 | 197 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | - | - | 4.12 | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | - | - | 2.218 | - |
| Pot Cap-1 Maneuver | 587 | 812 | - | - | 1302 | - |
| Stage 1 | 811 | - | - | - | - | - |
| Stage 2 | 836 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 561 | 812 | - | - | 1302 | - |
| Mov Cap-2 Maneuver | 561 | - | - | - | - | - |
| Stage 1 | 811 | - | - | - | - | - |
| Stage 2 | 799 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 11.7 | 0 | 3 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 683 | 1302 | - |
| HCM Lane V/C Ratio | - | - | 0.22 | 0.042 | - |
| HCM Control Delay (s) | - | - | 11.7 | 7.9 | 0 |
| HCM Lane LOS | - | - | B | A | A |
| HCM 95th %tile Q(veh) | - | - | 0.8 | 0.1 | - |

# APPENDIX E. TRIP GENERATION

## Streets at Southglenn Macy's Trip Generation Estimates

| Description | Land Use | ITE Code | Quantity | Units | Daily Trips | AM Peak Hour Trip | | | PM Peak Hour Trips | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | In | Out | Total | In | Out | Total |
| **Remove Existing Development** | | | | | | | | | | | |
| Retail | Department Store | 875 | 174.70 | ksf | 3,997 | 101 | 65 | 36 | 341 | 170 | 171 |
| | | | | **Existing Macy's Reduction** | **-3,997** | **-65** | **-36** | **-101** | **-170** | **-171** | **-341** |
| **Previously Approved Development** | | | | | | | | | | | |
| Residential | Multifamily Housing (Mid-Rise) | 221 | 148 | DU | 805 | 34 | 19 | 53 | 33 | 33 | 66 |
| | | | | **Approved Development** | **805** | **34** | **19** | **53** | **33** | **33** | **66** |
| **Add New Development** | | | | | | | | | | | |
| Residential | Multifamily Housing (Mid-Rise) | 221 | 225 | DU | 1224 | 21 | 60 | 81 | 60 | 39 | 99 |
| Entertainment | *(see text)* | *(see text)* | 30.00 | ksf | 600 | 0 | 0 | 0 | 37 | 17 | 54 |
| Retail | Shopping Center | 820 | 31.95 | ksf | 2767 | 104 | 64 | 108 | 112 | 122 | 234 |
| Retail | Free Standing Discount Store | 815 | 54.25 | ksf | 2881 | 63 | 43 | 20 | 131 | 131 | 262 |
| Office | General Office Building | 710 | 128.35 | ksf | 1352 | 126 | 21 | 147 | 23 | 121 | 144 |
| | | | | **Macy's New Development** | **8,824** | **294** | **165** | **459** | **363** | **430** | **793** |
| ***Total Macy's Site Trips*** | | | | | ***9,629*** | ***328*** | ***184*** | ***512*** | ***396*** | ***463*** | ***858*** |
| *Macy's Site Internal Trips (see text)* | | | | | *-2,220* | *-15* | *-15* | *-30* | *-111* | *-111* | *-222* |
| *Macy's Removal (from above)* | | | | | *-3,997* | *-65* | *-36* | *-101* | *-170* | *-171* | *-341* |
| **Macy's Site New External Trips** | | | | | **3,412** | **248** | **133** | **381** | **114** | **181** | **295** |

## Streets at Southglenn Sears Trip Generation Estimates

| Description | Land Use | ITE Code | Quantity | Units | Daily Trips | AM Peak Hour Trip | | | PM Peak Hour Trips | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | In | Out | Total | In | Out | Total |
| **Remove Existing Development** | | | | | | | | | | | |
| Retail | Department Store | 875 | 133.00 | ksf | 3,043 | 49 | 28 | 77 | 130 | 130 | 260 |
| Office | Office | 715 | 8.00 | ksf | 76 | 8 | 1 | 9 | 1 | 8 | 9 |
| | | | | **Existing Sears Reduction** | **-3,119** | **-57** | **-29** | **-86** | **-268** | **-131** | **-138** |
| **Add New Development** | | | | | | | | | | | |
| Residential | Multifamily Housing (Mid-Rise) | 221 | 698 | DU | 3,797 | 65 | 186 | 251 | 187 | 120 | 307 |
| Retail | Shopping Center | 820 | 35.00 | ksf | 2,931 | 105 | 64 | 169 | 120 | 129 | 249 |
| | | | | **Sears New Development** | **6,728** | **170** | **250** | **420** | **307** | **249** | **556** |
| ***Total Sears Site Trips*** | | | | | ***6,728*** | ***170*** | ***250*** | ***420*** | ***307*** | ***249*** | ***556*** |
| *Sears Site Internal Trips (see text)* | | | | | *-920* | *-3* | *-3* | *-6* | *-46* | *-46* | *-92* |
| *Sears Removal (from above)* | | | | | *-3,119* | *-57* | *-29* | *-86* | *-131* | *-138* | *-268* |
| **Sears Site New External Trips** | | | | | **2,689** | **110** | **218** | **328** | **130** | **65** | **196** |

# Department Store
(875)

**Vehicle Trip Ends vs:** **1000 Sq. Ft. GFA**
**On a:** **Weekday**

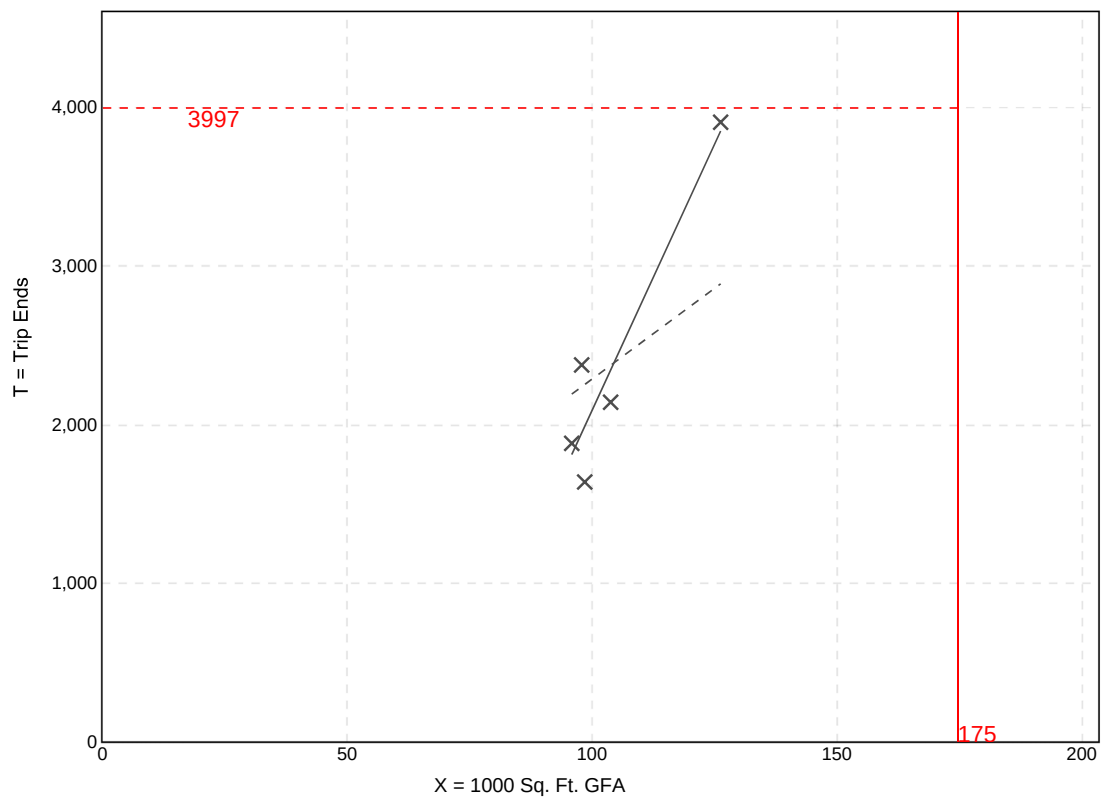
**Setting/Location:** **General Urban/Suburban**
Number of Studies: 5
Avg. 1000 Sq. Ft. GFA: 104
Directional Distribution: 50% entering, 50% exiting

## Vehicle Trip Generation per 1000 Sq. Ft. GFA

| Average Rate | Range of Rates | Standard Deviation |
|---|---|---|
| 22.88 | 16.64 - 30.95 | 5.74 |

## Data Plot and Equation

***Caution – Small Sample Size***




× **Study Site** ——— **Fitted Curve** - - - - **Average Rate**

**Fitted Curve Equation: T = 67.09(X) - 4618.37** **$R^2$= 0.89**

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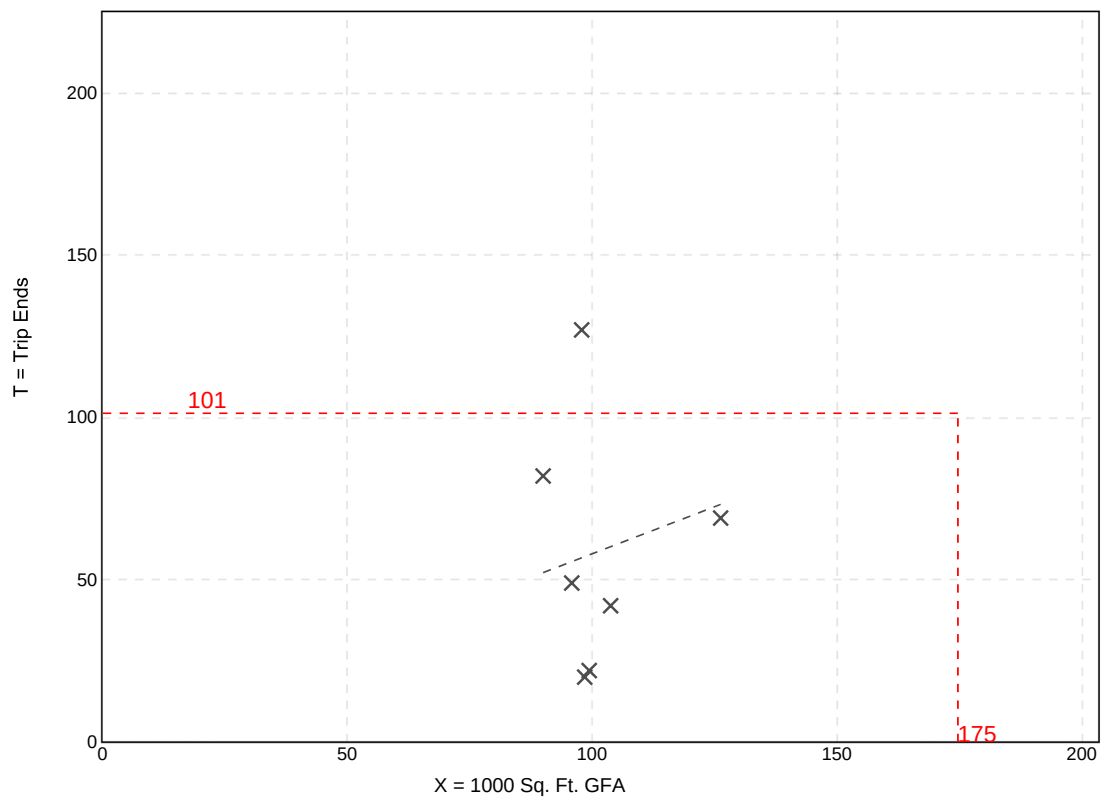
# Department Store
(875)

| | |
|---|---|
| **Vehicle Trip Ends vs:** | **1000 Sq. Ft. GFA** |
| **On a:** | **Weekday,** |
| | **Peak Hour of Adjacent Street Traffic,** |
| | **One Hour Between 7 and 9 a.m.** |
| **Setting/Location:** | **General Urban/Suburban** |
| Number of Studies: | 7 |
| Avg. 1000 Sq. Ft. GFA: | 102 |
| Directional Distribution: | 64% entering, 36% exiting |

## Vehicle Trip Generation per 1000 Sq. Ft. GFA

| Average Rate | Range of Rates | Standard Deviation |
|---|---|---|
| 0.58 | 0.20 - 1.30 | 0.39 |

## Data Plot and Equation




× **Study Site** - - - - **Average Rate**

**Fitted Curve Equation: Not Given** **$R^2$= ******

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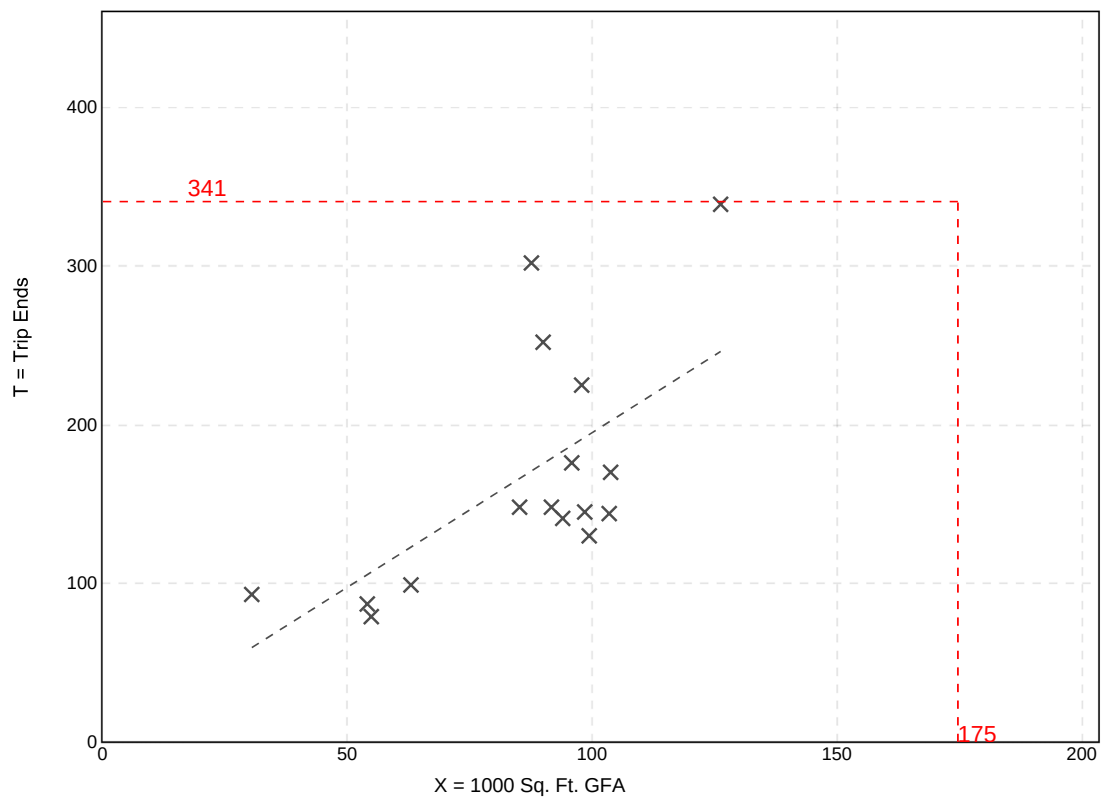
# Department Store
(875)

| | |
|---|---|
| **Vehicle Trip Ends vs:** | **1000 Sq. Ft. GFA** |
| **On a:** | **Weekday,** |
| | **Peak Hour of Adjacent Street Traffic,** |
| | **One Hour Between 4 and 6 p.m.** |
| **Setting/Location:** | **General Urban/Suburban** |
| Number of Studies: | 16 |
| Avg. 1000 Sq. Ft. GFA: | 86 |
| Directional Distribution: | 50% entering, 50% exiting |

## Vehicle Trip Generation per 1000 Sq. Ft. GFA

| Average Rate | Range of Rates | Standard Deviation |
|---|---|---|
| 1.95 | 1.31 - 3.45 | 0.65 |

## Data Plot and Equation




× **Study Site** - - - - **Average Rate**

**Fitted Curve Equation: Not Given** **$R^2$= ******

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# Multifamily Housing (Mid-Rise)
(221)

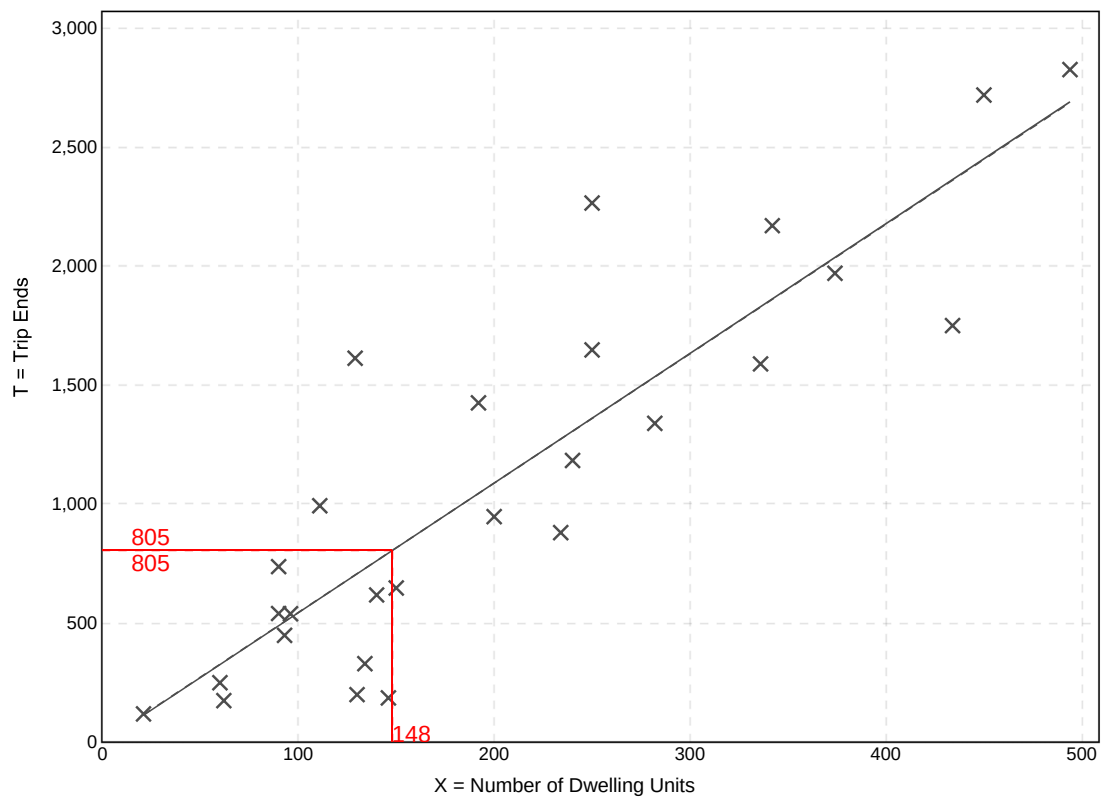
**Vehicle Trip Ends vs:** **Dwelling Units**
**On a:** **Weekday**

**Setting/Location:** **General Urban/Suburban**
Number of Studies: 27
Avg. Num. of Dwelling Units: 205
Directional Distribution: 50% entering, 50% exiting

## Vehicle Trip Generation per Dwelling Unit

| Average Rate | Range of Rates | Standard Deviation |
|---|---|---|
| 5.44 | 1.27 - 12.50 | 2.03 |

## Data Plot and Equation




× **Study Site** ——— **Fitted Curve** - - - - **Average Rate**

**Fitted Curve Equation: T = 5.45(X) - 1.75** **$R^2$= 0.77**

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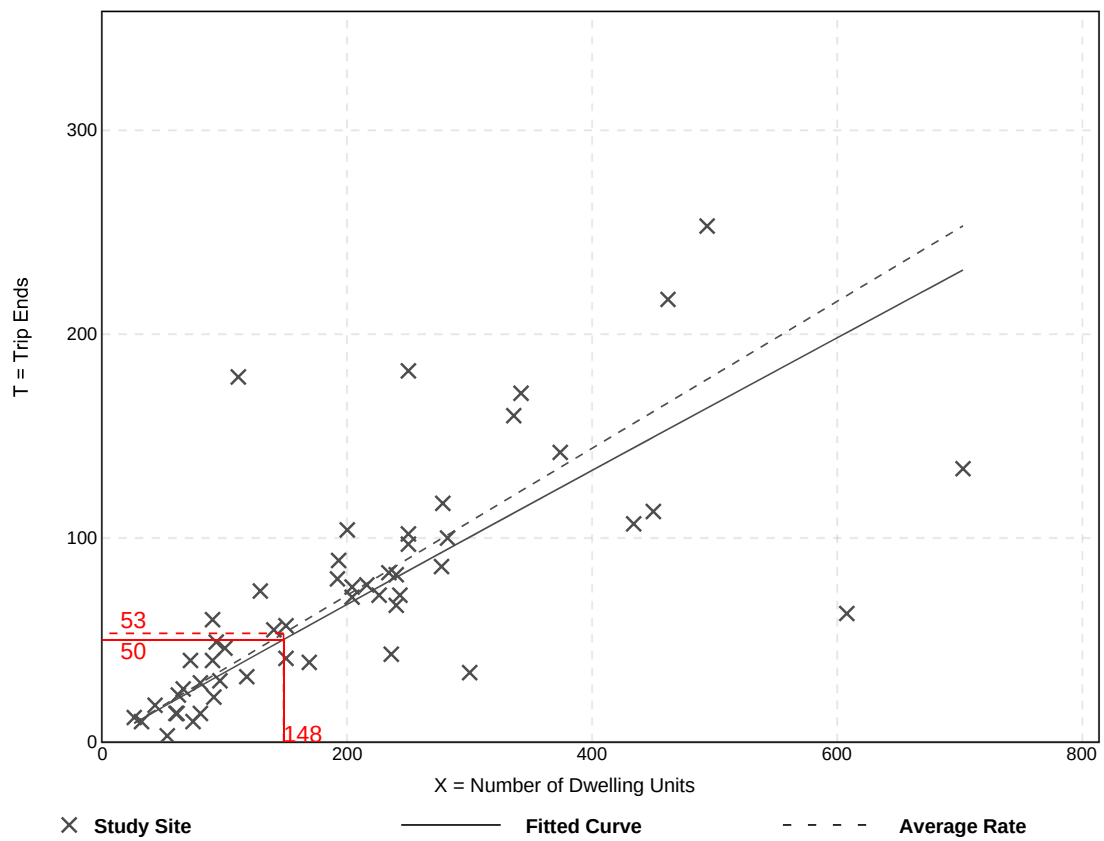
# Multifamily Housing (Mid-Rise)
(221)

| | |
|---|---|
| **Vehicle Trip Ends vs:** | **Dwelling Units** |
| **On a:** | **Weekday,** |
| | **Peak Hour of Adjacent Street Traffic,** |
| | **One Hour Between 7 and 9 a.m.** |
| **Setting/Location:** | **General Urban/Suburban** |
| Number of Studies: | 53 |
| Avg. Num. of Dwelling Units: | 207 |
| Directional Distribution: | 26% entering, 74% exiting |

## Vehicle Trip Generation per Dwelling Unit

| Average Rate | Range of Rates | Standard Deviation |
|---|---|---|
| 0.36 | 0.06 - 1.61 | 0.19 |

## Data Plot and Equation




**Fitted Curve Equation: Ln(T) = 0.98 Ln(X) - 0.98** **$R^2$= 0.67**

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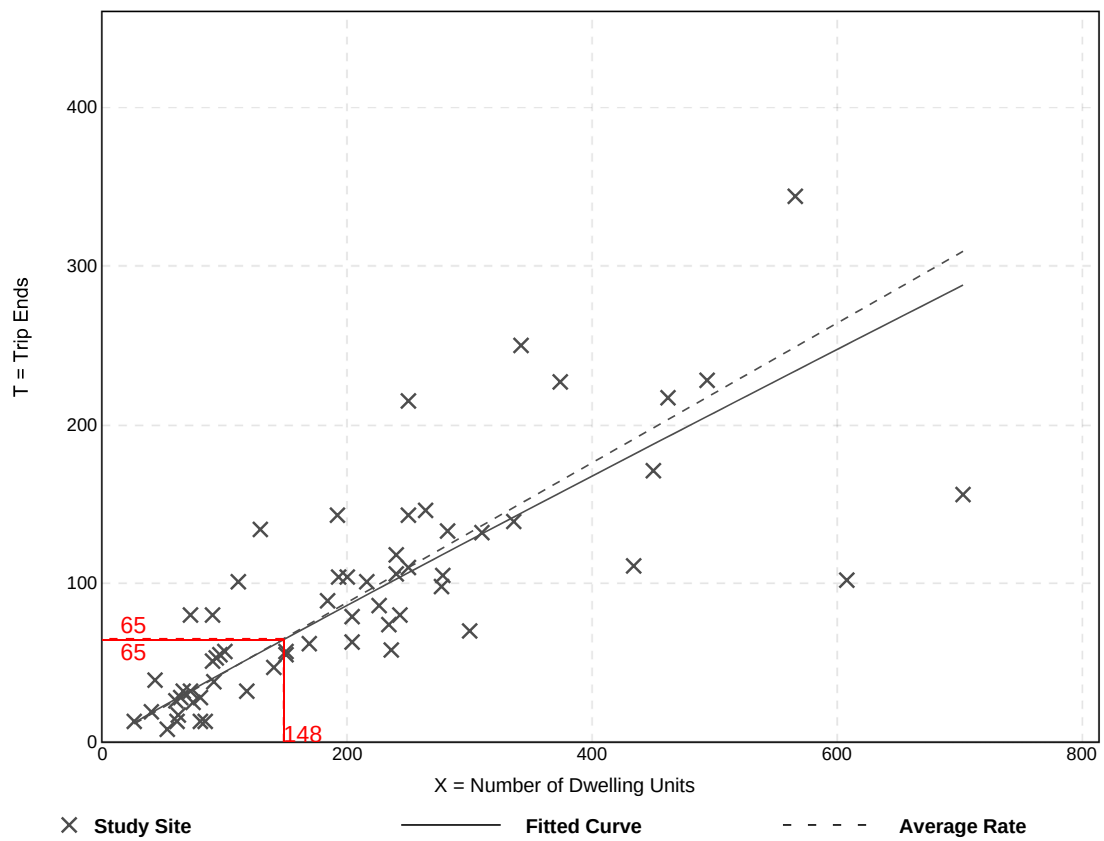
# Multifamily Housing (Mid-Rise)
(221)

| | |
|---|---|
| **Vehicle Trip Ends vs:** | **Dwelling Units** |
| **On a:** | **Weekday,** |
| | **Peak Hour of Adjacent Street Traffic,** |
| | **One Hour Between 4 and 6 p.m.** |
| **Setting/Location:** | **General Urban/Suburban** |
| Number of Studies: | 60 |
| Avg. Num. of Dwelling Units: | 208 |
| Directional Distribution: | 61% entering, 39% exiting |

## Vehicle Trip Generation per Dwelling Unit

| Average Rate | Range of Rates | Standard Deviation |
|---|---|---|
| 0.44 | 0.15 - 1.11 | 0.19 |

## Data Plot and Equation




**Fitted Curve Equation: Ln(T) = 0.96 Ln(X) - 0.63**

**$R^2$= 0.72**

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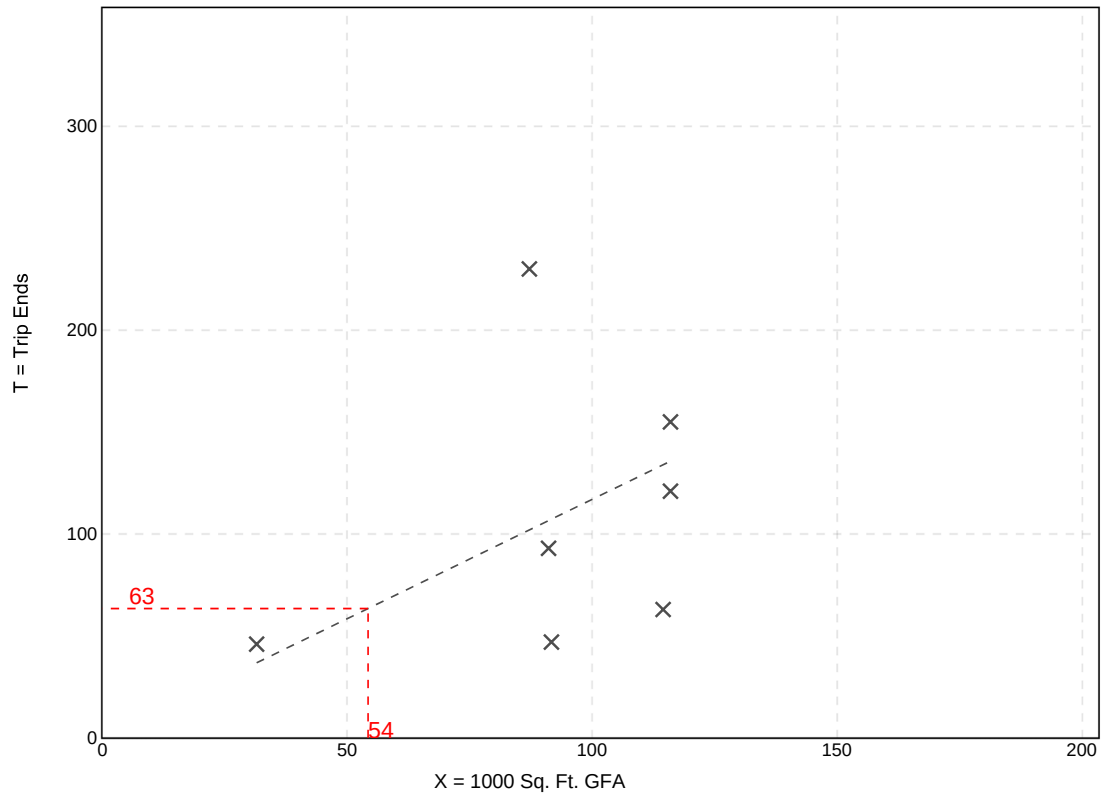
# Free-Standing Discount Store
(815)

| | |
|---|---|
| **Vehicle Trip Ends vs:** | **1000 Sq. Ft. GFA** |
| **On a:** | **Weekday,** |
| | **Peak Hour of Adjacent Street Traffic,** |
| | **One Hour Between 7 and 9 a.m.** |
| **Setting/Location:** | **General Urban/Suburban** |
| Number of Studies: | 7 |
| Avg. 1000 Sq. Ft. GFA: | 93 |
| Directional Distribution: | 69% entering, 31% exiting |

## Vehicle Trip Generation per 1000 Sq. Ft. GFA

| Average Rate | Range of Rates | Standard Deviation |
|---|---|---|
| 1.17 | 0.51 - 2.64 | 0.71 |

## Data Plot and Equation




× **Study Site** - - - - **Average Rate**

**Fitted Curve Equation: Not Given** **$R^2$= ******

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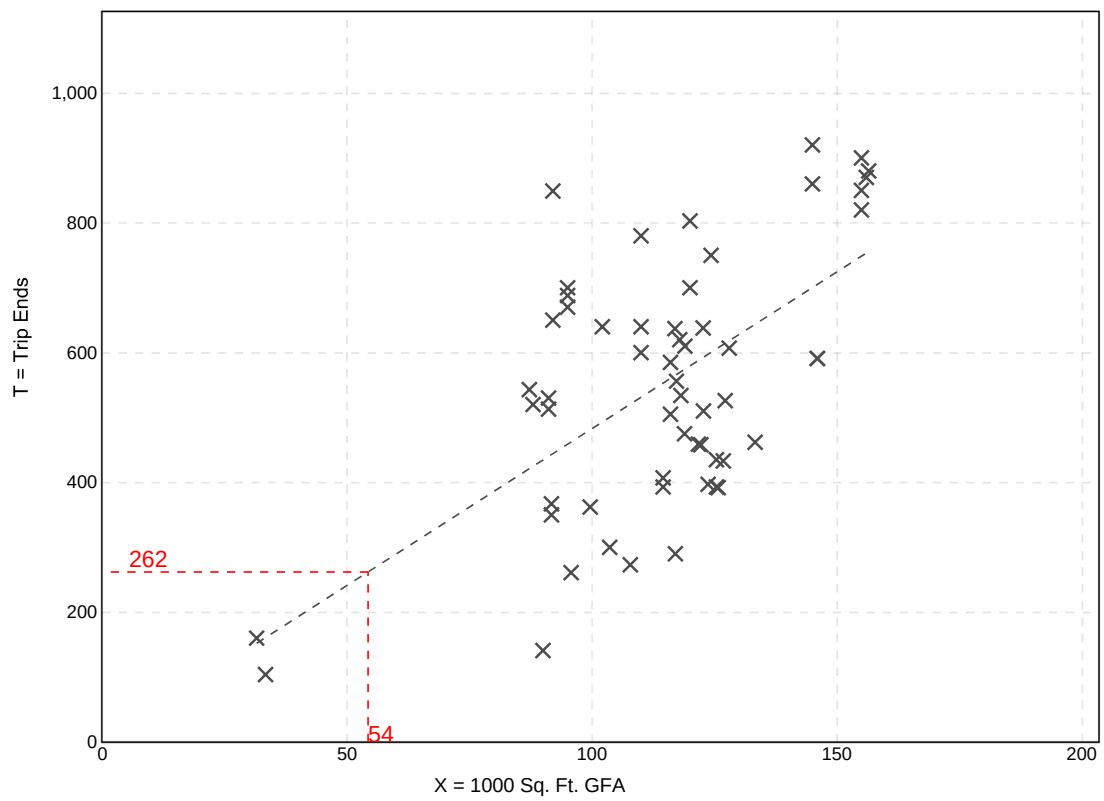
# Free-Standing Discount Store
(815)

| | |
|---|---|
| **Vehicle Trip Ends vs:** | **1000 Sq. Ft. GFA** |
| **On a:** | **Weekday,** |
| | **Peak Hour of Adjacent Street Traffic,** |
| | **One Hour Between 4 and 6 p.m.** |
| **Setting/Location:** | **General Urban/Suburban** |
| Number of Studies: | 57 |
| Avg. 1000 Sq. Ft. GFA: | 114 |
| Directional Distribution: | 50% entering, 50% exiting |

## Vehicle Trip Generation per 1000 Sq. Ft. GFA

| Average Rate | Range of Rates | Standard Deviation |
|---|---|---|
| 4.83 | 1.57 - 9.23 | 1.44 |

## Data Plot and Equation




× **Study Site** - - - - **Average Rate**

**Fitted Curve Equation: Not Given** **$R^2$= ******

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# Shopping Center
(820)

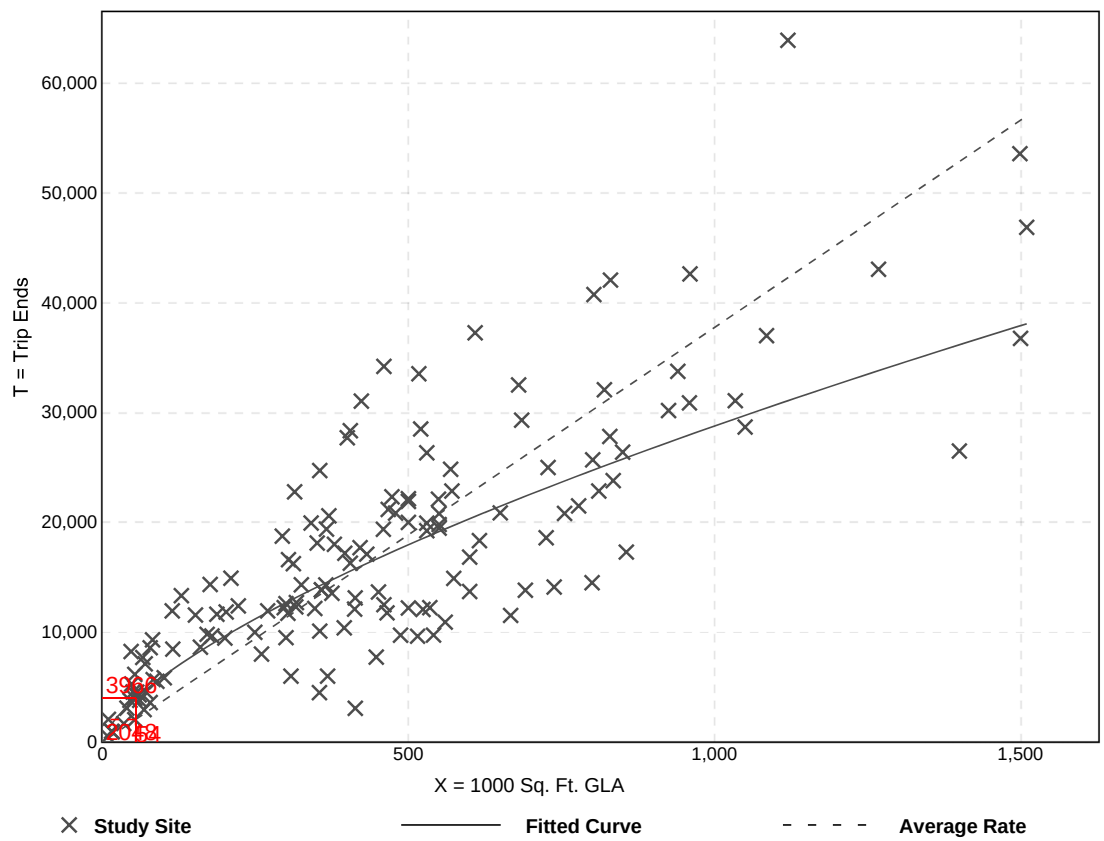
**Vehicle Trip Ends vs:** **1000 Sq. Ft. GLA**
**On a:** **Weekday**

**Setting/Location:** **General Urban/Suburban**
Number of Studies: 147
Avg. 1000 Sq. Ft. GLA: 453
Directional Distribution: 50% entering, 50% exiting

## Vehicle Trip Generation per 1000 Sq. Ft. GLA

| Average Rate | Range of Rates | Standard Deviation |
|---|---|---|
| 37.75 | 7.42 - 207.98 | 16.41 |

## Data Plot and Equation




**Fitted Curve Equation: Ln(T) = 0.68 Ln(X) + 5.57** **$R^2$= 0.76**

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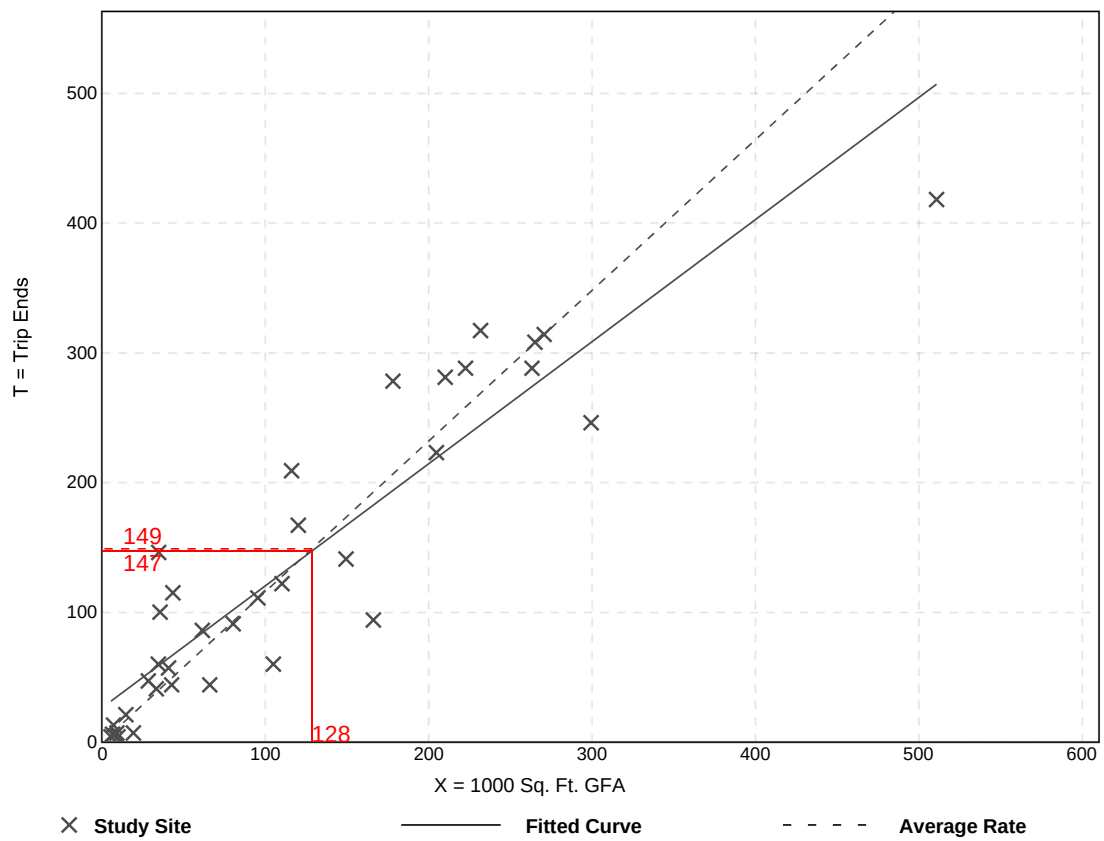
# General Office Building
(710)

| | |
|---|---|
| **Vehicle Trip Ends vs:** | **1000 Sq. Ft. GFA** |
| **On a:** | **Weekday,** |
| | **Peak Hour of Adjacent Street Traffic,** |
| | **One Hour Between 7 and 9 a.m.** |
| **Setting/Location:** | **General Urban/Suburban** |
| Number of Studies: | 35 |
| Avg. 1000 Sq. Ft. GFA: | 117 |
| Directional Distribution: | 86% entering, 14% exiting |

## Vehicle Trip Generation per 1000 Sq. Ft. GFA

| Average Rate | Range of Rates | Standard Deviation |
|---|---|---|
| 1.16 | 0.37 - 4.23 | 0.47 |

## Data Plot and Equation




**Fitted Curve Equation: T = 0.94(X) + 26.49** **$R^2$= 0.85**

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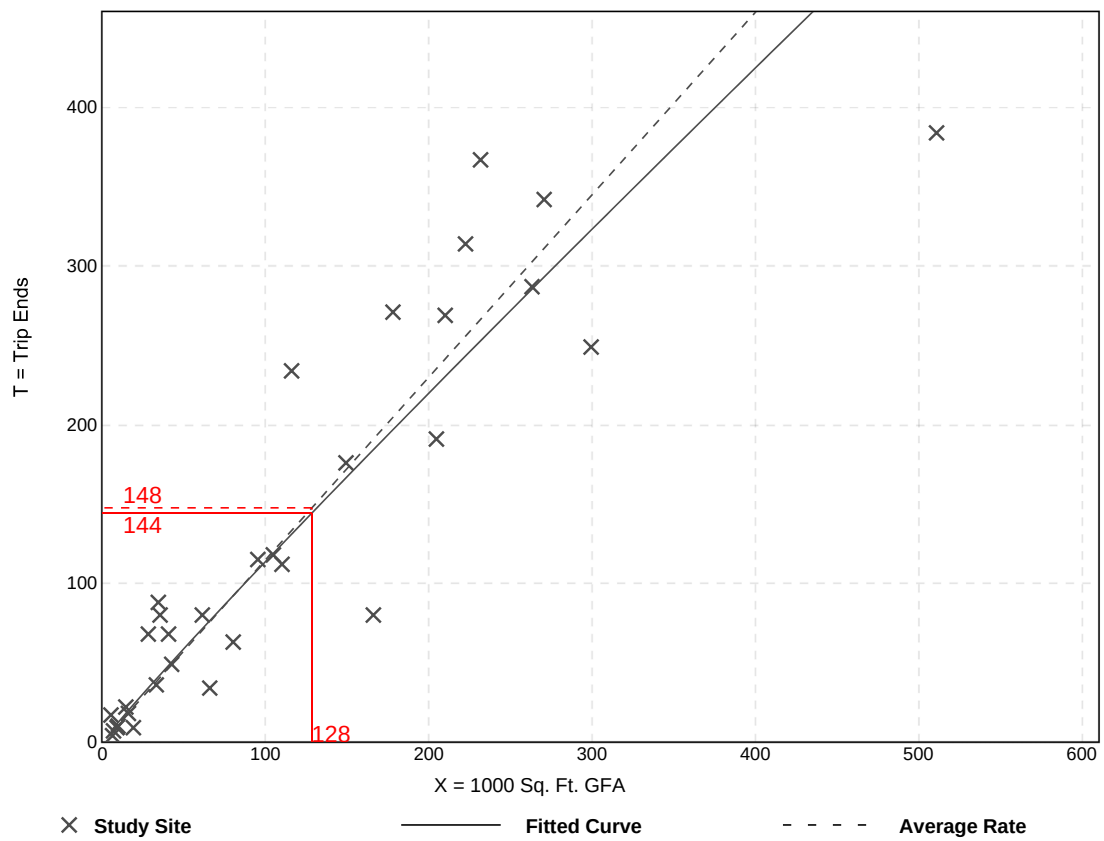
# General Office Building
(710)

| | |
|---|---|
| **Vehicle Trip Ends vs:** | **1000 Sq. Ft. GFA** |
| **On a:** | **Weekday,** |
| | **Peak Hour of Adjacent Street Traffic,** |
| | **One Hour Between 4 and 6 p.m.** |
| **Setting/Location:** | **General Urban/Suburban** |
| Number of Studies: | 32 |
| Avg. 1000 Sq. Ft. GFA: | 114 |
| Directional Distribution: | 16% entering, 84% exiting |

## Vehicle Trip Generation per 1000 Sq. Ft. GFA

| Average Rate | Range of Rates | Standard Deviation |
|---|---|---|
| 1.15 | 0.47 - 3.23 | 0.42 |

## Data Plot and Equation




**Fitted Curve Equation: Ln(T) = 0.95 Ln(X) + 0.36** **$R^2$= 0.88**

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# General Office Building
(710)

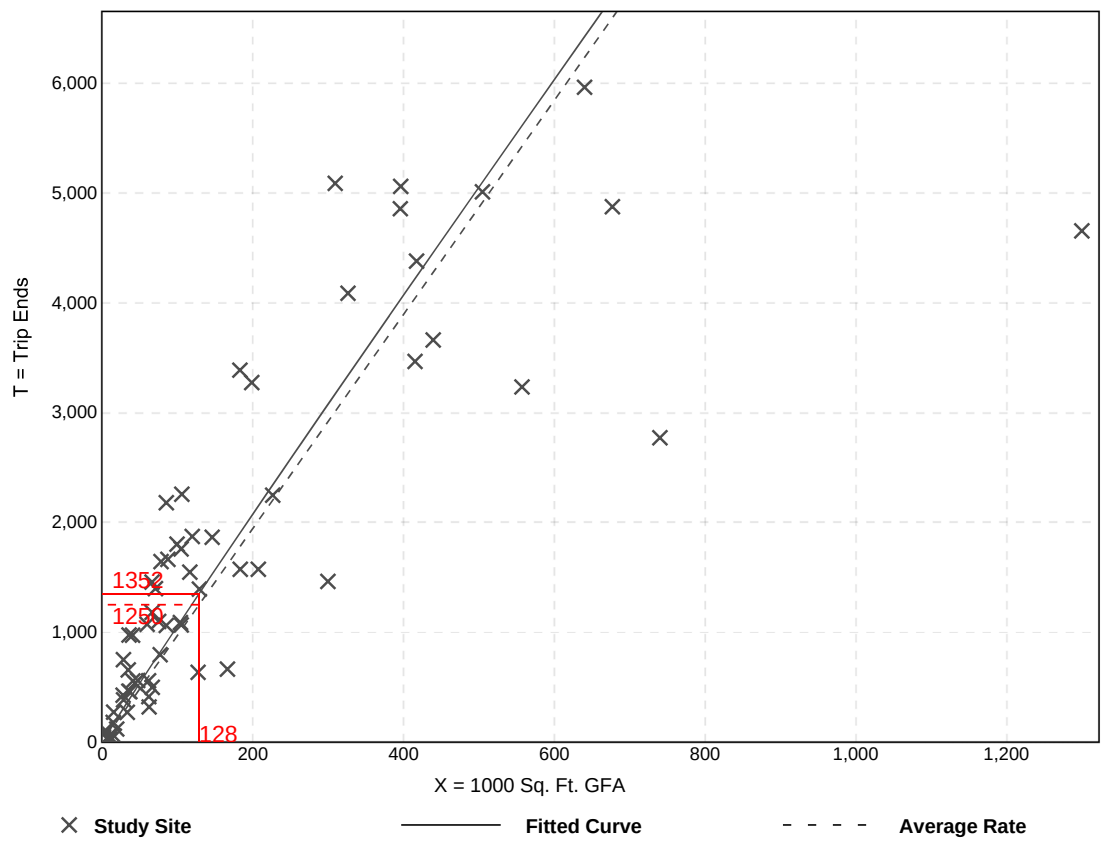
**Vehicle Trip Ends vs:** **1000 Sq. Ft. GFA**
**On a:** **Weekday**

**Setting/Location:** **General Urban/Suburban**
Number of Studies: 66
Avg. 1000 Sq. Ft. GFA: 171
Directional Distribution: 50% entering, 50% exiting

## Vehicle Trip Generation per 1000 Sq. Ft. GFA

| Average Rate | Range of Rates | Standard Deviation |
|---|---|---|
| 9.74 | 2.71 - 27.56 | 5.15 |

## Data Plot and Equation




**Fitted Curve Equation: Ln(T) = 0.97 Ln(X) + 2.50** **$R^2$= 0.83**

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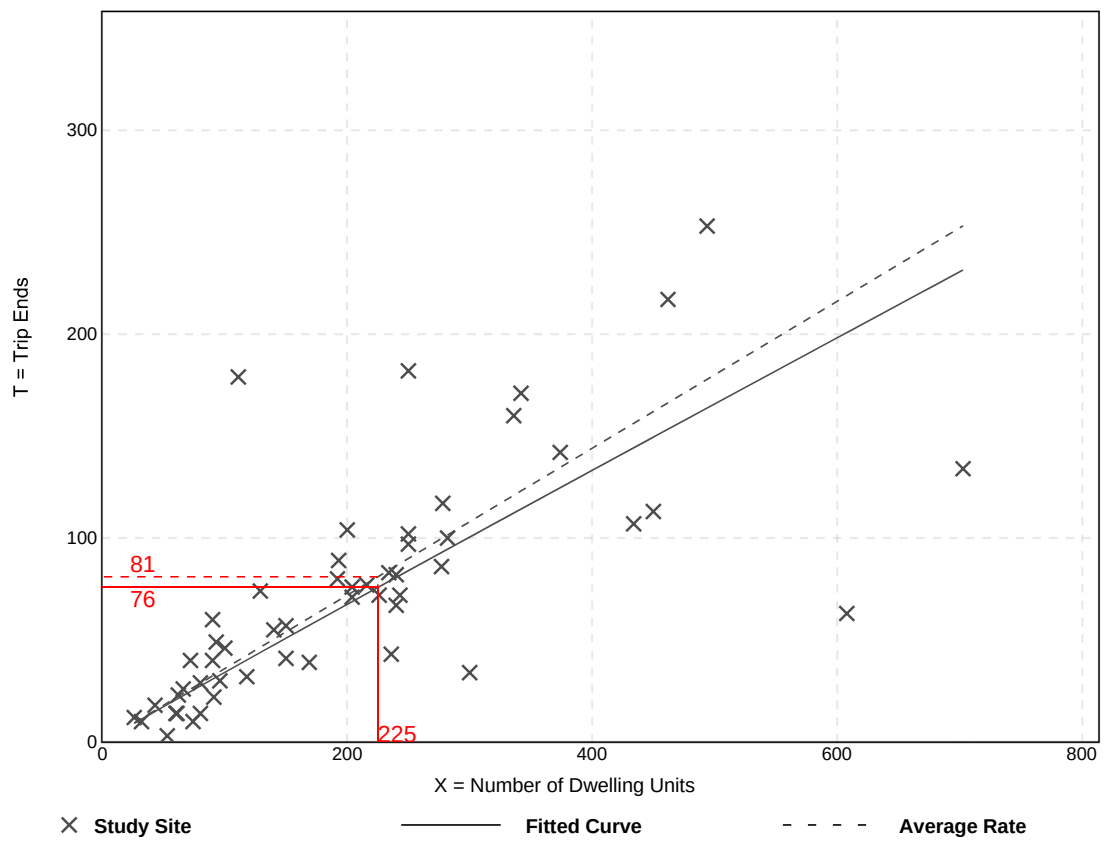
# Multifamily Housing (Mid-Rise)
(221)

| | |
|---|---|
| **Vehicle Trip Ends vs:** | **Dwelling Units** |
| **On a:** | **Weekday,** |
| | **Peak Hour of Adjacent Street Traffic,** |
| | **One Hour Between 7 and 9 a.m.** |
| **Setting/Location:** | **General Urban/Suburban** |
| Number of Studies: | 53 |
| Avg. Num. of Dwelling Units: | 207 |
| Directional Distribution: | 26% entering, 74% exiting |

