# 1000 MARTIN LUTHER KING JR. BOULEVARD DEVELOPMENT

## TRAFFIC IMPACT STUDY - *DRAFT*

**Prepared for:**

The Town of Chapel Hill
Public Works Department - Engineering

**Prepared by:**


***VHB Engineering NC, P.C.***

*940 Main Campus Drive, Venture 1*
*Suite 500*
*Raleigh, NC 27606*

*NCBELS License #: C-3750*


May 2020

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# 1

# Introduction

Trinsic Residential Group plans to develop a parcel of land in the northeast corner of Martin Luther King Jr. Boulevard (NC 86) and Estes Drive (SR 1750) in Chapel Hill, NC (Figure 1). The proposed development will consist of 9,000 square feet (sf) of retail space, a 1,000-sf high-turnover (sit-down) restaurant, and 388 multifamily dwelling units. The development is expected to be fully constructed and occupied by the end of 2023. This document summarizes the traffic impacts associated with this redevelopment and improvements to the roadway network needed to mitigate those impacts.

## Project Background

Two (2) site access points will be constructed: a right-turn in/right-turn out only (RIRO) access point at Martin Luther King Jr. Boulevard (NC 86), and a full movement access point at Estes Drive (SR 1750). The concept plan (Figure 2) illustrates the access points and long-term land-use plans for the site.

Based on discussions with Town of Chapel Hill staff, the following intersections were included in the study area and analyzed for existing and future conditions, where appropriate:

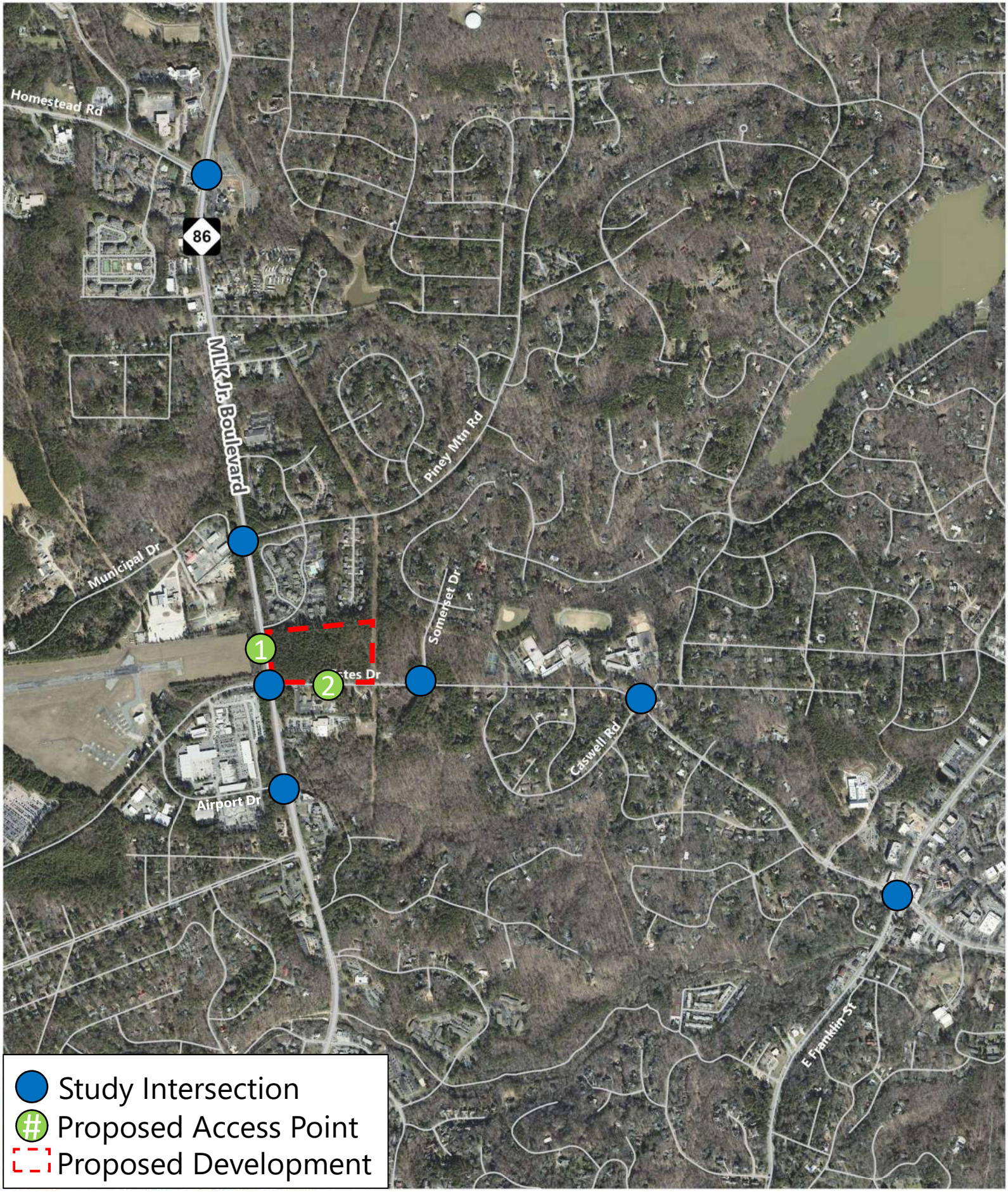
- Martin Luther King Jr. Boulevard (NC 86) at Estes Drive (SR 1750) (Signalized)
- Martin Luther King Jr. Boulevard (NC 86) at Piney Mountain Road/Municipal Drive (Signalized)
- Martin Luther King Jr. Boulevard (NC 86) at Homestead Road (SR 1777) (Signalized)
- Martin Luther King Jr. Boulevard (NC 86) at Airport Drive (Unsignalized)

- Estes Drive (SR 1750) at Somerset Drive (Unsignalized)
- Estes Drive (SR 1750) at Caswell Drive (Signalized)
- Estes Drive (SR 1750) at Franklin Street (SR 1010) (Signalized)

The Town of Chapel Hill requires that future year analysis of the traffic conditions be conducted for the projected build year plus one (+1). Therefore, the analysis was performed under the following four (4) scenarios:

- Existing (2020) Conditions
- No-Build (2024) Conditions
- Build (2024) Conditions
- Build (2024) Conditions – With Improvements

VHB Engineering NC, P.C. was retained by the Town of Chapel Hill to analyze the potential traffic impacts of the proposed redevelopment and to identify any necessary roadway improvements. This Traffic Impact Analysis (TIA) summarizes trip generation, distribution, traffic assignment, and traffic analyses for the proposed redevelopment.

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Project Area | **MLK Boulevard TIA**

**Figure 1**
**Vicinity Map**

Figure 2: CONCEPT PLAN

2

# Existing (2020) Conditions

This section describes the existing roadways in the vicinity of the proposed development. Average Annual Daily Traffic (AADT) data for the surrounding network of roadway were obtained from the North Carolina Department of Transportation (NCDOT). The most recent AADT counts from the NCDOT are for 2017 on the study area roadways. Table 1 summarizes the functional classification, cross-section, AADT, speeds, presence of sidewalks, and on-street parking status of the primary roads within the study area network.

**Martin Luther King Jr. Boulevard (NC 86)**

- Within the study area limits, Martin Luther King Jr. Boulevard (NC 86) is a four-lane divided roadway with a posted speed limit of 35 miles per hour (mph). this roadway is classified by NCDOT as a Principal Arterial.
- The land uses along Martin Luther King Jr. Boulevard (NC 86) are primarily commercial and residential within the study area limits.
- According to the NCDOT, the 2017 AADT along Martin Luther King Jr. Boulevard (NC 86) was 20,000 vehicles per day (vpd) north Estes Drive (SR 1750), 27,000 vpd north of Estes Drive (SR 1750), and 24,000 vpd north of Homestead Road (SR 1777).

**Estes Drive (SR 1750)**

- Within the study area limits, N. Estes Drive/S. Estes Drive (SR 1750) is a two-lane undivided roadway with a posted speed limit of 35 mph.
- The land uses along Estes Drive (SR 1750) are primarily residential and commercial within the study area.

- According to the NCDOT, the 2017 AADT along Estes Drive (SR 1750) was 12,000 vpd west of Martin Luther King Jr. Boulevard (NC 86), 15,000 vpd east of Martin Luther King Jr. Boulevard (NC 86), 17,000 vpd west of Franklin Street (SR 1010), and 16,000 vpd east of Franklin Street (SR 1010).

**Franklin Street (SR 1010)**

- Within the study area limits, Franklin Street is a four-lane undivided roadway with a two-way left-turn lane with a posted speed limit of 35 mph.
- The land uses along Franklin Street are primarily commercial within the study area.
- According to the NCDOT, the 2017 AADT along Franklin Street (SR 1010) was 23,000 vpd north of Estes Drive (SR 1750), and 16,000 south of Estes Drive (SR 1750).

**Piney Mountain Road**

- Within the study area limits, Piney Mountain Road is a two-lane undivided roadway with a posted speed limit of 35 mph along Piney Mountain Road.
- The land uses along Piney Mountain Road are primarily residential and institutional within the study area limits.
- According to the NCDOT, the 2017 AADT along Piney Mountain Road was 3,300 east of NC 86 (Martin Luther King Jr Boulevard).

**Homestead Road (SR 1777)**

- Within the study area limits, Homestead Road (SR 1777) is a two-lane undivided roadway with a posted speed limit of 35 mph.
- The land uses along Homestead Road (SR 1777) are primarily residential within the study area limits.
- According to the NCDOT, the 2017 AADT along Homestead Road (SR 1777) was 8,100 vpd west of Martin Luther King Jr. Boulevard (NC 86).

**Airport Drive**

- Within the study area limits, Airport Drive is a two-lane undivided roadway with no posted speed limit.
- The land uses along Airport Drive are primarily institutional within the study area.
- No AADT information was available for Airport Drive.

**Table 1 Existing Study Area Roadways**

| Road Name | Functional Classification* | Study Area Cross-Section | Recent AADT (vpd) | Speed Limit (mph) | Sidewalk (Y/N/S) | On-Street Parking (Y/N/S) |
|---|---|---|---|---|---|---|
| Martin Luther King Jr. Boulevard (NC 86) | Principal Arterial | Four-Lane Undivided; TWLTL | 20,000 - 27,000 | 35 | S | N |
| Estes Drive (SR 1750) | Minor Arterial | Two-Lane Undivided | 12,000 - 17,000 | 35 | S | N |
| Franklin Street (SR 1010) | Principal Arterial | Four-Lane Undivided; TWLTL | 23,000 | 35 | Y | N |
| Piney Mountain Road/ Municipal Drive | Local | Two-Lane Undivided | 3,300 | 35/25 | S | N |
| Homestead Road (SR 1777) | Minor Arterial | Two-Lane Undivided | 8,100 | 35 | Y | N |
| Airport Drive | Local | Two-Lane Undivided | Not Available | Not Posted | Y | N |

S – Some Sidewalk/On-Street Parking Present
* - NCDOT Urban Functional Classification Map (2018).

## Bicycle Routes and Sidewalks

There are no bicycle specific facilities present within the study area. There are pedestrian facilities present, sidewalks, along some of the study area roadways, but there are deficiencies in the connectivity of the network. Figure 3 illustrates the locations of pedestrian and bicycle facilities in the area.

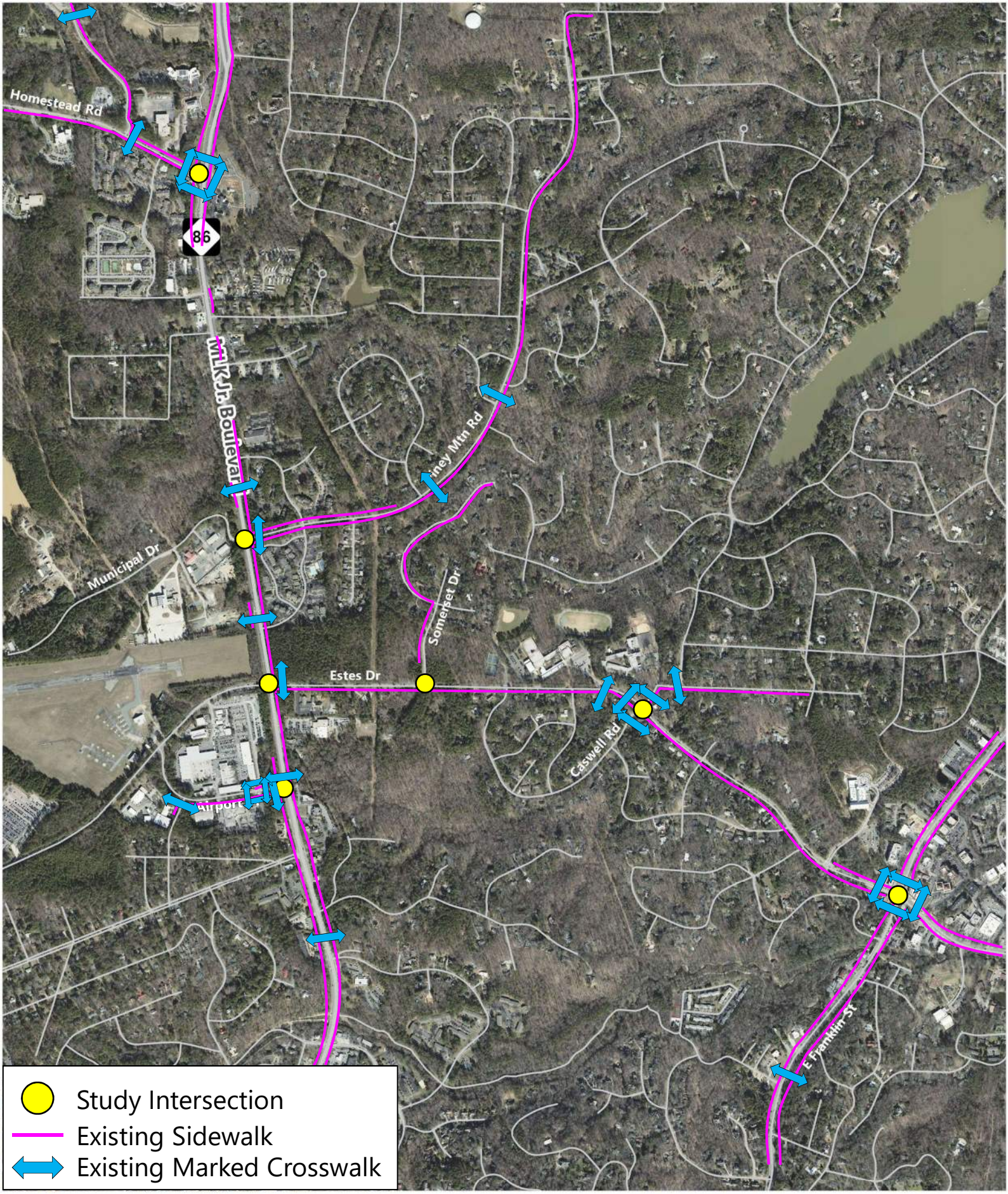
## Intersections

Table 2 shows all study area intersections analyzed for this study. Additionally, the table provides information regarding traffic control and pedestrian amenities found at each intersection.

**Table 2 Study Intersections**

| ID | Intersection | Traffic Control | Signal Inv No. | Signal Phases | Signal Operation | Cross-walk | Ped Signals |
|---|---|---|---|---|---|---|---|
| 100 | Martin Luther King Jr. Blvd (NC 86) at Airport Drive | TWSC | N/A | N/A | N/A | N/A | N |
| 110 | Martin Luther King Jr. Blvd (NC 86) at Estes Drive (SR 1750) | Signal | 07-0532 | 8 | Fully Actuated | NB | Y (1) |
| 120 | Martin Luther King Jr. Blvd (NC 86) at Piney Mountain Rd | Signal | 07-0965 | 4 | Fully Actuated | NB | Y (1) |
| 130 | Martin Luther King Jr. Blvd (NC 86) at Homestead Road | Signal | 07-1019 | 6 | Fully Actuated | All Legs | Y (4) |
| 200 | Estes Drive (SR 1750) at Somerset Drive | TWSC | N/A | N/A | N/A | N/A | N |
| 210 | Estes Drive (SR 1750) at Caswell Road | Signal | 07-0219 | 5 | Fully Actuated | SB, EB, WB | Y (3) |
| 220 | Franklin Street (SR 1010) at Estes Drive (SR 1750) | Signal | 07-0527 | 8 | Fully Actuated | All Legs | Y (4) |

Figure 4 provides a schematic diagram of the existing roadways near the proposed development, including the intersection geometrics.

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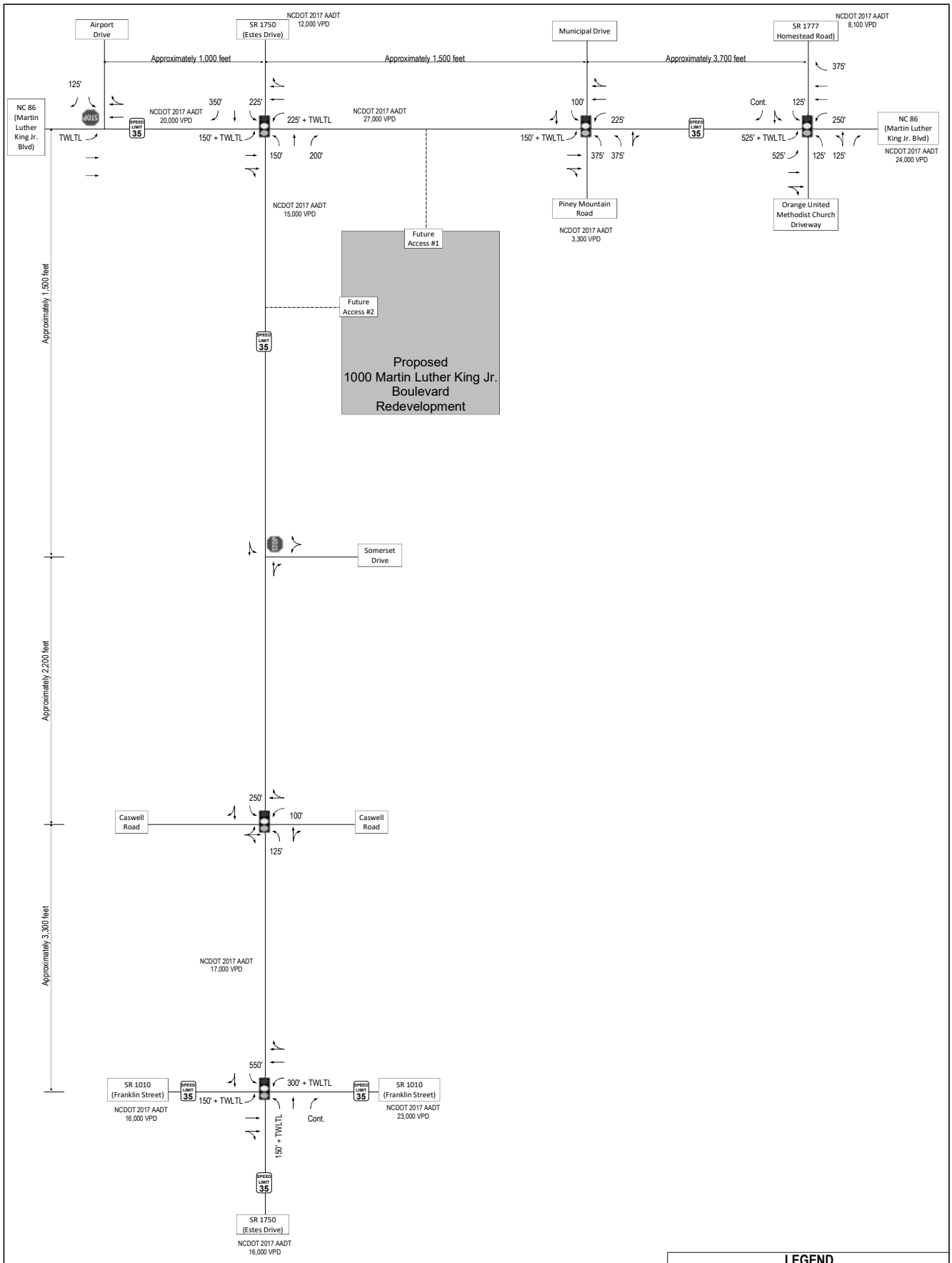
Project Area | **MLK Boulevard TIA**

**Figure 3**
**Existing Pedestrian and Bicycle Facilities**




| LEGEND | |
|---|---|
| ——— | Existing Roadway |
| - - - - - | Future Roadway |
| STOP | Existing Stop Controlled Approach |
| | Existing Signalized Intersection |
| ——→ | Existing Lane Configuration |

**Figure 4**
**Existing (2020) Lane Configurations and Traffic Control**

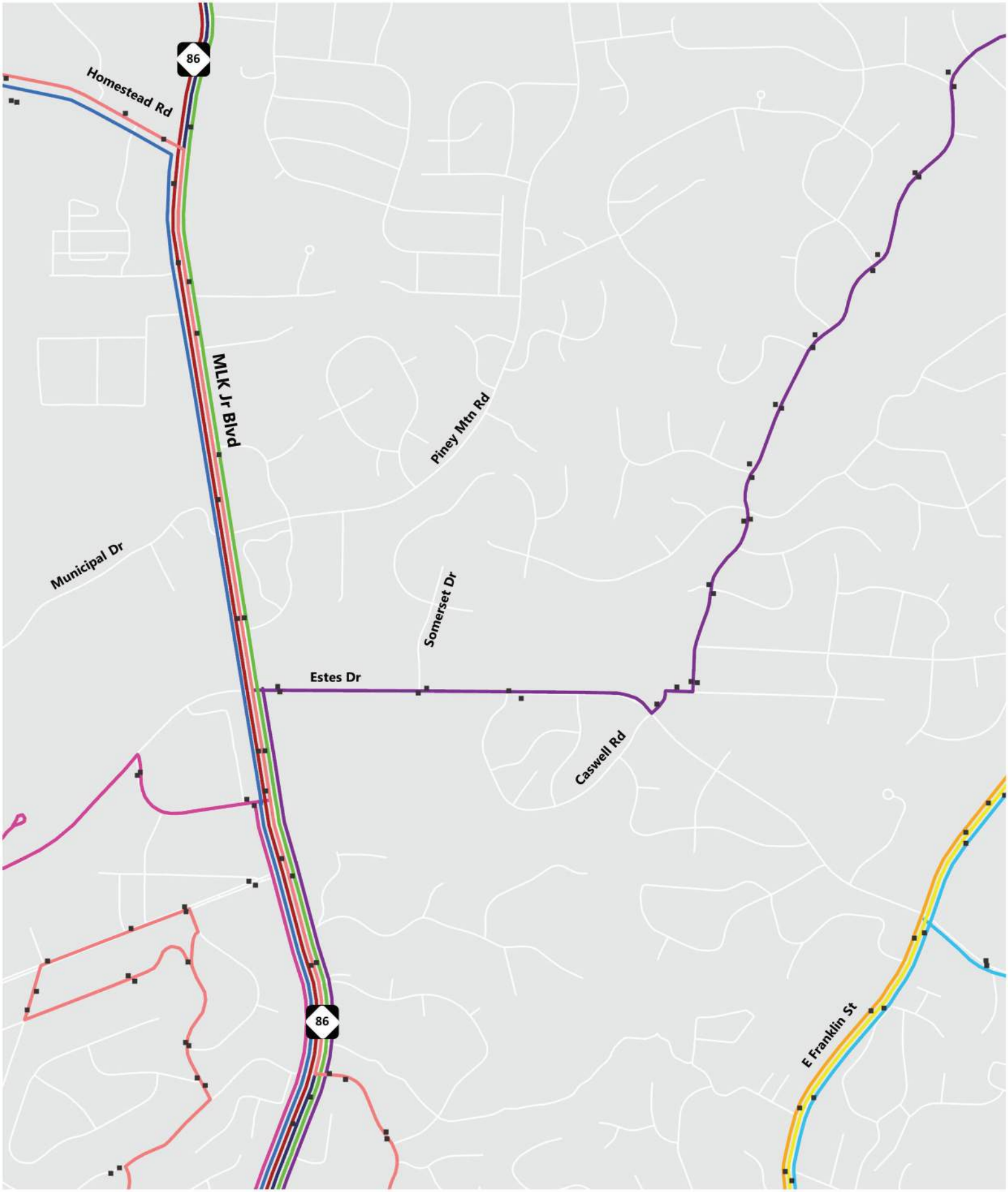
**1000 Martin Luther King Jr Boulevard**
**Traffic Impact Analysis**
**Chapel Hill, NC**

## Transit Routes

Chapel Hill Transit (CHT) has six bus routes through the study area with four bus stops adjacent to the site, and two bus stop near the site. Also, GoTriangle and Piedmont Area Regional Transit (PART) serve the study area with one bus route for each agency. Table 3 and Figure 5 provide additional detail about the area transit service.

**Table 3 Adjacent Transit Route Information**

| Route | Headways (Min) | | | Study Area Stops | Destinations |
|---|---|---|---|---|---|
| | AM Peak | PM Peak | Off-Peak | | |
| A | 30 | 30 | 60 | Martin Luther King Jr. Blvd (NC 86) @ Shadowood Ct (ID: 3327 and 3479) Martin Luther King Jr. Blvd (NC 86) @ YMCA (ID: 3445 and 3053) | UNC Campus, YMCA, CH PD, CH Town Hall, UNC Hospital |
| HS | 70 | 70 | 70 | Martin Luther King Jr. Blvd (NC 86) @ Shadowood Ct (ID: 3327 and 3479) Martin Luther King Jr. Blvd (NC 86) @ YMCA (ID: 3445 and 3053) | UNC Campus, YMCA, CH HS, UNC Hospital |
| NS | 10 | 10 | 20 | Martin Luther King Jr. Blvd (NC 86) @ Shadowood Ct (ID: 3327 and 3479) Martin Luther King Jr. Blvd (NC 86) @ YMCA (ID: 3445 and 3053) | UNC Campus, YMCA, CH HS, UNC Hospital, Southern Community Park |
| T | 25 | 25 | 70 | Martin Luther King Jr. Blvd (NC 86) @ Shadowood Ct (ID: 3327 and 3479) Martin Luther King Jr. Blvd (NC 86) @ YMCA (ID: 3445 and 3053) | UNC Campus, YMCA, UNC Hospital, East CH HS, CH Townhall |
| T (Saturday) | 60 | 60 | 70 | Martin Luther King Jr. Blvd (NC 86) @ Shadowood Ct (ID: 3327 and 3479) Martin Luther King Jr. Blvd (NC 86) @ YMCA (ID: 3445 and 3053) | UNC Campus, YMCA, UNC Hospital, East CH HS, Colonial Heights |
| T (Safe Ride) | N/A | N/A | 30 | Martin Luther King Jr. Blvd (NC 86) @ Shadowood Ct (ID: 3327 and 3479) Martin Luther King Jr. Blvd (NC 86) @ YMCA (ID: 3445 and 3053) | UNC Campus, YMCA, Timberlyne Shopping Center |
| NU | 20 | 20 | 20 | Airport Drive @ Martin Luther King Jr. Blvd (NC 86) (ID: 3054 and 3241) | UNC Campus, YMCA, UNC Hospital, CH PD |
| NU (Saturday) | N/A | 45 | 45 | Airport Drive @ Martin Luther King Jr. Blvd (NC 86) (ID: 3054 and 3241) | UNC Campus, YMCA, UNC Hospital, CH PD |
| G | 45 | 45 | 70 | Estes Drive (SR 1750) @ Methodist Church (ID: 3480 and 3478) | University Place, UNC Hospitals, UNC Campus |
| 420 [GoTriangle] | 30 | 30 | N/A | Martin Luther King Jr. Blvd (NC 86) @ YMCA (ID: 3053) Martin Luther King Jr. Blvd (NC 86) @ Airport Drive (ID: 3444) | Hillsborough, UNC Campus, UNC Hospitals |
| 4 [PART] | 30 | 30 | N/A | Martin Luther King Jr. Blvd (NC 86) @ YMCA (ID: 3053) Martin Luther King Jr. Blvd (NC 86) @ Airport Drive (ID: 3444) | Greensboro, Alamance, Graham and Mebane Counties, UNC Campus, UNC Hospital |




0 500 1000 Feet

**Transit**

- Bus Stop
- A
- CL
- D
- F
- G
- HS
- NS
- NU
- T
- TTA 420

Transit Services | **MLK Boulevard TIA**

**Figure 5**

## Existing Turning Movement Data

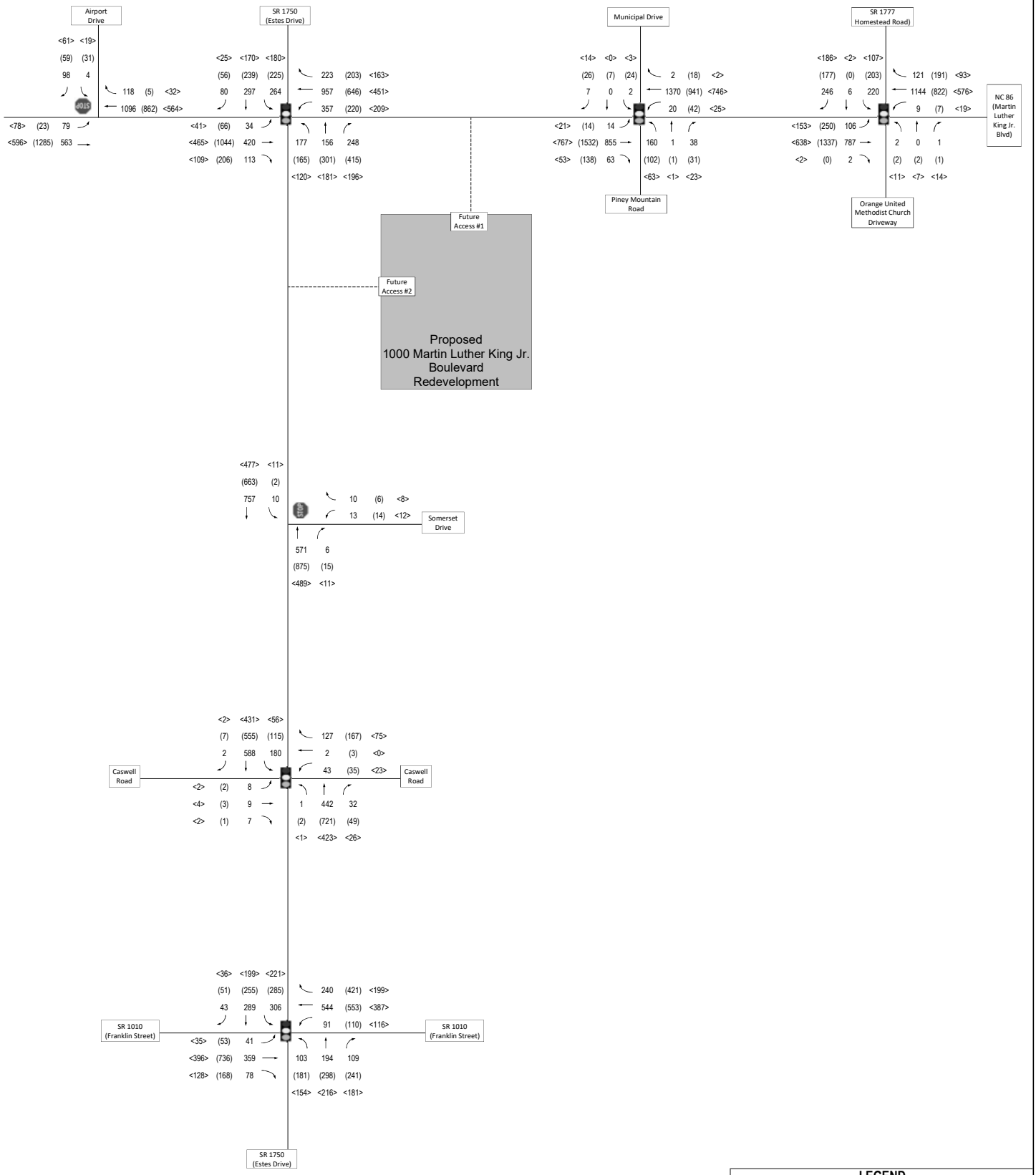
Turning movement counts (TMCs) for the study intersections were collected by VHB Engineering NC, P.C. during the AM, Noon and PM peak hours in January 2020. The intersection of Martin Luther King Jr. Boulevard (NC 86) and Estes Drive (SR 1750) was collected over a 24-hr period.

Table 4 summarizes the schedule used to obtain the turning movement data. A detailed summary of all traffic counts can be found in Appendix A.

**Table 4 Weekday Turning Movement Count Schedule**

| Intersection | Time Period | Data Collection Date |
|---|---|---|
| Martin Luther King Jr. Blvd (NC 86) at Airport Drive | 7:00 AM – 9:00 AM<br>11:00 AM – 1:00 PM<br>4:00 PM – 6:00 PM | Tuesday<br>January 28, 2020 |
| Martin Luther King Jr. Blvd (NC 86) at Estes Drive (SR 1750) | 12:00 AM – 11:59 PM | Tuesday<br>January 28, 2020 |
| Martin Luther King Jr. Blvd (NC 86) at Piney Mountain Road/Municipal Drive | 7:00 AM – 9:00 AM<br>11:00 AM – 1:00 PM<br>4:00 PM – 6:00 PM | Tuesday<br>January 28, 2020 |
| Martin Luther King Jr. Blvd (NC 86) at Homestead Road (SR 1777) | 7:00 AM – 9:00 AM<br>11:00 AM – 1:00 PM<br>4:00 PM – 6:00 PM | Tuesday<br>January 28, 2020 |
| Estes Drive (SR 1750) at Somerset Drive | 7:00 AM – 9:00 AM<br>11:00 AM – 1:00 PM<br>4:00 PM – 6:00 PM | Tuesday<br>January 28, 2020 |
| Estes Drive (SR 1750) at Caswell Road | 7:00 AM – 9:00 AM<br>11:00 AM – 1:00 PM<br>4:00 PM – 6:00 PM | Tuesday<br>January 28, 2020 |
| Franklin Street (SR 1010) at Estes Drive (SR 1750) | 7:00 AM – 9:00 AM<br>11:00 AM – 1:00 PM<br>4:00 PM – 6:00 PM | Tuesday<br>January 28, 2020 |
| Willow Drive at Harris Teeter Rear Driveway | 7:00 AM – 9:00 AM<br>11:00 AM – 1:00 PM<br>4:00 PM – 6:00 PM | Tuesday<br>January 28, 2020 |
| Willow Drive at University Place/Bank Driveway | 7:00 AM – 9:00 AM<br>11:00 AM – 1:00 PM<br>4:00 PM – 6:00 PM | Tuesday<br>January 28, 2020 |

The calculated existing peak hour turning movement volumes are shown in Figure 6.




| LEGEND | |
|---|---|
| ——— | Existing Roadway |
| - - - - - | Future Roadway |
| STOP | Existing Stop Controlled Approach |
| | Existing Signalized Intersection |
| ——→ | Turning Movement |
| XX | AM Peak Hour Turning Movement Volume |
| (XX) | PM Peak Hour Turning Movement Volume |
| <XX> | Noon Peak Hour Turning Movement Volume |

not to scale

**Figure 6**
**Existing (2020) AM, PM, and Noon Peak Hour Turning Movement Volumes**

**1000 Martin Luther King Jr Boulevard**
**Traffic Impact Analysis**
**Chapel Hill, NC**

## Crash Analysis

Five-year crash data (2/01/2015 - 1/31/2020) was obtained from the NCDOT Traffic Engineering Accident Analysis System (TEAAS) along Martin Luther King Jr Blvd (NC 86) and Estes Drive (SR 1750) adjacent to the site. Note that crashes within the mileposts specified were grouped. As a result, crashes reported just upstream or downstream of a specific location were grouped inside the intersection itself.

The crash rates for NC 86 (Martin Luther King Jr Blvd) from Piney Mountain Road to SR 1750/1780 (N Estes Drive) are reported in Table 5. The total crash rate for the corridor was higher than the statewide crash rate and critical crash rate, as were the non-fatal injury crash and the wet condition crash rates. The night conditions crash rate was higher than the statewide crash rate but lower than the critical crash rate.

Table 6 displays the total number of crashes for each crash type observed along this corridor throughout the study area. The predominant crash type was rear-end crashes (59%), with the next highest being left-turn crashes (20%) and angle crashes (9%).

Table 7 shows the intersection with the highest amount of crashes (44) over the five-year period was at the signalized intersection of NC 86 (Martin Luther King Jr Blvd) and SR 1750/1780 (N Estes Drive)

**Table 5 NC 86 (Martin Luther King Jr Blvd) from Piney Grove Road to SR 1750 (N Estes Drive) Rate (2/01/2015 – 1/31/2020)**

| Rate | Crashes | Crashes per 100 MVM | Statewide Crash Rate | Critical Crash Rate |
|---|---|---|---|---|
| **Total** | 70 | 439.70 | 299.06 | 373.50 |
| **Fatal** | 0 | 0.00 | 1.39 | 9.39 |
| **Non-Fatal Injury** | 23 | 144.47 | 83.67 | 124.52 |
| **Night** | 13 | 81.66 | 58.08 | 92.64 |
| **Wet** | 15 | 94.22 | 44.6 | 75.27 |

**2015-2017 statewide crash rate for urban 4-lane undivided secondary routes*

**Table 6 Crash Type Summary (Martin Luther King Jr Blvd)**

| Crash Type | Crashes | % |
|---|---|---|
| Angle | 6 | 9% |
| Head On | 2 | 3% |
| Left Turn | 14 | 20% |
| Other | 2 | 3% |
| Pedalcyclist | 0 | 0% |
| Pedestrian | 1 | 1% |
| Ran Off Road | 3 | 4% |
| Rear End | 41 | 59% |
| Right Turn | 1 | 1% |
| Sideswipe | 0 | 0% |

**Table 7 Crashes by Location (Martin Luther King Jr Blvd)**

| Intersection/Location | From Milepost | To Milepost | Angle | Head On | Left Turn | Rear End | Right Turn | Sideswipe | Other | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| MLK Dr @ Estes Dr | 3.06 | 3.11 | 5 | 2 | 13 | 20 | 1 | 0 | 3 | 44 |
| MLK Dr @ Mistywood/Shadowwood | 3.16 | 3.16 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 2 |
| MLK Dr @ Pedestrian Crossing | 3.22 | 3.24 | 0 | 0 | 0 | 14 | 0 | 0 | 2 | 16 |
| MLK Dr | 3.3 | 3.3 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 |
| MLK Dr @ Municipal/Piney Mountain | 3.34 | 3.37 | 1 | 0 | 1 | 5 | 0 | 0 | 0 | 7 |

The crash rates for SR 1750/1780 (N Estes Drive) from NC 86 (Martin Luther King Jr Blvd) to Caswell Road are reported in Table 8. The total crash rate for the corridor was higher than the statewide crash rate and critical crash rate, as were the non-fatal injury crash and the night conditions crash rates. The wet conditions crash rate was higher than the statewide crash rate but lower than the critical crash rate.

Table 9 displays the total number of crashes for each crash type observed along this corridor throughout the study area. The predominant crash type was rear-end crashes (42%), with the next highest being left-turn crashes (18%) and ran-off-road crashes (11%).

Table 10 shows the intersection with the highest amount of crashes (33) over the five-year period was at the signalized intersection of SR 1750/1780 (N Estes Drive) at NC 86 (Martin Luther King Jr Blvd).

**Table 8 SR 1750/1780 (N Estes Drive) from NC 86 (Martin Luther King Jr Blvd) to Caswell Road (2/01/2015 – 1/31/2020)**

| Rate | Crashes | Crashes per 100 MVM | Statewide Crash Rate | Critical Crash Rate |
|---|---|---|---|---|
| **Total** | 55 | 378.01 | 255.33 | 327.68 |
| **Fatal** | 0 | 0.00 | 1.09 | 9.03 |
| **Non-Fatal Injury** | 22 | 151.20 | 76.91 | 118.17 |
| **Night** | 17 | 116.84 | 66.47 | 105.07 |
| **Wet** | 9 | 61.86 | 41.11 | 72.20 |

**2015-2017 statewide crash rate for urban 4-lane undivided secondary routes*

**Table 9 Crash Type Summary (Estes Drive)**

| Crash Type | Crashes | % |
|---|---|---|
| Angle | 4 | 7% |
| Head On | 3 | 5% |
| Left Turn | 10 | 18% |
| Other | 3 | 5% |
| Pedalcyclist | 1 | 2% |
| Pedestrian | 0 | 0% |
| Ran Off Road | 6 | 11% |
| Rear End | 23 | 42% |
| Right Turn | 2 | 4% |
| Sideswipe | 3 | 5% |

**Table 10 Crashes by Location (Estes Drive)**

| Intersection/Location | From Milepost | To Milepost | Angle | Head On | Left Turn | Rear End | Right Turn | Sideswipe | Other | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| Estes Dr at MLK Jr Blvd | 1.72 | 1.77 | 4 | 2 | 10 | 11 | 1 | 3 | 2 | 33 |
| Estes Dr at Driveway | 1.78 | 1.82 | 0 | 0 | 0 | 3 | 1 | 0 | 2 | 6 |
| Estes Dr at Driveway | 1.89 | 1.89 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| Estes Dr at Driveway | 1.93 | 1.95 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 3 |
| Estes Dr at Somerset Dr | 1.99 | 2.03 | 0 | 0 | 0 | 2 | 0 | 0 | 3 | 5 |
| Estes Dr at Driveway | 2.11 | 2.13 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 2 |
| Estes Dr at Caswell Rd | 2.16 | 2.21 | 0 | 0 | 0 | 4 | 0 | 0 | 1 | 5 |

## Measure of Effectiveness (MOEs) Descriptions

The Town of Chapel Hill *TIA Guidelines* lists measures of effectiveness that should be reported for traffic impact studies. Table 11 lists the reported measures which include intersection delay, level of service, and maximum queue lengths within the analysis area. Certain measures are applicable at the intersection level whereas others are corridor or system-wide measures.

**Table 11 Summary of Analysis Program Used and MOE Reported**

| Type | Software | MOE |
|---|---|---|
| Intersection | Synchro | Intersection Level of Service (LOS) |
| | Synchro | Intersection Average Delay per Vehicle |
| | Synchro | Approach Average Delay per Vehicle |
| | Synchro | Approach Level of Service |
| | Synchro | 95$^{th}$ Percentile Queue Length |
| | SimTraffic | Maximum Observed Queue Length |
| Roadway Segments | N/A | Daily Volume/Capacity Analysis |

## Level of Service Criteria

Peak hour level of service (LOS) measures the adequacy of the intersection geometrics and traffic controls of an intersection or approach for the given turning volumes. Levels of service range from A through F, based on the average control delay experienced by vehicles traveling through the intersection during the peak hour. Control delay represents the portion of total delay attributed to traffic control devices (e.g., signals or stop signs). The engineering professional generally accepts LOS D as an acceptable operating condition for signalized intersections in urban areas and LOS C for rural areas.

At unsignalized intersections, LOS E is generally considered acceptable only if the side street encounters the delay. Nevertheless, side streets sometimes function at LOS F during peak traffic periods; however, the traffic volume often does not warrant a traffic signal to assist side

street traffic. Table 12 provides a general description of various levels of service categories and delay ranges.

**Table 12 Level of Service Description for Intersections**

| Level of Service | Description | Signalized Intersection | Unsignalized Intersection |
|---|---|---|---|
| A | Little or no delay | <= 10 sec. | <= 10 sec. |
| B | Short traffic delay | 10-20 sec. | 10-15 sec. |
| C | Average traffic delay | 20-35 sec. | 15-25 sec. |
| D | Long traffic delay | 35-55 sec. | 25-35 sec. |
| E | Very long traffic delay | 55-80 sec. | 35-50 sec. |
| F | Unacceptable delay | > 80 sec. | > 50 sec. |

## Level of Service Analysis

Intersection levels of service analyses were performed for the typical weekday AM, PM, and Noon peak hours using *Synchro/SimTraffic Professional Version 10*. Existing signal plans were obtained from the NCDOT online signal plan library and from the Town of Chapel Hill. The traffic signal plans are located in Appendix C. The existing coordinated signal timings along Martin Luther King Jr. Boulevard (NC 86) were also obtained from the Town of Chapel Hill and used within the Existing (2020) analysis. A summary of the findings for the Existing (2020) Conditions scenario LOS analysis can be found in Table 13, and the full *Synchro* output can be found in Appendix D.

As reported in Table 13, all signalized intersections operate at an overall acceptable level of service (i.e., LOS D or better) during all peak hours. Stop-controlled southbound Somerset Drive at Estes Drive currently operates at LOS E during the PM peak hour. All other stop-controlled approaches operate acceptably during all peak hours.

**Table 13 Existing (2020) LOS Results**

| Intersection and Approach | Traffic Control | Existing (2020) | | |
|---|---|---|---|---|
| | | AM | Noon | PM |
| **Martin Luther King Jr. Boulevard (NC 86) and Airport Road** | Unsignalized | - | - | - |
| Eastbound | | C-18.5 | B-12.7 | C-17.7 |
| **Martin Luther King Jr. Boulevard (NC 86) and Estes Drive** | Signalized | **D (39.0)** | **C (30.2)** | **D (52.7)** |
| Eastbound | | E-57.0 | E-73.6 | E-63.0 |
| Westbound | | D-37.5 | D-38.6 | E-76.3 |
| Northbound | | D-45.3 | C-21.7 | D-49.7 |
| Southbound | | C-29.8 | B-11.7 | C-31.9 |
| **Martin Luther King Jr. Boulevard (NC 86) and Municipal Drive/Piney Mountain Road** | Signalized | **A (8.4)** | **A (5.4)** | **B (11.1)** |
| Eastbound | | E-60.9 | E-59.3 | E-71.8 |
| Westbound | | E-65.3 | E-57.5 | E-70.9 |
| Northbound | | A-4.2 | A-2.8 | A-3.8 |
| Southbound | | A-2.8 | A-1.2 | B-11.7 |
| **Martin Luther King Jr. Boulevard (NC 86) and Homestead Road/Church Driveway** | Signalized | **C (23.9)** | **B (17.9)** | **B (18.6)** |
| Eastbound | | D-52.4 | D-44.7 | E-55.0 |
| Westbound | | D-51.3 | D-45.5 | E-58.6 |
| Northbound | | B-13.9 | B-10.8 | A-9.8 |
| Southbound | | C-20.3 | B-13.2 | B-18.6 |
| **Estes Drive and Somerset Drive** | Unsignalized | - | - | - |
| Southbound | | D-26.9 | C-18.3 | E-40.6 |
| **Estes Drive and Casewll Drive** | Signalized | **B (12.9)** | **A (8.5)** | **B (17.5)** |
| Eastbound | | A-5.3 | A-2.4 | A-6.2 |
| Westbound | | A-4.1 | A-2.1 | B-13.2 |
| Northbound | | D-47.2 | D-51.6 | D-47.2 |
| Southbound | | E-66.5 | E-65.7 | E-70.1 |
| **Estes Drive and Franklin Street** | Signalized | **D (42.7)** | **D (37.4)** | **D (49.2)** |
| Eastbound | | D-53.0 | D-45.3 | E-63.6 |
| Westbound | | D-44.8 | D-39.7 | D-45.6 |
| Northbound | | C-34.7 | C-34.7 | D-43.4 |
| Southbound | | D-38.7 | C-32.7 | D-49.0 |

**X (X sec/veh)** = Overall intersection LOS (average delay), X-XX = Approach LOS and average delay

# 3

# No-Build (2024) Conditions

## Background Growth and Development

A future growth rate of a half percent (0.5%) was derived from average daily traffic counts collected by the NCDOT. This annual growth rate is consistent with recent traffic impact studies near the study area, and it was applied to the existing traffic volumes on all the roadways to account for growth between the base year (2020) and the build year (2024). Three (3) background developments were identified within the project study area: 1200 MLK Redevelopment, Retirement Residence at Somerset Drive, and University Place Redevelopment. The site trips that are projected to be generated by these developments were used in the No-Build (2024) analysis.

*1200 MLK Redevelopment* – A new access plan for the 1200 MLK Redevelopment along Martin Luther King Jr. Blvd (NC 86) was proposed. The project proposes a realignment to the existing access to Northfield Drive to allow direct entering and exiting traffic access to the site. An additional RIRO driveway was proposed to connect to Martin Luther King Jr. Blvd (NC 86) to the north of the redeveloped site. The development sits north of Taylor Street, and east of Martin Luther King Jr. Blvd (NC 86). The site has an anticipated build-out year of 2021. The projected site trips from the development were applied to the roadway network and are depicted in Appendix E.

*Retirement Residence at Somerset Drive* – The proposed development is under construction and will consist of senior-oriented living spaces. A Traffic Impact Study was not completed for this site and a trip distribution was assumed. The proposed development is located along Somerset Drive, north of Estes Drive. The site has an anticipated build-out year of 2021 and

proposes an additional short Left-Turn lane towards Somerset Drive. The projected site trips from the development were applied to the roadway network and are depicted in Appendix E.

*University Place Redevelopment* – The proposed redevelopment will consist of hotel rooms, movie theater, office space, retail and grocery space, a drive-in bank, and a service gas station. The proposed development site north of Estes Drive (SR 1750), west of US 15-501 (Fordham Boulevard) and west of Willow Drive. The site has an anticipated build-out year of 2022. Noon peak hour traffic volumes were not collected for this report; therefore, the noon peak hour turning volumes were estimated as the average of the AM and PM peak hour volumes. The projected site trips from the development were applied to the roadway network and are depicted in Appendix E.

Total approved background traffic volumes for the study area are shown in Figure 7, while Figure 8 shows the relative location of the approved background developments.

One (1) background roadway improvement project was identified within the study area. The Estes Drive Extension plans to construct intersection and bicycle/pedestrian improvements at the existing signalized intersection of Martin Luther King Jr. Boulevard (NC 86) and Estes Drive. The committed background improvements from this project, as well as any approved background developments within the study area, were included in the No-Build (2024) analysis.

The No-Build (2024) AM, PM, and Noon peak hour volumes with the background approved development trips are shown in Figure 9. Lane configurations under the No-Build (2024) scenario are shown in Figure 10.

## Level of Service Analysis

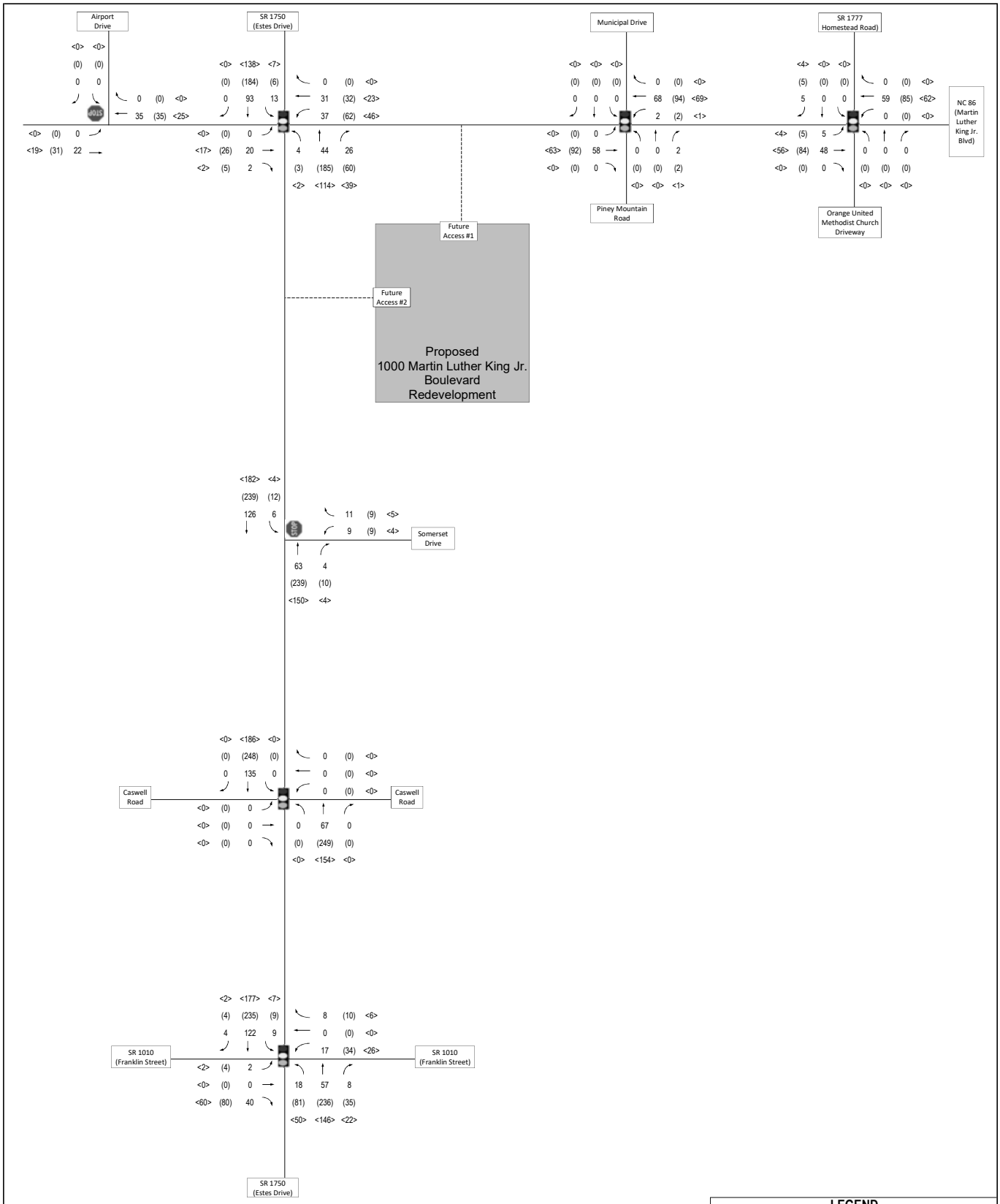
Intersection levels of service analyses were performed for the typical weekday AM, PM, and Noon peak hours using *Synchro/SimTraffic Professional Version 10*. Because a significant number of roadway improvements are expected in the background condition, the existing signal timings were not maintained for the No-Build (2024) analysis. New splits and offsets were developed, but the existing cycle lengths were maintained. A summary of the findings for the No-Build (2024) scenario LOS analysis can be found in Table 14, and the full *Synchro* output can be found in Appendix D.

As reported in Table 14, all signalized intersections, except for one, are expected to continue to operate at acceptable levels during all peak hours. The signalized intersection at Martin Luther King Jr. Boulevard (NC 86) and Estes Drive is expected to deteriorate to LOS E during the PM peak hour. Additionally, stop-controlled southbound Somerset Drive is projected to operate at LOS E during the AM peak hour and LOS F during the PM peak hour.

**Table 14 No-Build (2024) LOS Results**

| Intersection and Approach | Traffic Control | No-Build (2024) | | |
|---|---|---|---|---|
| | | AM | Noon | PM |
| **Martin Luther King Jr. Boulevard (NC 86) and Airport Road** | Unsignalized | - | - | - |
| Eastbound | | C-19.6 | B-13.1 | C-18.8 |
| **Martin Luther King Jr. Boulevard (NC 86) and Estes Drive** | Signalized | **D (37.8)** | **C (31.9)** | **E (58.7)** |
| Eastbound | | E-58.1 | E-58.5 | E-66.5 |
| Westbound | | D-51.2 | D-36.8 | E-69.6 |
| Northbound | | D-37.1 | C-29.0 | E-67.2 |
| Southbound | | C-23.0 | B-15.0 | C-33.5 |
| **Martin Luther King Jr. Boulevard (NC 86) and Municipal Drive/Piney Mountain Road** | Signalized | **A (8.6)** | **A (4.7)** | **B (10.9)** |
| Eastbound | | E-60.9 | E-59.3 | E-76.1 |
| Westbound | | E-65.5 | E-57.7 | E-78.5 |
| Northbound | | A-3.5 | A-2.1 | A-3.5 |
| Southbound | | A-3.8 | A-0.9 | B-11.1 |
| **Martin Luther King Jr. Boulevard (NC 86) and Homestead Road/Church Driveway** | Signalized | **C (22.2)** | **B (17.6)** | **B (18.7)** |
| Eastbound | | E-58.3 | D-44.6 | E-58.9 |
| Westbound | | D-51.7 | D-45.4 | E-60.4 |
| Northbound | | A-9.5 | B-10.2 | B-10.8 |
| Southbound | | B-18.4 | B-14.0 | B-16.5 |
| **Estes Drive and Somerset Drive** | Unsignalized | - | - | - |
| Southbound | | E-40.9 | D-28.5 | F-156.1 |
| **Estes Drive and Casewll Drive** | Signalized | **B (13.4)** | **A (9.0)** | **C (22.7)** |
| Eastbound | | A-6.5 | A-1.8 | B-11.3 |
| Westbound | | A-6.5 | A-7.1 | C-20.4 |
| Northbound | | D-47.0 | D-51.4 | D-50.2 |
| Southbound | | E-66.7 | E-65.9 | F-85.4 |
| **Estes Drive and Franklin Street** | Signalized | **C (35.0)** | **D (36.1)** | **D (44.0)** |
| Eastbound | | D-43.1 | D-42.2 | D-46.0 |
| Westbound | | D-41.9 | D-40.7 | D-46.1 |
| Northbound | | C-29.8 | C-30.4 | D-43.0 |
| Southbound | | C-27.3 | C-30.9 | D-41.7 |

**X (X sec/veh)** = Overall intersection LOS (average delay), X-XX = Approach LOS and average delay

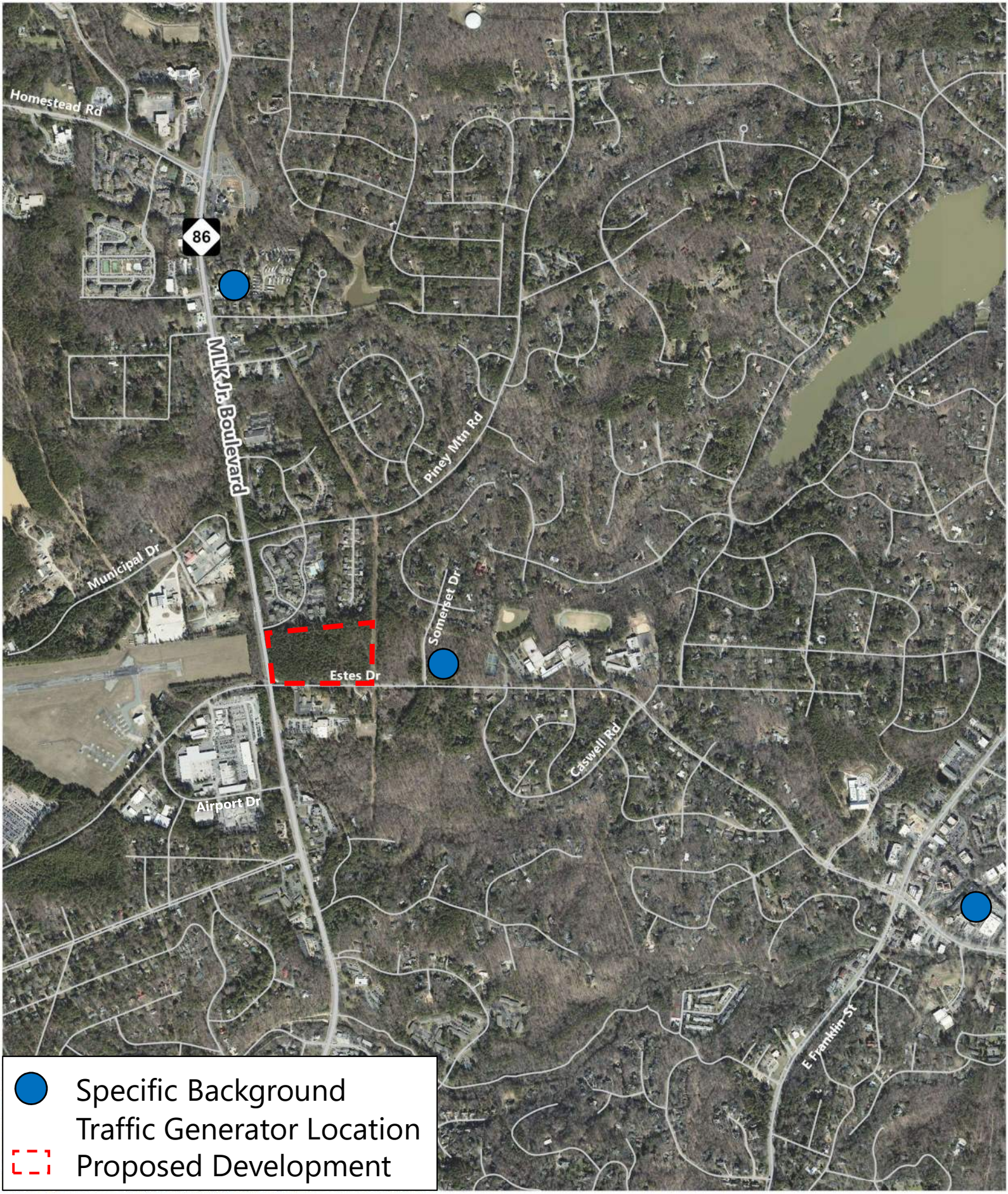



| LEGEND | |
|---|---|
| ——— | Existing Roadway |
| - - - - - | Future Roadway |
| STOP | Existing Stop Controlled Approach |
| | Existing Signalized Intersection |
| ——→ | Turning Movement |
| XX | AM Peak Hour Turning Movement Volume |
| (XX) | PM Peak Hour Turning Movement Volume |
| <XX> | Noon Peak Hour Turning Movement Volume |

not to scale

**Figure 7**
**Total Approved Background Generated Peak Hour Turning Movement Volumes**

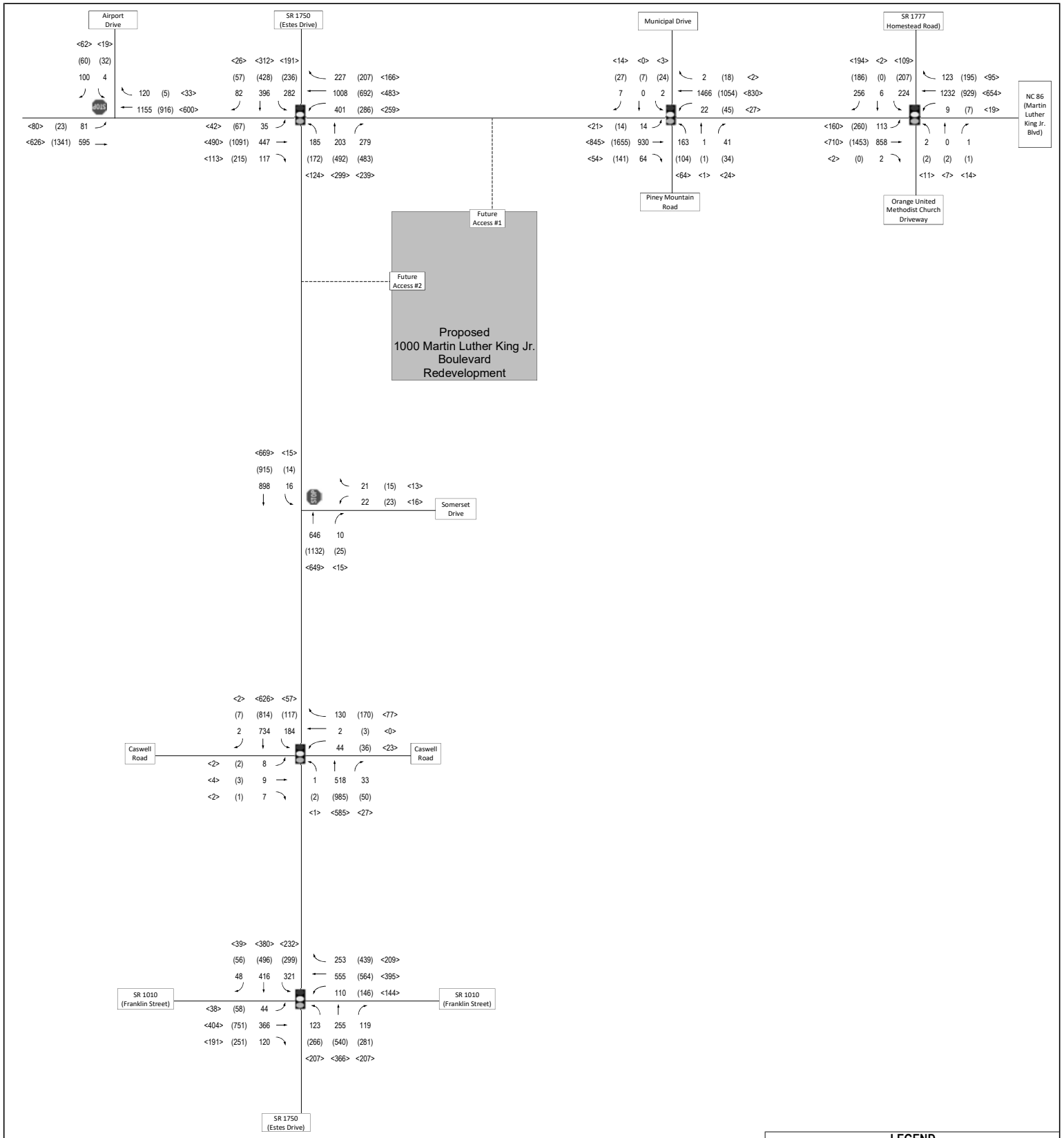
**1000 Martin Luther King Jr Boulevard**
**Traffic Impact Analysis**
**Chapel Hill, NC**




0 500 1000 Feet

Project Area | **MLK Boulevard TIA**

**Figure 8**
**Background Traffic Generator Locations**

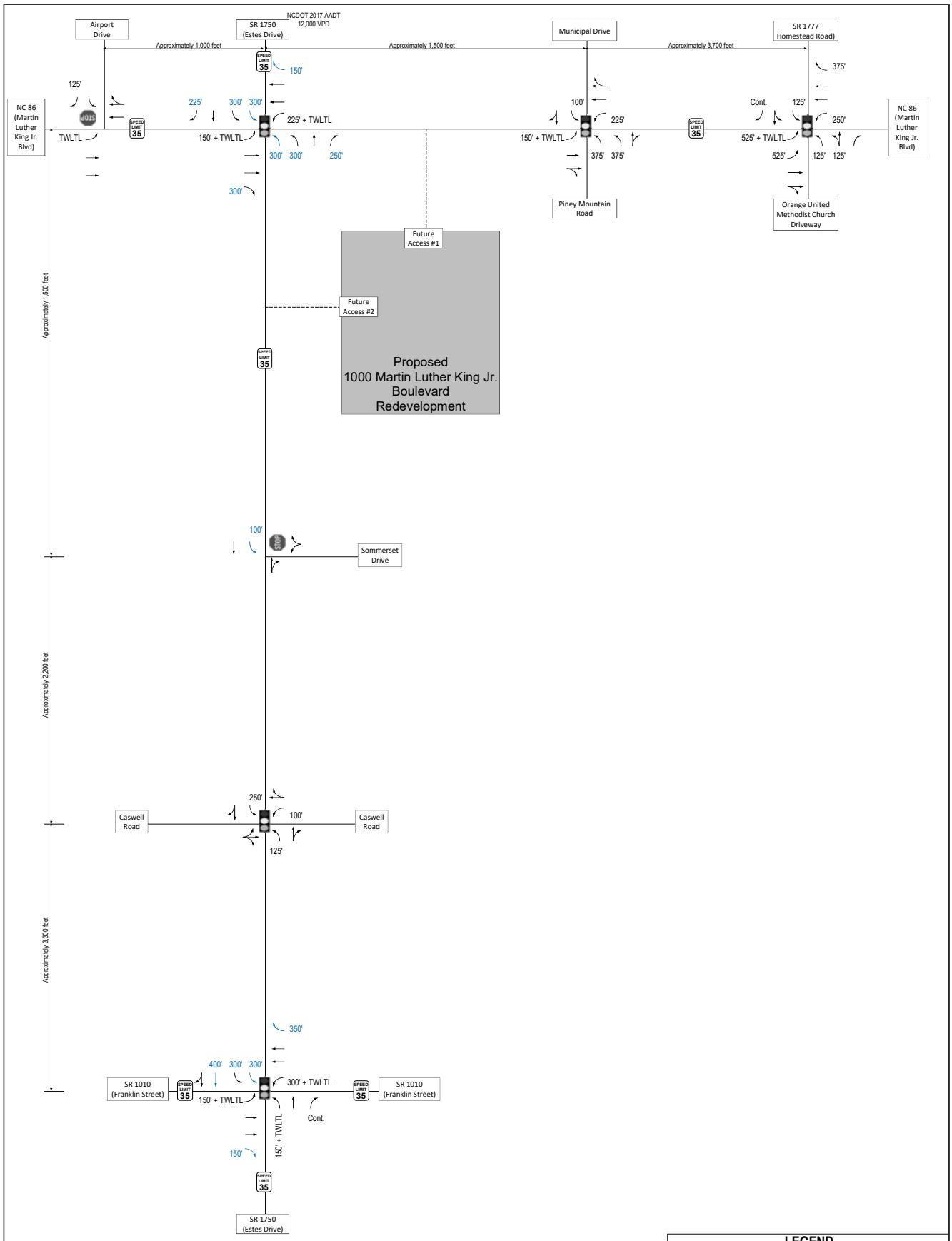



| LEGEND | |
|---|---|
| ——— | Existing Roadway |
| - - - - - | Future Roadway |
| STOP | Existing Stop Controlled Approach |
| | Existing Signalized Intersection |
| ——→ | Turning Movement |
| XX | AM Peak Hour Turning Movement Volume |
| (XX) | PM Peak Hour Turning Movement Volume |
| <XX> | Noon Peak Hour Turning Movement Volume |

not to scale

**Figure 9**
**No-Build (2024) AM, PM, and Noon Peak Hour Turning Movement Volumes**

**1000 Martin Luther King Jr Boulevard**
**Traffic Impact Analysis**
**Chapel Hill, NC**




| LEGEND | |
|---|---|
| ——— | Existing Roadway |
| - - - - - | Future Roadway |
| STOP | Existing Stop Controlled Approach |
| | Existing Signalized Intersection |
| ——→ | Existing Lane Configuration |
| ——→ | Future Lane Configuration - Background |

**Figure 10**
**No-Build (2024) Lane Configurations and Traffic Control**

**1000 Martin Luther King Jr Boulevard**
**Traffic Impact Analysis**
**Chapel Hill, NC**

# 4

# Build (2024) Conditions

## Trip Generation

Trip generation was conducted based on the most appropriate corresponding trip generation codes included in the *ITE Trip Generation Manual, 10th Edition,* and the suggested method of calculation in the NCDOT's *"Rate vs. Equation" Spreadsheet*. ITE Land Use Codes (LUC) LUC 221 (Multifamily Housing (Mid-Rise)), LUC 820 (General Retail), and LUC 932 (High-Turnover (Sit-Down) Restaurant) were used based on NCDOT guidance.

A transit reduction was taken for the proposed trip generation to account for the current transit service to the area. The new Bus Rapid Transit (BRT) system is proposed along Martin Luther King Jr. Boulevard (NC 86), but construction will not begin until 2024; therefore, no additional transit reductions were applied to the generated trips. The external site trips were reduced by 5% to account for the trips that will utilize the existing transit service stops near the development. The 5% reduction was determined based on travel demand model analysis. Table 15 shows the final external non-pass-by site trips generated by the new development.

The proposed development is to consist of the following:

- 9,000 square feet of General Retail Space
- 1,000 square feet High-Turnover (Sit-Down) Restaurant
- 388 Apartments and Townhome Units

The resulting trip generation associated with this amount of development includes 2,887 daily external site trips, with 269 trips (123 entering, 146 exiting) occurring in the AM peak hour,

171 trips (86 entering, 85 exiting) occurring during the Noon peak hour and 185 trips (107 entering, 78 exiting) occurring in the PM peak hour. Trips generated during the Noon peak hour were calculated by taking 75% of the average of the AM and PM site generated trips. The generated site trips were distributed following the existing turning movement counts and land uses.

Table 15 summarizes the assumed trip generation for the proposed redevelopment for typical weekday AM, PM, and Noon peak hours.

**Table 15 Trip Generation Results**

| Land Use Code[1] | Land Use | Unit | ADT | AM Peak Hour | | | Noon Peak Hour | | | PM Peak Hour | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Enter | Exit | Total | Enter | Exit | Total | Enter | Exit | Total |
| **Total Site Trips[2]** | | | | | | | | | | | | |
| 221 | Multifamily Housing (Mid-Rise) | 388 du | 2,113 | 34 | 95 | 129 | 50 | 60 | 110 | 99 | 64 | 163 |
| 820 | General Retail | 9,000 sf | 1,169 | 97 | 59 | 156 | 53 | 40 | 93 | 44 | 47 | 91 |
| 932 | High-Turnover (Sit-Down) Restaurant | 1,000 sf | 112 | 8 | 6 | 14 | 6 | 6 | 12 | 9 | 8 | 17 |
| | *Development Total* | | *3,394* | *139* | *160* | *299* | *109* | *106* | *215* | *152* | *119* | *271* |
| **Trip Reduction Due to Internal Capture[3]** | | | | | | | | | | | | |
| 221 | Multifamily Housing (Mid-Rise) | 388 du | 159 | 1 | 2 | 3 | 6 | 2 | 8 | 14 | 5 | 19 |
| 820 | General Retail | 9,000 sf | 137 | 2 | 5 | 7 | 4 | 7 | 11 | 8 | 14 | 22 |
| 932 | High-Turnover (Sit-Down) Restaurant | 1,000 sf | 58 | 6 | 1 | 7 | 4 | 2 | 6 | 4 | 5 | 9 |
| | *Development Total* | | *354* | *9* | *8* | *17* | *14* | *11* | *25* | *26* | *24* | *50* |
| **Total External Site Trips** | | | | | | | | | | | | |
| 221 | Multifamily Housing (Mid-Rise) | 388 du | 1,954 | 33 | 93 | 126 | 44 | 58 | 102 | 85 | 59 | 144 |
| 820 | General Retail | 9,000 sf | 1,032 | 95 | 54 | 149 | 49 | 33 | 82 | 36 | 33 | 69 |
| 932 | High-Turnover (Sit-Down) Restaurant | 1,000 sf | 54 | 2 | 5 | 7 | 2 | 4 | 6 | 5 | 3 | 8 |
| | *Development Total* | | *3,040* | *130* | *152* | *282* | *95* | *95* | *190* | *126* | *95* | *221* |
| **Total External Site Trips - 5% Transit Reduction** | | | | | | | | | | | | |
| 221 | Multifamily Housing (Mid-Rise) | 388 du | 1,856 | 31 | 89 | 120 | 42 | 55 | 97 | 81 | 56 | 137 |
| 820 | General Retail | 9,000 sf | 980 | 90 | 52 | 142 | 47 | 31 | 78 | 34 | 32 | 66 |
| 932 | High-Turnover (Sit-Down) Restaurant | 1,000 sf | 51 | 2 | 5 | 7 | 2 | 4 | 6 | 5 | 3 | 8 |
| | *Development Total* | | *2,887* | *123* | *146* | *269* | *91* | *90* | *181* | *120* | *91* | *211* |
| **Pass-by Site Trips[4]** | | | | | | | | | | | | |
| 221 | Multifamily Housing (Mid-Rise) | 388 du | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 820 | General Retail | 9,000 sf | | 0 | 0 | 0 | 4 | 4 | 8 | 11 | 11 | 22 |
| 932 | High-Turnover (Sit-Down) Restaurant | 1,000 sf | | 0 | 0 | 0 | 1 | 1 | 2 | 2 | 2 | 4 |
| | *Development Total* | | | *0* | *0* | *0* | *5* | *5* | *10* | *13* | *13* | *26* |
| **Non-Pass-by Site Trips** | | | | | | | | | | | | |
| 221 | Multifamily Housing (Mid-Rise) | 388 du | | 31 | 89 | 120 | 42 | 55 | 97 | 81 | 56 | 137 |
| 820 | General Retail | 9,000 sf | | 90 | 52 | 142 | 43 | 27 | 70 | 23 | 21 | 44 |
| 932 | High-Turnover (Sit-Down) Restaurant | 1,000 sf | | 2 | 5 | 7 | 1 | 3 | 4 | 3 | 1 | 4 |
| | *Development Total* | | | *123* | *146* | *269* | *86* | *85* | *171* | *107* | *78* | *185* |

Notes:

1. Land Use Code and trip generation rates are determined based on *ITE Trip Generation, 10th Edition*
2. Total site trips are determined based on the suggested method in the NCDOT Rate Vs Equation Spreadsheet
3. Internal capture was based on NCHRP 684 method and NCDOT IC calculation spreadsheet
4. Unconstrained pass-by trips are calculated based on *ITE Trip Generation Handbook, 3rd Edition.* The final projections are not expected to exceed 10% of adjacent street volumes.
5. Noon peak hour trips are esimated as 75% of the average of the AM and PM peak hour site trips.

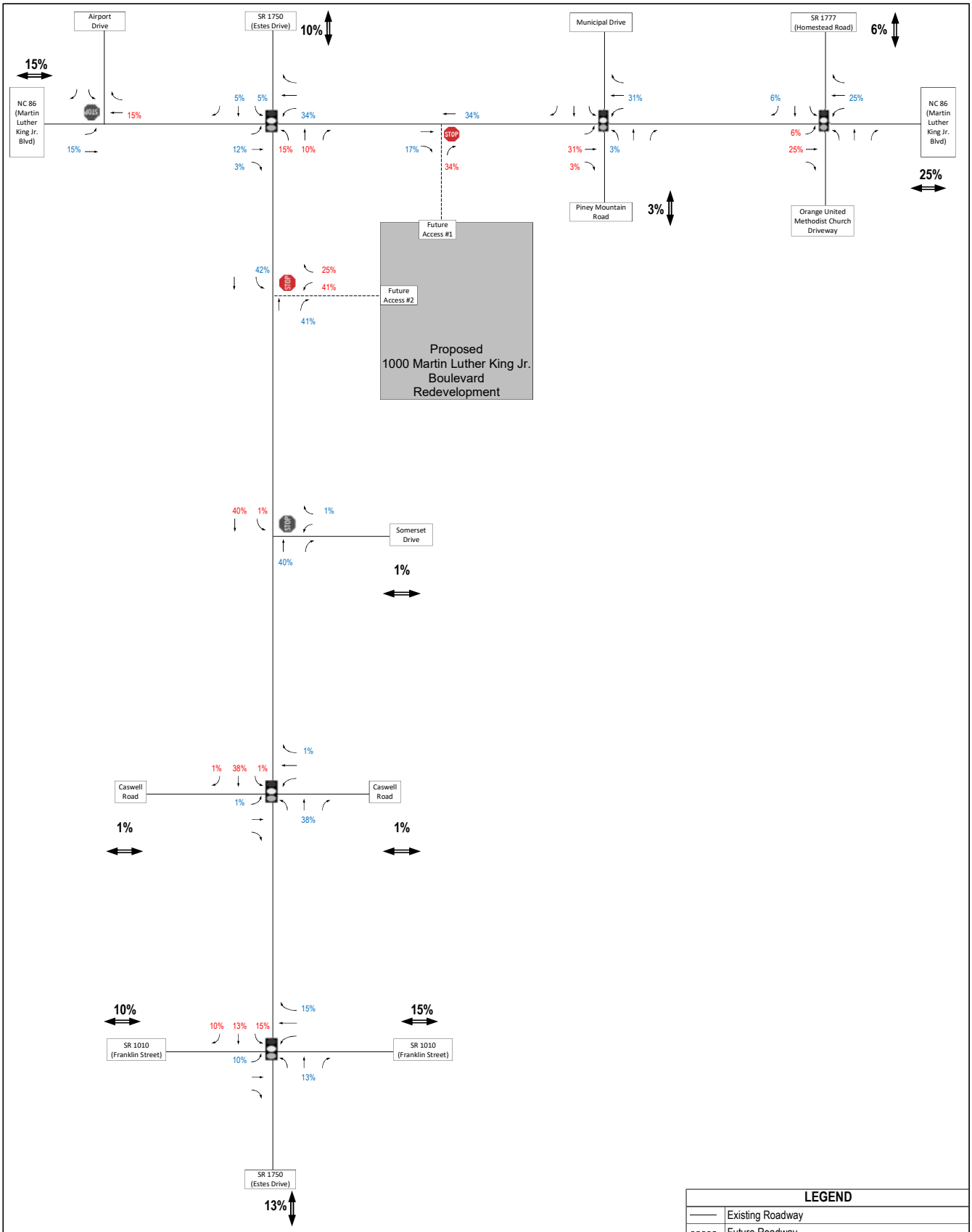
## Trip Distribution and Assignment

The proposed development will construct one access point along NC 86 (Martin Luther King Jr Boulevard), and one access points along Estes Drive (SR 1750). The generated non-pass-by site trips were distributed in accordance with the existing traffic patterns and land uses in the vicinity of the study area as follows:

- NC 86 (Martin Luther King Jr Boulevard) to/from the north – 25%
- NC 86 (Martin Luther King Jr Boulevard) to/from the south – 15%
- Estes Drive (SR 1750) to/from the west – 10%

- Estes Drive (SR 1750) to/from the east– 13%
- Franklin Street (SR 1010) to/from the north – 15%
- Franklin Street (SR 1010) to/from the south – 10%
- Caswell Road to/from the south – 1%
- Caswell Road to/from the north – 1%
- Somerset Drive to/from the north – 1%
- Piney Mountain Road to/from the east – 3%
- Homestead Road (SR 1777) to/from the west – 6%

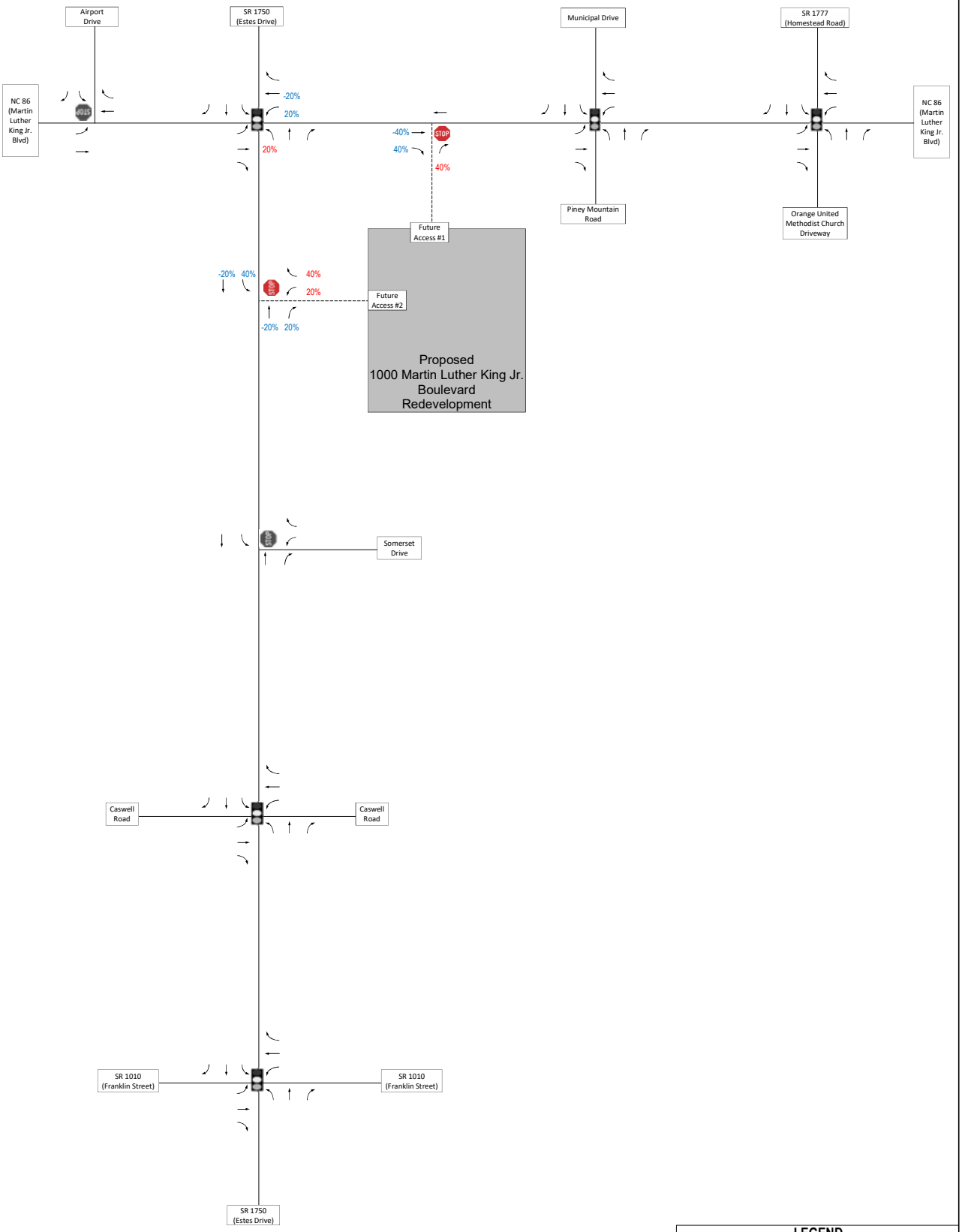
Pass-by trips were distributed based on existing traffic flow in the area. The total site trip percentages referenced above are shown in Figure 11 and pass-by trip percentages are shown in Figure 12. The resulting non-pass-by and pass-by trips are depicted in Figure 13 and Figure 14, respectively. The combined site-generated trips are shown in Figure 15.




| LEGEND | |
|---|---|
| —— | Existing Roadway |
| - - - - | Future Roadway |
| STOP | Existing Stop Controlled Approach |
| | Existing Signalized Intersection |
| STOP | Future Stop Controlled Approach |
| ——→ | Turning Movement |
| XX% | Percentage of Exiting Trips |
| XX% | Percentage of Entering Trips |

**Figure 11**
**Non-Pass-By Site Trip Distribution Percentages**

**1000 Martin Luther King Jr Boulevard**
**Traffic Impact Analysis**
**Chapel Hill, NC**

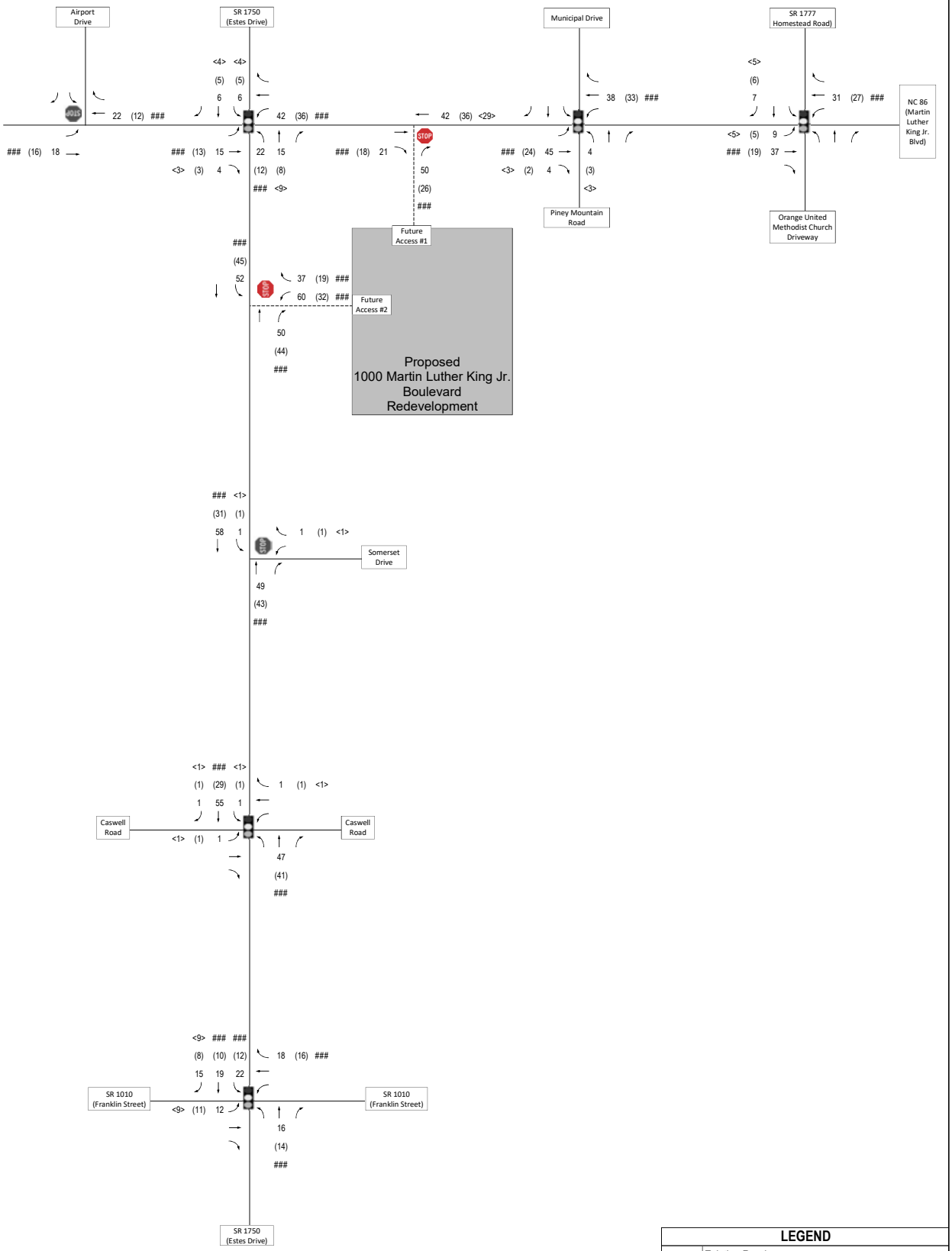



| LEGEND | |
|---|---|
| ——— | Existing Roadway |
| - - - - - | Future Roadway |
| STOP | Existing Stop Controlled Approach |
| | Existing Signalized Intersection |
| STOP | Future Stop Controlled Approach |
| ——→ | Turning Movement |
| XX% | Percentage of Exiting Trips |
| XX% | Percentage of Entering Trips |

not to scale

**Figure 12**
**Pass-By Site Trip Distribution Percentages**

**1000 Martin Luther King Jr Boulevard**
**Traffic Impact Analysis**
**Chapel Hill, NC**

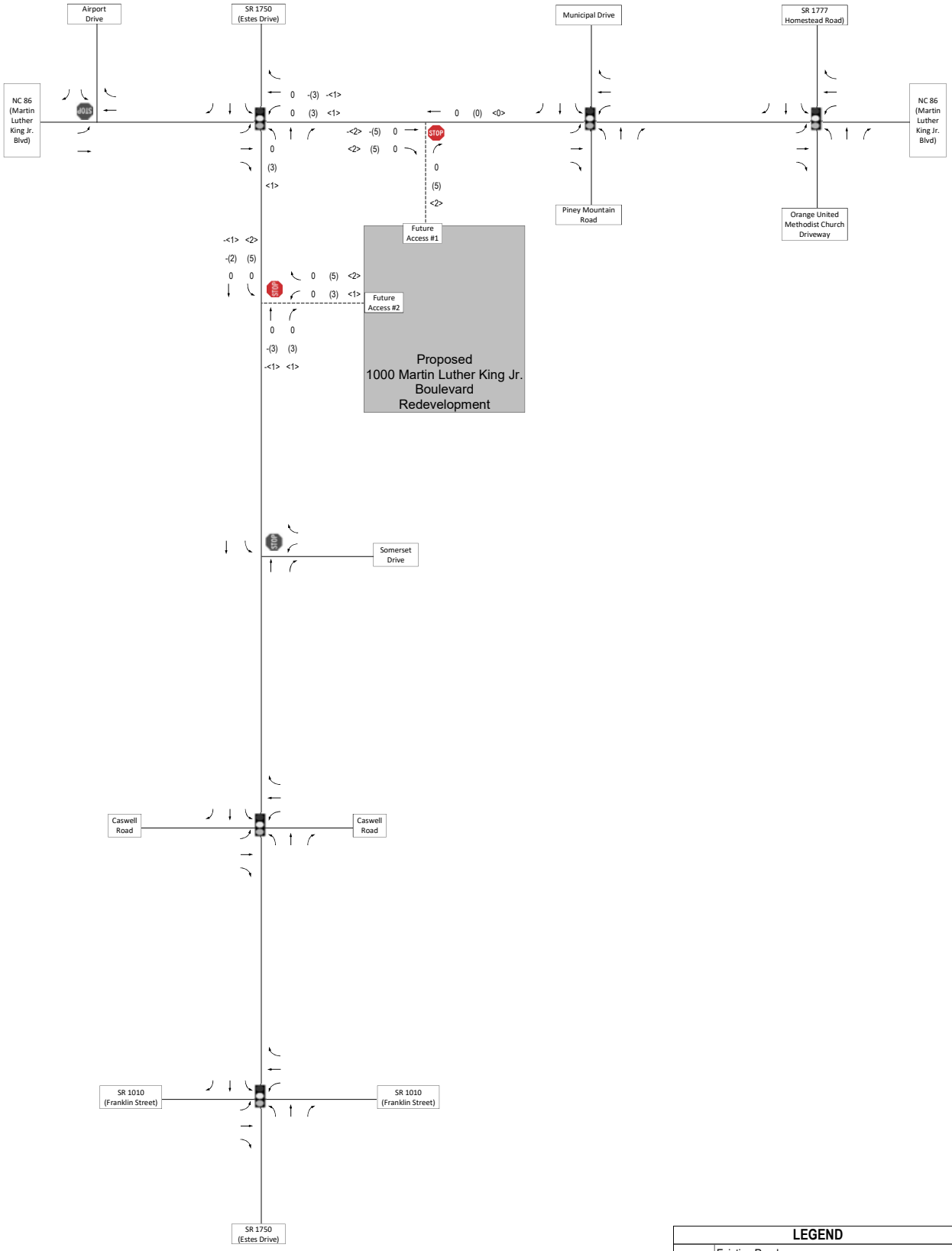



| LEGEND | |
|---|---|
| ——— | Existing Roadway |
| - - - - - | Future Roadway |
| STOP | Existing Stop Controlled Approach |
| | Existing Signalized Intersection |
| STOP | Future Stop Controlled Approach |
| ——→ | Turning Movement |
| XX | AM Peak Hour Turning Movement Volume |
| (XX) | PM Peak Hour Turning Movement Volume |
| <XX> | Noon Peak Hour Turning Movement Volume |

not to scale

**Figure 13**
**Non-Pass-By AM, PM, and Noon Peak Hour Site Generated Trips**

**1000 Martin Luther King Jr Boulevard**
**Traffic Impact Analysis**
**Chapel Hill, NC**

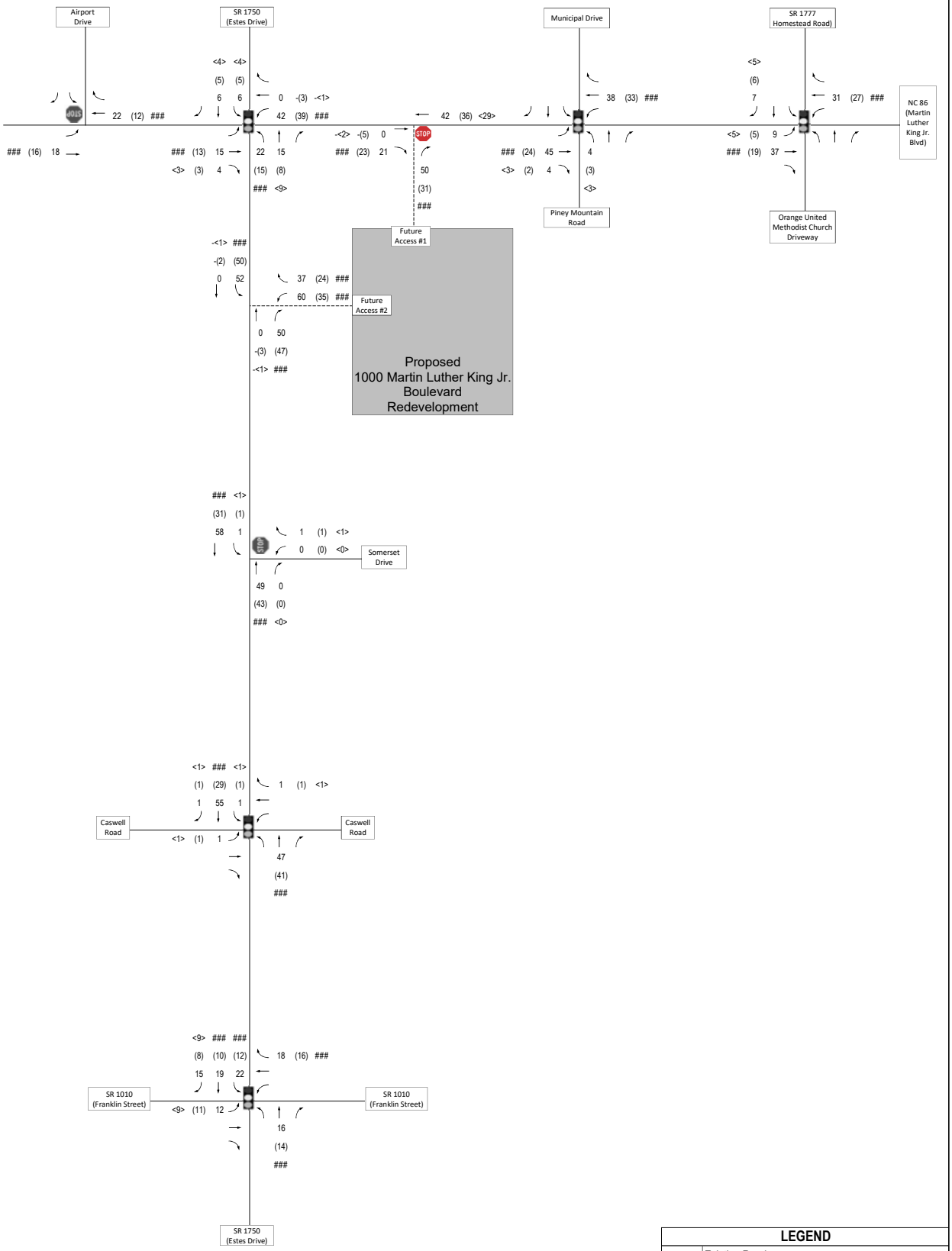



| LEGEND | |
|---|---|
| ——— | Existing Roadway |
| - - - - - | Future Roadway |
| STOP | Existing Stop Controlled Approach |
| | Existing Signalized Intersection |
| STOP | Future Stop Controlled Approach |
| ——→ | Turning Movement |
| XX | AM Peak Hour Turning Movement Volume |
| (XX) | PM Peak Hour Turning Movement Volume |
| <XX> | Noon Peak Hour Turning Movement Volume |

not to scale

**Figure 14**
**Pass-By AM, PM, and Noon Peak Hour Site Generated Trips**

**1000 Martin Luther King Jr Boulevard**
**Traffic Impact Analysis**
**Chapel Hill, NC**




| LEGEND | |
|---|---|
| ——— | Existing Roadway |
| - - - - - | Future Roadway |
| STOP | Existing Stop Controlled Approach |
| | Existing Signalized Intersection |
| STOP | Future Stop Controlled Approach |
| ——→ | Turning Movement |
| XX | AM Peak Hour Turning Movement Volume |
| (XX) | PM Peak Hour Turning Movement Volume |
| <XX> | Noon Peak Hour Turning Movement Volume |

not to scale

**Figure 15**
**Total AM, PM, and Noon Peak Hour Site Generated Trips**

**1000 Martin Luther King Jr Boulevard**
**Traffic Impact Analysis**
**Chapel Hill, NC**

## Signal Warrant Analysis

If a traffic signal was recommended for an intersection that is not currently signalized or is not proposed to be under Build (2024) Conditions, AM and PM peak hour turning movements were reviewed to determine if a peak hour signal warrant was expected to be met. Currently, no unsignalized intersection meets the minimum threshold for signal warrants based on MUTCD guidance.