## Vehicle Trip Generation per Dwelling Unit

| Average Rate | Range of Rates | Standard Deviation |
|---|---|---|
| 0.36 | 0.06 - 1.61 | 0.19 |

## Data Plot and Equation




**Fitted Curve Equation: Ln(T) = 0.98 Ln(X) - 0.98** **$R^2$= 0.67**

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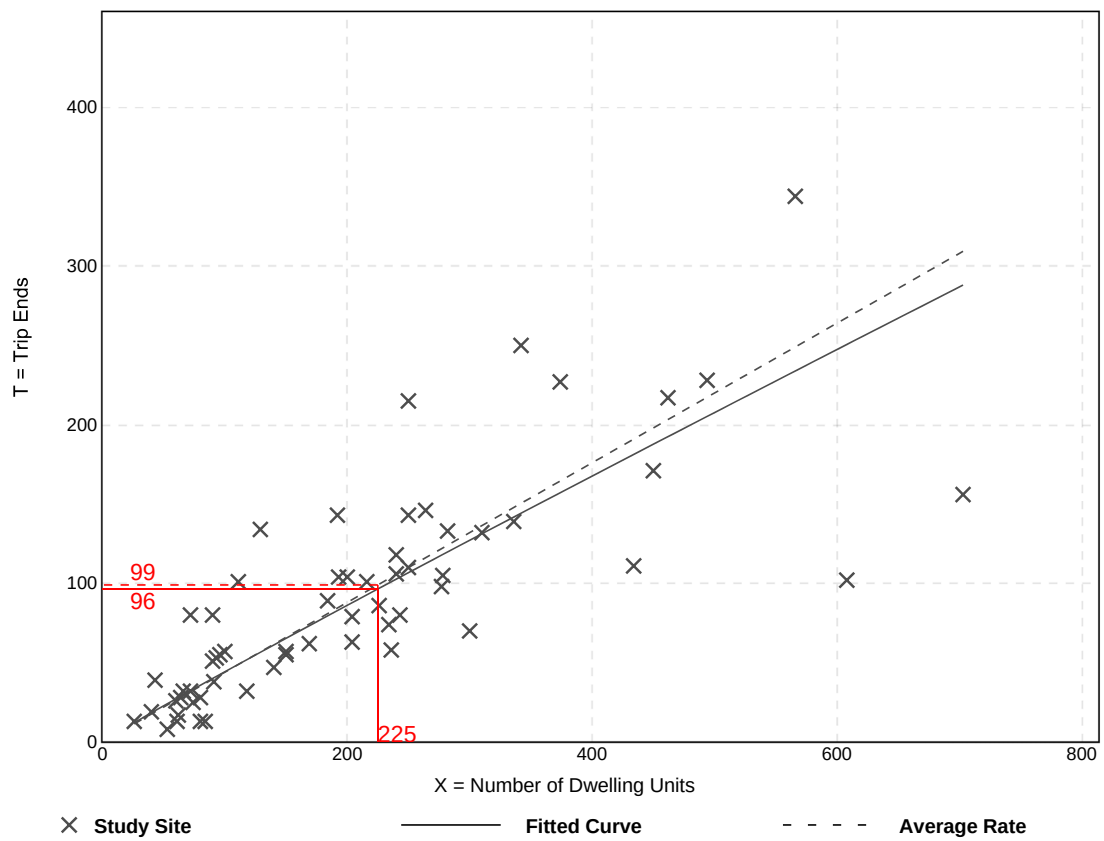
# Multifamily Housing (Mid-Rise)
(221)

| | |
|---|---|
| **Vehicle Trip Ends vs:** | **Dwelling Units** |
| **On a:** | **Weekday,** |
| | **Peak Hour of Adjacent Street Traffic,** |
| | **One Hour Between 4 and 6 p.m.** |
| **Setting/Location:** | **General Urban/Suburban** |
| Number of Studies: | 60 |
| Avg. Num. of Dwelling Units: | 208 |
| Directional Distribution: | 61% entering, 39% exiting |

## Vehicle Trip Generation per Dwelling Unit

| Average Rate | Range of Rates | Standard Deviation |
|---|---|---|
| 0.44 | 0.15 - 1.11 | 0.19 |

## Data Plot and Equation




**Fitted Curve Equation: Ln(T) = 0.96 Ln(X) - 0.63**

**$R^2$= 0.72**

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# Multifamily Housing (Mid-Rise)
(221)

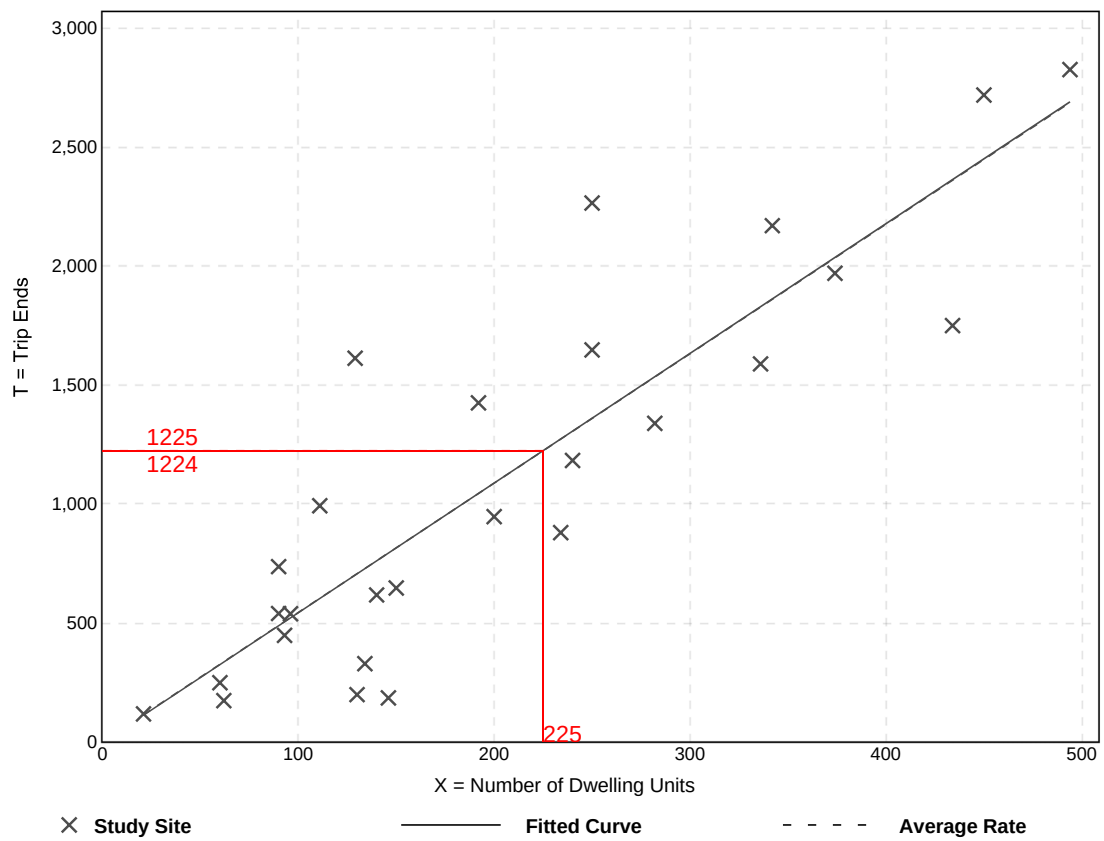
**Vehicle Trip Ends vs:** **Dwelling Units**
**On a:** **Weekday**

**Setting/Location:** **General Urban/Suburban**
Number of Studies: 27
Avg. Num. of Dwelling Units: 205
Directional Distribution: 50% entering, 50% exiting

## Vehicle Trip Generation per Dwelling Unit

| Average Rate | Range of Rates | Standard Deviation |
|---|---|---|
| 5.44 | 1.27 - 12.50 | 2.03 |

## Data Plot and Equation




**Fitted Curve Equation: T = 5.45(X) - 1.75** **$R^2$= 0.77**

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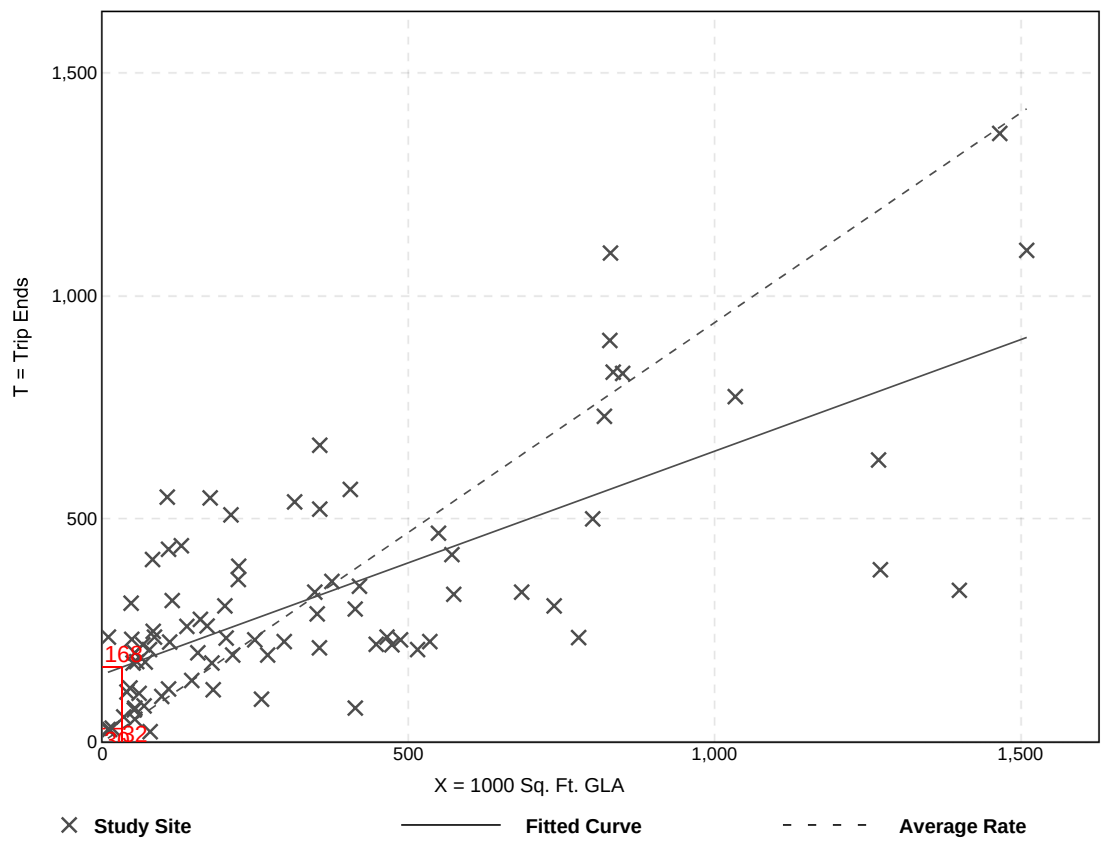
# Shopping Center
(820)

| | |
|---|---|
| **Vehicle Trip Ends vs:** | **1000 Sq. Ft. GLA** |
| **On a:** | **Weekday,** |
| | **Peak Hour of Adjacent Street Traffic,** |
| | **One Hour Between 7 and 9 a.m.** |
| **Setting/Location:** | **General Urban/Suburban** |
| Number of Studies: | 84 |
| Avg. 1000 Sq. Ft. GLA: | 351 |
| Directional Distribution: | 62% entering, 38% exiting |

## Vehicle Trip Generation per 1000 Sq. Ft. GLA

| Average Rate | Range of Rates | Standard Deviation |
|---|---|---|
| 0.94 | 0.18 - 23.74 | 0.87 |

## Data Plot and Equation




× **Study Site** ——— **Fitted Curve** - - - - **Average Rate**

**Fitted Curve Equation: T = 0.50(X) + 151.78** **$R^2$= 0.50**

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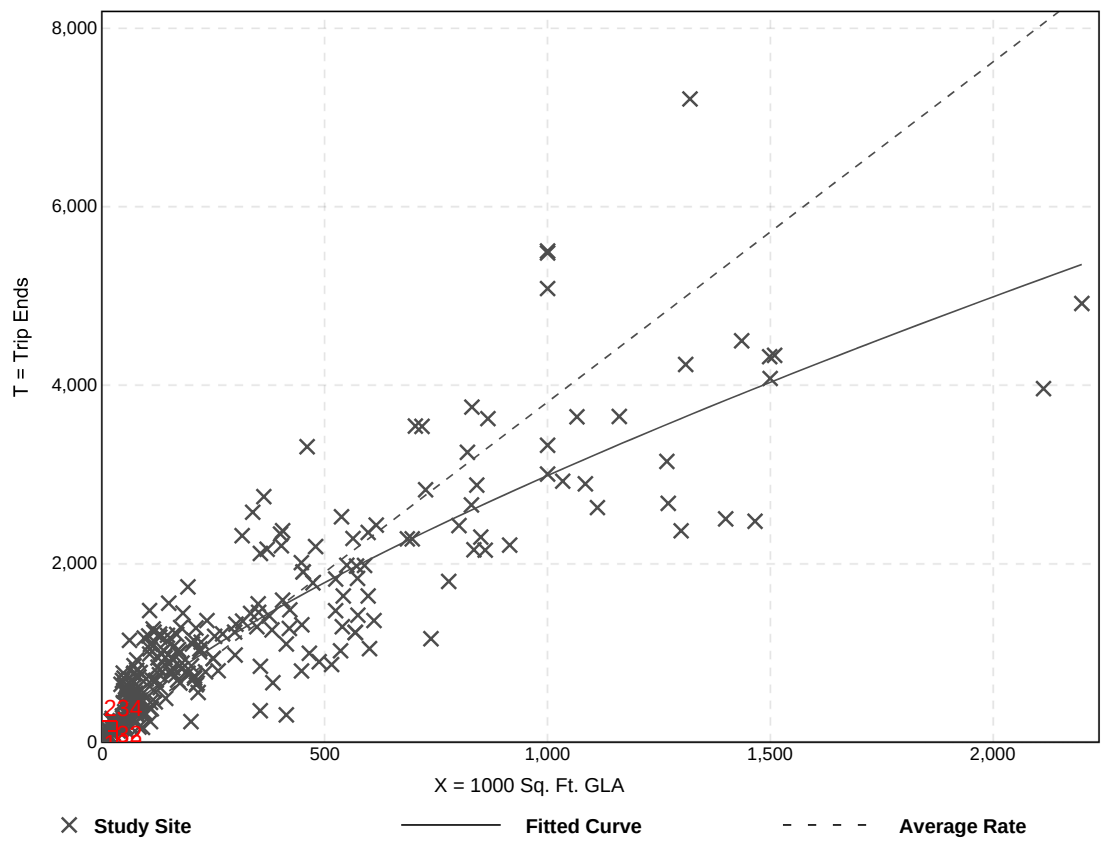
# Shopping Center
(820)

| | |
|---|---|
| **Vehicle Trip Ends vs:** | **1000 Sq. Ft. GLA** |
| **On a:** | **Weekday,** |
| | **Peak Hour of Adjacent Street Traffic,** |
| | **One Hour Between 4 and 6 p.m.** |
| **Setting/Location:** | **General Urban/Suburban** |
| Number of Studies: | 261 |
| Avg. 1000 Sq. Ft. GLA: | 327 |
| Directional Distribution: | 48% entering, 52% exiting |

## Vehicle Trip Generation per 1000 Sq. Ft. GLA

| Average Rate | Range of Rates | Standard Deviation |
|---|---|---|
| 3.81 | 0.74 - 18.69 | 2.04 |

## Data Plot and Equation




**Fitted Curve Equation: Ln(T) = 0.74 Ln(X) + 2.89** **$R^2$= 0.82**

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# Shopping Center
(820)

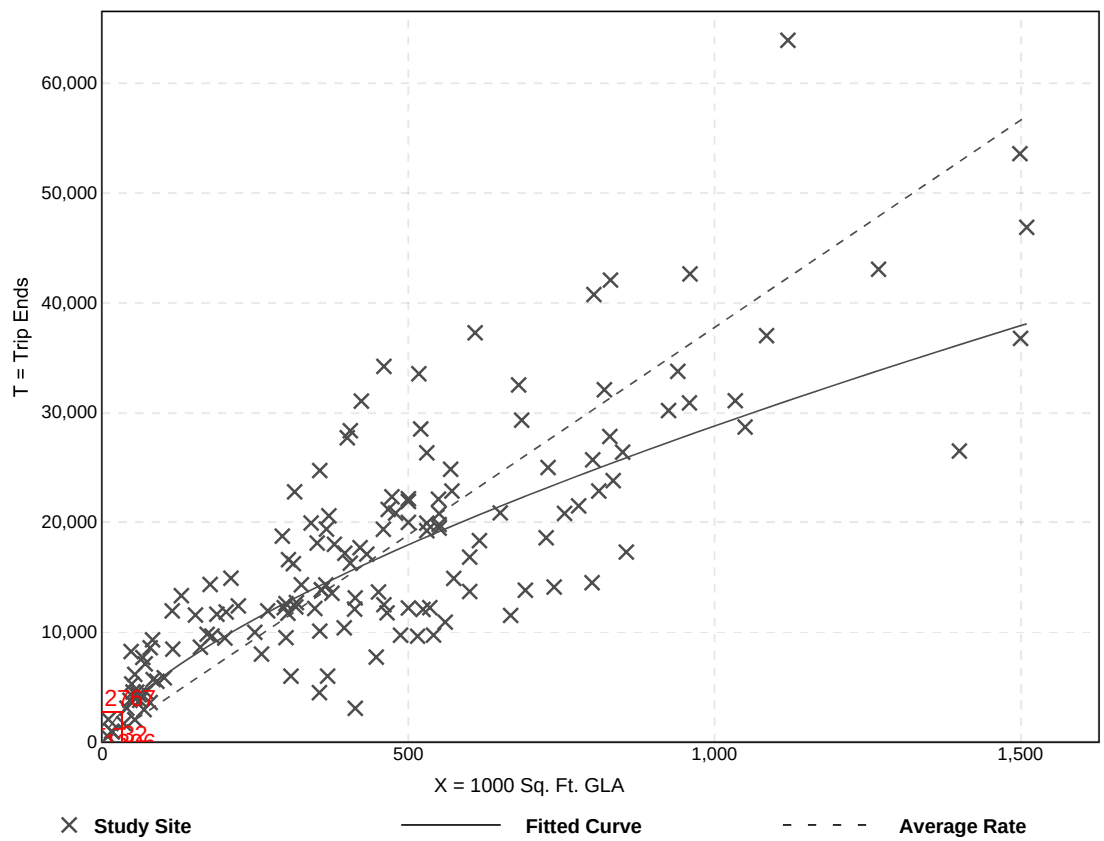
**Vehicle Trip Ends vs:** **1000 Sq. Ft. GLA**
**On a:** **Weekday**

**Setting/Location:** **General Urban/Suburban**
Number of Studies: 147
Avg. 1000 Sq. Ft. GLA: 453
Directional Distribution: 50% entering, 50% exiting

## Vehicle Trip Generation per 1000 Sq. Ft. GLA

| Average Rate | Range of Rates | Standard Deviation |
|---|---|---|
| 37.75 | 7.42 - 207.98 | 16.41 |

## Data Plot and Equation




**Fitted Curve Equation: Ln(T) = 0.68 Ln(X) + 5.57** **$R^2$= 0.76**

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# Department Store
(875)

**Vehicle Trip Ends vs:** **1000 Sq. Ft. GFA**
**On a:** **Weekday**

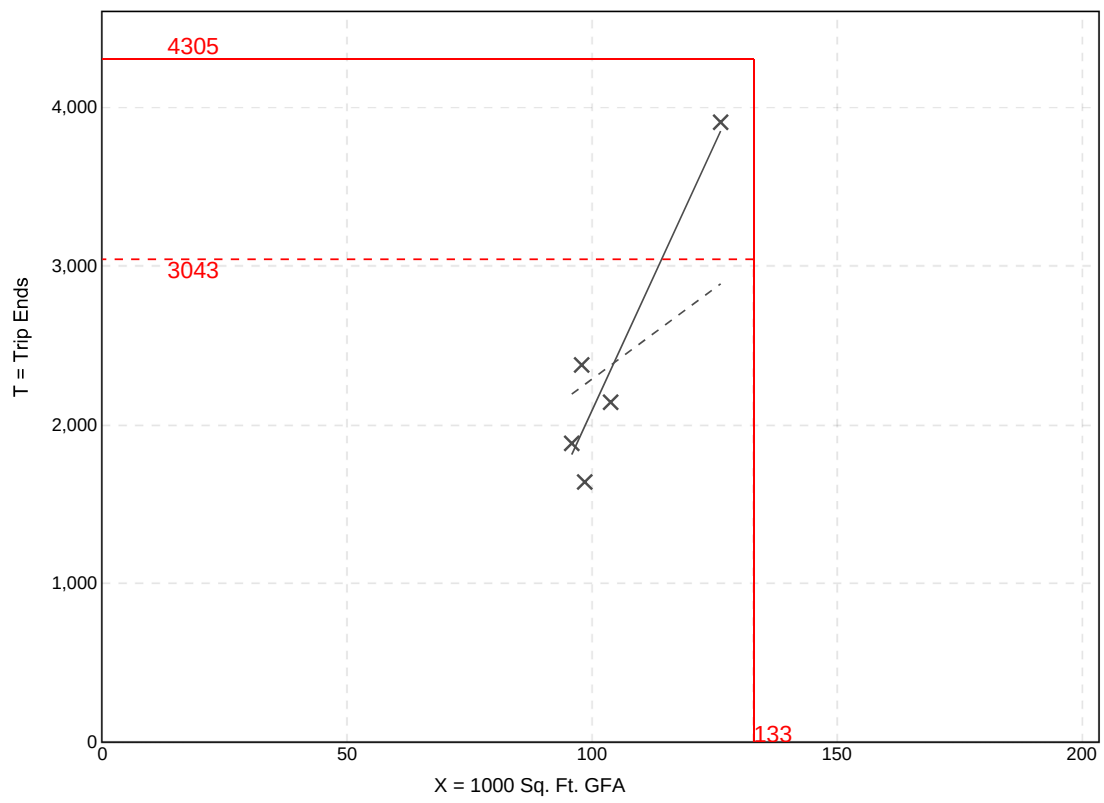
**Setting/Location:** **General Urban/Suburban**
Number of Studies: 5
Avg. 1000 Sq. Ft. GFA: 104
Directional Distribution: 50% entering, 50% exiting

## Vehicle Trip Generation per 1000 Sq. Ft. GFA

| Average Rate | Range of Rates | Standard Deviation |
|---|---|---|
| 22.88 | 16.64 - 30.95 | 5.74 |

## Data Plot and Equation

***Caution – Small Sample Size***




**Study Site** **Fitted Curve** **Average Rate**

**Fitted Curve Equation: T = 67.09(X) - 4618.37** **$R^2$= 0.89**

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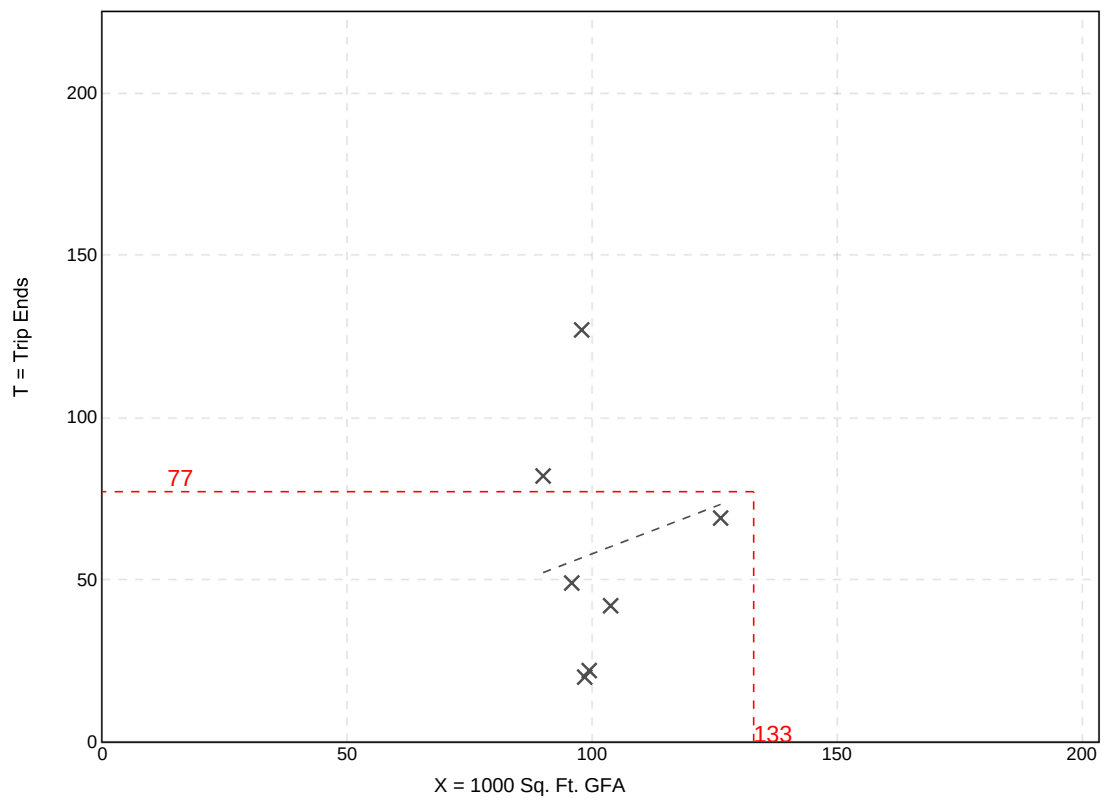
# Department Store
(875)

| | |
|---|---|
| **Vehicle Trip Ends vs:** | **1000 Sq. Ft. GFA** |
| **On a:** | **Weekday,** |
| | **Peak Hour of Adjacent Street Traffic,** |
| | **One Hour Between 7 and 9 a.m.** |
| **Setting/Location:** | **General Urban/Suburban** |
| Number of Studies: | 7 |
| Avg. 1000 Sq. Ft. GFA: | 102 |
| Directional Distribution: | 64% entering, 36% exiting |

## Vehicle Trip Generation per 1000 Sq. Ft. GFA

| Average Rate | Range of Rates | Standard Deviation |
|---|---|---|
| 0.58 | 0.20 - 1.30 | 0.39 |

## Data Plot and Equation




× **Study Site** - - - - **Average Rate**

**Fitted Curve Equation: Not Given** **$R^2$= ******

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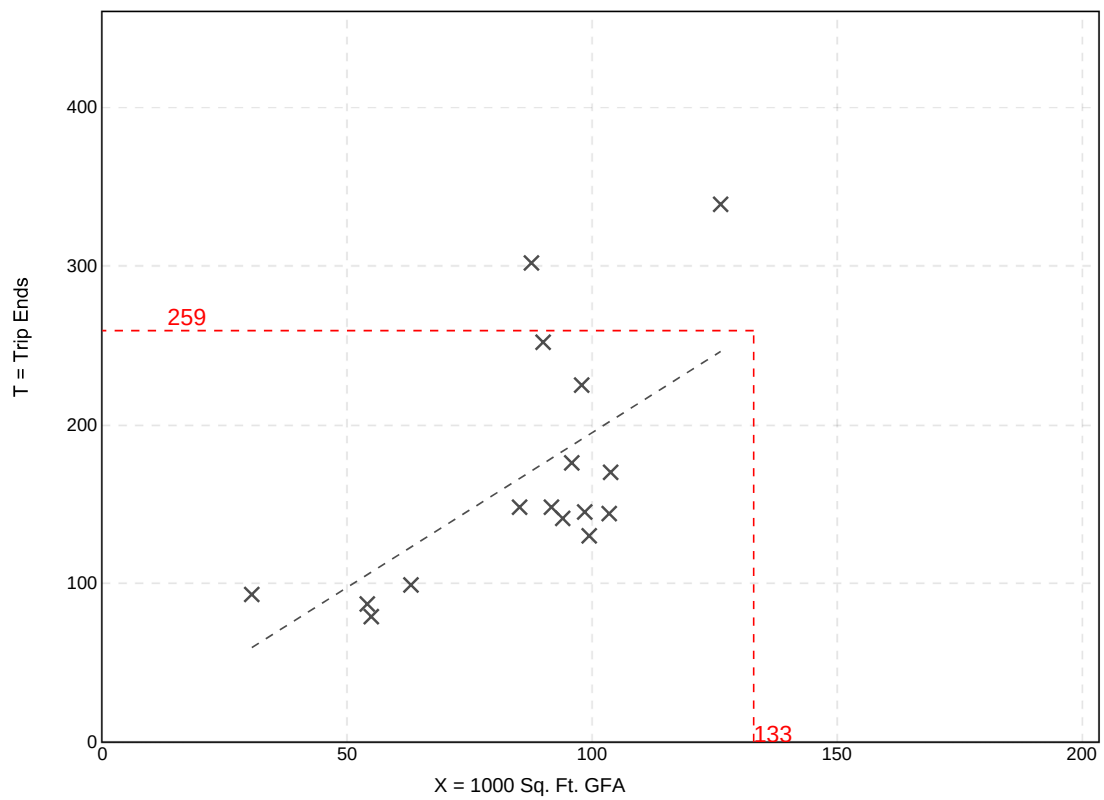
# Department Store
(875)

| | |
|---|---|
| **Vehicle Trip Ends vs:** | **1000 Sq. Ft. GFA** |
| **On a:** | **Weekday,** |
| | **Peak Hour of Adjacent Street Traffic,** |
| | **One Hour Between 4 and 6 p.m.** |
| **Setting/Location:** | **General Urban/Suburban** |
| Number of Studies: | 16 |
| Avg. 1000 Sq. Ft. GFA: | 86 |
| Directional Distribution: | 50% entering, 50% exiting |

## Vehicle Trip Generation per 1000 Sq. Ft. GFA

| Average Rate | Range of Rates | Standard Deviation |
|---|---|---|
| 1.95 | 1.31 - 3.45 | 0.65 |

## Data Plot and Equation




× **Study Site** - - - - **Average Rate**

**Fitted Curve Equation: Not Given** **$R^2$= ******

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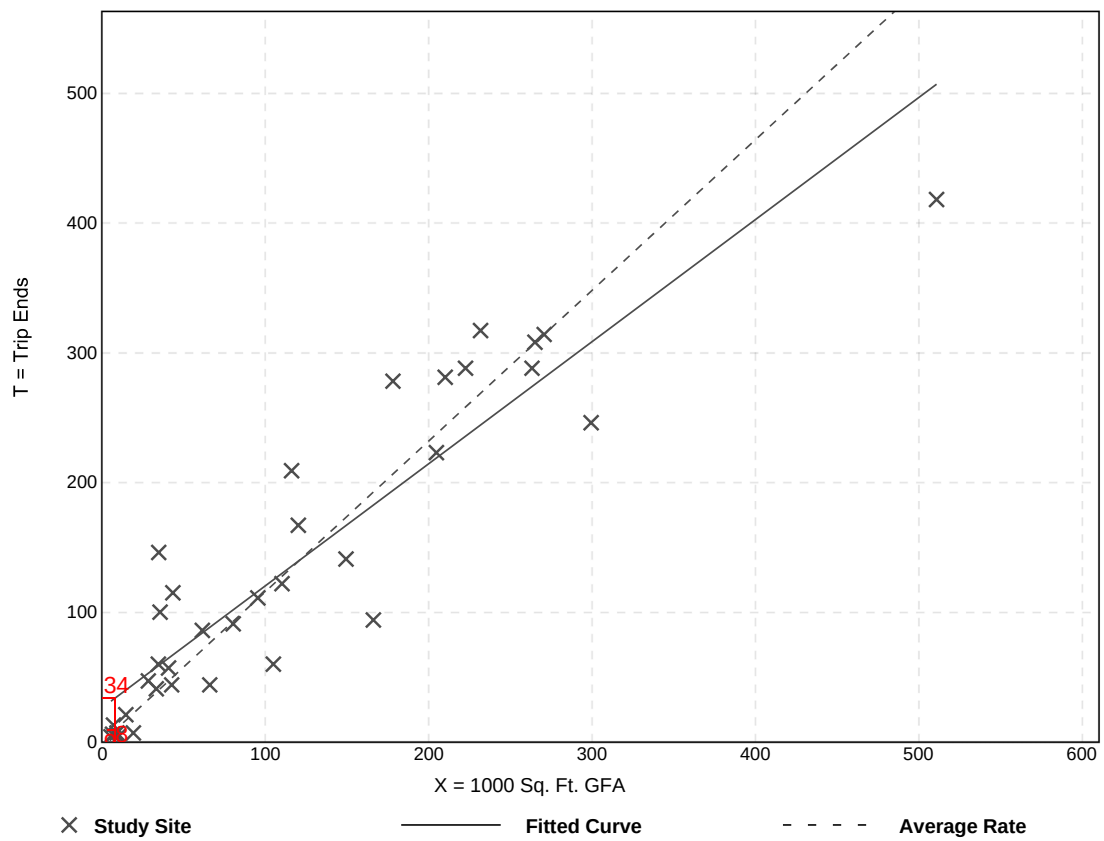
# General Office Building
(710)

| | |
|---|---|
| **Vehicle Trip Ends vs:** | **1000 Sq. Ft. GFA** |
| **On a:** | **Weekday,** |
| | **Peak Hour of Adjacent Street Traffic,** |
| | **One Hour Between 7 and 9 a.m.** |
| **Setting/Location:** | **General Urban/Suburban** |
| Number of Studies: | 35 |
| Avg. 1000 Sq. Ft. GFA: | 117 |
| Directional Distribution: | 86% entering, 14% exiting |

## Vehicle Trip Generation per 1000 Sq. Ft. GFA

| Average Rate | Range of Rates | Standard Deviation |
|---|---|---|
| 1.16 | 0.37 - 4.23 | 0.47 |

## Data Plot and Equation




**Fitted Curve Equation: T = 0.94(X) + 26.49** **$R^2$= 0.85**

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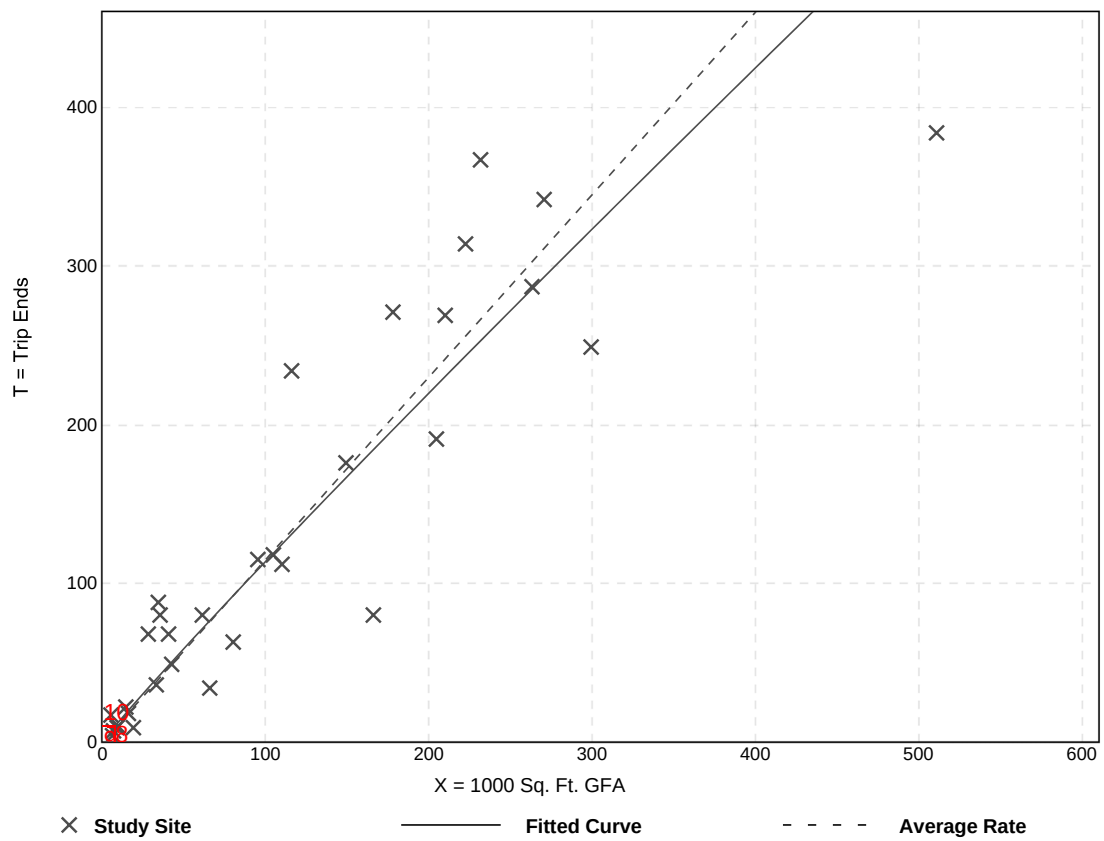
# General Office Building
(710)

| | |
|---|---|
| **Vehicle Trip Ends vs:** | **1000 Sq. Ft. GFA** |
| **On a:** | **Weekday,** |
| | **Peak Hour of Adjacent Street Traffic,** |
| | **One Hour Between 4 and 6 p.m.** |
| **Setting/Location:** | **General Urban/Suburban** |
| Number of Studies: | 32 |
| Avg. 1000 Sq. Ft. GFA: | 114 |
| Directional Distribution: | 16% entering, 84% exiting |

## Vehicle Trip Generation per 1000 Sq. Ft. GFA

| Average Rate | Range of Rates | Standard Deviation |
|---|---|---|
| 1.15 | 0.47 - 3.23 | 0.42 |

## Data Plot and Equation




**Fitted Curve Equation: Ln(T) = 0.95 Ln(X) + 0.36** **$R^2$= 0.88**

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# General Office Building
(710)

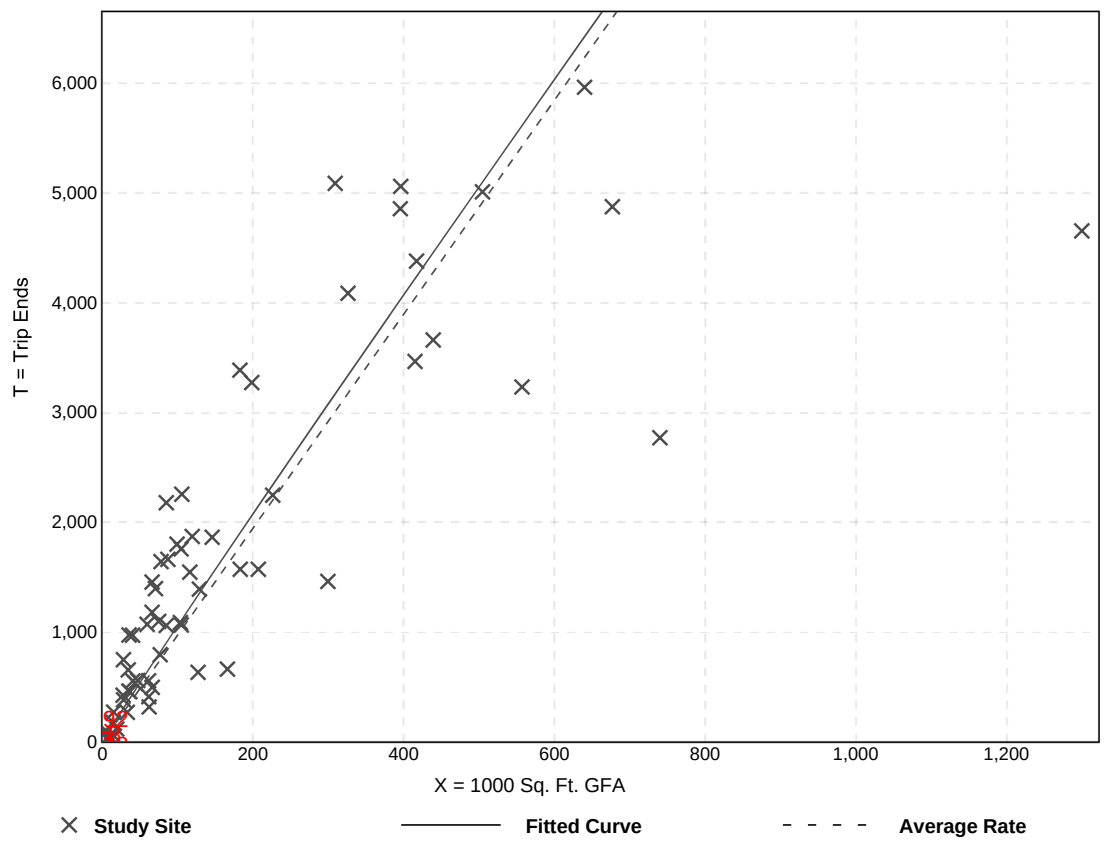
**Vehicle Trip Ends vs:** **1000 Sq. Ft. GFA**
**On a:** **Weekday**

**Setting/Location:** **General Urban/Suburban**
Number of Studies: 66
Avg. 1000 Sq. Ft. GFA: 171
Directional Distribution: 50% entering, 50% exiting

## Vehicle Trip Generation per 1000 Sq. Ft. GFA

| Average Rate | Range of Rates | Standard Deviation |
|---|---|---|
| 9.74 | 2.71 - 27.56 | 5.15 |

## Data Plot and Equation




**Fitted Curve Equation: Ln(T) = 0.97 Ln(X) + 2.50** **$R^2$= 0.83**

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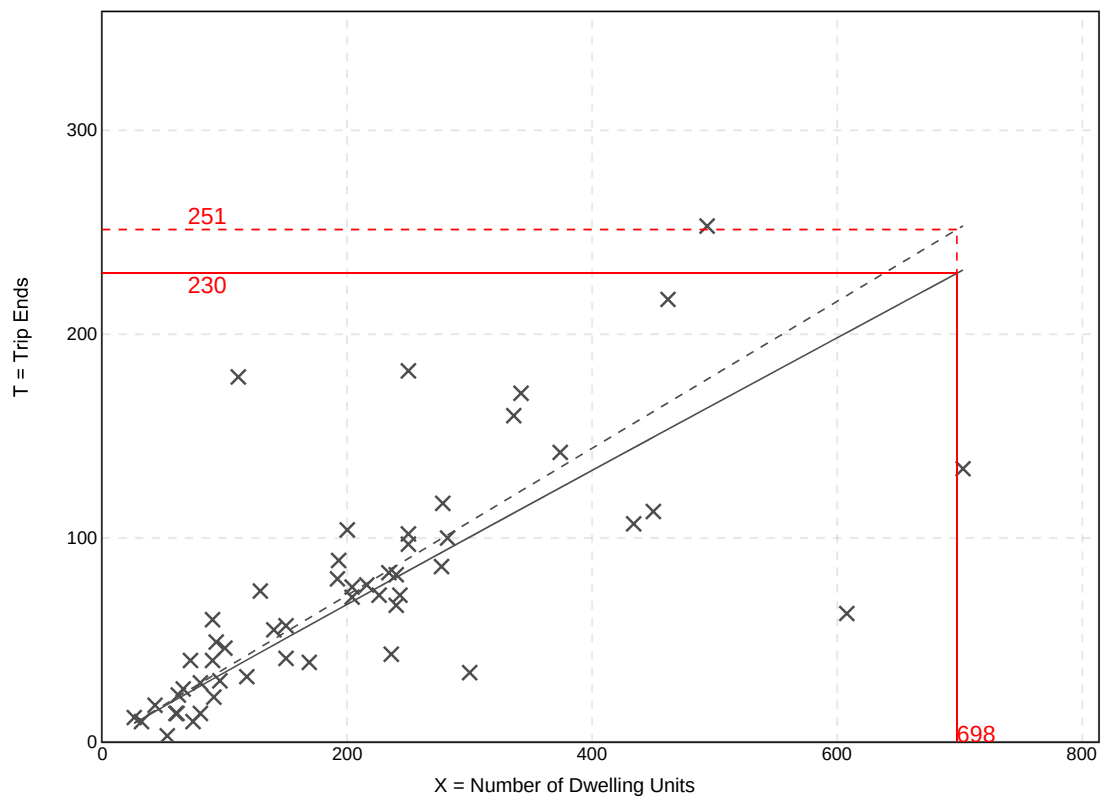
# Multifamily Housing (Mid-Rise)
(221)

| | |
|---|---|
| **Vehicle Trip Ends vs:** | **Dwelling Units** |
| **On a:** | **Weekday,** |
| | **Peak Hour of Adjacent Street Traffic,** |
| | **One Hour Between 7 and 9 a.m.** |
| **Setting/Location:** | **General Urban/Suburban** |
| Number of Studies: | 53 |
| Avg. Num. of Dwelling Units: | 207 |
| Directional Distribution: | 26% entering, 74% exiting |

## Vehicle Trip Generation per Dwelling Unit

| Average Rate | Range of Rates | Standard Deviation |
|---|---|---|
| 0.36 | 0.06 - 1.61 | 0.19 |

## Data Plot and Equation




**Study Site** **Fitted Curve** **Average Rate**

**Fitted Curve Equation: Ln(T) = 0.98 Ln(X) - 0.98** **$R^2$= 0.67**

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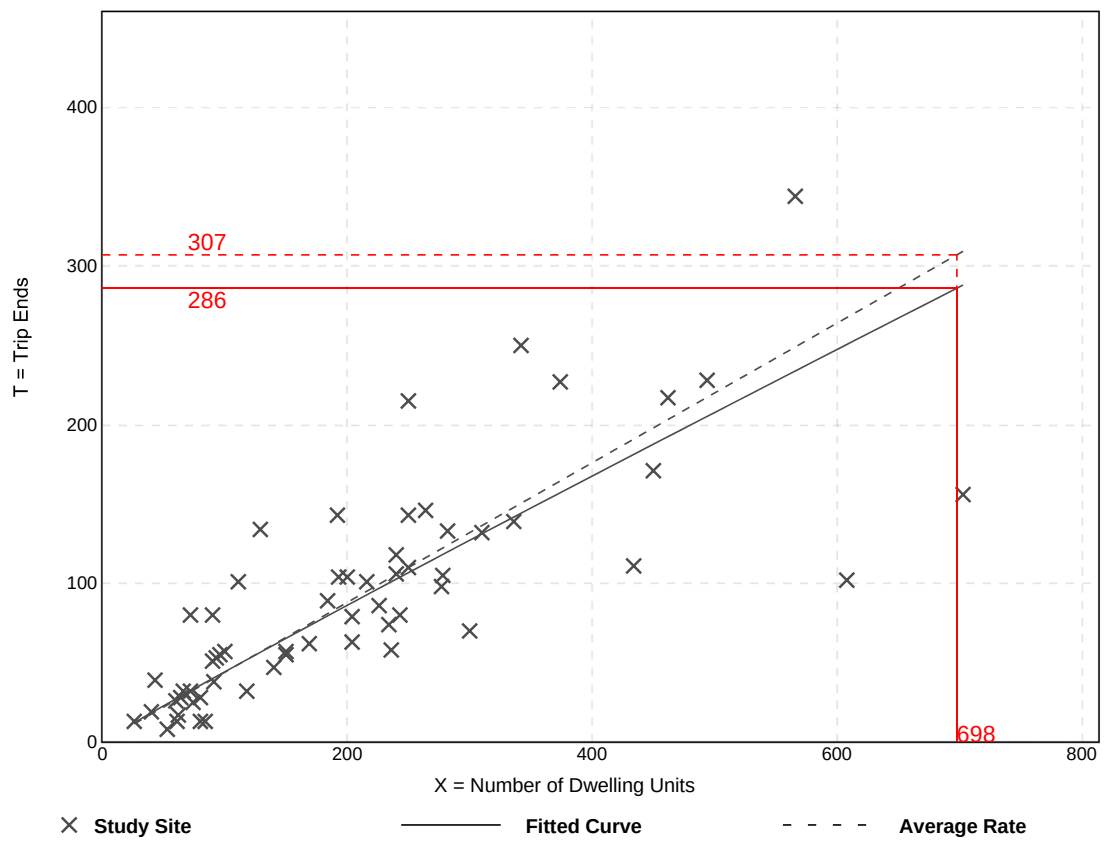
# Multifamily Housing (Mid-Rise)
(221)

| | |
|---|---|
| **Vehicle Trip Ends vs:** | **Dwelling Units** |
| **On a:** | **Weekday,** |
| | **Peak Hour of Adjacent Street Traffic,** |
| | **One Hour Between 4 and 6 p.m.** |
| **Setting/Location:** | **General Urban/Suburban** |
| Number of Studies: | 60 |
| Avg. Num. of Dwelling Units: | 208 |
| Directional Distribution: | 61% entering, 39% exiting |

## Vehicle Trip Generation per Dwelling Unit

| Average Rate | Range of Rates | Standard Deviation |
|---|---|---|
| 0.44 | 0.15 - 1.11 | 0.19 |

## Data Plot and Equation




**Fitted Curve Equation: Ln(T) = 0.96 Ln(X) - 0.63** **$R^2$= 0.72**

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# Multifamily Housing (Mid-Rise)
(221)

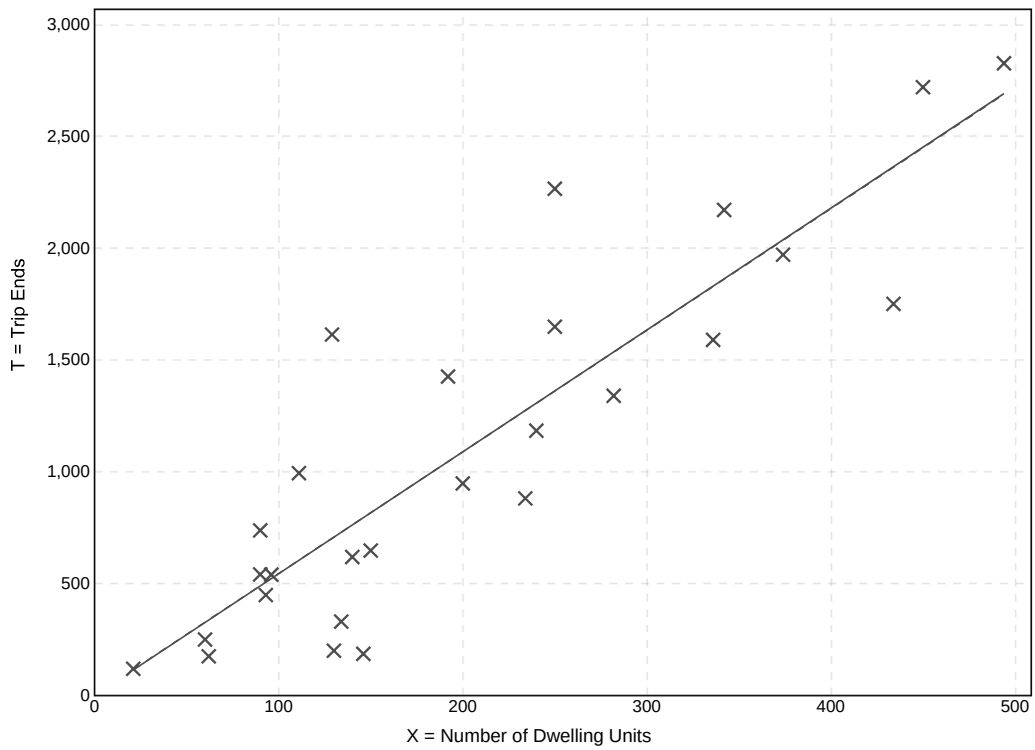
**Vehicle Trip Ends vs:** **Dwelling Units**
**On a:** **Weekday**

**Setting/Location:** **General Urban/Suburban**
Number of Studies: 27
Avg. Num. of Dwelling Units: 205
Directional Distribution: 50% entering, 50% exiting

## Vehicle Trip Generation per Dwelling Unit

| Average Rate | Range of Rates | Standard Deviation |
|---|---|---|
| 5.44 | 1.27 - 12.50 | 2.03 |

## Data Plot and Equation




× **Study Site** ——— **Fitted Curve** - - - - **Average Rate**

**Fitted Curve Equation: T = 5.45(X) - 1.75** **$R^2$= 0.77**

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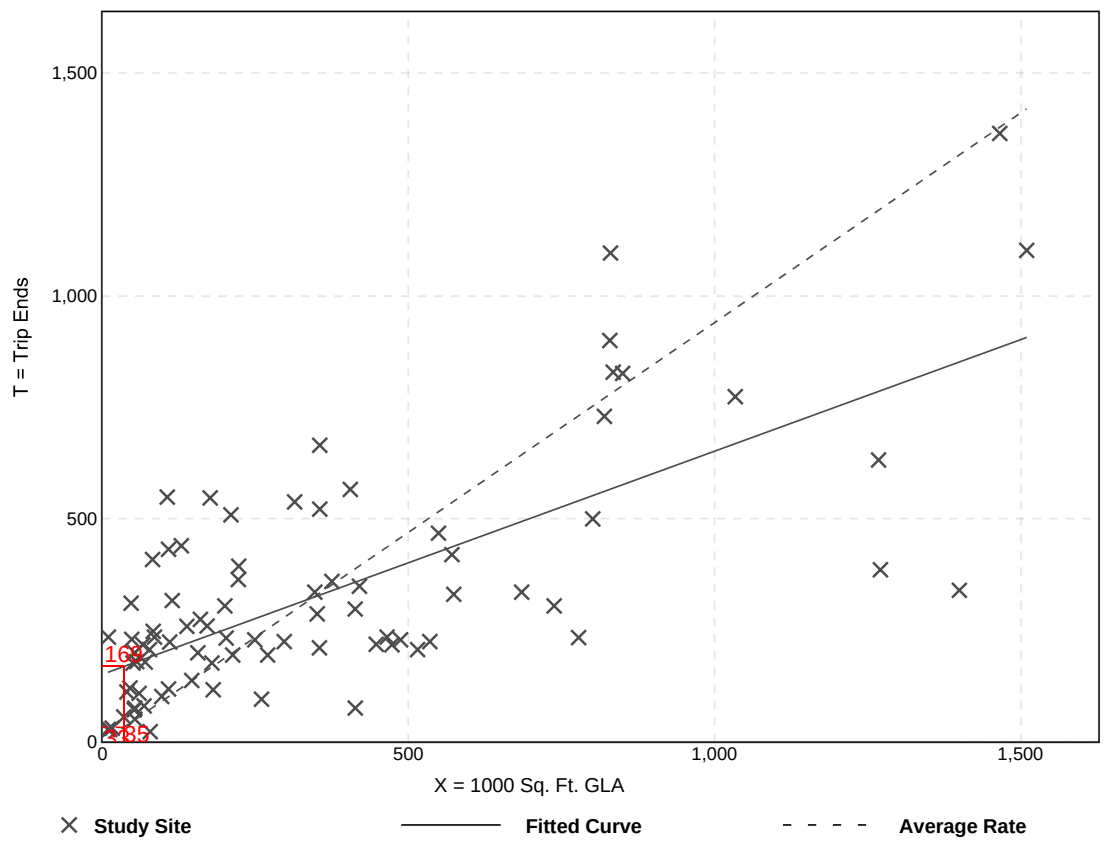
# Shopping Center
(820)

| | |
|---|---|
| **Vehicle Trip Ends vs:** | **1000 Sq. Ft. GLA** |
| **On a:** | **Weekday,** |
| | **Peak Hour of Adjacent Street Traffic,** |
| | **One Hour Between 7 and 9 a.m.** |
| **Setting/Location:** | **General Urban/Suburban** |
| Number of Studies: | 84 |
| Avg. 1000 Sq. Ft. GLA: | 351 |
| Directional Distribution: | 62% entering, 38% exiting |

## Vehicle Trip Generation per 1000 Sq. Ft. GLA

| Average Rate | Range of Rates | Standard Deviation |
|---|---|---|
| 0.94 | 0.18 - 23.74 | 0.87 |

## Data Plot and Equation




**Fitted Curve Equation: T = 0.50(X) + 151.78** **$R^2$= 0.50**

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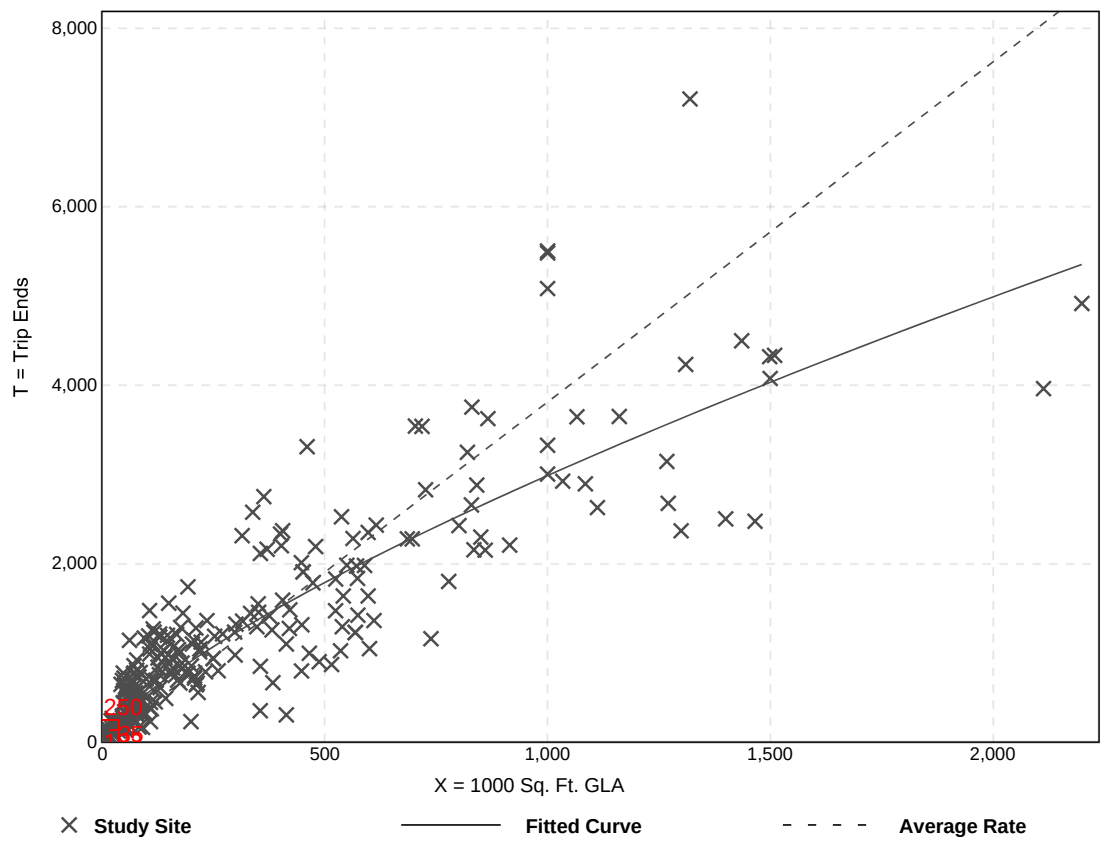
# Shopping Center
(820)

| | |
|---|---|
| **Vehicle Trip Ends vs:** | **1000 Sq. Ft. GLA** |
| **On a:** | **Weekday,** |
| | **Peak Hour of Adjacent Street Traffic,** |
| | **One Hour Between 4 and 6 p.m.** |
| **Setting/Location:** | **General Urban/Suburban** |
| Number of Studies: | 261 |
| Avg. 1000 Sq. Ft. GLA: | 327 |
| Directional Distribution: | 48% entering, 52% exiting |

## Vehicle Trip Generation per 1000 Sq. Ft. GLA

| Average Rate | Range of Rates | Standard Deviation |
|---|---|---|
| 3.81 | 0.74 - 18.69 | 2.04 |

## Data Plot and Equation




**Fitted Curve Equation: Ln(T) = 0.74 Ln(X) + 2.89** **$R^2$= 0.82**

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# Shopping Center
(820)

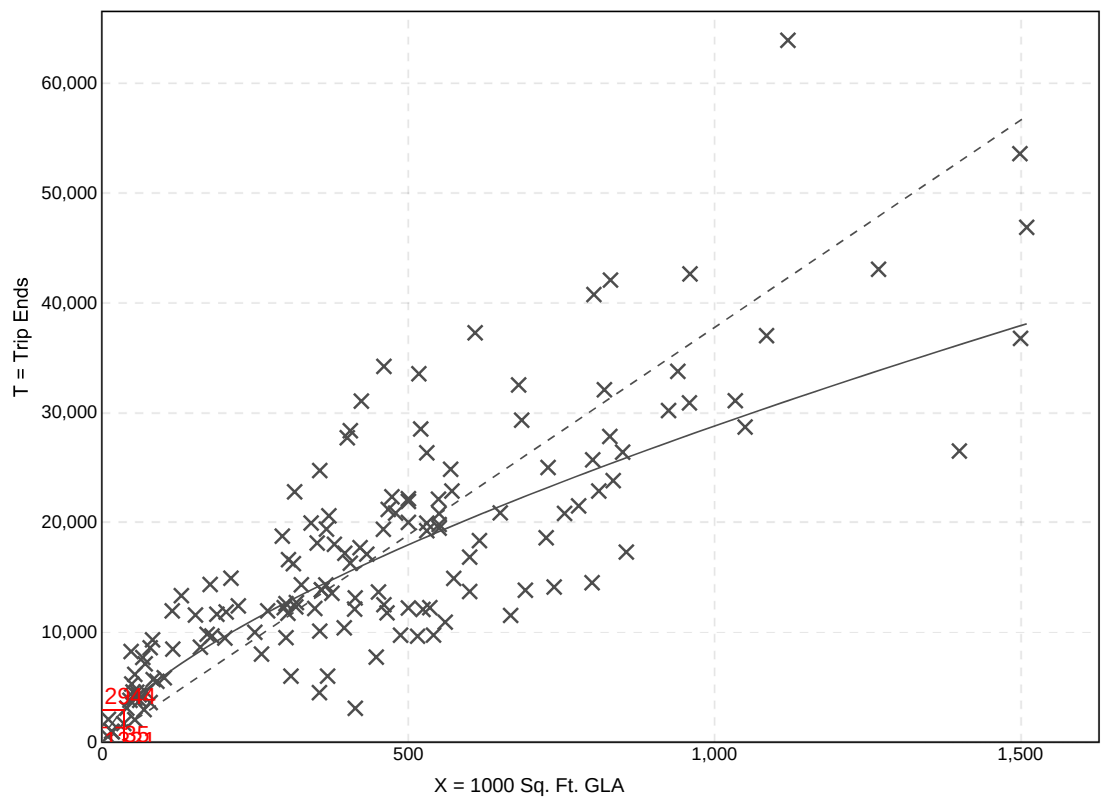
**Vehicle Trip Ends vs:** **1000 Sq. Ft. GLA**
**On a:** **Weekday**

**Setting/Location:** **General Urban/Suburban**
Number of Studies: 147
Avg. 1000 Sq. Ft. GLA: 453
Directional Distribution: 50% entering, 50% exiting

## Vehicle Trip Generation per 1000 Sq. Ft. GLA

| Average Rate | Range of Rates | Standard Deviation |
|---|---|---|
| 37.75 | 7.42 - 207.98 | 16.41 |

## Data Plot and Equation




**Study Site** **Fitted Curve** **Average Rate**

**Fitted Curve Equation: Ln(T) = 0.68 Ln(X) + 5.57** **$R^2$= 0.76**

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TRAFFIC ANALYSIS & DESIGN, INC.

*PROVIDING TRAFFIC ENGINEERING SOLUTIONS*

**Date:** December 20, 2010

# Memorandum

**To:** Fred Hennighausen, Dave & Busters, Inc.

**From:** Tammi Czewski, Traffic Analysis & Design, Inc.

**cc List::**

**Subject** Dave & Buster's Trip Rate and Parking Rate Calculations

## INTRODUCTION

Traffic Analysis & Design, Inc. conducted an analysis to determine the average parking demand and trip generation rates per 1,000 square feet of floor area for Dave & Buster's restaurants. The calculated rates were based on actual traffic volume and parking demand counts collected at Dave & Buster's sites in the San Diego, Atlanta, Cleveland, and St. Louis areas (see Exhibit 1). The specific locations of each site included in this analysis are as follows:

San Diego
2931 Camino Del Rio N.
San Diego, CA 92108

Cleveland
25735 First Street
Westlake, OH 44145

St. Louis
13857 Riverpoint Drive
Maryland Heights, MO 63043

Atlanta
2215 D&B Drive
Marietta, GA 30067

## DATA COLLECTION

All field data was collected at the four Dave & Buster's sites on Wednesdays, Fridays, and Saturdays from November 12 through November 17, 2010. For calculating the trip rates, traffic volumes were counted (in 15-minute increments) for all vehicles entering and exiting the Dave & Buster's sites. These traffic volumes were counted on a Wednesday, Friday, and Saturday from 4:00 p.m. to midnight, and also on Saturday from 11:00 a.m. to 2:00 p.m. For calculating the parking demand rates, the total parked cars in each Dave & Buster's parking lots were counted every 30 minutes. These cars were counted on a Wednesday, Friday, and Saturday from 4:00 p.m. to midnight. All traffic data collected for each Dave & Buster's site is located in the appendix at the end of this technical memorandum.

The total square footage and maximum number of parking spaces for each site was obtained from Dave & Buster's staff.

## TRIP GENERATION (PER SQUARE FEET)

Trip rates were calculated using a weighted average trip rate for all four Dave & Buster's study sites. The weighted average trip rate methodology follows the procedures outlined in the Institute of Transportation Engineers (ITE) *Trip Generation Handbook*. A weighted average trip rate is calculated by summing up all trips entering and exiting all sites, and then dividing them by the sum of the gross floor area for all four sites.

The weighted average trip rates were calculated for the weekday evening (Wednesday data), Friday evening, Saturday midday, and Saturday evening peak time periods. Trip rates were calculated to represent both the peak hour of adjacent street traffic and the peak hour of the generator. The peak hour of adjacent street traffic represents the time periods where traffic volumes on the nearby mainline roadways are highest. These time periods typically occur weekdays (including Friday) from 4:00 p.m. to 6:00 p.m. and Saturdays from 11:00 a.m. to 2:00 p.m. The peak hour of the generator represents the time periods where traffic volumes to and from the development site being evaluated (such as Dave & Buster's) is highest. These peak times varied considerably between the Dave & Buster's sites evaluated in this study. At some locations, the peak hour of the generator coincided with the peak hour of adjacent street traffic. At other locations, the peak hour of the generator occurred much later in the evening.

Graphs showing the total traffic flow data (sum of entering and exiting vehicles) at each site throughout the analysis time periods are shown on Exhibits 2 through 5. These exhibits also show aerial views of each Dave & Buster's restaurant and parking areas and parking demand graphs.

The weighted average trip rates for the weekday, Friday, and Saturday peak hour of adjacent street traffic and generator (as applicable) are shown in Table 1.

**Table 1: Dave & Buster's Weighted Average Trip Rates**

| Weekday | | Pk Hr. of Adjacent Street Traffic (4-6 PM) | | | Peak Hour of Generator | | |
|---|---|---|---|---|---|---|---|
| Site | GFA (1,000 SF) | In | Out | Trips | In | Out | Trips |
| St. Louis | 55.000 | 72 | 26 | 98 | 62 | 47 | 109 |
| San Diego | 43.701 | 75 | 49 | 124 | 56 | 72 | 128 |
| Cleveland | 57.500 | 60 | 20 | 80 | 54 | 39 | 93 |
| Atlanta | 59.551 | 62 | 24 | 86 | 60 | 37 | 97 |
| Totals | 215.752 | 269 | 119 | 388 | 232 | 195 | 427 |
| Weighted Average Rate: | | **69%** | **31%** | **1.80** | **54%** | **46%** | **1.98** |
| | | %in | %out | Rate | %in | %out | Rate |

| Friday | | Pk Hr. of Adjacent Street Traffic (4-6 PM) | | | Peak Hour of Generator | | |
|---|---|---|---|---|---|---|---|
| Site | GFA (1,000 SF) | In | Out | Trips | In | Out | Trips |
| St. Louis | 55.000 | 101 | 65 | 166 | 101 | 65 | 166 |
| San Diego | 43.701 | 128 | 49 | 177 | 138 | 123 | 261 |
| Cleveland | 57.500 | 108 | 33 | 141 | 95 | 82 | 177 |
| Atlanta | 59.551 | 154 | 36 | 190 | 131 | 123 | 254 |
| Totals | 215.752 | 491 | 183 | 674 | 465 | 393 | 858 |
| Weighted Average Rate: | | **73%** | **27%** | **3.12** | **54%** | **46%** | **3.98** |
| | | %in | %out | Rate | %in | %out | Rate |

| Saturday | | Pk Hr. of Adjacent Street Traffic (11 AM-2 PM) | | | Peak Hour of Generator | | |
|---|---|---|---|---|---|---|---|
| Site | GFA (1,000 SF) | In | Out | Trips | In | Out | Trips |
| St. Louis | 55.000 | 69 | 25 | 94 | 212 | 85 | 297 |
| San Diego | 43.701 | 106 | 23 | 129 | 168 | 114 | 282 |
| Cleveland | 57.500 | 63 | 21 | 84 | 248 | 101 | 349 |
| Atlanta | 59.551 | 80 | 30 | 110 | 148 | 172 | 320 |
| Totals | 215.752 | 318 | 99 | 417 | 776 | 472 | 1248 |
| Weighted Average Rate: | | **76%** | **24%** | **1.93** | **62%** | **38%** | **5.78** |
| | | %in | %out | Rate | %in | %out | Rate |

The weighted average trip rates can be used to estimate the total number of trips that may be generated at future Dave & Buster's restaurants. For example, a new store with about 60,000 SF of gross floor area can be expected to generate about 116 trips in one hour between 11:00 a.m. and 2:00 p.m. on a typical Saturday (60 x 1.93 = 116). During the Saturday peak however, which usually occurs later in the day, that same new store would be expected to generate about 347 trips in one hour. Of these trips, 62 percent are expected to be entering and 38 percent are expected to be exiting during the Saturday peak hour (215 entering and 132 exiting).

## PARKING DEMAND (PER SQUARE FEET)

The maximum number of cars parked in the Dave & Buster's parking lot at each site is compared to the site capacity in Table 2. For all four Dave & Buster's sites, this maximum occupancy occurred during the Saturday evening time period.

**Table 2: Dave & Buster's Maximum Parking Occupancy**

| Site Location | Lot Size | | |
|---|---|---|---|
| | Parking Capacity | Max Occupancy | |
| | | Vehicles | % Full |
| St. Louis | 538 | 408 | 76% |
| San Diego | 595 | 398 | 67% |
| Cleveland | 626 | 559 | 89% |
| Atlanta | 732 | 479 | 65% |

The weighted average parking demand rates were calculated for the weekday peak hour of adjacent street traffic (highest parking demand between 4:00 p.m. and 6:00 p.m.), and for the weekday, Friday, and Saturday evening peak hours of the generator. The weighted average parking demand rates were based on methodologies from the ITE *Parking Generation* manual and are shown in Table 3.

**Table 3: Dave & Buster's Parking Demand Rates**

| Site Location | D&B Size (1,000 SF) | Weekday PM PH of Adj | | Weekday PM PH of Gen | | Friday PM PH of Gen | | Saturday PM PH of Gen | |
|---|---|---|---|---|---|---|---|---|---|
| | | Cars | Rate | Cars | Rate | Cars | Rate | Cars | Rate |
| St. Louis | 55.000 | 111 | 2.02 | 160 | 2.91 | 227 | 4.13 | 408 | 7.42 |
| San Diego | 43.701 | 114 | 2.61 | 192 | 4.39 | 359 | 8.21 | 398 | 9.11 |
| Cleveland | 57.500 | 94 | 1.63 | 130 | 2.26 | 307 | 5.34 | 559 | 9.72 |
| Atlanta | 59.551 | 94 | 1.58 | 134 | 2.25 | 340 | 5.71 | 479 | 8.04 |
| Weighted Average Rate: | 215.752 | 413 | **1.91** | 616 | **2.86** | 1233 | **5.71** | 1844 | **8.55** |

The weighted average parking rates can be used to estimate the total number of parking spaces that may be occupied at future Dave & Buster's restaurants. For example, a new store with about 60,000 SF of gross floor area can be expected to have up to 513 cars parked in its lot during the peak parking time on a Saturday (60 x 8.55 = 513). Since parking lots typically seem "full" at 85 percent occupancy, a new Dave & Buster's parking area should therefore be sized with at least 603 parking spaces to accommodate the maximum number of guests parking on site (513 / 0.85 = 603).

## CONCLUSION

The trip rates and parking demand rates were calculated according to industry methods (i.e. ITE trip generation and parking generation methodology) for sample size and calculation procedures. These rates are expected to provide adequate predictions of traffic flow and parking needs for future Dave & Buster's sites across the country.

## United States, North America

★ = Dave & Buster's Sites

Atlanta, Georgia
Cleveland, Ohio
St. Louis, Missouri
San Diego, California

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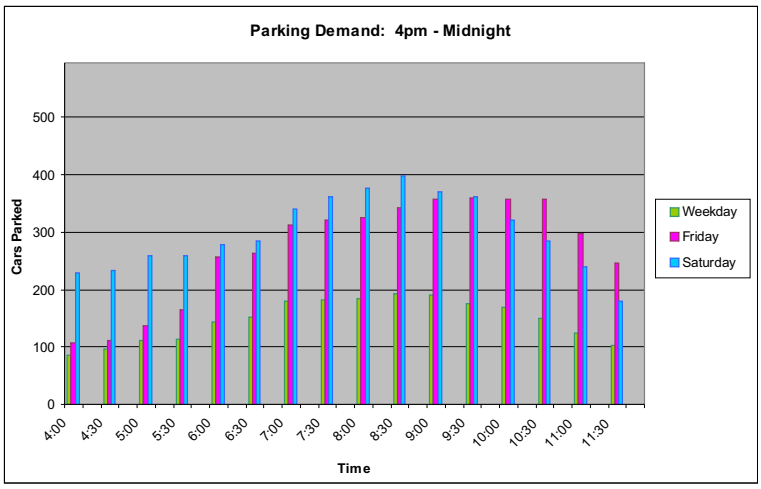
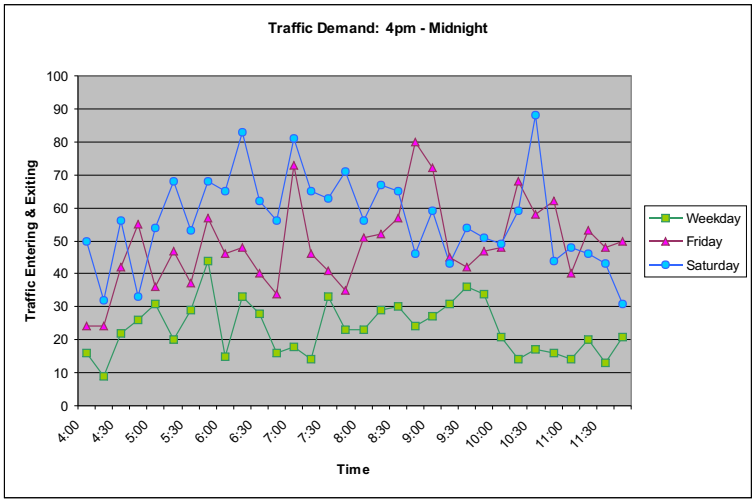
**EXHIBIT 1**
**SITE LOCATION MAP**
**DAVE & BUSTER'S**

N




Dave & Buster's
2931 Camino Del Rio N.
San Diego, CA 92108

Building Size: 43,701 SF
Lot Size: 595 Parking Spaces



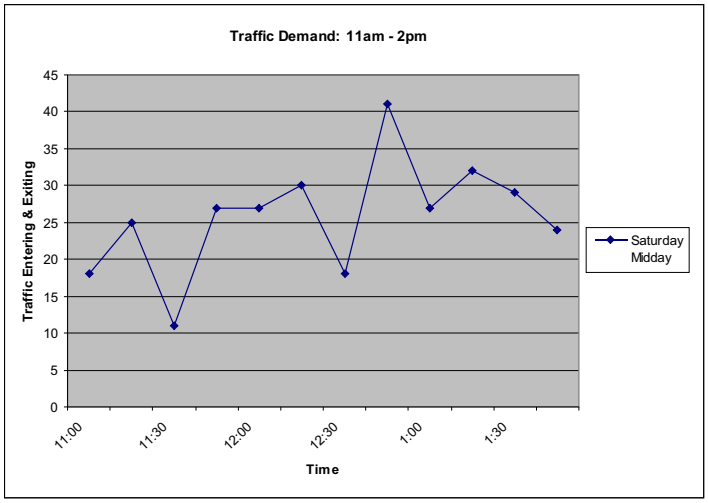




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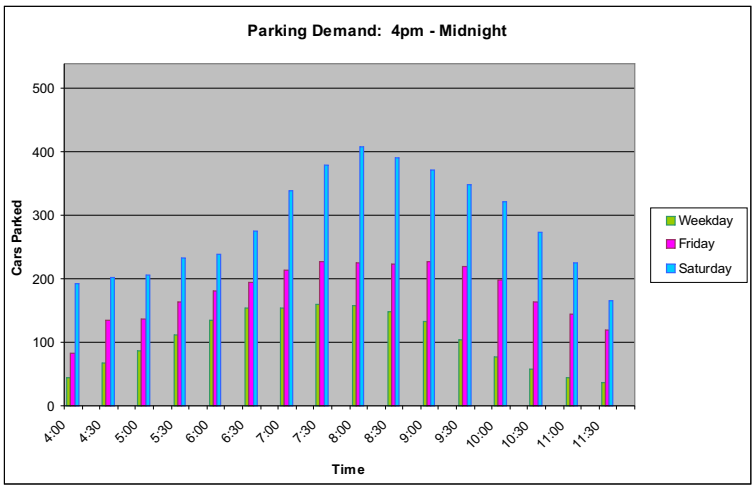
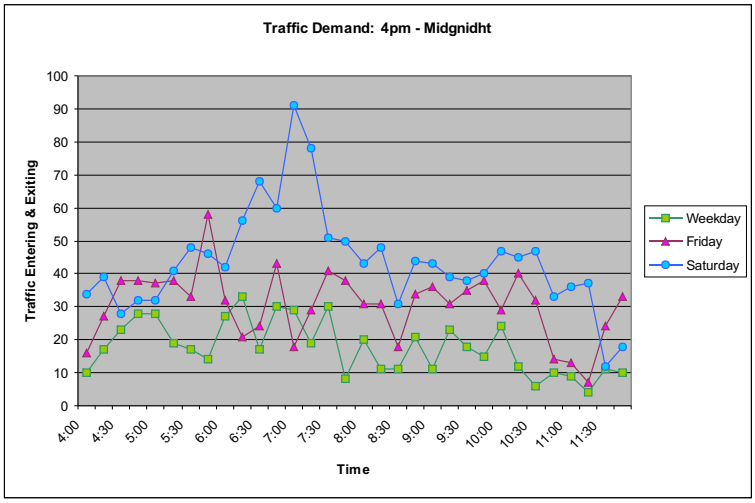
**EXHIBIT 2**
**SAN DIEGO SITE**
**DAVE & BUSTER'S**

N




Dave & Buster's
13857 Riverpoint Drive
Maryland Heights, MO 63043

Building Size: 55,000 SF
Lot Size: 538 Parking Spaces



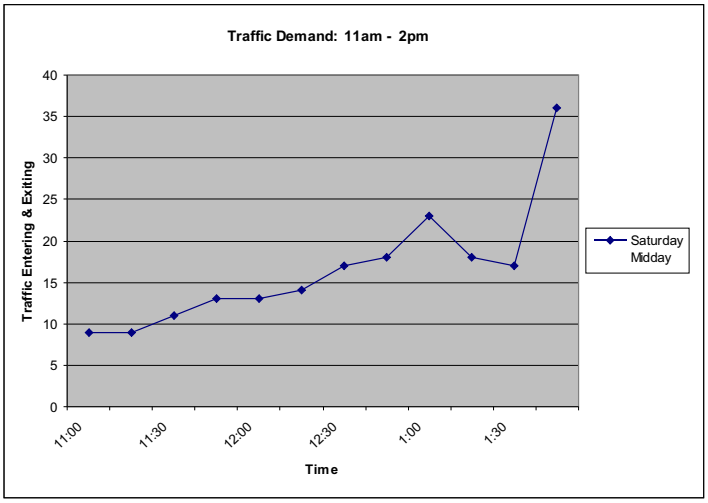




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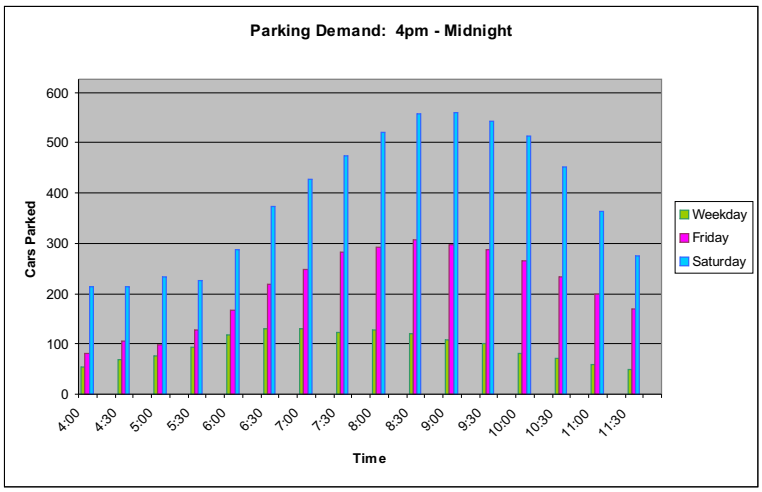
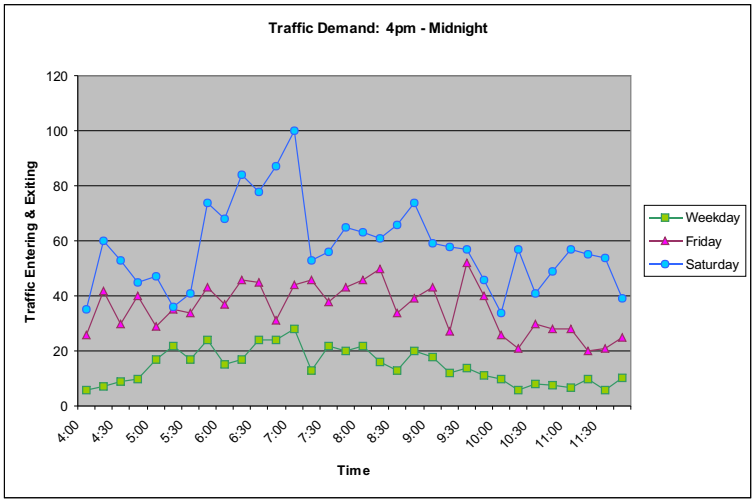
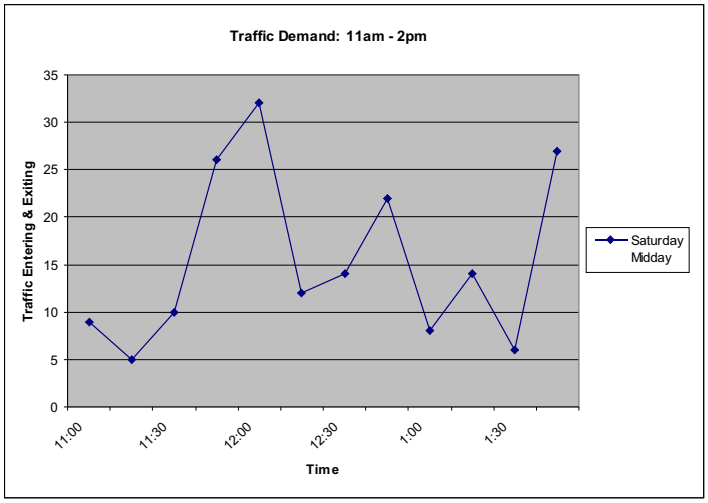
**EXHIBIT 3**
**ST. LOUIS SITE**
**DAVE & BUSTER'S**




Dave & Buster's
25735 First Street
Westlake, OH 44145

Building Size: 57,500 SF
Lot Size: 626 Parking Spaces

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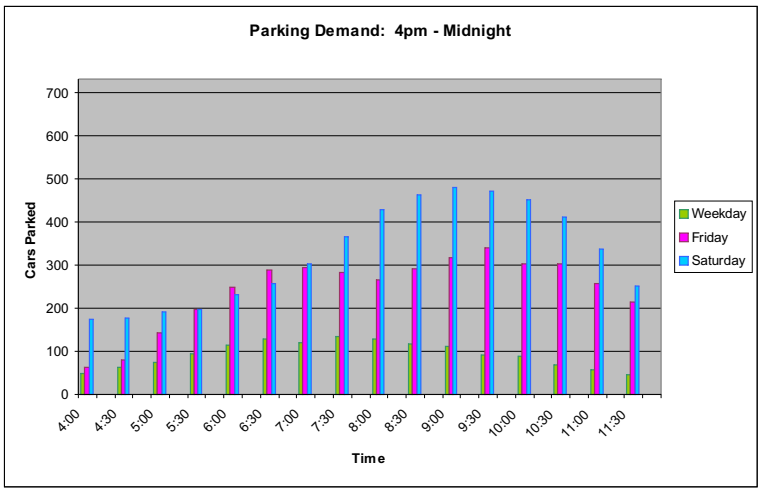
#1203

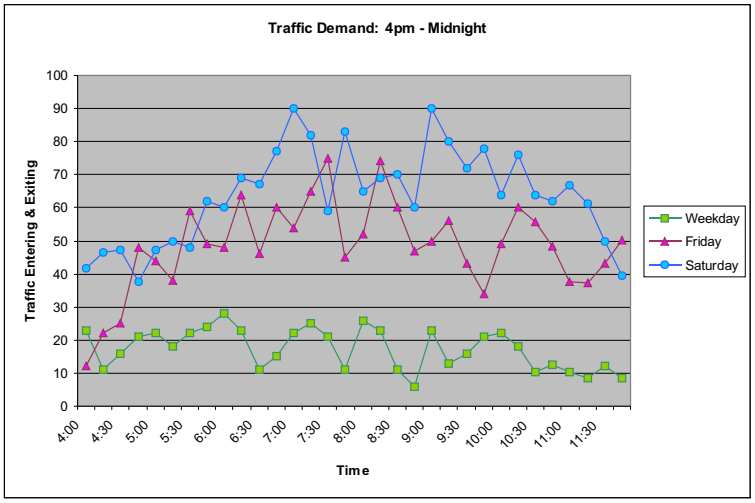
**EXHIBIT 4**
**CLEVELAND SITE**
**DAVE & BUSTER'S**

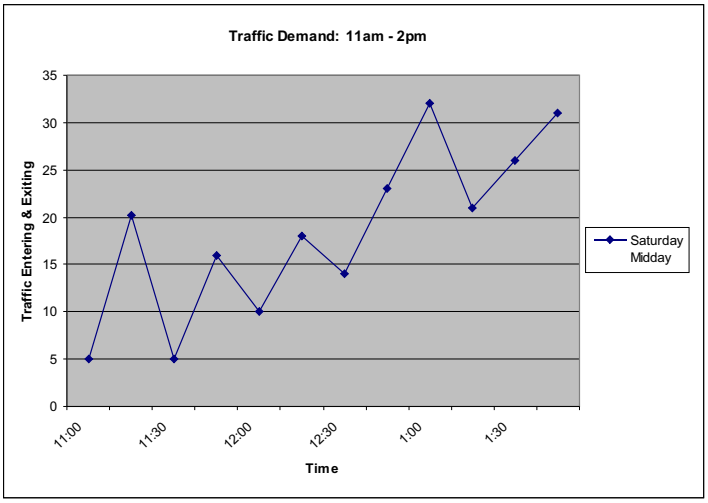
N




Dave & Buster's
2215 D&B Drive
Marietta, GA 30067

Building Size: 59,551 SF
Lot Size: 732 Parking Spaces




TRAFFIC ANALYSIS & DESIGN, INC.

#1203

**EXHIBIT 5**
**ATLANTA SITE**
**DAVE & BUSTER'S**

N

Dave Buster's San Diego
Traffic and Parking Counts

**Friday**

| Time | In | Out | Parking |
|---|---|---|---|
| 4:00 | 8 | 16 | 108 |
| 4:15 | 13 | 11 | |
| 4:30 | 30 | 12 | 111 |
| 4:45 | 33 | 22 | |
| **5:00** | 20 | 16 | 137 |
| **5:15** | 34 | 13 | |
| **5:30** | 27 | 10 | 165 |
| **5:45** | 47 | 10 | |
| 6:00 | 32 | 14 | 256 |
| 6:15 | 32 | 16 | |
| 6:30 | 29 | 11 | 263 |
| 6:45 | 24 | 10 | |
| 7:00 | 45 | 28 | 313 |
| 7:15 | 29 | 17 | |
| 7:30 | 17 | 24 | 320 |
| 7:45 | 24 | 11 | |
| 8:00 | 30 | 21 | 326 |
| **8:15** | 28 | 24 | |
| **8:30** | 31 | 26 | 343 |
| **8:45** | 43 | 37 | |
| **9:00** | 36 | 36 | 357 |
| 9:15 | 24 | 21 | |
| **9:30** | 20 | 22 | **359** |
| 9:45 | 24 | 23 | |
| 10:00 | 22 | 26 | 358 |
| 10:15 | 36 | 32 | |
| 10:30 | 14 | 44 | 358 |
| 10:45 | 20 | 42 | |
| 11:00 | 13 | 27 | 298 |
| 11:15 | 9 | 44 | |
| 11:30 | 8 | 40 | 246 |
| 11:45 | 9 | 41 | |

**Saturday**

| Times | In | Out | Parking |
|---|---|---|---|
| 11:00 | 13 | 5 | 32 |
| 11:15 | 22 | 3 | |
| 11:30 | 8 | 3 | 57 |
| 11:45 | 23 | 4 | |
| 12:00 | 22 | 5 | 93 |
| 12:15 | 25 | 5 | |
| 12:30 | 16 | 2 | 134 |
| **12:45** | 35 | 6 | |
| **1:00** | 24 | 3 | 176 |
| **1:15** | 24 | 8 | |
| **1:30** | 23 | 6 | 182 |
| 1:45 | 15 | 9 | |
| | | | |
| 4:00 | 25 | 25 | 230 |
| 4:15 | 17 | 15 | |
| 4:30 | 32 | 24 | 233 |
| 4:45 | 23 | 10 | |
| 5:00 | 35 | 19 | 258 |
| 5:15 | 28 | 40 | |
| 5:30 | 33 | 20 | 259 |
| 5:45 | 45 | 23 | |
| 6:00 | 31 | 34 | 279 |
| **6:15** | 40 | 43 | |
| **6:30** | 40 | 22 | 285 |
| **6:45** | 38 | 18 | |
| **7:00** | 50 | 31 | 340 |
| 7:15 | 42 | 23 | |
| 7:30 | 42 | 21 | 361 |
| 7:45 | 41 | 30 | |
| 8:00 | 30 | 26 | 376 |
| 8:15 | 41 | 26 | |
| **8:30** | 38 | 27 | **398** |
| 8:45 | 16 | 30 | |
| 9:00 | 22 | 37 | 371 |
| 9:15 | 16 | 27 | |
| 9:30 | 17 | 37 | 361 |
| 9:45 | 18 | 33 | |
| 10:00 | 18 | 31 | 320 |
| 10:15 | 21 | 38 | |
| 10:30 | 28 | 60 | 285 |
| 10:45 | 20 | 24 | |
| 11:00 | 10 | 38 | 239 |
| 11:15 | 5 | 41 | |
| 11:30 | 10 | 33 | 179 |
| 11:45 | 6 | 25 | |

**Wednesday**

| Time | In | Out | Parking |
|---|---|---|---|
| 4:00 | 9 | 7 | 85 |
| 4:15 | 5 | 4 | |
| 4:30 | 16 | 6 | 97 |
| 4:45 | 14 | 12 | |
| **5:00** | 18 | 13 | 111 |
| **5:15** | 12 | 8 | |
| **5:30** | 17 | 12 | **114** |
| **5:45** | 28 | 16 | |
| 6:00 | 10 | 5 | 143 |
| 6:15 | 24 | 9 | |
| 6:30 | 17 | 11 | 153 |
| 6:45 | 9 | 7 | |
| 7:00 | 9 | 9 | 179 |
| 7:15 | 11 | 3 | |
| 7:30 | 23 | 10 | 182 |
| 7:45 | 13 | 10 | |
| 8:00 | 14 | 9 | 185 |
| 8:15 | 18 | 11 | |
| **8:30** | 18 | 12 | **192** |
| 8:45 | 12 | 12 | |
| **9:00** | 11 | 16 | 191 |
| **9:15** | 12 | 19 | |
| **9:30** | 18 | 18 | 176 |
| **9:45** | 15 | 19 | |
| 10:00 | 7 | 14 | 170 |
| 10:15 | 6 | 8 | |
| 10:30 | 3 | 14 | 149 |
| 10:45 | 3 | 13 | |
| 11:00 | 2 | 12 | 125 |
| 11:15 | 2 | 18 | |
| 11:30 | 3 | 10 | 103 |
| 11:45 | 1 | 20 | |

595 Spaces in the lot
43,701 GFA

**Peak Hours for Max In/Out Trips on Site**

| | |
|---|---|
| Wkdy PM Peak (4-6) | 5:00-6:00 p.m. |
| Wkdy Pk Hr of Generator | 9:00-10:00 p.m. |
| Friday PM Peak (4-6) | 5:00-6:00 p.m. |
| Friday Pk Hr of Generator | 8:15-9:15 p.m. |
| Sat. Midday Peak (11-2) | 12:45-1:45 p.m. |
| Sat. PM Pk Hr of Generator | 6:15-7:15 p.m. |

**Peak Hours for Max Occupancy in Parking Lot**

| | |
|---|---|
| Wkdy PM Peak (4-6) | 5:30 p.m. |
| Wkdy Pk Hr of Generator | 8:30 p.m. |
| Friday Pk Hr of Generator | 9:30 p.m. |
| Sat. PM Pk Hr of Generator | 8:30 p.m. |

Dave Buster's St. Louis
Traffic and Parking Counts

**Friday**

| Time | In | Out | Parking |
|---|---|---|---|
| 4:00 | 13 | 3 | 83 |
| 4:15 | 24 | 3 | |
| 4:30 | 29 | 9 | 135 |
| 4:45 | 27 | 11 | |
| **5:00** | 14 | 23 | 136 |
| **5:15** | 26 | 12 | |
| **5:30** | 24 | 9 | 164 |
| **5:45** | 37 | 21 | |
| 6:00 | 18 | 14 | 181 |
| 6:15 | 14 | 7 | |
| 6:30 | 20 | 4 | 194 |
| 6:45 | 29 | 14 | |
| 7:00 | 9 | 9 | 214 |
| 7:15 | 16 | 13 | |
| 7:30 | 25 | 16 | 227 |
| 7:45 | 15 | 23 | |
| 8:00 | 21 | 10 | 224 |
| 8:15 | 14 | 17 | |
| 8:30 | 4 | 14 | 222 |
| 8:45 | 22 | 12 | |
| **9:00** | 21 | 15 | **227** |
| 9:15 | 11 | 20 | |
| 9:30 | 13 | 22 | 219 |
| 9:45 | 12 | 26 | |
| 10:00 | 13 | 16 | 197 |
| 10:15 | 9 | 31 | |
| 10:30 | 5 | 27 | 164 |
| 10:45 | 5 | 9 | |
| 11:00 | 1 | 12 | 144 |
| 11:15 | 2 | 5 | |
| 11:30 | 7 | 17 | 120 |
| 11:45 | 3 | 30 | |

**Saturday**

| Times | In | Out | Parking |
|---|---|---|---|
| 11:00 | 7 | 2 | 31 |
| 11:15 | 8 | 1 | |
| 11:30 | 10 | 1 | 44 |
| 11:45 | 11 | 2 | |
| 12:00 | 11 | 2 | 63 |
| 12:15 | 13 | 1 | |
| 12:30 | 16 | 1 | 90 |
| 12:45 | 14 | 4 | |
| **1:00** | 18 | 5 | 105 |
| **1:15** | 13 | 5 | |
| **1:30** | 12 | 5 | 118 |
| **1:45** | 26 | 10 | |
| | | | |
| 4:00 | 21 | 13 | 193 |
| 4:15 | 19 | 20 | |
| 4:30 | 17 | 11 | 202 |
| 4:45 | 18 | 14 | |
| 5:00 | 15 | 17 | 205 |
| 5:15 | 32 | 9 | |
| 5:30 | 26 | 22 | 232 |
| 5:45 | 28 | 18 | |
| 6:00 | 27 | 15 | 239 |
| 6:15 | 34 | 22 | |
| **6:30** | 48 | 20 | 275 |
| **6:45** | 44 | 16 | |
| **7:00** | 66 | 25 | 339 |
| **7:15** | 54 | 24 | |
| 7:30 | 30 | 21 | 379 |
| 7:45 | 34 | 16 | |
| **8:00** | 34 | 9 | **408** |
| 8:15 | 19 | 29 | |
| 8:30 | 9 | 22 | 391 |
| 8:45 | 15 | 29 | |
| 9:00 | 19 | 24 | 370 |
| 9:15 | 13 | 26 | |
| 9:30 | 13 | 25 | 348 |
| 9:45 | 20 | 20 | |
| 10:00 | 18 | 29 | 321 |
| 10:15 | 12 | 33 | |
| 10:30 | 11 | 36 | 273 |
| 10:45 | 3 | 30 | |
| 11:00 | 10 | 26 | 225 |
| 11:15 | 5 | 32 | |
| 11:30 | 0 | 12 | 165 |
| 11:45 | 2 | 16 | |

**Wednesday**

| Time | In | Out | Parking |
|---|---|---|---|
| 4:00 | 5 | 5 | 44 |
| 4:15 | 14 | 3 | |
| **4:30** | 16 | 7 | 67 |
| **4:45** | 21 | 7 | |
| **5:00** | 19 | 9 | 87 |
| **5:15** | 16 | 3 | |
| **5:30** | 13 | 4 | **111** |
| 5:45 | 12 | 2 | |
| 6:00 | 20 | 7 | 135 |
| **6:15** | 25 | 8 | |
| **6:30** | 11 | 6 | 154 |
| **6:45** | 11 | 19 | |
| **7:00** | 15 | 14 | 154 |
| 7:15 | 12 | 7 | |
| **7:30** | 17 | 13 | **160** |
| 7:45 | 2 | 6 | |
| 8:00 | 10 | 10 | 157 |
| 8:15 | 6 | 5 | |
| 8:30 | 3 | 8 | 148 |
| 8:45 | 6 | 15 | |
| 9:00 | 4 | 7 | 132 |
| 9:15 | 2 | 21 | |
| 9:30 | 4 | 14 | 104 |
| 9:45 | 3 | 12 | |
| 10:00 | 1 | 23 | 77 |
| 10:15 | 1 | 11 | |
| 10:30 | 0 | 6 | 58 |
| 10:45 | 1 | 9 | |
| 11:00 | 1 | 8 | 45 |
| 11:15 | 0 | 4 | |
| 11:30 | 1 | 10 | 37 |
| 11:45 | 0 | 10 | |

538 Spaces in the lot
55,000 GFA

**Peak Hours for Max In/Out Trips on Site**

| | |
|---|---|
| Wkdy PM Peak (4-6) | 4:30-5:30 p.m. |
| Wkdy Pk Hr of Generator | 6:15-7:15 p.m. |
| Friday PM Peak (4-6) | 5:00-6:00 p.m. |
| Friday Pk Hr of Generator | 5:00-6:00 p.m. |
| Sat. Midday Peak (11-2) | 1:00-2:00 p.m. |
| Sat. PM Pk Hr of Generator | 6:30-7:30 p.m. |

**Peak Hours for Max Occupancy in Parking Lot**

| | |
|---|---|
| Wkdy PM Peak (4-6) | 5:30 p.m. |
| Wkdy Pk Hr of Generator | 7:30 p.m. |
| Friday Pk Hr of Generator | 9:00 p.m. |
| Sat. PM Pk Hr of Generator | 8:00 p.m. |