## Sight Distance Analysis

The driveways along NC 86 (Martin Luther King Jr Boulevard) and Estes Drive (SR 1750) are on long tangent sections allowing for adequate sight distance for drivers. Any landscaping or signs within the development site triangles should be removed to further improve visibility for drivers.

## Special Analysis/Issues Related to Project

Based on discussions with the Town of Chapel Hill staff, there are no special issues associated with this project, and no special analyses needed beyond the ones included within this report.

## Level of Service Analysis

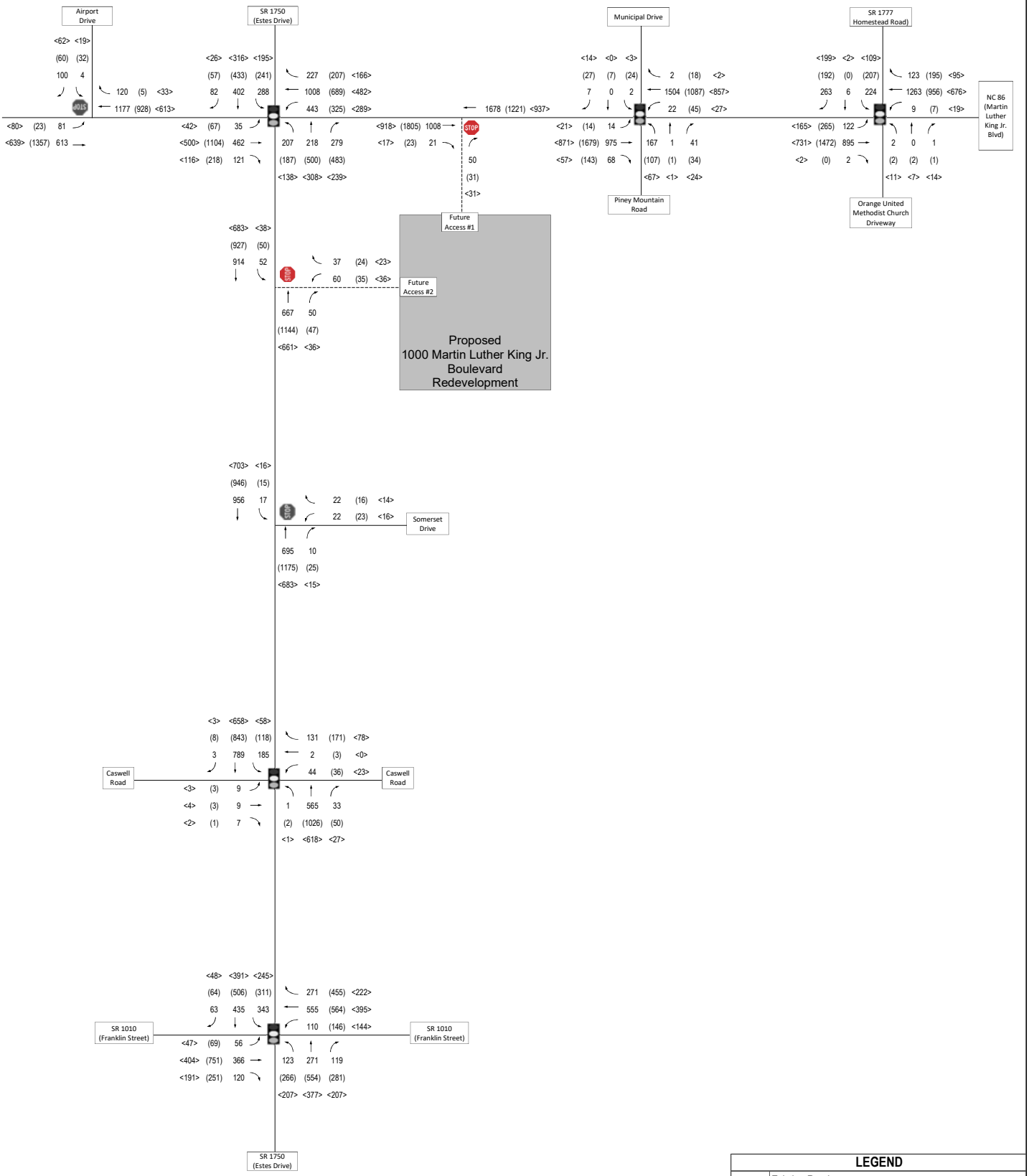
Intersection levels of service analyses were performed for the typical weekday AM, PM, and Noon peak hours using *Synchro/SimTraffic Professional Version 10*. The calculated Build (2024) peak hour turning movement volumes are depicted in Figure 16. The coordinated signal timings developed within the No-Build (2024) scenario were maintained for the Build (2024) analysis. A summary of the findings for the Build (2024) scenario LOS analysis can be found in Appendix D.

As reported in Table 16, the signalized intersection of Martin Luther King Jr. Boulevard (NC 86) is expected to continue to operate at LOS E during the PM peak hour. All other signalized intersections will operate acceptably during all peak hours with site trips in place. Stop-controlled southbound Somerset Drive at Estes Drive is expected to operate at LOS F during the AM and PM peak hours. Newly constructed Future Access #2 is expected to operate at LOS F during the AM and PM peak hours, and LOS E during the Noon peak hour.

**Table 16 Build (2024) LOS Results**

| Intersection and Approach | Traffic Control | Build (2024) | | |
|---|---|---|---|---|
| | | AM | Noon | PM |
| **Martin Luther King Jr. Boulevard (NC 86) and Airport Road** | Unsignalized | - | - | - |
| Eastbound | | C-20.1 | B-13.2 | C-19.0 |
| **Martin Luther King Jr. Boulevard (NC 86) and Estes Drive** | Signalized | **D (39.9)** | **C (33.4)** | **E (64.2)** |
| Eastbound | | E-58.7 | E-58.9 | E-67.6 |
| Westbound | | D-52.0 | D-39.0 | E-73.8 |
| Northbound | | D-40.4 | C-30.7 | E-70.5 |
| Southbound | | C-26.0 | B-16.7 | D-45.7 |
| **Martin Luther King Jr. Boulevard (NC 86) and Municipal Drive/Piney Mountain Road** | Signalized | **A (8.8)** | **A (4.8)** | **B (11.1)** |
| Eastbound | | E-60.9 | E-59.3 | E-76.1 |
| Westbound | | E-65.5 | E-57.8 | E-78.9 |
| Northbound | | A-4.2 | A-2.2 | A-3.7 |
| Southbound | | A-4.0 | A-1.0 | B-11.4 |
| **Martin Luther King Jr. Boulevard (NC 86) and Homestead Road/Church Driveway** | Signalized | **C (22.7)** | **B (17.3)** | **B (18.7)** |
| Eastbound | | E-58.5 | D-44.6 | E-59.0 |
| Westbound | | D-51.7 | D-45.4 | E-60.4 |
| Northbound | | B-10.5 | A-9.6 | B-10.9 |
| Southbound | | B-18.8 | B-14.3 | B-16.4 |
| **Estes Drive and Somerset Drive** | Unsignalized | - | - | - |
| Southbound | | F-50.1 | D-31.3 | F-195.2 |
| **Estes Drive and Casewll Drive** | Signalized | **B (13.8)** | **A (9.2)** | **C (24.7)** |
| Eastbound | | A-7.2 | A-2.2 | B-13.1 |
| Westbound | | A-7.6 | A-7.5 | C-22.5 |
| Northbound | | D-47.0 | D-52.0 | D-50.5 |
| Southbound | | E-66.4 | E-66.0 | F-88.9 |
| **Estes Drive and Franklin Street** | Signalized | **D (35.8)** | **D (36.4)** | **D (45.1)** |
| Eastbound | | D-42.7 | D-41.4 | D-46.3 |
| Westbound | | D-43.0 | D-40.6 | D-46.8 |
| Northbound | | C-32.0 | C-31.7 | D-45.3 |
| Southbound | | C-27.7 | C-31.3 | D-42.6 |
| **Martin Luther King Jr. Boulevard (NC 86) and Future Access #1** | Unsignalized | - | - | - |
| Westbound | | B-13.8 | B-12.7 | C-22.8 |
| **Estes Drive and Future Access #2** | Unsignalized | - | - | - |
| Southbound | | F-220.7 | E-46.4 | F-533.8 |

**X (X sec/veh)** = Overall intersection LOS (average delay), X-XX = Approach LOS and average delay




| LEGEND | |
|---|---|
| ——— | Existing Roadway |
| - - - - - | Future Roadway |
| STOP | Existing Stop Controlled Approach |
| | Existing Signalized Intersection |
| STOP | Future Stop Controlled Approach |
| ——→ | Turning Movement |
| XX | AM Peak Hour Turning Movement Volume |
| (XX) | PM Peak Hour Turning Movement Volume |
| <XX> | Noon Peak Hour Turning Movement Volume |

not to scale

**Figure 16**
**Build (2024) AM, PM, and Noon Peak Hour Turning Movement Volumes**

**1000 Martin Luther King Jr Boulevard**
**Traffic Impact Analysis**
**Chapel Hill, NC**

## Access Analysis

The proposed concept plan for the vehicular site access includes the following:

*Site Access #1*

Site Access #1 will be located approximately 300 feet north from the Martin Luther King Jr. Boulevard (NC 86) at Estes Drive (SR 1750) intersection as illustrated in the concept plan. Coordination with Chapel Hill Transit is necessary to assure the connectivity with the North-South BRT corridor.

*Site Access #2*

Site Access #2 will be located approximately 750 feet east from the Martin Luther King Jr. Boulevard (NC 86) at Estes Drive (SR 1750) intersection, as illustrated in the concept plan. In addition to the analysis of a stop-controlled intersection, a roundabout was analyzed at the driveway location. The results of the traffic control comparison at Estes Drive at Future Access #2 can be found in Table 17.

It should be noted that the projected maximum queues along westbound Estes Drive from the Martin Luther King Jr Boulevard (NC 86) intersection are projected to spillback to this intersection, which could create operational and vehicle conflict concerns within the roundabout.

The following driveway configuration is recommended for a stop-controlled driveway:

- Provide one ingress lane and two egress lanes at the full movement driveway.
- Provide a minimum of 100 feet of storage for an exclusive southbound right-turn lane along the driveway.
- Construct an exclusive eastbound left-turn lane with a minimum of 100 feet of full storage with appropriate taper.
- Construct through/right-turn lane along westbound Estes Drive with a minimum of 150 feet of full storage and appropriate taper.
- Provide a high visibility painted crosswalk across the southbound driveway approach.

The following driveway configuration is recommended for a roundabout:

- Provide one ingress lane and one egress lane at the full movement driveway.
- Provide approximately 200 feet of storage for a shared westbound through/right-turn lane along Estes Drive.
- Provide approximately 200 feet of storage for a shared eastbound through/left-turn lane along Estes Drive.

**Table 17 Level of Service Comparison Table - Estes Dr at Future Access #2 (Traffic Control)**

| Intersection and Approach | Traffic Control | Build (2024) - Unsignalized | | | Build (2024) - Roundabout | | |
|---|---|---|---|---|---|---|---|
| | | AM | Noon | PM | AM | Noon | PM |
| **Estes Drive and Future Access #2** | Unsignalized/ Roundabout | - | - | - | **A (0.7)** | **A (0.4)** | **A (0.6)** |
| Eastbound | | --- | --- | --- | A-0.5 | A-0.3 | A-0.3 |
| Westbound | | --- | --- | --- | A-0.4 | A-0.3 | A-0.5 |
| Southbound | | F-220.7 | E-46.4 | F-533.8 | A-3.8 | A-3.5 | A-5.8 |

With the above-listed mitigation measures in place, the intersections will experience relatively minor queuing as noted in Table 18. A protected internal stem of 100 feet or more should be provided as part of the development to ensure vehicles can enter and exit the site with minimal disruption.

**Table 18 Driveway Queuing (feet) Analysis**

| Intersection and Approach | Build (2024) Synchro 95th Queue (ft) | | | Build (2024) SIDRA 95th Queue (ft) | | |
|---|---|---|---|---|---|---|
| | AM | Noon | PM | AM | Noon | PM |
| **Martin Luther King Jr. Boulevard (NC 86) and Future Access #1** | | | | | | |
| Northbound Right | 0 | 0 | 0 | --- | --- | --- |
| Westbound Right | 10 | 5 | 13 | --- | --- | --- |
| **Estes Drive and Future Access #2** | | | | | | |
| Eastbound Left | 5 | 5 | 10 | 87.2 | 55.3 | 89 |
| Westbound Right | --- | --- | --- | 52.4 | 48 | 112.1 |
| Southbound Left | 128 | 40 | 115 | 17.3 | 9.9 | 13.9 |
| Southbound Right | 5 | 3 | 5 | 17.3 | 9.9 | 13.9 |

# 5

# Findings and Conclusions

The proposed development is expected to impact operations at multiple study intersections under Build (2024) conditions. To improve operations at these study area intersections, the following offsite improvements should be considered. The proposed intersection configurations are shown in Figure 17.

*NC 86 (Martin Luther King Jr Boulevard) at Estes Drive (SR 1750) (Signalized)*

The existing signalized intersection is projected to operate at LOS E during the PM peak hour under Build (2024) conditions. Multiple turn lane additions were evaluated to bring operations for the intersection back down to LOS D during the PM peak hour. However, only significant widening along multiple approaches will provide enough of an improvement to achieve this goal. In the future, the intersection should be considered for a potential alternative intersection design (i.e., Quadrant Roadway intersection, Median U-Turn intersection). For the purposes of this study, the following improvement is recommending at the intersection:

- Widen Estes Drive along the frontage of the development to provide a continuous westbound right-turn lane at Martin Luther King Jr. Boulevard (NC 86).
- Incorporate any bicycle and/or pedestrian facilities improvements that may be integrated with roadway improvements along Estes Drive at the NC 86 (Martin Luther King Jr Boulevard) intersection.

In addition to offsite improvements, the following driveway configurations should be considered.

*NC 86 (Martin Luther King Jr Boulevard) at Site Access #1*

The stop-controlled driveway is projected to operate at LOS C during the PM peak hour under Build (2024) conditions. The following driveway configuration is recommended:

- Provide one ingress lane and one egress lane along the driveway. Restrict access along the driveway to right-in/right-out only.
- Construct an exclusive northbound right-turn lane along Martin Luther King Jr. Boulevard (NC 86) with at least 100 feet of full storage and appropriate taper.
- Provide a high visibility painted crosswalk across the westbound driveway approach

*Estes Drive (SR 1750) at Site Access #2*

The stop-controlled driveway is projected to operate at LOS F during the AM and PM peak hours under Build (2024) conditions. The projected site generated trips are not expected to meet signal warrants after the buildout of the development, and signalization would not be recommended with the traffic signal at Martin Luther King Jr. Boulevard (NC 86) nearby.

A roundabout was also analyzed at this intersection. It should be noted that the projected maximum queues along westbound Estes Drive from the Martin Luther King Jr Boulevard (NC 86) intersection are projected to spillback to this intersection, which could create operational and vehicle conflict concerns within the roundabout.

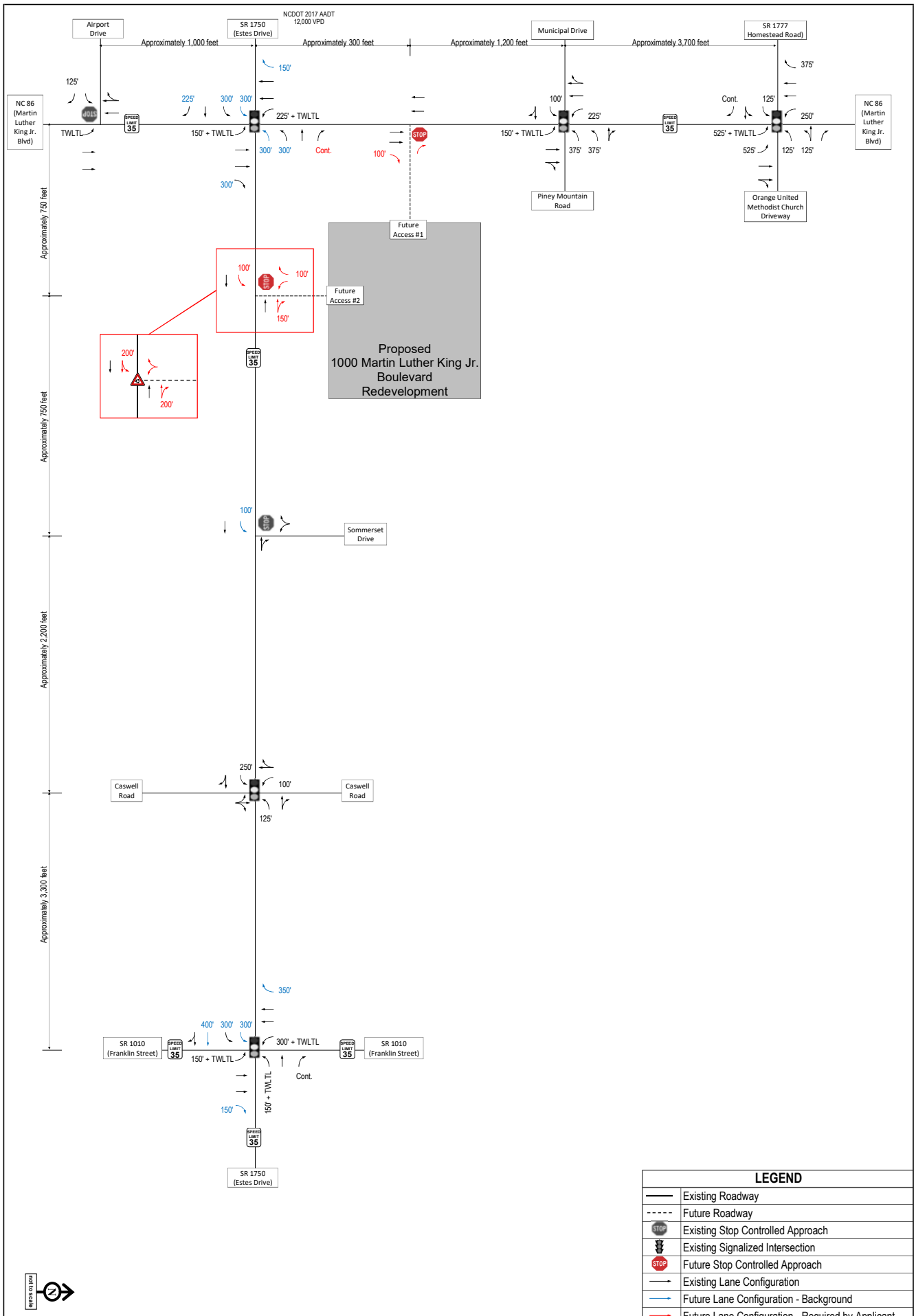
The Town of Chapel of Hill and the Applicant should evaluate the two analyzed configurations of the Estes Drive and Site Access #2 intersection to determine the desired traffic control at this location.

Table 19 displays the summary level of service results, and Figure 17 shows the Build (2024) lane geometrics and traffic control.

## Table 19 Summary of LOS Results

| Intersection and Approach | Traffic Control | Existing (2020) | | | No-Build (2024) | | | Build (2024) | | | Build (2024) with Improvements | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | AM | Noon | PM | AM | PM | PM | AM | PM | PM | AM | PM | PM |
| **Martin Luther King Jr. Boulevard (NC 86) and Airport Road** | Unsignalized | - | - | - | - | - | - | - | - | - | - | - | - |
| Eastbound | | C-18.5 | B-12.7 | C-17.7 | C-19.6 | B-13.1 | C-18.8 | C-20.1 | B-13.2 | C-19.0 | C-20.1 | B-13.2 | C-19.0 |
| **Martin Luther King Jr. Boulevard (NC 86) and Estes Drive** | Signalized | **D (39.0)** | **C (30.2)** | **D (52.7)** | **D (37.8)** | **C (31.9)** | **E (58.7)** | **D (39.9)** | **C (33.4)** | **E (64.2)** | **D (39.9)** | **C (33.4)** | **E (64.2)** |
| Eastbound | | E-57.0 | E-73.6 | E-63.0 | E-58.1 | E-58.5 | E-66.5 | E-58.7 | E-58.9 | E-67.6 | E-58.7 | E-58.9 | E-67.6 |
| Westbound | | D-37.5 | D-38.6 | E-76.3 | D-51.2 | D-36.8 | E-69.6 | D-52.0 | D-39.0 | E-73.8 | D-52.0 | D-39.0 | E-73.8 |
| Northbound | | D-45.3 | C-21.7 | D-49.7 | D-37.1 | C-29.0 | E-67.2 | D-40.4 | C-30.7 | E-70.5 | D-40.4 | C-30.7 | E-70.5 |
| Southbound | | C-29.8 | B-11.7 | C-31.9 | C-23.0 | B-15.0 | C-33.5 | C-26.0 | B-16.7 | D-45.7 | C-26.0 | B-16.7 | D-45.7 |
| **Martin Luther King Jr. Boulevard (NC 86) and Municipal Drive/Piney Mountain Road** | Signalized | **A (8.4)** | **A (5.4)** | **B (11.1)** | **A (8.6)** | **A (4.7)** | **B (10.9)** | **A (8.8)** | **A (4.8)** | **B (11.1)** | **A (8.8)** | **A (4.8)** | **B (11.1)** |
| Eastbound | | E-60.9 | E-59.3 | E-71.8 | E-60.9 | E-59.3 | E-76.1 | E-60.9 | E-59.3 | E-76.1 | E-60.9 | E-59.3 | E-76.1 |
| Westbound | | E-65.3 | E-57.5 | E-70.9 | E-65.5 | E-57.7 | E-78.5 | E-65.5 | E-57.8 | E-78.9 | E-65.5 | E-57.8 | E-78.9 |
| Northbound | | A-4.2 | A-2.8 | A-3.8 | A-3.5 | A-2.1 | A-3.5 | A-4.2 | A-2.2 | A-3.7 | A-4.2 | A-2.2 | A-3.7 |
| Southbound | | A-2.8 | A-1.2 | B-11.7 | A-3.8 | A-0.9 | B-11.1 | A-4.0 | A-1.0 | B-11.4 | A-4.0 | A-1.0 | B-11.4 |
| **Martin Luther King Jr. Boulevard (NC 86) and Homestead Road/Church Driveway** | Signalized | **C (23.9)** | **B (17.9)** | **B (18.6)** | **C (22.2)** | **B (17.6)** | **B (18.7)** | **C (22.7)** | **B (17.3)** | **B (18.7)** | **C (22.7)** | **B (17.3)** | **B (18.7)** |
| Eastbound | | D-52.4 | D-44.7 | E-55.0 | E-58.3 | D-44.6 | E-58.9 | E-58.5 | D-44.6 | E-59.0 | E-58.5 | D-44.6 | E-59.0 |
| Westbound | | D-51.3 | D-45.5 | E-58.6 | D-51.7 | D-45.4 | E-60.4 | D-51.7 | D-45.4 | E-60.4 | D-51.7 | D-45.4 | E-60.4 |
| Northbound | | B-13.9 | B-10.8 | A-9.8 | A-9.5 | B-10.2 | B-10.8 | B-10.5 | A-9.6 | B-10.9 | B-10.5 | A-9.6 | B-10.9 |
| Southbound | | C-20.3 | B-13.2 | B-18.6 | B-18.4 | B-14.0 | B-16.5 | B-18.8 | B-14.3 | B-16.4 | B-18.8 | B-14.3 | B-16.4 |
| **Estes Drive and Somerset Drive** | Unsignalized | - | - | - | - | - | - | - | - | - | - | - | - |
| Southbound | | D-26.9 | C-18.3 | E-40.6 | E-40.9 | D-28.5 | F-156.1 | F-50.1 | D-31.3 | F-195.2 | F-50.1 | D-31.3 | F-195.2 |
| **Estes Drive and Casewll Drive** | Signalized | **B (12.9)** | **A (8.5)** | **B (17.5)** | **B (13.4)** | **A (9.0)** | **C (22.7)** | **B (13.8)** | **A (9.2)** | **C (24.7)** | **B (13.7)** | **A (9.2)** | **C (24.7)** |
| Eastbound | | A-5.3 | A-2.4 | A-6.2 | A-6.5 | A-1.8 | B-11.3 | A-7.2 | A-2.2 | B-13.1 | A-7.2 | A-2.2 | B-13.1 |
| Westbound | | A-4.1 | A-2.1 | B-13.2 | A-6.5 | A-7.1 | C-20.4 | A-7.6 | A-7.5 | C-22.5 | A-7.3 | A-7.5 | C-22.5 |
| Northbound | | D-47.2 | D-51.6 | D-47.2 | D-47.0 | D-51.4 | D-50.2 | D-47.0 | D-52.0 | D-50.5 | D-47.0 | D-52.0 | D-50.5 |
| Southbound | | E-66.5 | E-65.7 | E-70.1 | E-66.7 | E-65.9 | F-85.4 | E-66.4 | E-66.0 | F-88.9 | E-66.4 | E-66.0 | F-88.9 |
| **Estes Drive and Franklin Street** | Signalized | **D (42.7)** | **D (37.4)** | **D (49.2)** | **C (35.0)** | **D (36.1)** | **D (44.0)** | **D (35.8)** | **D (36.4)** | **D (45.1)** | **D (35.8)** | **D (36.4)** | **D (45.1)** |
| Eastbound | | D-53.0 | D-45.3 | E-63.6 | D-43.1 | D-42.2 | D-46.0 | D-42.7 | D-41.4 | D-46.3 | D-42.7 | D-41.4 | D-46.3 |
| Westbound | | D-44.8 | D-39.7 | D-45.6 | D-41.9 | D-40.7 | D-46.1 | D-43.0 | D-40.6 | D-46.8 | D-43.0 | D-40.6 | D-46.8 |
| Northbound | | C-34.7 | C-34.7 | D-43.4 | C-29.8 | C-30.4 | D-43.0 | C-32.0 | C-31.7 | D-45.3 | C-32.0 | C-31.7 | D-45.3 |
| Southbound | | D-38.7 | C-32.7 | D-49.0 | C-27.3 | C-30.9 | D-41.7 | C-27.7 | C-31.3 | D-42.6 | C-27.7 | C-31.3 | D-42.6 |
| **Martin Luther King Jr. Boulevard (NC 86) and Future Access #1** | Unsignalized | - | - | - | - | - | - | - | - | - | - | - | - |
| Westbound | | --- | --- | --- | --- | --- | --- | B-13.8 | B-12.7 | C-22.8 | B-13.6 | B-12.6 | C-22.5 |
| **Estes Drive and Future Access #2** | Unsignalized | - | - | - | - | - | - | - | - | - | - | - | - |
| Southbound | | --- | --- | --- | --- | --- | --- | F-220.7 | E-46.4 | F-533.8 | F-153.2 | E-41.8 | F-330.7 |

**X (X sec/veh)** = Overall intersection LOS (average delay), X-XX = Approach LOS and average delay




| LEGEND | |
|---|---|
| ——— | Existing Roadway |
| - - - - - | Future Roadway |
| STOP | Existing Stop Controlled Approach |
| | Existing Signalized Intersection |
| STOP | Future Stop Controlled Approach |
| ——→ | Existing Lane Configuration |
| ——→ | Future Lane Configuration - Background |
| ——→ | Future Lane Configuration - Required by Applicant |

**Figure 17**
**Build (2024) Lane Configurations and Traffic Control With Improvements**

**1000 Martin Luther King Jr Boulevard**
**Traffic Impact Analysis**
**Chapel Hill, NC**

# Appendices

# Appendix A:

# Turning Movement Counts

# VHB Engineering NC, P.C.

Venture I
940 Main Campus Drive, Suite 500
Raleigh, NC 27606
*p: 919.829.0328 f: 919.833.0034*

File Name : Estes@Caswell
Site Code :
Start Date : 1/28/2020
Page No : 1

**Groups Printed- Passenger Vehicles - Single Unit - TTST - Bicycles on Crosswalk - Pedestrians**

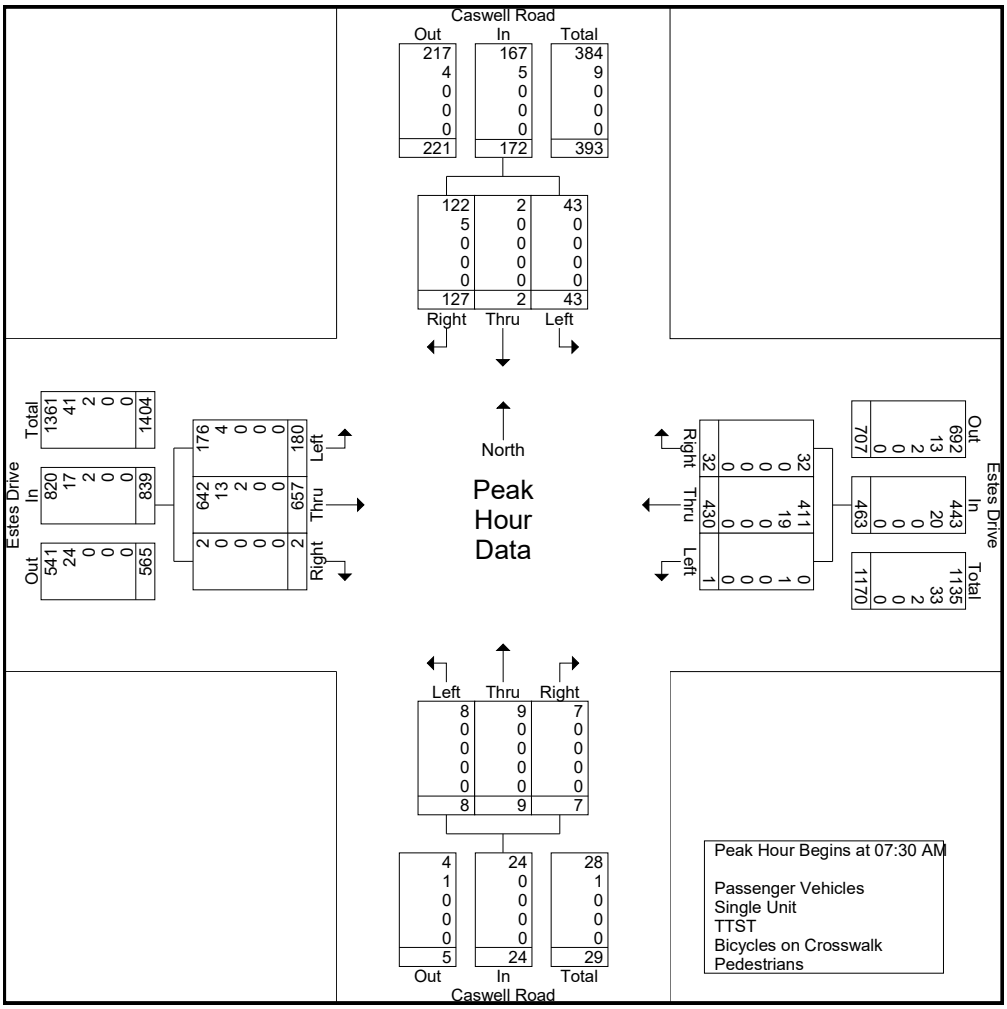
| | Caswell Road Southbound | | | | Estes Drive Westbound | | | | Caswell Road Northbound | | | | Estes Drive Eastbound | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | Peds | Left | Thru | Right | Peds | Left | Thru | Right | Peds | Left | Thru | Right | Peds | Exclu. Total | Inclu. Total | Int. Total |
| 07:00 AM | 4 | 0 | 8 | 1 | 0 | 52 | 9 | 0 | 1 | 1 | 1 | 0 | 18 | 60 | 0 | 2 | 3 | 154 | 157 |
| 07:15 AM | 6 | 0 | 20 | 0 | 0 | 68 | 13 | 0 | 0 | 1 | 1 | 0 | 28 | 107 | 0 | 0 | 0 | 244 | 244 |
| 07:30 AM | 18 | 2 | 44 | 3 | 0 | 89 | 19 | 0 | 1 | 3 | 1 | 1 | 62 | 146 | 0 | 10 | 14 | 385 | 399 |
| 07:45 AM | 11 | 0 | 31 | 1 | 0 | 126 | 6 | 0 | 0 | 1 | 1 | 0 | 40 | 149 | 0 | 7 | 8 | 365 | 373 |
| Total | 39 | 2 | 103 | 5 | 0 | 335 | 47 | 0 | 2 | 6 | 4 | 1 | 148 | 462 | 0 | 19 | 25 | 1148 | 1173 |
| 08:00 AM | 8 | 0 | 30 | 3 | 1 | 133 | 4 | 0 | 6 | 1 | 2 | 1 | 37 | 184 | 1 | 4 | 8 | 407 | 415 |
| 08:15 AM | 6 | 0 | 22 | 1 | 0 | 82 | 3 | 0 | 1 | 4 | 3 | 0 | 41 | 178 | 1 | 0 | 1 | 341 | 342 |
| 08:30 AM | 8 | 1 | 16 | 0 | 0 | 84 | 9 | 0 | 2 | 1 | 1 | 1 | 12 | 131 | 0 | 0 | 1 | 265 | 266 |
| 08:45 AM | 12 | 1 | 14 | 1 | 0 | 86 | 8 | 0 | 0 | 0 | 4 | 0 | 19 | 130 | 0 | 0 | 1 | 274 | 275 |
| Total | 34 | 2 | 82 | 5 | 1 | 385 | 24 | 0 | 9 | 6 | 10 | 2 | 109 | 623 | 2 | 4 | 11 | 1287 | 1298 |
| *** BREAK *** | | | | | | | | | | | | | | | | | | | |
| 11:00 AM | 4 | 0 | 15 | 0 | 1 | 84 | 5 | 0 | 0 | 0 | 1 | 0 | 11 | 102 | 2 | 0 | 0 | 225 | 225 |
| 11:15 AM | 5 | 0 | 19 | 1 | 0 | 112 | 4 | 0 | 0 | 1 | 0 | 0 | 12 | 103 | 0 | 0 | 1 | 256 | 257 |
| 11:30 AM | 4 | 0 | 24 | 1 | 1 | 92 | 8 | 0 | 1 | 0 | 1 | 0 | 17 | 98 | 1 | 0 | 1 | 247 | 248 |
| 11:45 AM | 6 | 0 | 15 | 1 | 0 | 113 | 7 | 0 | 1 | 1 | 0 | 0 | 14 | 128 | 1 | 0 | 1 | 286 | 287 |
| Total | 19 | 0 | 73 | 3 | 2 | 401 | 24 | 0 | 2 | 2 | 2 | 0 | 54 | 431 | 4 | 0 | 3 | 1014 | 1017 |
| 12:00 PM | 7 | 0 | 18 | 1 | 0 | 106 | 6 | 0 | 0 | 2 | 1 | 0 | 15 | 104 | 0 | 0 | 1 | 259 | 260 |
| 12:15 PM | 6 | 0 | 18 | 1 | 0 | 112 | 5 | 0 | 0 | 1 | 0 | 0 | 10 | 111 | 0 | 0 | 1 | 263 | 264 |
| 12:30 PM | 5 | 0 | 12 | 2 | 1 | 103 | 2 | 0 | 0 | 1 | 1 | 0 | 12 | 108 | 0 | 0 | 2 | 245 | 247 |
| 12:45 PM | 2 | 1 | 12 | 0 | 0 | 124 | 3 | 0 | 0 | 0 | 0 | 0 | 12 | 127 | 0 | 0 | 0 | 281 | 281 |
| Total | 20 | 1 | 60 | 4 | 1 | 445 | 16 | 0 | 0 | 4 | 2 | 0 | 49 | 450 | 0 | 0 | 4 | 1048 | 1052 |
| *** BREAK *** | | | | | | | | | | | | | | | | | | | |
| 04:00 PM | 7 | 0 | 24 | 1 | 0 | 137 | 3 | 0 | 0 | 2 | 1 | 1 | 20 | 131 | 2 | 1 | 3 | 327 | 330 |
| 04:15 PM | 9 | 1 | 38 | 1 | 0 | 134 | 9 | 0 | 2 | 0 | 0 | 0 | 21 | 150 | 0 | 1 | 2 | 364 | 366 |
| 04:30 PM | 5 | 1 | 32 | 0 | 1 | 158 | 10 | 0 | 1 | 1 | 2 | 0 | 24 | 138 | 0 | 1 | 1 | 373 | 374 |
| 04:45 PM | 6 | 1 | 28 | 0 | 0 | 165 | 13 | 1 | 0 | 1 | 0 | 2 | 24 | 154 | 1 | 1 | 4 | 393 | 397 |
| Total | 27 | 3 | 122 | 2 | 1 | 594 | 35 | 1 | 3 | 4 | 3 | 3 | 89 | 573 | 3 | 4 | 10 | 1457 | 1467 |
| 05:00 PM | 15 | 0 | 43 | 0 | 0 | 168 | 12 | 0 | 0 | 1 | 1 | 0 | 34 | 127 | 2 | 3 | 3 | 403 | 406 |
| 05:15 PM | 7 | 2 | 45 | 2 | 1 | 177 | 12 | 0 | 0 | 1 | 0 | 0 | 23 | 142 | 3 | 2 | 4 | 413 | 417 |
| 05:30 PM | 7 | 0 | 51 | 0 | 1 | 176 | 12 | 3 | 2 | 0 | 0 | 0 | 34 | 133 | 1 | 0 | 3 | 417 | 420 |
| 05:45 PM | 7 | 0 | 35 | 4 | 2 | 166 | 10 | 1 | 3 | 1 | 1 | 0 | 31 | 132 | 0 | 4 | 9 | 388 | 397 |
| Total | 36 | 2 | 174 | 6 | 4 | 687 | 46 | 4 | 5 | 3 | 2 | 0 | 122 | 534 | 6 | 9 | 19 | 1621 | 1640 |
| Grand Total | 175 | 10 | 614 | 25 | 9 | 2847 | 192 | 5 | 21 | 25 | 23 | 6 | 571 | 3073 | 15 | 36 | 72 | 7575 | 7647 |
| Apprch % | 21.9 | 1.3 | 76.8 | | 0.3 | 93.4 | 6.3 | | 30.4 | 36.2 | 33.3 | | 15.6 | 84 | 0.4 | | | | |
| Total % | 2.3 | 0.1 | 8.1 | | 0.1 | 37.6 | 2.5 | | 0.3 | 0.3 | 0.3 | | 7.5 | 40.6 | 0.2 | | 0.9 | 99.1 | |
| Passenger Vehicles | 174 | 8 | 597 | | 8 | 2785 | 190 | | 19 | 24 | 22 | | 555 | 3017 | 15 | | 0 | 0 | 7414 |
| % Passenger Vehicles | 99.4 | 80 | 97.2 | 0 | 88.9 | 97.8 | 99 | 0 | 90.5 | 96 | 95.7 | 0 | 97.2 | 98.2 | 100 | 0 | 0 | 0 | 97 |
| Single Unit | 1 | 2 | 17 | | 1 | 60 | 2 | | 2 | 1 | 1 | | 16 | 53 | 0 | | 0 | 0 | 156 |
| % Single Unit | 0.6 | 20 | 2.8 | 0 | 11.1 | 2.1 | 1 | 0 | 9.5 | 4 | 4.3 | 0 | 2.8 | 1.7 | 0 | 0 | 0 | 0 | 2 |
| TTST | 0 | 0 | 0 | | 0 | 2 | 0 | | 0 | 0 | 0 | | 0 | 3 | 0 | | 0 | 0 | 5 |
| % TTST | 0 | 0 | 0 | 0 | 0 | 0.1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 | 0 | 0 | 0 | 0 | 0.1 |
| Bicycles on Crosswalk | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 1 |
| % Bicycles on Crosswalk | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pedestrians | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 71 |
| % Pedestrians | 0 | 0 | 0 | 96 | 0 | 0 | 0 | 100 | 0 | 0 | 0 | 100 | 0 | 0 | 0 | 100 | 0 | 0 | 0.9 |

# VHB Engineering NC, P.C.

Venture I
940 Main Campus Drive, Suite 500
Raleigh, NC 27606
*p: 919.829.0328 f: 919.833.0034*


File Name : Estes@Caswell
Site Code :
Start Date : 1/28/2020
Page No : 2

| | Caswell Road Southbound | | | | Estes Drive Westbound | | | | Caswell Road Northbound | | | | Estes Drive Eastbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 09:45 AM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:30 AM | | | | | | | | | | | | | | | | | |
| 07:30 AM | 18 | 2 | 44 | 64 | 0 | 89 | 19 | 108 | 1 | 3 | 1 | 5 | 62 | 146 | 0 | 208 | 385 |
| 07:45 AM | 11 | 0 | 31 | 42 | 0 | 126 | 6 | 132 | 0 | 1 | 1 | 2 | 40 | 149 | 0 | 189 | 365 |
| 08:00 AM | 8 | 0 | 30 | 38 | 1 | 133 | 4 | 138 | 6 | 1 | 2 | 9 | 37 | 184 | 1 | 222 | 407 |
| 08:15 AM | 6 | 0 | 22 | 28 | 0 | 82 | 3 | 85 | 1 | 4 | 3 | 8 | 41 | 178 | 1 | 220 | 341 |
| Total Volume | 43 | 2 | 127 | 172 | 1 | 430 | 32 | 463 | 8 | 9 | 7 | 24 | 180 | 657 | 2 | 839 | 1498 |
| % App. Total | 25 | 1.2 | 73.8 | | 0.2 | 92.9 | 6.9 | | 33.3 | 37.5 | 29.2 | | 21.5 | 78.3 | 0.2 | | |
| PHF | .597 | .250 | .722 | .672 | .250 | .808 | .421 | .839 | .333 | .563 | .583 | .667 | .726 | .893 | .500 | .945 | .920 |
| Passenger Vehicles | 43 | 2 | 122 | 167 | 0 | 411 | 32 | 443 | 8 | 9 | 7 | 24 | 176 | 642 | 2 | 820 | 1454 |
| % Passenger Vehicles | 100 | 100 | 96.1 | 97.1 | 0 | 95.6 | 100 | 95.7 | 100 | 100 | 100 | 100 | 97.8 | 97.7 | 100 | 97.7 | 97.1 |
| Single Unit | 0 | 0 | 5 | 5 | 1 | 19 | 0 | 20 | 0 | 0 | 0 | 0 | 4 | 13 | 0 | 17 | 42 |
| % Single Unit | 0 | 0 | 3.9 | 2.9 | 100 | 4.4 | 0 | 4.3 | 0 | 0 | 0 | 0 | 2.2 | 2.0 | 0 | 2.0 | 2.8 |
| TTST | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 2 |
| % TTST | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.3 | 0 | 0.2 | 0.1 |
| Bicycles on Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Bicycles on Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pedestrians | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Pedestrians | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

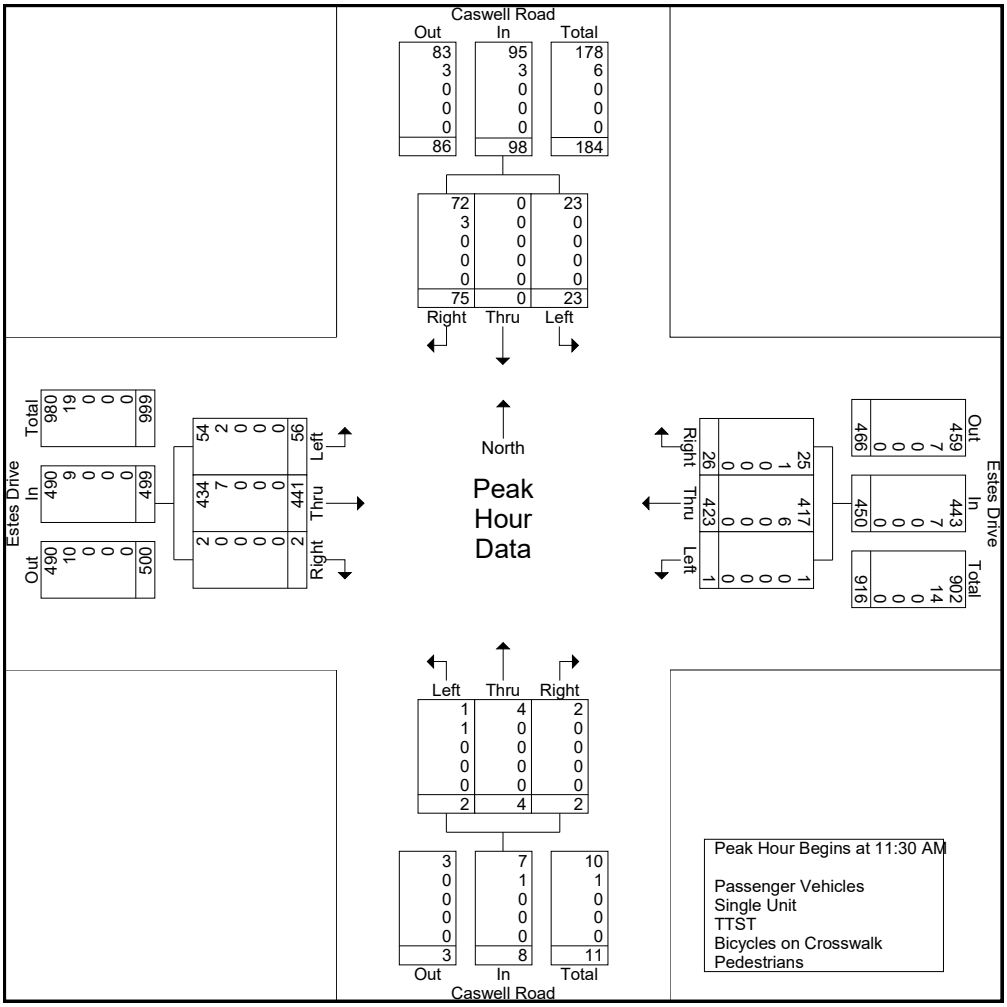


# VHB Engineering NC, P.C.

Venture I
940 Main Campus Drive, Suite 500
Raleigh, NC 27606
*p: 919.829.0328 f: 919.833.0034*


File Name : Estes@Caswell
Site Code :
Start Date : 1/28/2020
Page No : 3

| | Caswell Road Southbound | | | | Estes Drive Westbound | | | | Caswell Road Northbound | | | | Estes Drive Eastbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Int. Total |
| Peak Hour Analysis From 10:00 AM to 01:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 11:30 AM | | | | | | | | | | | | | | | | | |
| 11:30 AM | 4 | 0 | 24 | 28 | 1 | 92 | 8 | 101 | 1 | 0 | 1 | 2 | 17 | 98 | 1 | 116 | 247 |
| 11:45 AM | 6 | 0 | 15 | 21 | 0 | 113 | 7 | 120 | 1 | 1 | 0 | 2 | 14 | 128 | 1 | 143 | 286 |
| 12:00 PM | 7 | 0 | 18 | 25 | 0 | 106 | 6 | 112 | 0 | 2 | 1 | 3 | 15 | 104 | 0 | 119 | 259 |
| 12:15 PM | 6 | 0 | 18 | 24 | 0 | 112 | 5 | 117 | 0 | 1 | 0 | 1 | 10 | 111 | 0 | 121 | 263 |
| Total Volume | 23 | 0 | 75 | 98 | 1 | 423 | 26 | 450 | 2 | 4 | 2 | 8 | 56 | 441 | 2 | 499 | 1055 |
| % App. Total | 23.5 | 0 | 76.5 | | 0.2 | 94 | 5.8 | | 25 | 50 | 25 | | 11.2 | 88.4 | 0.4 | | |
| PHF | .821 | .000 | .781 | .875 | .250 | .936 | .813 | .938 | .500 | .500 | .500 | .667 | .824 | .861 | .500 | .872 | .922 |
| Passenger Vehicles | 23 | 0 | 72 | 95 | 1 | 417 | 25 | 443 | 1 | 4 | 2 | 7 | 54 | 434 | 2 | 490 | 1035 |
| % Passenger Vehicles | 100 | 0 | 96.0 | 96.9 | 100 | 98.6 | 96.2 | 98.4 | 50.0 | 100 | 100 | 87.5 | 96.4 | 98.4 | 100 | 98.2 | 98.1 |
| Single Unit | 0 | 0 | 3 | 3 | 0 | 6 | 1 | 7 | 1 | 0 | 0 | 1 | 2 | 7 | 0 | 9 | 20 |
| % Single Unit | 0 | 0 | 4.0 | 3.1 | 0 | 1.4 | 3.8 | 1.6 | 50.0 | 0 | 0 | 12.5 | 3.6 | 1.6 | 0 | 1.8 | 1.9 |
| TTST | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % TTST | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Bicycles on Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Bicycles on Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pedestrians | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Pedestrians | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

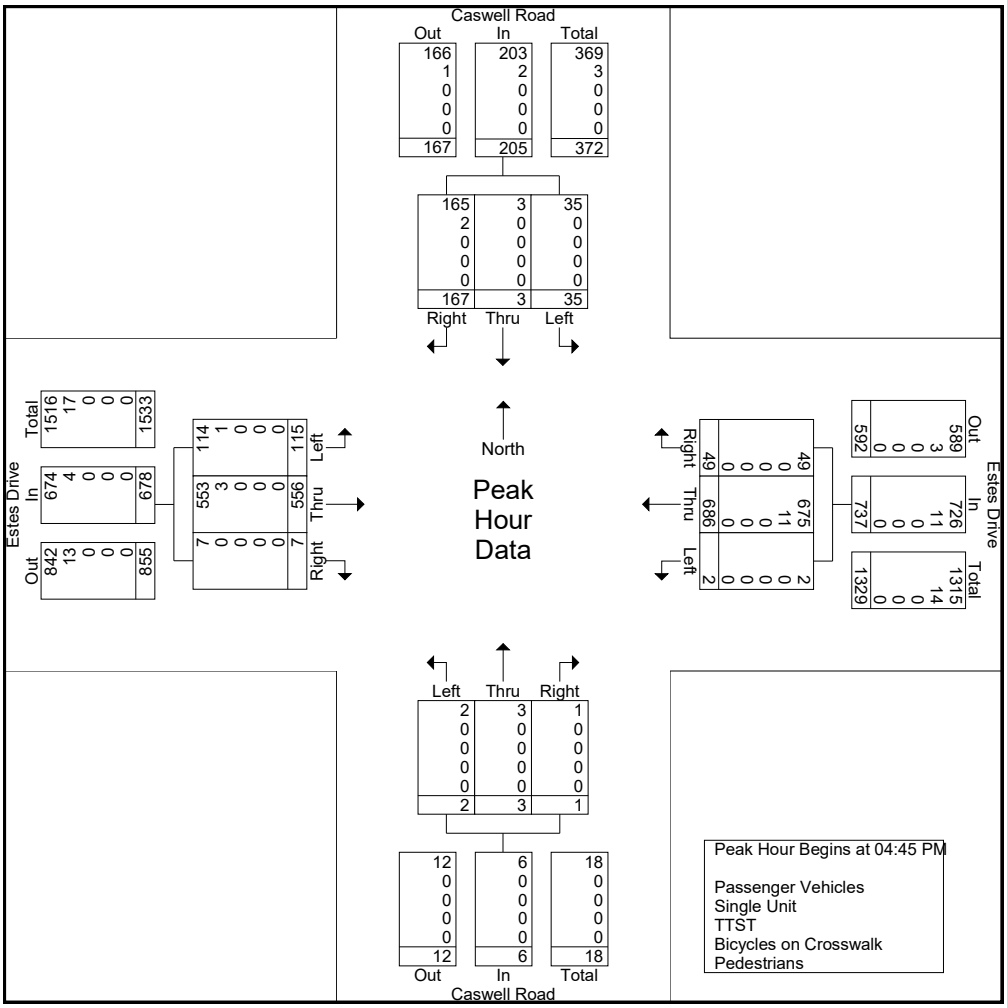


# VHB Engineering NC, P.C.

Venture I
940 Main Campus Drive, Suite 500
Raleigh, NC 27606
*p: 919.829.0328 f: 919.833.0034*


File Name : Estes@Caswell
Site Code :
Start Date : 1/28/2020
Page No : 4

| | Caswell Road Southbound | | | | Estes Drive Westbound | | | | Caswell Road Northbound | | | | Estes Drive Eastbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Int. Total |
| Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 04:45 PM | | | | | | | | | | | | | | | | | |
| 04:45 PM | 6 | 1 | 28 | 35 | 0 | 165 | 13 | 178 | 0 | 1 | 0 | 1 | 24 | 154 | 1 | 179 | 393 |
| 05:00 PM | 15 | 0 | 43 | 58 | 0 | 168 | 12 | 180 | 0 | 1 | 1 | 2 | 34 | 127 | 2 | 163 | 403 |
| 05:15 PM | 7 | 2 | 45 | 54 | 1 | 177 | 12 | 190 | 0 | 1 | 0 | 1 | 23 | 142 | 3 | 168 | 413 |
| 05:30 PM | 7 | 0 | 51 | 58 | 1 | 176 | 12 | 189 | 2 | 0 | 0 | 2 | 34 | 133 | 1 | 168 | 417 |
| Total Volume | 35 | 3 | 167 | 205 | 2 | 686 | 49 | 737 | 2 | 3 | 1 | 6 | 115 | 556 | 7 | 678 | 1626 |
| % App. Total | 17.1 | 1.5 | 81.5 | | 0.3 | 93.1 | 6.6 | | 33.3 | 50 | 16.7 | | 17 | 82 | 1 | | |
| PHF | .583 | .375 | .819 | .884 | .500 | .969 | .942 | .970 | .250 | .750 | .250 | .750 | .846 | .903 | .583 | .947 | .975 |
| Passenger Vehicles | 35 | 3 | 165 | 203 | 2 | 675 | 49 | 726 | 2 | 3 | 1 | 6 | 114 | 553 | 7 | 674 | 1609 |
| % Passenger Vehicles | 100 | 100 | 98.8 | 99.0 | 100 | 98.4 | 100 | 98.5 | 100 | 100 | 100 | 100 | 99.1 | 99.5 | 100 | 99.4 | 99.0 |
| Single Unit | 0 | 0 | 2 | 2 | 0 | 11 | 0 | 11 | 0 | 0 | 0 | 0 | 1 | 3 | 0 | 4 | 17 |
| % Single Unit | 0 | 0 | 1.2 | 1.0 | 0 | 1.6 | 0 | 1.5 | 0 | 0 | 0 | 0 | 0.9 | 0.5 | 0 | 0.6 | 1.0 |
| TTST | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % TTST | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Bicycles on Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Bicycles on Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pedestrians | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Pedestrians | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |



# VHB Engineering NC, P.C.

Venture I
940 Main Campus Drive, Suite 500
Raleigh, NC 27606
*p: 919.829.0328 f: 919.833.0034*

File Name : Estes@Franklin
Site Code :
Start Date : 1/28/2020
Page No : 1

**Groups Printed- Passenger Vehicles - Single Unit - TTST - Bicycles on Crosswalk - Pedestrians**

| | Franklin Street Southbound | | | | Estes Drive Westbound | | | | Franklin Street Northbound | | | | Estes Drive Eastbound | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | Peds | Left | Thru | Right | Peds | Left | Thru | Right | Peds | Left | Thru | Right | Peds | Exclu. Total | Inclu. Total | Int. Total |
| 07:00 AM | 6 | 62 | 41 | 1 | 17 | 20 | 14 | 1 | 2 | 32 | 5 | 0 | 32 | 38 | 6 | 0 | 2 | 275 | 277 |
| 07:15 AM | 15 | 85 | 54 | 1 | 11 | 30 | 15 | 2 | 5 | 65 | 16 | 2 | 55 | 36 | 11 | 1 | 6 | 398 | 404 |
| 07:30 AM | 18 | 124 | 68 | 2 | 21 | 38 | 11 | 0 | 5 | 68 | 22 | 2 | 65 | 79 | 7 | 2 | 6 | 526 | 532 |
| 07:45 AM | 24 | 133 | 67 | 5 | 25 | 73 | 24 | 1 | 14 | 86 | 20 | 2 | 77 | 74 | 11 | 3 | 11 | 628 | 639 |
| Total | 63 | 404 | 230 | 9 | 74 | 161 | 64 | 4 | 26 | 251 | 63 | 6 | 229 | 227 | 35 | 6 | 25 | 1827 | 1852 |
| 08:00 AM | 20 | 103 | 61 | 1 | 27 | 50 | 24 | 0 | 10 | 94 | 20 | 0 | 85 | 98 | 15 | 1 | 2 | 607 | 609 |
| 08:15 AM | 25 | 142 | 56 | 1 | 27 | 34 | 31 | 1 | 10 | 91 | 19 | 0 | 98 | 90 | 16 | 5 | 7 | 639 | 646 |
| 08:30 AM | 22 | 166 | 56 | 0 | 24 | 37 | 30 | 0 | 7 | 88 | 19 | 1 | 89 | 67 | 7 | 0 | 1 | 612 | 613 |
| 08:45 AM | 27 | 151 | 57 | 1 | 33 | 47 | 32 | 2 | 12 | 93 | 19 | 0 | 65 | 75 | 9 | 1 | 4 | 620 | 624 |
| Total | 94 | 562 | 230 | 3 | 111 | 168 | 117 | 3 | 39 | 366 | 77 | 1 | 337 | 330 | 47 | 7 | 14 | 2478 | 2492 |
| *** BREAK *** | | | | | | | | | | | | | | | | | | | |
| 11:00 AM | 31 | 80 | 46 | 2 | 30 | 42 | 33 | 1 | 12 | 90 | 31 | 1 | 46 | 59 | 8 | 2 | 6 | 508 | 514 |
| 11:15 AM | 24 | 101 | 57 | 1 | 21 | 57 | 49 | 2 | 6 | 89 | 38 | 0 | 55 | 70 | 8 | 1 | 4 | 575 | 579 |
| 11:30 AM | 30 | 84 | 52 | 3 | 26 | 48 | 48 | 1 | 8 | 91 | 25 | 1 | 57 | 57 | 9 | 3 | 8 | 535 | 543 |
| 11:45 AM | 31 | 114 | 59 | 1 | 29 | 80 | 46 | 1 | 11 | 97 | 34 | 0 | 71 | 69 | 13 | 3 | 5 | 654 | 659 |
| Total | 116 | 379 | 214 | 7 | 106 | 227 | 176 | 5 | 37 | 367 | 128 | 2 | 229 | 255 | 38 | 9 | 23 | 2272 | 2295 |
| 12:00 PM | 32 | 90 | 54 | 5 | 37 | 70 | 31 | 1 | 11 | 88 | 29 | 3 | 72 | 54 | 14 | 3 | 12 | 582 | 594 |
| 12:15 PM | 34 | 105 | 69 | 1 | 44 | 55 | 53 | 1 | 11 | 111 | 33 | 0 | 57 | 68 | 8 | 1 | 3 | 648 | 651 |
| 12:30 PM | 19 | 78 | 60 | 2 | 44 | 58 | 51 | 1 | 10 | 100 | 32 | 3 | 72 | 55 | 10 | 1 | 7 | 589 | 596 |
| 12:45 PM | 45 | 92 | 59 | 3 | 32 | 61 | 57 | 2 | 13 | 86 | 30 | 3 | 65 | 67 | 5 | 0 | 8 | 612 | 620 |
| Total | 130 | 365 | 242 | 11 | 157 | 244 | 192 | 5 | 45 | 385 | 124 | 9 | 266 | 244 | 37 | 5 | 30 | 2431 | 2461 |
| *** BREAK *** | | | | | | | | | | | | | | | | | | | |
| 04:00 PM | 33 | 103 | 70 | 2 | 37 | 62 | 58 | 6 | 12 | 148 | 46 | 4 | 58 | 66 | 10 | 4 | 16 | 703 | 719 |
| 04:15 PM | 37 | 109 | 85 | 9 | 46 | 76 | 41 | 7 | 11 | 141 | 47 | 2 | 76 | 84 | 6 | 5 | 23 | 759 | 782 |
| 04:30 PM | 26 | 135 | 97 | 3 | 50 | 75 | 48 | 4 | 11 | 140 | 36 | 0 | 81 | 90 | 11 | 1 | 8 | 800 | 808 |
| 04:45 PM | 27 | 138 | 96 | 1 | 50 | 68 | 59 | 4 | 9 | 145 | 40 | 5 | 86 | 79 | 14 | 3 | 13 | 811 | 824 |
| Total | 123 | 485 | 348 | 15 | 183 | 281 | 206 | 21 | 43 | 574 | 169 | 11 | 301 | 319 | 41 | 13 | 60 | 3073 | 3133 |
| 05:00 PM | 31 | 129 | 108 | 2 | 38 | 74 | 61 | 7 | 14 | 211 | 29 | 2 | 77 | 69 | 15 | 6 | 17 | 856 | 873 |
| 05:15 PM | 33 | 138 | 111 | 2 | 42 | 76 | 52 | 2 | 12 | 199 | 37 | 1 | 82 | 72 | 11 | 2 | 7 | 865 | 872 |
| 05:30 PM | 19 | 148 | 106 | 3 | 51 | 80 | 69 | 4 | 18 | 181 | 62 | 5 | 77 | 68 | 17 | 4 | 16 | 896 | 912 |
| 05:45 PM | 18 | 152 | 98 | 3 | 50 | 76 | 44 | 7 | 18 | 126 | 40 | 3 | 73 | 60 | 13 | 4 | 17 | 768 | 785 |
| Total | 101 | 567 | 423 | 10 | 181 | 306 | 226 | 20 | 62 | 717 | 168 | 11 | 309 | 269 | 56 | 16 | 57 | 3385 | 3442 |
| Grand Total | 627 | 2762 | 1687 | 55 | 812 | 1387 | 981 | 58 | 252 | 2660 | 729 | 40 | 1671 | 1644 | 254 | 56 | 209 | 15466 | 15675 |
| Apprch % | 12.4 | 54.4 | 33.2 | | 25.5 | 43.6 | 30.8 | | 6.9 | 73.1 | 20 | | 46.8 | 46.1 | 7.1 | | | | |
| Total % | 4.1 | 17.9 | 10.9 | | 5.3 | 9 | 6.3 | | 1.6 | 17.2 | 4.7 | | 10.8 | 10.6 | 1.6 | | 1.3 | 98.7 | |
| Passenger Vehicles | 605 | 2675 | 1654 | | 795 | 1355 | 962 | | 247 | 2560 | 714 | | 1652 | 1608 | 251 | | 0 | 0 | 15078 |
| % Passenger Vehicles | 96.5 | 96.9 | 98 | 0 | 97.9 | 97.7 | 98.1 | 0 | 98 | 96.2 | 97.9 | 0 | 98.9 | 97.8 | 98.8 | 0 | 0 | 0 | 96.2 |
| Single Unit | 19 | 87 | 32 | | 16 | 32 | 18 | | 4 | 94 | 14 | | 18 | 35 | 3 | | 0 | 0 | 372 |
| % Single Unit | 3 | 3.1 | 1.9 | 0 | 2 | 2.3 | 1.8 | 0 | 1.6 | 3.5 | 1.9 | 0 | 1.1 | 2.1 | 1.2 | 0 | 0 | 0 | 2.4 |
| TTST | 3 | 0 | 1 | | 1 | 0 | 1 | | 1 | 6 | 1 | | 1 | 1 | 0 | | 0 | 0 | 16 |
| % TTST | 0.5 | 0 | 0.1 | 0 | 0.1 | 0 | 0.1 | 0 | 0.4 | 0.2 | 0.1 | 0 | 0.1 | 0.1 | 0 | 0 | 0 | 0 | 0.1 |
| Bicycles on Crosswalk | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 5 |
| % Bicycles on Crosswalk | 0 | 0 | 0 | 1.8 | 0 | 0 | 0 | 3.4 | 0 | 0 | 0 | 2.5 | 0 | 0 | 0 | 1.8 | 0 | 0 | 0 |
| Pedestrians | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 204 |
| % Pedestrians | 0 | 0 | 0 | 98.2 | 0 | 0 | 0 | 96.6 | 0 | 0 | 0 | 97.5 | 0 | 0 | 0 | 98.2 | 0 | 0 | 1.3 |

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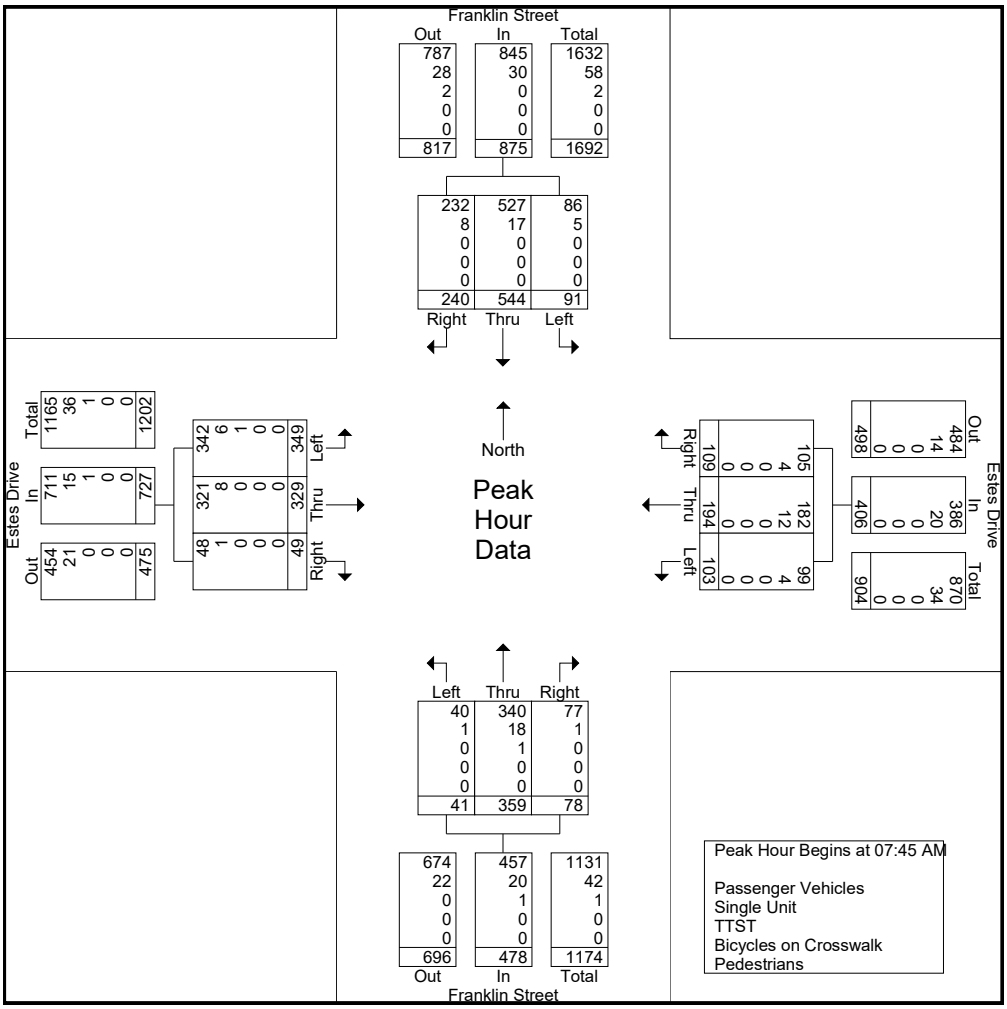
Start Date : 1/28/2020
Page No : 2

| | Franklin Street Southbound | | | | Estes Drive Westbound | | | | Franklin Street Northbound | | | | Estes Drive Eastbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 09:45 AM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:45 AM | | | | | | | | | | | | | | | | | |
| 07:45 AM | 24 | 133 | 67 | 224 | 25 | 73 | 24 | 122 | 14 | 86 | 20 | 120 | 77 | 74 | 11 | 162 | 628 |
| 08:00 AM | 20 | 103 | 61 | 184 | 27 | 50 | 24 | 101 | 10 | 94 | 20 | 124 | 85 | 98 | 15 | 198 | 607 |
| 08:15 AM | 25 | 142 | 56 | 223 | 27 | 34 | 31 | 92 | 10 | 91 | 19 | 120 | 98 | 90 | 16 | 204 | 639 |
| 08:30 AM | 22 | 166 | 56 | 244 | 24 | 37 | 30 | 91 | 7 | 88 | 19 | 114 | 89 | 67 | 7 | 163 | 612 |
| Total Volume | 91 | 544 | 240 | 875 | 103 | 194 | 109 | 406 | 41 | 359 | 78 | 478 | 349 | 329 | 49 | 727 | 2486 |
| % App. Total | 10.4 | 62.2 | 27.4 | | 25.4 | 47.8 | 26.8 | | 8.6 | 75.1 | 16.3 | | 48 | 45.3 | 6.7 | | |
| PHF | .910 | .819 | .896 | .897 | .954 | .664 | .879 | .832 | .732 | .955 | .975 | .964 | .890 | .839 | .766 | .891 | .973 |
| Passenger Vehicles | 86 | 527 | 232 | 845 | 99 | 182 | 105 | 386 | 40 | 340 | 77 | 457 | 342 | 321 | 48 | 711 | 2399 |
| % Passenger Vehicles | 94.5 | 96.9 | 96.7 | 96.6 | 96.1 | 93.8 | 96.3 | 95.1 | 97.6 | 94.7 | 98.7 | 95.6 | 98.0 | 97.6 | 98.0 | 97.8 | 96.5 |
| Single Unit | 5 | 17 | 8 | 30 | 4 | 12 | 4 | 20 | 1 | 18 | 1 | 20 | 6 | 8 | 1 | 15 | 85 |
| % Single Unit | 5.5 | 3.1 | 3.3 | 3.4 | 3.9 | 6.2 | 3.7 | 4.9 | 2.4 | 5.0 | 1.3 | 4.2 | 1.7 | 2.4 | 2.0 | 2.1 | 3.4 |
| TTST | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 2 |
| % TTST | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.3 | 0 | 0.2 | 0.3 | 0 | 0 | 0.1 | 0.1 |
| Bicycles on Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Bicycles on Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pedestrians | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Pedestrians | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |



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File Name : Estes@Franklin
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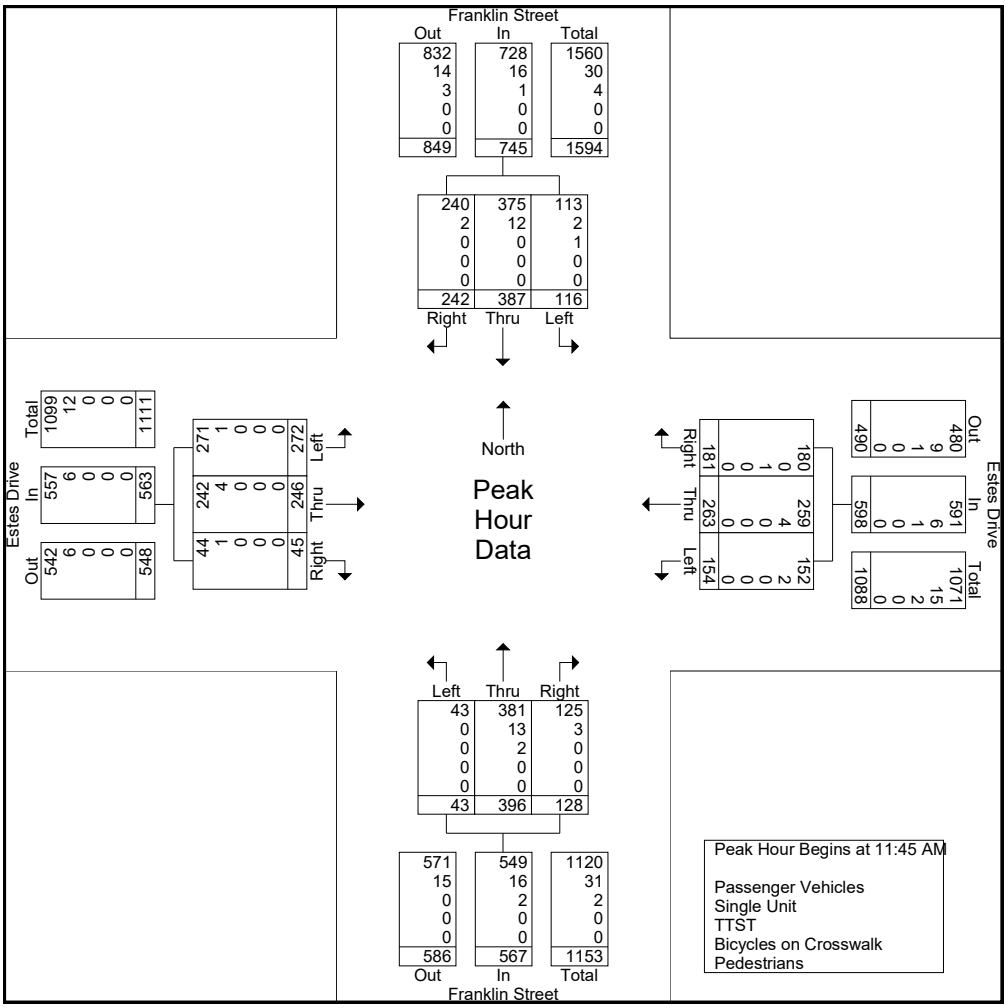
| | Franklin Street Southbound | | | | Estes Drive Westbound | | | | Franklin Street Northbound | | | | Estes Drive Eastbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Int. Total |
| Peak Hour Analysis From 10:00 AM to 01:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 11:45 AM | | | | | | | | | | | | | | | | | |
| 11:45 AM | 31 | 114 | 59 | 204 | 29 | 80 | 46 | 155 | 11 | 97 | 34 | 142 | 71 | 69 | 13 | 153 | 654 |
| 12:00 PM | 32 | 90 | 54 | 176 | 37 | 70 | 31 | 138 | 11 | 88 | 29 | 128 | 72 | 54 | 14 | 140 | 582 |
| 12:15 PM | 34 | 105 | 69 | 208 | 44 | 55 | 53 | 152 | 11 | 111 | 33 | 155 | 57 | 68 | 8 | 133 | 648 |
| 12:30 PM | 19 | 78 | 60 | 157 | 44 | 58 | 51 | 153 | 10 | 100 | 32 | 142 | 72 | 55 | 10 | 137 | 589 |
| Total Volume | 116 | 387 | 242 | 745 | 154 | 263 | 181 | 598 | 43 | 396 | 128 | 567 | 272 | 246 | 45 | 563 | 2473 |
| % App. Total | 15.6 | 51.9 | 32.5 | | 25.8 | 44 | 30.3 | | 7.6 | 69.8 | 22.6 | | 48.3 | 43.7 | 8 | | |
| PHF | .853 | .849 | .877 | .895 | .875 | .822 | .854 | .965 | .977 | .892 | .941 | .915 | .944 | .891 | .804 | .920 | .945 |
| Passenger Vehicles | 113 | 375 | 240 | 728 | 152 | 259 | 180 | 591 | 43 | 381 | 125 | 549 | 271 | 242 | 44 | 557 | 2425 |
| % Passenger Vehicles | 97.4 | 96.9 | 99.2 | 97.7 | 98.7 | 98.5 | 99.4 | 98.8 | 100 | 96.2 | 97.7 | 96.8 | 99.6 | 98.4 | 97.8 | 98.9 | 98.1 |
| Single Unit | 2 | 12 | 2 | 16 | 2 | 4 | 0 | 6 | 0 | 13 | 3 | 16 | 1 | 4 | 1 | 6 | 44 |
| % Single Unit | 1.7 | 3.1 | 0.8 | 2.1 | 1.3 | 1.5 | 0 | 1.0 | 0 | 3.3 | 2.3 | 2.8 | 0.4 | 1.6 | 2.2 | 1.1 | 1.8 |
| TTST | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 4 |
| % TTST | 0.9 | 0 | 0 | 0.1 | 0 | 0 | 0.6 | 0.2 | 0 | 0.5 | 0 | 0.4 | 0 | 0 | 0 | 0 | 0.2 |
| Bicycles on Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Bicycles on Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pedestrians | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Pedestrians | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

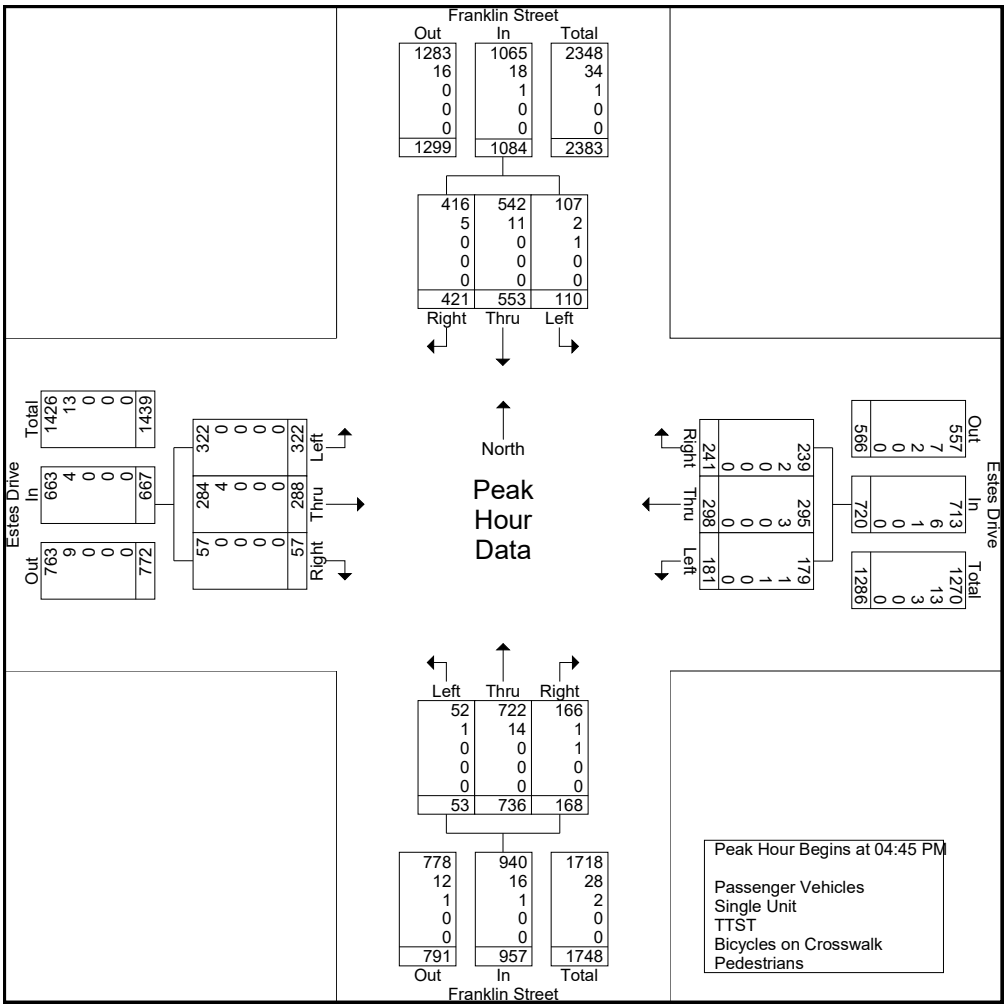


# VHB Engineering NC, P.C.

Venture I
940 Main Campus Drive, Suite 500
Raleigh, NC 27606
*p: 919.829.0328 f: 919.833.0034*


File Name : Estes@Franklin
Site Code :
Start Date : 1/28/2020
Page No : 4

| | Franklin Street Southbound | | | | Estes Drive Westbound | | | | Franklin Street Northbound | | | | Estes Drive Eastbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Int. Total |
| Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 04:45 PM | | | | | | | | | | | | | | | | | |
| 04:45 PM | 27 | 138 | 96 | 261 | 50 | 68 | 59 | 177 | 9 | 145 | 40 | 194 | 86 | 79 | 14 | 179 | 811 |
| 05:00 PM | 31 | 129 | 108 | 268 | 38 | 74 | 61 | 173 | 14 | 211 | 29 | 254 | 77 | 69 | 15 | 161 | 856 |
| 05:15 PM | 33 | 138 | 111 | 282 | 42 | 76 | 52 | 170 | 12 | 199 | 37 | 248 | 82 | 72 | 11 | 165 | 865 |
| 05:30 PM | 19 | 148 | 106 | 273 | 51 | 80 | 69 | 200 | 18 | 181 | 62 | 261 | 77 | 68 | 17 | 162 | 896 |
| Total Volume | 110 | 553 | 421 | 1084 | 181 | 298 | 241 | 720 | 53 | 736 | 168 | 957 | 322 | 288 | 57 | 667 | 3428 |
| % App. Total | 10.1 | 51 | 38.8 | | 25.1 | 41.4 | 33.5 | | 5.5 | 76.9 | 17.6 | | 48.3 | 43.2 | 8.5 | | |
| PHF | .833 | .934 | .948 | .961 | .887 | .931 | .873 | .900 | .736 | .872 | .677 | .917 | .936 | .911 | .838 | .932 | .956 |
| Passenger Vehicles | 107 | 542 | 416 | 1065 | 179 | 295 | 239 | 713 | 52 | 722 | 166 | 940 | 322 | 284 | 57 | 663 | 3381 |
| % Passenger Vehicles | 97.3 | 98.0 | 98.8 | 98.2 | 98.9 | 99.0 | 99.2 | 99.0 | 98.1 | 98.1 | 98.8 | 98.2 | 100 | 98.6 | 100 | 99.4 | 98.6 |
| Single Unit | 2 | 11 | 5 | 18 | 1 | 3 | 2 | 6 | 1 | 14 | 1 | 16 | 0 | 4 | 0 | 4 | 44 |
| % Single Unit | 1.8 | 2.0 | 1.2 | 1.7 | 0.6 | 1.0 | 0.8 | 0.8 | 1.9 | 1.9 | 0.6 | 1.7 | 0 | 1.4 | 0 | 0.6 | 1.3 |
| TTST | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 3 |
| % TTST | 0.9 | 0 | 0 | 0.1 | 0.6 | 0 | 0 | 0.1 | 0 | 0 | 0.6 | 0.1 | 0 | 0 | 0 | 0 | 0.1 |
| Bicycles on Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Bicycles on Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pedestrians | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Pedestrians | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |



# VHB Engineering NC, P.C.

Venture I
940 Main Campus Drive, Suite 500
Raleigh, NC 27606
*p: 919.829.0328 f: 919.833.0034*


File Name : Estes@Somerset
Site Code :
Start Date : 1/28/2020
Page No : 1

**Groups Printed- Passenger Vehicles - Single Unit - TTST - Bicycles on Crosswalk - Pedestrians**

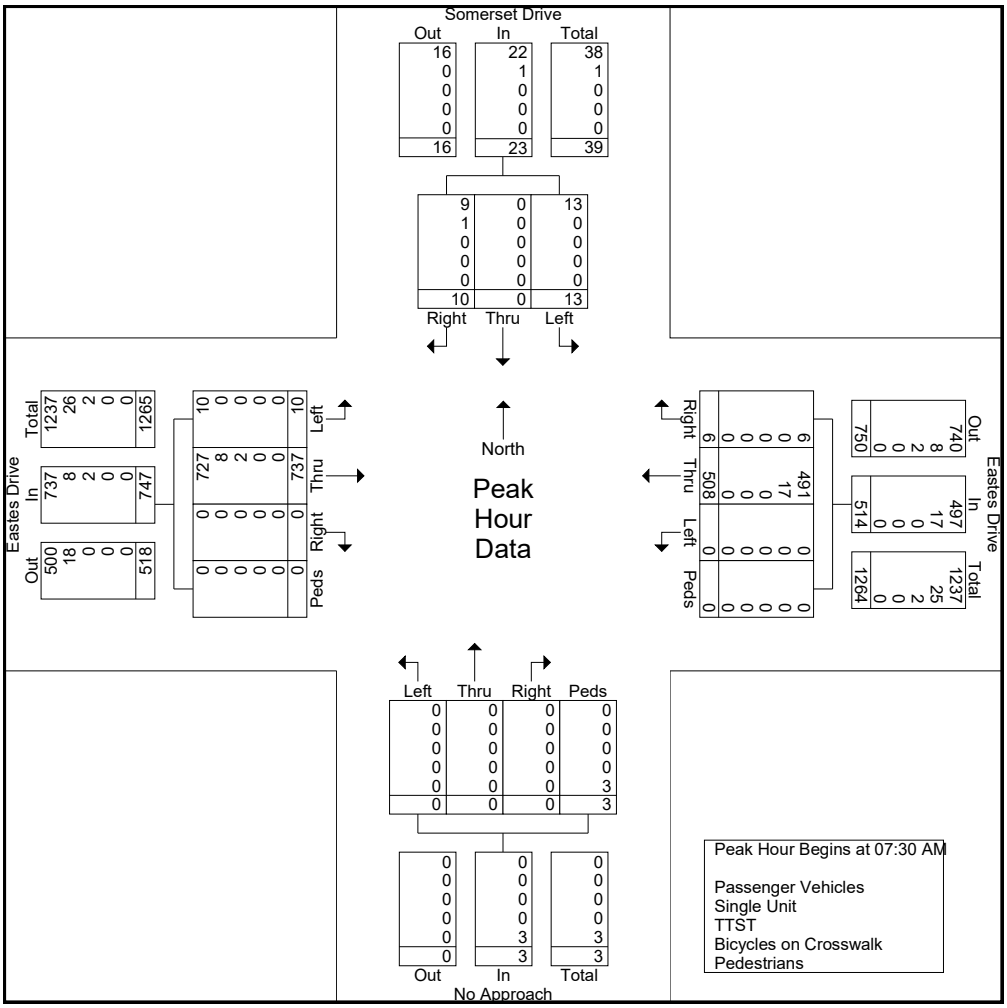
| | Somerset Drive Southbound | | | | Eastes Drive Westbound | | | | No Approach Northbound | | | | Eastes Drive Eastbound | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | Peds | Left | Thru | Right | Peds | Left | Thru | Right | Peds | Left | Thru | Right | Peds | Exclu. Total | Inclu. Total | Int. Total |
| 07:00 AM | 0 | 0 | 1 | 0 | 0 | 50 | 5 | 0 | 0 | 0 | 0 | 1 | 1 | 90 | 0 | 0 | 0 | 148 | 148 |
| 07:15 AM | 5 | 0 | 0 | 0 | 0 | 76 | 3 | 0 | 0 | 0 | 0 | 2 | 3 | 127 | 0 | 0 | 0 | 216 | 216 |
| 07:30 AM | 5 | 0 | 1 | 0 | 0 | 127 | 2 | 0 | 0 | 0 | 0 | 1 | 1 | 197 | 0 | 0 | 0 | 334 | 334 |
| 07:45 AM | 3 | 0 | 1 | 0 | 0 | 138 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 180 | 0 | 0 | 0 | 325 | 325 |
| Total | 13 | 0 | 3 | 0 | 0 | 391 | 10 | 0 | 0 | 0 | 0 | 4 | 8 | 594 | 0 | 0 | 0 | 1023 | 1023 |
| 08:00 AM | 3 | 0 | 2 | 0 | 0 | 108 | 3 | 0 | 0 | 0 | 0 | 1 | 4 | 181 | 0 | 0 | 0 | 302 | 302 |
| 08:15 AM | 2 | 0 | 6 | 0 | 0 | 135 | 1 | 0 | 0 | 0 | 0 | 1 | 2 | 179 | 0 | 0 | 0 | 326 | 326 |
| 08:30 AM | 1 | 0 | 4 | 0 | 0 | 98 | 1 | 0 | 0 | 0 | 0 | 2 | 3 | 141 | 0 | 0 | 0 | 250 | 250 |
| 08:45 AM | 2 | 0 | 3 | 0 | 0 | 104 | 2 | 0 | 0 | 0 | 0 | 1 | 3 | 145 | 0 | 0 | 0 | 260 | 260 |
| Total | 8 | 0 | 15 | 0 | 0 | 445 | 7 | 0 | 0 | 0 | 0 | 5 | 12 | 646 | 0 | 0 | 0 | 1138 | 1138 |
| *** BREAK *** | | | | | | | | | | | | | | | | | | | |
| 11:00 AM | 0 | 0 | 1 | 0 | 0 | 96 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 118 | 0 | 0 | 0 | 218 | 218 |
| 11:15 AM | 4 | 0 | 4 | 1 | 0 | 132 | 4 | 0 | 0 | 0 | 0 | 0 | 2 | 107 | 0 | 0 | 1 | 253 | 254 |
| 11:30 AM | 4 | 0 | 1 | 0 | 0 | 115 | 2 | 0 | 0 | 0 | 0 | 2 | 3 | 122 | 0 | 0 | 0 | 249 | 249 |
| 11:45 AM | 5 | 0 | 6 | 0 | 0 | 119 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 132 | 0 | 0 | 0 | 267 | 267 |
| Total | 13 | 0 | 12 | 1 | 0 | 462 | 13 | 0 | 0 | 0 | 0 | 2 | 6 | 479 | 0 | 0 | 1 | 987 | 988 |
| 12:00 PM | 6 | 0 | 2 | 0 | 0 | 122 | 6 | 0 | 0 | 0 | 0 | 2 | 1 | 117 | 0 | 0 | 0 | 256 | 256 |
| 12:15 PM | 2 | 0 | 2 | 0 | 0 | 124 | 1 | 0 | 0 | 0 | 0 | 0 | 3 | 122 | 0 | 0 | 0 | 254 | 254 |
| 12:30 PM | 1 | 0 | 2 | 0 | 0 | 116 | 2 | 0 | 0 | 0 | 0 | 3 | 4 | 117 | 0 | 0 | 0 | 245 | 245 |
| 12:45 PM | 3 | 0 | 2 | 0 | 0 | 134 | 2 | 0 | 0 | 0 | 0 | 0 | 3 | 129 | 0 | 0 | 0 | 273 | 273 |
| Total | 12 | 0 | 8 | 0 | 0 | 496 | 11 | 0 | 0 | 0 | 0 | 5 | 11 | 485 | 0 | 0 | 0 | 1028 | 1028 |
| *** BREAK *** | | | | | | | | | | | | | | | | | | | |
| 04:00 PM | 3 | 0 | 4 | 1 | 0 | 164 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 149 | 0 | 0 | 1 | 323 | 324 |
| 04:15 PM | 1 | 0 | 2 | 0 | 0 | 173 | 3 | 0 | 0 | 0 | 0 | 3 | 2 | 163 | 0 | 0 | 0 | 347 | 347 |
| 04:30 PM | 2 | 0 | 4 | 0 | 0 | 172 | 2 | 0 | 0 | 0 | 0 | 0 | 4 | 168 | 0 | 0 | 0 | 352 | 352 |
| 04:45 PM | 3 | 0 | 4 | 0 | 0 | 184 | 1 | 0 | 0 | 0 | 0 | 0 | 3 | 156 | 0 | 0 | 0 | 351 | 351 |
| Total | 9 | 0 | 14 | 1 | 0 | 693 | 7 | 0 | 0 | 0 | 0 | 4 | 10 | 636 | 0 | 0 | 1 | 1373 | 1374 |
| 05:00 PM | 4 | 0 | 0 | 0 | 0 | 201 | 4 | 0 | 0 | 0 | 0 | 2 | 0 | 160 | 0 | 0 | 0 | 371 | 371 |
| 05:15 PM | 4 | 0 | 2 | 0 | 0 | 197 | 3 | 0 | 0 | 0 | 0 | 1 | 1 | 168 | 0 | 0 | 0 | 376 | 376 |
| 05:30 PM | 4 | 0 | 2 | 0 | 0 | 242 | 4 | 0 | 0 | 0 | 0 | 1 | 0 | 160 | 0 | 1 | 0 | 414 | 414 |
| 05:45 PM | 2 | 0 | 2 | 0 | 0 | 204 | 4 | 0 | 0 | 0 | 0 | 3 | 1 | 177 | 0 | 0 | 0 | 393 | 393 |
| Total | 14 | 0 | 6 | 0 | 0 | 844 | 15 | 0 | 0 | 0 | 0 | 7 | 2 | 665 | 0 | 1 | 0 | 1554 | 1554 |
| Grand Total | 69 | 0 | 58 | 2 | 0 | 3331 | 63 | 0 | 0 | 0 | 0 | 27 | 49 | 3505 | 0 | 1 | 2 | 7103 | 7105 |
| Apprch % | 54.3 | 0 | 45.7 | | 0 | 98.1 | 1.9 | 0 | 0 | 0 | 0 | 100 | 1.4 | 98.6 | 0 | 0 | | | |
| Total % | 1 | 0 | 0.8 | | 0 | 46.9 | 0.9 | 0 | 0 | 0 | 0 | 0.4 | 0.7 | 49.3 | 0 | 0 | 0 | 100 | |
| Passenger Vehicles | 68 | 0 | 52 | | 0 | 3252 | 60 | 0 | 0 | 0 | 0 | 0 | 46 | 3446 | 0 | 0 | 0 | 0 | 6924 |
| % Passenger Vehicles | 98.6 | 0 | 89.7 | 0 | 0 | 97.6 | 95.2 | 0 | 0 | 0 | 0 | 0 | 93.9 | 98.3 | 0 | 0 | 0 | 0 | 97.5 |
| Single Unit | 1 | 0 | 6 | | 0 | 76 | 3 | 0 | 0 | 0 | 0 | 0 | 3 | 54 | 0 | 0 | 0 | 0 | 143 |
| % Single Unit | 1.4 | 0 | 10.3 | 0 | 0 | 2.3 | 4.8 | 0 | 0 | 0 | 0 | 0 | 6.1 | 1.5 | 0 | 0 | 0 | 0 | 2 |
| TTST | 0 | 0 | 0 | | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 8 |
| % TTST | 0 | 0 | 0 | 0 | 0 | 0.1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 | 0 | 0 | 0 | 0 | 0.1 |
| Bicycles on Crosswalk | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| % Bicycles on Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14.8 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 |
| Pedestrians | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 23 | 0 | 0 | 0 | 1 | 0 | 0 | 26 |
| % Pedestrians | 0 | 0 | 0 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 85.2 | 0 | 0 | 0 | 100 | 0 | 0 | 0.4 |