Dave Buster's Cleveland
Traffic and Parking Counts

**Friday**

| Time | In | Out | Parking |
|---|---|---|---|
| 4:00 | 6 | 20 | 82 |
| 4:15 | 7 | 35 | |
| 4:30 | 19 | 11 | 105 |
| 4:45 | 22 | 18 | |
| **5:00** | 19 | 10 | 99 |
| **5:15** | 24 | 11 | |
| **5:30** | 29 | 5 | 127 |
| **5:45** | 36 | 7 | |
| 6:00 | 28 | 9 | 166 |
| 6:15 | 32 | 14 | |
| 6:30 | 31 | 14 | 218 |
| 6:45 | 25 | 6 | |
| 7:00 | 29 | 15 | 248 |
| 7:15 | 28 | 18 | |
| **7:30** | 22 | 16 | 282 |
| **7:45** | 25 | 18 | |
| **8:00** | 28 | 18 | 292 |
| **8:15** | 20 | 30 | |
| **8:30** | 17 | 17 | **307** |
| 8:45 | 19 | 20 | |
| 9:00 | 21 | 22 | 296 |
| 9:15 | 7 | 20 | |
| 9:30 | 19 | 33 | 288 |
| 9:45 | 17 | 23 | |
| 10:00 | 5 | 21 | 266 |
| 10:15 | 9 | 12 | |
| 10:30 | 12 | 18 | 234 |
| 10:45 | 7 | 21 | |
| 11:00 | 7 | 21 | 198 |
| 11:15 | 8 | 12 | |
| 11:30 | 3 | 18 | 169 |
| 11:45 | 4 | 21 | |

**Saturday**

| Times | In | Out | Parking |
|---|---|---|---|
| 11:00 | 7 | 2 | |
| 11:15 | 5 | 0 | |
| 11:30 | 9 | 1 | |
| **11:45** | 22 | 4 | |
| **12:00** | 20 | 12 | |
| **12:15** | 10 | 2 | |
| **12:30** | 11 | 3 | |
| 12:45 | 16 | 6 | |
| 1:00 | 6 | 2 | |
| 1:15 | 11 | 3 | |
| 1:30 | 4 | 2 | |
| 1:45 | 21 | 6 | |
| | | | |
| 4:00 | 19 | 16 | 214 |
| 4:15 | 30 | 30 | |
| 4:30 | 31 | 22 | 214 |
| 4:45 | 25 | 20 | |
| 5:00 | 18 | 29 | 232 |
| 5:15 | 26 | 10 | |
| 5:30 | 31 | 10 | 227 |
| 5:45 | 58 | 16 | |
| 6:00 | 52 | 16 | 288 |
| **6:15** | 54 | 30 | |
| **6:30** | 56 | 22 | 374 |
| **6:45** | 67 | 20 | |
| **7:00** | 71 | 29 | 428 |
| 7:15 | 43 | 10 | |
| 7:30 | 46 | 10 | 475 |
| 7:45 | 49 | 16 | |
| 8:00 | 47 | 16 | 521 |
| 8:15 | 43 | 18 | |
| 8:30 | 43 | 23 | 557 |
| 8:45 | 46 | 28 | |
| **9:00** | 28 | 31 | **559** |
| 9:15 | 26 | 32 | |
| 9:30 | 27 | 30 | 542 |
| 9:45 | 22 | 24 | |
| 10:00 | 14 | 20 | 514 |
| 10:15 | 14 | 43 | |
| 10:30 | 10 | 31 | 452 |
| 10:45 | 11 | 38 | |
| 11:00 | 9 | 48 | 363 |
| 11:15 | 4 | 51 | |
| 11:30 | 7 | 47 | 275 |
| 11:45 | 3 | 36 | |

**Wednesday**

| Time | In | Out | Parking |
|---|---|---|---|
| 4:00 | 6 | 0 | 53 |
| 4:15 | 5 | 2 | |
| 4:30 | 7 | 2 | 68 |
| 4:45 | 9 | 1 | |
| **5:00** | 10 | 7 | 77 |
| **5:15** | 19 | 3 | |
| **5:30** | 11 | 6 | **94** |
| **5:45** | 20 | 4 | |
| 6:00 | 10 | 5 | 117 |
| **6:15** | 12 | 5 | |
| **6:30** | 15 | 9 | 129 |
| **6:45** | 11 | 13 | |
| **7:00** | 16 | 12 | **130** |
| 7:15 | 5 | 8 | |
| 7:30 | 11 | 11 | 123 |
| 7:45 | 9 | 11 | |
| 8:00 | 11 | 11 | 128 |
| 8:15 | 5 | 11 | |
| 8:30 | 4 | 9 | 120 |
| 8:45 | 5 | 15 | |
| 9:00 | 9 | 9 | 107 |
| 9:15 | 3 | 9 | |
| 9:30 | 2 | 12 | 100 |
| 9:45 | 0 | 11 | |
| 10:00 | 1 | 9 | 80 |
| 10:15 | 2 | 4 | |
| 10:30 | 1 | 7 | 70 |
| 10:45 | 1 | 7 | |
| 11:00 | 1 | 6 | 59 |
| 11:15 | 1 | 9 | |
| 11:30 | 1 | 5 | 48 |
| 11:45 | 0 | 10 | |

626 Spaces in the lot
57,500 GFA

**Peak Hours for Max In/Out Trips on Site**

| | |
|---|---|
| Wkdy PM Peak (4-6) | 5:00-6:00 p.m. |
| Wkdy Pk Hr of Generator | 6:15-7:15 p.m. |
| Friday PM Peak (4-6) | 5:00-6:00 p.m. |
| Friday Pk Hr of Generator | 7:30-8:30 p.m. |
| Sat. Midday Peak (11-2) | 11:45-12:45 p.m |
| Sat. PM Pk Hr of Generator | 6:15-7:15 p.m. |

**Peak Hours for Max Occupancy in Parking Lot**

| | |
|---|---|
| Wkdy PM Peak (4-6) | 5:30 p.m. |
| Wkdy Pk Hr of Generator | 7:00 p.m. |
| Friday Pk Hr of Generator | 8:30 p.m. |
| Sat. PM Pk Hr of Generator | 9:00 p.m. |

Dave Buster's Atlanta
Traffic and Parking Counts

**Friday**

| Time | In | Out | Parking |
|---|---|---|---|
| 4:00 | 9 | 3 | 63 |
| 4:15 | 17 | 5 | |
| 4:30 | 20 | 5 | 81 |
| 4:45 | 44 | 4 | |
| **5:00** | 33 | 11 | 144 |
| **5:15** | 34 | 4 | |
| **5:30** | 51 | 8 | 198 |
| **5:45** | 36 | 13 | |
| 6:00 | 36 | 12 | 249 |
| 6:15 | 34 | 30 | |
| 6:30 | 27 | 19 | 288 |
| **6:45** | 38 | 22 | |
| **7:00** | 27 | 27 | 294 |
| **7:15** | 31 | 34 | |
| **7:30** | 35 | 40 | 284 |
| 7:45 | 21 | 24 | |
| 8:00 | 32 | 20 | 267 |
| 8:15 | 36 | 38 | |
| 8:30 | 37 | 23 | 293 |
| 8:45 | 26 | 21 | |
| 9:00 | 35 | 15 | 316 |
| 9:15 | 35 | 21 | |
| **9:30** | 13 | 30 | **340** |
| 9:45 | 13 | 21 | |
| 10:00 | 19 | 30 | 302 |
| 10:15 | 25 | 35 | |
| 10:30 | 14 | 42 | 304 |
| 10:45 | 15 | 34 | |
| 11:00 | 10 | 28 | 257 |
| 11:15 | 9 | 28 | |
| 11:30 | 8 | 35 | 215 |
| 11:45 | 7 | 43 | |

**Saturday**

| Times | In | Out | Parking |
|---|---|---|---|
| 11:00 | 5 | 0 | |
| 11:15 | 19 | 1 | |
| 11:30 | 5 | 0 | |
| 11:45 | 15 | 1 | |
| 12:00 | 8 | 2 | |
| 12:15 | 14 | 4 | |
| 12:30 | 11 | 3 | |
| 12:45 | 20 | 3 | |
| **1:00** | 25 | 7 | |
| **1:15** | 16 | 5 | |
| **1:30** | 19 | 7 | |
| **1:45** | 20 | 11 | |
| | | | |
| 4:00 | 19 | 23 | 175 |
| 4:15 | 19 | 28 | |
| 4:30 | 23 | 24 | 178 |
| 4:45 | 19 | 19 | |
| 5:00 | 20 | 28 | 191 |
| 5:15 | 25 | 25 | |
| 5:30 | 26 | 22 | 197 |
| 5:45 | 38 | 24 | |
| 6:00 | 37 | 23 | 231 |
| 6:15 | 37 | 32 | |
| 6:30 | 39 | 28 | 256 |
| 6:45 | 58 | 19 | |
| 7:00 | 54 | 36 | 304 |
| 7:15 | 62 | 20 | |
| 7:30 | 44 | 15 | 366 |
| 7:45 | 58 | 25 | |
| 8:00 | 38 | 27 | 429 |
| 8:15 | 42 | 27 | |
| 8:30 | 36 | 34 | 464 |
| 8:45 | 34 | 26 | |
| **9:00** | 48 | 42 | **479** |
| **9:15** | 44 | 36 | |
| **9:30** | 26 | 46 | 472 |
| **9:45** | 30 | 48 | |
| 10:00 | 34 | 30 | 451 |
| 10:15 | 28 | 48 | |
| 10:30 | 19 | 45 | 412 |
| 10:45 | 24 | 38 | |
| 11:00 | 20 | 46 | 337 |
| 11:15 | 10 | 51 | |
| 11:30 | 12 | 38 | 253 |
| 11:45 | 8 | 32 | |

**Wednesday**

| Time | In | Out | Parking |
|---|---|---|---|
| 4:00 | 18 | 5 | 50 |
| 4:15 | 11 | 0 | |
| 4:30 | 14 | 2 | 63 |
| 4:45 | 15 | 6 | |
| **5:00** | 20 | 2 | 73 |
| **5:15** | 14 | 4 | |
| **5:30** | 13 | 9 | **94** |
| **5:45** | 15 | 9 | |
| **6:00** | 17 | 11 | 114 |
| **6:15** | 15 | 8 | |
| 6:30 | 6 | 5 | 130 |
| 6:45 | 8 | 7 | |
| 7:00 | 13 | 9 | 121 |
| 7:15 | 11 | 14 | |
| **7:30** | 10 | 11 | **134** |
| 7:45 | 6 | 5 | |
| 8:00 | 9 | 17 | 128 |
| 8:15 | 3 | 20 | |
| 8:30 | 4 | 7 | 117 |
| 8:45 | 3 | 3 | |
| 9:00 | 18 | 5 | 111 |
| 9:15 | 11 | 2 | |
| 9:30 | 14 | 2 | 91 |
| 9:45 | 15 | 6 | |
| 10:00 | 20 | 2 | 88 |
| 10:15 | 14 | 4 | |
| 10:30 | 6 | 4 | 68 |
| 10:45 | 8 | 5 | |
| 11:00 | 6 | 4 | 56 |
| 11:15 | 4 | 5 | |
| 11:30 | 8 | 4 | 46 |
| 11:45 | 2 | 6 | |

732 Spaces in the lot
59,551 GFA

**Peak Hours for Max In/Out Trips on Site**

| | |
|---|---|
| Wkdy PM Peak (4-6) | 5:00-6:00 p.m. |
| Wkdy Pk Hr of Generator | 5:30-6:30 p.m. |
| Friday PM Peak (4-6) | 5:00-6:00 p.m. |
| Friday Pk Hr of Generator | 6:45-7:45 p.m. |
| Sat. Midday Peak (11-2) | 1:00-2:00 p.m. |
| Sat. PM Pk Hr of Generator | 9:00-10:00 p.m. |

**Peak Hours for Max Occupancy in Parking Lot**

| | |
|---|---|
| Wkdy PM Peak (4-6) | 5:30 p.m. |
| Wkdy Pk Hr of Generator | 7:30 p.m. |
| Friday Pk Hr of Generator | 9:30 p.m. |
| Sat. PM Pk Hr of Generator | 9:00 p.m. |

# APPENDIX F. TOTAL TRAFFIC OPERATIONAL ANALYSIS WORKSHEETS

# Timings
## 1: Race St & Arapahoe Rd

11/04/2019

| Lane Group | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 1291 | 98 | 34 | 764 | 102 | 38 |
| Future Volume (vph) | 1291 | 98 | 34 | 764 | 102 | 38 |
| Turn Type | NA | Perm | pm+pt | NA | Prot | Perm |
| Protected Phases | 2 | | 1 | 6 | 8 | |
| Permitted Phases | | 2 | 6 | | | 8 |
| Detector Phase | 2 | 2 | 1 | 6 | 8 | 8 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 17.0 | 17.0 | 3.0 | 17.0 | 5.0 | 5.0 |
| Minimum Split (s) | 23.0 | 23.0 | 7.0 | 23.0 | 30.0 | 30.0 |
| Total Split (s) | 76.0 | 76.0 | 12.0 | 88.0 | 32.0 | 32.0 |
| Total Split (%) | 63.3% | 63.3% | 10.0% | 73.3% | 26.7% | 26.7% |
| Yellow Time (s) | 4.0 | 4.0 | 3.0 | 4.0 | 3.0 | 3.0 |
| All-Red Time (s) | 2.0 | 2.0 | 1.0 | 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) | 6.0 | 6.0 | 4.0 | 6.0 | 5.0 | 5.0 |
| Lead/Lag | Lag | Lag | Lead | | | |
| Lead-Lag Optimize? | Yes | Yes | Yes | | | |
| Recall Mode | C-Min | C-Min | None | C-Min | None | None |
| Act Effct Green (s) | 90.2 | 90.2 | 97.8 | 95.8 | 13.2 | 13.2 |
| Actuated g/C Ratio | 0.75 | 0.75 | 0.82 | 0.80 | 0.11 | 0.11 |
| v/c Ratio | 0.50 | 0.09 | 0.11 | 0.19 | 0.54 | 0.19 |
| Control Delay | 8.2 | 3.7 | 1.4 | 0.7 | 58.9 | 14.9 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 8.2 | 3.7 | 1.4 | 0.7 | 58.9 | 14.9 |
| LOS | A | A | A | A | E | B |
| Approach Delay | 7.9 | | | 0.7 | 46.9 | |
| Approach LOS | A | | | A | D | |

| Intersection Summary | |
|---|---|
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 111 (93%), Referenced to phase 2:EBT and 6:WBTL, Start of 1st Green | |
| Natural Cycle: 70 | |
| Control Type: Actuated-Coordinated | |
| Maximum v/c Ratio: 0.54 | |
| Intersection Signal Delay: 7.8 | Intersection LOS: A |
| Intersection Capacity Utilization 52.8% | ICU Level of Service A |
| Analysis Period (min) 15 | |

Splits and Phases: 1: Race St & Arapahoe Rd

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 1291 | 98 | 34 | 764 | 102 | 38 |
| Future Volume (veh/h) | 1291 | 98 | 34 | 764 | 102 | 38 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | | 1.00 | 1.00 | | 1.00 | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | No | | | No | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 1317 | 100 | 35 | 780 | 104 | 39 |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 2782 | 1235 | 339 | 4256 | 133 | 119 |
| Arrive On Green | 0.78 | 0.78 | 0.03 | 1.00 | 0.07 | 0.07 |
| Sat Flow, veh/h | 3647 | 1578 | 1781 | 5274 | 1781 | 1585 |
| Grp Volume(v), veh/h | 1317 | 100 | 35 | 780 | 104 | 39 |
| Grp Sat Flow(s),veh/h/ln | 1777 | 1578 | 1781 | 1702 | 1781 | 1585 |
| Q Serve(g_s), s | 15.3 | 1.8 | 0.4 | 0.0 | 6.9 | 2.8 |
| Cycle Q Clear(g_c), s | 15.3 | 1.8 | 0.4 | 0.0 | 6.9 | 2.8 |
| Prop In Lane | | 1.00 | 1.00 | | 1.00 | 1.00 |
| Lane Grp Cap(c), veh/h | 2782 | 1235 | 339 | 4256 | 133 | 119 |
| V/C Ratio(X) | 0.47 | 0.08 | 0.10 | 0.18 | 0.78 | 0.33 |
| Avail Cap(c_a), veh/h | 2782 | 1235 | 427 | 4256 | 401 | 357 |
| HCM Platoon Ratio | 1.00 | 1.00 | 2.00 | 2.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.98 | 0.98 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 4.5 | 3.0 | 3.4 | 0.0 | 54.5 | 52.7 |
| Incr Delay (d2), s/veh | 0.6 | 0.1 | 0.0 | 0.1 | 3.7 | 0.6 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 4.3 | 0.5 | 0.1 | 0.0 | 3.2 | 1.1 |
| Unsig. Movement Delay, s/veh | | | | | | |
| LnGrp Delay(d),s/veh | 5.1 | 3.1 | 3.4 | 0.1 | 58.2 | 53.2 |
| LnGrp LOS | A | A | A | A | E | D |
| Approach Vol, veh/h | 1417 | | | 815 | 143 | |
| Approach Delay, s/veh | 4.9 | | | 0.2 | 56.9 | |
| Approach LOS | A | | | A | E | |

| Timer - Assigned Phs | 1 | 2 | | | | 6 | 8 |
|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 6.1 | 100.0 | | | | 106.0 | 14.0 |
| Change Period (Y+Rc), s | 4.0 | 6.0 | | | | 6.0 | 5.0 |
| Max Green Setting (Gmax), s | 8.0 | 70.0 | | | | 82.0 | 27.0 |
| Max Q Clear Time (g_c+I1), s | 2.4 | 17.3 | | | | 2.0 | 8.9 |
| Green Ext Time (p_c), s | 0.0 | 7.8 | | | | 3.9 | 0.2 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 6.5 |
| HCM 6th LOS | A |

| Lane Group | EBL | EBT | WBL | WBT | NBT | NBR | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | |
| Traffic Volume (vph) | 52 | 1196 | 96 | 710 | 7 | 57 | 6 | 29 |
| Future Volume (vph) | 52 | 1196 | 96 | 710 | 7 | 57 | 6 | 29 |
| Turn Type | pm+pt | NA | pm+pt | NA | NA | Perm | NA | Perm |
| Protected Phases | 5 | 2 | 1 | 6 | 8 | | 4 | |
| Permitted Phases | 2 | | 6 | | | 8 | | 4 |
| Detector Phase | 5 | 2 | 1 | 6 | 8 | 8 | 4 | 4 |
| Switch Phase | | | | | | | | |
| Minimum Initial (s) | 3.0 | 17.0 | 3.0 | 17.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Minimum Split (s) | 7.0 | 26.0 | 7.0 | 23.0 | 35.0 | 35.0 | 34.0 | 34.0 |
| Total Split (s) | 12.0 | 72.0 | 12.0 | 72.0 | 18.0 | 18.0 | 18.0 | 18.0 |
| Total Split (%) | 10.0% | 60.0% | 10.0% | 60.0% | 15.0% | 15.0% | 15.0% | 15.0% |
| Yellow Time (s) | 3.0 | 4.0 | 3.0 | 4.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| All-Red Time (s) | 1.0 | 2.0 | 1.0 | 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) | 4.0 | 6.0 | 4.0 | 6.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Lead/Lag | Lead | Lag | Lead | Lag | | | | |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | | | | |
| Recall Mode | None | C-Min | None | C-Min | None | None | None | None |
| Act Effct Green (s) | 83.5 | 75.8 | 86.3 | 78.6 | 9.0 | 9.0 | 10.5 | 10.5 |
| Actuated g/C Ratio | 0.70 | 0.63 | 0.72 | 0.66 | 0.08 | 0.08 | 0.09 | 0.09 |
| v/c Ratio | 0.12 | 0.42 | 0.34 | 0.26 | 0.51 | 0.28 | 0.64 | 0.13 |
| Control Delay | 5.0 | 7.7 | 10.2 | 4.2 | 66.1 | 3.9 | 71.1 | 1.2 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 5.0 | 7.7 | 10.2 | 4.2 | 66.1 | 3.9 | 71.1 | 1.2 |
| LOS | A | A | B | A | E | A | E | A |
| Approach Delay | | 7.6 | | 4.9 | 37.2 | | 54.4 | |
| Approach LOS | | A | | A | D | | D | |

| Intersection Summary | |
|---|---|
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of 1st Green | |
| Natural Cycle: 105 | |
| Control Type: Actuated-Coordinated | |
| Maximum v/c Ratio: 0.64 | |
| Intersection Signal Delay: 10.4 | Intersection LOS: B |
| Intersection Capacity Utilization 56.1% | ICU Level of Service B |
| Analysis Period (min) 15 | |

Splits and Phases: 2: Vine St & Arapahoe Rd

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 52 | 1196 | 81 | 96 | 710 | 96 | 59 | 7 | 57 | 88 | 6 | 29 |
| Future Volume (veh/h) | 52 | 1196 | 81 | 96 | 710 | 96 | 59 | 7 | 57 | 88 | 6 | 29 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 0.99 | 1.00 | | 0.99 | 1.00 | | 0.96 | 1.00 | | 0.96 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 55 | 1259 | 85 | 101 | 747 | 101 | 62 | 7 | 60 | 93 | 6 | 31 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 528 | 3219 | 217 | 389 | 3054 | 410 | 102 | 11 | 96 | 128 | 8 | 117 |
| Arrive On Green | 0.05 | 1.00 | 1.00 | 0.07 | 1.00 | 1.00 | 0.06 | 0.06 | 0.06 | 0.08 | 0.08 | 0.08 |
| Sat Flow, veh/h | 1781 | 4883 | 330 | 1781 | 4550 | 610 | 1608 | 182 | 1517 | 1678 | 108 | 1529 |
| Grp Volume(v), veh/h | 55 | 878 | 466 | 101 | 557 | 291 | 69 | 0 | 60 | 99 | 0 | 31 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1702 | 1809 | 1781 | 1702 | 1757 | 1790 | 0 | 1517 | 1786 | 0 | 1529 |
| Q Serve(g_s), s | 1.2 | 0.0 | 0.0 | 2.3 | 0.0 | 0.0 | 4.5 | 0.0 | 4.6 | 6.5 | 0.0 | 2.3 |
| Cycle Q Clear(g_c), s | 1.2 | 0.0 | 0.0 | 2.3 | 0.0 | 0.0 | 4.5 | 0.0 | 4.6 | 6.5 | 0.0 | 2.3 |
| Prop In Lane | 1.00 | | 0.18 | 1.00 | | 0.35 | 0.90 | | 1.00 | 0.94 | | 1.00 |
| Lane Grp Cap(c), veh/h | 528 | 2244 | 1193 | 389 | 2285 | 1179 | 113 | 0 | 96 | 136 | 0 | 117 |
| V/C Ratio(X) | 0.10 | 0.39 | 0.39 | 0.26 | 0.24 | 0.25 | 0.61 | 0.00 | 0.63 | 0.73 | 0.00 | 0.27 |
| Avail Cap(c_a), veh/h | 606 | 2244 | 1193 | 446 | 2285 | 1179 | 194 | 0 | 164 | 194 | 0 | 166 |
| HCM Platoon Ratio | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.87 | 0.87 | 0.87 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 6.1 | 0.0 | 0.0 | 5.8 | 0.0 | 0.0 | 54.8 | 0.0 | 54.8 | 54.2 | 0.0 | 52.3 |
| Incr Delay (d2), s/veh | 0.0 | 0.4 | 0.8 | 0.1 | 0.3 | 0.5 | 2.0 | 0.0 | 2.5 | 3.5 | 0.0 | 0.4 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.4 | 0.1 | 0.3 | 0.7 | 0.1 | 0.2 | 2.1 | 0.0 | 1.8 | 3.1 | 0.0 | 0.9 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 6.1 | 0.4 | 0.8 | 5.9 | 0.3 | 0.5 | 56.7 | 0.0 | 57.3 | 57.7 | 0.0 | 52.7 |
| LnGrp LOS | A | A | A | A | A | A | E | A | E | E | A | D |
| Approach Vol, veh/h | | 1399 | | | 949 | | | 129 | | | 130 | |
| Approach Delay, s/veh | | 0.8 | | | 0.9 | | | 57.0 | | | 56.5 | |
| Approach LOS | | A | | | A | | | E | | | E | |

| Timer - Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 8.2 | 85.1 | | 14.2 | 6.7 | 86.5 | | 12.6 |
| Change Period (Y+Rc), s | 4.0 | 6.0 | | 5.0 | 4.0 | 6.0 | | 5.0 |
| Max Green Setting (Gmax), s | 8.0 | 66.0 | | 13.0 | 8.0 | 66.0 | | 13.0 |
| Max Q Clear Time (g_c+I1), s | 4.3 | 2.0 | | 8.5 | 3.2 | 2.0 | | 6.6 |
| Green Ext Time (p_c), s | 0.0 | 7.3 | | 0.1 | 0.0 | 3.9 | | 0.2 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 6.4 |
| HCM 6th LOS | A |

Notes

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

| 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 | 11 | 1301 | 29 | 37 | 894 | 10 | 0 | 0 | 63 | 0 | 0 | 8 |
| Future Vol, veh/h | 11 | 1301 | 29 | 37 | 894 | 10 | 0 | 0 | 63 | 0 | 0 | 8 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | 150 | - | 0 | 100 | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 12 | 1414 | 32 | 40 | 972 | 11 | 0 | 0 | 68 | 0 | 0 | 9 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 983 | 0 | 0 | 1446 | 0 | 0 | - | 2501 | 707 | - | 2528 | 492 |
| Stage 1 | - | - | - | - | - | - | - | 1438 | - | - | 1058 | - |
| Stage 2 | - | - | - | - | - | - | - | 1063 | - | - | 1470 | - |
| Critical Hdwy | 5.34 | - | - | 5.34 | - | - | - | 6.54 | 7.14 | - | 6.54 | 7.14 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | - | 5.54 | - | - | 5.54 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | - | 5.54 | - | - | 5.54 | - |
| Follow-up Hdwy | 3.12 | - | - | 3.12 | - | - | - | 4.02 | 3.92 | - | 4.02 | 3.92 |
| Pot Cap-1 Maneuver | *900 | - | - | 751 | - | - | 0 | 316 | *629 | 0 | 293 | *716 |
| Stage 1 | - | - | - | - | - | - | 0 | 592 | - | 0 | 638 | - |
| Stage 2 | - | - | - | - | - | - | 0 | 634 | - | 0 | 565 | - |
| Platoon blocked, % | 1 | - | - | 1 | - | - | | 1 | 1 | | 1 | 1 |
| Mov Cap-1 Maneuver | *900 | - | - | 751 | - | - | - | 295 | *629 | - | 274 | *716 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | - | 295 | - | - | 274 | - |
| Stage 1 | - | - | - | - | - | - | - | 584 | - | - | 604 | - |
| Stage 2 | - | - | - | - | - | - | - | 601 | - | - | 558 | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 0.1 | 0.4 | 11.4 | 10.1 |
| HCM LOS | | | B | B |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 629 | * 900 | - | - | 751 | - | - | 716 |
| HCM Lane V/C Ratio | 0.109 | 0.013 | - | - | 0.054 | - | - | 0.012 |
| HCM Control Delay (s) | 11.4 | 9.1 | - | - | 10.1 | - | - | 10.1 |
| HCM Lane LOS | B | A | - | - | B | - | - | B |
| HCM 95th %tile Q(veh) | 0.4 | 0 | - | - | 0.2 | - | - | 0 |

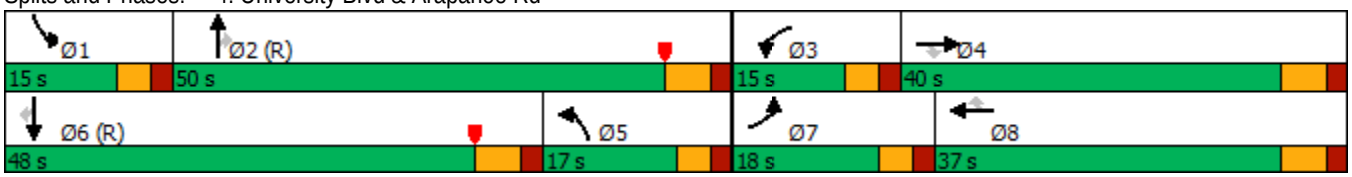
Notes

~: 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) | 209 | 989 | 166 | 247 | 618 | 382 | 188 | 1248 | 236 | 246 | 849 | 134 |
| Future Volume (vph) | 209 | 989 | 166 | 247 | 618 | 382 | 188 | 1248 | 236 | 246 | 849 | 134 |
| Turn Type | Prot | NA | Perm | Prot | NA | Perm | Prot | NA | Perm | Prot | NA | Perm |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | | | 4 | | | 8 | | | 2 | | | 6 |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | 8 | 5 | 2 | 2 | 1 | 6 | 6 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 | 3.0 | 10.0 | 10.0 | 3.0 | 10.0 | 10.0 |
| Minimum Split (s) | 8.0 | 39.0 | 39.0 | 8.0 | 37.0 | 37.0 | 8.0 | 35.0 | 35.0 | 8.0 | 40.0 | 40.0 |
| Total Split (s) | 18.0 | 40.0 | 40.0 | 15.0 | 37.0 | 37.0 | 17.0 | 50.0 | 50.0 | 15.0 | 48.0 | 48.0 |
| Total Split (%) | 15.0% | 33.3% | 33.3% | 12.5% | 30.8% | 30.8% | 14.2% | 41.7% | 41.7% | 12.5% | 40.0% | 40.0% |
| Yellow Time (s) | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 |
| 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 | 0.0 |
| Total Lost Time (s) | 5.0 | 6.0 | 6.0 | 5.0 | 6.0 | 6.0 | 5.0 | 6.0 | 6.0 | 5.0 | 6.0 | 6.0 |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lag | Lag | Lag | Lead | Lead | Lead |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | None | None | None | None | None | None | C-Min | C-Min | None | C-Min | C-Min |
| Act Effct Green (s) | 11.1 | 30.4 | 30.4 | 10.0 | 29.3 | 29.3 | 18.9 | 47.6 | 47.6 | 10.0 | 38.7 | 38.7 |
| Actuated g/C Ratio | 0.09 | 0.25 | 0.25 | 0.08 | 0.24 | 0.24 | 0.16 | 0.40 | 0.40 | 0.08 | 0.32 | 0.32 |
| v/c Ratio | 0.69 | 0.80 | 0.33 | 0.90 | 0.52 | 0.73 | 0.36 | 0.64 | 0.33 | 0.90 | 0.54 | 0.23 |
| Control Delay | 68.1 | 51.4 | 15.7 | 87.3 | 40.7 | 28.3 | 42.4 | 26.0 | 3.8 | 86.8 | 34.7 | 5.5 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 68.1 | 51.4 | 15.7 | 87.3 | 40.7 | 28.3 | 42.4 | 26.0 | 3.8 | 86.8 | 34.7 | 5.5 |
| LOS | E | D | B | F | D | C | D | C | A | F | C | A |
| Approach Delay | | 49.6 | | | 46.2 | | | 24.7 | | | 41.9 | |
| Approach LOS | | D | | | D | | | C | | | D | |

| Intersection Summary | |
|---|---|
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 38 (32%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow | |
| Natural Cycle: 95 | |
| Control Type: Actuated-Coordinated | |
| Maximum v/c Ratio: 0.90 | |
| Intersection Signal Delay: 39.6 | Intersection LOS: D |
| Intersection Capacity Utilization 77.0% | ICU Level of Service D |
| Analysis Period (min) 15 | |

Splits and Phases: 4: University Blvd & Arapahoe Rd



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 209 | 989 | 166 | 247 | 618 | 382 | 188 | 1248 | 236 | 246 | 849 | 134 |
| Future Volume (veh/h) | 209 | 989 | 166 | 247 | 618 | 382 | 188 | 1248 | 236 | 246 | 849 | 134 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 0.99 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.99 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 218 | 1030 | 173 | 257 | 644 | 0 | 196 | 1300 | 246 | 256 | 884 | 140 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 277 | 1257 | 388 | 288 | 1273 | | 743 | 2062 | 638 | 288 | 1347 | 416 |
| Arrive On Green | 0.03 | 0.08 | 0.08 | 0.08 | 0.25 | 0.00 | 0.22 | 0.40 | 0.40 | 0.08 | 0.26 | 0.26 |
| Sat Flow, veh/h | 3456 | 5106 | 1575 | 3456 | 5106 | 1585 | 3456 | 5106 | 1579 | 3456 | 5106 | 1576 |
| Grp Volume(v), veh/h | 218 | 1030 | 173 | 257 | 644 | 0 | 196 | 1300 | 246 | 256 | 884 | 140 |
| Grp Sat Flow(s),veh/h/ln | 1728 | 1702 | 1575 | 1728 | 1702 | 1585 | 1728 | 1702 | 1579 | 1728 | 1702 | 1576 |
| Q Serve(g_s), s | 7.5 | 23.8 | 7.3 | 8.8 | 13.0 | 0.0 | 5.7 | 24.4 | 13.2 | 8.8 | 18.5 | 6.6 |
| Cycle Q Clear(g_c), s | 7.5 | 23.8 | 7.3 | 8.8 | 13.0 | 0.0 | 5.7 | 24.4 | 13.2 | 8.8 | 18.5 | 6.6 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 277 | 1257 | 388 | 288 | 1273 | | 743 | 2062 | 638 | 288 | 1347 | 416 |
| V/C Ratio(X) | 0.79 | 0.82 | 0.45 | 0.89 | 0.51 | | 0.26 | 0.63 | 0.39 | 0.89 | 0.66 | 0.34 |
| Avail Cap(c_a), veh/h | 374 | 1447 | 446 | 288 | 1319 | | 743 | 2062 | 638 | 288 | 1787 | 552 |
| HCM Platoon Ratio | 0.33 | 0.33 | 0.33 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 57.4 | 52.5 | 16.0 | 54.5 | 38.7 | 0.0 | 39.2 | 28.6 | 25.3 | 54.5 | 39.3 | 21.0 |
| Incr Delay (d2), s/veh | 5.3 | 2.9 | 0.3 | 26.8 | 0.1 | 0.0 | 0.1 | 1.5 | 1.8 | 26.1 | 2.5 | 2.2 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 3.6 | 11.2 | 2.8 | 4.9 | 5.4 | 0.0 | 2.4 | 9.9 | 5.2 | 4.8 | 7.9 | 3.5 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 62.7 | 55.4 | 16.3 | 81.2 | 38.8 | 0.0 | 39.3 | 30.1 | 27.0 | 80.6 | 41.8 | 23.2 |
| LnGrp LOS | E | E | B | F | D | | D | C | C | F | D | C |
| Approach Vol, veh/h | | 1421 | | | 901 | A | | 1742 | | | 1280 | |
| Approach Delay, s/veh | | 51.8 | | | 50.9 | | | 30.7 | | | 47.5 | |
| Approach LOS | | D | | | D | | | C | | | D | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 15.0 | 54.5 | 15.0 | 35.5 | 31.8 | 37.7 | 14.6 | 35.9 |
| Change Period (Y+Rc), s | 5.0 | 6.0 | 5.0 | 6.0 | 6.0 | * 6 | 5.0 | 6.0 |
| Max Green Setting (Gmax), s | 10.0 | 44.0 | 10.0 | 34.0 | 12.0 | * 42 | 13.0 | 31.0 |
| Max Q Clear Time (g_c+I1), s | 10.8 | 26.4 | 10.8 | 25.8 | 7.7 | 20.5 | 9.5 | 15.0 |
| Green Ext Time (p_c), s | 0.0 | 13.5 | 0.0 | 3.4 | 0.1 | 11.2 | 0.1 | 2.7 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 43.7 |
| HCM 6th LOS | D |

Notes

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

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

| 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 | 0 | 0 | 84 | 0 | 0 | 9 | 0 | 1687 | 2 | 0 | 1183 | 78 |
| Future Vol, veh/h | 0 | 0 | 84 | 0 | 0 | 9 | 0 | 1687 | 2 | 0 | 1183 | 78 |
| 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 | - | - | 0 | - | - | 0 | - | - | - | - | - | 0 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 | 100 | 100 | 92 | 92 | 100 | 100 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 0 | 91 | 0 | 0 | 10 | 0 | 1687 | 2 | 0 | 1183 | 78 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | - | - | 592 | - | - | 845 | - | 0 | 0 | - | - | 0 |
| Stage 1 | - | - | - | - | - | - | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - | - | - | - | - | - | - |
| Critical Hdwy | - | - | 7.14 | - | - | 7.14 | - | - | - | - | - | - |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | - | - | - | - | - | - |
| Follow-up Hdwy | - | - | 3.92 | - | - | 3.92 | - | - | - | - | - | - |
| Pot Cap-1 Maneuver | 0 | 0 | *653 | 0 | 0 | 263 | 0 | - | - | 0 | - | - |
| Stage 1 | 0 | 0 | - | 0 | 0 | - | 0 | - | - | 0 | - | - |
| Stage 2 | 0 | 0 | - | 0 | 0 | - | 0 | - | - | 0 | - | - |
| Platoon blocked, % | | | 1 | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | - | - | *653 | - | - | 263 | - | - | - | - | - | - |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | - | - | - | - | - | - |
| Stage 1 | - | - | - | - | - | - | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 11.4 | 19.2 | 0 | 0 |
| HCM LOS | B | C | | |

| Minor Lane/Major Mvmt | NBT | NBR | EBLn1 | WBLn1 | SBT | SBR |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 653 | 263 | - | - |
| HCM Lane V/C Ratio | - | - | 0.14 | 0.037 | - | - |
| HCM Control Delay (s) | - | - | 11.4 | 19.2 | - | - |
| HCM Lane LOS | - | - | B | C | - | - |
| HCM 95th %tile Q(veh) | - | - | 0.5 | 0.1 | - | - |

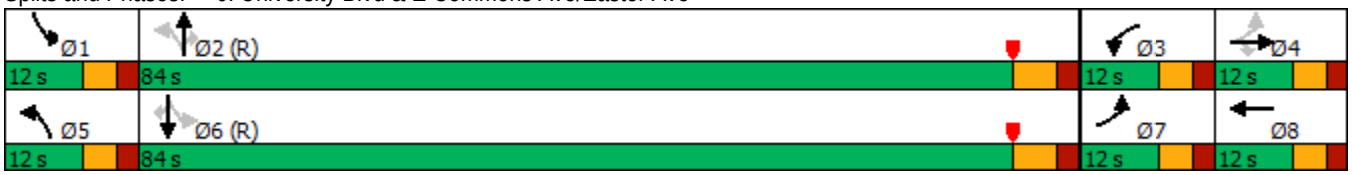
Notes

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

| Lane Group | EBL | EBT | EBR | WBL | WBT | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | |
| Traffic Volume (vph) | 125 | 9 | 63 | 54 | 19 | 235 | 1517 | 31 | 10 | 1164 | 78 |
| Future Volume (vph) | 125 | 9 | 63 | 54 | 19 | 235 | 1517 | 31 | 10 | 1164 | 78 |
| Turn Type | pm+pt | NA | Perm | Prot | NA | pm+pt | NA | Perm | pm+pt | NA | Perm |
| Protected Phases | 7 | 4 | | 3 | 8 | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | 4 | | | 2 | | 2 | 6 | | 6 |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | 5 | 2 | 2 | 1 | 6 | 6 |
| Switch Phase | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 3.0 | 4.0 | 3.0 | 3.0 | 5.0 | 5.0 | 3.0 | 5.0 | 5.0 |
| Minimum Split (s) | 8.0 | 35.0 | 35.0 | 9.0 | 32.0 | 8.0 | 24.0 | 24.0 | 8.0 | 29.0 | 29.0 |
| Total Split (s) | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 84.0 | 84.0 | 12.0 | 84.0 | 84.0 |
| Total Split (%) | 10.0% | 10.0% | 10.0% | 10.0% | 10.0% | 10.0% | 70.0% | 70.0% | 10.0% | 70.0% | 70.0% |
| Yellow Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 |
| 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) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 6.0 | 6.0 | 5.0 | 6.0 | 6.0 |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lead | Lag | Lag | Lead | Lag | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | None | None | None | None | None | C-Min | C-Min | None | C-Min | C-Min |
| Act Effct Green (s) | 11.8 | 6.2 | 6.2 | 7.1 | 6.1 | 93.3 | 90.9 | 90.9 | 86.6 | 80.9 | 80.9 |
| Actuated g/C Ratio | 0.10 | 0.05 | 0.05 | 0.06 | 0.05 | 0.78 | 0.76 | 0.76 | 0.72 | 0.67 | 0.67 |
| v/c Ratio | 0.50 | 0.10 | 0.37 | 0.60 | 0.50 | 0.91 | 0.65 | 0.03 | 0.06 | 0.56 | 0.08 |
| Control Delay | 52.1 | 56.2 | 7.5 | 78.2 | 40.4 | 48.1 | 6.7 | 0.0 | 3.2 | 8.9 | 0.4 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 52.1 | 56.2 | 7.5 | 78.2 | 40.4 | 48.1 | 6.8 | 0.0 | 3.2 | 8.9 | 0.4 |
| LOS | D | E | A | E | D | D | A | A | A | A | A |
| Approach Delay | | 38.1 | | | 59.6 | | 12.1 | | | 8.3 | |
| Approach LOS | | D | | | E | | B | | | A | |

| Intersection Summary | |
|---|---|
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 50 (42%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow | |
| Natural Cycle: 105 | |
| Control Type: Actuated-Coordinated | |
| Maximum v/c Ratio: 0.91 | |
| Intersection Signal Delay: 13.7 | Intersection LOS: B |
| Intersection Capacity Utilization 71.2% | ICU Level of Service C |
| Analysis Period (min) 15 | |

Splits and Phases: 6: University Blvd & E Commons Ave/Easter Ave



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 125 | 9 | 63 | 54 | 19 | 33 | 235 | 1517 | 31 | 10 | 1164 | 78 |
| Future Volume (veh/h) | 125 | 9 | 63 | 54 | 19 | 33 | 235 | 1517 | 31 | 10 | 1164 | 78 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 0.94 | | 1.00 | 1.00 | | 0.94 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 144 | 10 | 0 | 62 | 22 | 38 | 270 | 1744 | 36 | 11 | 1338 | 0 |
| Peak Hour Factor | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 354 | 121 | | 80 | 32 | 56 | 348 | 2516 | 1118 | 249 | 2336 | |
| Arrive On Green | 0.06 | 0.06 | 0.00 | 0.04 | 0.05 | 0.05 | 0.12 | 1.00 | 1.00 | 0.01 | 0.66 | 0.00 |
| Sat Flow, veh/h | 3456 | 1870 | 1585 | 1781 | 590 | 1019 | 1781 | 3554 | 1579 | 1781 | 3554 | 1585 |
| Grp Volume(v), veh/h | 144 | 10 | 0 | 62 | 0 | 60 | 270 | 1744 | 36 | 11 | 1338 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1728 | 1870 | 1585 | 1781 | 0 | 1609 | 1781 | 1777 | 1579 | 1781 | 1777 | 1585 |
| Q Serve(g_s), s | 4.6 | 0.6 | 0.0 | 4.1 | 0.0 | 4.4 | 6.6 | 0.0 | 0.0 | 0.2 | 24.8 | 0.0 |
| Cycle Q Clear(g_c), s | 4.6 | 0.6 | 0.0 | 4.1 | 0.0 | 4.4 | 6.6 | 0.0 | 0.0 | 0.2 | 24.8 | 0.0 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.63 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 354 | 121 | | 80 | 0 | 88 | 348 | 2516 | 1118 | 249 | 2336 | |
| V/C Ratio(X) | 0.41 | 0.08 | | 0.78 | 0.00 | 0.68 | 0.78 | 0.69 | 0.03 | 0.04 | 0.57 | |
| Avail Cap(c_a), veh/h | 365 | 121 | | 104 | 0 | 94 | 348 | 2516 | 1118 | 339 | 2336 | |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 2.00 | 2.00 | 2.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 49.7 | 52.8 | 0.0 | 56.7 | 0.0 | 55.7 | 12.3 | 0.0 | 0.0 | 6.8 | 11.3 | 0.0 |
| Incr Delay (d2), s/veh | 0.3 | 0.1 | 0.0 | 23.6 | 0.0 | 13.7 | 9.6 | 1.6 | 0.1 | 0.0 | 1.0 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 2.0 | 0.3 | 0.0 | 2.4 | 0.0 | 2.1 | 3.7 | 0.6 | 0.0 | 0.1 | 9.0 | 0.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 50.0 | 52.9 | 0.0 | 80.4 | 0.0 | 69.4 | 21.9 | 1.6 | 0.1 | 6.8 | 12.3 | 0.0 |
| LnGrp LOS | D | D | | F | A | E | C | A | A | A | B | |
| Approach Vol, veh/h | | 154 | A | | 122 | | | 2050 | | | 1349 | A |
| Approach Delay, s/veh | | 50.2 | | | 75.0 | | | 4.2 | | | 12.3 | |
| Approach LOS | | D | | | E | | | A | | | B | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 5.9 | 90.9 | 10.4 | 12.8 | 12.0 | 84.9 | 11.6 | 11.5 |
| Change Period (Y+Rc), s | 5.0 | 6.0 | 5.0 | 5.0 | 5.0 | 6.0 | 5.0 | 5.0 |
| Max Green Setting (Gmax), s | 7.0 | 78.0 | 7.0 | 7.0 | 7.0 | 78.0 | 7.0 | 7.0 |
| Max Q Clear Time (g_c+I1), s | 2.2 | 2.0 | 6.1 | 2.6 | 8.6 | 26.8 | 6.6 | 6.4 |
| Green Ext Time (p_c), s | 0.0 | 50.6 | 0.0 | 0.0 | 0.0 | 27.2 | 0.0 | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 11.5 |
| HCM 6th LOS | B |

**Notes**

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

Unsignalized Delay for [EBR, SBR] is excluded from calculations of the approach delay and intersection delay.