# VHB Engineering NC, P.C.

Venture I
940 Main Campus Drive, Suite 500
Raleigh, NC 27606
*p: 919.829.0328 f: 919.833.0034*


File Name : Estes@Somerset
Site Code :
Start Date : 1/28/2020
Page No : 2

| | Somerset Drive Southbound | | | | Eastes Drive Westbound | | | | | No Approach Northbound | | | | | Eastes Drive Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 09:45 AM - Peak 1 of 1 | | | | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:30 AM | | | | | | | | | | | | | | | | | | | | |
| 07:30 AM | 5 | 0 | 1 | 6 | 0 | 127 | 2 | 0 | 129 | 0 | 0 | 0 | 1 | 1 | 1 | 197 | 0 | 0 | 198 | 334 |
| 07:45 AM | 3 | 0 | 1 | 4 | 0 | 138 | 0 | 0 | 138 | 0 | 0 | 0 | 0 | 0 | 3 | 180 | 0 | 0 | 183 | 325 |
| 08:00 AM | 3 | 0 | 2 | 5 | 0 | 108 | 3 | 0 | 111 | 0 | 0 | 0 | 1 | 1 | 4 | 181 | 0 | 0 | 185 | 302 |
| 08:15 AM | 2 | 0 | 6 | 8 | 0 | 135 | 1 | 0 | 136 | 0 | 0 | 0 | 1 | 1 | 2 | 179 | 0 | 0 | 181 | 326 |
| Total Volume | 13 | 0 | 10 | 23 | 0 | 508 | 6 | 0 | 514 | 0 | 0 | 0 | 3 | 3 | 10 | 737 | 0 | 0 | 747 | 1287 |
| % App. Total | 56.5 | 0 | 43.5 | | 0 | 98.8 | 1.2 | 0 | | 0 | 0 | 0 | 100 | | 1.3 | 98.7 | 0 | 0 | | |
| PHF | .650 | .000 | .417 | .719 | .000 | .920 | .500 | .000 | .931 | .000 | .000 | .000 | .750 | .750 | .625 | .935 | .000 | .000 | .943 | .963 |
| Passenger Vehicles | 13 | 0 | 9 | 22 | 0 | 491 | 6 | 0 | 497 | 0 | 0 | 0 | 0 | 0 | 10 | 727 | 0 | 0 | 737 | 1256 |
| % Passenger Vehicles | | | | | | | | | | | | | | | | | | | | |
| Single Unit | 0 | 0 | 1 | 1 | 0 | 17 | 0 | 0 | 17 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 8 | 26 |
| % Single Unit | 0 | 0 | 10.0 | 4.3 | 0 | 3.3 | 0 | 0 | 3.3 | 0 | 0 | 0 | 0 | 0 | 0 | 1.1 | 0 | 0 | 1.1 | 2.0 |
| TTST | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 2 |
| % TTST | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.3 | 0 | 0 | 0.3 | 0.2 |
| Bicycles on Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Bicycles on Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pedestrians | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 3 |
| % Pedestrians | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 100 | 0 | 0 | 0 | 0 | 0 | 0.2 |

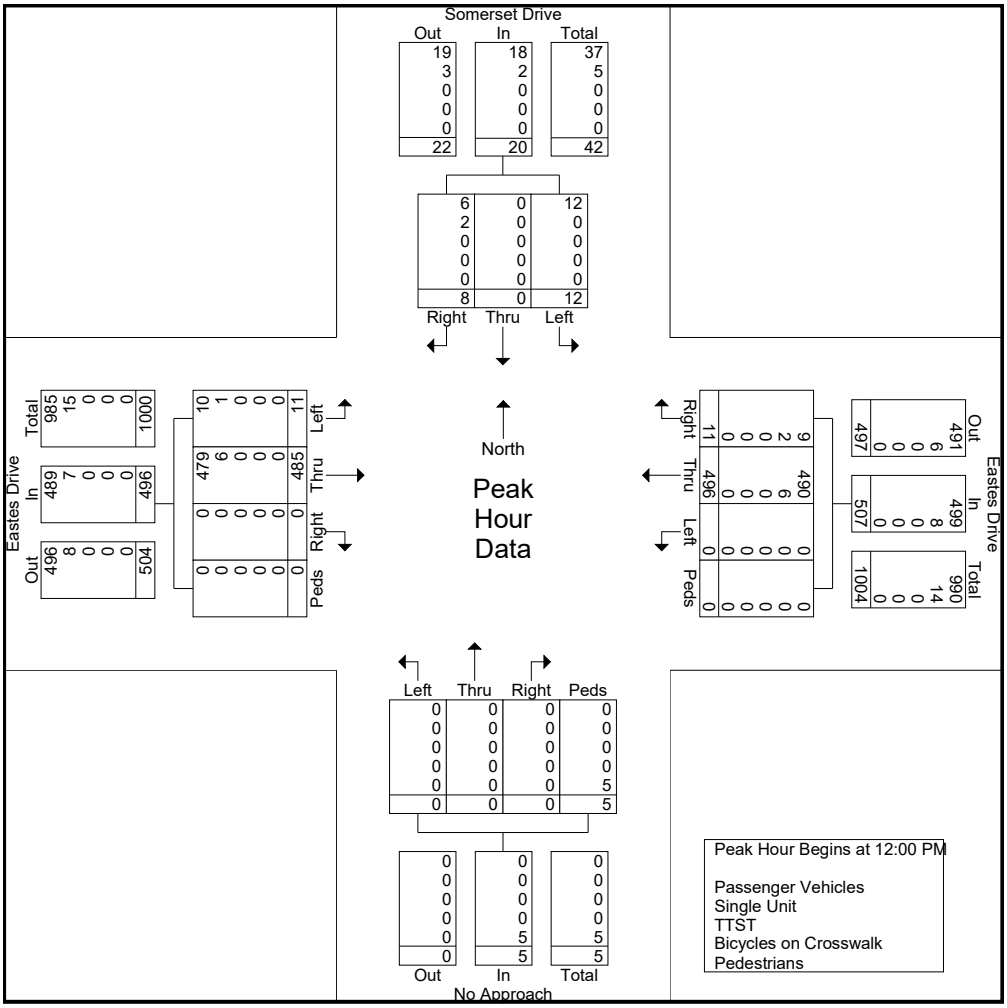


# VHB Engineering NC, P.C.

Venture I
940 Main Campus Drive, Suite 500
Raleigh, NC 27606
*p: 919.829.0328 f: 919.833.0034*


File Name : Estes@Somerset
Site Code :
Start Date : 1/28/2020
Page No : 3

| | Somerset Drive Southbound | | | | Eastes Drive Westbound | | | | | No Approach Northbound | | | | | Eastes Drive Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Int. Total |
| Peak Hour Analysis From 10:00 AM to 01:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 12:00 PM | | | | | | | | | | | | | | | | | | | | |
| 12:00 PM | 6 | 0 | 2 | 8 | 0 | 122 | 6 | 0 | 128 | 0 | 0 | 0 | 2 | 2 | 1 | 117 | 0 | 0 | 118 | 256 |
| 12:15 PM | 2 | 0 | 2 | 4 | 0 | 124 | 1 | 0 | 125 | 0 | 0 | 0 | 0 | 0 | 3 | 122 | 0 | 0 | 125 | 254 |
| 12:30 PM | 1 | 0 | 2 | 3 | 0 | 116 | 2 | 0 | 118 | 0 | 0 | 0 | 3 | 3 | 4 | 117 | 0 | 0 | 121 | 245 |
| 12:45 PM | 3 | 0 | 2 | 5 | 0 | 134 | 2 | 0 | 136 | 0 | 0 | 0 | 0 | 0 | 3 | 129 | 0 | 0 | 132 | 273 |
| Total Volume | 12 | 0 | 8 | 20 | 0 | 496 | 11 | 0 | 507 | 0 | 0 | 0 | 5 | 5 | 11 | 485 | 0 | 0 | 496 | 1028 |
| % App. Total | 60 | 0 | 40 | | 0 | 97.8 | 2.2 | 0 | | 0 | 0 | 0 | 100 | | 2.2 | 97.8 | 0 | 0 | | |
| PHF | .500 | .000 | 1.00 | .625 | .000 | .925 | .458 | .000 | .932 | .000 | .000 | .000 | .417 | .417 | .688 | .940 | .000 | .000 | .939 | .941 |
| Passenger Vehicles | 12 | 0 | 6 | 18 | 0 | 490 | 9 | 0 | 499 | 0 | 0 | 0 | 0 | 0 | 10 | 479 | 0 | 0 | 489 | 1006 |
| % Passenger Vehicles | | | | | | | | | | | | | | | | | | | | |
| Single Unit | 0 | 0 | 2 | 2 | 0 | 6 | 2 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 1 | 6 | 0 | 0 | 7 | 17 |
| % Single Unit | 0 | 0 | 25.0 | 10.0 | 0 | 1.2 | 18.2 | 0 | 1.6 | 0 | 0 | 0 | 0 | 0 | 9.1 | 1.2 | 0 | 0 | 1.4 | 1.7 |
| TTST | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % TTST | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Bicycles on Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Bicycles on Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pedestrians | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 5 | 0 | 0 | 0 | 0 | 0 | 5 |
| % Pedestrians | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 100 | 0 | 0 | 0 | 0 | 0 | 0.5 |

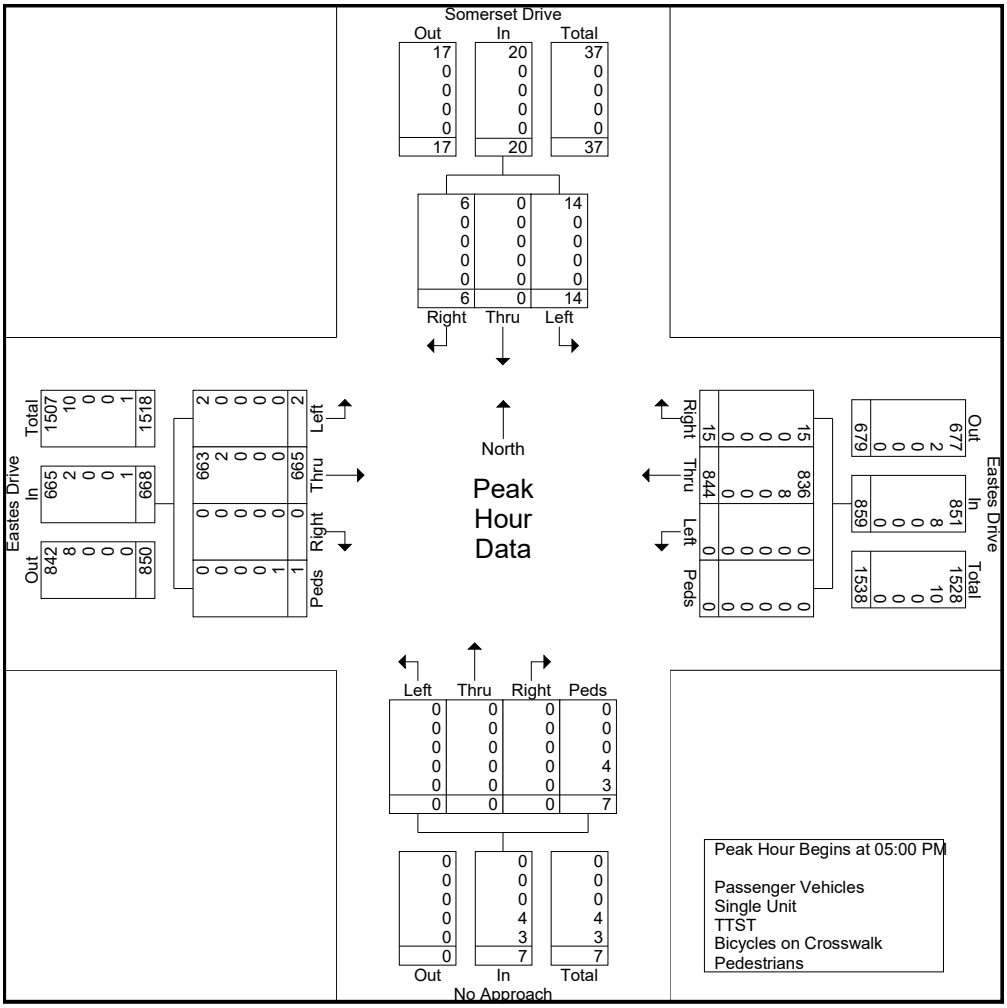


# VHB Engineering NC, P.C.

Venture I
940 Main Campus Drive, Suite 500
Raleigh, NC 27606
*p: 919.829.0328 f: 919.833.0034*


File Name : Estes@Somerset
Site Code :
Start Date : 1/28/2020
Page No : 4

| | Somerset Drive Southbound | | | | Eastes Drive Westbound | | | | | No Approach Northbound | | | | | Eastes Drive Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Int. Total |
| Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 05:00 PM | | | | | | | | | | | | | | | | | | | | |
| 05:00 PM | 4 | 0 | 0 | 4 | 0 | 201 | 4 | 0 | 205 | 0 | 0 | 0 | 2 | 2 | 0 | 160 | 0 | 0 | 160 | 371 |
| 05:15 PM | 4 | 0 | 2 | 6 | 0 | 197 | 3 | 0 | 200 | 0 | 0 | 0 | 1 | 1 | 1 | 168 | 0 | 0 | 169 | 376 |
| 05:30 PM | 4 | 0 | 2 | 6 | 0 | 242 | 4 | 0 | 246 | 0 | 0 | 0 | 1 | 1 | 0 | 160 | 0 | 1 | 161 | 414 |
| 05:45 PM | 2 | 0 | 2 | 4 | 0 | 204 | 4 | 0 | 208 | 0 | 0 | 0 | 3 | 3 | 1 | 177 | 0 | 0 | 178 | 393 |
| Total Volume | 14 | 0 | 6 | 20 | 0 | 844 | 15 | 0 | 859 | 0 | 0 | 0 | 7 | 7 | 2 | 665 | 0 | 1 | 668 | 1554 |
| % App. Total | 70 | 0 | 30 | | 0 | 98.3 | 1.7 | 0 | | 0 | 0 | 0 | 100 | | 0.3 | 99.6 | 0 | 0.1 | | |
| PHF | .875 | .000 | .750 | .833 | .000 | .872 | .938 | .000 | .873 | .000 | .000 | .000 | .583 | .583 | .500 | .939 | .000 | .250 | .938 | .938 |
| Passenger Vehicles | 14 | 0 | 6 | 20 | 0 | 836 | 15 | 0 | 851 | 0 | 0 | 0 | 0 | 0 | 2 | 663 | 0 | 0 | 665 | 1536 |
| % Passenger Vehicles | | | | | | | | | | | | | | | | | | | | |
| Single Unit | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 10 |
| % Single Unit | 0 | 0 | 0 | 0 | 0 | 0.9 | 0 | 0 | 0.9 | 0 | 0 | 0 | 0 | 0 | 0 | 0.3 | 0 | 0 | 0.3 | 0.6 |
| TTST | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % TTST | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Bicycles on Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 4 | 0 | 0 | 0 | 0 | 0 | 4 |
| % Bicycles on Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 57.1 | 57.1 | 0 | 0 | 0 | 0 | 0 | 0.3 |
| Pedestrians | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 0 | 0 | 1 | 1 | 4 |
| % Pedestrians | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 42.9 | 42.9 | 0 | 0 | 0 | 100 | 0.1 | 0.3 |



# VHB Engineering NC, P.C.

Venture I
940 Main Campus Drive, Suite 500
Raleigh, NC 27606
*p: 919.829.0328 f: 919.833.0034*


File Name : MLK@Airport
Site Code :
Start Date : 1/28/2020
Page No : 1

**Groups Printed- Passenger Vehicles - Single Unit - TTST - Bicycles on Crosswalk - Pedestrians**

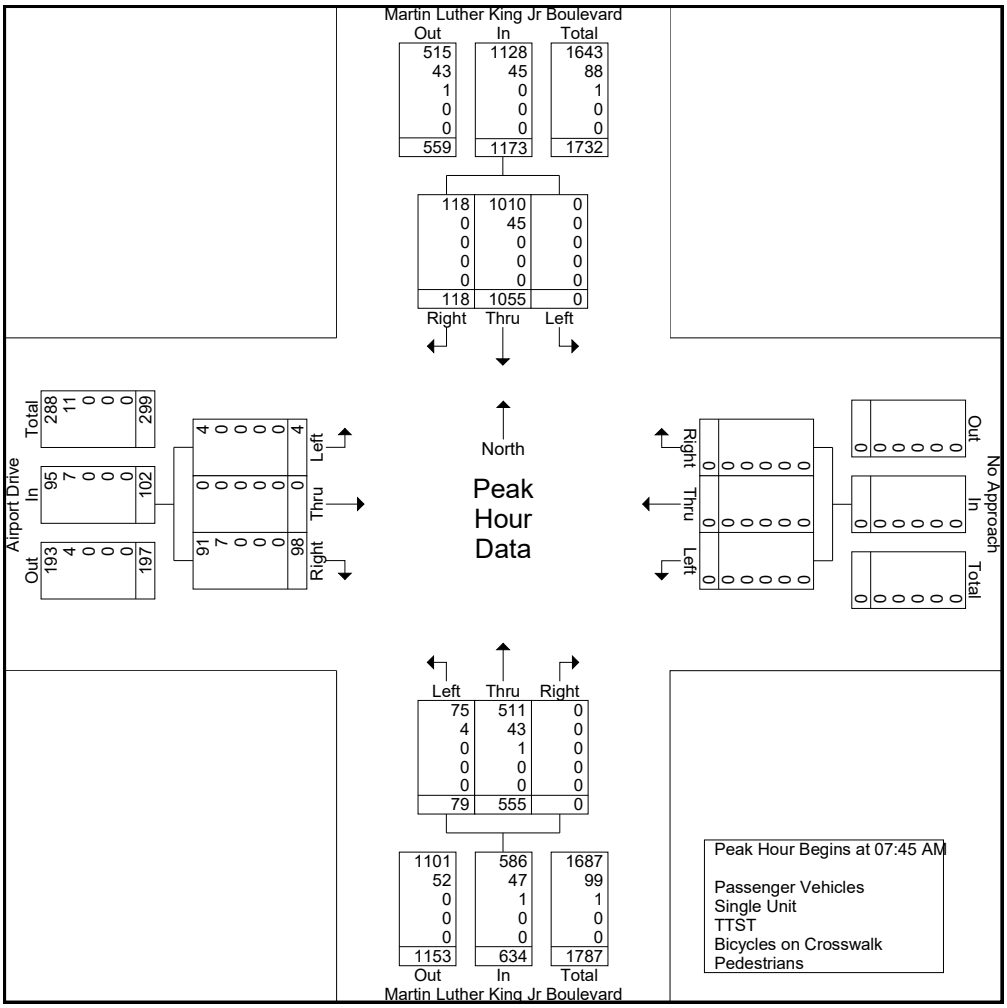
| | Martin Luther King Jr Boulevard Southbound | | | | No Approach Westbound | | | | Martin Luther King Jr Boulevard Northbound | | | | Airport Drive Eastbound | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | Peds | Left | Thru | Right | Peds | Left | Thru | Right | Peds | Left | Thru | Right | Peds | Exclu. Total | Inclu. Total | Int. Total |
| 07:00 AM | 0 | 179 | 11 | 0 | 0 | 0 | 0 | 1 | 13 | 91 | 0 | 0 | 2 | 0 | 9 | 0 | 1 | 305 | 306 |
| 07:15 AM | 0 | 174 | 14 | 1 | 0 | 0 | 0 | 1 | 11 | 86 | 0 | 0 | 0 | 0 | 17 | 0 | 2 | 302 | 304 |
| 07:30 AM | 0 | 279 | 33 | 3 | 0 | 0 | 0 | 2 | 12 | 134 | 0 | 0 | 3 | 0 | 18 | 1 | 6 | 479 | 485 |
| 07:45 AM | 0 | 267 | 33 | 3 | 0 | 0 | 0 | 0 | 22 | 137 | 0 | 0 | 2 | 0 | 16 | 1 | 4 | 477 | 481 |
| Total | 0 | 899 | 91 | 7 | 0 | 0 | 0 | 4 | 58 | 448 | 0 | 0 | 7 | 0 | 60 | 2 | 13 | 1563 | 1576 |
| 08:00 AM | 0 | 252 | 31 | 1 | 0 | 0 | 0 | 0 | 20 | 136 | 0 | 0 | 1 | 0 | 25 | 0 | 1 | 465 | 466 |
| 08:15 AM | 0 | 251 | 32 | 1 | 0 | 0 | 0 | 1 | 17 | 152 | 0 | 0 | 0 | 0 | 27 | 0 | 2 | 479 | 481 |
| 08:30 AM | 0 | 285 | 22 | 3 | 0 | 0 | 0 | 1 | 20 | 130 | 0 | 0 | 1 | 0 | 30 | 1 | 5 | 488 | 493 |
| 08:45 AM | 0 | 296 | 23 | 3 | 0 | 0 | 0 | 1 | 15 | 105 | 0 | 0 | 1 | 0 | 23 | 0 | 4 | 463 | 467 |
| Total | 0 | 1084 | 108 | 8 | 0 | 0 | 0 | 3 | 72 | 523 | 0 | 0 | 3 | 0 | 105 | 1 | 12 | 1895 | 1907 |
| *** BREAK *** | | | | | | | | | | | | | | | | | | | |
| 11:00 AM | 0 | 102 | 2 | 0 | 0 | 0 | 0 | 1 | 18 | 137 | 0 | 0 | 4 | 0 | 29 | 0 | 1 | 292 | 293 |
| 11:15 AM | 0 | 136 | 3 | 4 | 0 | 0 | 0 | 1 | 13 | 118 | 0 | 0 | 4 | 0 | 26 | 0 | 5 | 300 | 305 |
| 11:30 AM | 0 | 128 | 3 | 4 | 0 | 0 | 0 | 2 | 15 | 123 | 0 | 0 | 8 | 0 | 17 | 0 | 6 | 294 | 300 |
| 11:45 AM | 0 | 133 | 6 | 0 | 0 | 0 | 0 | 0 | 14 | 153 | 0 | 0 | 11 | 0 | 20 | 1 | 1 | 337 | 338 |
| Total | 0 | 499 | 14 | 8 | 0 | 0 | 0 | 4 | 60 | 531 | 0 | 0 | 27 | 0 | 92 | 1 | 13 | 1223 | 1236 |
| 12:00 PM | 0 | 151 | 7 | 4 | 0 | 0 | 0 | 3 | 19 | 150 | 0 | 0 | 8 | 0 | 16 | 0 | 7 | 351 | 358 |
| 12:15 PM | 0 | 136 | 5 | 2 | 0 | 0 | 0 | 1 | 22 | 151 | 0 | 0 | 2 | 0 | 18 | 0 | 3 | 334 | 337 |
| 12:30 PM | 0 | 128 | 9 | 0 | 0 | 0 | 0 | 2 | 20 | 153 | 0 | 0 | 6 | 0 | 12 | 0 | 2 | 328 | 330 |
| 12:45 PM | 0 | 150 | 11 | 0 | 0 | 0 | 0 | 0 | 17 | 146 | 0 | 0 | 3 | 0 | 15 | 0 | 0 | 342 | 342 |
| Total | 0 | 565 | 32 | 6 | 0 | 0 | 0 | 6 | 78 | 600 | 0 | 0 | 19 | 0 | 61 | 0 | 12 | 1355 | 1367 |
| *** BREAK *** | | | | | | | | | | | | | | | | | | | |
| 04:00 PM | 0 | 147 | 5 | 2 | 0 | 0 | 0 | 3 | 31 | 251 | 0 | 0 | 19 | 0 | 15 | 1 | 6 | 468 | 474 |
| 04:15 PM | 0 | 152 | 7 | 9 | 0 | 0 | 0 | 0 | 18 | 262 | 0 | 0 | 18 | 0 | 10 | 3 | 12 | 467 | 479 |
| 04:30 PM | 0 | 160 | 6 | 0 | 0 | 0 | 0 | 5 | 11 | 281 | 0 | 0 | 34 | 0 | 29 | 0 | 5 | 521 | 526 |
| 04:45 PM | 0 | 182 | 3 | 4 | 0 | 0 | 0 | 6 | 10 | 283 | 0 | 0 | 7 | 0 | 22 | 1 | 11 | 507 | 518 |
| Total | 0 | 641 | 21 | 15 | 0 | 0 | 0 | 14 | 70 | 1077 | 0 | 0 | 78 | 0 | 76 | 5 | 34 | 1963 | 1997 |
| 05:00 PM | 0 | 176 | 2 | 3 | 0 | 0 | 0 | 1 | 4 | 327 | 0 | 0 | 11 | 0 | 21 | 3 | 7 | 541 | 548 |
| 05:15 PM | 0 | 196 | 0 | 3 | 0 | 0 | 0 | 2 | 3 | 332 | 0 | 0 | 7 | 0 | 7 | 0 | 5 | 545 | 550 |
| 05:30 PM | 0 | 202 | 0 | 2 | 0 | 0 | 0 | 1 | 6 | 310 | 0 | 0 | 6 | 0 | 9 | 0 | 3 | 533 | 536 |
| 05:45 PM | 0 | 189 | 1 | 3 | 0 | 0 | 0 | 2 | 5 | 252 | 0 | 0 | 3 | 0 | 16 | 0 | 5 | 466 | 471 |
| Total | 0 | 763 | 3 | 11 | 0 | 0 | 0 | 6 | 18 | 1221 | 0 | 0 | 27 | 0 | 53 | 3 | 20 | 2085 | 2105 |
| Grand Total | 0 | 4451 | 269 | 55 | 0 | 0 | 0 | 37 | 356 | 4400 | 0 | 0 | 161 | 0 | 447 | 12 | 104 | 10084 | 10188 |
| Apprch % | 0 | 94.3 | 5.7 | | 0 | 0 | 0 | | 7.5 | 92.5 | 0 | | 26.5 | 0 | 73.5 | | | | |
| Total % | 0 | 44.1 | 2.7 | | 0 | 0 | 0 | | 3.5 | 43.6 | 0 | | 1.6 | 0 | 4.4 | | 1 | 99 | |
| Passenger Vehicles | 0 | 4258 | 268 | | 0 | 0 | 0 | | 334 | 4215 | 0 | | 159 | 0 | 420 | | 0 | 0 | 9654 |
| % Passenger Vehicles | 0 | 95.7 | 99.6 | 0 | 0 | 0 | 0 | 0 | 93.8 | 95.8 | 0 | 0 | 98.8 | 0 | 94 | 0 | 0 | 0 | 94.8 |
| Single Unit | 0 | 192 | 0 | | 0 | 0 | 0 | | 21 | 178 | 0 | | 1 | 0 | 27 | | 0 | 0 | 419 |
| % Single Unit | 0 | 4.3 | 0 | 0 | 0 | 0 | 0 | 0 | 5.9 | 4 | 0 | 0 | 0.6 | 0 | 6 | 0 | 0 | 0 | 4.1 |
| TTST | 0 | 1 | 1 | | 0 | 0 | 0 | | 1 | 7 | 0 | | 1 | 0 | 0 | | 0 | 0 | 11 |
| % TTST | 0 | 0 | 0.4 | 0 | 0 | 0 | 0 | 0 | 0.3 | 0.2 | 0 | 0 | 0.6 | 0 | 0 | 0 | 0 | 0 | 0.1 |
| Bicycles on Crosswalk | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 8 |
| % Bicycles on Crosswalk | 0 | 0 | 0 | 3.6 | 0 | 0 | 0 | 16.2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 |
| Pedestrians | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 96 |
| % Pedestrians | 0 | 0 | 0 | 96.4 | 0 | 0 | 0 | 83.8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 0 | 0 | 0.9 |

# VHB Engineering NC, P.C.

Venture I
940 Main Campus Drive, Suite 500
Raleigh, NC 27606
*p: 919.829.0328 f: 919.833.0034*


File Name : MLK@Airport
Site Code :
Start Date : 1/28/2020
Page No : 2

| | Martin Luther King Jr Boulevard Southbound | | | | No Approach Westbound | | | | Martin Luther King Jr Boulevard Northbound | | | | Airport Drive Eastbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 09:45 AM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:45 AM | | | | | | | | | | | | | | | | | |
| 07:45 AM | 0 | 267 | 33 | 300 | 0 | 0 | 0 | 0 | 22 | 137 | 0 | 159 | 2 | 0 | 16 | 18 | 477 |
| 08:00 AM | 0 | 252 | 31 | 283 | 0 | 0 | 0 | 0 | 20 | 136 | 0 | 156 | 1 | 0 | 25 | 26 | 465 |
| 08:15 AM | 0 | 251 | 32 | 283 | 0 | 0 | 0 | 0 | 17 | 152 | 0 | 169 | 0 | 0 | 27 | 27 | 479 |
| 08:30 AM | 0 | 285 | 22 | 307 | 0 | 0 | 0 | 0 | 20 | 130 | 0 | 150 | 1 | 0 | 30 | 31 | 488 |
| Total Volume | 0 | 1055 | 118 | 1173 | 0 | 0 | 0 | 0 | 79 | 555 | 0 | 634 | 4 | 0 | 98 | 102 | 1909 |
| % App. Total | 0 | 89.9 | 10.1 | | 0 | 0 | 0 | | 12.5 | 87.5 | 0 | | 3.9 | 0 | 96.1 | | |
| PHF | .000 | .925 | .894 | .955 | .000 | .000 | .000 | .000 | .898 | .913 | .000 | .938 | .500 | .000 | .817 | .823 | .978 |
| Passenger Vehicles | 0 | 1010 | 118 | 1128 | 0 | 0 | 0 | 0 | 75 | 511 | 0 | 586 | 4 | 0 | 91 | 95 | 1809 |
| % Passenger Vehicles | 0 | 95.7 | 100 | 96.2 | 0 | 0 | 0 | 0 | 94.9 | 92.1 | 0 | 92.4 | 100 | 0 | 92.9 | 93.1 | 94.8 |
| Single Unit | 0 | 45 | 0 | 45 | 0 | 0 | 0 | 0 | 4 | 43 | 0 | 47 | 0 | 0 | 7 | 7 | 99 |
| % Single Unit | 0 | 4.3 | 0 | 3.8 | 0 | 0 | 0 | 0 | 5.1 | 7.7 | 0 | 7.4 | 0 | 0 | 7.1 | 6.9 | 5.2 |
| TTST | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 1 |
| % TTST | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.2 | 0 | 0.2 | 0 | 0 | 0 | 0 | 0.1 |
| Bicycles on Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Bicycles on Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pedestrians | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Pedestrians | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

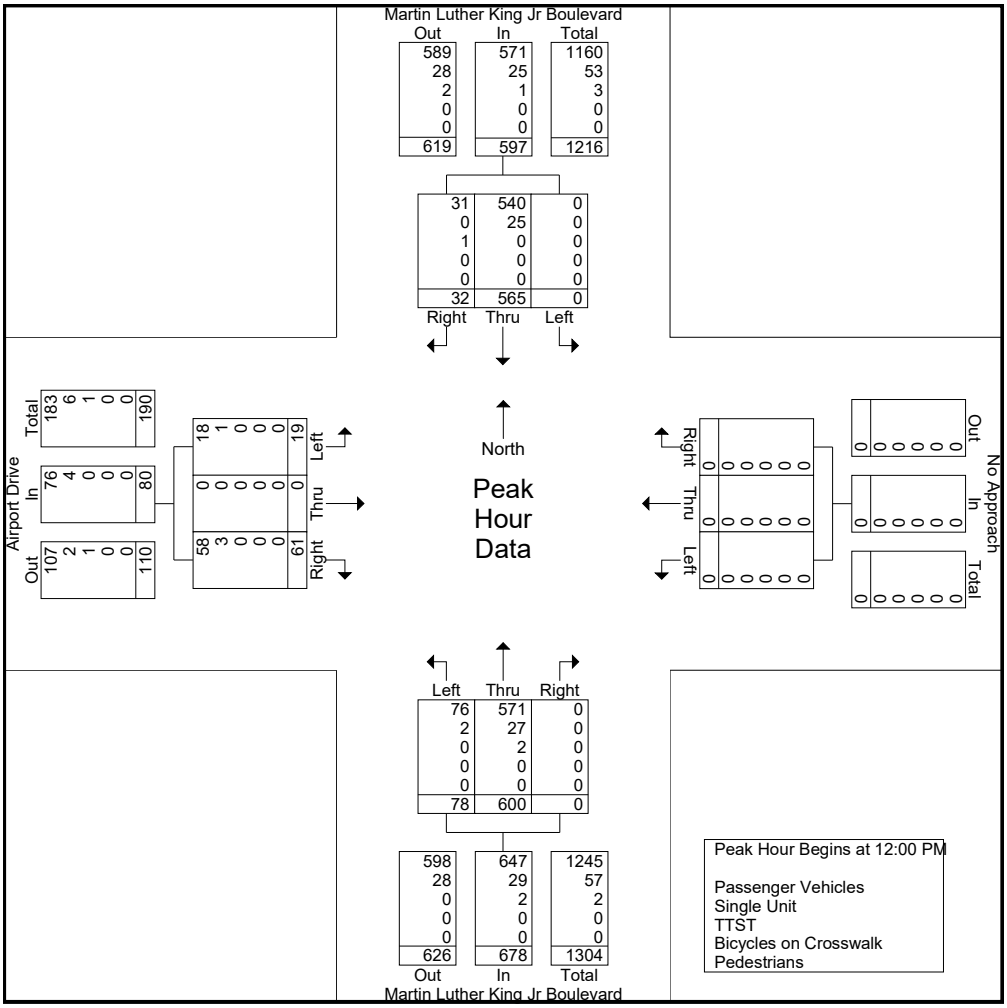


# VHB Engineering NC, P.C.

Venture I
940 Main Campus Drive, Suite 500
Raleigh, NC 27606
*p: 919.829.0328 f: 919.833.0034*


File Name : MLK@Airport
Site Code :
Start Date : 1/28/2020
Page No : 3

| | Martin Luther King Jr Boulevard Southbound | | | | No Approach Westbound | | | | Martin Luther King Jr Boulevard Northbound | | | | Airport Drive Eastbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Int. Total |
| Peak Hour Analysis From 10:00 AM to 01:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 12:00 PM | | | | | | | | | | | | | | | | | |
| 12:00 PM | 0 | 151 | 7 | 158 | 0 | 0 | 0 | 0 | 19 | 150 | 0 | 169 | 8 | 0 | 16 | 24 | 351 |
| 12:15 PM | 0 | 136 | 5 | 141 | 0 | 0 | 0 | 0 | 22 | 151 | 0 | 173 | 2 | 0 | 18 | 20 | 334 |
| 12:30 PM | 0 | 128 | 9 | 137 | 0 | 0 | 0 | 0 | 20 | 153 | 0 | 173 | 6 | 0 | 12 | 18 | 328 |
| 12:45 PM | 0 | 150 | 11 | 161 | 0 | 0 | 0 | 0 | 17 | 146 | 0 | 163 | 3 | 0 | 15 | 18 | 342 |
| Total Volume | 0 | 565 | 32 | 597 | 0 | 0 | 0 | 0 | 78 | 600 | 0 | 678 | 19 | 0 | 61 | 80 | 1355 |
| % App. Total | 0 | 94.6 | 5.4 | | 0 | 0 | 0 | | 11.5 | 88.5 | 0 | | 23.8 | 0 | 76.2 | | |
| PHF | .000 | .935 | .727 | .927 | .000 | .000 | .000 | .000 | .886 | .980 | .000 | .980 | .594 | .000 | .847 | .833 | .965 |
| Passenger Vehicles | 0 | 540 | 31 | 571 | 0 | 0 | 0 | 0 | 76 | 571 | 0 | 647 | 18 | 0 | 58 | 76 | 1294 |
| % Passenger Vehicles | 0 | 95.6 | 96.9 | 95.6 | 0 | 0 | 0 | 0 | 97.4 | 95.2 | 0 | 95.4 | 94.7 | 0 | 95.1 | 95.0 | 95.5 |
| Single Unit | 0 | 25 | 0 | 25 | 0 | 0 | 0 | 0 | 2 | 27 | 0 | 29 | 1 | 0 | 3 | 4 | 58 |
| % Single Unit | 0 | 4.4 | 0 | 4.2 | 0 | 0 | 0 | 0 | 2.6 | 4.5 | 0 | 4.3 | 5.3 | 0 | 4.9 | 5.0 | 4.3 |
| TTST | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 3 |
| % TTST | 0 | 0 | 3.1 | 0.2 | 0 | 0 | 0 | 0 | 0 | 0.3 | 0 | 0.3 | 0 | 0 | 0 | 0 | 0.2 |
| Bicycles on Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Bicycles on Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pedestrians | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Pedestrians | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

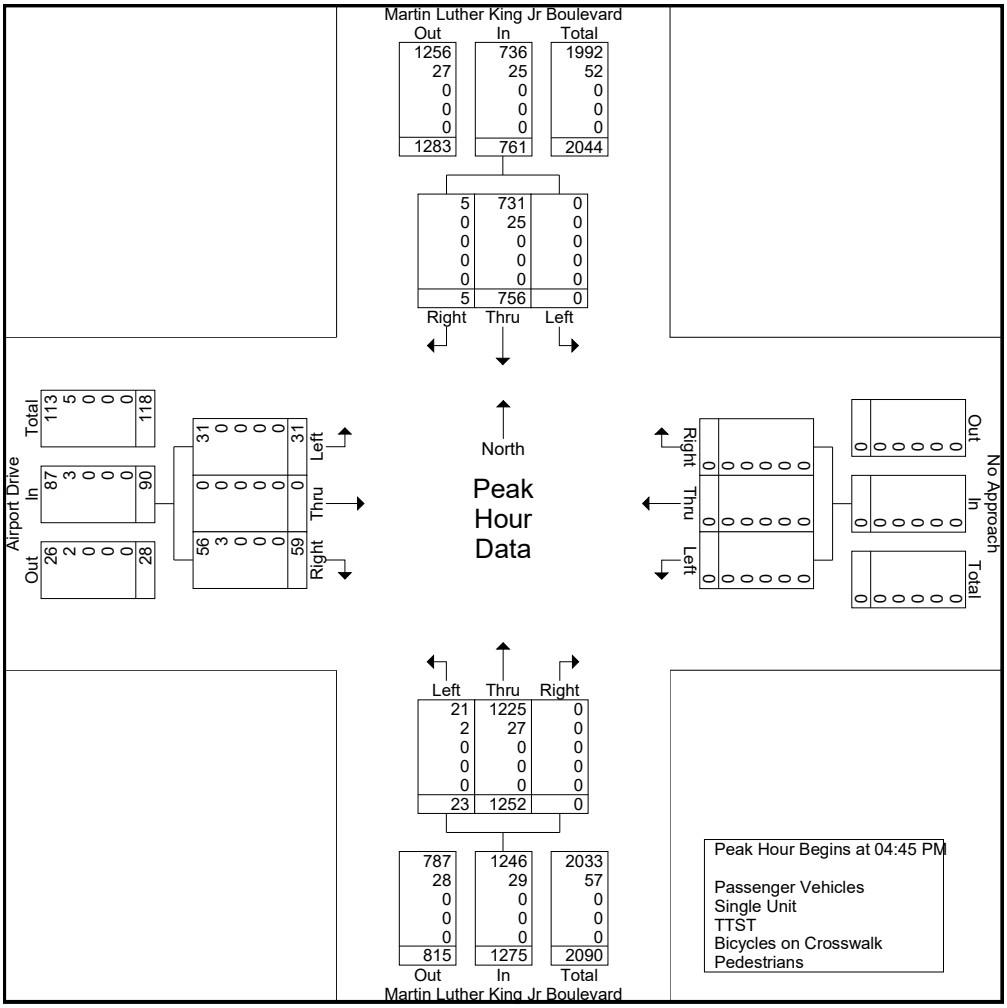


# VHB Engineering NC, P.C.

Venture I
940 Main Campus Drive, Suite 500
Raleigh, NC 27606
*p: 919.829.0328 f: 919.833.0034*


File Name : MLK@Airport
Site Code :
Start Date : 1/28/2020
Page No : 4

| | Martin Luther King Jr Boulevard Southbound | | | | No Approach Westbound | | | | Martin Luther King Jr Boulevard Northbound | | | | Airport Drive Eastbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Int. Total |
| Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 04:45 PM | | | | | | | | | | | | | | | | | |
| 04:45 PM | 0 | 182 | 3 | 185 | 0 | 0 | 0 | 0 | 10 | 283 | 0 | 293 | 7 | 0 | 22 | 29 | 507 |
| 05:00 PM | 0 | 176 | 2 | 178 | 0 | 0 | 0 | 0 | 4 | 327 | 0 | 331 | 11 | 0 | 21 | 32 | 541 |
| 05:15 PM | 0 | 196 | 0 | 196 | 0 | 0 | 0 | 0 | 3 | 332 | 0 | 335 | 7 | 0 | 7 | 14 | 545 |
| 05:30 PM | 0 | 202 | 0 | 202 | 0 | 0 | 0 | 0 | 6 | 310 | 0 | 316 | 6 | 0 | 9 | 15 | 533 |
| Total Volume | 0 | 756 | 5 | 761 | 0 | 0 | 0 | 0 | 23 | 1252 | 0 | 1275 | 31 | 0 | 59 | 90 | 2126 |
| % App. Total | 0 | 99.3 | 0.7 | | 0 | 0 | 0 | | 1.8 | 98.2 | 0 | | 34.4 | 0 | 65.6 | | |
| PHF | .000 | .936 | .417 | .942 | .000 | .000 | .000 | .000 | .575 | .943 | .000 | .951 | .705 | .000 | .670 | .703 | .975 |
| Passenger Vehicles | 0 | 731 | 5 | 736 | 0 | 0 | 0 | 0 | 21 | 1225 | 0 | 1246 | 31 | 0 | 56 | 87 | 2069 |
| % Passenger Vehicles | 0 | 96.7 | 100 | 96.7 | 0 | 0 | 0 | 0 | 91.3 | 97.8 | 0 | 97.7 | 100 | 0 | 94.9 | 96.7 | 97.3 |
| Single Unit | 0 | 25 | 0 | 25 | 0 | 0 | 0 | 0 | 2 | 27 | 0 | 29 | 0 | 0 | 3 | 3 | 57 |
| % Single Unit | 0 | 3.3 | 0 | 3.3 | 0 | 0 | 0 | 0 | 8.7 | 2.2 | 0 | 2.3 | 0 | 0 | 5.1 | 3.3 | 2.7 |
| TTST | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % TTST | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Bicycles on Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Bicycles on Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pedestrians | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Pedestrians | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |