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.2 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | ↱ | | ↑↑ | ↑↑ | ↱ |
| Traffic Vol, veh/h | 0 | 40 | 0 | 1795 | 1251 | 29 |
| Future Vol, veh/h | 0 | 40 | 0 | 1795 | 1251 | 29 |
| 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 | 92 | 92 | 100 | 100 | 100 | 100 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 43 | 0 | 1795 | 1251 | 29 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | - | 626 | - | 0 | - | 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 | *567 | 0 | - | - | - |
| Stage 1 | 0 | - | 0 | - | - | - |
| Stage 2 | 0 | - | 0 | - | - | - |
| Platoon blocked, % | | 1 | | - | - | - |
| Mov Cap-1 Maneuver | - | *567 | - | - | - | - |
| Mov Cap-2 Maneuver | - | - | - | - | - | - |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 11.9 | 0 | 0 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|
| Capacity (veh/h) | - | 567 | - | - |
| HCM Lane V/C Ratio | - | 0.077 | - | - |
| HCM Control Delay (s) | - | 11.9 | - | - |
| HCM Lane LOS | - | B | - | - |
| HCM 95th %tile Q(veh) | - | 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 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | |
| Traffic Volume (vph) | 88 | 22 | 95 | 26 | 34 | 68 | 173 | 1640 | 31 | 1224 | 37 |
| Future Volume (vph) | 88 | 22 | 95 | 26 | 34 | 68 | 173 | 1640 | 31 | 1224 | 37 |
| Turn Type | Perm | NA | Perm | Perm | NA | Perm | pm+pt | NA | Perm | NA | Perm |
| Protected Phases | | 4 | | | 8 | | 5 | 2 | | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | 8 | 2 | | 6 | | 6 |
| Detector Phase | 4 | 4 | 4 | 8 | 8 | 8 | 5 | 2 | 6 | 6 | 6 |
| Switch Phase | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Minimum Split (s) | 36.0 | 36.0 | 36.0 | 40.0 | 40.0 | 40.0 | 8.0 | 29.0 | 32.0 | 32.0 | 32.0 |
| Total Split (s) | 23.0 | 23.0 | 23.0 | 23.0 | 23.0 | 23.0 | 12.0 | 97.0 | 85.0 | 85.0 | 85.0 |
| Total Split (%) | 19.2% | 19.2% | 19.2% | 19.2% | 19.2% | 19.2% | 10.0% | 80.8% | 70.8% | 70.8% | 70.8% |
| Yellow Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| 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) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 6.0 | 6.0 | 6.0 | 6.0 |
| Lead/Lag | | | | | | | Lead | | Lag | Lag | Lag |
| Lead-Lag Optimize? | | | | | | | Yes | | Yes | Yes | Yes |
| Recall Mode | None | None | None | None | None | None | None | C-Min | C-Min | C-Min | C-Min |
| Act Effct Green (s) | 12.9 | 12.9 | 12.9 | 12.9 | 12.9 | 12.9 | 97.1 | 96.1 | 84.7 | 84.7 | 84.7 |
| Actuated g/C Ratio | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.81 | 0.80 | 0.71 | 0.71 | 0.71 |
| v/c Ratio | 0.69 | 0.13 | 0.41 | 0.20 | 0.19 | 0.33 | 0.64 | 0.66 | 0.26 | 0.55 | 0.04 |
| Control Delay | 74.1 | 47.6 | 13.5 | 49.9 | 49.0 | 15.2 | 14.0 | 6.9 | 7.8 | 5.8 | 0.1 |
| 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 | 74.1 | 47.6 | 13.5 | 49.9 | 49.0 | 15.2 | 14.0 | 6.9 | 7.8 | 5.8 | 0.1 |
| LOS | E | D | B | D | D | B | B | A | A | A | A |
| Approach Delay | | 43.2 | | | 31.2 | | | 7.6 | | 5.7 | |
| Approach LOS | | D | | | C | | | A | | A | |

| Intersection Summary | |
|---|---|
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 66 (55%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow | |
| Natural Cycle: 90 | |
| Control Type: Actuated-Coordinated | |
| Maximum v/c Ratio: 0.69 | |
| Intersection Signal Delay: 9.9 | Intersection LOS: A |
| Intersection Capacity Utilization 77.4% | ICU Level of Service D |
| Analysis Period (min) 15 | |

Splits and Phases: 8: University Blvd & Easter Pl

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 88 | 22 | 95 | 26 | 34 | 68 | 173 | 1640 | 24 | 31 | 1224 | 37 |
| Future Volume (veh/h) | 88 | 22 | 95 | 26 | 34 | 68 | 173 | 1640 | 24 | 31 | 1224 | 37 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 0.98 | | 0.98 | 0.98 | | 0.98 | 1.00 | | 1.00 | 1.00 | | 0.99 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 99 | 25 | 107 | 29 | 38 | 76 | 194 | 1843 | 27 | 35 | 1375 | 42 |
| Peak Hour Factor | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 191 | 230 | 190 | 197 | 230 | 190 | 406 | 2816 | 41 | 196 | 2480 | 1100 |
| Arrive On Green | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 | 0.05 | 0.79 | 0.79 | 1.00 | 1.00 | 1.00 |
| Sat Flow, veh/h | 1256 | 1870 | 1550 | 1236 | 1870 | 1550 | 1781 | 3585 | 52 | 244 | 3554 | 1577 |
| Grp Volume(v), veh/h | 99 | 25 | 107 | 29 | 38 | 76 | 194 | 911 | 959 | 35 | 1375 | 42 |
| Grp Sat Flow(s),veh/h/ln | 1256 | 1870 | 1550 | 1236 | 1870 | 1550 | 1781 | 1777 | 1861 | 244 | 1777 | 1577 |
| Q Serve(g_s), s | 9.2 | 1.4 | 7.8 | 2.6 | 2.2 | 5.4 | 3.5 | 27.1 | 27.4 | 4.3 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 11.4 | 1.4 | 7.8 | 4.0 | 2.2 | 5.4 | 3.5 | 27.1 | 27.4 | 21.2 | 0.0 | 0.0 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.03 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 191 | 230 | 190 | 197 | 230 | 190 | 406 | 1396 | 1462 | 196 | 2480 | 1100 |
| V/C Ratio(X) | 0.52 | 0.11 | 0.56 | 0.15 | 0.17 | 0.40 | 0.48 | 0.65 | 0.66 | 0.18 | 0.55 | 0.04 |
| Avail Cap(c_a), veh/h | 226 | 281 | 233 | 231 | 281 | 233 | 428 | 1396 | 1462 | 196 | 2480 | 1100 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 2.00 | 2.00 | 2.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 52.2 | 46.8 | 49.6 | 48.6 | 47.1 | 48.5 | 3.9 | 5.7 | 5.7 | 2.1 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 0.8 | 0.1 | 1.0 | 0.1 | 0.1 | 0.5 | 0.3 | 2.4 | 2.3 | 2.0 | 0.9 | 0.1 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 3.0 | 0.7 | 3.1 | 0.8 | 1.0 | 2.2 | 1.0 | 7.6 | 8.1 | 0.2 | 0.3 | 0.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 53.0 | 46.9 | 50.6 | 48.7 | 47.2 | 49.0 | 4.2 | 8.1 | 8.0 | 4.1 | 0.9 | 0.1 |
| LnGrp LOS | D | D | D | D | D | D | A | A | A | A | A | A |
| Approach Vol, veh/h | | 231 | | | 143 | | | 2064 | | | 1452 | |
| Approach Delay, s/veh | | 51.2 | | | 48.5 | | | 7.7 | | | 1.0 | |
| Approach LOS | | D | | | D | | | A | | | A | |

| Timer - Assigned Phs | | 2 | | 4 | 5 | 6 | | 8 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | | 100.3 | | 19.7 | 10.5 | 89.7 | | 19.7 | | | | |
| Change Period (Y+Rc), s | | 6.0 | | 5.0 | 5.0 | 6.0 | | 5.0 | | | | |
| Max Green Setting (Gmax), s | | 91.0 | | 18.0 | 7.0 | 79.0 | | 18.0 | | | | |
| Max Q Clear Time (g_c+I1), s | | 29.4 | | 13.4 | 5.5 | 23.2 | | 7.4 | | | | |
| Green Ext Time (p_c), s | | 46.7 | | 0.2 | 0.0 | 32.7 | | 0.2 | | | | |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 9.3 |
| HCM 6th LOS | A |

Notes

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

| Intersection | |
|---|---|
| Int Delay, s/veh | 2.9 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 19 | 120 | 3 | 5 | 177 | 67 | 10 | 2 | 15 | 68 | 2 | 6 |
| Future Vol, veh/h | 19 | 120 | 3 | 5 | 177 | 67 | 10 | 2 | 15 | 68 | 2 | 6 |
| 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 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 21 | 130 | 3 | 5 | 192 | 73 | 11 | 2 | 16 | 74 | 2 | 7 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 265 | 0 | 0 | 133 | 0 | 0 | 417 | 449 | 132 | 422 | 414 | 229 |
| Stage 1 | - | - | - | - | - | - | 174 | 174 | - | 239 | 239 | - |
| Stage 2 | - | - | - | - | - | - | 243 | 275 | - | 183 | 175 | - |
| Critical Hdwy | 4.12 | - | - | 4.12 | - | - | 7.12 | 6.52 | 6.22 | 7.12 | 6.52 | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.12 | 5.52 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.12 | 5.52 | - |
| Follow-up Hdwy | 2.218 | - | - | 2.218 | - | - | 3.518 | 4.018 | 3.318 | 3.518 | 4.018 | 3.318 |
| Pot Cap-1 Maneuver | 1299 | - | - | 1452 | - | - | 546 | 505 | 917 | 542 | 529 | 810 |
| Stage 1 | - | - | - | - | - | - | 828 | 755 | - | 764 | 708 | - |
| Stage 2 | - | - | - | - | - | - | 761 | 683 | - | 819 | 754 | - |
| Platoon blocked, % | | - | - | | - | - | | | | | | |
| Mov Cap-1 Maneuver | 1299 | - | - | 1452 | - | - | 531 | 494 | 917 | 522 | 518 | 810 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 531 | 494 | - | 522 | 518 | - |
| Stage 1 | - | - | - | - | - | - | 814 | 742 | - | 751 | 705 | - |
| Stage 2 | - | - | - | - | - | - | 750 | 680 | - | 788 | 741 | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 1 | 0.2 | 10.5 | 12.9 |
| HCM LOS | | | B | B |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 688 | 1299 | - | - | 1452 | - | - | 537 |
| HCM Lane V/C Ratio | 0.043 | 0.016 | - | - | 0.004 | - | - | 0.154 |
| HCM Control Delay (s) | 10.5 | 7.8 | 0 | - | 7.5 | 0 | - | 12.9 |
| HCM Lane LOS | B | A | A | - | A | A | - | B |
| HCM 95th %tile Q(veh) | 0.1 | 0 | - | - | 0 | - | - | 0.5 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 1.3 |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 20 | 122 | 127 | 66 | 20 | 13 |
| Future Vol, veh/h | 20 | 122 | 127 | 66 | 20 | 13 |
| 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 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 22 | 133 | 138 | 72 | 22 | 14 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 210 | 0 | - | 0 | 351 | 174 |
| Stage 1 | - | - | - | - | 174 | - |
| Stage 2 | - | - | - | - | 177 | - |
| Critical Hdwy | 4.12 | - | - | - | 6.42 | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.42 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.42 | - |
| Follow-up Hdwy | 2.218 | - | - | - | 3.518 | 3.318 |
| Pot Cap-1 Maneuver | 1361 | - | - | - | 646 | 869 |
| Stage 1 | - | - | - | - | 856 | - |
| Stage 2 | - | - | - | - | 854 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | 1361 | - | - | - | 635 | 869 |
| Mov Cap-2 Maneuver | - | - | - | - | 635 | - |
| Stage 1 | - | - | - | - | 841 | - |
| Stage 2 | - | - | - | - | 854 | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 1.1 | 0 | 10.3 |
| HCM LOS | | | B |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|
| Capacity (veh/h) | 1361 | - | - | - | 710 |
| HCM Lane V/C Ratio | 0.016 | - | - | - | 0.051 |
| HCM Control Delay (s) | 7.7 | 0 | - | - | 10.3 |
| HCM Lane LOS | A | A | - | - | B |
| HCM 95th %tile Q(veh) | 0 | - | - | - | 0.2 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 1.4 |

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 128 | 5 | 3 | 137 | 26 | 14 |
| Future Vol, veh/h | 128 | 5 | 3 | 137 | 26 | 14 |
| 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 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 139 | 5 | 3 | 149 | 28 | 15 |

| Major/Minor | Major1 | | Major2 | | Minor1 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 0 | 0 | 144 | 0 | 297 | 142 |
| Stage 1 | - | - | - | - | 142 | - |
| Stage 2 | - | - | - | - | 155 | - |
| Critical Hdwy | - | - | 4.12 | - | 6.42 | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.42 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.42 | - |
| Follow-up Hdwy | - | - | 2.218 | - | 3.518 | 3.318 |
| Pot Cap-1 Maneuver | - | - | 1438 | - | 694 | 906 |
| Stage 1 | - | - | - | - | 885 | - |
| Stage 2 | - | - | - | - | 873 | - |
| Platoon blocked, % | - | - | | - | | |
| Mov Cap-1 Maneuver | - | - | 1438 | - | 693 | 906 |
| Mov Cap-2 Maneuver | - | - | - | - | 693 | - |
| Stage 1 | - | - | - | - | 885 | - |
| Stage 2 | - | - | - | - | 871 | - |

| Approach | EB | WB | NB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 0.2 | 10.1 |
| HCM LOS | | | B |

| Minor Lane/Major Mvmt | NBLn1 | EBT | EBR | WBL | WBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | 755 | - | - | 1438 | - |
| HCM Lane V/C Ratio | 0.058 | - | - | 0.002 | - |
| HCM Control Delay (s) | 10.1 | - | - | 7.5 | 0 |
| HCM Lane LOS | B | - | - | A | A |
| HCM 95th %tile Q(veh) | 0.2 | - | - | 0 | - |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 7.9 |
| Intersection LOS | A |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 22 | 102 | 107 | 53 | 30 | 12 |
| Future Vol, veh/h | 22 | 102 | 107 | 53 | 30 | 12 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 24 | 111 | 116 | 58 | 33 | 13 |
| Number of Lanes | 0 | 1 | 1 | 0 | 1 | 0 |

| Approach | EB | WB | SB |
|---|---|---|---|
| Opposing Approach | WB | EB | |
| Opposing Lanes | 1 | 1 | 0 |
| Conflicting Approach Left | SB | | WB |
| Conflicting Lanes Left | 1 | 0 | 1 |
| Conflicting Approach Right | | SB | EB |
| Conflicting Lanes Right | 0 | 1 | 1 |
| HCM Control Delay | 8 | 7.9 | 7.8 |
| HCM LOS | A | A | A |

| Lane | EBLn1 | WBLn1 | SBLn1 |
|---|---|---|---|
| Vol Left, % | 18% | 0% | 71% |
| Vol Thru, % | 82% | 67% | 0% |
| Vol Right, % | 0% | 33% | 29% |
| Sign Control | Stop | Stop | Stop |
| Traffic Vol by Lane | 124 | 160 | 42 |
| LT Vol | 22 | 0 | 30 |
| Through Vol | 102 | 107 | 0 |
| RT Vol | 0 | 53 | 12 |
| Lane Flow Rate | 135 | 174 | 46 |
| Geometry Grp | 1 | 1 | 1 |
| Degree of Util (X) | 0.157 | 0.189 | 0.058 |
| Departure Headway (Hd) | 4.182 | 3.918 | 4.561 |
| Convergence, Y/N | Yes | Yes | Yes |
| Cap | 850 | 906 | 790 |
| Service Time | 2.246 | 1.984 | 2.561 |
| HCM Lane V/C Ratio | 0.159 | 0.192 | 0.058 |
| HCM Control Delay | 8 | 7.9 | 7.8 |
| HCM Lane LOS | A | A | A |
| HCM 95th-tile Q | 0.6 | 0.7 | 0.2 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 4.1 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 4 | 56 | 68 | 8 | 48 | 38 |
| Future Vol, veh/h | 4 | 56 | 68 | 8 | 48 | 38 |
| 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 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 4 | 61 | 74 | 9 | 52 | 41 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 224 | 79 | 0 | 0 | 83 | 0 |
| Stage 1 | 79 | - | - | - | - | - |
| Stage 2 | 145 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | - | - | 4.12 | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | - | - | 2.218 | - |
| Pot Cap-1 Maneuver | 764 | 981 | - | - | 1514 | - |
| Stage 1 | 944 | - | - | - | - | - |
| Stage 2 | 882 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 737 | 981 | - | - | 1514 | - |
| Mov Cap-2 Maneuver | 737 | - | - | - | - | - |
| Stage 1 | 944 | - | - | - | - | - |
| Stage 2 | 851 | - | - | - | - | - |

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

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 960 | 1514 | - |
| HCM Lane V/C Ratio | - | - | 0.068 | 0.034 | - |
| HCM Control Delay (s) | - | - | 9 | 7.5 | 0 |
| HCM Lane LOS | - | - | A | A | A |
| HCM 95th %tile Q(veh) | - | - | 0.2 | 0.1 | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 2.7 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 24 | 10 | 4 | 2 | 4 | 4 | 1 | 121 | 2 | 39 | 81 | 14 |
| Future Vol, veh/h | 24 | 10 | 4 | 2 | 4 | 4 | 1 | 121 | 2 | 39 | 81 | 14 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 26 | 11 | 4 | 2 | 4 | 4 | 1 | 132 | 2 | 42 | 88 | 15 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 319 | 316 | 96 | 322 | 322 | 133 | 103 | 0 | 0 | 134 | 0 | 0 |
| Stage 1 | 180 | 180 | - | 135 | 135 | - | - | - | - | - | - | - |
| Stage 2 | 139 | 136 | - | 187 | 187 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.12 | 6.52 | 6.22 | 7.12 | 6.52 | 6.22 | 4.12 | - | - | 4.12 | - | - |
| Critical Hdwy Stg 1 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 4.018 | 3.318 | 3.518 | 4.018 | 3.318 | 2.218 | - | - | 2.218 | - | - |
| Pot Cap-1 Maneuver | 634 | 600 | 960 | 631 | 595 | 916 | 1489 | - | - | 1451 | - | - |
| Stage 1 | 822 | 750 | - | 868 | 785 | - | - | - | - | - | - | - |
| Stage 2 | 864 | 784 | - | 815 | 745 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | 612 | 581 | 960 | 604 | 576 | 916 | 1489 | - | - | 1451 | - | - |
| Mov Cap-2 Maneuver | 612 | 581 | - | 604 | 576 | - | - | - | - | - | - | - |
| Stage 1 | 821 | 727 | - | 867 | 784 | - | - | - | - | - | - | - |
| Stage 2 | 854 | 783 | - | 774 | 722 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 11.1 | 10.3 | 0.1 | 2.2 |
| HCM LOS | B | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 1489 | - | - | 627 | 684 | 1451 | - | - |
| HCM Lane V/C Ratio | 0.001 | - | - | 0.066 | 0.016 | 0.029 | - | - |
| HCM Control Delay (s) | 7.4 | 0 | - | 11.1 | 10.3 | 7.6 | 0 | - |
| HCM Lane LOS | A | A | - | B | B | A | A | - |
| HCM 95th %tile Q(veh) | 0 | - | - | 0.2 | 0 | 0.1 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 1.9 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 22 | 24 | 116 | 33 | 22 | 110 |
| Future Vol, veh/h | 22 | 24 | 116 | 33 | 22 | 110 |
| 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 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 24 | 26 | 126 | 36 | 24 | 120 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 312 | 144 | 0 | 0 | 162 | 0 |
| Stage 1 | 144 | - | - | - | - | - |
| Stage 2 | 168 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | - | - | 4.12 | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | - | - | 2.218 | - |
| Pot Cap-1 Maneuver | 681 | 903 | - | - | 1417 | - |
| Stage 1 | 883 | - | - | - | - | - |
| Stage 2 | 862 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 669 | 903 | - | - | 1417 | - |
| Mov Cap-2 Maneuver | 669 | - | - | - | - | - |
| Stage 1 | 883 | - | - | - | - | - |
| Stage 2 | 846 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 10 | 0 | 1.3 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 774 | 1417 | - |
| HCM Lane V/C Ratio | - | - | 0.065 | 0.017 | - |
| HCM Control Delay (s) | - | - | 10 | 7.6 | 0 |
| HCM Lane LOS | - | - | B | A | A |
| HCM 95th %tile Q(veh) | - | - | 0.2 | 0.1 | - |

| Lane Group | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 1061 | 114 | 46 | 1554 | 176 | 79 |
| Future Volume (vph) | 1061 | 114 | 46 | 1554 | 176 | 79 |
| Turn Type | NA | Perm | pm+pt | NA | Prot | Perm |
| Protected Phases | 2 | | 1 | 6 | 8 | |
| Permitted Phases | | 2 | 6 | | | 8 |
| Detector Phase | 2 | 2 | 1 | 6 | 8 | 8 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 17.0 | 17.0 | 3.0 | 17.0 | 5.0 | 5.0 |
| Minimum Split (s) | 23.0 | 23.0 | 7.0 | 23.0 | 30.0 | 30.0 |
| Total Split (s) | 76.0 | 76.0 | 13.0 | 89.0 | 31.0 | 31.0 |
| Total Split (%) | 63.3% | 63.3% | 10.8% | 74.2% | 25.8% | 25.8% |
| Yellow Time (s) | 4.0 | 4.0 | 3.0 | 4.0 | 3.0 | 3.0 |
| All-Red Time (s) | 2.0 | 2.0 | 1.0 | 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) | 6.0 | 6.0 | 4.0 | 6.0 | 5.0 | 5.0 |
| Lead/Lag | Lag | Lag | Lead | | | |
| Lead-Lag Optimize? | Yes | Yes | Yes | | | |
| Recall Mode | C-Min | C-Min | None | C-Min | None | None |
| Act Effct Green (s) | 84.3 | 84.3 | 93.9 | 91.9 | 17.1 | 17.1 |
| Actuated g/C Ratio | 0.70 | 0.70 | 0.78 | 0.77 | 0.14 | 0.14 |
| v/c Ratio | 0.44 | 0.11 | 0.13 | 0.42 | 0.73 | 0.28 |
| Control Delay | 9.5 | 3.8 | 4.6 | 5.7 | 64.8 | 11.3 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.3 | 0.0 | 0.0 |
| Total Delay | 9.5 | 3.8 | 4.6 | 5.9 | 64.8 | 11.3 |
| LOS | A | A | A | A | E | B |
| Approach Delay | 9.0 | | | 5.9 | 48.3 | |
| Approach LOS | A | | | A | D | |

| Intersection Summary | |
|---|---|
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 31 (26%), Referenced to phase 2:EBT and 6:WBTL, Start of 1st Green | |
| Natural Cycle: 65 | |
| Control Type: Actuated-Coordinated | |
| Maximum v/c Ratio: 0.73 | |
| Intersection Signal Delay: 10.6 | Intersection LOS: B |
| Intersection Capacity Utilization 56.6% | ICU Level of Service B |
| Analysis Period (min) 15 | |

Splits and Phases: 1: S Race St & Arapahoe Rd

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 1061 | 114 | 46 | 1554 | 176 | 79 |
| Future Volume (veh/h) | 1061 | 114 | 46 | 1554 | 176 | 79 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | | 1.00 | 1.00 | | 1.00 | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | No | | | No | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 1105 | 119 | 48 | 1619 | 183 | 82 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 2612 | 1159 | 376 | 4025 | 214 | 190 |
| Arrive On Green | 0.73 | 0.73 | 0.02 | 0.79 | 0.12 | 0.12 |
| Sat Flow, veh/h | 3647 | 1578 | 1781 | 5274 | 1781 | 1585 |
| Grp Volume(v), veh/h | 1105 | 119 | 48 | 1619 | 183 | 82 |
| Grp Sat Flow(s),veh/h/ln | 1777 | 1578 | 1781 | 1702 | 1781 | 1585 |
| Q Serve(g_s), s | 14.4 | 2.6 | 0.8 | 11.8 | 12.1 | 5.8 |
| Cycle Q Clear(g_c), s | 14.4 | 2.6 | 0.8 | 11.8 | 12.1 | 5.8 |
| Prop In Lane | | 1.00 | 1.00 | | 1.00 | 1.00 |
| Lane Grp Cap(c), veh/h | 2612 | 1159 | 376 | 4025 | 214 | 190 |
| V/C Ratio(X) | 0.42 | 0.10 | 0.13 | 0.40 | 0.86 | 0.43 |
| Avail Cap(c_a), veh/h | 2612 | 1159 | 474 | 4025 | 386 | 343 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.79 | 0.79 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 6.1 | 4.6 | 4.5 | 3.9 | 51.8 | 49.0 |
| Incr Delay (d2), s/veh | 0.5 | 0.2 | 0.0 | 0.2 | 3.8 | 0.6 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 4.6 | 0.8 | 0.2 | 3.2 | 5.6 | 2.3 |
| Unsig. Movement Delay, s/veh | | | | | | |
| LnGrp Delay(d),s/veh | 6.6 | 4.7 | 4.5 | 4.2 | 55.6 | 49.6 |
| LnGrp LOS | A | A | A | A | E | D |
| Approach Vol, veh/h | 1224 | | | 1667 | 265 | |
| Approach Delay, s/veh | 6.4 | | | 4.2 | 53.7 | |
| Approach LOS | A | | | A | D | |

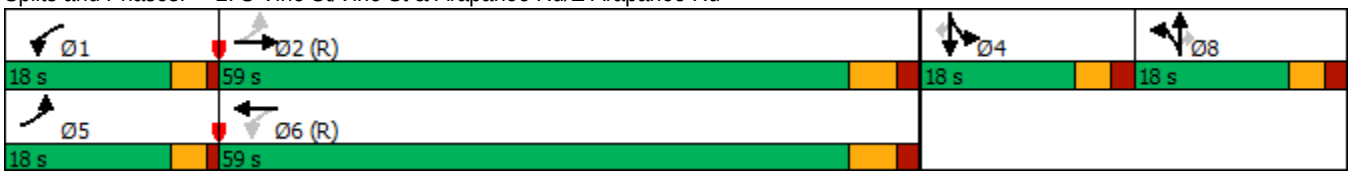
| Timer - Assigned Phs | 1 | 2 | | | | 6 | 8 |
|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 6.4 | 94.2 | | | | 100.6 | 19.4 |
| Change Period (Y+Rc), s | 4.0 | 6.0 | | | | 6.0 | 5.0 |
| Max Green Setting (Gmax), s | 9.0 | 70.0 | | | | 83.0 | 26.0 |
| Max Q Clear Time (g_c+I1), s | 2.8 | 16.4 | | | | 13.8 | 14.1 |
| Green Ext Time (p_c), s | 0.0 | 6.0 | | | | 11.1 | 0.3 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 9.2 |
| HCM 6th LOS | A |

| Lane Group | EBL | EBT | WBL | WBT | NBT | NBR | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | |
| Traffic Volume (vph) | 63 | 938 | 178 | 1406 | 25 | 155 | 15 | 32 |
| Future Volume (vph) | 63 | 938 | 178 | 1406 | 25 | 155 | 15 | 32 |
| Turn Type | pm+pt | NA | pm+pt | NA | NA | Perm | NA | Perm |
| Protected Phases | 5 | 2 | 1 | 6 | 8 | | 4 | |
| Permitted Phases | 2 | | 6 | | | 8 | | 4 |
| Detector Phase | 5 | 2 | 1 | 6 | 8 | 8 | 4 | 4 |
| Switch Phase | | | | | | | | |
| Minimum Initial (s) | 3.0 | 17.0 | 3.0 | 17.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Minimum Split (s) | 7.0 | 26.0 | 7.0 | 23.0 | 35.0 | 35.0 | 34.0 | 34.0 |
| Total Split (s) | 18.0 | 59.0 | 18.0 | 59.0 | 18.0 | 18.0 | 18.0 | 18.0 |
| Total Split (%) | 15.9% | 52.2% | 15.9% | 52.2% | 15.9% | 15.9% | 15.9% | 15.9% |
| Yellow Time (s) | 3.0 | 4.0 | 3.0 | 4.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| All-Red Time (s) | 1.0 | 2.0 | 1.0 | 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) | 4.0 | 6.0 | 4.0 | 6.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Lead/Lag | Lead | Lag | Lead | Lag | | | | |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | | | | |
| Recall Mode | None | C-Min | None | C-Min | None | None | None | None |
| Act Effct Green (s) | 67.7 | 59.6 | 74.2 | 64.4 | 13.0 | 13.0 | 11.2 | 11.2 |
| Actuated g/C Ratio | 0.60 | 0.53 | 0.66 | 0.57 | 0.12 | 0.12 | 0.10 | 0.10 |
| v/c Ratio | 0.34 | 0.43 | 0.55 | 0.59 | 0.96 | 0.51 | 0.72 | 0.13 |
| Control Delay | 12.5 | 16.9 | 13.8 | 17.3 | 104.1 | 13.1 | 71.4 | 1.1 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 12.5 | 16.9 | 13.8 | 17.3 | 104.1 | 13.1 | 71.4 | 1.1 |
| LOS | B | B | B | B | F | B | E | A |
| Approach Delay | | 16.7 | | 17.0 | 62.9 | | 56.5 | |
| Approach LOS | | B | | B | E | | E | |

| Intersection Summary | |
|---|---|
| Cycle Length: 113 | |
| Actuated Cycle Length: 113 | |
| Offset: 28 (25%), Referenced to phase 2:EBTL and 6:WBTL, Start of 1st Green | |
| Natural Cycle: 115 | |
| Control Type: Actuated-Coordinated | |
| Maximum v/c Ratio: 0.96 | |
| Intersection Signal Delay: 23.3 | Intersection LOS: C |
| Intersection Capacity Utilization 65.5% | ICU Level of Service C |
| Analysis Period (min) 15 | |

Splits and Phases: 2: S Vine St/Vine St & Arapahoe Rd/E Arapahoe Rd



# HCM 6th Signalized Intersection Summary
## 2: S Vine St/Vine St & Arapahoe Rd/E Arapahoe Rd

11/04/2019

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 63 | 938 | 139 | 178 | 1406 | 184 | 162 | 25 | 155 | 105 | 15 | 32 |
| Future Volume (veh/h) | 63 | 938 | 139 | 178 | 1406 | 184 | 162 | 25 | 155 | 105 | 15 | 32 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 0.99 | 1.00 | | 0.99 | 1.00 | | 0.98 | 1.00 | | 0.97 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 66 | 987 | 146 | 187 | 1480 | 194 | 171 | 26 | 163 | 111 | 16 | 34 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 232 | 2489 | 367 | 387 | 2679 | 351 | 179 | 27 | 178 | 143 | 21 | 140 |
| Arrive On Green | 0.03 | 0.55 | 0.55 | 0.06 | 0.59 | 0.59 | 0.12 | 0.12 | 0.12 | 0.09 | 0.09 | 0.09 |
| Sat Flow, veh/h | 1781 | 4488 | 662 | 1781 | 4565 | 598 | 1556 | 237 | 1548 | 1566 | 226 | 1538 |
| Grp Volume(v), veh/h | 66 | 748 | 385 | 187 | 1103 | 571 | 197 | 0 | 163 | 127 | 0 | 34 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1702 | 1746 | 1781 | 1702 | 1759 | 1793 | 0 | 1548 | 1792 | 0 | 1538 |
| Q Serve(g_s), s | 1.8 | 14.2 | 14.2 | 4.9 | 22.4 | 22.4 | 12.3 | 0.0 | 11.8 | 7.8 | 0.0 | 2.3 |
| Cycle Q Clear(g_c), s | 1.8 | 14.2 | 14.2 | 4.9 | 22.4 | 22.4 | 12.3 | 0.0 | 11.8 | 7.8 | 0.0 | 2.3 |
| Prop In Lane | 1.00 | | 0.38 | 1.00 | | 0.34 | 0.87 | | 1.00 | 0.87 | | 1.00 |
| Lane Grp Cap(c), veh/h | 232 | 1888 | 968 | 387 | 1998 | 1032 | 206 | 0 | 178 | 164 | 0 | 140 |
| V/C Ratio(X) | 0.28 | 0.40 | 0.40 | 0.48 | 0.55 | 0.55 | 0.96 | 0.00 | 0.92 | 0.78 | 0.00 | 0.24 |
| Avail Cap(c_a), veh/h | 399 | 1888 | 968 | 497 | 1998 | 1032 | 206 | 0 | 178 | 206 | 0 | 177 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.90 | 0.90 | 0.90 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 12.1 | 14.4 | 14.4 | 10.4 | 14.3 | 14.3 | 49.7 | 0.0 | 49.5 | 50.2 | 0.0 | 47.7 |
| Incr Delay (d2), s/veh | 0.2 | 0.6 | 1.1 | 0.3 | 1.1 | 2.1 | 49.5 | 0.0 | 43.2 | 10.2 | 0.0 | 0.3 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.7 | 5.4 | 5.7 | 1.8 | 8.4 | 8.9 | 8.4 | 0.0 | 6.7 | 4.0 | 0.0 | 0.9 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 12.4 | 14.9 | 15.5 | 10.7 | 15.4 | 16.4 | 99.2 | 0.0 | 92.7 | 60.4 | 0.0 | 48.0 |
| LnGrp LOS | B | B | B | B | B | B | F | A | F | E | A | D |
| Approach Vol, veh/h | | 1199 | | | 1861 | | | 360 | | | 161 | |
| Approach Delay, s/veh | | 15.0 | | | 15.2 | | | 96.2 | | | 57.8 | |
| Approach LOS | | B | | | B | | | F | | | E | |

| Timer - Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 11.0 | 68.7 | | 15.3 | 7.4 | 72.3 | | 18.0 |
| Change Period (Y+Rc), s | 4.0 | 6.0 | | 5.0 | 4.0 | 6.0 | | 5.0 |
| Max Green Setting (Gmax), s | 14.0 | 53.0 | | 13.0 | 14.0 | 53.0 | | 13.0 |
| Max Q Clear Time (g_c+I1), s | 6.9 | 16.2 | | 9.8 | 3.8 | 24.4 | | 14.3 |
| Green Ext Time (p_c), s | 0.1 | 5.6 | | 0.1 | 0.0 | 9.4 | | 0.0 |

| Intersection Summary | | |
|---|---|---|
| HCM 6th Ctrl Delay | | 25.2 |
| HCM 6th LOS | | C |

**Notes**

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

| Intersection | |
|---|---|
| Int Delay, s/veh | 1.3 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 27 | 1131 | 40 | 83 | 1689 | 7 | 0 | 0 | 175 | 0 | 0 | 78 |
| Future Vol, veh/h | 27 | 1131 | 40 | 83 | 1689 | 7 | 0 | 0 | 175 | 0 | 0 | 78 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | 150 | - | 0 | 100 | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 28 | 1166 | 41 | 86 | 1741 | 7 | 0 | 0 | 180 | 0 | 0 | 80 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 1748 | 0 | 0 | 1207 | 0 | 0 | - | 3142 | 583 | - | 3180 | 874 |
| Stage 1 | - | - | - | - | - | - | - | 1222 | - | - | 1917 | - |
| Stage 2 | - | - | - | - | - | - | - | 1920 | - | - | 1263 | - |
| Critical Hdwy | 5.34 | - | - | 5.34 | - | - | - | 6.54 | 7.14 | - | 6.54 | 7.14 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | - | 5.54 | - | - | 5.54 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | - | 5.54 | - | - | 5.54 | - |
| Follow-up Hdwy | 3.12 | - | - | 3.12 | - | - | - | 4.02 | 3.92 | - | 4.02 | 3.92 |
| Pot Cap-1 Maneuver | *655 | - | - | *827 | - | - | 0 | *11 | *658 | 0 | *10 | *521 |
| Stage 1 | - | - | - | - | - | - | 0 | *642 | - | 0 | *508 | - |
| Stage 2 | - | - | - | - | - | - | 0 | *508 | - | 0 | *642 | - |
| Platoon blocked, % | 1 | - | - | 1 | - | - | | | 1 | | | 1 |
| Mov Cap-1 Maneuver | *655 | - | - | *827 | - | - | - | *9 | *658 | - | *9 | *521 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | - | *9 | - | - | *9 | - |
| Stage 1 | - | - | - | - | - | - | - | *614 | - | - | *455 | - |
| Stage 2 | - | - | - | - | - | - | - | *455 | - | - | *614 | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 0.2 | 0.5 | 12.5 | 13.2 |
| HCM LOS | | | B | B |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 658 | * 655 | - | - | * 827 | - | - | 521 |
| HCM Lane V/C Ratio | 0.274 | 0.042 | - | - | 0.103 | - | - | 0.154 |
| HCM Control Delay (s) | 12.5 | 10.7 | - | - | 9.9 | - | - | 13.2 |
| HCM Lane LOS | B | B | - | - | A | - | - | B |
| HCM 95th %tile Q(veh) | 1.1 | 0.1 | - | - | 0.3 | - | - | 0.5 |

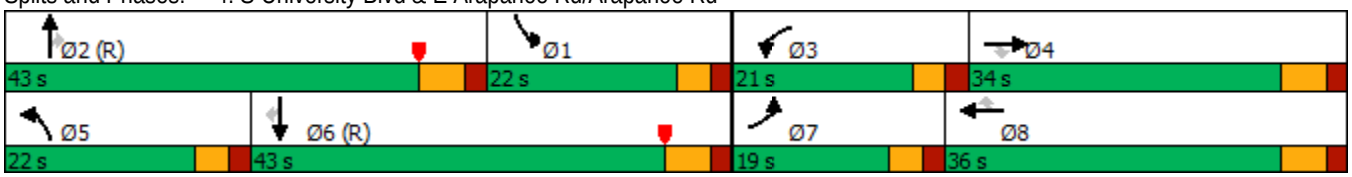
Notes

~: 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) | 337 | 730 | 239 | 344 | 1197 | 418 | 289 | 1174 | 218 | 317 | 1305 | 335 |
| Future Volume (vph) | 337 | 730 | 239 | 344 | 1197 | 418 | 289 | 1174 | 218 | 317 | 1305 | 335 |
| Turn Type | Prot | NA | Perm | Prot | NA | Perm | Prot | NA | Perm | Prot | NA | Perm |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | | | 4 | | | 8 | | | 2 | | | 6 |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | 8 | 5 | 2 | 2 | 1 | 6 | 6 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 | 3.0 | 10.0 | 10.0 | 3.0 | 10.0 | 10.0 |
| Minimum Split (s) | 8.0 | 39.0 | 39.0 | 8.0 | 37.0 | 37.0 | 8.0 | 35.0 | 35.0 | 8.0 | 40.0 | 40.0 |
| Total Split (s) | 19.0 | 34.0 | 34.0 | 21.0 | 36.0 | 36.0 | 22.0 | 43.0 | 43.0 | 22.0 | 43.0 | 43.0 |
| Total Split (%) | 15.8% | 28.3% | 28.3% | 17.5% | 30.0% | 30.0% | 18.3% | 35.8% | 35.8% | 18.3% | 35.8% | 35.8% |
| Yellow Time (s) | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 |
| 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 | 0.0 |
| Total Lost Time (s) | 5.0 | 6.0 | 6.0 | 5.0 | 6.0 | 6.0 | 5.0 | 6.0 | 6.0 | 5.0 | 6.0 | 6.0 |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lead | Lead | Lead | Lag | Lag | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | None | None | None | None | None | None | C-Min | C-Min | None | C-Min | C-Min |
| Act Effct Green (s) | 13.6 | 28.8 | 28.8 | 14.8 | 30.0 | 30.0 | 14.3 | 37.3 | 37.3 | 17.0 | 40.1 | 40.1 |
| Actuated g/C Ratio | 0.11 | 0.24 | 0.24 | 0.12 | 0.25 | 0.25 | 0.12 | 0.31 | 0.31 | 0.14 | 0.33 | 0.33 |
| v/c Ratio | 0.88 | 0.61 | 0.44 | 0.83 | 0.96 | 0.70 | 0.72 | 0.76 | 0.35 | 0.66 | 0.78 | 0.49 |
| Control Delay | 76.5 | 43.3 | 7.3 | 68.2 | 62.1 | 19.8 | 48.6 | 36.8 | 7.5 | 56.1 | 40.5 | 9.5 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 76.5 | 43.3 | 7.3 | 68.2 | 62.1 | 19.8 | 48.6 | 36.8 | 7.5 | 56.1 | 40.5 | 9.5 |
| LOS | E | D | A | E | E | B | D | D | A | E | D | A |
| Approach Delay | | 45.3 | | | 54.1 | | | 35.1 | | | 37.7 | |
| Approach LOS | | D | | | D | | | D | | | D | |

| Intersection Summary | |
|---|---|
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 103 (86%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow | |
| Natural Cycle: 105 | |
| Control Type: Actuated-Coordinated | |
| Maximum v/c Ratio: 0.96 | |
| Intersection Signal Delay: 43.1 | Intersection LOS: D |
| Intersection Capacity Utilization 84.5% | ICU Level of Service E |
| Analysis Period (min) 15 | |

Splits and Phases: 4: S University Blvd & E Arapahoe Rd/Arapahoe Rd



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 337 | 730 | 239 | 344 | 1197 | 418 | 289 | 1174 | 218 | 317 | 1305 | 335 |
| Future Volume (veh/h) | 337 | 730 | 239 | 344 | 1197 | 418 | 289 | 1174 | 218 | 317 | 1305 | 335 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 0.99 | 1.00 | | 1.00 | 1.00 | | 0.99 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 344 | 745 | 244 | 351 | 1221 | 0 | 295 | 1198 | 222 | 323 | 1332 | 342 |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 396 | 1262 | 390 | 406 | 1277 | | 355 | 1500 | 463 | 518 | 1784 | 551 |
| Arrive On Green | 0.11 | 0.25 | 0.25 | 0.12 | 0.25 | 0.00 | 0.10 | 0.29 | 0.29 | 0.15 | 0.35 | 0.35 |
| Sat Flow, veh/h | 3456 | 5106 | 1575 | 3456 | 5106 | 1585 | 3456 | 5106 | 1577 | 3456 | 5106 | 1578 |
| Grp Volume(v), veh/h | 344 | 745 | 244 | 351 | 1221 | 0 | 295 | 1198 | 222 | 323 | 1332 | 342 |
| Grp Sat Flow(s),veh/h/ln | 1728 | 1702 | 1575 | 1728 | 1702 | 1585 | 1728 | 1702 | 1577 | 1728 | 1702 | 1578 |
| Q Serve(g_s), s | 11.7 | 15.4 | 16.6 | 12.0 | 28.3 | 0.0 | 10.1 | 26.0 | 9.8 | 10.5 | 27.6 | 21.6 |
| Cycle Q Clear(g_c), s | 11.7 | 15.4 | 16.6 | 12.0 | 28.3 | 0.0 | 10.1 | 26.0 | 9.8 | 10.5 | 27.6 | 21.6 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 396 | 1262 | 390 | 406 | 1277 | | 355 | 1500 | 463 | 518 | 1784 | 551 |
| V/C Ratio(X) | 0.87 | 0.59 | 0.63 | 0.86 | 0.96 | | 0.83 | 0.80 | 0.48 | 0.62 | 0.75 | 0.62 |
| Avail Cap(c_a), veh/h | 403 | 1262 | 390 | 461 | 1277 | | 490 | 1574 | 486 | 518 | 1784 | 551 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 52.2 | 39.8 | 40.2 | 52.0 | 44.4 | 0.0 | 52.8 | 39.1 | 17.3 | 47.8 | 34.4 | 32.4 |
| Incr Delay (d2), s/veh | 17.0 | 0.5 | 2.4 | 13.1 | 15.8 | 0.0 | 6.3 | 4.5 | 3.5 | 1.8 | 2.9 | 5.2 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 6.0 | 6.5 | 6.6 | 5.9 | 13.6 | 0.0 | 4.6 | 11.2 | 3.9 | 4.6 | 11.5 | 8.9 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 69.2 | 40.3 | 42.6 | 65.1 | 60.1 | 0.0 | 59.1 | 43.6 | 20.8 | 49.6 | 37.3 | 37.6 |
| LnGrp LOS | E | D | D | E | E | | E | D | C | D | D | D |
| Approach Vol, veh/h | | 1333 | | | 1572 | A | | 1715 | | | 1997 | |
| Approach Delay, s/veh | | 48.2 | | | 61.3 | | | 43.3 | | | 39.3 | |
| Approach LOS | | D | | | E | | | D | | | D | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 24.0 | 41.3 | 19.1 | 35.7 | 17.3 | 47.9 | 18.8 | 36.0 |
| Change Period (Y+Rc), s | 6.0 | * 6 | 5.0 | 6.0 | 5.0 | 6.0 | 5.0 | 6.0 |
| Max Green Setting (Gmax), s | 17.0 | * 37 | 16.0 | 28.0 | 17.0 | 37.0 | 14.0 | 30.0 |
| Max Q Clear Time (g_c+I1), s | 12.5 | 28.0 | 14.0 | 18.6 | 12.1 | 29.6 | 13.7 | 30.3 |
| Green Ext Time (p_c), s | 0.2 | 7.3 | 0.1 | 2.8 | 0.3 | 6.5 | 0.0 | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 47.4 |
| HCM 6th LOS | D |

Notes

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

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

| Intersection | |
|---|---|
| Int Delay, s/veh | 1.2 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | ↱ | | | ↱ | | ↑↑↑↳ | | | ↑↑↑ | ↱ |
| Traffic Vol, veh/h | 0 | 0 | 204 | 0 | 0 | 41 | 0 | 1659 | 18 | 0 | 1764 | 125 |
| Future Vol, veh/h | 0 | 0 | 204 | 0 | 0 | 41 | 0 | 1659 | 18 | 0 | 1764 | 125 |
| 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 | - | - | 0 | - | - | 0 | - | - | - | - | - | 0 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 93 | 93 | 93 | 93 | 93 | 93 | 93 | 93 | 93 | 93 | 93 | 93 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 0 | 219 | 0 | 0 | 44 | 0 | 1784 | 19 | 0 | 1897 | 134 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | - | - | 949 | - | - | 902 | - | 0 | 0 | - | - | 0 |
| Stage 1 | - | - | - | - | - | - | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - | - | - | - | - | - | - |
| Critical Hdwy | - | - | 7.14 | - | - | 7.14 | - | - | - | - | - | - |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | - | - | - | - | - | - |
| Follow-up Hdwy | - | - | 3.92 | - | - | 3.92 | - | - | - | - | - | - |
| Pot Cap-1 Maneuver | 0 | 0 | *502 | 0 | 0 | 241 | 0 | - | - | 0 | - | - |
| Stage 1 | 0 | 0 | - | 0 | 0 | - | 0 | - | - | 0 | - | - |
| Stage 2 | 0 | 0 | - | 0 | 0 | - | 0 | - | - | 0 | - | - |
| Platoon blocked, % | | | 1 | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | - | - | *502 | - | - | 241 | - | - | - | - | - | - |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | - | - | - | - | - | - |
| Stage 1 | - | - | - | - | - | - | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 17.6 | 23.3 | 0 | 0 |
| HCM LOS | C | C | | |

| Minor Lane/Major Mvmt | NBT | NBR | EBLn1 | WBLn1 | SBT | SBR |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 502 | 241 | - | - |
| HCM Lane V/C Ratio | - | - | 0.437 | 0.183 | - | - |
| HCM Control Delay (s) | - | - | 17.6 | 23.3 | - | - |
| HCM Lane LOS | - | - | C | C | - | - |
| HCM 95th %tile Q(veh) | - | - | 2.2 | 0.7 | - | - |

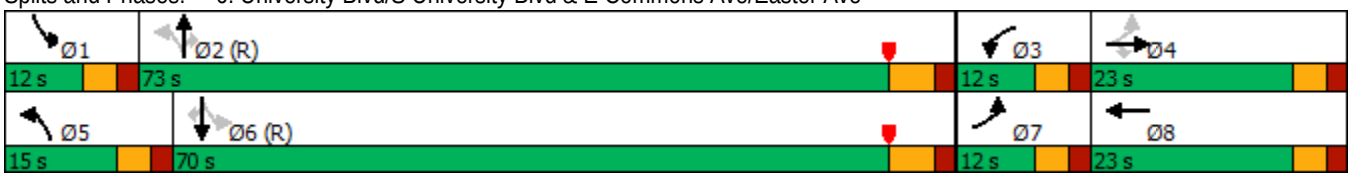
Notes

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

| Lane Group | EBL | EBT | EBR | WBL | WBT | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | |
| Traffic Volume (vph) | 187 | 40 | 148 | 63 | 74 | 293 | 1445 | 43 | 68 | 1682 | 201 |
| Future Volume (vph) | 187 | 40 | 148 | 63 | 74 | 293 | 1445 | 43 | 68 | 1682 | 201 |
| Turn Type | pm+pt | NA | Perm | Prot | NA | pm+pt | NA | Perm | pm+pt | NA | Perm |
| Protected Phases | 7 | 4 | | 3 | 8 | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | 4 | | | 2 | | 2 | 6 | | 6 |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | 5 | 2 | 2 | 1 | 6 | 6 |
| Switch Phase | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 3.0 | 4.0 | 3.0 | 3.0 | 5.0 | 5.0 | 3.0 | 5.0 | 5.0 |
| Minimum Split (s) | 8.0 | 35.0 | 35.0 | 9.0 | 32.0 | 8.0 | 24.0 | 24.0 | 8.0 | 29.0 | 29.0 |
| Total Split (s) | 12.0 | 23.0 | 23.0 | 12.0 | 23.0 | 15.0 | 73.0 | 73.0 | 12.0 | 70.0 | 70.0 |
| Total Split (%) | 10.0% | 19.2% | 19.2% | 10.0% | 19.2% | 12.5% | 60.8% | 60.8% | 10.0% | 58.3% | 58.3% |
| Yellow Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 |
| 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) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 6.0 | 6.0 | 5.0 | 6.0 | 6.0 |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lead | Lag | Lag | Lead | Lag | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | None | None | None | None | None | C-Min | C-Min | None | C-Min | C-Min |
| Act Effct Green (s) | 20.6 | 15.0 | 15.0 | 6.9 | 12.6 | 84.4 | 75.4 | 75.4 | 76.3 | 69.4 | 69.4 |
| Actuated g/C Ratio | 0.17 | 0.12 | 0.12 | 0.06 | 0.10 | 0.70 | 0.63 | 0.63 | 0.64 | 0.58 | 0.58 |
| v/c Ratio | 0.51 | 0.18 | 0.50 | 0.66 | 0.62 | 1.49 | 0.69 | 0.04 | 0.37 | 0.87 | 0.22 |
| Control Delay | 44.2 | 48.6 | 18.2 | 85.1 | 54.9 | 271.7 | 14.3 | 0.1 | 12.6 | 26.6 | 3.0 |
| 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 | 44.2 | 48.6 | 18.2 | 85.1 | 54.9 | 271.7 | 14.3 | 0.1 | 12.6 | 26.6 | 3.0 |
| LOS | D | D | B | F | D | F | B | A | B | C | A |
| Approach Delay | | 34.5 | | | 65.4 | | 56.3 | | | 23.6 | |
| Approach LOS | | C | | | E | | E | | | C | |

| Intersection Summary | |
|---|---|
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 74 (62%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow | |
| Natural Cycle: 145 | |
| Control Type: Actuated-Coordinated | |
| Maximum v/c Ratio: 1.49 | |
| Intersection Signal Delay: 39.9 | Intersection LOS: D |
| Intersection Capacity Utilization 89.0% | ICU Level of Service E |
| Analysis Period (min) 15 | |

Splits and Phases: 6: University Blvd/S University Blvd & E Commons Ave/Easter Ave



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 187 | 40 | 148 | 63 | 74 | 43 | 293 | 1445 | 43 | 68 | 1682 | 201 |
| Future Volume (veh/h) | 187 | 40 | 148 | 63 | 74 | 43 | 293 | 1445 | 43 | 68 | 1682 | 201 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 0.97 | | 1.00 | 1.00 | | 0.97 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 199 | 43 | 0 | 67 | 79 | 46 | 312 | 1537 | 46 | 72 | 1789 | 0 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 412 | 220 | | 86 | 118 | 68 | 247 | 2235 | 993 | 300 | 2047 | |
| Arrive On Green | 0.06 | 0.12 | 0.00 | 0.05 | 0.11 | 0.11 | 0.17 | 1.00 | 1.00 | 0.03 | 0.58 | 0.00 |
| Sat Flow, veh/h | 3456 | 1870 | 1585 | 1781 | 1094 | 637 | 1781 | 3554 | 1579 | 1781 | 3554 | 1585 |
| Grp Volume(v), veh/h | 199 | 43 | 0 | 67 | 0 | 125 | 312 | 1537 | 46 | 72 | 1789 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1728 | 1870 | 1585 | 1781 | 0 | 1732 | 1781 | 1777 | 1579 | 1781 | 1777 | 1585 |
| Q Serve(g_s), s | 6.1 | 2.5 | 0.0 | 4.5 | 0.0 | 8.3 | 10.0 | 0.0 | 0.0 | 2.0 | 51.6 | 0.0 |
| Cycle Q Clear(g_c), s | 6.1 | 2.5 | 0.0 | 4.5 | 0.0 | 8.3 | 10.0 | 0.0 | 0.0 | 2.0 | 51.6 | 0.0 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.37 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 412 | 220 | | 86 | 0 | 186 | 247 | 2235 | 993 | 300 | 2047 | |
| V/C Ratio(X) | 0.48 | 0.20 | | 0.78 | 0.00 | 0.67 | 1.26 | 0.69 | 0.05 | 0.24 | 0.87 | |
| Avail Cap(c_a), veh/h | 412 | 281 | | 104 | 0 | 260 | 247 | 2235 | 993 | 350 | 2047 | |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 2.00 | 2.00 | 2.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 44.6 | 47.8 | 0.0 | 56.5 | 0.0 | 51.5 | 31.1 | 0.0 | 0.0 | 9.7 | 21.7 | 0.0 |
| Incr Delay (d2), s/veh | 0.3 | 0.2 | 0.0 | 26.2 | 0.0 | 1.6 | 146.5 | 1.8 | 0.1 | 0.2 | 5.6 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 2.7 | 1.2 | 0.0 | 2.6 | 0.0 | 3.7 | 16.6 | 0.5 | 0.0 | 0.7 | 21.0 | 0.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 45.0 | 48.0 | 0.0 | 82.7 | 0.0 | 53.1 | 177.6 | 1.8 | 0.1 | 9.8 | 27.3 | 0.0 |
| LnGrp LOS | D | D | | F | A | D | F | A | A | A | C | |
| Approach Vol, veh/h | | 242 | A | | 192 | | | 1895 | | | 1861 | A |
| Approach Delay, s/veh | | 45.5 | | | 63.4 | | | 30.7 | | | 26.6 | |
| Approach LOS | | D | | | E | | | C | | | C | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 8.6 | 81.5 | 10.8 | 19.1 | 15.0 | 75.1 | 12.0 | 17.9 |
| Change Period (Y+Rc), s | 5.0 | 6.0 | 5.0 | 5.0 | 5.0 | 6.0 | 5.0 | 5.0 |
| Max Green Setting (Gmax), s | 7.0 | 67.0 | 7.0 | 18.0 | 10.0 | 64.0 | 7.0 | 18.0 |
| Max Q Clear Time (g_c+I1), s | 4.0 | 2.0 | 6.5 | 4.5 | 12.0 | 53.6 | 8.1 | 10.3 |
| Green Ext Time (p_c), s | 0.0 | 38.6 | 0.0 | 0.1 | 0.0 | 9.6 | 0.0 | 0.2 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 31.2 |
| HCM 6th LOS | C |

**Notes**

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

Unsignalized Delay for [EBR, SBR] is excluded from calculations of the approach delay and intersection delay.