# VHB Engineering NC, P.C.

Venture I
940 Main Campus Drive, Suite 500
Raleigh, NC 27606
*p: 919.829.0328 f: 919.833.0034*


File Name : MLK@Estes
Site Code :
Start Date : 1/28/2020
Page No : 1

**Groups Printed- Passenger Vehicles - Single Unit - TTST - Bicycles on Crosswalk - Pedestrians**

| | Martin Luther King Jr Boulevard Southbound | | | | Estes Drive Westbound | | | | Martin Luther King Jr Boulevard Northbound | | | | Estes Drive Eastbound | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | Peds | Left | Thru | Right | Peds | Left | Thru | Right | Peds | Left | Thru | Right | Peds | Exclu. Total | Inclu. Total | Int. Total |
| 12:00 AM | 1 | 13 | 7 | 0 | 4 | 3 | 3 | 0 | 1 | 15 | 1 | 0 | 2 | 2 | 1 | 0 | 0 | 53 | 53 |
| 12:15 AM | 2 | 7 | 2 | 0 | 2 | 5 | 4 | 0 | 0 | 16 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 41 | 41 |
| 12:30 AM | 2 | 4 | 2 | 0 | 0 | 2 | 2 | 1 | 1 | 41 | 0 | 0 | 8 | 2 | 1 | 0 | 1 | 65 | 66 |
| 12:45 AM | 0 | 9 | 3 | 0 | 2 | 2 | 1 | 0 | 0 | 12 | 1 | 0 | 2 | 2 | 0 | 0 | 0 | 34 | 34 |
| Total | 5 | 33 | 14 | 0 | 8 | 12 | 10 | 1 | 2 | 84 | 3 | 0 | 12 | 7 | 3 | 0 | 1 | 193 | 194 |
| 01:00 AM | 1 | 3 | 0 | 0 | 1 | 1 | 2 | 0 | 0 | 14 | 0 | 0 | 0 | 2 | 1 | 0 | 0 | 25 | 25 |
| 01:15 AM | 0 | 7 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 15 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 26 | 26 |
| 01:30 AM | 1 | 3 | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 9 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | 17 |
| 01:45 AM | 1 | 5 | 1 | 0 | 3 | 0 | 3 | 0 | 2 | 7 | 0 | 0 | 5 | 2 | 0 | 0 | 0 | 29 | 29 |
| Total | 3 | 18 | 4 | 0 | 4 | 2 | 6 | 0 | 2 | 45 | 2 | 0 | 6 | 4 | 1 | 0 | 0 | 97 | 97 |
| 02:00 AM | 1 | 4 | 3 | 0 | 0 | 2 | 1 | 1 | 0 | 3 | 1 | 0 | 1 | 2 | 1 | 0 | 1 | 19 | 20 |
| 02:15 AM | 0 | 6 | 0 | 0 | 1 | 3 | 0 | 0 | 0 | 5 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 17 | 17 |
| 02:30 AM | 0 | 3 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 2 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 10 | 10 |
| 02:45 AM | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 7 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 12 | 12 |
| Total | 1 | 14 | 3 | 0 | 2 | 7 | 1 | 1 | 1 | 17 | 2 | 0 | 4 | 4 | 2 | 0 | 1 | 58 | 59 |
| 03:00 AM | 1 | 4 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 4 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 13 | 14 |
| 03:15 AM | 0 | 3 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 8 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 17 | 17 |
| 03:30 AM | 1 | 5 | 2 | 0 | 1 | 1 | 2 | 0 | 0 | 4 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 19 | 19 |
| 03:45 AM | 2 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 7 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 20 | 20 |
| Total | 4 | 19 | 3 | 0 | 3 | 2 | 3 | 1 | 1 | 23 | 3 | 0 | 4 | 4 | 0 | 0 | 1 | 69 | 70 |
| 04:00 AM | 3 | 6 | 0 | 0 | 0 | 1 | 3 | 0 | 0 | 5 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 20 | 20 |
| 04:15 AM | 0 | 9 | 3 | 0 | 1 | 1 | 0 | 0 | 0 | 5 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 22 | 22 |
| 04:30 AM | 4 | 12 | 2 | 0 | 1 | 0 | 0 | 0 | 1 | 5 | 2 | 0 | 3 | 1 | 0 | 0 | 0 | 31 | 31 |
| 04:45 AM | 4 | 13 | 0 | 0 | 1 | 1 | 6 | 0 | 0 | 7 | 0 | 0 | 2 | 5 | 0 | 0 | 0 | 39 | 39 |
| Total | 11 | 40 | 5 | 0 | 3 | 3 | 9 | 0 | 1 | 22 | 2 | 0 | 7 | 8 | 1 | 0 | 0 | 112 | 112 |
| 05:00 AM | 7 | 10 | 4 | 0 | 2 | 1 | 3 | 0 | 0 | 5 | 2 | 0 | 5 | 4 | 0 | 0 | 0 | 43 | 43 |
| 05:15 AM | 12 | 23 | 5 | 0 | 6 | 2 | 5 | 0 | 0 | 10 | 2 | 0 | 3 | 6 | 7 | 0 | 0 | 81 | 81 |
| 05:30 AM | 10 | 42 | 9 | 0 | 10 | 2 | 4 | 0 | 0 | 13 | 2 | 0 | 8 | 6 | 5 | 0 | 0 | 111 | 111 |
| 05:45 AM | 18 | 53 | 17 | 0 | 5 | 3 | 7 | 1 | 1 | 18 | 7 | 0 | 13 | 11 | 2 | 0 | 1 | 155 | 156 |
| Total | 47 | 128 | 35 | 0 | 23 | 8 | 19 | 1 | 1 | 46 | 13 | 0 | 29 | 27 | 14 | 0 | 1 | 390 | 391 |
| 06:00 AM | 8 | 55 | 4 | 0 | 3 | 8 | 11 | 0 | 2 | 22 | 6 | 0 | 9 | 11 | 1 | 0 | 0 | 140 | 140 |
| 06:15 AM | 14 | 78 | 17 | 0 | 7 | 8 | 7 | 1 | 2 | 41 | 13 | 0 | 15 | 11 | 3 | 0 | 1 | 216 | 217 |
| 06:30 AM | 23 | 101 | 16 | 0 | 7 | 6 | 13 | 1 | 3 | 40 | 8 | 0 | 14 | 19 | 1 | 0 | 1 | 251 | 252 |
| 06:45 AM | 21 | 103 | 25 | 0 | 24 | 17 | 12 | 1 | 6 | 44 | 14 | 0 | 36 | 25 | 7 | 0 | 1 | 334 | 335 |
| Total | 66 | 337 | 62 | 0 | 41 | 39 | 43 | 3 | 13 | 147 | 41 | 0 | 74 | 66 | 12 | 0 | 3 | 941 | 944 |
| 07:00 AM | 41 | 157 | 42 | 0 | 21 | 17 | 14 | 1 | 5 | 77 | 16 | 0 | 41 | 37 | 5 | 0 | 1 | 473 | 474 |
| 07:15 AM | 57 | 178 | 34 | 0 | 13 | 29 | 23 | 0 | 3 | 63 | 26 | 0 | 53 | 61 | 5 | 0 | 0 | 545 | 545 |
| 07:30 AM | 86 | 261 | 71 | 0 | 41 | 44 | 53 | 2 | 10 | 102 | 32 | 0 | 58 | 74 | 14 | 0 | 2 | 846 | 848 |
| 07:45 AM | 90 | 240 | 62 | 0 | 41 | 39 | 58 | 1 | 7 | 101 | 27 | 0 | 72 | 76 | 20 | 0 | 1 | 833 | 834 |
| Total | 274 | 836 | 209 | 0 | 116 | 129 | 148 | 4 | 25 | 343 | 101 | 0 | 224 | 248 | 44 | 0 | 4 | 2697 | 2701 |
| 08:00 AM | 97 | 226 | 33 | 0 | 33 | 23 | 51 | 0 | 12 | 103 | 26 | 0 | 68 | 68 | 17 | 0 | 0 | 757 | 757 |
| 08:15 AM | 77 | 211 | 53 | 0 | 43 | 34 | 60 | 0 | 5 | 108 | 28 | 0 | 64 | 79 | 29 | 0 | 0 | 791 | 791 |
| 08:30 AM | 62 | 231 | 51 | 0 | 37 | 31 | 33 | 0 | 9 | 120 | 23 | 0 | 58 | 60 | 22 | 0 | 0 | 737 | 737 |
| 08:45 AM | 69 | 246 | 49 | 0 | 42 | 34 | 38 | 0 | 8 | 77 | 25 | 0 | 58 | 70 | 27 | 0 | 0 | 743 | 743 |
| Total | 305 | 914 | 186 | 0 | 155 | 122 | 182 | 0 | 34 | 408 | 102 | 0 | 248 | 277 | 95 | 0 | 0 | 3028 | 3028 |
| 09:00 AM | 68 | 252 | 35 | 0 | 28 | 27 | 33 | 0 | 5 | 84 | 30 | 0 | 40 | 51 | 17 | 0 | 0 | 670 | 670 |
| 09:15 AM | 66 | 147 | 36 | 0 | 20 | 34 | 40 | 0 | 11 | 85 | 25 | 0 | 34 | 55 | 21 | 0 | 0 | 574 | 574 |
| 09:30 AM | 51 | 148 | 25 | 0 | 27 | 34 | 33 | 1 | 3 | 84 | 44 | 0 | 34 | 49 | 11 | 0 | 1 | 543 | 544 |
| 09:45 AM | 59 | 151 | 28 | 0 | 26 | 43 | 36 | 2 | 4 | 87 | 33 | 0 | 29 | 37 | 11 | 0 | 2 | 544 | 546 |
| Total | 244 | 698 | 124 | 0 | 101 | 138 | 142 | 3 | 23 | 340 | 132 | 0 | 137 | 192 | 60 | 0 | 3 | 2331 | 2334 |

# VHB Engineering NC, P.C.

Venture I
940 Main Campus Drive, Suite 500
Raleigh, NC 27606
*p: 919.829.0328 f: 919.833.0034*


File Name : MLK@Estes
Site Code :
Start Date : 1/28/2020
Page No : 2

**Groups Printed- Passenger Vehicles - Single Unit - TTST - Bicycles on Crosswalk - Pedestrians**

| | Martin Luther King Jr Boulevard Southbound | | | | Estes Drive Westbound | | | | Martin Luther King Jr Boulevard Northbound | | | | Estes Drive Eastbound | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | Peds | Left | Thru | Right | Peds | Left | Thru | Right | Peds | Left | Thru | Right | Peds | Exclu. Total | Inclu. Total | Int. Total |
| 10:00 AM | 55 | 114 | 29 | 0 | 29 | 30 | 46 | 2 | 5 | 90 | 32 | 0 | 28 | 41 | 6 | 1 | 3 | 505 | 508 |
| 10:15 AM | 45 | 114 | 38 | 0 | 22 | 38 | 46 | 0 | 7 | 88 | 33 | 0 | 37 | 40 | 12 | 0 | 0 | 520 | 520 |
| 10:30 AM | 66 | 143 | 42 | 0 | 22 | 41 | 40 | 1 | 11 | 66 | 25 | 0 | 39 | 47 | 9 | 0 | 1 | 551 | 552 |
| 10:45 AM | 47 | 107 | 25 | 0 | 24 | 58 | 55 | 1 | 8 | 111 | 29 | 0 | 43 | 31 | 12 | 0 | 1 | 550 | 551 |
| Total | 213 | 478 | 134 | 0 | 97 | 167 | 187 | 4 | 31 | 355 | 119 | 0 | 147 | 159 | 39 | 1 | 5 | 2126 | 2131 |
| 11:00 AM | 38 | 93 | 45 | 0 | 16 | 36 | 41 | 0 | 4 | 110 | 32 | 0 | 27 | 43 | 6 | 0 | 0 | 491 | 491 |
| 11:15 AM | 40 | 95 | 25 | 0 | 40 | 36 | 61 | 1 | 7 | 84 | 31 | 0 | 35 | 39 | 6 | 0 | 1 | 499 | 500 |
| 11:30 AM | 49 | 92 | 46 | 0 | 34 | 35 | 51 | 2 | 8 | 99 | 34 | 0 | 40 | 44 | 8 | 0 | 2 | 540 | 542 |
| 11:45 AM | 50 | 108 | 29 | 0 | 27 | 40 | 50 | 0 | 4 | 116 | 52 | 0 | 29 | 30 | 11 | 0 | 0 | 546 | 546 |
| Total | 177 | 388 | 145 | 0 | 117 | 147 | 203 | 3 | 23 | 409 | 149 | 0 | 131 | 156 | 31 | 0 | 3 | 2076 | 2079 |
| 12:00 PM | 43 | 124 | 34 | 0 | 28 | 35 | 59 | 1 | 12 | 109 | 36 | 0 | 47 | 42 | 9 | 0 | 1 | 578 | 579 |
| 12:15 PM | 50 | 115 | 33 | 0 | 24 | 49 | 50 | 1 | 13 | 124 | 31 | 0 | 21 | 42 | 9 | 0 | 1 | 561 | 562 |
| 12:30 PM | 45 | 99 | 37 | 0 | 31 | 37 | 45 | 1 | 13 | 117 | 27 | 0 | 39 | 48 | 3 | 0 | 1 | 541 | 542 |
| 12:45 PM | 57 | 118 | 45 | 0 | 33 | 47 | 61 | 1 | 13 | 107 | 34 | 0 | 41 | 41 | 6 | 0 | 1 | 603 | 604 |
| Total | 195 | 456 | 149 | 0 | 116 | 168 | 215 | 4 | 51 | 457 | 128 | 0 | 148 | 173 | 27 | 0 | 4 | 2283 | 2287 |
| 01:00 PM | 47 | 106 | 37 | 0 | 37 | 60 | 45 | 3 | 5 | 113 | 25 | 0 | 45 | 48 | 11 | 0 | 3 | 579 | 582 |
| 01:15 PM | 53 | 113 | 39 | 0 | 31 | 56 | 65 | 0 | 10 | 94 | 23 | 0 | 42 | 33 | 5 | 0 | 0 | 564 | 564 |
| 01:30 PM | 48 | 97 | 38 | 0 | 43 | 31 | 54 | 2 | 9 | 100 | 42 | 0 | 26 | 44 | 7 | 0 | 2 | 539 | 541 |
| 01:45 PM | 48 | 118 | 28 | 0 | 37 | 62 | 55 | 3 | 5 | 109 | 25 | 0 | 40 | 36 | 2 | 0 | 3 | 565 | 568 |
| Total | 196 | 434 | 142 | 0 | 148 | 209 | 219 | 8 | 29 | 416 | 115 | 0 | 153 | 161 | 25 | 0 | 8 | 2247 | 2255 |
| 02:00 PM | 37 | 91 | 33 | 0 | 28 | 37 | 42 | 0 | 8 | 130 | 41 | 0 | 43 | 47 | 10 | 0 | 0 | 547 | 547 |
| 02:15 PM | 59 | 95 | 33 | 0 | 26 | 57 | 62 | 1 | 9 | 123 | 45 | 0 | 38 | 35 | 10 | 0 | 1 | 592 | 593 |
| 02:30 PM | 54 | 100 | 45 | 0 | 34 | 46 | 62 | 1 | 12 | 134 | 34 | 0 | 58 | 52 | 6 | 0 | 1 | 637 | 638 |
| 02:45 PM | 44 | 117 | 40 | 0 | 19 | 47 | 84 | 2 | 4 | 158 | 38 | 0 | 61 | 49 | 9 | 0 | 2 | 670 | 672 |
| Total | 194 | 403 | 151 | 0 | 107 | 187 | 250 | 4 | 33 | 545 | 158 | 0 | 200 | 183 | 35 | 0 | 4 | 2446 | 2450 |
| 03:00 PM | 55 | 92 | 36 | 0 | 24 | 53 | 58 | 0 | 8 | 148 | 39 | 0 | 47 | 46 | 13 | 0 | 0 | 619 | 619 |
| 03:15 PM | 48 | 107 | 43 | 0 | 23 | 26 | 44 | 1 | 6 | 164 | 45 | 0 | 47 | 38 | 8 | 0 | 1 | 599 | 600 |
| 03:30 PM | 37 | 108 | 41 | 0 | 35 | 70 | 106 | 4 | 3 | 211 | 23 | 1 | 50 | 58 | 11 | 0 | 5 | 753 | 758 |
| 03:45 PM | 46 | 102 | 44 | 0 | 40 | 65 | 66 | 1 | 11 | 182 | 30 | 0 | 50 | 40 | 8 | 0 | 1 | 684 | 685 |
| Total | 186 | 409 | 164 | 0 | 122 | 214 | 274 | 6 | 28 | 705 | 137 | 1 | 194 | 182 | 40 | 0 | 7 | 2655 | 2662 |
| 04:00 PM | 55 | 111 | 48 | 0 | 28 | 66 | 80 | 2 | 7 | 235 | 42 | 0 | 65 | 58 | 13 | 0 | 2 | 808 | 810 |
| 04:15 PM | 78 | 122 | 57 | 0 | 33 | 47 | 68 | 0 | 11 | 232 | 51 | 0 | 48 | 43 | 12 | 0 | 0 | 802 | 802 |
| 04:30 PM | 53 | 136 | 43 | 0 | 24 | 65 | 70 | 0 | 17 | 267 | 45 | 0 | 73 | 77 | 7 | 0 | 0 | 877 | 877 |
| 04:45 PM | 62 | 160 | 52 | 0 | 38 | 72 | 99 | 7 | 20 | 231 | 53 | 0 | 55 | 45 | 8 | 0 | 7 | 895 | 902 |
| Total | 248 | 529 | 200 | 0 | 123 | 250 | 317 | 9 | 55 | 965 | 191 | 0 | 241 | 223 | 40 | 0 | 9 | 3382 | 3391 |
| 05:00 PM | 38 | 126 | 43 | 0 | 41 | 67 | 90 | 4 | 24 | 255 | 49 | 0 | 70 | 72 | 17 | 0 | 4 | 892 | 896 |
| 05:15 PM | 52 | 178 | 59 | 0 | 36 | 73 | 107 | 1 | 9 | 318 | 53 | 0 | 66 | 56 | 11 | 0 | 1 | 1018 | 1019 |
| 05:30 PM | 62 | 178 | 47 | 0 | 41 | 72 | 121 | 2 | 15 | 258 | 50 | 0 | 40 | 54 | 14 | 0 | 2 | 952 | 954 |
| 05:45 PM | 62 | 148 | 49 | 0 | 47 | 88 | 96 | 2 | 18 | 239 | 54 | 0 | 55 | 57 | 14 | 0 | 2 | 927 | 929 |
| Total | 214 | 630 | 198 | 0 | 165 | 300 | 414 | 9 | 66 | 1070 | 206 | 0 | 231 | 239 | 56 | 0 | 9 | 3789 | 3798 |
| 06:00 PM | 71 | 157 | 61 | 0 | 35 | 55 | 85 | 2 | 8 | 165 | 44 | 0 | 45 | 46 | 10 | 2 | 4 | 782 | 786 |
| 06:15 PM | 47 | 123 | 52 | 0 | 40 | 60 | 75 | 3 | 7 | 136 | 40 | 0 | 53 | 53 | 4 | 1 | 4 | 690 | 694 |
| 06:30 PM | 41 | 139 | 44 | 0 | 27 | 59 | 72 | 2 | 5 | 181 | 33 | 0 | 32 | 36 | 9 | 0 | 2 | 678 | 680 |
| 06:45 PM | 46 | 99 | 42 | 0 | 43 | 51 | 76 | 1 | 12 | 121 | 26 | 0 | 43 | 41 | 13 | 0 | 1 | 613 | 614 |
| Total | 205 | 518 | 199 | 0 | 145 | 225 | 308 | 8 | 32 | 603 | 143 | 0 | 173 | 176 | 36 | 3 | 11 | 2763 | 2774 |
| 07:00 PM | 41 | 93 | 34 | 0 | 23 | 73 | 67 | 1 | 15 | 124 | 23 | 0 | 38 | 20 | 9 | 0 | 1 | 560 | 561 |
| 07:15 PM | 35 | 83 | 23 | 0 | 30 | 35 | 72 | 3 | 7 | 128 | 16 | 0 | 35 | 25 | 11 | 0 | 3 | 500 | 503 |
| 07:30 PM | 24 | 82 | 39 | 0 | 29 | 54 | 54 | 1 | 10 | 125 | 28 | 0 | 18 | 36 | 9 | 0 | 1 | 508 | 509 |
| 07:45 PM | 15 | 76 | 27 | 0 | 27 | 53 | 59 | 2 | 14 | 132 | 24 | 0 | 29 | 14 | 5 | 0 | 2 | 475 | 477 |
| Total | 115 | 334 | 123 | 0 | 109 | 215 | 252 | 7 | 46 | 509 | 91 | 0 | 120 | 95 | 34 | 0 | 7 | 2043 | 2050 |

# VHB Engineering NC, P.C.

Venture I
940 Main Campus Drive, Suite 500
Raleigh, NC 27606
*p: 919.829.0328 f: 919.833.0034*


File Name : MLK@Estes
Site Code :
Start Date : 1/28/2020
Page No : 3

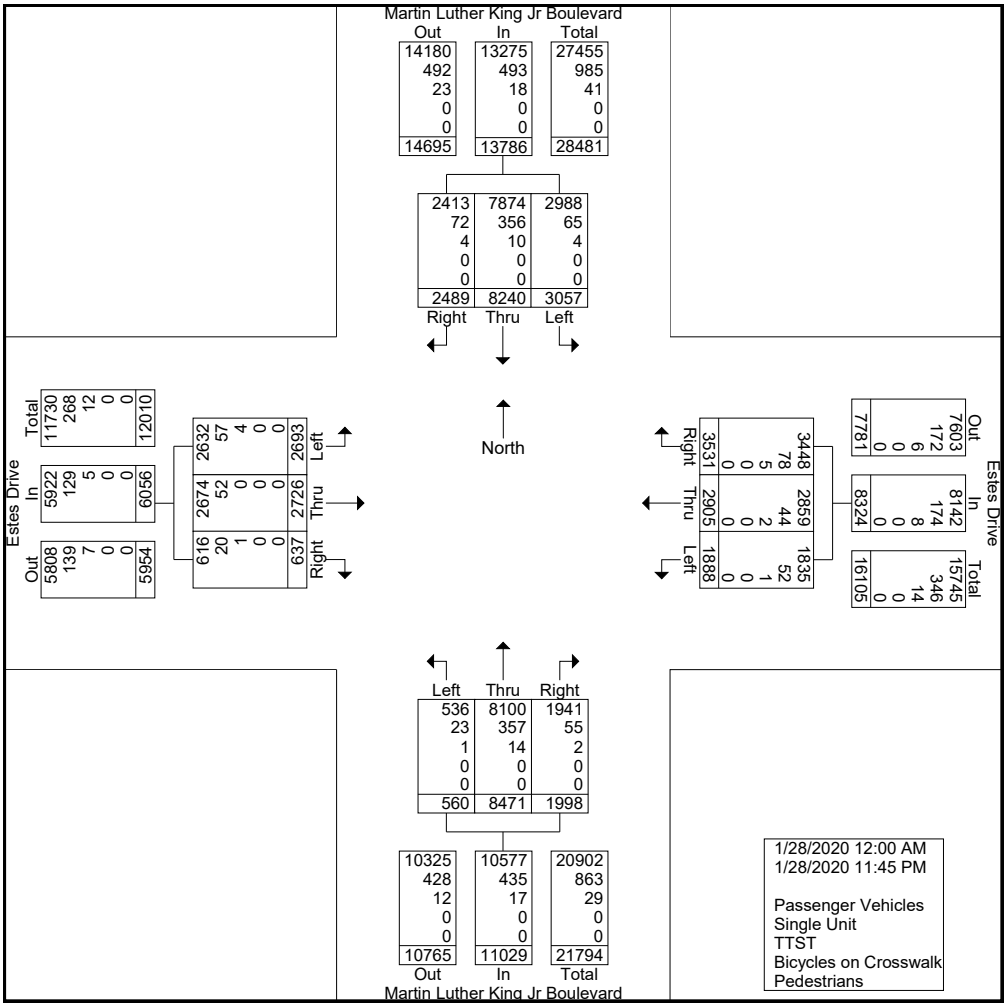
**Groups Printed- Passenger Vehicles - Single Unit - TTST - Bicycles on Crosswalk - Pedestrians**

| | Martin Luther King Jr Boulevard Southbound | | | | Estes Drive Westbound | | | | Martin Luther King Jr Boulevard Northbound | | | | Estes Drive Eastbound | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | Peds | Left | Thru | Right | Peds | Left | Thru | Right | Peds | Left | Thru | Right | Peds | Exclu. Total | Inclu. Total | Int. Total |
| 08:00 PM | 20 | 57 | 19 | 0 | 28 | 66 | 43 | 1 | 15 | 104 | 30 | 0 | 19 | 21 | 8 | 0 | 1 | 430 | 431 |
| 08:15 PM | 22 | 70 | 27 | 0 | 17 | 45 | 45 | 0 | 7 | 83 | 23 | 0 | 23 | 18 | 5 | 0 | 0 | 385 | 385 |
| 08:30 PM | 21 | 46 | 11 | 0 | 24 | 25 | 30 | 0 | 9 | 103 | 20 | 0 | 22 | 10 | 1 | 0 | 0 | 322 | 322 |
| 08:45 PM | 22 | 72 | 25 | 0 | 17 | 26 | 34 | 0 | 6 | 102 | 12 | 0 | 19 | 13 | 1 | 0 | 0 | 349 | 349 |
| Total | 85 | 245 | 82 | 0 | 86 | 162 | 152 | 1 | 37 | 392 | 85 | 0 | 83 | 62 | 15 | 0 | 1 | 1486 | 1487 |
| 09:00 PM | 11 | 55 | 31 | 0 | 16 | 34 | 31 | 0 | 6 | 88 | 15 | 0 | 11 | 14 | 3 | 0 | 0 | 315 | 315 |
| 09:15 PM | 8 | 42 | 25 | 0 | 12 | 32 | 29 | 0 | 5 | 75 | 13 | 0 | 12 | 16 | 3 | 0 | 0 | 272 | 272 |
| 09:30 PM | 4 | 42 | 22 | 0 | 4 | 22 | 22 | 0 | 4 | 65 | 5 | 0 | 21 | 10 | 6 | 0 | 0 | 227 | 227 |
| 09:45 PM | 8 | 29 | 15 | 0 | 12 | 19 | 15 | 0 | 3 | 51 | 11 | 0 | 22 | 8 | 3 | 0 | 0 | 196 | 196 |
| Total | 31 | 168 | 93 | 0 | 44 | 107 | 97 | 0 | 18 | 279 | 44 | 0 | 66 | 48 | 15 | 0 | 0 | 1010 | 1010 |
| 10:00 PM | 6 | 29 | 11 | 0 | 13 | 13 | 12 | 0 | 2 | 61 | 6 | 0 | 7 | 6 | 1 | 0 | 0 | 167 | 167 |
| 10:15 PM | 6 | 26 | 8 | 0 | 8 | 8 | 13 | 1 | 0 | 41 | 8 | 0 | 9 | 4 | 1 | 0 | 1 | 132 | 133 |
| 10:30 PM | 11 | 45 | 9 | 0 | 11 | 27 | 23 | 0 | 2 | 44 | 5 | 0 | 12 | 6 | 1 | 0 | 0 | 196 | 196 |
| 10:45 PM | 5 | 43 | 10 | 0 | 3 | 6 | 9 | 0 | 1 | 26 | 5 | 0 | 6 | 7 | 2 | 0 | 0 | 123 | 123 |
| Total | 28 | 143 | 38 | 0 | 35 | 54 | 57 | 1 | 5 | 172 | 24 | 0 | 34 | 23 | 5 | 0 | 1 | 618 | 619 |
| 11:00 PM | 3 | 15 | 11 | 0 | 8 | 10 | 9 | 0 | 1 | 30 | 1 | 0 | 5 | 2 | 3 | 0 | 0 | 98 | 98 |
| 11:15 PM | 2 | 16 | 8 | 0 | 4 | 9 | 9 | 0 | 0 | 31 | 3 | 0 | 6 | 4 | 0 | 0 | 0 | 92 | 92 |
| 11:30 PM | 2 | 23 | 5 | 0 | 2 | 11 | 3 | 0 | 1 | 24 | 2 | 0 | 8 | 2 | 2 | 0 | 0 | 85 | 85 |
| 11:45 PM | 3 | 14 | 2 | 0 | 4 | 8 | 2 | 0 | 1 | 34 | 1 | 0 | 8 | 1 | 2 | 0 | 0 | 80 | 80 |
| Total | 10 | 68 | 26 | 0 | 18 | 38 | 23 | 0 | 3 | 119 | 7 | 0 | 27 | 9 | 7 | 0 | 0 | 355 | 355 |
| Grand Total | 3057 | 8240 | 2489 | 0 | 1888 | 2905 | 3531 | 78 | 560 | 8471 | 1998 | 1 | 2693 | 2726 | 637 | 4 | 83 | 39195 | 39278 |
| Apprch % | 22.2 | 59.8 | 18.1 | | 22.7 | 34.9 | 42.4 | | 5.1 | 76.8 | 18.1 | | 44.5 | 45 | 10.5 | | | | |
| Total % | 7.8 | 21 | 6.4 | | 4.8 | 7.4 | 9 | | 1.4 | 21.6 | 5.1 | | 6.9 | 7 | 1.6 | | 0.2 | 99.8 | |
| Passenger Vehicles | 2988 | 7874 | 2413 | | 1835 | 2859 | 3448 | | 536 | 8100 | 1941 | | 2632 | 2674 | 616 | | 0 | 0 | 37916 |
| % Passenger Vehicles | 97.7 | 95.6 | 96.9 | 0 | 97.2 | 98.4 | 97.6 | 0 | 95.7 | 95.6 | 97.1 | 0 | 97.7 | 98.1 | 96.7 | 0 | 0 | 0 | 96.5 |
| Single Unit | 65 | 356 | 72 | | 52 | 44 | 78 | | 23 | 357 | 55 | | 57 | 52 | 20 | | 0 | 0 | 1231 |
| % Single Unit | 2.1 | 4.3 | 2.9 | 0 | 2.8 | 1.5 | 2.2 | 0 | 4.1 | 4.2 | 2.8 | 0 | 2.1 | 1.9 | 3.1 | 0 | 0 | 0 | 3.1 |
| TTST | 4 | 10 | 4 | | 1 | 2 | 5 | | 1 | 14 | 2 | | 4 | 0 | 1 | | 0 | 0 | 48 |
| % TTST | 0.1 | 0.1 | 0.2 | 0 | 0.1 | 0.1 | 0.1 | 0 | 0.2 | 0.2 | 0.1 | 0 | 0.1 | 0 | 0.2 | 0 | 0 | 0 | 0.1 |
| Bicycles on Crosswalk | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 17 |
| % Bicycles on Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17.9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 75 | 0 | 0 | 0 |
| Pedestrians | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 66 |
| % Pedestrians | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 82.1 | 0 | 0 | 0 | 100 | 0 | 0 | 0 | 25 | 0 | 0 | 0.2 |

# VHB Engineering NC, P.C.

Venture I
940 Main Campus Drive, Suite 500
Raleigh, NC 27606
*p: 919.829.0328 f: 919.833.0034*


File Name : MLK@Estes
Site Code :
Start Date : 1/28/2020
Page No : 4

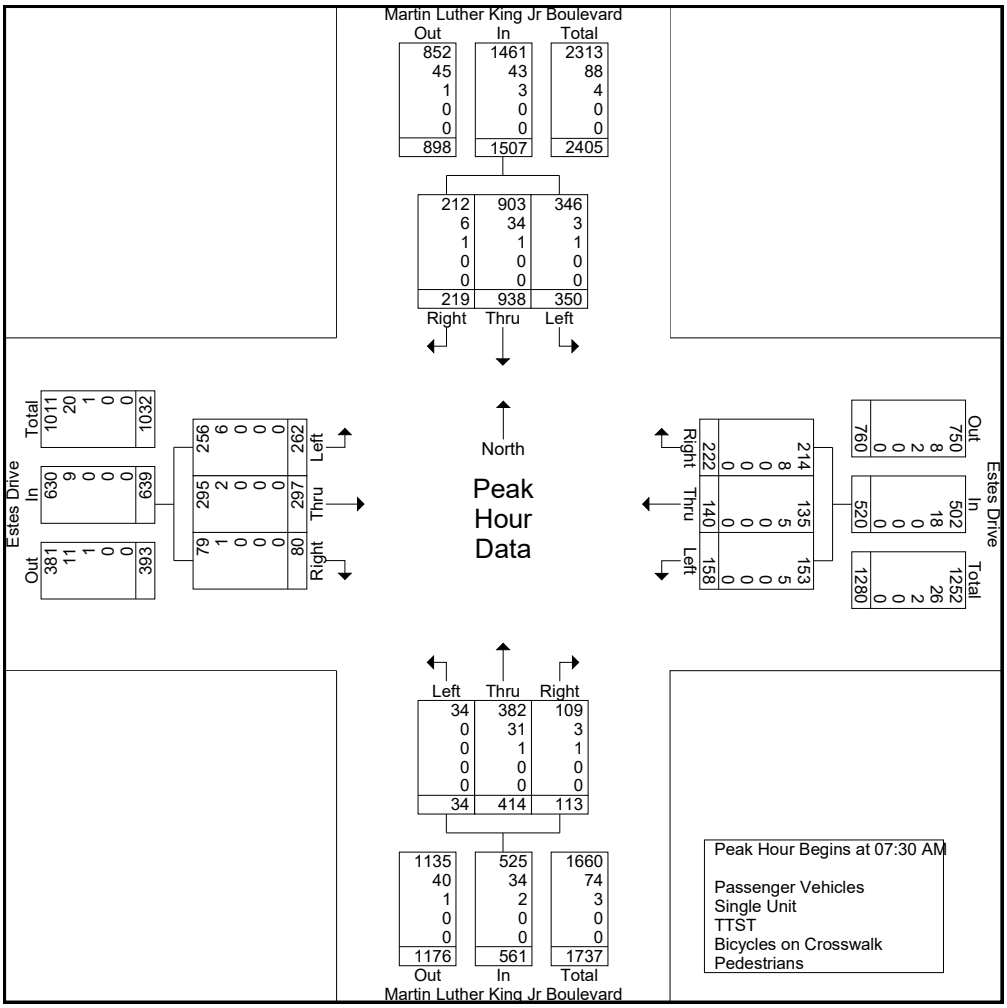


# VHB Engineering NC, P.C.

Venture I
940 Main Campus Drive, Suite 500
Raleigh, NC 27606
*p: 919.829.0328 f: 919.833.0034*


File Name : MLK@Estes
Site Code :
Start Date : 1/28/2020
Page No : 5

| | Martin Luther King Jr Boulevard Southbound | | | | Estes Drive Westbound | | | | Martin Luther King Jr Boulevard Northbound | | | | Estes Drive Eastbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Int. Total |
| Peak Hour Analysis From 12:00 AM to 09:45 AM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:30 AM | | | | | | | | | | | | | | | | | |
| 07:30 AM | 86 | 261 | 71 | 418 | 41 | 44 | 53 | 138 | 10 | 102 | 32 | 144 | 58 | 74 | 14 | 146 | 846 |
| 07:45 AM | 90 | 240 | 62 | 392 | 41 | 39 | 58 | 138 | 7 | 101 | 27 | 135 | 72 | 76 | 20 | 168 | 833 |
| 08:00 AM | 97 | 226 | 33 | 356 | 33 | 23 | 51 | 107 | 12 | 103 | 26 | 141 | 68 | 68 | 17 | 153 | 757 |
| 08:15 AM | 77 | 211 | 53 | 341 | 43 | 34 | 60 | 137 | 5 | 108 | 28 | 141 | 64 | 79 | 29 | 172 | 791 |
| Total Volume | 350 | 938 | 219 | 1507 | 158 | 140 | 222 | 520 | 34 | 414 | 113 | 561 | 262 | 297 | 80 | 639 | 3227 |
| % App. Total | 23.2 | 62.2 | 14.5 | | 30.4 | 26.9 | 42.7 | | 6.1 | 73.8 | 20.1 | | 41 | 46.5 | 12.5 | | |
| PHF | .902 | .898 | .771 | .901 | .919 | .795 | .925 | .942 | .708 | .958 | .883 | .974 | .910 | .940 | .690 | .929 | .954 |
| Passenger Vehicles | 346 | 903 | 212 | 1461 | 153 | 135 | 214 | 502 | 34 | 382 | 109 | 525 | 256 | 295 | 79 | 630 | 3118 |
| % Passenger Vehicles | 98.9 | 96.3 | 96.8 | 96.9 | 96.8 | 96.4 | 96.4 | 96.5 | 100 | 92.3 | 96.5 | 93.6 | 97.7 | 99.3 | 98.8 | 98.6 | 96.6 |
| Single Unit | 3 | 34 | 6 | 43 | 5 | 5 | 8 | 18 | 0 | 31 | 3 | 34 | 6 | 2 | 1 | 9 | 104 |
| % Single Unit | 0.9 | 3.6 | 2.7 | 2.9 | 3.2 | 3.6 | 3.6 | 3.5 | 0 | 7.5 | 2.7 | 6.1 | 2.3 | 0.7 | 1.3 | 1.4 | 3.2 |
| TTST | 1 | 1 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 5 |
| % TTST | 0.3 | 0.1 | 0.5 | 0.2 | 0 | 0 | 0 | 0 | 0 | 0.2 | 0.9 | 0.4 | 0 | 0 | 0 | 0 | 0.2 |
| Bicycles on Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Bicycles on Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pedestrians | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Pedestrians | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

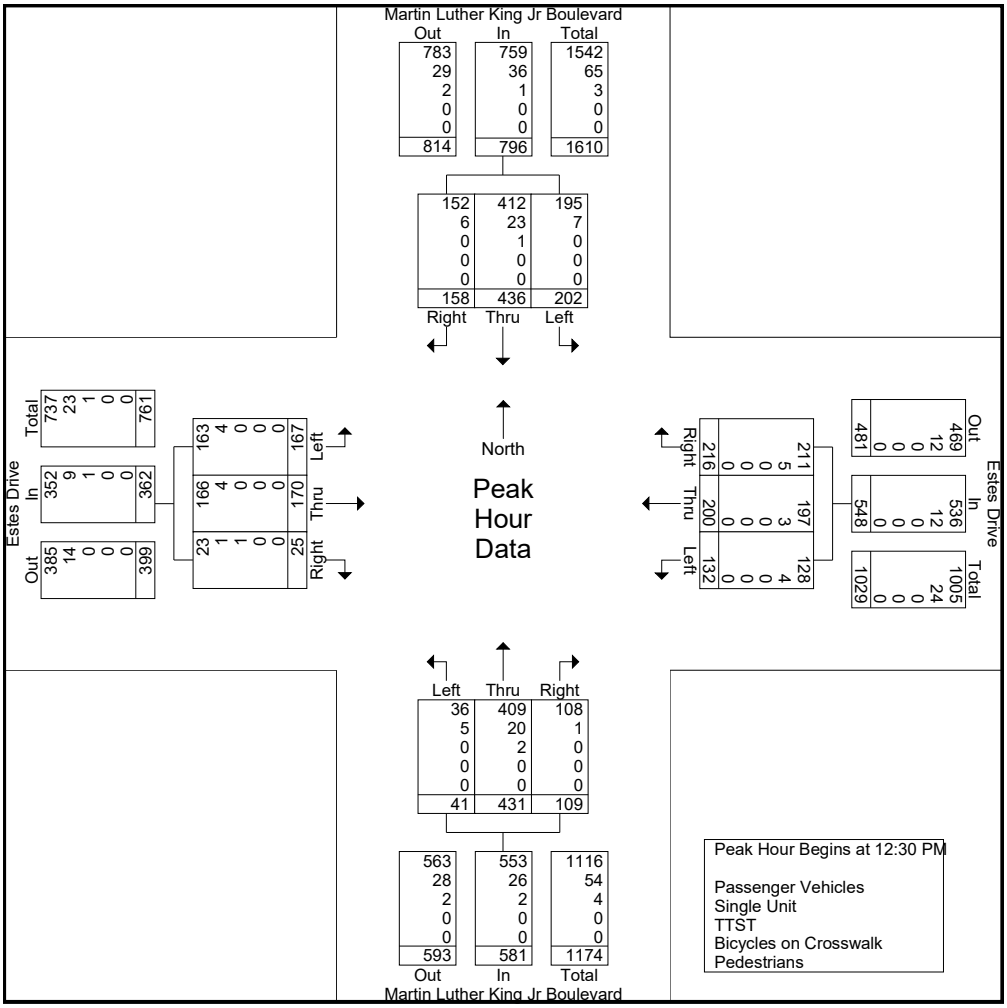


# VHB Engineering NC, P.C.

Venture I
940 Main Campus Drive, Suite 500
Raleigh, NC 27606
*p: 919.829.0328 f: 919.833.0034*


File Name : MLK@Estes
Site Code :
Start Date : 1/28/2020
Page No : 6

| | Martin Luther King Jr Boulevard Southbound | | | | Estes Drive Westbound | | | | Martin Luther King Jr Boulevard Northbound | | | | Estes Drive Eastbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Int. Total |
| Peak Hour Analysis From 10:00 AM to 01:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 12:30 PM | | | | | | | | | | | | | | | | | |
| 12:30 PM | 45 | 99 | 37 | 181 | 31 | 37 | 45 | 113 | 13 | 117 | 27 | 157 | 39 | 48 | 3 | 90 | 541 |
| 12:45 PM | 57 | 118 | 45 | 220 | 33 | 47 | 61 | 141 | 13 | 107 | 34 | 154 | 41 | 41 | 6 | 88 | 603 |
| 01:00 PM | 47 | 106 | 37 | 190 | 37 | 60 | 45 | 142 | 5 | 113 | 25 | 143 | 45 | 48 | 11 | 104 | 579 |
| 01:15 PM | 53 | 113 | 39 | 205 | 31 | 56 | 65 | 152 | 10 | 94 | 23 | 127 | 42 | 33 | 5 | 80 | 564 |
| Total Volume | 202 | 436 | 158 | 796 | 132 | 200 | 216 | 548 | 41 | 431 | 109 | 581 | 167 | 170 | 25 | 362 | 2287 |
| % App. Total | 25.4 | 54.8 | 19.8 | | 24.1 | 36.5 | 39.4 | | 7.1 | 74.2 | 18.8 | | 46.1 | 47 | 6.9 | | |
| PHF | .886 | .924 | .878 | .905 | .892 | .833 | .831 | .901 | .788 | .921 | .801 | .925 | .928 | .885 | .568 | .870 | .948 |
| Passenger Vehicles | 195 | 412 | 152 | 759 | 128 | 197 | 211 | 536 | 36 | 409 | 108 | 553 | 163 | 166 | 23 | 352 | 2200 |
| % Passenger Vehicles | 96.5 | 94.5 | 96.2 | 95.4 | 97.0 | 98.5 | 97.7 | 97.8 | 87.8 | 94.9 | 99.1 | 95.2 | 97.6 | 97.6 | 92.0 | 97.2 | 96.2 |
| Single Unit | 7 | 23 | 6 | 36 | 4 | 3 | 5 | 12 | 5 | 20 | 1 | 26 | 4 | 4 | 1 | 9 | 83 |
| % Single Unit | 3.5 | 5.3 | 3.8 | 4.5 | 3.0 | 1.5 | 2.3 | 2.2 | 12.2 | 4.6 | 0.9 | 4.5 | 2.4 | 2.4 | 4.0 | 2.5 | 3.6 |
| TTST | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 1 | 1 | 4 |
| % TTST | 0 | 0.2 | 0 | 0.1 | 0 | 0 | 0 | 0 | 0 | 0.5 | 0 | 0.3 | 0 | 0 | 4.0 | 0.3 | 0.2 |
| Bicycles on Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Bicycles on Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pedestrians | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Pedestrians | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

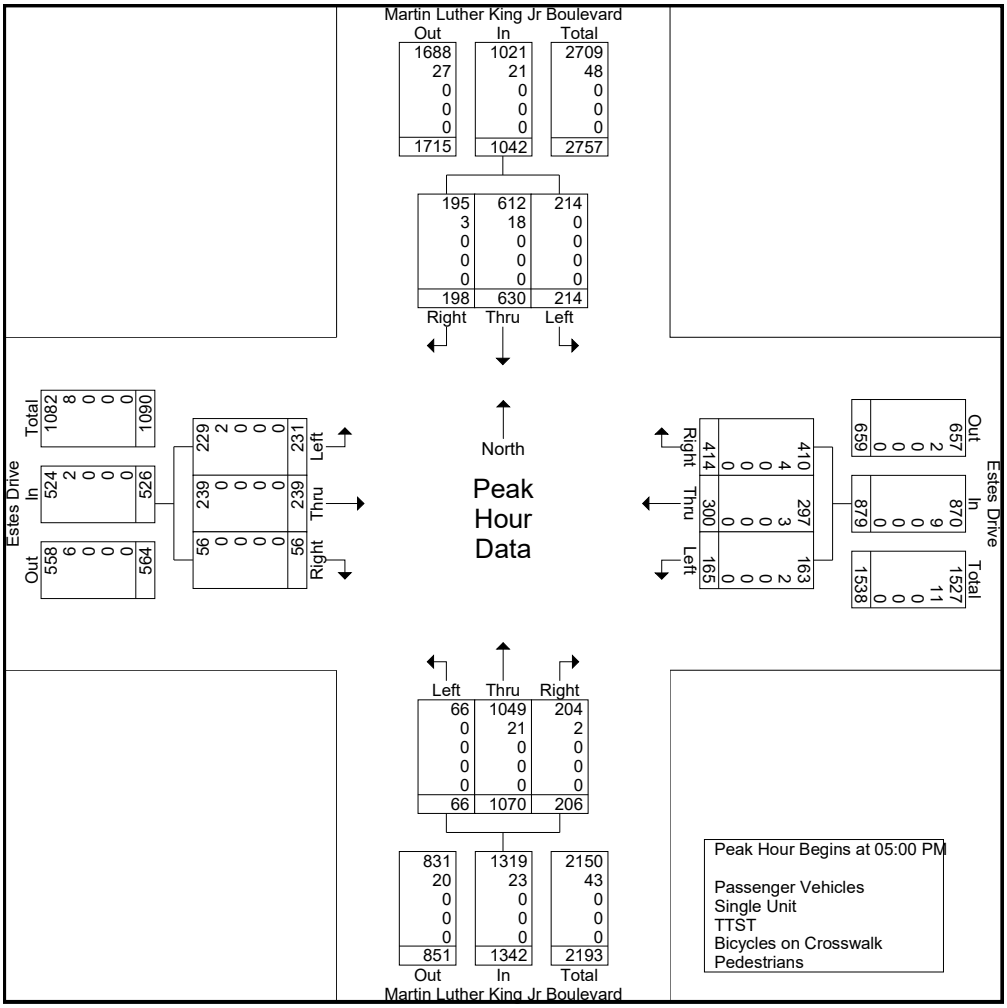


# VHB Engineering NC, P.C.

Venture I
940 Main Campus Drive, Suite 500
Raleigh, NC 27606
*p: 919.829.0328 f: 919.833.0034*