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

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | ↱ | | ↑↑ | ↑↑ | ↱ |
| Traffic Vol, veh/h | 0 | 75 | 0 | 1800 | 1858 | 34 |
| Future Vol, veh/h | 0 | 75 | 0 | 1800 | 1858 | 34 |
| 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 | 93 | 93 | 93 | 93 | 93 | 93 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 81 | 0 | 1935 | 1998 | 37 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | - | 999 | - | 0 | - | 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 | *312 | 0 | - | - | - |
| Stage 1 | 0 | - | 0 | - | - | - |
| Stage 2 | 0 | - | 0 | - | - | - |
| Platoon blocked, % | | 1 | | - | - | - |
| Mov Cap-1 Maneuver | - | *312 | - | - | - | - |
| Mov Cap-2 Maneuver | - | - | - | - | - | - |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 20.5 | 0 | 0 |
| HCM LOS | C | | |

| Minor Lane/Major Mvmt | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|
| Capacity (veh/h) | - | 312 | - | - |
| HCM Lane V/C Ratio | - | 0.258 | - | - |
| HCM Control Delay (s) | - | 20.5 | - | - |
| HCM Lane LOS | - | C | - | - |
| HCM 95th %tile Q(veh) | - | 1 | - | - |

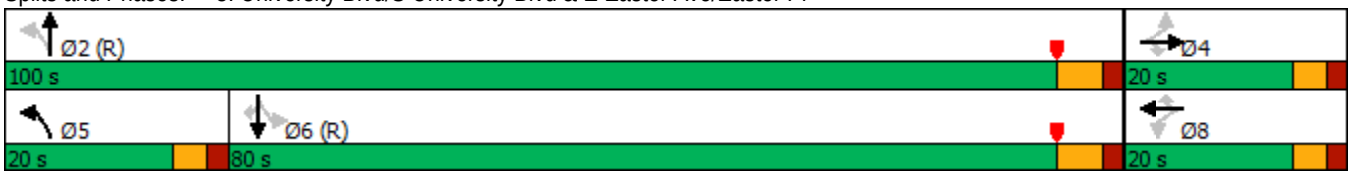
Notes

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

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | |
| Traffic Volume (vph) | 96 | 31 | 177 | 56 | 33 | 25 | 195 | 1678 | 27 | 1827 | 80 |
| Future Volume (vph) | 96 | 31 | 177 | 56 | 33 | 25 | 195 | 1678 | 27 | 1827 | 80 |
| Turn Type | Perm | NA | Perm | Perm | NA | Perm | pm+pt | NA | Perm | NA | Perm |
| Protected Phases | | 4 | | | 8 | | 5 | 2 | | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | 8 | 2 | | 6 | | 6 |
| Detector Phase | 4 | 4 | 4 | 8 | 8 | 8 | 5 | 2 | 6 | 6 | 6 |
| Switch Phase | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Minimum Split (s) | 36.0 | 36.0 | 36.0 | 40.0 | 40.0 | 40.0 | 8.0 | 29.0 | 32.0 | 32.0 | 32.0 |
| Total Split (s) | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 100.0 | 80.0 | 80.0 | 80.0 |
| Total Split (%) | 16.7% | 16.7% | 16.7% | 16.7% | 16.7% | 16.7% | 16.7% | 83.3% | 66.7% | 66.7% | 66.7% |
| Yellow Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| 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) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 6.0 | 6.0 | 6.0 | 6.0 |
| Lead/Lag | | | | | | | Lead | | Lag | Lag | Lag |
| Lead-Lag Optimize? | | | | | | | Yes | | Yes | Yes | Yes |
| Recall Mode | None | None | None | None | None | None | None | C-Min | C-Min | C-Min | C-Min |
| Act Effct Green (s) | 12.3 | 12.3 | 12.3 | 12.3 | 12.3 | 12.3 | 97.7 | 96.7 | 79.6 | 79.6 | 79.6 |
| Actuated g/C Ratio | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.81 | 0.81 | 0.66 | 0.66 | 0.66 |
| v/c Ratio | 0.73 | 0.17 | 0.57 | 0.43 | 0.18 | 0.12 | 0.86 | 0.65 | 0.21 | 0.83 | 0.08 |
| Control Delay | 81.0 | 49.8 | 14.2 | 59.2 | 50.1 | 1.1 | 62.7 | 6.4 | 7.6 | 7.6 | 1.1 |
| 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 | 81.0 | 49.8 | 14.2 | 59.2 | 50.1 | 1.1 | 62.7 | 6.4 | 7.6 | 7.6 | 1.1 |
| LOS | F | D | B | E | D | A | E | A | A | A | A |
| Approach Delay | | 38.9 | | | 43.7 | | | 12.1 | | 7.4 | |
| Approach LOS | | D | | | D | | | B | | A | |

| Intersection Summary | |
|---|---|
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 82 (68%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow | |
| Natural Cycle: 130 | |
| Control Type: Actuated-Coordinated | |
| Maximum v/c Ratio: 0.86 | |
| Intersection Signal Delay: 12.7 | Intersection LOS: B |
| Intersection Capacity Utilization 88.0% | ICU Level of Service E |
| Analysis Period (min) 15 | |

Splits and Phases: 8: University Blvd/S University Blvd & E Easter Ave/Easter Pl



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 96 | 31 | 177 | 56 | 33 | 25 | 195 | 1678 | 59 | 27 | 1827 | 80 |
| Future Volume (veh/h) | 96 | 31 | 177 | 56 | 33 | 25 | 195 | 1678 | 59 | 27 | 1827 | 80 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 0.98 | | 0.98 | 0.99 | | 0.98 | 1.00 | | 1.00 | 1.00 | | 0.99 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 102 | 33 | 188 | 60 | 35 | 27 | 207 | 1785 | 63 | 29 | 1944 | 85 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 202 | 234 | 194 | 185 | 234 | 194 | 293 | 2743 | 96 | 199 | 2460 | 1092 |
| Arrive On Green | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.05 | 0.78 | 0.78 | 1.00 | 1.00 | 1.00 |
| Sat Flow, veh/h | 1315 | 1870 | 1551 | 1143 | 1870 | 1551 | 1781 | 3501 | 123 | 250 | 3554 | 1577 |
| Grp Volume(v), veh/h | 102 | 33 | 188 | 60 | 35 | 27 | 207 | 901 | 947 | 29 | 1944 | 85 |
| Grp Sat Flow(s),veh/h/ln | 1315 | 1870 | 1551 | 1143 | 1870 | 1551 | 1781 | 1777 | 1848 | 250 | 1777 | 1577 |
| Q Serve(g_s), s | 9.0 | 1.9 | 14.5 | 5.9 | 2.0 | 1.9 | 3.8 | 26.8 | 27.3 | 3.3 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 11.0 | 1.9 | 14.5 | 7.8 | 2.0 | 1.9 | 3.8 | 26.8 | 27.3 | 19.7 | 0.0 | 0.0 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.07 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 202 | 234 | 194 | 185 | 234 | 194 | 293 | 1392 | 1447 | 199 | 2460 | 1092 |
| V/C Ratio(X) | 0.50 | 0.14 | 0.97 | 0.32 | 0.15 | 0.14 | 0.71 | 0.65 | 0.65 | 0.15 | 0.79 | 0.08 |
| Avail Cap(c_a), veh/h | 202 | 234 | 194 | 185 | 234 | 194 | 428 | 1392 | 1447 | 199 | 2460 | 1092 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 2.00 | 2.00 | 2.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 51.7 | 46.8 | 52.3 | 50.2 | 46.8 | 46.8 | 5.1 | 5.7 | 5.8 | 1.9 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 0.8 | 0.1 | 55.4 | 0.4 | 0.1 | 0.1 | 1.2 | 2.3 | 2.3 | 1.5 | 2.7 | 0.1 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 3.0 | 0.9 | 8.7 | 1.7 | 1.0 | 0.7 | 1.1 | 7.6 | 8.0 | 0.1 | 0.9 | 0.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 52.5 | 46.9 | 107.7 | 50.6 | 46.9 | 46.9 | 6.2 | 8.1 | 8.1 | 3.5 | 2.7 | 0.1 |
| LnGrp LOS | D | D | F | D | D | D | A | A | A | A | A | A |
| Approach Vol, veh/h | | 323 | | | 122 | | | 2055 | | | 2058 | |
| Approach Delay, s/veh | | 84.1 | | | 48.7 | | | 7.9 | | | 2.6 | |
| Approach LOS | | F | | | D | | | A | | | A | |

| Timer - Assigned Phs | | 2 | | 4 | 5 | 6 | | 8 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | | 100.0 | | 20.0 | 10.9 | 89.1 | | 20.0 | | | | |
| Change Period (Y+Rc), s | | 6.0 | | 5.0 | 5.0 | 6.0 | | 5.0 | | | | |
| Max Green Setting (Gmax), s | | 94.0 | | 15.0 | 15.0 | 74.0 | | 15.0 | | | | |
| Max Q Clear Time (g_c+I1), s | | 29.3 | | 16.5 | 5.8 | 21.7 | | 9.8 | | | | |
| Green Ext Time (p_c), s | | 47.7 | | 0.0 | 0.1 | 44.5 | | 0.1 | | | | |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 12.0 |
| HCM 6th LOS | B |

Notes

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

| Intersection | |
|---|---|
| Int Delay, s/veh | 4.4 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 38 | 205 | 15 | 14 | 187 | 122 | 7 | 3 | 17 | 100 | 3 | 40 |
| Future Vol, veh/h | 38 | 205 | 15 | 14 | 187 | 122 | 7 | 3 | 17 | 100 | 3 | 40 |
| 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 | 92 | 91 | 91 | 91 | 91 | 92 | 91 | 92 | 91 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 41 | 225 | 16 | 15 | 205 | 133 | 8 | 3 | 19 | 109 | 3 | 43 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 338 | 0 | 0 | 241 | 0 | 0 | 640 | 683 | 233 | 628 | 625 | 272 |
| Stage 1 | - | - | - | - | - | - | 315 | 315 | - | 302 | 302 | - |
| Stage 2 | - | - | - | - | - | - | 325 | 368 | - | 326 | 323 | - |
| Critical Hdwy | 4.12 | - | - | 4.12 | - | - | 7.12 | 6.52 | 6.22 | 7.12 | 6.52 | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.12 | 5.52 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.12 | 5.52 | - |
| Follow-up Hdwy | 2.218 | - | - | 2.218 | - | - | 3.518 | 4.018 | 3.318 | 3.518 | 4.018 | 3.318 |
| Pot Cap-1 Maneuver | 1221 | - | - | 1326 | - | - | 388 | 372 | 806 | 395 | 401 | 767 |
| Stage 1 | - | - | - | - | - | - | 696 | 656 | - | 707 | 664 | - |
| Stage 2 | - | - | - | - | - | - | 687 | 621 | - | 687 | 650 | - |
| Platoon blocked, % | | - | - | | - | - | | | | | | |
| Mov Cap-1 Maneuver | 1221 | - | - | 1326 | - | - | 349 | 353 | 806 | 368 | 380 | 767 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 349 | 353 | - | 368 | 380 | - |
| Stage 1 | - | - | - | - | - | - | 669 | 630 | - | 679 | 655 | - |
| Stage 2 | - | - | - | - | - | - | 636 | 612 | - | 642 | 625 | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 1.2 | 0.3 | 12 | 18 |
| HCM LOS | | | B | C |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 544 | 1221 | - | - | 1326 | - | - | 431 |
| HCM Lane V/C Ratio | 0.054 | 0.034 | - | - | 0.012 | - | - | 0.361 |
| HCM Control Delay (s) | 12 | 8.1 | 0 | - | 7.7 | 0 | - | 18 |
| HCM Lane LOS | B | A | A | - | A | A | - | C |
| HCM 95th %tile Q(veh) | 0.2 | 0.1 | - | - | 0 | - | - | 1.6 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 2.8 |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 32 | 167 | 184 | 50 | 71 | 28 |
| Future Vol, veh/h | 32 | 167 | 184 | 50 | 71 | 28 |
| 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 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 35 | 182 | 200 | 54 | 77 | 30 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 254 | 0 | - | 0 | 479 | 227 |
| Stage 1 | - | - | - | - | 227 | - |
| Stage 2 | - | - | - | - | 252 | - |
| Critical Hdwy | 4.12 | - | - | - | 6.42 | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.42 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.42 | - |
| Follow-up Hdwy | 2.218 | - | - | - | 3.518 | 3.318 |
| Pot Cap-1 Maneuver | 1311 | - | - | - | 545 | 812 |
| Stage 1 | - | - | - | - | 811 | - |
| Stage 2 | - | - | - | - | 790 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | 1311 | - | - | - | 529 | 812 |
| Mov Cap-2 Maneuver | - | - | - | - | 529 | - |
| Stage 1 | - | - | - | - | 787 | - |
| Stage 2 | - | - | - | - | 790 | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 1.3 | 0 | 12.5 |
| HCM LOS | | | B |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|
| Capacity (veh/h) | 1311 | - | - | - | 587 |
| HCM Lane V/C Ratio | 0.027 | - | - | - | 0.183 |
| HCM Control Delay (s) | 7.8 | 0 | - | - | 12.5 |
| HCM Lane LOS | A | A | - | - | B |
| HCM 95th %tile Q(veh) | 0.1 | - | - | - | 0.7 |

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

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 182 | 16 | 13 | 199 | 17 | 18 |
| Future Vol, veh/h | 182 | 16 | 13 | 199 | 17 | 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, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 202 | 18 | 14 | 221 | 19 | 20 |

| Major/Minor | Major1 | | Major2 | | Minor1 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 0 | 0 | 220 | 0 | 460 | 211 |
| Stage 1 | - | - | - | - | 211 | - |
| Stage 2 | - | - | - | - | 249 | - |
| Critical Hdwy | - | - | 4.12 | - | 6.42 | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.42 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.42 | - |
| Follow-up Hdwy | - | - | 2.218 | - | 3.518 | 3.318 |
| Pot Cap-1 Maneuver | - | - | 1349 | - | 559 | 829 |
| Stage 1 | - | - | - | - | 824 | - |
| Stage 2 | - | - | - | - | 792 | - |
| Platoon blocked, % | - | - | | - | | |
| Mov Cap-1 Maneuver | - | - | 1349 | - | 552 | 829 |
| Mov Cap-2 Maneuver | - | - | - | - | 552 | - |
| Stage 1 | - | - | - | - | 824 | - |
| Stage 2 | - | - | - | - | 782 | - |

| Approach | EB | WB | NB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 0.5 | 10.7 |
| HCM LOS | | | B |

| Minor Lane/Major Mvmt | NBLn1 | EBT | EBR | WBL | WBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | 667 | - | - | 1349 | - |
| HCM Lane V/C Ratio | 0.058 | - | - | 0.011 | - |
| HCM Control Delay (s) | 10.7 | - | - | 7.7 | 0 |
| HCM Lane LOS | B | - | - | A | A |
| HCM 95th %tile Q(veh) | 0.2 | - | - | 0 | - |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 8.8 |
| Intersection LOS | A |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 30 | 131 | 151 | 54 | 67 | 36 |
| Future Vol, veh/h | 30 | 131 | 151 | 54 | 67 | 36 |
| Peak Hour Factor | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 33 | 144 | 166 | 59 | 74 | 40 |
| Number of Lanes | 0 | 1 | 1 | 0 | 1 | 0 |

| Approach | EB | WB | SB |
|---|---|---|---|
| Opposing Approach | WB | EB | |
| Opposing Lanes | 1 | 1 | 0 |
| Conflicting Approach Left | SB | | WB |
| Conflicting Lanes Left | 1 | 0 | 1 |
| Conflicting Approach Right | | SB | EB |
| Conflicting Lanes Right | 0 | 1 | 1 |
| HCM Control Delay | 8.8 | 8.8 | 8.6 |
| HCM LOS | A | A | A |

| Lane | EBLn1 | WBLn1 | SBLn1 |
|---|---|---|---|
| Vol Left, % | 19% | 0% | 65% |
| Vol Thru, % | 81% | 74% | 0% |
| Vol Right, % | 0% | 26% | 35% |
| Sign Control | Stop | Stop | Stop |
| Traffic Vol by Lane | 161 | 205 | 103 |
| LT Vol | 30 | 0 | 67 |
| Through Vol | 131 | 151 | 0 |
| RT Vol | 0 | 54 | 36 |
| Lane Flow Rate | 177 | 225 | 113 |
| Geometry Grp | 1 | 1 | 1 |
| Degree of Util (X) | 0.22 | 0.266 | 0.149 |
| Departure Headway (Hd) | 4.481 | 4.247 | 4.736 |
| Convergence, Y/N | Yes | Yes | Yes |
| Cap | 801 | 847 | 757 |
| Service Time | 2.504 | 2.266 | 2.763 |
| HCM Lane V/C Ratio | 0.221 | 0.266 | 0.149 |
| HCM Control Delay | 8.8 | 8.8 | 8.6 |
| HCM Lane LOS | A | A | A |
| HCM 95th-tile Q | 0.8 | 1.1 | 0.5 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 7.6 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 12 | 98 | 77 | 7 | 61 | 90 |
| Future Vol, veh/h | 12 | 98 | 77 | 7 | 61 | 90 |
| 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 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 76 | 25 | 76 | 76 | 76 | 76 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 16 | 392 | 101 | 9 | 80 | 118 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 384 | 106 | 0 | 0 | 110 | 0 |
| Stage 1 | 106 | - | - | - | - | - |
| Stage 2 | 278 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | - | - | 4.12 | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | - | - | 2.218 | - |
| Pot Cap-1 Maneuver | 619 | 948 | - | - | 1480 | - |
| Stage 1 | 918 | - | - | - | - | - |
| Stage 2 | 769 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 583 | 948 | - | - | 1480 | - |
| Mov Cap-2 Maneuver | 583 | - | - | - | - | - |
| Stage 1 | 918 | - | - | - | - | - |
| Stage 2 | 724 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 11.9 | 0 | 3.1 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 926 | 1480 | - |
| HCM Lane V/C Ratio | - | - | 0.44 | 0.054 | - |
| HCM Control Delay (s) | - | - | 11.9 | 7.6 | 0 |
| HCM Lane LOS | - | - | B | A | A |
| HCM 95th %tile Q(veh) | - | - | 2.3 | 0.2 | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 3.5 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 32 | 9 | 2 | 13 | 15 | 59 | 4 | 167 | 4 | 11 | 136 | 42 |
| Future Vol, veh/h | 32 | 9 | 2 | 13 | 15 | 59 | 4 | 167 | 4 | 11 | 136 | 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 | - | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 42 | 12 | 3 | 17 | 20 | 78 | 5 | 220 | 5 | 14 | 179 | 55 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 517 | 470 | 207 | 475 | 495 | 223 | 234 | 0 | 0 | 225 | 0 | 0 |
| Stage 1 | 235 | 235 | - | 233 | 233 | - | - | - | - | - | - | - |
| Stage 2 | 282 | 235 | - | 242 | 262 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.12 | 6.52 | 6.22 | 7.12 | 6.52 | 6.22 | 4.12 | - | - | 4.12 | - | - |
| Critical Hdwy Stg 1 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 4.018 | 3.318 | 3.518 | 4.018 | 3.318 | 2.218 | - | - | 2.218 | - | - |
| Pot Cap-1 Maneuver | 469 | 492 | 833 | 500 | 476 | 817 | 1333 | - | - | 1344 | - | - |
| Stage 1 | 768 | 710 | - | 770 | 712 | - | - | - | - | - | - | - |
| Stage 2 | 725 | 710 | - | 762 | 691 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | 406 | 484 | 833 | 483 | 468 | 817 | 1333 | - | - | 1344 | - | - |
| Mov Cap-2 Maneuver | 406 | 484 | - | 483 | 468 | - | - | - | - | - | - | - |
| Stage 1 | 765 | 701 | - | 767 | 709 | - | - | - | - | - | - | - |
| Stage 2 | 635 | 707 | - | 738 | 683 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 14.6 | 11.6 | 0.2 | 0.4 |
| HCM LOS | B | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 1333 | - | - | 431 | 663 | 1344 | - | - |
| HCM Lane V/C Ratio | 0.004 | - | - | 0.131 | 0.173 | 0.011 | - | - |
| HCM Control Delay (s) | 7.7 | 0 | - | 14.6 | 11.6 | 7.7 | 0 | - |
| HCM Lane LOS | A | A | - | B | B | A | A | - |
| HCM 95th %tile Q(veh) | 0 | - | - | 0.4 | 0.6 | 0 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 3.7 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 67 | 66 | 188 | 68 | 37 | 122 |
| Future Vol, veh/h | 67 | 66 | 188 | 68 | 37 | 122 |
| 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 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 84 | 84 | 84 | 84 | 84 | 84 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 80 | 79 | 224 | 81 | 44 | 145 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 498 | 265 | 0 | 0 | 305 | 0 |
| Stage 1 | 265 | - | - | - | - | - |
| Stage 2 | 233 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | - | - | 4.12 | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | - | - | 2.218 | - |
| Pot Cap-1 Maneuver | 532 | 774 | - | - | 1256 | - |
| Stage 1 | 779 | - | - | - | - | - |
| Stage 2 | 806 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 512 | 774 | - | - | 1256 | - |
| Mov Cap-2 Maneuver | 512 | - | - | - | - | - |
| Stage 1 | 779 | - | - | - | - | - |
| Stage 2 | 775 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 12.9 | 0 | 1.9 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 615 | 1256 | - |
| HCM Lane V/C Ratio | - | - | 0.257 | 0.035 | - |
| HCM Control Delay (s) | - | - | 12.9 | 8 | 0 |
| HCM Lane LOS | - | - | B | A | A |
| HCM 95th %tile Q(veh) | - | - | 1 | 0.1 | - |

| Lane Group | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 1408 | 103 | 38 | 833 | 106 | 41 |
| Future Volume (vph) | 1408 | 103 | 38 | 833 | 106 | 41 |
| Turn Type | NA | Perm | pm+pt | NA | Prot | Perm |
| Protected Phases | 2 | | 1 | 6 | 8 | |
| Permitted Phases | | 2 | 6 | | | 8 |
| Detector Phase | 2 | 2 | 1 | 6 | 8 | 8 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 17.0 | 17.0 | 3.0 | 17.0 | 5.0 | 5.0 |
| Minimum Split (s) | 23.0 | 23.0 | 7.0 | 23.0 | 30.0 | 30.0 |
| Total Split (s) | 76.0 | 76.0 | 12.0 | 88.0 | 32.0 | 32.0 |
| Total Split (%) | 63.3% | 63.3% | 10.0% | 73.3% | 26.7% | 26.7% |
| Yellow Time (s) | 4.0 | 4.0 | 3.0 | 4.0 | 3.0 | 3.0 |
| All-Red Time (s) | 2.0 | 2.0 | 1.0 | 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) | 6.0 | 6.0 | 4.0 | 6.0 | 5.0 | 5.0 |
| Lead/Lag | Lag | Lag | Lead | | | |
| Lead-Lag Optimize? | Yes | Yes | Yes | | | |
| Recall Mode | C-Min | C-Min | None | C-Min | None | None |
| Act Effct Green (s) | 90.0 | 90.0 | 97.6 | 95.6 | 13.4 | 13.4 |
| Actuated g/C Ratio | 0.75 | 0.75 | 0.81 | 0.80 | 0.11 | 0.11 |
| v/c Ratio | 0.54 | 0.09 | 0.14 | 0.21 | 0.55 | 0.20 |
| Control Delay | 8.9 | 3.9 | 2.8 | 1.9 | 59.2 | 14.7 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 8.9 | 3.9 | 2.8 | 1.9 | 59.2 | 14.7 |
| LOS | A | A | A | A | E | B |
| Approach Delay | 8.6 | | | 2.0 | 46.7 | |
| Approach LOS | A | | | A | D | |

| Intersection Summary | |
|---|---|
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 111 (93%), Referenced to phase 2:EBT and 6:WBTL, Start of 1st Green | |
| Natural Cycle: 75 | |
| Control Type: Actuated-Coordinated | |
| Maximum v/c Ratio: 0.55 | |
| Intersection Signal Delay: 8.5 | Intersection LOS: A |
| Intersection Capacity Utilization 56.3% | ICU Level of Service B |
| Analysis Period (min) 15 | |

Splits and Phases: 1: Race St & Arapahoe Rd

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 1408 | 103 | 38 | 833 | 106 | 41 |
| Future Volume (veh/h) | 1408 | 103 | 38 | 833 | 106 | 41 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | | 1.00 | 1.00 | | 1.00 | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | No | | | No | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 1437 | 105 | 39 | 850 | 108 | 42 |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 2770 | 1230 | 304 | 4244 | 138 | 122 |
| Arrive On Green | 0.78 | 0.78 | 0.02 | 0.83 | 0.08 | 0.08 |
| Sat Flow, veh/h | 3647 | 1578 | 1781 | 5274 | 1781 | 1585 |
| Grp Volume(v), veh/h | 1437 | 105 | 39 | 850 | 108 | 42 |
| Grp Sat Flow(s),veh/h/ln | 1777 | 1578 | 1781 | 1702 | 1781 | 1585 |
| Q Serve(g_s), s | 18.0 | 1.9 | 0.5 | 4.0 | 7.1 | 3.0 |
| Cycle Q Clear(g_c), s | 18.0 | 1.9 | 0.5 | 4.0 | 7.1 | 3.0 |
| Prop In Lane | | 1.00 | 1.00 | | 1.00 | 1.00 |
| Lane Grp Cap(c), veh/h | 2770 | 1230 | 304 | 4244 | 138 | 122 |
| V/C Ratio(X) | 0.52 | 0.09 | 0.13 | 0.20 | 0.79 | 0.34 |
| Avail Cap(c_a), veh/h | 2770 | 1230 | 390 | 4244 | 401 | 357 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.97 | 0.97 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 4.9 | 3.1 | 4.0 | 2.1 | 54.4 | 52.5 |
| Incr Delay (d2), s/veh | 0.7 | 0.1 | 0.1 | 0.1 | 3.7 | 0.6 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 5.1 | 0.5 | 0.1 | 0.9 | 3.3 | 1.2 |
| Unsig. Movement Delay, s/veh | | | | | | |
| LnGrp Delay(d),s/veh | 5.6 | 3.3 | 4.1 | 2.2 | 58.1 | 53.1 |
| LnGrp LOS | A | A | A | A | E | D |
| Approach Vol, veh/h | 1542 | | | 889 | 150 | |
| Approach Delay, s/veh | 5.4 | | | 2.2 | 56.7 | |
| Approach LOS | A | | | A | E | |

| Timer - Assigned Phs | 1 | 2 | | | | 6 | 8 |
|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 6.2 | 99.6 | | | | 105.7 | 14.3 |
| Change Period (Y+Rc), s | 4.0 | 6.0 | | | | 6.0 | 5.0 |
| Max Green Setting (Gmax), s | 8.0 | 70.0 | | | | 82.0 | 27.0 |
| Max Q Clear Time (g_c+I1), s | 2.5 | 20.0 | | | | 6.0 | 9.1 |
| Green Ext Time (p_c), s | 0.0 | 9.0 | | | | 4.4 | 0.2 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 7.3 |
| HCM 6th LOS | A |

| Lane Group | EBL | EBT | WBL | WBT | NBT | NBR | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | |
| Traffic Volume (vph) | 56 | 1308 | 100 | 776 | 8 | 60 | 6 | 32 |
| Future Volume (vph) | 56 | 1308 | 100 | 776 | 8 | 60 | 6 | 32 |
| Turn Type | pm+pt | NA | pm+pt | NA | NA | Perm | NA | Perm |
| Protected Phases | 5 | 2 | 1 | 6 | 8 | | 4 | |
| Permitted Phases | 2 | | 6 | | | 8 | | 4 |
| Detector Phase | 5 | 2 | 1 | 6 | 8 | 8 | 4 | 4 |
| Switch Phase | | | | | | | | |
| Minimum Initial (s) | 3.0 | 17.0 | 3.0 | 17.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Minimum Split (s) | 7.0 | 26.0 | 7.0 | 23.0 | 35.0 | 35.0 | 34.0 | 34.0 |
| Total Split (s) | 12.0 | 72.0 | 12.0 | 72.0 | 18.0 | 18.0 | 18.0 | 18.0 |
| Total Split (%) | 10.0% | 60.0% | 10.0% | 60.0% | 15.0% | 15.0% | 15.0% | 15.0% |
| Yellow Time (s) | 3.0 | 4.0 | 3.0 | 4.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| All-Red Time (s) | 1.0 | 2.0 | 1.0 | 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) | 4.0 | 6.0 | 4.0 | 6.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Lead/Lag | Lead | Lag | Lead | Lag | | | | |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | | | | |
| Recall Mode | None | C-Min | None | C-Min | None | None | None | None |
| Act Effct Green (s) | 82.8 | 75.1 | 85.9 | 77.9 | 9.3 | 9.3 | 10.8 | 10.8 |
| Actuated g/C Ratio | 0.69 | 0.63 | 0.72 | 0.65 | 0.08 | 0.08 | 0.09 | 0.09 |
| v/c Ratio | 0.14 | 0.47 | 0.40 | 0.29 | 0.54 | 0.29 | 0.68 | 0.14 |
| Control Delay | 8.5 | 13.3 | 15.5 | 2.4 | 66.7 | 4.8 | 73.4 | 1.2 |
| Queue Delay | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 8.5 | 13.3 | 15.5 | 2.4 | 66.7 | 4.8 | 73.4 | 1.2 |
| LOS | A | B | B | A | E | A | E | A |
| Approach Delay | | 13.2 | | 3.7 | 38.3 | | 56.1 | |
| Approach LOS | | B | | A | D | | E | |

| Intersection Summary | |
|---|---|
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 102 (85%), Referenced to phase 2:EBTL and 6:WBTL, Start of 1st Green | |
| Natural Cycle: 105 | |
| Control Type: Actuated-Coordinated | |
| Maximum v/c Ratio: 0.68 | |
| Intersection Signal Delay: 13.1 | Intersection LOS: B |
| Intersection Capacity Utilization 59.0% | ICU Level of Service B |
| Analysis Period (min) 15 | |

Splits and Phases: 2: Vine St & Arapahoe Rd

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 56 | 1308 | 84 | 100 | 776 | 105 | 63 | 8 | 60 | 97 | 6 | 32 |
| Future Volume (veh/h) | 56 | 1308 | 84 | 100 | 776 | 105 | 63 | 8 | 60 | 97 | 6 | 32 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 0.99 | 1.00 | | 0.99 | 1.00 | | 0.96 | 1.00 | | 0.97 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 59 | 1377 | 88 | 105 | 817 | 111 | 66 | 8 | 63 | 102 | 6 | 34 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 495 | 3194 | 204 | 360 | 3016 | 407 | 104 | 13 | 99 | 136 | 8 | 124 |
| Arrive On Green | 0.05 | 1.00 | 1.00 | 0.07 | 1.00 | 1.00 | 0.07 | 0.07 | 0.07 | 0.08 | 0.08 | 0.08 |
| Sat Flow, veh/h | 1781 | 4903 | 313 | 1781 | 4546 | 614 | 1597 | 194 | 1519 | 1687 | 99 | 1532 |
| Grp Volume(v), veh/h | 59 | 956 | 509 | 105 | 610 | 318 | 74 | 0 | 63 | 108 | 0 | 34 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1702 | 1812 | 1781 | 1702 | 1756 | 1791 | 0 | 1519 | 1786 | 0 | 1532 |
| Q Serve(g_s), s | 1.3 | 0.0 | 0.0 | 2.4 | 0.0 | 0.0 | 4.8 | 0.0 | 4.9 | 7.1 | 0.0 | 2.5 |
| Cycle Q Clear(g_c), s | 1.3 | 0.0 | 0.0 | 2.4 | 0.0 | 0.0 | 4.8 | 0.0 | 4.9 | 7.1 | 0.0 | 2.5 |
| Prop In Lane | 1.00 | | 0.17 | 1.00 | | 0.35 | 0.89 | | 1.00 | 0.94 | | 1.00 |
| Lane Grp Cap(c), veh/h | 495 | 2218 | 1181 | 360 | 2258 | 1165 | 116 | 0 | 99 | 144 | 0 | 124 |
| V/C Ratio(X) | 0.12 | 0.43 | 0.43 | 0.29 | 0.27 | 0.27 | 0.64 | 0.00 | 0.64 | 0.75 | 0.00 | 0.27 |
| Avail Cap(c_a), veh/h | 571 | 2218 | 1181 | 414 | 2258 | 1165 | 194 | 0 | 165 | 193 | 0 | 166 |
| HCM Platoon Ratio | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.83 | 0.83 | 0.83 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 6.4 | 0.0 | 0.0 | 6.0 | 0.0 | 0.0 | 54.7 | 0.0 | 54.7 | 54.0 | 0.0 | 51.8 |
| Incr Delay (d2), s/veh | 0.0 | 0.5 | 1.0 | 0.2 | 0.3 | 0.6 | 2.1 | 0.0 | 2.5 | 6.6 | 0.0 | 0.4 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.5 | 0.2 | 0.3 | 0.8 | 0.1 | 0.2 | 2.3 | 0.0 | 1.9 | 3.5 | 0.0 | 1.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 6.4 | 0.5 | 1.0 | 6.2 | 0.3 | 0.6 | 56.8 | 0.0 | 57.3 | 60.5 | 0.0 | 52.3 |
| LnGrp LOS | A | A | A | A | A | A | E | A | E | E | A | D |
| Approach Vol, veh/h | | 1524 | | | 1033 | | | 137 | | | 142 | |
| Approach Delay, s/veh | | 0.9 | | | 1.0 | | | 57.0 | | | 58.6 | |
| Approach LOS | | A | | | A | | | E | | | E | |

| Timer - Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 8.3 | 84.2 | | 14.7 | 6.9 | 85.6 | | 12.8 |
| Change Period (Y+Rc), s | 4.0 | 6.0 | | 5.0 | 4.0 | 6.0 | | 5.0 |
| Max Green Setting (Gmax), s | 8.0 | 66.0 | | 13.0 | 8.0 | 66.0 | | 13.0 |
| Max Q Clear Time (g_c+I1), s | 4.4 | 2.0 | | 9.1 | 3.3 | 2.0 | | 6.9 |
| Green Ext Time (p_c), s | 0.0 | 8.3 | | 0.1 | 0.0 | 4.4 | | 0.2 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 6.5 |
| HCM 6th LOS | A |

Notes

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

| 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 | 12 | 1421 | 32 | 39 | 972 | 11 | 0 | 0 | 67 | 0 | 0 | 9 |
| Future Vol, veh/h | 12 | 1421 | 32 | 39 | 972 | 11 | 0 | 0 | 67 | 0 | 0 | 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 | - | - | None | - | - | None |
| Storage Length | 150 | - | 0 | 100 | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 13 | 1545 | 35 | 42 | 1057 | 12 | 0 | 0 | 73 | 0 | 0 | 10 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 1069 | 0 | 0 | 1580 | 0 | 0 | - | 2724 | 773 | - | 2753 | 535 |
| Stage 1 | - | - | - | - | - | - | - | 1571 | - | - | 1147 | - |
| Stage 2 | - | - | - | - | - | - | - | 1153 | - | - | 1606 | - |
| Critical Hdwy | 5.34 | - | - | 5.34 | - | - | - | 6.54 | 7.14 | - | 6.54 | 7.14 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | - | 5.54 | - | - | 5.54 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | - | 5.54 | - | - | 5.54 | - |
| Follow-up Hdwy | 3.12 | - | - | 3.12 | - | - | - | 4.02 | 3.92 | - | 4.02 | 3.92 |
| Pot Cap-1 Maneuver | *873 | - | - | *737 | - | - | 0 | *347 | *586 | 0 | *316 | *694 |
| Stage 1 | - | - | - | - | - | - | 0 | *572 | - | 0 | *632 | - |
| Stage 2 | - | - | - | - | - | - | 0 | *626 | - | 0 | *572 | - |
| Platoon blocked, % | 1 | - | - | 1 | - | - | | 1 | 1 | | 1 | 1 |
| Mov Cap-1 Maneuver | *873 | - | - | *737 | - | - | - | *322 | *586 | - | *294 | *694 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | - | *322 | - | - | *294 | - |
| Stage 1 | - | - | - | - | - | - | - | *563 | - | - | *596 | - |
| Stage 2 | - | - | - | - | - | - | - | *591 | - | - | *563 | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 0.1 | 0.4 | 12 | 10.3 |
| HCM LOS | | | B | B |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 586 | * 873 | - | - | * 737 | - | - | 694 |
| HCM Lane V/C Ratio | 0.124 | 0.015 | - | - | 0.058 | - | - | 0.014 |
| HCM Control Delay (s) | 12 | 9.2 | - | - | 10.2 | - | - | 10.3 |
| HCM Lane LOS | B | A | - | - | B | - | - | B |
| HCM 95th %tile Q(veh) | 0.4 | 0 | - | - | 0.2 | - | - | 0 |

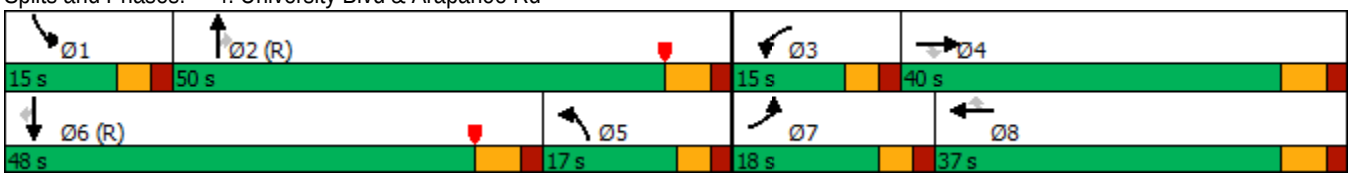
Notes

~: 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) | 226 | 1079 | 181 | 266 | 670 | 417 | 206 | 1365 | 253 | 269 | 925 | 144 |
| Future Volume (vph) | 226 | 1079 | 181 | 266 | 670 | 417 | 206 | 1365 | 253 | 269 | 925 | 144 |
| Turn Type | Prot | NA | Perm | Prot | NA | Perm | Prot | NA | Perm | Prot | NA | Perm |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | | | 4 | | | 8 | | | 2 | | | 6 |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | 8 | 5 | 2 | 2 | 1 | 6 | 6 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 | 3.0 | 10.0 | 10.0 | 3.0 | 10.0 | 10.0 |
| Minimum Split (s) | 8.0 | 39.0 | 39.0 | 8.0 | 37.0 | 37.0 | 8.0 | 35.0 | 35.0 | 8.0 | 40.0 | 40.0 |
| Total Split (s) | 18.0 | 40.0 | 40.0 | 15.0 | 37.0 | 37.0 | 17.0 | 50.0 | 50.0 | 15.0 | 48.0 | 48.0 |
| Total Split (%) | 15.0% | 33.3% | 33.3% | 12.5% | 30.8% | 30.8% | 14.2% | 41.7% | 41.7% | 12.5% | 40.0% | 40.0% |
| Yellow Time (s) | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 |
| 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 | 0.0 |
| Total Lost Time (s) | 5.0 | 6.0 | 6.0 | 5.0 | 6.0 | 6.0 | 5.0 | 6.0 | 6.0 | 5.0 | 6.0 | 6.0 |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lag | Lag | Lag | Lead | Lead | Lead |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | None | None | None | None | None | None | C-Min | C-Min | None | C-Min | C-Min |
| Act Effct Green (s) | 11.4 | 31.9 | 31.9 | 10.0 | 30.5 | 30.5 | 17.4 | 46.1 | 46.1 | 10.0 | 38.7 | 38.7 |
| Actuated g/C Ratio | 0.10 | 0.27 | 0.27 | 0.08 | 0.25 | 0.25 | 0.14 | 0.38 | 0.38 | 0.08 | 0.32 | 0.32 |
| v/c Ratio | 0.72 | 0.83 | 0.34 | 0.97 | 0.54 | 0.79 | 0.43 | 0.73 | 0.36 | 0.98 | 0.59 | 0.25 |
| Control Delay | 77.2 | 46.4 | 10.8 | 100.8 | 40.4 | 33.1 | 44.0 | 27.9 | 3.8 | 103.2 | 35.3 | 5.3 |
| 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 | 77.2 | 46.4 | 10.8 | 100.8 | 40.4 | 33.1 | 44.0 | 27.9 | 3.8 | 103.2 | 35.3 | 5.3 |
| LOS | E | D | B | F | D | C | D | C | A | F | D | A |
| Approach Delay | | 46.7 | | | 50.0 | | | 26.4 | | | 45.7 | |
| Approach LOS | | D | | | D | | | C | | | D | |

| Intersection Summary | |
|---|---|
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 38 (32%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow | |
| Natural Cycle: 95 | |
| Control Type: Actuated-Coordinated | |
| Maximum v/c Ratio: 0.98 | |
| Intersection Signal Delay: 41.1 | Intersection LOS: D |
| Intersection Capacity Utilization 81.8% | ICU Level of Service D |
| Analysis Period (min) 15 | |

Splits and Phases: 4: University Blvd & Arapahoe Rd



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 226 | 1079 | 181 | 266 | 670 | 417 | 206 | 1365 | 253 | 269 | 925 | 144 |
| Future Volume (veh/h) | 226 | 1079 | 181 | 266 | 670 | 417 | 206 | 1365 | 253 | 269 | 925 | 144 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 0.99 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.99 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 235 | 1124 | 189 | 277 | 698 | 0 | 215 | 1422 | 264 | 280 | 964 | 150 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 294 | 1327 | 410 | 288 | 1319 | | 639 | 1992 | 616 | 288 | 1430 | 442 |
| Arrive On Green | 0.03 | 0.09 | 0.09 | 0.08 | 0.26 | 0.00 | 0.18 | 0.39 | 0.39 | 0.08 | 0.28 | 0.28 |
| Sat Flow, veh/h | 3456 | 5106 | 1576 | 3456 | 5106 | 1585 | 3456 | 5106 | 1579 | 3456 | 5106 | 1577 |
| Grp Volume(v), veh/h | 235 | 1124 | 189 | 277 | 698 | 0 | 215 | 1422 | 264 | 280 | 964 | 150 |
| Grp Sat Flow(s),veh/h/ln | 1728 | 1702 | 1576 | 1728 | 1702 | 1585 | 1728 | 1702 | 1579 | 1728 | 1702 | 1577 |
| Q Serve(g_s), s | 8.1 | 26.0 | 8.4 | 9.6 | 14.1 | 0.0 | 6.5 | 28.2 | 14.7 | 9.7 | 20.1 | 6.9 |
| Cycle Q Clear(g_c), s | 8.1 | 26.0 | 8.4 | 9.6 | 14.1 | 0.0 | 6.5 | 28.2 | 14.7 | 9.7 | 20.1 | 6.9 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 294 | 1327 | 410 | 288 | 1319 | | 639 | 1992 | 616 | 288 | 1430 | 442 |
| V/C Ratio(X) | 0.80 | 0.85 | 0.46 | 0.96 | 0.53 | | 0.34 | 0.71 | 0.43 | 0.97 | 0.67 | 0.34 |
| Avail Cap(c_a), veh/h | 374 | 1447 | 447 | 288 | 1319 | | 639 | 1992 | 616 | 288 | 1787 | 552 |
| HCM Platoon Ratio | 0.33 | 0.33 | 0.33 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 57.3 | 52.5 | 17.7 | 54.8 | 38.2 | 0.0 | 42.5 | 30.9 | 26.8 | 54.9 | 38.3 | 19.6 |
| Incr Delay (d2), s/veh | 7.2 | 4.2 | 0.3 | 42.3 | 0.2 | 0.0 | 0.1 | 2.2 | 2.2 | 45.1 | 2.6 | 2.1 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 4.0 | 12.4 | 3.3 | 5.8 | 5.9 | 0.0 | 2.7 | 11.6 | 5.8 | 5.9 | 8.5 | 0.3 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 64.5 | 56.7 | 18.0 | 97.1 | 38.4 | 0.0 | 42.6 | 33.1 | 29.0 | 100.0 | 40.9 | 21.6 |
| LnGrp LOS | E | E | B | F | D | | D | C | C | F | D | C |
| Approach Vol, veh/h | | 1548 | | | 975 | A | | 1901 | | | 1394 | |
| Approach Delay, s/veh | | 53.1 | | | 55.1 | | | 33.6 | | | 50.7 | |
| Approach LOS | | D | | | E | | | C | | | D | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 15.0 | 52.8 | 15.0 | 37.2 | 28.2 | 39.6 | 15.2 | 37.0 |
| Change Period (Y+Rc), s | 5.0 | 6.0 | 5.0 | 6.0 | 6.0 | * 6 | 5.0 | 6.0 |
| Max Green Setting (Gmax), s | 10.0 | 44.0 | 10.0 | 34.0 | 12.0 | * 42 | 13.0 | 31.0 |
| Max Q Clear Time (g_c+I1), s | 11.7 | 30.2 | 11.6 | 28.0 | 8.5 | 22.1 | 10.1 | 16.1 |
| Green Ext Time (p_c), s | 0.0 | 11.6 | 0.0 | 3.0 | 0.1 | 11.5 | 0.1 | 2.8 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 46.5 |
| HCM 6th LOS | D |

Notes

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

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

| 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 | 0 | 0 | 86 | 0 | 0 | 10 | 0 | 1837 | 2 | 0 | 1289 | 83 |
| Future Vol, veh/h | 0 | 0 | 86 | 0 | 0 | 10 | 0 | 1837 | 2 | 0 | 1289 | 83 |
| 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 | - | - | 0 | - | - | 0 | - | - | - | - | - | 0 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 | 100 | 100 | 92 | 92 | 100 | 100 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 0 | 93 | 0 | 0 | 11 | 0 | 1837 | 2 | 0 | 1289 | 83 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | - | - | 645 | - | - | 920 | - | 0 | 0 | - | - | 0 |
| Stage 1 | - | - | - | - | - | - | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - | - | - | - | - | - | - |
| Critical Hdwy | - | - | 7.14 | - | - | 7.14 | - | - | - | - | - | - |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | - | - | - | - | - | - |
| Follow-up Hdwy | - | - | 3.92 | - | - | 3.92 | - | - | - | - | - | - |
| Pot Cap-1 Maneuver | 0 | 0 | *632 | 0 | 0 | 234 | 0 | - | - | 0 | - | - |
| Stage 1 | 0 | 0 | - | 0 | 0 | - | 0 | - | - | 0 | - | - |
| Stage 2 | 0 | 0 | - | 0 | 0 | - | 0 | - | - | 0 | - | - |
| Platoon blocked, % | | | 1 | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | - | - | *632 | - | - | 234 | - | - | - | - | - | - |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | - | - | - | - | - | - |
| Stage 1 | - | - | - | - | - | - | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 11.7 | 21.1 | 0 | 0 |
| HCM LOS | B | C | | |

| Minor Lane/Major Mvmt | NBT | NBR | EBLn1 | WBLn1 | SBT | SBR |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 632 | 234 | - | - |
| HCM Lane V/C Ratio | - | - | 0.148 | 0.046 | - | - |
| HCM Control Delay (s) | - | - | 11.7 | 21.1 | - | - |
| HCM Lane LOS | - | - | B | C | - | - |
| HCM 95th %tile Q(veh) | - | - | 0.5 | 0.1 | - | - |

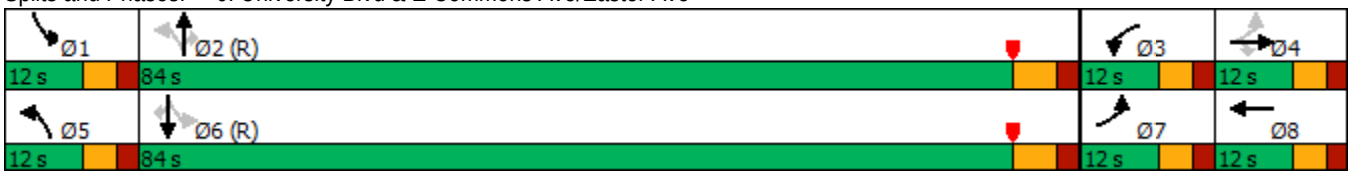
Notes

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

| Lane Group | EBL | EBT | EBR | WBL | WBT | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | |
| Traffic Volume (vph) | 131 | 9 | 67 | 59 | 20 | 246 | 1657 | 34 | 11 | 1266 | 81 |
| Future Volume (vph) | 131 | 9 | 67 | 59 | 20 | 246 | 1657 | 34 | 11 | 1266 | 81 |
| Turn Type | pm+pt | NA | Perm | Prot | NA | pm+pt | NA | Perm | pm+pt | NA | Perm |
| Protected Phases | 7 | 4 | | 3 | 8 | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | 4 | | | 2 | | 2 | 6 | | 6 |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | 5 | 2 | 2 | 1 | 6 | 6 |
| Switch Phase | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 3.0 | 4.0 | 3.0 | 3.0 | 5.0 | 5.0 | 3.0 | 5.0 | 5.0 |
| Minimum Split (s) | 8.0 | 35.0 | 35.0 | 9.0 | 32.0 | 8.0 | 24.0 | 24.0 | 8.0 | 29.0 | 29.0 |
| Total Split (s) | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 84.0 | 84.0 | 12.0 | 84.0 | 84.0 |
| Total Split (%) | 10.0% | 10.0% | 10.0% | 10.0% | 10.0% | 10.0% | 70.0% | 70.0% | 10.0% | 70.0% | 70.0% |
| Yellow Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 |
| 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) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 6.0 | 6.0 | 5.0 | 6.0 | 6.0 |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lead | Lag | Lag | Lead | Lag | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | None | None | None | None | None | C-Min | C-Min | None | C-Min | C-Min |
| Act Effct Green (s) | 11.9 | 6.3 | 6.3 | 6.9 | 5.8 | 93.0 | 89.2 | 89.2 | 86.9 | 81.1 | 81.1 |
| Actuated g/C Ratio | 0.10 | 0.05 | 0.05 | 0.06 | 0.05 | 0.78 | 0.74 | 0.74 | 0.72 | 0.68 | 0.68 |
| v/c Ratio | 0.52 | 0.10 | 0.40 | 0.67 | 0.55 | 1.07 | 0.72 | 0.03 | 0.08 | 0.61 | 0.08 |
| Control Delay | 53.0 | 56.2 | 8.9 | 86.1 | 41.8 | 93.2 | 8.5 | 0.0 | 3.8 | 10.3 | 0.4 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 53.0 | 56.2 | 8.9 | 86.1 | 41.8 | 93.2 | 8.6 | 0.0 | 3.8 | 10.3 | 0.4 |
| LOS | D | E | A | F | D | F | A | A | A | B | A |
| Approach Delay | | 38.9 | | | 64.3 | | 19.2 | | | 9.7 | |
| Approach LOS | | D | | | E | | B | | | A | |

| Intersection Summary | |
|---|---|
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 50 (42%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow | |
| Natural Cycle: 125 | |
| Control Type: Actuated-Coordinated | |
| Maximum v/c Ratio: 1.07 | |
| Intersection Signal Delay: 18.2 | Intersection LOS: B |
| Intersection Capacity Utilization 75.2% | ICU Level of Service D |
| Analysis Period (min) 15 | |

Splits and Phases: 6: University Blvd & E Commons Ave/Easter Ave



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 131 | 9 | 67 | 59 | 20 | 37 | 246 | 1657 | 34 | 11 | 1266 | 81 |
| Future Volume (veh/h) | 131 | 9 | 67 | 59 | 20 | 37 | 246 | 1657 | 34 | 11 | 1266 | 81 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 0.94 | | 1.00 | 1.00 | | 0.94 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 151 | 10 | 0 | 68 | 23 | 43 | 283 | 1905 | 39 | 13 | 1455 | 0 |
| Peak Hour Factor | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 357 | 122 | | 87 | 32 | 60 | 314 | 2496 | 1109 | 224 | 2320 | |
| Arrive On Green | 0.06 | 0.07 | 0.00 | 0.05 | 0.06 | 0.06 | 0.12 | 1.00 | 1.00 | 0.01 | 0.65 | 0.00 |
| Sat Flow, veh/h | 3456 | 1870 | 1585 | 1781 | 560 | 1047 | 1781 | 3554 | 1579 | 1781 | 3554 | 1585 |
| Grp Volume(v), veh/h | 151 | 10 | 0 | 68 | 0 | 66 | 283 | 1905 | 39 | 13 | 1455 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1728 | 1870 | 1585 | 1781 | 0 | 1606 | 1781 | 1777 | 1579 | 1781 | 1777 | 1585 |
| Q Serve(g_s), s | 4.9 | 0.6 | 0.0 | 4.5 | 0.0 | 4.8 | 7.0 | 0.0 | 0.0 | 0.3 | 28.9 | 0.0 |
| Cycle Q Clear(g_c), s | 4.9 | 0.6 | 0.0 | 4.5 | 0.0 | 4.8 | 7.0 | 0.0 | 0.0 | 0.3 | 28.9 | 0.0 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.65 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 357 | 122 | | 87 | 0 | 92 | 314 | 2496 | 1109 | 224 | 2320 | |
| V/C Ratio(X) | 0.42 | 0.08 | | 0.78 | 0.00 | 0.72 | 0.90 | 0.76 | 0.04 | 0.06 | 0.63 | |
| Avail Cap(c_a), veh/h | 363 | 122 | | 104 | 0 | 94 | 314 | 2496 | 1109 | 312 | 2320 | |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 2.00 | 2.00 | 2.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 49.4 | 52.7 | 0.0 | 56.4 | 0.0 | 55.6 | 17.6 | 0.0 | 0.0 | 6.9 | 12.3 | 0.0 |
| Incr Delay (d2), s/veh | 0.3 | 0.1 | 0.0 | 26.7 | 0.0 | 19.8 | 26.5 | 2.3 | 0.1 | 0.0 | 1.3 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 2.1 | 0.3 | 0.0 | 2.7 | 0.0 | 2.5 | 7.4 | 0.8 | 0.0 | 0.1 | 10.6 | 0.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 49.7 | 52.8 | 0.0 | 83.2 | 0.0 | 75.4 | 44.0 | 2.3 | 0.1 | 7.0 | 13.6 | 0.0 |
| LnGrp LOS | D | D | | F | A | E | D | A | A | A | B | |
| Approach Vol, veh/h | | 161 | A | | 134 | | | 2227 | | | 1468 | A |
| Approach Delay, s/veh | | 49.9 | | | 79.3 | | | 7.5 | | | 13.5 | |
| Approach LOS | | D | | | E | | | A | | | B | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 6.1 | 90.3 | 10.9 | 12.8 | 12.0 | 84.3 | 11.8 | 11.9 |
| Change Period (Y+Rc), s | 5.0 | 6.0 | 5.0 | 5.0 | 5.0 | 6.0 | 5.0 | 5.0 |
| Max Green Setting (Gmax), s | 7.0 | 78.0 | 7.0 | 7.0 | 7.0 | 78.0 | 7.0 | 7.0 |
| Max Q Clear Time (g_c+I1), s | 2.3 | 2.0 | 6.5 | 2.6 | 9.0 | 30.9 | 6.9 | 6.8 |
| Green Ext Time (p_c), s | 0.0 | 56.8 | 0.0 | 0.0 | 0.0 | 29.0 | 0.0 | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 13.9 |
| HCM 6th LOS | B |

Notes

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

Unsignalized Delay for [EBR, SBR] is excluded from calculations of the approach delay and intersection delay.

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.2 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | ↱ | | ↑↑ | ↑↑ | ↱ |
| Traffic Vol, veh/h | 0 | 42 | 0 | 1950 | 1361 | 31 |
| Future Vol, veh/h | 0 | 42 | 0 | 1950 | 1361 | 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 | - | - | - | 0 |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 100 | 100 | 100 | 100 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 46 | 0 | 1950 | 1361 | 31 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | - | 681 | - | 0 | - | 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 | *516 | 0 | - | - | - |
| Stage 1 | 0 | - | 0 | - | - | - |
| Stage 2 | 0 | - | 0 | - | - | - |
| Platoon blocked, % | | 1 | | - | - | - |
| Mov Cap-1 Maneuver | - | *516 | - | - | - | - |
| Mov Cap-2 Maneuver | - | - | - | - | - | - |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |

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

| Minor Lane/Major Mvmt | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|
| Capacity (veh/h) | - | 516 | - | - |
| HCM Lane V/C Ratio | - | 0.088 | - | - |
| HCM Control Delay (s) | - | 12.7 | - | - |
| HCM Lane LOS | - | B | - | - |
| HCM 95th %tile Q(veh) | - | 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 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | |
| Traffic Volume (vph) | 94 | 24 | 100 | 29 | 37 | 74 | 186 | 1781 | 34 | 1330 | 40 |
| Future Volume (vph) | 94 | 24 | 100 | 29 | 37 | 74 | 186 | 1781 | 34 | 1330 | 40 |
| Turn Type | Perm | NA | Perm | Perm | NA | Perm | pm+pt | NA | Perm | NA | Perm |
| Protected Phases | | 4 | | | 8 | | 5 | 2 | | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | 8 | 2 | | 6 | | 6 |
| Detector Phase | 4 | 4 | 4 | 8 | 8 | 8 | 5 | 2 | 6 | 6 | 6 |
| Switch Phase | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Minimum Split (s) | 36.0 | 36.0 | 36.0 | 40.0 | 40.0 | 40.0 | 8.0 | 29.0 | 32.0 | 32.0 | 32.0 |
| Total Split (s) | 23.0 | 23.0 | 23.0 | 23.0 | 23.0 | 23.0 | 12.0 | 97.0 | 85.0 | 85.0 | 85.0 |
| Total Split (%) | 19.2% | 19.2% | 19.2% | 19.2% | 19.2% | 19.2% | 10.0% | 80.8% | 70.8% | 70.8% | 70.8% |
| Yellow Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| 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) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 6.0 | 6.0 | 6.0 | 6.0 |
| Lead/Lag | | | | | | | Lead | | Lag | Lag | Lag |
| Lead-Lag Optimize? | | | | | | | Yes | | Yes | Yes | Yes |
| Recall Mode | None | None | None | None | None | None | None | C-Min | C-Min | C-Min | C-Min |
| Act Effct Green (s) | 13.3 | 13.3 | 13.3 | 13.3 | 13.3 | 13.3 | 96.7 | 95.7 | 83.7 | 83.7 | 83.7 |
| Actuated g/C Ratio | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.81 | 0.80 | 0.70 | 0.70 | 0.70 |
| v/c Ratio | 0.71 | 0.13 | 0.41 | 0.22 | 0.20 | 0.35 | 0.77 | 0.72 | 0.37 | 0.61 | 0.04 |
| Control Delay | 75.8 | 47.3 | 13.1 | 50.1 | 48.9 | 17.3 | 28.1 | 8.2 | 12.6 | 4.7 | 0.1 |
| 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 | 75.8 | 47.3 | 13.1 | 50.1 | 48.9 | 17.3 | 28.1 | 8.2 | 12.6 | 4.7 | 0.1 |
| LOS | E | D | B | D | D | B | C | A | B | A | A |
| Approach Delay | | 44.0 | | | 32.6 | | | 10.1 | | 4.8 | |
| Approach LOS | | D | | | C | | | B | | A | |

| Intersection Summary | |
|---|---|
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 66 (55%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow | |
| Natural Cycle: 100 | |
| Control Type: Actuated-Coordinated | |
| Maximum v/c Ratio: 0.77 | |
| Intersection Signal Delay: 10.9 | Intersection LOS: B |
| Intersection Capacity Utilization 81.7% | ICU Level of Service D |
| Analysis Period (min) 15 | |

Splits and Phases: 8: University Blvd & Easter Pl

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 94 | 24 | 100 | 29 | 37 | 74 | 186 | 1781 | 27 | 34 | 1330 | 40 |
| Future Volume (veh/h) | 94 | 24 | 100 | 29 | 37 | 74 | 186 | 1781 | 27 | 34 | 1330 | 40 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 0.98 | | 0.98 | 0.98 | | 0.98 | 1.00 | | 1.00 | 1.00 | | 0.99 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 106 | 27 | 112 | 33 | 42 | 83 | 209 | 2001 | 30 | 38 | 1494 | 45 |
| Peak Hour Factor | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 195 | 241 | 200 | 203 | 241 | 200 | 380 | 2794 | 42 | 164 | 2447 | 1086 |
| Arrive On Green | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.05 | 0.78 | 0.78 | 1.00 | 1.00 | 1.00 |
| Sat Flow, veh/h | 1245 | 1870 | 1552 | 1229 | 1870 | 1552 | 1781 | 3584 | 54 | 209 | 3554 | 1577 |
| Grp Volume(v), veh/h | 106 | 27 | 112 | 33 | 42 | 83 | 209 | 989 | 1042 | 38 | 1494 | 45 |
| Grp Sat Flow(s),veh/h/ln | 1245 | 1870 | 1552 | 1229 | 1870 | 1552 | 1781 | 1777 | 1860 | 209 | 1777 | 1577 |
| Q Serve(g_s), s | 10.0 | 1.5 | 8.1 | 2.9 | 2.4 | 5.9 | 3.9 | 33.2 | 33.6 | 8.2 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 12.4 | 1.5 | 8.1 | 4.5 | 2.4 | 5.9 | 3.9 | 33.2 | 33.6 | 30.9 | 0.0 | 0.0 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.03 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 195 | 241 | 200 | 203 | 241 | 200 | 380 | 1385 | 1450 | 164 | 2447 | 1086 |
| V/C Ratio(X) | 0.54 | 0.11 | 0.56 | 0.16 | 0.17 | 0.42 | 0.55 | 0.71 | 0.72 | 0.23 | 0.61 | 0.04 |
| Avail Cap(c_a), veh/h | 222 | 281 | 233 | 229 | 281 | 233 | 396 | 1385 | 1450 | 164 | 2447 | 1086 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 2.00 | 2.00 | 2.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 52.1 | 46.2 | 49.1 | 48.2 | 46.6 | 48.1 | 4.1 | 6.6 | 6.6 | 4.2 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 0.9 | 0.1 | 0.9 | 0.1 | 0.1 | 0.5 | 0.8 | 3.2 | 3.1 | 3.3 | 1.1 | 0.1 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 3.2 | 0.7 | 3.2 | 0.9 | 1.1 | 2.3 | 1.2 | 9.7 | 10.2 | 0.4 | 0.4 | 0.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 53.0 | 46.3 | 50.0 | 48.3 | 46.7 | 48.6 | 4.9 | 9.7 | 9.7 | 7.5 | 1.1 | 0.1 |
| LnGrp LOS | D | D | D | D | D | D | A | A | A | A | A | A |
| Approach Vol, veh/h | | 245 | | | 158 | | | 2240 | | | 1577 | |
| Approach Delay, s/veh | | 50.9 | | | 48.1 | | | 9.3 | | | 1.3 | |
| Approach LOS | | D | | | D | | | A | | | A | |

| Timer - Assigned Phs | | 2 | | 4 | 5 | 6 | | 8 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | | 99.6 | | 20.4 | 10.9 | 88.6 | | 20.4 | | | | |
| Change Period (Y+Rc), s | | 6.0 | | 5.0 | 5.0 | 6.0 | | 5.0 | | | | |
| Max Green Setting (Gmax), s | | 91.0 | | 18.0 | 7.0 | 79.0 | | 18.0 | | | | |
| Max Q Clear Time (g_c+I1), s | | 35.6 | | 14.4 | 5.9 | 32.9 | | 7.9 | | | | |
| Green Ext Time (p_c), s | | 46.9 | | 0.2 | 0.0 | 32.3 | | 0.2 | | | | |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 10.2 |
| HCM 6th LOS | B |

Notes

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

| Intersection | |
|---|---|
| Int Delay, s/veh | 2.9 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 21 | 130 | 3 | 5 | 193 | 69 | 11 | 2 | 16 | 69 | 2 | 7 |
| Future Vol, veh/h | 21 | 130 | 3 | 5 | 193 | 69 | 11 | 2 | 16 | 69 | 2 | 7 |
| 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 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 23 | 141 | 3 | 5 | 210 | 75 | 12 | 2 | 17 | 75 | 2 | 8 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 285 | 0 | 0 | 144 | 0 | 0 | 452 | 484 | 143 | 456 | 448 | 248 |
| Stage 1 | - | - | - | - | - | - | 189 | 189 | - | 258 | 258 | - |
| Stage 2 | - | - | - | - | - | - | 263 | 295 | - | 198 | 190 | - |
| Critical Hdwy | 4.12 | - | - | 4.12 | - | - | 7.12 | 6.52 | 6.22 | 7.12 | 6.52 | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.12 | 5.52 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.12 | 5.52 | - |
| Follow-up Hdwy | 2.218 | - | - | 2.218 | - | - | 3.518 | 4.018 | 3.318 | 3.518 | 4.018 | 3.318 |
| Pot Cap-1 Maneuver | 1277 | - | - | 1438 | - | - | 518 | 483 | 905 | 515 | 506 | 791 |
| Stage 1 | - | - | - | - | - | - | 813 | 744 | - | 747 | 694 | - |
| Stage 2 | - | - | - | - | - | - | 742 | 669 | - | 804 | 743 | - |
| Platoon blocked, % | | - | - | | - | - | | | | | | |
| Mov Cap-1 Maneuver | 1277 | - | - | 1438 | - | - | 502 | 471 | 905 | 494 | 494 | 791 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 502 | 471 | - | 494 | 494 | - |
| Stage 1 | - | - | - | - | - | - | 797 | 729 | - | 732 | 691 | - |
| Stage 2 | - | - | - | - | - | - | 730 | 666 | - | 770 | 728 | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 1.1 | 0.1 | 10.7 | 13.4 |
| HCM LOS | | | B | B |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 662 | 1277 | - | - | 1438 | - | - | 511 |
| HCM Lane V/C Ratio | 0.048 | 0.018 | - | - | 0.004 | - | - | 0.166 |
| HCM Control Delay (s) | 10.7 | 7.9 | 0 | - | 7.5 | 0 | - | 13.4 |
| HCM Lane LOS | B | A | A | - | A | A | - | B |
| HCM 95th %tile Q(veh) | 0.1 | 0.1 | - | - | 0 | - | - | 0.6 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 1.3 |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 21 | 133 | 139 | 72 | 21 | 13 |
| Future Vol, veh/h | 21 | 133 | 139 | 72 | 21 | 13 |
| 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 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 23 | 145 | 151 | 78 | 23 | 14 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 229 | 0 | - | 0 | 381 | 190 |
| Stage 1 | - | - | - | - | 190 | - |
| Stage 2 | - | - | - | - | 191 | - |
| Critical Hdwy | 4.12 | - | - | - | 6.42 | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.42 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.42 | - |
| Follow-up Hdwy | 2.218 | - | - | - | 3.518 | 3.318 |
| Pot Cap-1 Maneuver | 1339 | - | - | - | 621 | 852 |
| Stage 1 | - | - | - | - | 842 | - |
| Stage 2 | - | - | - | - | 841 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | 1339 | - | - | - | 609 | 852 |
| Mov Cap-2 Maneuver | - | - | - | - | 609 | - |
| Stage 1 | - | - | - | - | 826 | - |
| Stage 2 | - | - | - | - | 841 | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 1.1 | 0 | 10.6 |
| HCM LOS | | | B |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|
| Capacity (veh/h) | 1339 | - | - | - | 684 |
| HCM Lane V/C Ratio | 0.017 | - | - | - | 0.054 |
| HCM Control Delay (s) | 7.7 | 0 | - | - | 10.6 |
| HCM Lane LOS | A | A | - | - | B |
| HCM 95th %tile Q(veh) | 0.1 | - | - | - | 0.2 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 1.4 |

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 139 | 5 | 3 | 149 | 29 | 15 |
| Future Vol, veh/h | 139 | 5 | 3 | 149 | 29 | 15 |
| 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 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 151 | 5 | 3 | 162 | 32 | 16 |

| Major/Minor | Major1 | | Major2 | | Minor1 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 0 | 0 | 156 | 0 | 322 | 154 |
| Stage 1 | - | - | - | - | 154 | - |
| Stage 2 | - | - | - | - | 168 | - |
| Critical Hdwy | - | - | 4.12 | - | 6.42 | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.42 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.42 | - |
| Follow-up Hdwy | - | - | 2.218 | - | 3.518 | 3.318 |
| Pot Cap-1 Maneuver | - | - | 1424 | - | 672 | 892 |
| Stage 1 | - | - | - | - | 874 | - |
| Stage 2 | - | - | - | - | 862 | - |
| Platoon blocked, % | - | - | | - | | |
| Mov Cap-1 Maneuver | - | - | 1424 | - | 671 | 892 |
| Mov Cap-2 Maneuver | - | - | - | - | 671 | - |
| Stage 1 | - | - | - | - | 874 | - |
| Stage 2 | - | - | - | - | 860 | - |

| Approach | EB | WB | NB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 0.1 | 10.3 |
| HCM LOS | | | B |

| Minor Lane/Major Mvmt | NBLn1 | EBT | EBR | WBL | WBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | 733 | - | - | 1424 | - |
| HCM Lane V/C Ratio | 0.065 | - | - | 0.002 | - |
| HCM Control Delay (s) | 10.3 | - | - | 7.5 | 0 |
| HCM Lane LOS | B | - | - | A | A |
| HCM 95th %tile Q(veh) | 0.2 | - | - | 0 | - |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 8.1 |
| Intersection LOS | A |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 23 | 112 | 117 | 57 | 33 | 13 |
| Future Vol, veh/h | 23 | 112 | 117 | 57 | 33 | 13 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 25 | 122 | 127 | 62 | 36 | 14 |
| Number of Lanes | 0 | 1 | 1 | 0 | 1 | 0 |

| Approach | EB | WB | SB |
|---|---|---|---|
| Opposing Approach | WB | EB | |
| Opposing Lanes | 1 | 1 | 0 |
| Conflicting Approach Left | SB | | WB |
| Conflicting Lanes Left | 1 | 0 | 1 |
| Conflicting Approach Right | | SB | EB |
| Conflicting Lanes Right | 0 | 1 | 1 |
| HCM Control Delay | 8.2 | 8.1 | 7.9 |
| HCM LOS | A | A | A |

| Lane | EBLn1 | WBLn1 | SBLn1 |
|---|---|---|---|
| Vol Left, % | 17% | 0% | 72% |
| Vol Thru, % | 83% | 67% | 0% |
| Vol Right, % | 0% | 33% | 28% |
| Sign Control | Stop | Stop | Stop |
| Traffic Vol by Lane | 135 | 174 | 46 |
| LT Vol | 23 | 0 | 33 |
| Through Vol | 112 | 117 | 0 |
| RT Vol | 0 | 57 | 13 |
| Lane Flow Rate | 147 | 189 | 50 |
| Geometry Grp | 1 | 1 | 1 |
| Degree of Util (X) | 0.171 | 0.207 | 0.064 |
| Departure Headway (Hd) | 4.198 | 3.935 | 4.622 |
| Convergence, Y/N | Yes | Yes | Yes |
| Cap | 845 | 900 | 780 |
| Service Time | 2.272 | 2.01 | 2.622 |
| HCM Lane V/C Ratio | 0.174 | 0.21 | 0.064 |
| HCM Control Delay | 8.2 | 8.1 | 7.9 |
| HCM Lane LOS | A | A | A |
| HCM 95th-tile Q | 0.6 | 0.8 | 0.2 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 3.9 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 4 | 56 | 73 | 9 | 49 | 41 |
| Future Vol, veh/h | 4 | 56 | 73 | 9 | 49 | 41 |
| 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 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 4 | 61 | 79 | 10 | 53 | 45 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 235 | 84 | 0 | 0 | 89 | 0 |
| Stage 1 | 84 | - | - | - | - | - |
| Stage 2 | 151 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | - | - | 4.12 | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | - | - | 2.218 | - |
| Pot Cap-1 Maneuver | 753 | 975 | - | - | 1506 | - |
| Stage 1 | 939 | - | - | - | - | - |
| Stage 2 | 877 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 726 | 975 | - | - | 1506 | - |
| Mov Cap-2 Maneuver | 726 | - | - | - | - | - |
| Stage 1 | 939 | - | - | - | - | - |
| Stage 2 | 845 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 9.1 | 0 | 4.1 |
| HCM LOS | A | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 953 | 1506 | - |
| HCM Lane V/C Ratio | - | - | 0.068 | 0.035 | - |
| HCM Control Delay (s) | - | - | 9.1 | 7.5 | 0 |
| HCM Lane LOS | - | - | A | A | A |
| HCM 95th %tile Q(veh) | - | - | 0.2 | 0.1 | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 2.8 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 26 | 11 | 4 | 2 | 4 | 4 | 1 | 126 | 2 | 42 | 84 | 15 |
| Future Vol, veh/h | 26 | 11 | 4 | 2 | 4 | 4 | 1 | 126 | 2 | 42 | 84 | 15 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 28 | 12 | 4 | 2 | 4 | 4 | 1 | 137 | 2 | 46 | 91 | 16 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 335 | 332 | 99 | 339 | 339 | 138 | 107 | 0 | 0 | 139 | 0 | 0 |
| Stage 1 | 191 | 191 | - | 140 | 140 | - | - | - | - | - | - | - |
| Stage 2 | 144 | 141 | - | 199 | 199 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.12 | 6.52 | 6.22 | 7.12 | 6.52 | 6.22 | 4.12 | - | - | 4.12 | - | - |
| Critical Hdwy Stg 1 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 4.018 | 3.318 | 3.518 | 4.018 | 3.318 | 2.218 | - | - | 2.218 | - | - |
| Pot Cap-1 Maneuver | 619 | 588 | 957 | 615 | 582 | 910 | 1484 | - | - | 1445 | - | - |
| Stage 1 | 811 | 742 | - | 863 | 781 | - | - | - | - | - | - | - |
| Stage 2 | 859 | 780 | - | 803 | 736 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | 596 | 567 | 957 | 586 | 562 | 910 | 1484 | - | - | 1445 | - | - |
| Mov Cap-2 Maneuver | 596 | 567 | - | 586 | 562 | - | - | - | - | - | - | - |
| Stage 1 | 810 | 717 | - | 862 | 780 | - | - | - | - | - | - | - |
| Stage 2 | 849 | 779 | - | 759 | 711 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 11.4 | 10.5 | 0.1 | 2.3 |
| HCM LOS | B | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 1484 | - | - | 610 | 670 | 1445 | - | - |
| HCM Lane V/C Ratio | 0.001 | - | - | 0.073 | 0.016 | 0.032 | - | - |
| HCM Control Delay (s) | 7.4 | 0 | - | 11.4 | 10.5 | 7.6 | 0 | - |
| HCM Lane LOS | A | A | - | B | B | A | A | - |
| HCM 95th %tile Q(veh) | 0 | - | - | 0.2 | 0 | 0.1 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 1.9 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 24 | 26 | 122 | 35 | 23 | 117 |
| Future Vol, veh/h | 24 | 26 | 122 | 35 | 23 | 117 |
| 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 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 26 | 28 | 133 | 38 | 25 | 127 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 329 | 152 | 0 | 0 | 171 | 0 |
| Stage 1 | 152 | - | - | - | - | - |
| Stage 2 | 177 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | - | - | 4.12 | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | - | - | 2.218 | - |
| Pot Cap-1 Maneuver | 665 | 894 | - | - | 1406 | - |
| Stage 1 | 876 | - | - | - | - | - |
| Stage 2 | 854 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 652 | 894 | - | - | 1406 | - |
| Mov Cap-2 Maneuver | 652 | - | - | - | - | - |
| Stage 1 | 876 | - | - | - | - | - |
| Stage 2 | 838 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 10.1 | 0 | 1.2 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 759 | 1406 | - |
| HCM Lane V/C Ratio | - | - | 0.072 | 0.018 | - |
| HCM Control Delay (s) | - | - | 10.1 | 7.6 | 0 |
| HCM Lane LOS | - | - | B | A | A |
| HCM 95th %tile Q(veh) | - | - | 0.2 | 0.1 | - |

| Lane Group | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 1156 | 119 | 50 | 1595 | 187 | 86 |
| Future Volume (vph) | 1156 | 119 | 50 | 1595 | 187 | 86 |
| Turn Type | NA | Perm | pm+pt | NA | Prot | Perm |
| Protected Phases | 2 | | 1 | 6 | 8 | |
| Permitted Phases | | 2 | 6 | | | 8 |
| Detector Phase | 2 | 2 | 1 | 6 | 8 | 8 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 17.0 | 17.0 | 3.0 | 17.0 | 5.0 | 5.0 |
| Minimum Split (s) | 23.0 | 23.0 | 7.0 | 23.0 | 30.0 | 30.0 |
| Total Split (s) | 76.0 | 76.0 | 13.0 | 89.0 | 31.0 | 31.0 |
| Total Split (%) | 63.3% | 63.3% | 10.8% | 74.2% | 25.8% | 25.8% |
| Yellow Time (s) | 4.0 | 4.0 | 3.0 | 4.0 | 3.0 | 3.0 |
| All-Red Time (s) | 2.0 | 2.0 | 1.0 | 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) | 6.0 | 6.0 | 4.0 | 6.0 | 5.0 | 5.0 |
| Lead/Lag | Lag | Lag | Lead | | | |
| Lead-Lag Optimize? | Yes | Yes | Yes | | | |
| Recall Mode | C-Min | C-Min | None | C-Min | None | None |
| Act Effct Green (s) | 83.5 | 83.5 | 93.2 | 91.2 | 17.8 | 17.8 |
| Actuated g/C Ratio | 0.70 | 0.70 | 0.78 | 0.76 | 0.15 | 0.15 |
| v/c Ratio | 0.49 | 0.12 | 0.16 | 0.43 | 0.75 | 0.29 |
| Control Delay | 10.4 | 4.2 | 5.0 | 6.0 | 65.6 | 10.8 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.3 | 0.0 | 0.0 |
| Total Delay | 10.4 | 4.2 | 5.0 | 6.2 | 65.6 | 10.8 |
| LOS | B | A | A | A | E | B |
| Approach Delay | 9.8 | | | 6.2 | 48.3 | |
| Approach LOS | A | | | A | D | |

| Intersection Summary | |
|---|---|
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 31 (26%), Referenced to phase 2:EBT and 6:WBTL, Start of 1st Green | |
| Natural Cycle: 65 | |
| Control Type: Actuated-Coordinated | |
| Maximum v/c Ratio: 0.75 | |
| Intersection Signal Delay: 11.2 | Intersection LOS: B |
| Intersection Capacity Utilization 59.8% | ICU Level of Service B |
| Analysis Period (min) 15 | |

Splits and Phases: 1: S Race St & Arapahoe Rd

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 1156 | 119 | 50 | 1595 | 187 | 86 |
| Future Volume (veh/h) | 1156 | 119 | 50 | 1595 | 187 | 86 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | | 1.00 | 1.00 | | 1.00 | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | No | | | No | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 1204 | 124 | 52 | 1661 | 195 | 90 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 2586 | 1148 | 339 | 3990 | 226 | 201 |
| Arrive On Green | 0.73 | 0.73 | 0.02 | 0.78 | 0.13 | 0.13 |
| Sat Flow, veh/h | 3647 | 1577 | 1781 | 5274 | 1781 | 1585 |
| Grp Volume(v), veh/h | 1204 | 124 | 52 | 1661 | 195 | 90 |
| Grp Sat Flow(s),veh/h/ln | 1777 | 1577 | 1781 | 1702 | 1781 | 1585 |
| Q Serve(g_s), s | 16.8 | 2.8 | 0.8 | 12.6 | 12.9 | 6.3 |
| Cycle Q Clear(g_c), s | 16.8 | 2.8 | 0.8 | 12.6 | 12.9 | 6.3 |
| Prop In Lane | | 1.00 | 1.00 | | 1.00 | 1.00 |
| Lane Grp Cap(c), veh/h | 2586 | 1148 | 339 | 3990 | 226 | 201 |
| V/C Ratio(X) | 0.47 | 0.11 | 0.15 | 0.42 | 0.86 | 0.45 |
| Avail Cap(c_a), veh/h | 2586 | 1148 | 436 | 3990 | 386 | 343 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.73 | 0.73 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 6.7 | 4.8 | 5.1 | 4.2 | 51.4 | 48.5 |
| Incr Delay (d2), s/veh | 0.6 | 0.2 | 0.1 | 0.2 | 4.2 | 0.6 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 5.5 | 0.8 | 0.3 | 3.5 | 6.0 | 2.5 |
| Unsig. Movement Delay, s/veh | | | | | | |
| LnGrp Delay(d),s/veh | 7.3 | 5.0 | 5.2 | 4.5 | 55.6 | 49.1 |
| LnGrp LOS | A | A | A | A | E | D |
| Approach Vol, veh/h | 1328 | | | 1713 | 285 | |
| Approach Delay, s/veh | 7.1 | | | 4.5 | 53.5 | |
| Approach LOS | A | | | A | D | |

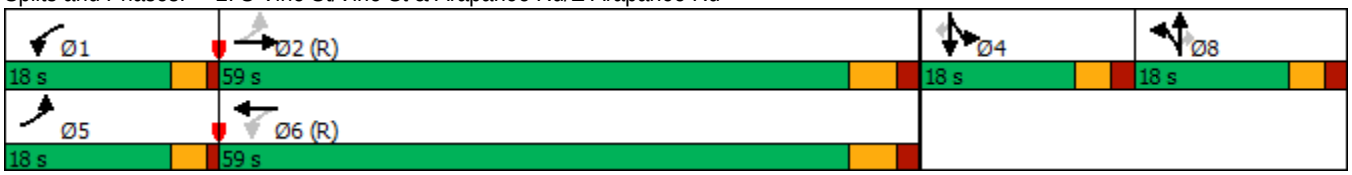
| Timer - Assigned Phs | 1 | 2 | | | | 6 | 8 |
|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 6.5 | 93.3 | | | | 99.8 | 20.2 |
| Change Period (Y+Rc), s | 4.0 | 6.0 | | | | 6.0 | 5.0 |
| Max Green Setting (Gmax), s | 9.0 | 70.0 | | | | 83.0 | 26.0 |
| Max Q Clear Time (g_c+I1), s | 2.8 | 18.8 | | | | 14.6 | 14.9 |
| Green Ext Time (p_c), s | 0.0 | 6.8 | | | | 11.7 | 0.3 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 9.7 |
| HCM 6th LOS | A |

| Lane Group | EBL | EBT | WBL | WBT | NBT | NBR | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | |
| Traffic Volume (vph) | 69 | 1026 | 189 | 1538 | 27 | 165 | 16 | 35 |
| Future Volume (vph) | 69 | 1026 | 189 | 1538 | 27 | 165 | 16 | 35 |
| Turn Type | pm+pt | NA | pm+pt | NA | NA | Perm | NA | Perm |
| Protected Phases | 5 | 2 | 1 | 6 | 8 | | 4 | |
| Permitted Phases | 2 | | 6 | | | 8 | | 4 |
| Detector Phase | 5 | 2 | 1 | 6 | 8 | 8 | 4 | 4 |
| Switch Phase | | | | | | | | |
| Minimum Initial (s) | 3.0 | 17.0 | 3.0 | 17.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Minimum Split (s) | 7.0 | 26.0 | 7.0 | 23.0 | 35.0 | 35.0 | 34.0 | 34.0 |
| Total Split (s) | 18.0 | 59.0 | 18.0 | 59.0 | 18.0 | 18.0 | 18.0 | 18.0 |
| Total Split (%) | 15.9% | 52.2% | 15.9% | 52.2% | 15.9% | 15.9% | 15.9% | 15.9% |
| Yellow Time (s) | 3.0 | 4.0 | 3.0 | 4.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| All-Red Time (s) | 1.0 | 2.0 | 1.0 | 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) | 4.0 | 6.0 | 4.0 | 6.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Lead/Lag | Lead | Lag | Lead | Lag | | | | |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | | | | |
| Recall Mode | None | C-Min | None | C-Min | None | None | None | None |
| Act Effct Green (s) | 66.9 | 58.5 | 74.0 | 63.8 | 13.0 | 13.0 | 11.6 | 11.6 |
| Actuated g/C Ratio | 0.59 | 0.52 | 0.65 | 0.56 | 0.12 | 0.12 | 0.10 | 0.10 |
| v/c Ratio | 0.42 | 0.48 | 0.62 | 0.65 | 1.01 | 0.53 | 0.75 | 0.14 |
| Control Delay | 17.4 | 18.3 | 16.9 | 18.9 | 116.9 | 13.1 | 73.4 | 1.1 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 17.4 | 18.3 | 16.9 | 18.9 | 116.9 | 13.1 | 73.4 | 1.1 |
| LOS | B | B | B | B | F | B | E | A |
| Approach Delay | | 18.3 | | 18.7 | 69.6 | | 58.0 | |
| Approach LOS | | B | | B | E | | E | |

| Intersection Summary | |
|---|---|
| Cycle Length: 113 | |
| Actuated Cycle Length: 113 | |
| Offset: 28 (25%), Referenced to phase 2:EBTL and 6:WBTL, Start of 1st Green | |
| Natural Cycle: 125 | |
| Control Type: Actuated-Coordinated | |
| Maximum v/c Ratio: 1.01 | |
| Intersection Signal Delay: 25.3 | Intersection LOS: C |
| Intersection Capacity Utilization 69.2% | ICU Level of Service C |
| Analysis Period (min) 15 | |

Splits and Phases: 2: S Vine St/Vine St & Arapahoe Rd/E Arapahoe Rd



# HCM 6th Signalized Intersection Summary
## 2: S Vine St/Vine St & Arapahoe Rd/E Arapahoe Rd

11/04/2019

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 69 | 1026 | 148 | 189 | 1538 | 201 | 171 | 27 | 165 | 114 | 16 | 35 |
| Future Volume (veh/h) | 69 | 1026 | 148 | 189 | 1538 | 201 | 171 | 27 | 165 | 114 | 16 | 35 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 0.99 | 1.00 | | 0.99 | 1.00 | | 0.98 | 1.00 | | 0.97 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 73 | 1080 | 156 | 199 | 1619 | 212 | 180 | 28 | 174 | 120 | 17 | 37 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 210 | 2459 | 355 | 362 | 2646 | 345 | 178 | 28 | 178 | 151 | 21 | 148 |
| Arrive On Green | 0.03 | 0.55 | 0.55 | 0.07 | 0.58 | 0.58 | 0.12 | 0.12 | 0.12 | 0.10 | 0.10 | 0.10 |
| Sat Flow, veh/h | 1781 | 4503 | 650 | 1781 | 4567 | 596 | 1551 | 241 | 1548 | 1570 | 222 | 1541 |
| Grp Volume(v), veh/h | 73 | 816 | 420 | 199 | 1206 | 625 | 208 | 0 | 174 | 137 | 0 | 37 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1702 | 1748 | 1781 | 1702 | 1759 | 1793 | 0 | 1548 | 1792 | 0 | 1541 |
| Q Serve(g_s), s | 2.0 | 16.2 | 16.2 | 5.3 | 26.1 | 26.2 | 13.0 | 0.0 | 12.7 | 8.5 | 0.0 | 2.5 |
| Cycle Q Clear(g_c), s | 2.0 | 16.2 | 16.2 | 5.3 | 26.1 | 26.2 | 13.0 | 0.0 | 12.7 | 8.5 | 0.0 | 2.5 |
| Prop In Lane | 1.00 | | 0.37 | 1.00 | | 0.34 | 0.87 | | 1.00 | 0.88 | | 1.00 |
| Lane Grp Cap(c), veh/h | 210 | 1859 | 955 | 362 | 1972 | 1019 | 206 | 0 | 178 | 172 | 0 | 148 |
| V/C Ratio(X) | 0.35 | 0.44 | 0.44 | 0.55 | 0.61 | 0.61 | 1.01 | 0.00 | 0.98 | 0.80 | 0.00 | 0.25 |
| Avail Cap(c_a), veh/h | 373 | 1859 | 955 | 466 | 1972 | 1019 | 206 | 0 | 178 | 206 | 0 | 177 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.88 | 0.88 | 0.88 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 13.6 | 15.3 | 15.3 | 11.4 | 15.5 | 15.5 | 50.0 | 0.0 | 49.9 | 50.0 | 0.0 | 47.3 |
| Incr Delay (d2), s/veh | 0.3 | 0.7 | 1.3 | 0.5 | 1.4 | 2.8 | 64.9 | 0.0 | 60.3 | 13.5 | 0.0 | 0.3 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.8 | 6.1 | 6.5 | 2.0 | 9.8 | 10.6 | 9.6 | 0.0 | 7.9 | 4.4 | 0.0 | 1.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 13.9 | 16.0 | 16.6 | 11.9 | 16.9 | 18.3 | 114.9 | 0.0 | 110.2 | 63.5 | 0.0 | 47.6 |
| LnGrp LOS | B | B | B | B | B | B | F | A | F | E | A | D |
| Approach Vol, veh/h | | 1309 | | | 2030 | | | 382 | | | 174 | |
| Approach Delay, s/veh | | 16.1 | | | 16.8 | | | 112.7 | | | 60.1 | |
| Approach LOS | | B | | | B | | | F | | | E | |

| Timer - Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 11.4 | 67.7 | | 15.9 | 7.7 | 71.5 | | 18.0 |
| Change Period (Y+Rc), s | 4.0 | 6.0 | | 5.0 | 4.0 | 6.0 | | 5.0 |
| Max Green Setting (Gmax), s | 14.0 | 53.0 | | 13.0 | 14.0 | 53.0 | | 13.0 |
| Max Q Clear Time (g_c+I1), s | 7.3 | 18.2 | | 10.5 | 4.0 | 28.2 | | 15.0 |
| Green Ext Time (p_c), s | 0.1 | 6.3 | | 0.1 | 0.0 | 10.2 | | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 27.9 |
| HCM 6th LOS | C |

**Notes**

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

| Intersection | |
|---|---|
| Int Delay, s/veh | 1.4 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 30 | 1232 | 43 | 89 | 1842 | 8 | 0 | 0 | 185 | 0 | 0 | 86 |
| Future Vol, veh/h | 30 | 1232 | 43 | 89 | 1842 | 8 | 0 | 0 | 185 | 0 | 0 | 86 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | 150 | - | 0 | 100 | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 31 | 1270 | 44 | 92 | 1899 | 8 | 0 | 0 | 191 | 0 | 0 | 89 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 1907 | 0 | 0 | 1314 | 0 | 0 | - | 3423 | 635 | - | 3463 | 954 |
| Stage 1 | - | - | - | - | - | - | - | 1332 | - | - | 2087 | - |
| Stage 2 | - | - | - | - | - | - | - | 2091 | - | - | 1376 | - |
| Critical Hdwy | 5.34 | - | - | 5.34 | - | - | - | 6.54 | 7.14 | - | 6.54 | 7.14 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | - | 5.54 | - | - | 5.54 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | - | 5.54 | - | - | 5.54 | - |
| Follow-up Hdwy | 3.12 | - | - | 3.12 | - | - | - | 4.02 | 3.92 | - | 4.02 | 3.92 |
| Pot Cap-1 Maneuver | *627 | - | - | *798 | - | - | 0 | *7 | *635 | 0 | *7 | *499 |
| Stage 1 | - | - | - | - | - | - | 0 | *619 | - | 0 | *457 | - |
| Stage 2 | - | - | - | - | - | - | 0 | *453 | - | 0 | *619 | - |
| Platoon blocked, % | 1 | - | - | 1 | - | - | | | 1 | | | 1 |
| Mov Cap-1 Maneuver | *627 | - | - | *798 | - | - | - | *6 | *635 | - | *6 | *499 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | - | *6 | - | - | *6 | - |
| Stage 1 | - | - | - | - | - | - | - | *589 | - | - | *404 | - |
| Stage 2 | - | - | - | - | - | - | - | *401 | - | - | *589 | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 0.3 | 0.5 | 13.1 | 13.8 |
| HCM LOS | | | B | B |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 635 | * 627 | - | - | * 798 | - | - | 499 |
| HCM Lane V/C Ratio | 0.3 | 0.049 | - | - | 0.115 | - | - | 0.178 |
| HCM Control Delay (s) | 13.1 | 11 | - | - | 10.1 | - | - | 13.8 |
| HCM Lane LOS | B | B | - | - | B | - | - | B |
| HCM 95th %tile Q(veh) | 1.3 | 0.2 | - | - | 0.4 | - | - | 0.6 |

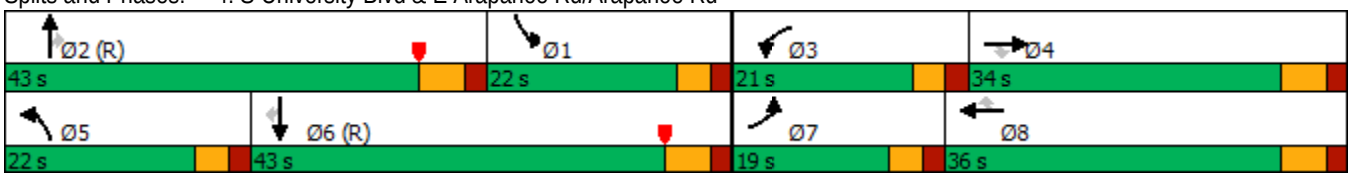
Notes

~: 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) | 365 | 791 | 261 | 370 | 1304 | 457 | 316 | 1282 | 234 | 368 | 1423 | 345 |
| Future Volume (vph) | 365 | 791 | 261 | 370 | 1304 | 457 | 316 | 1282 | 234 | 368 | 1423 | 345 |
| Turn Type | Prot | NA | Perm | Prot | NA | Perm | Prot | NA | Perm | Prot | NA | Perm |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | | | 4 | | | 8 | | | 2 | | | 6 |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | 8 | 5 | 2 | 2 | 1 | 6 | 6 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 | 3.0 | 10.0 | 10.0 | 3.0 | 10.0 | 10.0 |
| Minimum Split (s) | 8.0 | 39.0 | 39.0 | 8.0 | 37.0 | 37.0 | 8.0 | 35.0 | 35.0 | 8.0 | 40.0 | 40.0 |
| Total Split (s) | 19.0 | 34.0 | 34.0 | 21.0 | 36.0 | 36.0 | 22.0 | 43.0 | 43.0 | 22.0 | 43.0 | 43.0 |
| Total Split (%) | 15.8% | 28.3% | 28.3% | 17.5% | 30.0% | 30.0% | 18.3% | 35.8% | 35.8% | 18.3% | 35.8% | 35.8% |
| Yellow Time (s) | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 |
| 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 | 0.0 |
| Total Lost Time (s) | 5.0 | 6.0 | 6.0 | 5.0 | 6.0 | 6.0 | 5.0 | 6.0 | 6.0 | 5.0 | 6.0 | 6.0 |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lead | Lead | Lead | Lag | Lag | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | None | None | None | None | None | None | C-Min | C-Min | None | C-Min | C-Min |
| Act Effct Green (s) | 14.0 | 28.7 | 28.7 | 15.3 | 30.0 | 30.0 | 14.9 | 37.0 | 37.0 | 17.0 | 39.1 | 39.1 |
| Actuated g/C Ratio | 0.12 | 0.24 | 0.24 | 0.13 | 0.25 | 0.25 | 0.12 | 0.31 | 0.31 | 0.14 | 0.33 | 0.33 |
| v/c Ratio | 0.93 | 0.66 | 0.46 | 0.86 | 1.05 | 0.76 | 0.76 | 0.83 | 0.37 | 0.77 | 0.88 | 0.51 |
| Control Delay | 83.2 | 44.5 | 7.3 | 71.4 | 82.2 | 24.9 | 48.7 | 35.5 | 8.1 | 61.4 | 45.7 | 10.8 |
| 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 | 83.2 | 44.5 | 7.3 | 71.4 | 82.2 | 24.9 | 48.7 | 35.5 | 8.1 | 61.4 | 45.7 | 10.8 |
| LOS | F | D | A | E | F | C | D | D | A | E | D | B |
| Approach Delay | | 47.6 | | | 68.1 | | | 34.3 | | | 42.8 | |
| Approach LOS | | D | | | E | | | C | | | D | |

| Intersection Summary | |
|---|---|
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 103 (86%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow | |
| Natural Cycle: 105 | |
| Control Type: Actuated-Coordinated | |
| Maximum v/c Ratio: 1.05 | |
| Intersection Signal Delay: 48.8 | Intersection LOS: D |
| Intersection Capacity Utilization 90.5% | ICU Level of Service E |
| Analysis Period (min) 15 | |

Splits and Phases: 4: S University Blvd & E Arapahoe Rd/Arapahoe Rd



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 365 | 791 | 261 | 370 | 1304 | 457 | 316 | 1282 | 234 | 368 | 1423 | 345 |
| Future Volume (veh/h) | 365 | 791 | 261 | 370 | 1304 | 457 | 316 | 1282 | 234 | 368 | 1423 | 345 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 0.99 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 372 | 807 | 266 | 378 | 1331 | 0 | 322 | 1308 | 239 | 376 | 1452 | 352 |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 403 | 1235 | 381 | 431 | 1277 | | 381 | 1540 | 476 | 484 | 1735 | 536 |
| Arrive On Green | 0.12 | 0.24 | 0.24 | 0.12 | 0.25 | 0.00 | 0.11 | 0.30 | 0.30 | 0.14 | 0.34 | 0.34 |
| Sat Flow, veh/h | 3456 | 5106 | 1575 | 3456 | 5106 | 1585 | 3456 | 5106 | 1577 | 3456 | 5106 | 1578 |
| Grp Volume(v), veh/h | 372 | 807 | 266 | 378 | 1331 | 0 | 322 | 1308 | 239 | 376 | 1452 | 352 |
| Grp Sat Flow(s),veh/h/ln | 1728 | 1702 | 1575 | 1728 | 1702 | 1585 | 1728 | 1702 | 1577 | 1728 | 1702 | 1578 |
| Q Serve(g_s), s | 12.8 | 17.1 | 18.5 | 12.9 | 30.0 | 0.0 | 11.0 | 28.9 | 10.3 | 12.6 | 31.5 | 22.7 |
| Cycle Q Clear(g_c), s | 12.8 | 17.1 | 18.5 | 12.9 | 30.0 | 0.0 | 11.0 | 28.9 | 10.3 | 12.6 | 31.5 | 22.7 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 403 | 1235 | 381 | 431 | 1277 | | 381 | 1540 | 476 | 484 | 1735 | 536 |
| V/C Ratio(X) | 0.92 | 0.65 | 0.70 | 0.88 | 1.04 | | 0.85 | 0.85 | 0.50 | 0.78 | 0.84 | 0.66 |
| Avail Cap(c_a), veh/h | 403 | 1235 | 381 | 461 | 1277 | | 490 | 1574 | 486 | 490 | 1735 | 536 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 52.5 | 41.0 | 41.5 | 51.6 | 45.0 | 0.0 | 52.4 | 39.3 | 16.4 | 49.8 | 36.5 | 33.7 |
| Incr Delay (d2), s/veh | 26.1 | 1.0 | 4.7 | 15.5 | 37.1 | 0.0 | 8.5 | 6.1 | 3.8 | 6.9 | 5.0 | 6.2 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 6.9 | 7.2 | 7.6 | 6.5 | 16.8 | 0.0 | 5.1 | 12.5 | 4.1 | 5.8 | 13.4 | 9.5 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 78.6 | 41.9 | 46.2 | 67.1 | 82.1 | 0.0 | 60.9 | 45.4 | 20.2 | 56.7 | 41.5 | 39.8 |
| LnGrp LOS | E | D | D | E | F | | E | D | C | E | D | D |
| Approach Vol, veh/h | | 1445 | | | 1709 | A | | 1869 | | | 2180 | |
| Approach Delay, s/veh | | 52.2 | | | 78.8 | | | 44.8 | | | 43.9 | |
| Approach LOS | | D | | | E | | | D | | | D | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 22.8 | 42.2 | 20.0 | 35.0 | 18.2 | 46.8 | 19.0 | 36.0 |
| Change Period (Y+Rc), s | 6.0 | * 6 | 5.0 | 6.0 | 5.0 | 6.0 | 5.0 | 6.0 |
| Max Green Setting (Gmax), s | 17.0 | * 37 | 16.0 | 28.0 | 17.0 | 37.0 | 14.0 | 30.0 |
| Max Q Clear Time (g_c+I1), s | 14.6 | 30.9 | 14.9 | 20.5 | 13.0 | 33.5 | 14.8 | 32.0 |
| Green Ext Time (p_c), s | 0.1 | 5.3 | 0.1 | 2.7 | 0.3 | 3.3 | 0.0 | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 54.1 |
| HCM 6th LOS | D |

Notes

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

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

| Intersection | |
|---|---|
| Int Delay, s/veh | 1.2 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | ↱ | | | ↱ | | ↑↑↑↳ | | | ↑↑↑ | ↱ |
| Traffic Vol, veh/h | 0 | 0 | 210 | 0 | 0 | 44 | 0 | 1808 | 20 | 0 | 1921 | 134 |
| Future Vol, veh/h | 0 | 0 | 210 | 0 | 0 | 44 | 0 | 1808 | 20 | 0 | 1921 | 134 |
| 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 | - | - | 0 | - | - | 0 | - | - | - | - | - | 0 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 93 | 93 | 93 | 93 | 93 | 93 | 93 | 93 | 93 | 93 | 93 | 93 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 0 | 226 | 0 | 0 | 47 | 0 | 1944 | 22 | 0 | 2066 | 144 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | - | - | 1033 | - | - | 983 | - | 0 | 0 | - | - | 0 |
| Stage 1 | - | - | - | - | - | - | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - | - | - | - | - | - | - |
| Critical Hdwy | - | - | 7.14 | - | - | 7.14 | - | - | - | - | - | - |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | - | - | - | - | - | - |
| Follow-up Hdwy | - | - | 3.92 | - | - | 3.92 | - | - | - | - | - | - |
| Pot Cap-1 Maneuver | 0 | 0 | *480 | 0 | 0 | 213 | 0 | - | - | 0 | - | - |
| Stage 1 | 0 | 0 | - | 0 | 0 | - | 0 | - | - | 0 | - | - |
| Stage 2 | 0 | 0 | - | 0 | 0 | - | 0 | - | - | 0 | - | - |
| Platoon blocked, % | | | 1 | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | - | - | *480 | - | - | 213 | - | - | - | - | - | - |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | - | - | - | - | - | - |
| Stage 1 | - | - | - | - | - | - | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 19 | 26.7 | 0 | 0 |
| HCM LOS | C | D | | |

| Minor Lane/Major Mvmt | NBT | NBR | EBLn1 | WBLn1 | SBT | SBR |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 480 | 213 | - | - |
| HCM Lane V/C Ratio | - | - | 0.47 | 0.222 | - | - |
| HCM Control Delay (s) | - | - | 19 | 26.7 | - | - |
| HCM Lane LOS | - | - | C | D | - | - |
| HCM 95th %tile Q(veh) | - | - | 2.5 | 0.8 | - | - |

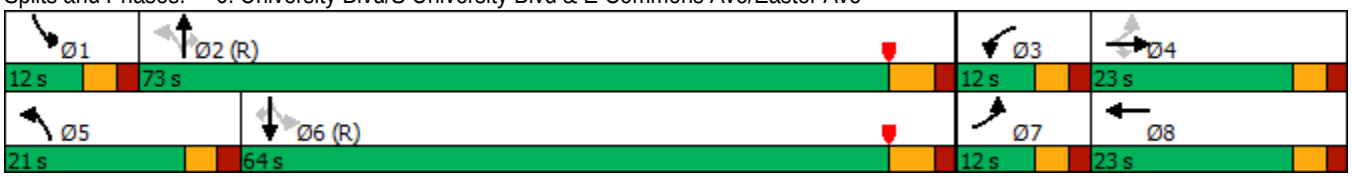
Notes

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

| Lane Group | EBL | EBT | EBR | WBL | WBT | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | |
| Traffic Volume (vph) | 193 | 43 | 161 | 69 | 81 | 306 | 1579 | 47 | 74 | 1825 | 214 |
| Future Volume (vph) | 193 | 43 | 161 | 69 | 81 | 306 | 1579 | 47 | 74 | 1825 | 214 |
| Turn Type | pm+pt | NA | Perm | Prot | NA | pm+pt | NA | Perm | pm+pt | NA | Perm |
| Protected Phases | 7 | 4 | | 3 | 8 | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | 4 | | | 2 | | 2 | 6 | | 6 |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | 5 | 2 | 2 | 1 | 6 | 6 |
| Switch Phase | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 3.0 | 4.0 | 3.0 | 3.0 | 5.0 | 5.0 | 3.0 | 5.0 | 5.0 |
| Minimum Split (s) | 8.0 | 35.0 | 35.0 | 9.0 | 32.0 | 8.0 | 24.0 | 24.0 | 8.0 | 29.0 | 29.0 |
| Total Split (s) | 12.0 | 23.0 | 23.0 | 12.0 | 23.0 | 21.0 | 73.0 | 73.0 | 12.0 | 64.0 | 64.0 |
| Total Split (%) | 10.0% | 19.2% | 19.2% | 10.0% | 19.2% | 17.5% | 60.8% | 60.8% | 10.0% | 53.3% | 53.3% |
| Yellow Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 |
| 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) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 6.0 | 6.0 | 5.0 | 6.0 | 6.0 |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lead | Lag | Lag | Lead | Lag | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | None | None | None | None | None | C-Min | C-Min | None | C-Min | C-Min |
| Act Effct Green (s) | 21.0 | 15.4 | 15.4 | 7.0 | 13.0 | 85.0 | 74.9 | 74.9 | 70.0 | 63.0 | 63.0 |
| Actuated g/C Ratio | 0.18 | 0.13 | 0.13 | 0.06 | 0.11 | 0.71 | 0.62 | 0.62 | 0.58 | 0.52 | 0.52 |
| v/c Ratio | 0.53 | 0.19 | 0.49 | 0.71 | 0.65 | 1.09 | 0.76 | 0.05 | 0.48 | 1.05 | 0.25 |
| Control Delay | 44.7 | 48.6 | 11.7 | 90.4 | 57.0 | 113.6 | 15.5 | 0.1 | 33.9 | 54.4 | 2.6 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 44.7 | 48.6 | 11.7 | 90.4 | 57.0 | 113.6 | 15.6 | 0.1 | 33.9 | 54.4 | 2.6 |
| LOS | D | D | B | F | E | F | B | A | C | D | A |
| Approach Delay | | 31.8 | | | 68.6 | | 30.8 | | | 48.4 | |
| Approach LOS | | C | | | E | | C | | | D | |

| Intersection Summary | |
|---|---|
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 67 (56%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow | |
| Natural Cycle: 145 | |
| Control Type: Actuated-Coordinated | |
| Maximum v/c Ratio: 1.09 | |
| Intersection Signal Delay: 40.5 | Intersection LOS: D |
| Intersection Capacity Utilization 97.5% | ICU Level of Service F |
| Analysis Period (min) 15 | |

Splits and Phases: 6: University Blvd/S University Blvd & E Commons Ave/Easter Ave



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 193 | 43 | 161 | 69 | 81 | 47 | 306 | 1579 | 47 | 74 | 1825 | 214 |
| Future Volume (veh/h) | 193 | 43 | 161 | 69 | 81 | 47 | 306 | 1579 | 47 | 74 | 1825 | 214 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 0.99 | | 1.00 | 1.00 | | 0.99 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 205 | 46 | 0 | 73 | 86 | 50 | 326 | 1680 | 50 | 79 | 1941 | 0 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 398 | 213 | | 93 | 119 | 69 | 298 | 2220 | 986 | 269 | 1869 | |
| Arrive On Green | 0.06 | 0.11 | 0.00 | 0.05 | 0.11 | 0.11 | 0.27 | 1.00 | 1.00 | 0.03 | 0.53 | 0.00 |
| Sat Flow, veh/h | 3456 | 1870 | 1585 | 1781 | 1103 | 641 | 1781 | 3554 | 1579 | 1781 | 3554 | 1585 |
| Grp Volume(v), veh/h | 205 | 46 | 0 | 73 | 0 | 136 | 326 | 1680 | 50 | 79 | 1941 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1728 | 1870 | 1585 | 1781 | 0 | 1744 | 1781 | 1777 | 1579 | 1781 | 1777 | 1585 |
| Q Serve(g_s), s | 6.3 | 2.7 | 0.0 | 4.9 | 0.0 | 9.1 | 16.0 | 0.0 | 0.0 | 2.4 | 63.1 | 0.0 |
| Cycle Q Clear(g_c), s | 6.3 | 2.7 | 0.0 | 4.9 | 0.0 | 9.1 | 16.0 | 0.0 | 0.0 | 2.4 | 63.1 | 0.0 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.37 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 398 | 213 | | 93 | 0 | 187 | 298 | 2220 | 986 | 269 | 1869 | |
| V/C Ratio(X) | 0.51 | 0.22 | | 0.79 | 0.00 | 0.73 | 1.10 | 0.76 | 0.05 | 0.29 | 1.04 | |
| Avail Cap(c_a), veh/h | 398 | 281 | | 104 | 0 | 262 | 298 | 2220 | 986 | 311 | 1869 | |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 2.00 | 2.00 | 2.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 44.8 | 48.3 | 0.0 | 56.2 | 0.0 | 51.8 | 34.5 | 0.0 | 0.0 | 12.1 | 28.4 | 0.0 |
| Incr Delay (d2), s/veh | 0.5 | 0.2 | 0.0 | 29.1 | 0.0 | 2.9 | 80.3 | 2.5 | 0.1 | 0.2 | 31.6 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 2.8 | 1.3 | 0.0 | 3.0 | 0.0 | 4.1 | 13.8 | 0.8 | 0.0 | 0.9 | 32.8 | 0.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 45.3 | 48.5 | 0.0 | 85.3 | 0.0 | 54.7 | 114.8 | 2.5 | 0.1 | 12.4 | 60.1 | 0.0 |
| LnGrp LOS | D | D | | F | A | D | F | A | A | B | F | |
| Approach Vol, veh/h | | 251 | A | | 209 | | | 2056 | | | 2020 | A |
| Approach Delay, s/veh | | 45.9 | | | 65.4 | | | 20.2 | | | 58.2 | |
| Approach LOS | | D | | | E | | | C | | | E | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 9.1 | 81.0 | 11.3 | 18.6 | 21.0 | 69.1 | 12.0 | 17.9 |
| Change Period (Y+Rc), s | 5.0 | 6.0 | 5.0 | 5.0 | 5.0 | 6.0 | 5.0 | 5.0 |
| Max Green Setting (Gmax), s | 7.0 | 67.0 | 7.0 | 18.0 | 16.0 | 58.0 | 7.0 | 18.0 |
| Max Q Clear Time (g_c+I1), s | 4.4 | 2.0 | 6.9 | 4.7 | 18.0 | 65.1 | 8.3 | 11.1 |
| Green Ext Time (p_c), s | 0.0 | 43.7 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.2 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 40.6 |
| HCM 6th LOS | D |

Notes

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

Unsignalized Delay for [EBR, SBR] is excluded from calculations of the approach delay and intersection delay.