File Name : MLK@Estes
Site Code :
Start Date : 1/28/2020
Page No : 7

| | Martin Luther King Jr Boulevard Southbound | | | | Estes Drive Westbound | | | | Martin Luther King Jr Boulevard Northbound | | | | Estes Drive Eastbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Int. Total |
| Peak Hour Analysis From 02:00 PM to 11:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 05:00 PM | | | | | | | | | | | | | | | | | |
| 05:00 PM | 38 | 126 | 43 | 207 | 41 | 67 | 90 | 198 | 24 | 255 | 49 | 328 | 70 | 72 | 17 | 159 | 892 |
| 05:15 PM | 52 | 178 | 59 | 289 | 36 | 73 | 107 | 216 | 9 | 318 | 53 | 380 | 66 | 56 | 11 | 133 | 1018 |
| 05:30 PM | 62 | 178 | 47 | 287 | 41 | 72 | 121 | 234 | 15 | 258 | 50 | 323 | 40 | 54 | 14 | 108 | 952 |
| 05:45 PM | 62 | 148 | 49 | 259 | 47 | 88 | 96 | 231 | 18 | 239 | 54 | 311 | 55 | 57 | 14 | 126 | 927 |
| Total Volume | 214 | 630 | 198 | 1042 | 165 | 300 | 414 | 879 | 66 | 1070 | 206 | 1342 | 231 | 239 | 56 | 526 | 3789 |
| % App. Total | 20.5 | 60.5 | 19 | | 18.8 | 34.1 | 47.1 | | 4.9 | 79.7 | 15.4 | | 43.9 | 45.4 | 10.6 | | |
| PHF | .863 | .885 | .839 | .901 | .878 | .852 | .855 | .939 | .688 | .841 | .954 | .883 | .825 | .830 | .824 | .827 | .931 |
| Passenger Vehicles | 214 | 612 | 195 | 1021 | 163 | 297 | 410 | 870 | 66 | 1049 | 204 | 1319 | 229 | 239 | 56 | 524 | 3734 |
| % Passenger Vehicles | 100 | 97.1 | 98.5 | 98.0 | 98.8 | 99.0 | 99.0 | 99.0 | 100 | 98.0 | 99.0 | 98.3 | 99.1 | 100 | 100 | 99.6 | 98.5 |
| Single Unit | 0 | 18 | 3 | 21 | 2 | 3 | 4 | 9 | 0 | 21 | 2 | 23 | 2 | 0 | 0 | 2 | 55 |
| % Single Unit | 0 | 2.9 | 1.5 | 2.0 | 1.2 | 1.0 | 1.0 | 1.0 | 0 | 2.0 | 1.0 | 1.7 | 0.9 | 0 | 0 | 0.4 | 1.5 |
| TTST | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % TTST | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Bicycles on Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Bicycles on Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pedestrians | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Pedestrians | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |



# VHB Engineering NC, P.C.

Venture I
940 Main Campus Drive, Suite 500
Raleigh, NC 27606
*p: 919.829.0328 f: 919.833.0034*


File Name : MLK@Homestead
Site Code :
Start Date : 1/28/2020
Page No : 1

**Groups Printed- Passenger Vehicles - Single Unit - TTST - Bicycles on Crosswalk - Pedestrians**

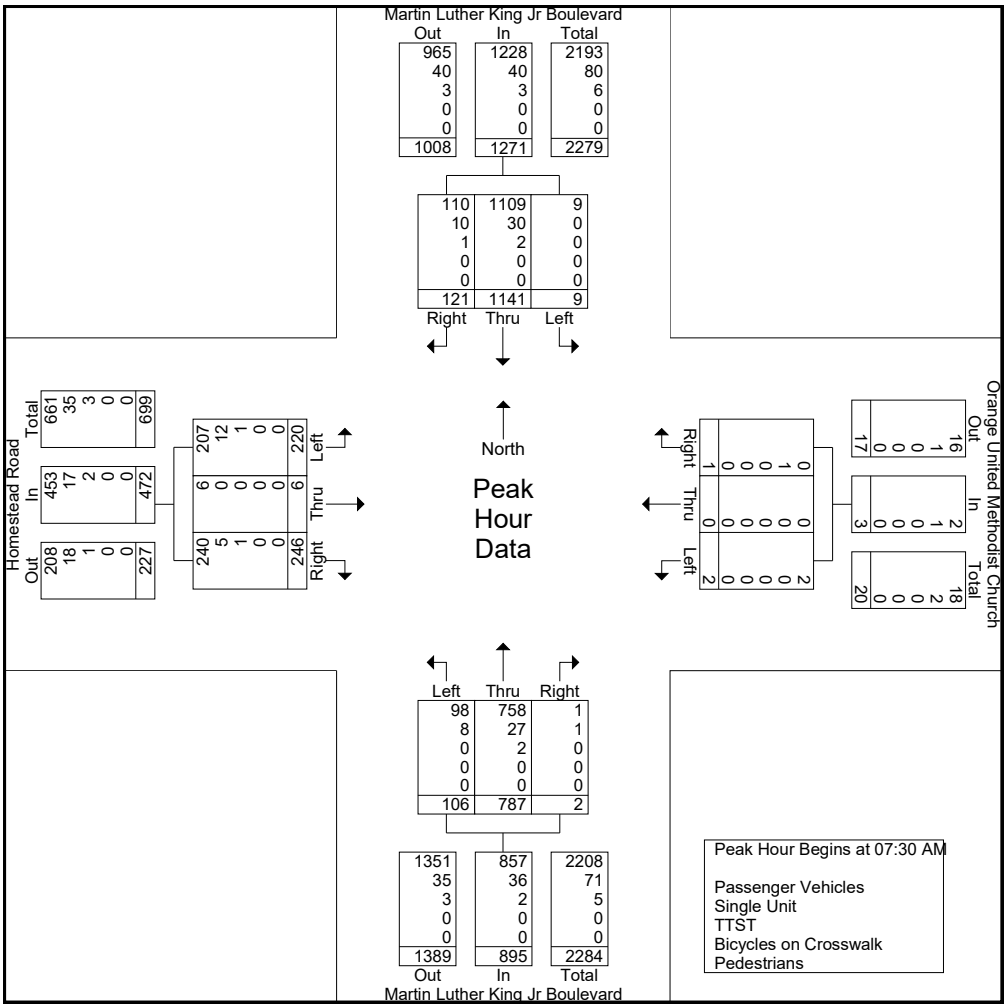
| | Martin Luther King Jr Boulevard Southbound | | | | Orange United Methodist Church Westbound | | | | Martin Luther King Jr Boulevard Northbound | | | | Homestead Road Eastbound | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | Peds | Left | Thru | Right | Peds | Left | Thru | Right | Peds | Left | Thru | Right | Peds | Exclu. Total | Inclu. Total | Int. Total |
| 07:00 AM | 0 | 197 | 13 | 0 | 0 | 0 | 0 | 0 | 23 | 98 | 1 | 0 | 21 | 0 | 47 | 0 | 0 | 400 | 400 |
| 07:15 AM | 1 | 229 | 40 | 0 | 1 | 0 | 0 | 0 | 18 | 156 | 0 | 1 | 29 | 0 | 49 | 1 | 2 | 523 | 525 |
| 07:30 AM | 0 | 302 | 29 | 1 | 0 | 0 | 1 | 0 | 18 | 175 | 1 | 0 | 58 | 0 | 57 | 1 | 2 | 641 | 643 |
| 07:45 AM | 1 | 276 | 34 | 0 | 0 | 0 | 0 | 1 | 26 | 200 | 1 | 3 | 58 | 1 | 69 | 3 | 7 | 666 | 673 |
| Total | 2 | 1004 | 116 | 1 | 1 | 0 | 1 | 1 | 85 | 629 | 3 | 4 | 166 | 1 | 222 | 5 | 11 | 2230 | 2241 |
| 08:00 AM | 4 | 269 | 24 | 0 | 0 | 0 | 0 | 0 | 31 | 216 | 0 | 1 | 56 | 2 | 60 | 0 | 1 | 662 | 663 |
| 08:15 AM | 4 | 294 | 34 | 0 | 2 | 0 | 0 | 0 | 31 | 196 | 0 | 0 | 48 | 3 | 60 | 1 | 1 | 672 | 673 |
| 08:30 AM | 7 | 273 | 24 | 0 | 2 | 0 | 4 | 0 | 22 | 187 | 1 | 0 | 45 | 0 | 51 | 0 | 0 | 616 | 616 |
| 08:45 AM | 6 | 296 | 36 | 0 | 1 | 0 | 4 | 0 | 22 | 157 | 1 | 0 | 32 | 6 | 60 | 0 | 0 | 621 | 621 |
| Total | 21 | 1132 | 118 | 0 | 5 | 0 | 8 | 0 | 106 | 756 | 2 | 1 | 181 | 11 | 231 | 1 | 2 | 2571 | 2573 |
| *** BREAK *** | | | | | | | | | | | | | | | | | | | |
| 11:00 AM | 1 | 124 | 22 | 0 | 0 | 0 | 0 | 0 | 24 | 121 | 0 | 0 | 21 | 0 | 30 | 0 | 0 | 343 | 343 |
| 11:15 AM | 1 | 124 | 25 | 0 | 0 | 0 | 0 | 0 | 31 | 135 | 0 | 0 | 28 | 0 | 34 | 0 | 0 | 378 | 378 |
| 11:30 AM | 2 | 117 | 19 | 0 | 0 | 0 | 0 | 1 | 34 | 136 | 0 | 1 | 42 | 1 | 40 | 1 | 3 | 391 | 394 |
| 11:45 AM | 9 | 132 | 24 | 2 | 0 | 0 | 0 | 1 | 32 | 141 | 0 | 0 | 28 | 4 | 33 | 0 | 3 | 403 | 406 |
| Total | 13 | 497 | 90 | 2 | 0 | 0 | 0 | 2 | 121 | 533 | 0 | 1 | 119 | 5 | 137 | 1 | 6 | 1515 | 1521 |
| 12:00 PM | 8 | 131 | 15 | 2 | 6 | 6 | 4 | 2 | 44 | 169 | 0 | 2 | 30 | 1 | 52 | 0 | 6 | 466 | 472 |
| 12:15 PM | 2 | 150 | 22 | 0 | 3 | 1 | 7 | 2 | 36 | 149 | 1 | 0 | 37 | 0 | 43 | 1 | 3 | 451 | 454 |
| 12:30 PM | 4 | 126 | 24 | 0 | 0 | 0 | 1 | 6 | 36 | 167 | 1 | 7 | 22 | 0 | 44 | 0 | 13 | 425 | 438 |
| 12:45 PM | 5 | 163 | 32 | 0 | 2 | 0 | 2 | 0 | 37 | 149 | 0 | 0 | 18 | 1 | 47 | 0 | 0 | 456 | 456 |
| Total | 19 | 570 | 93 | 2 | 11 | 7 | 14 | 10 | 153 | 634 | 2 | 9 | 107 | 2 | 186 | 1 | 22 | 1798 | 1820 |
| *** BREAK *** | | | | | | | | | | | | | | | | | | | |
| 04:00 PM | 0 | 184 | 46 | 0 | 0 | 0 | 0 | 0 | 40 | 303 | 0 | 0 | 34 | 1 | 53 | 0 | 0 | 661 | 661 |
| 04:15 PM | 2 | 217 | 41 | 1 | 0 | 1 | 2 | 4 | 45 | 278 | 0 | 5 | 51 | 0 | 50 | 0 | 10 | 687 | 697 |
| 04:30 PM | 0 | 187 | 50 | 2 | 1 | 0 | 3 | 3 | 43 | 346 | 0 | 2 | 33 | 1 | 51 | 1 | 8 | 715 | 723 |
| 04:45 PM | 0 | 191 | 45 | 0 | 1 | 0 | 0 | 1 | 53 | 321 | 0 | 0 | 42 | 0 | 38 | 1 | 2 | 691 | 693 |
| Total | 2 | 779 | 182 | 3 | 2 | 1 | 5 | 8 | 181 | 1248 | 0 | 7 | 160 | 2 | 192 | 2 | 20 | 2754 | 2774 |
| 05:00 PM | 2 | 185 | 55 | 1 | 2 | 0 | 0 | 14 | 65 | 317 | 0 | 9 | 72 | 0 | 38 | 0 | 24 | 736 | 760 |
| 05:15 PM | 1 | 240 | 43 | 0 | 0 | 2 | 0 | 0 | 64 | 367 | 0 | 0 | 37 | 0 | 49 | 1 | 1 | 803 | 804 |
| 05:30 PM | 1 | 183 | 36 | 0 | 0 | 0 | 0 | 5 | 61 | 334 | 0 | 6 | 41 | 0 | 44 | 1 | 12 | 700 | 712 |
| 05:45 PM | 3 | 199 | 57 | 1 | 0 | 0 | 1 | 6 | 60 | 308 | 0 | 6 | 53 | 0 | 46 | 0 | 13 | 727 | 740 |
| Total | 7 | 807 | 191 | 2 | 2 | 2 | 1 | 25 | 250 | 1326 | 0 | 21 | 203 | 0 | 177 | 2 | 50 | 2966 | 3016 |
| Grand Total | 64 | 4789 | 790 | 10 | 21 | 10 | 29 | 46 | 896 | 5126 | 7 | 43 | 936 | 21 | 1145 | 12 | 111 | 13834 | 13945 |
| Apprch % | 1.1 | 84.9 | 14 | | 35 | 16.7 | 48.3 | | 14.9 | 85 | 0.1 | | 44.5 | 1 | 54.5 | | | | |
| Total % | 0.5 | 34.6 | 5.7 | | 0.2 | 0.1 | 0.2 | | 6.5 | 37.1 | 0.1 | | 6.8 | 0.2 | 8.3 | | 0.8 | 99.2 | |
| Passenger Vehicles | 63 | 4616 | 730 | | 20 | 10 | 28 | | 855 | 4966 | 4 | | 895 | 21 | 1106 | | 0 | 0 | 13314 |
| % Passenger Vehicles | 98.4 | 96.4 | 92.4 | 0 | 95.2 | 100 | 96.6 | 0 | 95.4 | 96.9 | 57.1 | 0 | 95.6 | 100 | 96.6 | 0 | 0 | 0 | 95.5 |
| Single Unit | 1 | 165 | 56 | | 1 | 0 | 1 | | 41 | 146 | 3 | | 39 | 0 | 38 | | 0 | 0 | 491 |
| % Single Unit | 1.6 | 3.4 | 7.1 | 0 | 4.8 | 0 | 3.4 | 0 | 4.6 | 2.8 | 42.9 | 0 | 4.2 | 0 | 3.3 | 0 | 0 | 0 | 3.5 |
| TTST | 0 | 8 | 4 | | 0 | 0 | 0 | | 0 | 14 | 0 | | 2 | 0 | 1 | | 0 | 0 | 29 |
| % TTST | 0 | 0.2 | 0.5 | 0 | 0 | 0 | 0 | 0 | 0 | 0.3 | 0 | 0 | 0.2 | 0 | 0.1 | 0 | 0 | 0 | 0.2 |
| Bicycles on Crosswalk | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 |
| % Bicycles on Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pedestrians | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 111 |
| % Pedestrians | 0 | 0 | 0 | 100 | 0 | 0 | 0 | 100 | 0 | 0 | 0 | 100 | 0 | 0 | 0 | 100 | 0 | 0 | 0.8 |

# VHB Engineering NC, P.C.

Venture I
940 Main Campus Drive, Suite 500
Raleigh, NC 27606
*p: 919.829.0328 f: 919.833.0034*


File Name : MLK@Homestead
Site Code :
Start Date : 1/28/2020
Page No : 2

| | Martin Luther King Jr Boulevard Southbound | | | | Orange United Methodist Church Westbound | | | | Martin Luther King Jr Boulevard Northbound | | | | Homestead Road Eastbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 09:45 AM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:30 AM | | | | | | | | | | | | | | | | | |
| 07:30 AM | 0 | 302 | 29 | 331 | 0 | 0 | 1 | 1 | 18 | 175 | 1 | 194 | 58 | 0 | 57 | 115 | 641 |
| 07:45 AM | 1 | 276 | 34 | 311 | 0 | 0 | 0 | 0 | 26 | 200 | 1 | 227 | 58 | 1 | 69 | 128 | 666 |
| 08:00 AM | 4 | 269 | 24 | 297 | 0 | 0 | 0 | 0 | 31 | 216 | 0 | 247 | 56 | 2 | 60 | 118 | 662 |
| 08:15 AM | 4 | 294 | 34 | 332 | 2 | 0 | 0 | 2 | 31 | 196 | 0 | 227 | 48 | 3 | 60 | 111 | 672 |
| Total Volume | 9 | 1141 | 121 | 1271 | 2 | 0 | 1 | 3 | 106 | 787 | 2 | 895 | 220 | 6 | 246 | 472 | 2641 |
| % App. Total | 0.7 | 89.8 | 9.5 | | 66.7 | 0 | 33.3 | | 11.8 | 87.9 | 0.2 | | 46.6 | 1.3 | 52.1 | | |
| PHF | .563 | .945 | .890 | .957 | .250 | .000 | .250 | .375 | .855 | .911 | .500 | .906 | .948 | .500 | .891 | .922 | .983 |
| Passenger Vehicles | 9 | 1109 | 110 | 1228 | 2 | 0 | 0 | 2 | 98 | 758 | 1 | 857 | 207 | 6 | 240 | 453 | 2540 |
| % Passenger Vehicles | 100 | 97.2 | 90.9 | 96.6 | 100 | 0 | 0 | 66.7 | 92.5 | 96.3 | 50.0 | 95.8 | 94.1 | 100 | 97.6 | 96.0 | 96.2 |
| Single Unit | 0 | 30 | 10 | 40 | 0 | 0 | 1 | 1 | 8 | 27 | 1 | 36 | 12 | 0 | 5 | 17 | 94 |
| % Single Unit | 0 | 2.6 | 8.3 | 3.1 | 0 | 0 | 100 | 33.3 | 7.5 | 3.4 | 50.0 | 4.0 | 5.5 | 0 | 2.0 | 3.6 | 3.6 |
| TTST | 0 | 2 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 1 | 0 | 1 | 2 | 7 |
| % TTST | 0 | 0.2 | 0.8 | 0.2 | 0 | 0 | 0 | 0 | 0 | 0.3 | 0 | 0.2 | 0.5 | 0 | 0.4 | 0.4 | 0.3 |
| Bicycles on Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Bicycles on Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pedestrians | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Pedestrians | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

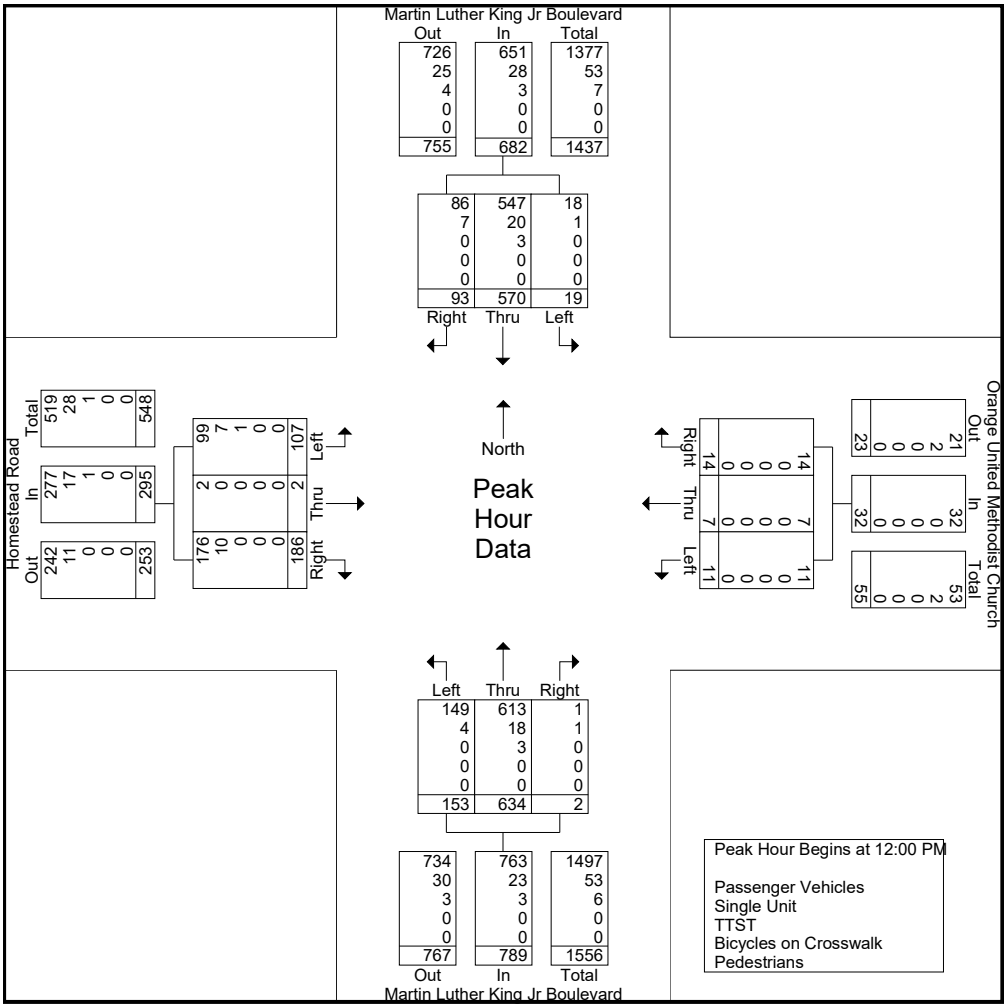


# VHB Engineering NC, P.C.

Venture I
940 Main Campus Drive, Suite 500
Raleigh, NC 27606
*p: 919.829.0328 f: 919.833.0034*


File Name : MLK@Homestead
Site Code :
Start Date : 1/28/2020
Page No : 3

| | Martin Luther King Jr Boulevard Southbound | | | | Orange United Methodist Church Westbound | | | | Martin Luther King Jr Boulevard Northbound | | | | Homestead Road Eastbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Int. Total |
| Peak Hour Analysis From 10:00 AM to 01:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 12:00 PM | | | | | | | | | | | | | | | | | |
| 12:00 PM | 8 | 131 | 15 | 154 | 6 | 6 | 4 | 16 | 44 | 169 | 0 | 213 | 30 | 1 | 52 | 83 | 466 |
| 12:15 PM | 2 | 150 | 22 | 174 | 3 | 1 | 7 | 11 | 36 | 149 | 1 | 186 | 37 | 0 | 43 | 80 | 451 |
| 12:30 PM | 4 | 126 | 24 | 154 | 0 | 0 | 1 | 1 | 36 | 167 | 1 | 204 | 22 | 0 | 44 | 66 | 425 |
| 12:45 PM | 5 | 163 | 32 | 200 | 2 | 0 | 2 | 4 | 37 | 149 | 0 | 186 | 18 | 1 | 47 | 66 | 456 |
| Total Volume | 19 | 570 | 93 | 682 | 11 | 7 | 14 | 32 | 153 | 634 | 2 | 789 | 107 | 2 | 186 | 295 | 1798 |
| % App. Total | 2.8 | 83.6 | 13.6 | | 34.4 | 21.9 | 43.8 | | 19.4 | 80.4 | 0.3 | | 36.3 | 0.7 | 63.1 | | |
| PHF | .594 | .874 | .727 | .853 | .458 | .292 | .500 | .500 | .869 | .938 | .500 | .926 | .723 | .500 | .894 | .889 | .965 |
| Passenger Vehicles | 18 | 547 | 86 | 651 | 11 | 7 | 14 | 32 | 149 | 613 | 1 | 763 | 99 | 2 | 176 | 277 | 1723 |
| % Passenger Vehicles | 94.7 | 96.0 | 92.5 | 95.5 | 100 | 100 | 100 | 100 | 97.4 | 96.7 | 50.0 | 96.7 | 92.5 | 100 | 94.6 | 93.9 | 95.8 |
| Single Unit | 1 | 20 | 7 | 28 | 0 | 0 | 0 | 0 | 4 | 18 | 1 | 23 | 7 | 0 | 10 | 17 | 68 |
| % Single Unit | 5.3 | 3.5 | 7.5 | 4.1 | 0 | 0 | 0 | 0 | 2.6 | 2.8 | 50.0 | 2.9 | 6.5 | 0 | 5.4 | 5.8 | 3.8 |
| TTST | 0 | 3 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 3 | 1 | 0 | 0 | 1 | 7 |
| % TTST | 0 | 0.5 | 0 | 0.4 | 0 | 0 | 0 | 0 | 0 | 0.5 | 0 | 0.4 | 0.9 | 0 | 0 | 0.3 | 0.4 |
| Bicycles on Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Bicycles on Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pedestrians | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Pedestrians | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

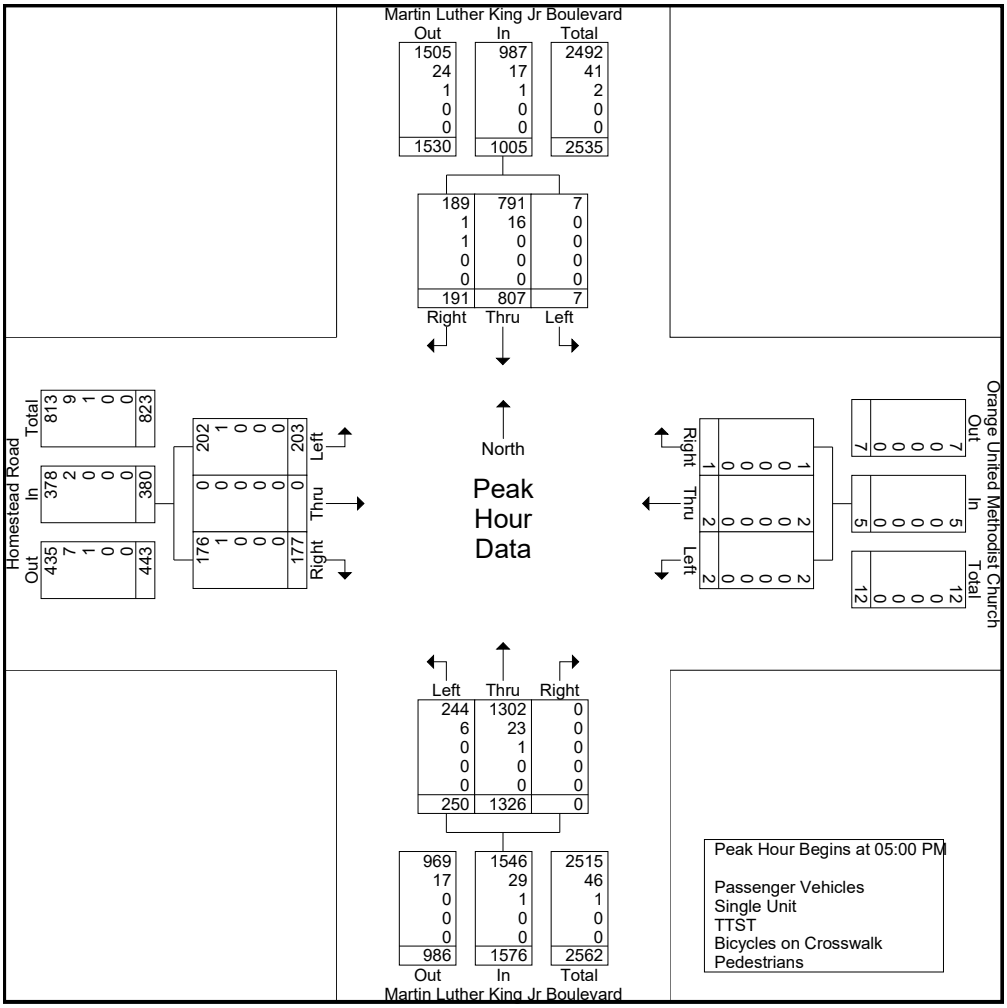


# VHB Engineering NC, P.C.

Venture I
940 Main Campus Drive, Suite 500
Raleigh, NC 27606
*p: 919.829.0328 f: 919.833.0034*


File Name : MLK@Homestead
Site Code :
Start Date : 1/28/2020
Page No : 4

| | Martin Luther King Jr Boulevard Southbound | | | | Orange United Methodist Church Westbound | | | | Martin Luther King Jr Boulevard Northbound | | | | Homestead Road Eastbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Int. Total |
| Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 05:00 PM | | | | | | | | | | | | | | | | | |
| 05:00 PM | 2 | 185 | 55 | 242 | 2 | 0 | 0 | 2 | 65 | 317 | 0 | 382 | 72 | 0 | 38 | 110 | 736 |
| 05:15 PM | 1 | 240 | 43 | 284 | 0 | 2 | 0 | 2 | 64 | 367 | 0 | 431 | 37 | 0 | 49 | 86 | 803 |
| 05:30 PM | 1 | 183 | 36 | 220 | 0 | 0 | 0 | 0 | 61 | 334 | 0 | 395 | 41 | 0 | 44 | 85 | 700 |
| 05:45 PM | 3 | 199 | 57 | 259 | 0 | 0 | 1 | 1 | 60 | 308 | 0 | 368 | 53 | 0 | 46 | 99 | 727 |
| Total Volume | 7 | 807 | 191 | 1005 | 2 | 2 | 1 | 5 | 250 | 1326 | 0 | 1576 | 203 | 0 | 177 | 380 | 2966 |
| % App. Total | 0.7 | 80.3 | 19 | | 40 | 40 | 20 | | 15.9 | 84.1 | 0 | | 53.4 | 0 | 46.6 | | |
| PHF | .583 | .841 | .838 | .885 | .250 | .250 | .250 | .625 | .962 | .903 | .000 | .914 | .705 | .000 | .903 | .864 | .923 |
| Passenger Vehicles | 7 | 791 | 189 | 987 | 2 | 2 | 1 | 5 | 244 | 1302 | 0 | 1546 | 202 | 0 | 176 | 378 | 2916 |
| % Passenger Vehicles | 100 | 98.0 | 99.0 | 98.2 | 100 | 100 | 100 | 100 | 97.6 | 98.2 | 0 | 98.1 | 99.5 | 0 | 99.4 | 99.5 | 98.3 |
| Single Unit | 0 | 16 | 1 | 17 | 0 | 0 | 0 | 0 | 6 | 23 | 0 | 29 | 1 | 0 | 1 | 2 | 48 |
| % Single Unit | 0 | 2.0 | 0.5 | 1.7 | 0 | 0 | 0 | 0 | 2.4 | 1.7 | 0 | 1.8 | 0.5 | 0 | 0.6 | 0.5 | 1.6 |
| TTST | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 2 |
| % TTST | 0 | 0 | 0.5 | 0.1 | 0 | 0 | 0 | 0 | 0 | 0.1 | 0 | 0.1 | 0 | 0 | 0 | 0 | 0.1 |
| Bicycles on Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Bicycles on Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pedestrians | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Pedestrians | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |



# VHB Engineering NC, P.C.

Venture I
940 Main Campus Drive, Suite 500
Raleigh, NC 27606
*p: 919.829.0328 f: 919.833.0034*


File Name : MLK@PineyMountain
Site Code :
Start Date : 1/28/2020
Page No : 1

**Groups Printed- Passenger Vehicles - Single Unit - TTST - Bicycles on Crosswalk - Pedestrians**

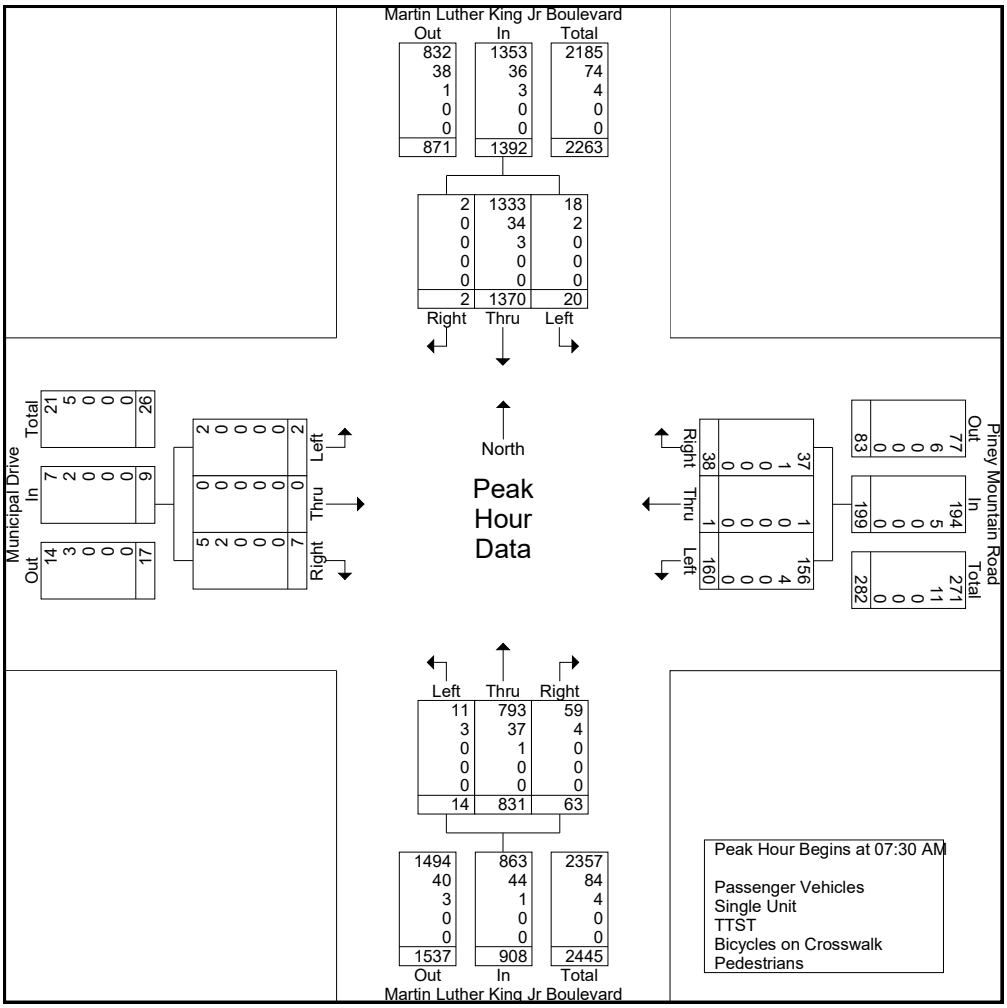
| | Martin Luther King Jr Boulevard Southbound | | | | Piney Mountain Road Westbound | | | | Martin Luther King Jr Boulevard Northbound | | | | Municipal Drive Eastbound | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | Peds | Left | Thru | Right | Peds | Left | Thru | Right | Peds | Left | Thru | Right | Peds | Exclu. Total | Inclu. Total | Int. Total |
| 07:00 AM | 6 | 216 | 0 | 0 | 17 | 0 | 12 | 0 | 4 | 118 | 5 | 0 | 0 | 0 | 3 | 0 | 0 | 381 | 381 |
| 07:15 AM | 3 | 260 | 1 | 0 | 31 | 0 | 12 | 1 | 3 | 129 | 8 | 0 | 0 | 0 | 0 | 0 | 1 | 447 | 448 |
| 07:30 AM | 4 | 383 | 0 | 0 | 51 | 0 | 6 | 0 | 3 | 180 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 639 | 639 |
| 07:45 AM | 5 | 326 | 1 | 0 | 44 | 1 | 9 | 1 | 5 | 217 | 19 | 0 | 0 | 0 | 2 | 0 | 1 | 629 | 630 |
| Total | 18 | 1185 | 2 | 0 | 143 | 1 | 39 | 2 | 15 | 644 | 44 | 0 | 0 | 0 | 5 | 0 | 2 | 2096 | 2098 |
| 08:00 AM | 4 | 337 | 1 | 0 | 39 | 0 | 16 | 0 | 3 | 212 | 12 | 0 | 2 | 0 | 1 | 0 | 0 | 627 | 627 |
| 08:15 AM | 7 | 324 | 0 | 0 | 26 | 0 | 7 | 0 | 3 | 222 | 20 | 1 | 0 | 0 | 4 | 0 | 1 | 613 | 614 |
| 08:30 AM | 12 | 337 | 1 | 0 | 34 | 0 | 12 | 0 | 3 | 192 | 19 | 0 | 0 | 0 | 1 | 0 | 0 | 611 | 611 |
| 08:45 AM | 4 | 356 | 2 | 0 | 27 | 0 | 6 | 0 | 3 | 162 | 12 | 0 | 0 | 0 | 4 | 0 | 0 | 576 | 576 |
| Total | 27 | 1354 | 4 | 0 | 126 | 0 | 41 | 0 | 12 | 788 | 63 | 1 | 2 | 0 | 10 | 0 | 1 | 2427 | 2428 |
| *** BREAK *** | | | | | | | | | | | | | | | | | | | |
| 11:00 AM | 2 | 152 | 1 | 0 | 7 | 0 | 3 | 0 | 6 | 157 | 8 | 0 | 0 | 1 | 8 | 0 | 0 | 345 | 345 |
| 11:15 AM | 4 | 143 | 2 | 1 | 8 | 1 | 4 | 0 | 4 | 159 | 13 | 0 | 1 | 0 | 7 | 0 | 1 | 346 | 347 |
| 11:30 AM | 8 | 154 | 1 | 1 | 22 | 0 | 5 | 1 | 3 | 150 | 20 | 0 | 0 | 0 | 3 | 0 | 2 | 366 | 368 |
| 11:45 AM | 4 | 167 | 1 | 0 | 11 | 0 | 4 | 0 | 7 | 170 | 14 | 0 | 0 | 0 | 6 | 0 | 0 | 384 | 384 |
| Total | 18 | 616 | 5 | 2 | 48 | 1 | 16 | 1 | 20 | 636 | 55 | 0 | 1 | 1 | 24 | 0 | 3 | 1441 | 1444 |
| 12:00 PM | 8 | 189 | 1 | 1 | 14 | 0 | 6 | 1 | 2 | 213 | 16 | 0 | 0 | 0 | 4 | 0 | 2 | 453 | 455 |
| 12:15 PM | 6 | 171 | 1 | 0 | 17 | 1 | 6 | 0 | 7 | 174 | 8 | 1 | 0 | 0 | 2 | 0 | 1 | 393 | 394 |
| 12:30 PM | 6 | 164 | 0 | 1 | 18 | 0 | 3 | 0 | 4 | 201 | 12 | 0 | 0 | 0 | 4 | 0 | 1 | 412 | 413 |
| 12:45 PM | 5 | 208 | 0 | 0 | 14 | 0 | 8 | 0 | 8 | 179 | 17 | 0 | 3 | 0 | 4 | 0 | 0 | 446 | 446 |
| Total | 25 | 732 | 2 | 2 | 63 | 1 | 23 | 1 | 21 | 767 | 53 | 1 | 3 | 0 | 14 | 0 | 4 | 1704 | 1708 |
| *** BREAK *** | | | | | | | | | | | | | | | | | | | |
| 04:00 PM | 9 | 205 | 2 | 0 | 15 | 1 | 5 | 0 | 2 | 332 | 16 | 0 | 1 | 0 | 3 | 0 | 0 | 591 | 591 |
| 04:15 PM | 12 | 235 | 2 | 0 | 20 | 0 | 6 | 1 | 11 | 324 | 14 | 0 | 1 | 0 | 7 | 0 | 1 | 632 | 633 |
| 04:30 PM | 4 | 218 | 2 | 0 | 25 | 2 | 11 | 0 | 2 | 378 | 24 | 0 | 1 | 0 | 6 | 0 | 0 | 673 | 673 |
| 04:45 PM | 9 | 235 | 3 | 0 | 25 | 1 | 7 | 0 | 2 | 354 | 24 | 0 | 4 | 0 | 0 | 0 | 0 | 664 | 664 |
| Total | 34 | 893 | 9 | 0 | 85 | 4 | 29 | 1 | 17 | 1388 | 78 | 0 | 7 | 0 | 16 | 0 | 1 | 2560 | 2561 |
| 05:00 PM | 10 | 205 | 4 | 0 | 14 | 1 | 7 | 3 | 2 | 379 | 30 | 0 | 8 | 1 | 4 | 0 | 3 | 665 | 668 |
| 05:15 PM | 5 | 261 | 8 | 0 | 25 | 0 | 9 | 2 | 3 | 407 | 33 | 0 | 1 | 1 | 6 | 0 | 2 | 759 | 761 |
| 05:30 PM | 9 | 232 | 6 | 0 | 26 | 0 | 6 | 0 | 8 | 403 | 41 | 0 | 15 | 2 | 10 | 0 | 0 | 758 | 758 |
| 05:45 PM | 18 | 243 | 0 | 0 | 37 | 0 | 9 | 1 | 1 | 343 | 34 | 0 | 0 | 3 | 6 | 0 | 1 | 694 | 695 |
| Total | 42 | 941 | 18 | 0 | 102 | 1 | 31 | 6 | 14 | 1532 | 138 | 0 | 24 | 7 | 26 | 0 | 6 | 2876 | 2882 |
| Grand Total | 164 | 5721 | 40 | 4 | 567 | 8 | 179 | 11 | 99 | 5755 | 431 | 2 | 37 | 8 | 95 | 0 | 17 | 13104 | 13121 |
| Apprch % | 2.8 | 96.6 | 0.7 | | 75.2 | 1.1 | 23.7 | | 1.6 | 91.6 | 6.9 | | 26.4 | 5.7 | 67.9 | | | | |
| Total % | 1.3 | 43.7 | 0.3 | | 4.3 | 0.1 | 1.4 | | 0.8 | 43.9 | 3.3 | | 0.3 | 0.1 | 0.7 | | 0.1 | 99.9 | |
| Passenger Vehicles | 161 | 5512 | 39 | | 555 | 8 | 168 | | 84 | 5574 | 416 | | 35 | 8 | 84 | | 0 | 0 | 12644 |
| % Passenger Vehicles | 98.2 | 96.3 | 97.5 | 0 | 97.9 | 100 | 93.9 | 0 | 84.8 | 96.9 | 96.5 | 0 | 94.6 | 100 | 88.4 | 0 | 0 | 0 | 96.4 |
| Single Unit | 3 | 202 | 1 | | 12 | 0 | 11 | | 13 | 172 | 14 | | 2 | 0 | 11 | | 0 | 0 | 441 |
| % Single Unit | 1.8 | 3.5 | 2.5 | 0 | 2.1 | 0 | 6.1 | 0 | 13.1 | 3 | 3.2 | 0 | 5.4 | 0 | 11.6 | 0 | 0 | 0 | 3.4 |
| TTST | 0 | 7 | 0 | | 0 | 0 | 0 | | 2 | 9 | 1 | | 0 | 0 | 0 | | 0 | 0 | 19 |
| % TTST | 0 | 0.1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0.2 | 0.2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 |
| Bicycles on Crosswalk | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 3 |
| % Bicycles on Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 27.3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pedestrians | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 14 |
| % Pedestrians | 0 | 0 | 0 | 100 | 0 | 0 | 0 | 72.7 | 0 | 0 | 0 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 |

# VHB Engineering NC, P.C.

Venture I
940 Main Campus Drive, Suite 500
Raleigh, NC 27606
*p: 919.829.0328 f: 919.833.0034*


File Name : MLK@PineyMountain
Site Code :
Start Date : 1/28/2020
Page No : 2

| | Martin Luther King Jr Boulevard Southbound | | | | Piney Mountain Road Westbound | | | | Martin Luther King Jr Boulevard Northbound | | | | Municipal Drive Eastbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 09:45 AM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:30 AM | | | | | | | | | | | | | | | | | |
| 07:30 AM | 4 | 383 | 0 | 387 | 51 | 0 | 6 | 57 | 3 | 180 | 12 | 195 | 0 | 0 | 0 | 0 | 639 |
| 07:45 AM | 5 | 326 | 1 | 332 | 44 | 1 | 9 | 54 | 5 | 217 | 19 | 241 | 0 | 0 | 2 | 2 | 629 |
| 08:00 AM | 4 | 337 | 1 | 342 | 39 | 0 | 16 | 55 | 3 | 212 | 12 | 227 | 2 | 0 | 1 | 3 | 627 |
| 08:15 AM | 7 | 324 | 0 | 331 | 26 | 0 | 7 | 33 | 3 | 222 | 20 | 245 | 0 | 0 | 4 | 4 | 613 |
| Total Volume | 20 | 1370 | 2 | 1392 | 160 | 1 | 38 | 199 | 14 | 831 | 63 | 908 | 2 | 0 | 7 | 9 | 2508 |
| % App. Total | 1.4 | 98.4 | 0.1 | | 80.4 | 0.5 | 19.1 | | 1.5 | 91.5 | 6.9 | | 22.2 | 0 | 77.8 | | |
| PHF | .714 | .894 | .500 | .899 | .784 | .250 | .594 | .873 | .700 | .936 | .788 | .927 | .250 | .000 | .438 | .563 | .981 |
| Passenger Vehicles | 18 | 1333 | 2 | 1353 | 156 | 1 | 37 | 194 | 11 | 793 | 59 | 863 | 2 | 0 | 5 | 7 | 2417 |
| % Passenger Vehicles | 90.0 | 97.3 | 100 | 97.2 | 97.5 | 100 | 97.4 | 97.5 | 78.6 | 95.4 | 93.7 | 95.0 | 100 | 0 | 71.4 | 77.8 | 96.4 |
| Single Unit | 2 | 34 | 0 | 36 | 4 | 0 | 1 | 5 | 3 | 37 | 4 | 44 | 0 | 0 | 2 | 2 | 87 |
| % Single Unit | 10.0 | 2.5 | 0 | 2.6 | 2.5 | 0 | 2.6 | 2.5 | 21.4 | 4.5 | 6.3 | 4.8 | 0 | 0 | 28.6 | 22.2 | 3.5 |
| TTST | 0 | 3 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 4 |
| % TTST | 0 | 0.2 | 0 | 0.2 | 0 | 0 | 0 | 0 | 0 | 0.1 | 0 | 0.1 | 0 | 0 | 0 | 0 | 0.2 |
| Bicycles on Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Bicycles on Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pedestrians | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Pedestrians | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