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

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | ↱ | | ↑↑ | ↑↑ | ↱ |
| Traffic Vol, veh/h | 0 | 80 | 0 | 1953 | 2019 | 35 |
| Future Vol, veh/h | 0 | 80 | 0 | 1953 | 2019 | 35 |
| 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 | 93 | 93 | 93 | 93 | 93 | 93 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 86 | 0 | 2100 | 2171 | 38 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | - | 1086 | - | 0 | - | 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 | *236 | 0 | - | - | - |
| Stage 1 | 0 | - | 0 | - | - | - |
| Stage 2 | 0 | - | 0 | - | - | - |
| Platoon blocked, % | | 1 | | - | - | - |
| Mov Cap-1 Maneuver | - | *236 | - | - | - | - |
| Mov Cap-2 Maneuver | - | - | - | - | - | - |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 28.8 | 0 | 0 |
| HCM LOS | D | | |

| Minor Lane/Major Mvmt | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|
| Capacity (veh/h) | - | 236 | - | - |
| HCM Lane V/C Ratio | - | 0.364 | - | - |
| HCM Control Delay (s) | - | 28.8 | - | - |
| HCM Lane LOS | - | D | - | - |
| HCM 95th %tile Q(veh) | - | 1.6 | - | - |

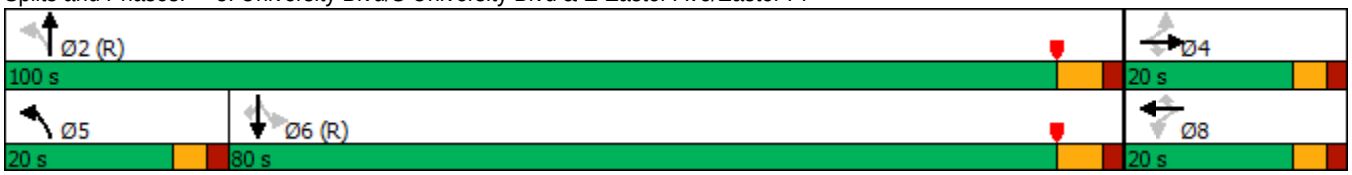
Notes

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

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | |
| Traffic Volume (vph) | 103 | 34 | 190 | 61 | 35 | 27 | 209 | 1823 | 29 | 1984 | 87 |
| Future Volume (vph) | 103 | 34 | 190 | 61 | 35 | 27 | 209 | 1823 | 29 | 1984 | 87 |
| Turn Type | Perm | NA | Perm | Perm | NA | Perm | pm+pt | NA | Perm | NA | Perm |
| Protected Phases | | 4 | | | 8 | | 5 | 2 | | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | 8 | 2 | | 6 | | 6 |
| Detector Phase | 4 | 4 | 4 | 8 | 8 | 8 | 5 | 2 | 6 | 6 | 6 |
| Switch Phase | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Minimum Split (s) | 36.0 | 36.0 | 36.0 | 40.0 | 40.0 | 40.0 | 8.0 | 29.0 | 32.0 | 32.0 | 32.0 |
| Total Split (s) | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 100.0 | 80.0 | 80.0 | 80.0 |
| Total Split (%) | 16.7% | 16.7% | 16.7% | 16.7% | 16.7% | 16.7% | 16.7% | 83.3% | 66.7% | 66.7% | 66.7% |
| Yellow Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| 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) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 6.0 | 6.0 | 6.0 | 6.0 |
| Lead/Lag | | | | | | | Lead | | Lag | Lag | Lag |
| Lead-Lag Optimize? | | | | | | | Yes | | Yes | Yes | Yes |
| Recall Mode | None | None | None | None | None | None | None | C-Min | C-Min | C-Min | C-Min |
| Act Effct Green (s) | 12.8 | 12.8 | 12.8 | 12.8 | 12.8 | 12.8 | 97.2 | 96.2 | 78.3 | 78.3 | 78.3 |
| Actuated g/C Ratio | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.81 | 0.80 | 0.65 | 0.65 | 0.65 |
| v/c Ratio | 0.76 | 0.18 | 0.60 | 0.45 | 0.19 | 0.13 | 0.88 | 0.71 | 0.29 | 0.91 | 0.09 |
| Control Delay | 83.2 | 49.7 | 16.0 | 59.6 | 49.9 | 1.1 | 65.9 | 7.6 | 5.0 | 11.2 | 0.1 |
| 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 | 83.2 | 49.7 | 16.0 | 59.6 | 49.9 | 1.1 | 65.9 | 7.6 | 5.0 | 11.2 | 0.1 |
| LOS | F | D | B | E | D | A | E | A | A | B | A |
| Approach Delay | | 40.7 | | | 43.9 | | | 13.4 | | 10.7 | |
| Approach LOS | | D | | | D | | | B | | B | |

| Intersection Summary | |
|---|---|
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 82 (68%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow | |
| Natural Cycle: 150 | |
| Control Type: Actuated-Coordinated | |
| Maximum v/c Ratio: 0.91 | |
| Intersection Signal Delay: 14.9 | Intersection LOS: B |
| Intersection Capacity Utilization 93.4% | ICU Level of Service F |
| Analysis Period (min) 15 | |

Splits and Phases: 8: University Blvd/S University Blvd & E Easter Ave/Easter Pl



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 103 | 34 | 190 | 61 | 35 | 27 | 209 | 1823 | 64 | 29 | 1984 | 87 |
| Future Volume (veh/h) | 103 | 34 | 190 | 61 | 35 | 27 | 209 | 1823 | 64 | 29 | 1984 | 87 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 0.98 | | 0.98 | 0.99 | | 0.98 | 1.00 | | 1.00 | 1.00 | | 0.99 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 110 | 36 | 202 | 65 | 37 | 29 | 222 | 1939 | 68 | 31 | 2111 | 93 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 201 | 234 | 194 | 181 | 234 | 194 | 274 | 2744 | 96 | 169 | 2451 | 1088 |
| Arrive On Green | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.05 | 0.78 | 0.78 | 1.00 | 1.00 | 1.00 |
| Sat Flow, veh/h | 1311 | 1870 | 1551 | 1126 | 1870 | 1551 | 1781 | 3503 | 122 | 214 | 3554 | 1577 |
| Grp Volume(v), veh/h | 110 | 36 | 202 | 65 | 37 | 29 | 222 | 978 | 1029 | 31 | 2111 | 93 |
| Grp Sat Flow(s),veh/h/ln | 1311 | 1870 | 1551 | 1126 | 1870 | 1551 | 1781 | 1777 | 1848 | 214 | 1777 | 1577 |
| Q Serve(g_s), s | 9.8 | 2.1 | 15.0 | 6.6 | 2.1 | 2.0 | 4.1 | 31.8 | 32.7 | 5.7 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 11.9 | 2.1 | 15.0 | 8.6 | 2.1 | 2.0 | 4.1 | 31.8 | 32.7 | 27.2 | 0.0 | 0.0 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.07 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 201 | 234 | 194 | 181 | 234 | 194 | 274 | 1392 | 1447 | 169 | 2451 | 1088 |
| V/C Ratio(X) | 0.55 | 0.15 | 1.04 | 0.36 | 0.16 | 0.15 | 0.81 | 0.70 | 0.71 | 0.18 | 0.86 | 0.09 |
| Avail Cap(c_a), veh/h | 201 | 234 | 194 | 181 | 234 | 194 | 404 | 1392 | 1447 | 169 | 2451 | 1088 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 2.00 | 2.00 | 2.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 52.2 | 46.8 | 52.5 | 50.7 | 46.9 | 46.8 | 11.3 | 6.3 | 6.4 | 3.5 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 1.8 | 0.1 | 76.1 | 0.4 | 0.1 | 0.1 | 4.5 | 3.0 | 3.0 | 2.4 | 4.3 | 0.2 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 3.4 | 1.0 | 10.0 | 1.9 | 1.0 | 0.8 | 2.3 | 9.1 | 9.7 | 0.3 | 1.5 | 0.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 54.0 | 47.0 | 128.6 | 51.1 | 47.0 | 46.9 | 15.8 | 9.3 | 9.4 | 5.9 | 4.3 | 0.2 |
| LnGrp LOS | D | D | F | D | D | D | B | A | A | A | A | A |
| Approach Vol, veh/h | | 348 | | | 131 | | | 2229 | | | 2235 | |
| Approach Delay, s/veh | | 96.6 | | | 49.0 | | | 10.0 | | | 4.1 | |
| Approach LOS | | F | | | D | | | A | | | A | |

| Timer - Assigned Phs | | 2 | | 4 | 5 | 6 | | 8 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | | 100.0 | | 20.0 | 11.2 | 88.8 | | 20.0 | | | | |
| Change Period (Y+Rc), s | | 6.0 | | 5.0 | 5.0 | 6.0 | | 5.0 | | | | |
| Max Green Setting (Gmax), s | | 94.0 | | 15.0 | 15.0 | 74.0 | | 15.0 | | | | |
| Max Q Clear Time (g_c+I1), s | | 34.7 | | 17.0 | 6.1 | 29.2 | | 10.6 | | | | |
| Green Ext Time (p_c), s | | 49.1 | | 0.0 | 0.1 | 40.9 | | 0.1 | | | | |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 14.5 |
| HCM 6th LOS | B |

Notes

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

| Intersection | |
|---|---|
| Int Delay, s/veh | 4.7 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 42 | 202 | 17 | 15 | 204 | 127 | 8 | 3 | 19 | 104 | 3 | 43 |
| Future Vol, veh/h | 42 | 202 | 17 | 15 | 204 | 127 | 8 | 3 | 19 | 104 | 3 | 43 |
| 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 | 92 | 91 | 91 | 91 | 91 | 92 | 91 | 92 | 91 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 46 | 222 | 19 | 16 | 224 | 138 | 9 | 3 | 21 | 113 | 3 | 47 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 362 | 0 | 0 | 241 | 0 | 0 | 674 | 718 | 232 | 661 | 658 | 293 |
| Stage 1 | - | - | - | - | - | - | 324 | 324 | - | 325 | 325 | - |
| Stage 2 | - | - | - | - | - | - | 350 | 394 | - | 336 | 333 | - |
| Critical Hdwy | 4.12 | - | - | 4.12 | - | - | 7.12 | 6.52 | 6.22 | 7.12 | 6.52 | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.12 | 5.52 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.12 | 5.52 | - |
| Follow-up Hdwy | 2.218 | - | - | 2.218 | - | - | 3.518 | 4.018 | 3.318 | 3.518 | 4.018 | 3.318 |
| Pot Cap-1 Maneuver | 1197 | - | - | 1326 | - | - | 368 | 355 | 807 | 376 | 384 | 746 |
| Stage 1 | - | - | - | - | - | - | 688 | 650 | - | 687 | 649 | - |
| Stage 2 | - | - | - | - | - | - | 666 | 605 | - | 678 | 644 | - |
| Platoon blocked, % | | - | - | | - | - | | | | | | |
| Mov Cap-1 Maneuver | 1197 | - | - | 1326 | - | - | 327 | 334 | 807 | 347 | 362 | 746 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 327 | 334 | - | 347 | 362 | - |
| Stage 1 | - | - | - | - | - | - | 658 | 621 | - | 657 | 639 | - |
| Stage 2 | - | - | - | - | - | - | 612 | 596 | - | 628 | 616 | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 1.3 | 0.3 | 12.3 | 19.5 |
| HCM LOS | | | B | C |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 527 | 1197 | - | - | 1326 | - | - | 410 |
| HCM Lane V/C Ratio | 0.062 | 0.038 | - | - | 0.012 | - | - | 0.398 |
| HCM Control Delay (s) | 12.3 | 8.1 | 0 | - | 7.7 | 0 | - | 19.5 |
| HCM Lane LOS | B | A | A | - | A | A | - | C |
| HCM 95th %tile Q(veh) | 0.2 | 0.1 | - | - | 0 | - | - | 1.9 |

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

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 198 | 17 | 14 | 217 | 19 | 20 |
| Future Vol, veh/h | 198 | 17 | 14 | 217 | 19 | 20 |
| 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, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 220 | 19 | 16 | 241 | 21 | 22 |

| Major/Minor | Major1 | | Major2 | | Minor1 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 0 | 0 | 239 | 0 | 503 | 230 |
| Stage 1 | - | - | - | - | 230 | - |
| Stage 2 | - | - | - | - | 273 | - |
| Critical Hdwy | - | - | 4.12 | - | 6.42 | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.42 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.42 | - |
| Follow-up Hdwy | - | - | 2.218 | - | 3.518 | 3.318 |
| Pot Cap-1 Maneuver | - | - | 1328 | - | 528 | 809 |
| Stage 1 | - | - | - | - | 808 | - |
| Stage 2 | - | - | - | - | 773 | - |
| Platoon blocked, % | - | - | | - | | |
| Mov Cap-1 Maneuver | - | - | 1328 | - | 521 | 809 |
| Mov Cap-2 Maneuver | - | - | - | - | 521 | - |
| Stage 1 | - | - | - | - | 808 | - |
| Stage 2 | - | - | - | - | 762 | - |

| Approach | EB | WB | NB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 0.5 | 11.1 |
| HCM LOS | | | B |

| Minor Lane/Major Mvmt | NBLn1 | EBT | EBR | WBL | WBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | 637 | - | - | 1328 | - |
| HCM Lane V/C Ratio | 0.068 | - | - | 0.012 | - |
| HCM Control Delay (s) | 11.1 | - | - | 7.7 | 0 |
| HCM Lane LOS | B | - | - | A | A |
| HCM 95th %tile Q(veh) | 0.2 | - | - | 0 | - |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 9 |
| Intersection LOS | A |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 32 | 142 | 165 | 59 | 73 | 39 |
| Future Vol, veh/h | 32 | 142 | 165 | 59 | 73 | 39 |
| Peak Hour Factor | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 35 | 156 | 181 | 65 | 80 | 43 |
| Number of Lanes | 0 | 1 | 1 | 0 | 1 | 0 |

| Approach | EB | WB | SB |
|---|---|---|---|
| Opposing Approach | WB | EB | |
| Opposing Lanes | 1 | 1 | 0 |
| Conflicting Approach Left | SB | | WB |
| Conflicting Lanes Left | 1 | 0 | 1 |
| Conflicting Approach Right | | SB | EB |
| Conflicting Lanes Right | 0 | 1 | 1 |
| HCM Control Delay | 9 | 9.1 | 8.8 |
| HCM LOS | A | A | A |

| Lane | EBLn1 | WBLn1 | SBLn1 |
|---|---|---|---|
| Vol Left, % | 18% | 0% | 65% |
| Vol Thru, % | 82% | 74% | 0% |
| Vol Right, % | 0% | 26% | 35% |
| Sign Control | Stop | Stop | Stop |
| Traffic Vol by Lane | 174 | 224 | 112 |
| LT Vol | 32 | 0 | 73 |
| Through Vol | 142 | 165 | 0 |
| RT Vol | 0 | 59 | 39 |
| Lane Flow Rate | 191 | 246 | 123 |
| Geometry Grp | 1 | 1 | 1 |
| Degree of Util (X) | 0.241 | 0.294 | 0.165 |
| Departure Headway (Hd) | 4.535 | 4.295 | 4.818 |
| Convergence, Y/N | Yes | Yes | Yes |
| Cap | 792 | 837 | 743 |
| Service Time | 2.562 | 2.318 | 2.852 |
| HCM Lane V/C Ratio | 0.241 | 0.294 | 0.166 |
| HCM Control Delay | 9 | 9.1 | 8.8 |
| HCM Lane LOS | A | A | A |
| HCM 95th-tile Q | 0.9 | 1.2 | 0.6 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 7.8 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 13 | 103 | 83 | 8 | 62 | 97 |
| Future Vol, veh/h | 13 | 103 | 83 | 8 | 62 | 97 |
| 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 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 76 | 25 | 76 | 76 | 76 | 76 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 17 | 412 | 109 | 11 | 82 | 128 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 407 | 115 | 0 | 0 | 120 | 0 |
| Stage 1 | 115 | - | - | - | - | - |
| Stage 2 | 292 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | - | - | 4.12 | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | - | - | 2.218 | - |
| Pot Cap-1 Maneuver | 600 | 937 | - | - | 1468 | - |
| Stage 1 | 910 | - | - | - | - | - |
| Stage 2 | 758 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 564 | 937 | - | - | 1468 | - |
| Mov Cap-2 Maneuver | 564 | - | - | - | - | - |
| Stage 1 | 910 | - | - | - | - | - |
| Stage 2 | 713 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 12.4 | 0 | 3 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 913 | 1468 | - |
| HCM Lane V/C Ratio | - | - | 0.47 | 0.056 | - |
| HCM Control Delay (s) | - | - | 12.4 | 7.6 | 0 |
| HCM Lane LOS | - | - | B | A | A |
| HCM 95th %tile Q(veh) | - | - | 2.6 | 0.2 | - |

| 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 | 35 | 10 | 2 | 14 | 16 | 64 | 4 | 177 | 4 | 12 | 142 | 45 |
| Future Vol, veh/h | 35 | 10 | 2 | 14 | 16 | 64 | 4 | 177 | 4 | 12 | 142 | 45 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 46 | 13 | 3 | 18 | 21 | 84 | 5 | 233 | 5 | 16 | 187 | 59 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 547 | 497 | 217 | 503 | 524 | 236 | 246 | 0 | 0 | 238 | 0 | 0 |
| Stage 1 | 249 | 249 | - | 246 | 246 | - | - | - | - | - | - | - |
| Stage 2 | 298 | 248 | - | 257 | 278 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.12 | 6.52 | 6.22 | 7.12 | 6.52 | 6.22 | 4.12 | - | - | 4.12 | - | - |
| Critical Hdwy Stg 1 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 4.018 | 3.318 | 3.518 | 4.018 | 3.318 | 2.218 | - | - | 2.218 | - | - |
| Pot Cap-1 Maneuver | 448 | 475 | 823 | 479 | 458 | 803 | 1320 | - | - | 1329 | - | - |
| Stage 1 | 755 | 701 | - | 758 | 703 | - | - | - | - | - | - | - |
| Stage 2 | 711 | 701 | - | 748 | 680 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | 381 | 466 | 823 | 461 | 450 | 803 | 1320 | - | - | 1329 | - | - |
| Mov Cap-2 Maneuver | 381 | 466 | - | 461 | 450 | - | - | - | - | - | - | - |
| Stage 1 | 752 | 691 | - | 755 | 700 | - | - | - | - | - | - | - |
| Stage 2 | 615 | 698 | - | 721 | 670 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 15.5 | 11.9 | 0.2 | 0.5 |
| HCM LOS | C | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 1320 | - | - | 406 | 645 | 1329 | - | - |
| HCM Lane V/C Ratio | 0.004 | - | - | 0.152 | 0.192 | 0.012 | - | - |
| HCM Control Delay (s) | 7.7 | 0 | - | 15.5 | 11.9 | 7.7 | 0 | - |
| HCM Lane LOS | A | A | - | C | B | A | A | - |
| HCM 95th %tile Q(veh) | 0 | - | - | 0.5 | 0.7 | 0 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 3.8 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 71 | 71 | 202 | 73 | 40 | 128 |
| Future Vol, veh/h | 71 | 71 | 202 | 73 | 40 | 128 |
| 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 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 84 | 84 | 84 | 84 | 84 | 84 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 85 | 85 | 240 | 87 | 48 | 152 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 532 | 284 | 0 | 0 | 327 | 0 |
| Stage 1 | 284 | - | - | - | - | - |
| Stage 2 | 248 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | - | - | 4.12 | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | - | - | 2.218 | - |
| Pot Cap-1 Maneuver | 508 | 755 | - | - | 1233 | - |
| Stage 1 | 764 | - | - | - | - | - |
| Stage 2 | 793 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 486 | 755 | - | - | 1233 | - |
| Mov Cap-2 Maneuver | 486 | - | - | - | - | - |
| Stage 1 | 764 | - | - | - | - | - |
| Stage 2 | 759 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 13.5 | 0 | 1.9 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 591 | 1233 | - |
| HCM Lane V/C Ratio | - | - | 0.286 | 0.039 | - |
| HCM Control Delay (s) | - | - | 13.5 | 8 | 0 |
| HCM Lane LOS | - | - | B | A | A |
| HCM 95th %tile Q(veh) | - | - | 1.2 | 0.1 | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 2.9 |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 34 | 183 | 201 | 54 | 77 | 30 |
| Future Vol, veh/h | 34 | 183 | 201 | 54 | 77 | 30 |
| 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 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 37 | 199 | 218 | 59 | 84 | 33 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 277 | 0 | - | 0 | 521 | 248 |
| Stage 1 | - | - | - | - | 248 | - |
| Stage 2 | - | - | - | - | 273 | - |
| Critical Hdwy | 4.12 | - | - | - | 6.42 | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.42 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.42 | - |
| Follow-up Hdwy | 2.218 | - | - | - | 3.518 | 3.318 |
| Pot Cap-1 Maneuver | 1286 | - | - | - | 516 | 791 |
| Stage 1 | - | - | - | - | 793 | - |
| Stage 2 | - | - | - | - | 773 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | 1286 | - | - | - | 499 | 791 |
| Mov Cap-2 Maneuver | - | - | - | - | 499 | - |
| Stage 1 | - | - | - | - | 768 | - |
| Stage 2 | - | - | - | - | 773 | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 1.2 | 0 | 13.2 |
| HCM LOS | | | B |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|
| Capacity (veh/h) | 1286 | - | - | - | 557 |
| HCM Lane V/C Ratio | 0.029 | - | - | - | 0.209 |
| HCM Control Delay (s) | 7.9 | 0 | - | - | 13.2 |
| HCM Lane LOS | A | A | - | - | B |
| HCM 95th %tile Q(veh) | 0.1 | - | - | - | 0.8 |

# APPENDIX G. EAST EASTER AVENUE EVALUATION

FELSBURG HOLT & ULLEVIG
connecting & enhancing communities

December 21, 2018

Mr. Bryan McFarland
Principal – Development
Southglenn Affiliated Holdings, LLC
5750 DTC Parkway, Suite 210
Greenwood Village, Colorado 80111

RE: Southglenn Northwoods Development in Centennial, Colorado
East Easter Avenue Evaluation
Project No. 118490-01

Dear Mr. McFarland:

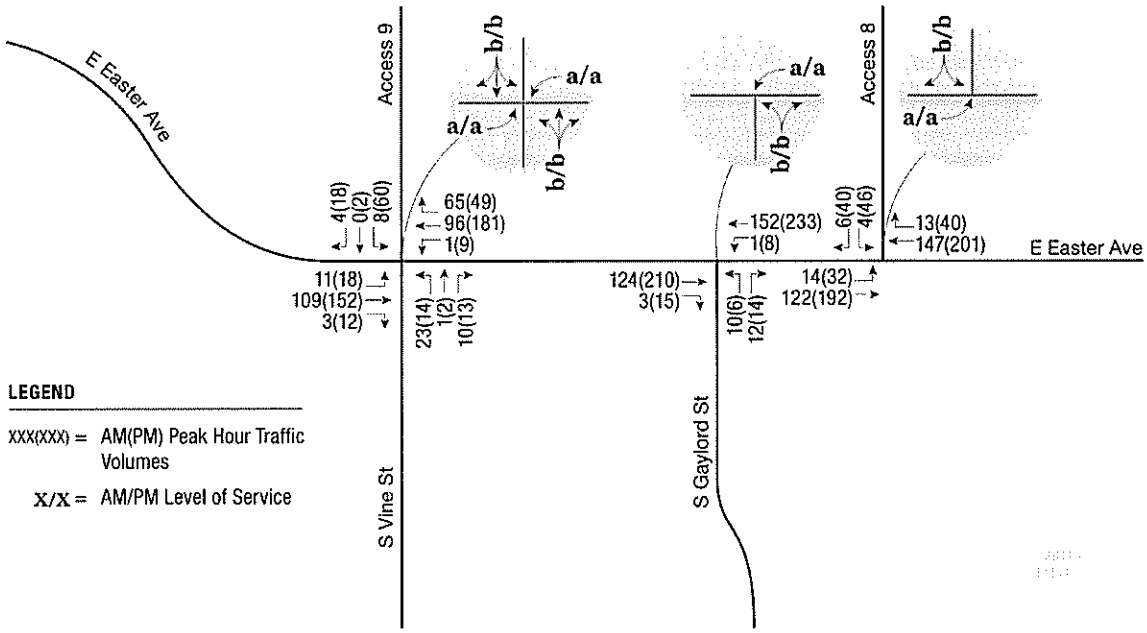
Felsburg Holt & Ullevig (FHU) has been asked to evaluate traffic and roadway network changes along East Easter Avenue associated with the redevelopment of the existing Sears department store in the Streets at Southglenn. This is a follow-up to our 2006 traffic impact analysis for the overall mall redevelopment. We have assessed the changes in site trip generation related to the redevelopment. FHU has also examined traffic operations along East Easter Avenue based on the updated on-site roadway network, specifically addressing access to the roadway. We have found that traffic operations along East Easter Avenue are not adversely affected by the redevelopment. This letter report presents our findings.

## Existing Conditions

The Streets at Southglenn is a regional mixed-use development that includes several large anchor stores, a wide variety of smaller retail shops, a movie theater, and residential land uses. The existing Sears (the southerly anchor store) is closing, and a redevelopment of the Sears site and surrounding area has been proposed. The project is expected to consist of both retail and residential uses across the south end of the shopping center, along East Easter Avenue. As part of the redevelopment, South Vine Street will be connected through the Streets at Southglenn, and the existing shopping center access just east of South Gaylord Street (referred to as Access 8) will be realigned. Refer to **Figure 1**. These on-site roadway changes may affect traffic operations along East Easter Avenue, as the alignments of both the South Vine Street / East Easter Avenue and South Gaylord Street / Access 8 / East Easter Avenue intersections will be modified from existing conditions.

The existing Sears building is located between South Vine Street and Access 8. Both north-south streets provide one lane in each direction and are stop-controlled approaching East Easter Avenue. They provide access to Sears parking areas and connections between East Easter Avenue and additional shopping areas to the north. South Vine Street also provides access to the mall's main parking garage, located between South Vine Street and South Race Street, slightly north of Sears. East Easter Avenue is also one lane per direction, with a striped bicycle lane on each side of the street. At East Easter Avenue, South Vine Street is aligned with South Vine Street in Glenn Oaks Townhomes, an established residential neighborhood. Access 8 is currently offset about 100 feet (centerline to centerline) east of South Gaylord Street along East Easter Avenue. Due to the flared South Gaylord Street approach to East Easter Avenue, the distance between the east curbline of South Gaylord Street to the west curbline of Access 8 is approximately 40 feet. South Gaylord Street provides access to the existing Glenn Oaks Condominiums.

**Figure 1. Existing Volumes and Levels of Service**




Peak period traffic counts were collected at the South Vine Street / East Easter Avenue and South Gaylord Street / Access 8 / East Easter Avenue intersections on Wednesday, December 5, 2018. The AM peak hour was identified as 8:00 AM to 9:00 AM, and the PM peak hour was identified as 4:00 PM to 5:00 PM. Refer to **Figure 1**. The counted through volumes along East Easter Avenue were higher than those reported in the 2006 study, as would be expected with 12 years of traffic growth since the 2006 study. South Vine Street, South Gaylord Street, and Access 8 volumes were estimated in 2006. The 2018 side street counts were similar to the 2006 estimates in most locations. The largest observed difference was eastbound right turns into the Streets at Southglenn from East Easter Avenue. In the 2006 study, most of these trips turned right at Access 8, while the 2018 counts show more trips turning right at South Vine Street. This could be attributed to the location of the parking structure along South Vine Street within the shopping center and the limited number of trips destined to Sears as the store approaches closure.

Peak hour factors (PHFs), which are used to account for the variation of traffic arrivals within a peak hour, were calculated for each intersection approach. These data were summarized, and project-wide peak hours were determined for the AM and PM peak hours. The AM peak hour factor was 0.76, and the PM peak hour factor was 0.91.

Study area traffic operations were evaluated according to techniques documented in the *Highway Capacity Manual, Sixth Edition* (HCM) using the existing traffic volumes and intersection geometry. Synchro software (version 10.3) from Trafficware was used for the HCM evaluations. Level of Service (LOS), a qualitative measure of traffic operational conditions based on roadway capacity and vehicle delay, was determined for all movements that must yield right-of-way to other traffic movements. LOS is described by a letter designation ranging from LOS A to LOS F, with LOS A representing nearly free-flow travel and LOS F representing congested conditions. For unsignalized intersections, LOS is reported for side street approaches and for the main street left turns.

The existing geometry and volumes were evaluated using Synchro, and the results are presented on **Figure 1**. As shown, the side street approaches generally operate at LOS B, and the East Easter Avenue left turns typically operate at LOS A. Detailed Synchro printouts are attached to this letter. A key consideration in this study is the intersection spacing between the East Easter Avenue / South Gaylord Street intersection and the East Easter Avenue / Access 8 intersection. The Synchro results show negligible queuing westbound approaching South Gaylord Street. Short queues (less than 1 vehicle) are predicted eastbound approaching Access 8 in both AM and PM peak hours. Assuming each vehicle is 25 feet long and a one vehicle queue, the existing 40-foot separation provides adequate spacing between South Gaylord Street and Access 8 to accommodate existing queues.

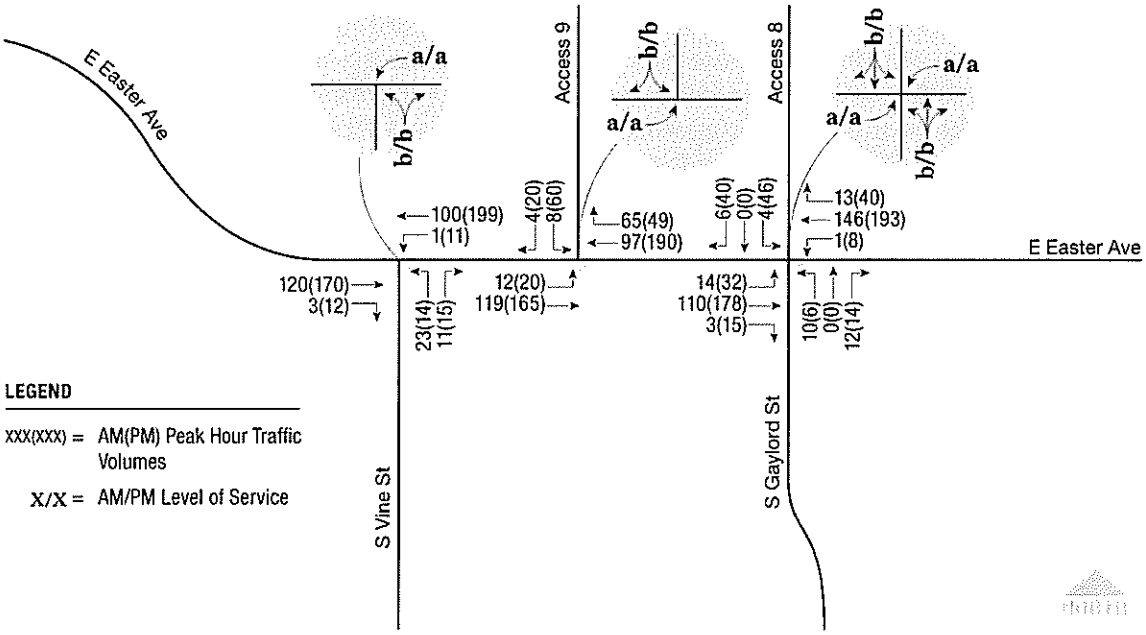
## Roadway Realignment

As part of the proposed redevelopment, both South Vine Street and Access 8 are planned to be relocated.

- South Vine Street will be shifted east (away from the Glenn Oaks Townhomes access) to provide better through connectivity between East Easter Avenue and commercial development north of Sears. This will create a new offset intersection along East Easter Avenue. For clarity, the relocated South Vine Street approach is referred to as Access 9 in this letter. The proposed alignment results in a 150-foot centerline offset, or 100 feet from the east curb of (existing) South Vine Street and the proposed west curb of Access 9.
- Access 8 will be shifted west to align with South Gaylord Street, eliminating the existing offset.

The existing traffic volumes were redistributed within these intersections to reflect the change in offsets, and Synchro analyses were performed to document the operational effects of the realignments. No changes to peak hour factors or other inputs were made. Refer to **Figure 2**. As shown, the side street approaches generally operate at LOS B, and the East Easter Avenue left turns typically operate at LOS A, which is unchanged from the existing conditions.

**Figure 2. Redistributed Volumes and Level of Service**



The Synchro results show negligible queuing along East Easter Avenue approaching the new South Gaylord Street / Access 8 intersection. Negligible westbound queues are predicted approaching South Vine Street. Short queues (less than 1 vehicle) are predicted eastbound approaching Access 9 in the PM peak hour, and negligible eastbound queues are predicted in the AM peak hour. Assuming each vehicle is 25 feet long and a one vehicle queue, the proposed 100-foot separation provides adequate spacing between South Vine Street and Access 9 to accommodate existing queues.

## Redevelopment

The proposed redevelopment will consist of several components:

- Closure and demolition of the existing Sears store, which includes 132,584 square feet of retail space.
- Closure and demolition of 2001 East Easter Avenue, a 3-story office-style building with 7,828 square feet of space dedicated to medical / dental offices, retail facilities, and office space.
- Construction of 34,770 square feet of new retail space adjacent to the existing retail in the Streets at Southglenn.
- Construction of three 5-story residential buildings on three blocks along East Easter Avenue, providing a total of 683 multi-family units.

Data from *Trip Generation*, Institute of Transportation Engineers (ITE), 10th Edition (2017) were used to determine vehicle-trips anticipated to be generated by the proposed redevelopment. Reductions in trip generation were taken to reflect the elimination of Sears and the office building. Although Sears is part of the Streets at Southglenn and would normally be evaluated using ITE Land Use 820 (Shopping Center), FHU applied ITE Land Use 875 (Department Store). This land use reflects lower trip generation than Land Use 820, which is believed to be more reflective of the current declining retail operations at Sears. This results in a smaller overall trip reduction and is therefore conservative. **Table 1** presents the typical weekday trip generation information (including reductions), including daily, AM peak hour, and PM peak hour volumes. The AM and PM peak hour trips were calculated using ITE's peak hour of adjacent street traffic rates.

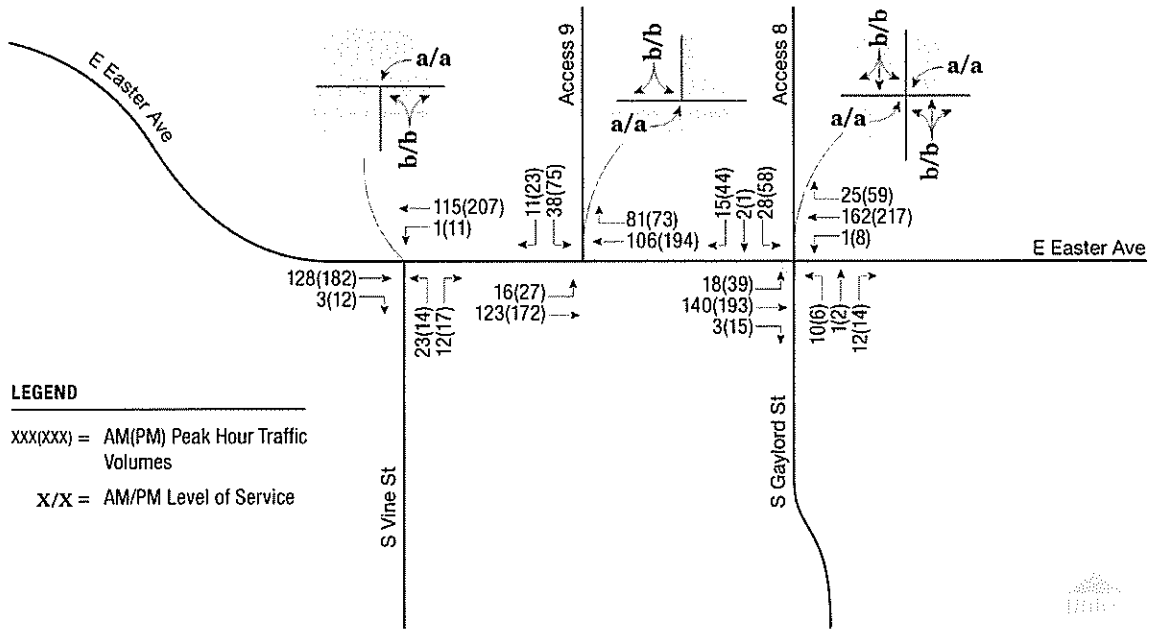
As **Table 1** indicates, there is a net increase of approximately 2,300 daily trips, with 327 new trips in the AM peak and 282 trips in the PM peak. These trips were distributed to the street network based on the trip distribution in the 2006 study. That study indicated that 7% of trips from the Streets at Southglenn would travel to/from the west on East Easter Avenue, 1% of trips would travel to/from the south on South Vine Street, 1% of trips would travel to/from the south on South Gaylord Street, and 25% of trips would travel to/from the south of University Boulevard. The remaining 66% of trips were shown to use other streets surrounding the Streets at Southglenn, including Arapahoe Road and University Boulevard to the north. These trips would not use East Easter Avenue and have not been evaluated as part of this redevelopment traffic study.

## Table 1. Weekday Trip Generation

| Description | ITE LU Code | Quantity | Unit | Daily | | AM Peak | | | | PM Peak | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Rate | Trips | Rate | Trips | In | Out | Rate | Trips | In | Out |
| **Remove Existing Development** | | | | | | | | | | | | | |
| - Remove Existing Sears | | | | | | | | 64% | 36% | | | 50% | 50% |
| | 875 - Department Store | 132.584 | 1000 sq. ft. | eqn | 4277 | 0.58 | 77 | 49 | 28 | 1.95 | 259 | 130 | 130 |
| - Remove Existing Office | | | | | | | | 86% | 14% | | | 16% | 84% |
| | 710 – Office | 7.828 | 1000 sq. ft. | 9.74 | 76 | 1.16 | 9 | 8 | 1 | 1.15 | 9 | 1 | 8 |
| | | | *Net Reduction* | | *-4353* | | -86 | -57 | -29 | | -268 | -131 | -138 |
| **Add New Development** | | | | | | | | | | | | | |
| - Add New Residential | | | | | | | | 26% | 74% | | | 61% | 39% |
| | 221 - Multifamily Housing (Mid-Rise) | 683 | dwelling units | 5.44 | 3716 | 0.36 | 246 | 64 | 182 | 0.44 | 301 | 184 | 117 |
| - Add New Retail | | | | | | | | 62% | 38% | | | 48% | 52% |
| | 820 - Shopping Center | 34.77 | 1000 sq. ft. | Eqn | 2931 | Eqn | 160 | 105 | 64 | Eqn | 249 | 120 | 129 |
| | | | *Net Addition* | | 6647 | | 415 | 169 | 246 | | 550 | 304 | 246 |
| **Totals** | | | | | **2294** | | **327** | **113** | **214** | | **282** | **170** | **111** |

The distribution along East Easter Avenue was applied to the trip generation shown above, and the volumes were added to traffic on the realigned roadway network. Synchro analyses were performed to document the operational effects of the redevelopment. No changes to peak hour factors or other inputs were made. Refer to **Figure 3**. As shown, the side street approaches generally operate at LOS B, and the East Easter Avenue left turns typically operate at LOS A, which is unchanged from the existing conditions.

**Figure 3. Total Volumes and Level of Service**




The Synchro results show negligible queuing along East Easter Avenue approaching the new South Gaylord Street / Access 8 intersection. Negligible westbound queues are predicted approaching South Vine Street. Short queues (less than 1 vehicle) are predicted eastbound approaching Access 9 in the PM peak hour. Assuming each vehicle is 25 feet long and a one vehicle queue, the proposed 100-foot separation provides adequate spacing between South Vine Street and Access 9 to accommodate existing queues.

A review of ITE guidance regarding offset intersections was undertaken using ITE's *Transportation and Land Development, 2nd Edition* (2002). ITE recommends that queue lengths between offset intersections be evaluated, and that various minimums also be observed. As discussed above, our evaluation of queue lengths indicates that there is a low probability of overlap issues with the proposed relocation of Access 9. The ITE minimums vary based on site conditions, intersection control, and traffic volumes. The working minimum for spacing is 120 feet (from curbline to curbline), per Figure 6-23. The existing 40-foot offset at Access 8 / South Gaylord Street offset is only 33% of the recommended value. The proposed 100-foot offset at Access 9 / South Vine Street, while not ideal, is 83% of the recommended value.

A similar review of Transportation Research Board (TRB) guidance regarding offset intersections was undertaken using TRB's *Access Management Manual, 2nd Edition* (2014). TRB also recommends that various minimums be observed between offset intersections, and they specify a 175-foot minimum from centerline to centerline in Exhibit 14-23. The existing 100-foot offset at Access 8 / South Gaylord Street offset is 57% of TRB's recommended value. The proposed 150-foot offset at Access 9 / South Vine Street, while not ideal, is 86% of TRB's recommended value.

Not fully meeting these offset recommendations is not problematic due to the relatively low peak hour traffic volumes they serve and the fact that minimal queuing is anticipated between the offset legs.

## Related Elements

In addition to traffic operations and queuing, several other transportation elements have been considered at a conceptual level. These are presented below.

### Bus Stops

The Regional Transportation District (RTD), the Denver area's transit provider, operates three routes that use East Easter Avenue to reach their transfer / end-of-line bus station at South Race Street / East Davies Place (on the west side of the shopping center parking garage). There are far-side bus stops eastbound and westbound at South Vine Street, plus a near-side stop approaching Gaylord Street and approaching Access 8. The bus stops along eastbound East Easter Avenue serve all three routes as they circulate clockwise around the Streets at Southglenn. The westbound stops only serve Route 66 as part of its local service pattern.

- Near-side bus stops are often discouraged as stopped buses conflict with traffic flow approaching intersections. It is assumed that the near-side stops at the Access 8 / South Gaylord Street intersection are in place to prevent buses from stopping within the offset area. With the realignment of Access 8 across from South Gaylord Street, it is recommended that a discussion be held with RTD to relocate these two stops to far-side stops surrounding the reconfigured South Gaylord Street / Access 8 intersection.
- The eastbound far-side stop at South Vine Street will be within the offset intersection created when Access 9 is constructed, and the stop should be relocated further east. It is recommended that a discussion be held with RTD to relocate this stop east of Access 9.

If bus stops are relocated, existing bus stop amenities (benches, signs, etc.) will need to be moved during the process. RTD is currently evaluating their entire system for bus stop consolidation. A conversation with RTD staff about consolidating stops along East Easter Avenue may also be beneficial.

### Bicycles and Pedestrians

Given the existing bicycle lanes and marked crosswalk on East Easter Avenue, a review of bicycle and pedestrian amenities has also been conducted.

- The existing bicycle lanes connect to bicycle lanes east of the project along East Easter Place and continue west of the project along East Easter Avenue. The proposed realignments should be designed to maintain continuity of these facilities along East Easter Avenue. The total number of bicycle lane interruptions for intersections will not change, although the interruption at Access 8 will be related west to Access 9. If bus stops are relocated, the related dashed bicycle lane striping will need to be adjusted.
- The existing marked pedestrian crosswalk at Access 8 should be removed when Access 8 is relocated. If the bus stops at Access 8 and South Gaylord Street are relocated as described above, it would make sense to relocate the existing crosswalk at the new Access 8 / South Gaylord Street intersection, where access to both the Glenn Oaks Condominiums and the eastbound bus stop can be provided. The current concept plans for the relocated Access 8 show pedestrian amenities along both sides of the new access. These will connect pedestrians from East Easter Avenue to the existing pedestrian plaza north of the Sears building.

## Conclusions

Based on the evaluations above, FHU believes that the proposed offset intersection at South Vine Street represents an improvement from existing conditions for the following reasons:

- The proposed offset intersection location is further from University Boulevard than the existing offset intersection, implying that motorists will be more acclimated to lower volume, lower speed conditions.
- The through volumes on East Easter Avenue at the proposed location are lower than at the existing offset intersection, implying fewer conflicts at the offset intersection.
- The analyses performed indicate that left turn queues between the north and south legs of the proposed offset intersection are not anticipated to overlap.
- The proposed offset intersection provides more than twice the interior spacing between the north and south legs of the offset intersections than at the existing offset intersection.

The proposed plan reflects an improvement with respect to East Easter Avenue access. If you have any questions regarding this letter report, please call me at 303.721.1440.

Sincerely,

**FELSBURG HOLT & ULLEVIG**

Paul Brown, PE, PTOE
Associate

Attachments