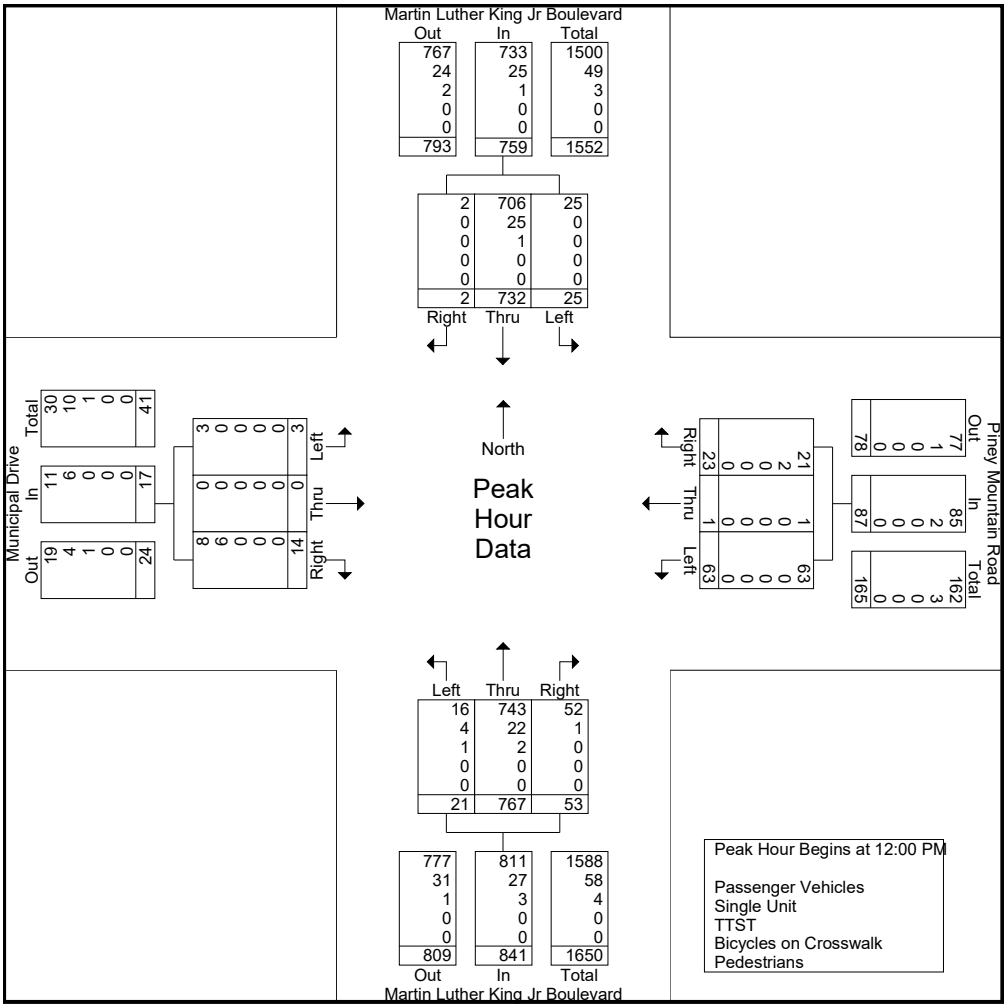


# VHB Engineering NC, P.C.

Venture I
940 Main Campus Drive, Suite 500
Raleigh, NC 27606
*p: 919.829.0328 f: 919.833.0034*


File Name : MLK@PineyMountain
Site Code :
Start Date : 1/28/2020
Page No : 3

| | Martin Luther King Jr Boulevard Southbound | | | | Piney Mountain Road Westbound | | | | Martin Luther King Jr Boulevard Northbound | | | | Municipal Drive Eastbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Int. Total |
| Peak Hour Analysis From 10:00 AM to 01:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 12:00 PM | | | | | | | | | | | | | | | | | |
| 12:00 PM | 8 | 189 | 1 | 198 | 14 | 0 | 6 | 20 | 2 | 213 | 16 | 231 | 0 | 0 | 4 | 4 | 453 |
| 12:15 PM | 6 | 171 | 1 | 178 | 17 | 1 | 6 | 24 | 7 | 174 | 8 | 189 | 0 | 0 | 2 | 2 | 393 |
| 12:30 PM | 6 | 164 | 0 | 170 | 18 | 0 | 3 | 21 | 4 | 201 | 12 | 217 | 0 | 0 | 4 | 4 | 412 |
| 12:45 PM | 5 | 208 | 0 | 213 | 14 | 0 | 8 | 22 | 8 | 179 | 17 | 204 | 3 | 0 | 4 | 7 | 446 |
| Total Volume | 25 | 732 | 2 | 759 | 63 | 1 | 23 | 87 | 21 | 767 | 53 | 841 | 3 | 0 | 14 | 17 | 1704 |
| % App. Total | 3.3 | 96.4 | 0.3 | | 72.4 | 1.1 | 26.4 | | 2.5 | 91.2 | 6.3 | | 17.6 | 0 | 82.4 | | |
| PHF | .781 | .880 | .500 | .891 | .875 | .250 | .719 | .906 | .656 | .900 | .779 | .910 | .250 | .000 | .875 | .607 | .940 |
| Passenger Vehicles | 25 | 706 | 2 | 733 | 63 | 1 | 21 | 85 | 16 | 743 | 52 | 811 | 3 | 0 | 8 | 11 | 1640 |
| % Passenger Vehicles | 100 | 96.4 | 100 | 96.6 | 100 | 100 | 91.3 | 97.7 | 76.2 | 96.9 | 98.1 | 96.4 | 100 | 0 | 57.1 | 64.7 | 96.2 |
| Single Unit | 0 | 25 | 0 | 25 | 0 | 0 | 2 | 2 | 4 | 22 | 1 | 27 | 0 | 0 | 6 | 6 | 60 |
| % Single Unit | 0 | 3.4 | 0 | 3.3 | 0 | 0 | 8.7 | 2.3 | 19.0 | 2.9 | 1.9 | 3.2 | 0 | 0 | 42.9 | 35.3 | 3.5 |
| TTST | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 3 | 0 | 0 | 0 | 0 | 4 |
| % TTST | 0 | 0.1 | 0 | 0.1 | 0 | 0 | 0 | 0 | 4.8 | 0.3 | 0 | 0.4 | 0 | 0 | 0 | 0 | 0.2 |
| Bicycles on Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Bicycles on Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pedestrians | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Pedestrians | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

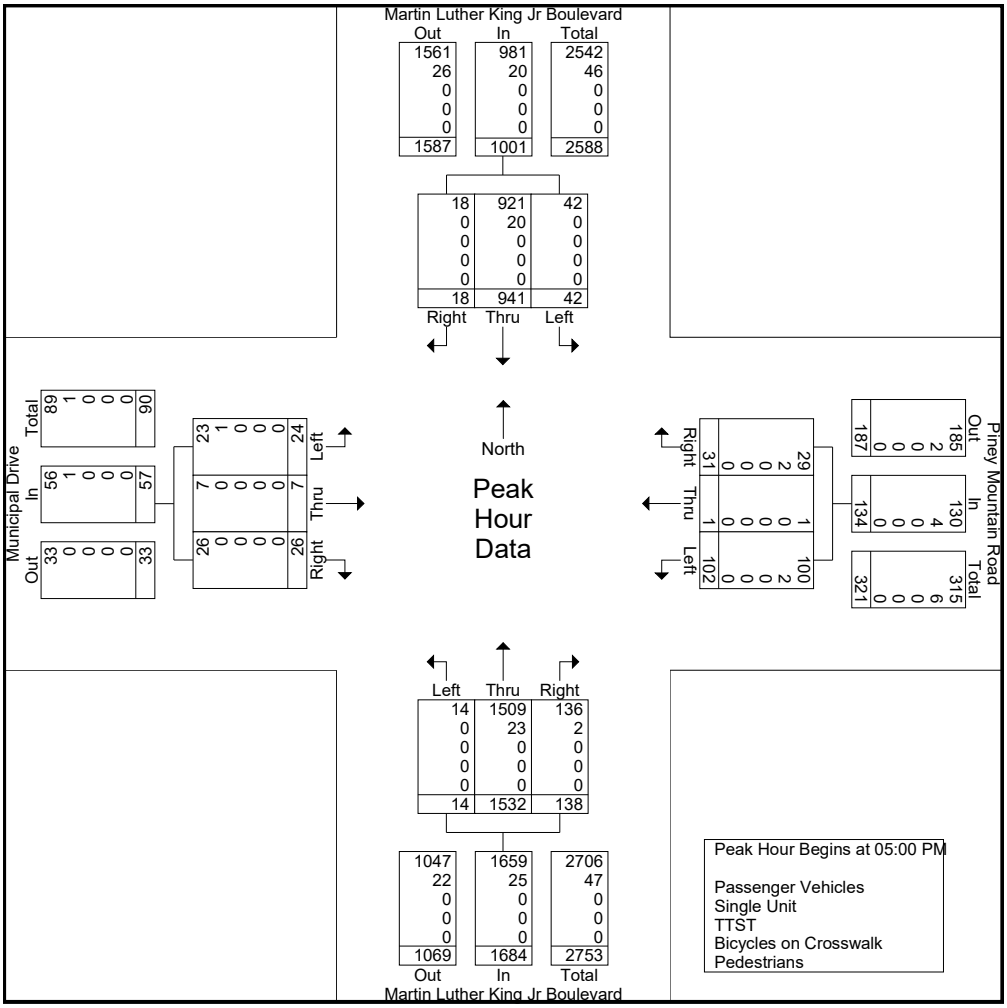


# VHB Engineering NC, P.C.

Venture I
940 Main Campus Drive, Suite 500
Raleigh, NC 27606
*p: 919.829.0328 f: 919.833.0034*


File Name : MLK@PineyMountain
Site Code :
Start Date : 1/28/2020
Page No : 4

| | Martin Luther King Jr Boulevard Southbound | | | | Piney Mountain Road Westbound | | | | Martin Luther King Jr Boulevard Northbound | | | | Municipal Drive Eastbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Int. Total |
| Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 05:00 PM | | | | | | | | | | | | | | | | | |
| 05:00 PM | 10 | 205 | 4 | 219 | 14 | 1 | 7 | 22 | 2 | 379 | 30 | 411 | 8 | 1 | 4 | 13 | 665 |
| 05:15 PM | 5 | 261 | 8 | 274 | 25 | 0 | 9 | 34 | 3 | 407 | 33 | 443 | 1 | 1 | 6 | 8 | 759 |
| 05:30 PM | 9 | 232 | 6 | 247 | 26 | 0 | 6 | 32 | 8 | 403 | 41 | 452 | 15 | 2 | 10 | 27 | 758 |
| 05:45 PM | 18 | 243 | 0 | 261 | 37 | 0 | 9 | 46 | 1 | 343 | 34 | 378 | 0 | 3 | 6 | 9 | 694 |
| Total Volume | 42 | 941 | 18 | 1001 | 102 | 1 | 31 | 134 | 14 | 1532 | 138 | 1684 | 24 | 7 | 26 | 57 | 2876 |
| % App. Total | 4.2 | 94 | 1.8 | | 76.1 | 0.7 | 23.1 | | 0.8 | 91 | 8.2 | | 42.1 | 12.3 | 45.6 | | |
| PHF | .583 | .901 | .563 | .913 | .689 | .250 | .861 | .728 | .438 | .941 | .841 | .931 | .400 | .583 | .650 | .528 | .947 |
| Passenger Vehicles | 42 | 921 | 18 | 981 | 100 | 1 | 29 | 130 | 14 | 1509 | 136 | 1659 | 23 | 7 | 26 | 56 | 2826 |
| % Passenger Vehicles | 100 | 97.9 | 100 | 98.0 | 98.0 | 100 | 93.5 | 97.0 | 100 | 98.5 | 98.6 | 98.5 | 95.8 | 100 | 100 | 98.2 | 98.3 |
| Single Unit | 0 | 20 | 0 | 20 | 2 | 0 | 2 | 4 | 0 | 23 | 2 | 25 | 1 | 0 | 0 | 1 | 50 |
| % Single Unit | 0 | 2.1 | 0 | 2.0 | 2.0 | 0 | 6.5 | 3.0 | 0 | 1.5 | 1.4 | 1.5 | 4.2 | 0 | 0 | 1.8 | 1.7 |
| TTST | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % TTST | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Bicycles on Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Bicycles on Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pedestrians | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Pedestrians | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |



# Appendix B:

# Crash Data

# North Carolina Department of Transportation
# Traffic Engineering Accident Analysis System
# Strip Analysis Report

## Study Criteria Summary

**County:** ORANGE **City:** All and Rural
**Date:** 02/01/2015 **to** 01/31/2020 **Study:** 41000060169
**Location:** N Estes Dr (SR 1750/SR 1780) form 150 ft West of NC 86 (Martin Luther King Jr) to 150 ft East of Caswell Rd

## Report Details

| Acc No | Crash ID | Milepost | Date | Accident Type | Total Damage | Injuries F | Injuries A | Injuries B | Injuries C | Condition R | Condition L | Condition W | Road Ch | Road Ci | Trfc Ctl Dv | Trfc Ctl Op |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | **105338598** | 1.716 | 12/17/2017 09:48 | REAR END, SLOW OR STOP | $ 900 | 0 | 0 | 0 | 1 | 1 | 1 | 2 | 1 | 0 | 3 | 1 |
| **Unit 1 :** 1 | **Alchl/Drgs:** 0 | **Speed:** 0 MPH | **Dir:** E | **Veh Mnvr/Ped Actn:** 1 | **Obj Strk:** | | | | | | | | | | | |
| **Unit 2 :** 1 | **Alchl/Drgs:** 0 | **Speed:** 5 MPH | **Dir:** E | **Veh Mnvr/Ped Actn:** 4 | **Obj Strk:** | | | | | | | | | | | |
| 2 | **105555884** | 1.716 | 07/20/2018 19:47 | REAR END, SLOW OR STOP | $ 1000 | 0 | 0 | 0 | 0 | 1 | 2 | 1 | 1 | 0 | 3 | 1 |
| **Unit 1 :** 1 | **Alchl/Drgs:** 0 | **Speed:** 0 MPH | **Dir:** E | **Veh Mnvr/Ped Actn:** 1 | **Obj Strk:** | | | | | | | | | | | |
| **Unit 2 :** 4 | **Alchl/Drgs:** 0 | **Speed:** 15 MPH | **Dir:** E | **Veh Mnvr/Ped Actn:** 4 | **Obj Strk:** | | | | | | | | | | | |
| 3 | **105963780** | 1.717 | 08/14/2019 06:37 | REAR END, SLOW OR STOP | $ 2100 | 0 | 0 | 0 | 0 | 2 | 1 | 2 | 1 | 0 | 3 | 1 |
| **Unit 1 :** 1 | **Alchl/Drgs:** 0 | **Speed:** 15 MPH | **Dir:** E | **Veh Mnvr/Ped Actn:** 4 | **Obj Strk:** | | | | | | | | | | | |
| **Unit 2 :** 1 | **Alchl/Drgs:** 0 | **Speed:** 0 MPH | **Dir:** E | **Veh Mnvr/Ped Actn:** 1 | **Obj Strk:** | | | | | | | | | | | |
| 4 | **104924595** | 1.724 | 10/24/2016 14:53 | REAR END, SLOW OR STOP | $ 1000 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 3 | 1 |
| **Unit 1 :** 1 | **Alchl/Drgs:** 1 | **Speed:** 0 MPH | **Dir:** E | **Veh Mnvr/Ped Actn:** 11 | **Obj Strk:** | | | | | | | | | | | |
| **Unit 2 :** 4 | **Alchl/Drgs:** 0 | **Speed:** 0 MPH | **Dir:** E | **Veh Mnvr/Ped Actn:** 11 | **Obj Strk:** | | | | | | | | | | | |
| 5 | **104355424** | 1.730 | 04/10/2015 17:54 | LEFT TURN, SAME ROADWAY | $ 3800 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 3 | 0 | 3 | 1 |
| **Unit 1 :** 4 | **Alchl/Drgs:** 0 | **Speed:** 30 MPH | **Dir:** N | **Veh Mnvr/Ped Actn:** 4 | **Obj Strk:** | | | | | | | | | | | |
| **Unit 2 :** 1 | **Alchl/Drgs:** 0 | **Speed:** 30 MPH | **Dir:** S | **Veh Mnvr/Ped Actn:** 8 | **Obj Strk:** | | | | | | | | | | | |
| 6 | **104369919** | 1.730 | 05/04/2015 09:21 | PEDALCYCLIST | $ 100 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 3 | 1 |
| **Unit 1 :** 4 | **Alchl/Drgs:** 0 | **Speed:** 0 MPH | **Dir:** W | **Veh Mnvr/Ped Actn:** 7 | **Obj Strk:** 15 | | | | | | | | | | | |
| **Unit 2 :** 24 | **Alchl/Drgs:** 0 | **Speed:** 0 MPH | **Dir:** | **Veh Mnvr/Ped Actn:** | **Obj Strk:** 15 | | | | | | | | | | | |
| 7 | **104490927** | 1.730 | 09/08/2015 16:06 | LEFT TURN, SAME ROADWAY | $ 12000 | 0 | 0 | 0 | 2 | 1 | 1 | 1 | 1 | 0 | 3 | 1 |
| **Unit 1 :** 2 | **Alchl/Drgs:** 0 | **Speed:** 25 MPH | **Dir:** N | **Veh Mnvr/Ped Actn:** 4 | **Obj Strk:** | | | | | | | | | | | |
| **Unit 2 :** 1 | **Alchl/Drgs:** 0 | **Speed:** 25 MPH | **Dir:** SE | **Veh Mnvr/Ped Actn:** 8 | **Obj Strk:** | | | | | | | | | | | |
| 8 | **104582812** | 1.730 | 11/22/2015 01:42 | ANGLE | $ 12000 | 0 | 0 | 0 | 0 | 1 | 4 | 1 | 1 | 0 | 3 | 1 |
| **Unit 1 :** 4 | **Alchl/Drgs:** 0 | **Speed:** 40 MPH | **Dir:** S | **Veh Mnvr/Ped Actn:** 4 | **Obj Strk:** | | | | | | | | | | | |



**All data presented in this report comes explicitly from the Traffic Engineering Accident Analysis System based upon va criteria provided by the report's creator. The onus is strictly upon the user of this report to exercise due diligence in in and further representing this data.**

| Acc No | Crash ID | Milepost | Date | Accident Type | Total Damage | Injuries F | A | B | C | Condition R | L | W | Road Ch | Ci | Trfc Ctl Dv | Op |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Unit** | **2 :** 5 | **Alchl/Drgs:** | 0 | **Speed:** 10 MPH | **Dir:** E | **Veh Mnvr/Ped Actn:** | | | | 8 | | | **Obj Strk:** | | | |
| 9 | **104628361** | 1.730 | 01/18/2016 15:54 | LEFT TURN, SAME ROADWAY | $ 10000 | 0 | 0 | 0 | 2 | 1 | 1 | 1 | 1 | 0 | 3 | 1 |
| **Unit** | **1 :** 5 | **Alchl/Drgs:** | 0 | **Speed:** 15 MPH | **Dir:** E | **Veh Mnvr/Ped Actn:** | | | | 8 | | | **Obj Strk:** | | | |
| **Unit** | **2 :** 1 | **Alchl/Drgs:** | 0 | **Speed:** 40 MPH | **Dir:** N | **Veh Mnvr/Ped Actn:** | | | | 4 | | | **Obj Strk:** | | | |
| 10 | **104667241** | 1.730 | 02/19/2016 19:05 | LEFT TURN, SAME ROADWAY | $ 10000 | 0 | 0 | 0 | 1 | 1 | 4 | 1 | 1 | 0 | 3 | 1 |
| **Unit** | **1 :** 1 | **Alchl/Drgs:** | 0 | **Speed:** 20 MPH | **Dir:** S | **Veh Mnvr/Ped Actn:** | | | | 8 | | | **Obj Strk:** | | | |
| **Unit** | **2 :** 5 | **Alchl/Drgs:** | 0 | **Speed:** 45 MPH | **Dir:** N | **Veh Mnvr/Ped Actn:** | | | | 4 | | | **Obj Strk:** | | | |
| 11 | **104687062** | 1.730 | 03/08/2016 18:00 | LEFT TURN, SAME ROADWAY | $ 13000 | 0 | 0 | 0 | 1 | 1 | 2 | 1 | 1 | 0 | 3 | 1 |
| **Unit** | **1 :** 2 | **Alchl/Drgs:** | 0 | **Speed:** 35 MPH | **Dir:** N | **Veh Mnvr/Ped Actn:** | | | | 4 | | | **Obj Strk:** | | | |
| **Unit** | **2 :** 1 | **Alchl/Drgs:** | 0 | **Speed:** 10 MPH | **Dir:** SE | **Veh Mnvr/Ped Actn:** | | | | 8 | | | **Obj Strk:** | | | |
| 12 | **104811851** | 1.730 | 07/09/2016 18:40 | HEAD ON | $ 8000 | 0 | 0 | 2 | 0 | 1 | 1 | 1 | 1 | 0 | 3 | 1 |
| **Unit** | **1 :** 4 | **Alchl/Drgs:** | 0 | **Speed:** 35 MPH | **Dir:** N | **Veh Mnvr/Ped Actn:** | | | | 4 | | | **Obj Strk:** | | | |
| **Unit** | **2 :** 1 | **Alchl/Drgs:** | 0 | **Speed:** 10 MPH | **Dir:** S | **Veh Mnvr/Ped Actn:** | | | | 8 | | | **Obj Strk:** | | | |
| 13 | **105064389** | 1.730 | 04/03/2017 20:46 | LEFT TURN, SAME ROADWAY | $ 6700 | 0 | 0 | 0 | 0 | 2 | 4 | 2 | 3 | 0 | 3 | 1 |
| **Unit** | **1 :** 4 | **Alchl/Drgs:** | 0 | **Speed:** 30 MPH | **Dir:** W | **Veh Mnvr/Ped Actn:** | | | | 4 | | | **Obj Strk:** | | | |
| **Unit** | **2 :** 1 | **Alchl/Drgs:** | 0 | **Speed:** 30 MPH | **Dir:** E | **Veh Mnvr/Ped Actn:** | | | | 8 | | | **Obj Strk:** | | | |
| **Unit** | **3 :** 4 | **Alchl/Drgs:** | 0 | **Speed:** 35 MPH | **Dir:** S | **Veh Mnvr/Ped Actn:** | | | | 1 | | | **Obj Strk:** | | | |
| 14 | **105061198** | 1.730 | 04/03/2017 21:05 | REAR END, TURN | $ 1700 | 0 | 0 | 0 | 0 | 2 | 4 | 2 | 1 | 0 | 3 | 1 |
| **Unit** | **1 :** 4 | **Alchl/Drgs:** | 0 | **Speed:** 5 MPH | **Dir:** S | **Veh Mnvr/Ped Actn:** | | | | 8 | | | **Obj Strk:** | | | |
| **Unit** | **2 :** 1 | **Alchl/Drgs:** | 0 | **Speed:** 5 MPH | **Dir:** S | **Veh Mnvr/Ped Actn:** | | | | 8 | | | **Obj Strk:** | | | |
| 15 | **105070133** | 1.730 | 04/04/2017 20:29 | LEFT TURN, DIFFERENT ROADWAYS | $ 1700 | 0 | 0 | 0 | 0 | 1 | 4 | 1 | 1 | 0 | 3 | 1 |
| **Unit** | **1 :** 1 | **Alchl/Drgs:** | 0 | **Speed:** 15 MPH | **Dir:** E | **Veh Mnvr/Ped Actn:** | | | | 8 | | | **Obj Strk:** | | | |
| **Unit** | **2 :** 1 | **Alchl/Drgs:** | 0 | **Speed:** 35 MPH | **Dir:** N | **Veh Mnvr/Ped Actn:** | | | | 4 | | | **Obj Strk:** | | | |
| 16 | **105328703** | 1.730 | 12/10/2017 18:01 | ANGLE | $ 1500 | 0 | 0 | 0 | 0 | 1 | 4 | 1 | 1 | 0 | 3 | 1 |
| **Unit** | **1 :** 1 | **Alchl/Drgs:** | 0 | **Speed:** 10 MPH | **Dir:** E | **Veh Mnvr/Ped Actn:** | | | | 7 | | | **Obj Strk:** | | | |
| **Unit** | **2 :** 1 | **Alchl/Drgs:** | 0 | **Speed:** 30 MPH | **Dir:** S | **Veh Mnvr/Ped Actn:** | | | | 4 | | | **Obj Strk:** | | | |
| 17 | **105748689** | 1.730 | 12/19/2017 21:14 | REAR END, SLOW OR STOP | $ 2250 | 0 | 0 | 0 | 0 | 1 | 4 | 1 | 1 | 0 | 12 | 3 |
| **Unit** | **1 :** 1 | **Alchl/Drgs:** | 0 | **Speed:** 0 MPH | **Dir:** W | **Veh Mnvr/Ped Actn:** | | | | 1 | | | **Obj Strk:** | | | |



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and further representing this data.

# North Carolina Department of Transportation
## Traffic Engineering Accident Analysis System
## Strip Analysis Report

| Acc No | Crash ID | Milepost | Date | Accident Type | Total Damage | Injuries F | Injuries A | Injuries B | Injuries C | Condition R | Condition L | Condition W | Road Ch | Road Ci | Trfc Ctl Dv | Trfc Ctl Op |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Unit** | **2 :** 1 | **Alchl/Drgs:** | 0 | **Speed:** 10 MPH | **Dir:** W | **Veh Mnvr/Ped Actn:** | | | | 4 | | **Obj Strk:** | | | | |
| 18 | **105472750** | 1.730 | 05/01/2018 20:35 | LEFT TURN, DIFFERENT ROADWAYS | $ 3500 | 0 | 0 | 0 | 0 | 1 | 4 | 1 | 1 | 0 | 3 | 1 |
| **Unit** | **1 :** 4 | **Alchl/Drgs:** | 0 | **Speed:** 15 MPH | **Dir:** W | **Veh Mnvr/Ped Actn:** | | | | 8 | | **Obj Strk:** | | | | |
| **Unit** | **2 :** 1 | **Alchl/Drgs:** | 0 | **Speed:** 30 MPH | **Dir:** E | **Veh Mnvr/Ped Actn:** | | | | 4 | | **Obj Strk:** | | | | |
| 19 | **105578758** | 1.730 | 08/15/2018 16:08 | RIGHT TURN, DIFFERENT ROADWAYS | $ 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 3 | 1 |
| **Unit** | **1 :** 1 | **Alchl/Drgs:** | 0 | **Speed:** 5 MPH | **Dir:** W | **Veh Mnvr/Ped Actn:** | | | | 12 | | **Obj Strk:** | | | | |
| **Unit** | **2 :** 23 | **Alchl/Drgs:** | 0 | **Speed:** 0 MPH | **Dir:** | **Veh Mnvr/Ped Actn:** | | | | | | **Obj Strk:** | | | | |
| 20 | **105578503** | 1.730 | 08/15/2018 16:20 | REAR END, TURN | $ 3150 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 1 | 0 | 3 | 1 |
| **Unit** | **1 :** 1 | **Alchl/Drgs:** | 0 | **Speed:** 10 MPH | **Dir:** E | **Veh Mnvr/Ped Actn:** | | | | 8 | | **Obj Strk:** | | | | |
| **Unit** | **2 :** 1 | **Alchl/Drgs:** | 0 | **Speed:** 10 MPH | **Dir:** E | **Veh Mnvr/Ped Actn:** | | | | 8 | | **Obj Strk:** | | | | |
| 21 | **105769948** | 1.730 | 02/06/2019 21:42 | HEAD ON | $ 8000 | 0 | 0 | 0 | 0 | 1 | 4 | 1 | 1 | 0 | 3 | 1 |
| **Unit** | **1 :** 1 | **Alchl/Drgs:** | 0 | **Speed:** 25 MPH | **Dir:** W | **Veh Mnvr/Ped Actn:** | | | | 8 | | **Obj Strk:** | | | | |
| **Unit** | **2 :** 1 | **Alchl/Drgs:** | 0 | **Speed:** 35 MPH | **Dir:** E | **Veh Mnvr/Ped Actn:** | | | | 4 | | **Obj Strk:** | | | | |
| 22 | **105924178** | 1.730 | 06/19/2019 11:21 | ANGLE | $ 13500 | 0 | 0 | 2 | 0 | 1 | 1 | 2 | 1 | 0 | 3 | 1 |
| **Unit** | **1 :** 5 | **Alchl/Drgs:** | 0 | **Speed:** 35 MPH | **Dir:** S | **Veh Mnvr/Ped Actn:** | | | | 4 | | **Obj Strk:** | | | | |
| **Unit** | **2 :** 1 | **Alchl/Drgs:** | 0 | **Speed:** 10 MPH | **Dir:** NW | **Veh Mnvr/Ped Actn:** | | | | 8 | | **Obj Strk:** | | | | |
| 23 | **105947413** | 1.730 | 07/20/2019 21:29 | LEFT TURN, SAME ROADWAY | $ 6000 | 0 | 0 | 0 | 0 | 1 | 4 | 1 | 1 | 0 | 3 | 1 |
| **Unit** | **1 :** 4 | **Alchl/Drgs:** | 0 | **Speed:** 10 MPH | **Dir:** SW | **Veh Mnvr/Ped Actn:** | | | | 8 | | **Obj Strk:** | | | | |
| **Unit** | **2 :** 10 | **Alchl/Drgs:** | 0 | **Speed:** 25 MPH | **Dir:** E | **Veh Mnvr/Ped Actn:** | | | | 4 | | **Obj Strk:** | | | | |
| 24 | **105956966** | 1.730 | 08/01/2019 10:44 | ANGLE | $ 3300 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 3 | 1 |
| **Unit** | **1 :** 1 | **Alchl/Drgs:** | 0 | **Speed:** 30 MPH | **Dir:** S | **Veh Mnvr/Ped Actn:** | | | | 4 | | **Obj Strk:** | | | | |
| **Unit** | **2 :** 1 | **Alchl/Drgs:** | 0 | **Speed:** 25 MPH | **Dir:** E | **Veh Mnvr/Ped Actn:** | | | | 4 | | **Obj Strk:** | | | | |
| 25 | **105991720** | 1.730 | 08/30/2019 16:33 | LEFT TURN, SAME ROADWAY | $ 30000 | 0 | 0 | 1 | 2 | 1 | 1 | 1 | 1 | 0 | 3 | 1 |
| **Unit** | **1 :** 4 | **Alchl/Drgs:** | 0 | **Speed:** 5 MPH | **Dir:** N | **Veh Mnvr/Ped Actn:** | | | | 8 | | **Obj Strk:** | | | | |
| **Unit** | **2 :** 1 | **Alchl/Drgs:** | 0 | **Speed:** 35 MPH | **Dir:** S | **Veh Mnvr/Ped Actn:** | | | | 4 | | **Obj Strk:** | | | | |
| 26 | **104929528** | 1.732 | 11/06/2016 01:15 | RAN OFF ROAD - RIGHT | $ 3000 | 0 | 0 | 0 | 0 | 1 | 4 | 1 | 3 | 0 | 0 | |
| **Unit** | **1 :** 1 | **Alchl/Drgs:** | 1 | **Speed:** 30 MPH | **Dir:** E | **Veh Mnvr/Ped Actn:** | | | | 8 | | **Obj Strk:** | | | | |



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# North Carolina Department of Transportation
## Traffic Engineering Accident Analysis System
## Strip Analysis Report

| Acc No | Crash ID | Milepost | Date | Accident Type | Total Damage | Injuries F | A | B | C | Condition R | L | W | Road Ch | Ci | Trfc Ctl Dv | Op |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 27 | **105498712** | 1.732 | 05/26/2018 21:34 | SIDESWIPE, SAME DIRECTION | $ 4000 | 0 | 0 | 0 | 1 | 1 | 4 | 2 | 1 | 0 | 3 | 1 |
| **Unit** | **1 :** 1 | **Alchl/Drgs:** | 0 | **Speed:** 5 MPH | **Dir:** W | **Veh Mnvr/Ped Actn:** | | | | 5 | | | **Obj Strk:** | | | |
| **Unit** | **2 :** 1 | **Alchl/Drgs:** | 0 | **Speed:** 0 MPH | **Dir:** W | **Veh Mnvr/Ped Actn:** | | | | 1 | | | **Obj Strk:** | | | |
| 28 | **105645166** | 1.740 | 10/13/2018 19:15 | REAR END, SLOW OR STOP | $ 1250 | 0 | 0 | 0 | 0 | 1 | 4 | 1 | 1 | 0 | 3 | 1 |
| **Unit** | **1 :** 1 | **Alchl/Drgs:** | 0 | **Speed:** 10 MPH | **Dir:** E | **Veh Mnvr/Ped Actn:** | | | | 4 | | | **Obj Strk:** | | | |
| **Unit** | **2 :** 4 | **Alchl/Drgs:** | 0 | **Speed:** 0 MPH | **Dir:** E | **Veh Mnvr/Ped Actn:** | | | | 1 | | | **Obj Strk:** | | | |
| 29 | **106013175** | 1.746 | 09/26/2019 17:33 | REAR END, SLOW OR STOP | $ 2000 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 3 | 1 |
| **Unit** | **1 :** 1 | **Alchl/Drgs:** | 0 | **Speed:** 10 MPH | **Dir:** W | **Veh Mnvr/Ped Actn:** | | | | 12 | | | **Obj Strk:** | | | |
| **Unit** | **2 :** 1 | **Alchl/Drgs:** | 0 | **Speed:** 0 MPH | **Dir:** W | **Veh Mnvr/Ped Actn:** | | | | 1 | | | **Obj Strk:** | | | |
| 30 | **105792928** | 1.749 | 02/22/2019 14:49 | REAR END, SLOW OR STOP | $ 3550 | 0 | 0 | 0 | 2 | 2 | 1 | 3 | 1 | 0 | 3 | 1 |
| **Unit** | **1 :** 4 | **Alchl/Drgs:** | 0 | **Speed:** 0 MPH | **Dir:** W | **Veh Mnvr/Ped Actn:** | | | | 1 | | | **Obj Strk:** | | | |
| **Unit** | **2 :** 2 | **Alchl/Drgs:** | 0 | **Speed:** 20 MPH | **Dir:** W | **Veh Mnvr/Ped Actn:** | | | | 4 | | | **Obj Strk:** | | | |
| 31 | **104975623** | 1.764 | 12/06/2016 16:56 | SIDESWIPE, SAME DIRECTION | $ 3000 | 0 | 0 | 0 | 0 | 2 | 2 | 3 | 3 | 0 | 3 | 1 |
| **Unit** | **1 :** 1 | **Alchl/Drgs:** | 0 | **Speed:** 35 MPH | **Dir:** W | **Veh Mnvr/Ped Actn:** | | | | 4 | | | **Obj Strk:** | | | |
| **Unit** | **2 :** 1 | **Alchl/Drgs:** | 0 | **Speed:** 35 MPH | **Dir:** W | **Veh Mnvr/Ped Actn:** | | | | 5 | | | **Obj Strk:** | | | |
| 32 | **104355632** | 1.770 | 03/07/2015 19:22 | REAR END, SLOW OR STOP | $ 3750 | 0 | 0 | 0 | 0 | 1 | 4 | 1 | 1 | 0 | 3 | 1 |
| **Unit** | **1 :** 1 | **Alchl/Drgs:** | 0 | **Speed:** 0 MPH | **Dir:** W | **Veh Mnvr/Ped Actn:** | | | | 1 | | | **Obj Strk:** | | | |
| **Unit** | **2 :** 1 | **Alchl/Drgs:** | 0 | **Speed:** 8 MPH | **Dir:** W | **Veh Mnvr/Ped Actn:** | | | | 11 | | | **Obj Strk:** | | | |
| 33 | **106032019** | 1.770 | 10/01/2019 16:23 | SIDESWIPE, SAME DIRECTION | $ 4000 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | |
| **Unit** | **1 :** 1 | **Alchl/Drgs:** | 0 | **Speed:** 15 MPH | **Dir:** W | **Veh Mnvr/Ped Actn:** | | | | 5 | | | **Obj Strk:** | | | |
| **Unit** | **2 :** 1 | **Alchl/Drgs:** | 0 | **Speed:** 15 MPH | **Dir:** W | **Veh Mnvr/Ped Actn:** | | | | 5 | | | **Obj Strk:** | | | |
| 34 | **104459774** | 1.780 | 08/11/2015 18:51 | RIGHT TURN, DIFFERENT ROADWAYS | $ 1300 | 0 | 0 | 0 | 0 | 2 | 1 | 3 | 1 | 0 | 13 | 2 |
| **Unit** | **1 :** 4 | **Alchl/Drgs:** | 0 | **Speed:** 35 MPH | **Dir:** E | **Veh Mnvr/Ped Actn:** | | | | 4 | | | **Obj Strk:** | | | |
| **Unit** | **2 :** 1 | **Alchl/Drgs:** | 0 | **Speed:** 10 MPH | **Dir:** E | **Veh Mnvr/Ped Actn:** | | | | 7 | | | **Obj Strk:** | | | |
| 35 | **105987037** | 1.780 | 08/29/2019 08:09 | REAR END, SLOW OR STOP | $ 14200 | 0 | 0 | 0 | 2 | 1 | 1 | 1 | 3 | 0 | 13 | 1 |
| **Unit** | **1 :** 1 | **Alchl/Drgs:** | 0 | **Speed:** 0 MPH | **Dir:** E | **Veh Mnvr/Ped Actn:** | | | | 1 | | | **Obj Strk:** | | | |
| **Unit** | **2 :** 3 | **Alchl/Drgs:** | 0 | **Speed:** 0 MPH | **Dir:** E | **Veh Mnvr/Ped Actn:** | | | | 1 | | | **Obj Strk:** | | | |
| **Unit** | **3 :** 5 | **Alchl/Drgs:** | 0 | **Speed:** 35 MPH | **Dir:** E | **Veh Mnvr/Ped Actn:** | | | | 4 | | | **Obj Strk:** | | | |



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# North Carolina Department of Transportation
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## Strip Analysis Report

| Acc No | Crash ID | Milepost | Date | Accident Type | Total Damage | Injuries F | Injuries A | Injuries B | Injuries C | Condition R | Condition L | Condition W | Road Ch | Road Ci | Trfc Ctl Dv | Trfc Ctl Op |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 36 | **106042065** | 1.780 | 10/21/2019 17:55 | REAR END, SLOW OR STOP | $ 2500 | 0 | 0 | 0 | 0 | 1 | 2 | 1 | 1 | 0 | 3 | 1 |
| **Unit** | **1 :** 1 | **Alchl/Drgs:** | 0 | **Speed:** 0 MPH | **Dir:** W | **Veh Mnvr/Ped Actn:** | | | | 1 | | **Obj Strk:** | | | | |
| **Unit** | **2 :** 1 | **Alchl/Drgs:** | 0 | **Speed:** 20 MPH | **Dir:** W | **Veh Mnvr/Ped Actn:** | | | | 4 | | **Obj Strk:** | | | | |
| 37 | **105339137** | 1.782 | 12/14/2017 17:24 | REAR END, SLOW OR STOP | $ 6000 | 0 | 0 | 0 | 1 | 1 | 2 | 1 | 1 | 0 | 3 | 1 |
| **Unit** | **1 :** 4 | **Alchl/Drgs:** | 0 | **Speed:** 0 MPH | **Dir:** W | **Veh Mnvr/Ped Actn:** | | | | 1 | | **Obj Strk:** | | | | |
| **Unit** | **2 :** 4 | **Alchl/Drgs:** | 0 | **Speed:** 30 MPH | **Dir:** W | **Veh Mnvr/Ped Actn:** | | | | 11 | | **Obj Strk:** | | | | |
| 38 | **104573031** | 1.790 | 11/09/2015 13:28 | RAN OFF ROAD - LEFT | $ 1500 | 0 | 0 | 0 | 0 | 2 | 1 | 3 | 3 | 0 | | |
| **Unit** | **1 :** 1 | **Alchl/Drgs:** | 0 | **Speed:** 10 MPH | **Dir:** S | **Veh Mnvr/Ped Actn:** | | | | 4 | | **Obj Strk:** | | | 56 | |
| 39 | **104628690** | 1.820 | 01/18/2016 19:19 | RAN OFF ROAD - RIGHT | $ 8000 | 0 | 0 | 0 | 0 | 1 | 5 | 1 | 1 | 0 | 0 | |
| **Unit** | **1 :** 2 | **Alchl/Drgs:** | 0 | **Speed:** 35 MPH | **Dir:** E | **Veh Mnvr/Ped Actn:** | | | | 4 | | **Obj Strk:** | | | 33 | |
| 40 | **105011787** | 1.895 | 02/11/2017 10:19 | RAN OFF ROAD - RIGHT | $ 1500 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 3 | 0 | | |
| **Unit** | **1 :** 4 | **Alchl/Drgs:** | 0 | **Speed:** 35 MPH | **Dir:** W | **Veh Mnvr/Ped Actn:** | | | | 4 | | **Obj Strk:** | | | 33 | |
| 41 | **104918134** | 1.930 | 10/25/2016 17:30 | REAR END, SLOW OR STOP | $ 2900 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 3 | 0 | 3 | 1 |
| **Unit** | **1 :** 1 | **Alchl/Drgs:** | 0 | **Speed:** 20 MPH | **Dir:** W | **Veh Mnvr/Ped Actn:** | | | | 1 | | **Obj Strk:** | | | | |
| **Unit** | **2 :** 1 | **Alchl/Drgs:** | 0 | **Speed:** 20 MPH | **Dir:** W | **Veh Mnvr/Ped Actn:** | | | | 1 | | **Obj Strk:** | | | | |
| **Unit** | **3 :** 1 | **Alchl/Drgs:** | 0 | **Speed:** 20 MPH | **Dir:** W | **Veh Mnvr/Ped Actn:** | | | | 4 | | **Obj Strk:** | | | | |
| 42 | **105909282** | 1.930 | 06/09/2019 12:28 | REAR END, SLOW OR STOP | $ 5500 | 0 | 0 | 1 | 1 | 1 | 1 | 2 | 3 | 0 | 0 | |
| **Unit** | **1 :** 1 | **Alchl/Drgs:** | 0 | **Speed:** 35 MPH | **Dir:** E | **Veh Mnvr/Ped Actn:** | | | | 4 | | **Obj Strk:** | | | | |
| **Unit** | **2 :** 4 | **Alchl/Drgs:** | 0 | **Speed:** 30 MPH | **Dir:** E | **Veh Mnvr/Ped Actn:** | | | | 11 | | **Obj Strk:** | | | | |
| 43 | **104775963** | 1.948 | 06/10/2016 10:39 | HEAD ON | $ 17000 | 0 | 0 | 2 | 0 | 1 | 1 | 1 | 3 | 0 | 0 | 2 |
| **Unit** | **1 :** 4 | **Alchl/Drgs:** | 0 | **Speed:** 35 MPH | **Dir:** E | **Veh Mnvr/Ped Actn:** | | | | 4 | | **Obj Strk:** | | | | |
| **Unit** | **2 :** 4 | **Alchl/Drgs:** | 0 | **Speed:** 30 MPH | **Dir:** W | **Veh Mnvr/Ped Actn:** | | | | 4 | | **Obj Strk:** | | | | |
| 44 | **104929539** | 1.988 | 11/04/2016 13:55 | RAN OFF ROAD - LEFT | $ 2600 | 0 | 0 | 0 | 2 | 1 | 1 | 1 | 1 | 0 | 13 | 1 |
| **Unit** | **1 :** 1 | **Alchl/Drgs:** | 0 | **Speed:** 30 MPH | **Dir:** W | **Veh Mnvr/Ped Actn:** | | | | 11 | | **Obj Strk:** | | | | |
| **Unit** | **2 :** 1 | **Alchl/Drgs:** | 0 | **Speed:** 0 MPH | **Dir:** W | **Veh Mnvr/Ped Actn:** | | | | 11 | | **Obj Strk:** | | | | |
| 45 | **105017900** | 1.995 | 02/06/2017 16:18 | ANIMAL | $ 4000 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | |
| **Unit** | **1 :** 1 | **Alchl/Drgs:** | 0 | **Speed:** 35 MPH | **Dir:** W | **Veh Mnvr/Ped Actn:** | | | | 4 | | **Obj Strk:** | | | 17 | |



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| Acc No | Crash ID | Milepost | Date | Accident Type | Total Damage | Injuries F | A | B | C | Condition R | L | W | Road Ch | Ci | Trfc Ctl Dv | Op |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 46 | **104355660** | 2.030 | 03/17/2015 17:00 | RAN OFF ROAD - RIGHT | $ 2000 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 3 | 0 | 1 | 1 |
| **Unit** | **1 :** 1 | **Alchl/Drgs:** | 0 | **Speed:** 25 MPH | **Dir:** E | **Veh Mnvr/Ped Actn:** | | | | 4 | | | **Obj Strk:** | | 37 | |
| **Unit** | **2 :** 5 | **Alchl/Drgs:** | 0 | **Speed:** 10 MPH | **Dir:** E | **Veh Mnvr/Ped Actn:** | | | | 8 | | | **Obj Strk:** | | | |
| 47 | **104516501** | 2.030 | 10/07/2015 17:51 | REAR END, SLOW OR STOP | $ 3200 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | | |
| **Unit** | **1 :** 4 | **Alchl/Drgs:** | 0 | **Speed:** 20 MPH | **Dir:** W | **Veh Mnvr/Ped Actn:** | | | | 11 | | | **Obj Strk:** | | | |
| **Unit** | **2 :** 5 | **Alchl/Drgs:** | 0 | **Speed:** 5 MPH | **Dir:** W | **Veh Mnvr/Ped Actn:** | | | | 11 | | | **Obj Strk:** | | | |
| **Unit** | **3 :** 4 | **Alchl/Drgs:** | 0 | **Speed:** 3 MPH | **Dir:** W | **Veh Mnvr/Ped Actn:** | | | | 11 | | | **Obj Strk:** | | | |
| 48 | **105764719** | 2.030 | 02/01/2019 18:56 | REAR END, SLOW OR STOP | $ 6800 | 0 | 0 | 0 | 1 | 1 | 4 | 1 | 1 | 0 | 0 | 2 |
| **Unit** | **1 :** 1 | **Alchl/Drgs:** | 0 | **Speed:** 15 MPH | **Dir:** N | **Veh Mnvr/Ped Actn:** | | | | 4 | | | **Obj Strk:** | | | |
| **Unit** | **2 :** 5 | **Alchl/Drgs:** | 0 | **Speed:** 10 MPH | **Dir:** N | **Veh Mnvr/Ped Actn:** | | | | 11 | | | **Obj Strk:** | | | |
| **Unit** | **3 :** 4 | **Alchl/Drgs:** | 0 | **Speed:** 0 MPH | **Dir:** N | **Veh Mnvr/Ped Actn:** | | | | 1 | | | **Obj Strk:** | | | |
| 49 | **105687195** | 2.105 | 11/14/2018 08:03 | REAR END, SLOW OR STOP | $ 3000 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 1 | 0 | 0 | |
| **Unit** | **1 :** 1 | **Alchl/Drgs:** | 0 | **Speed:** 20 MPH | **Dir:** S | **Veh Mnvr/Ped Actn:** | | | | 1 | | | **Obj Strk:** | | | |
| **Unit** | **2 :** 1 | **Alchl/Drgs:** | 0 | **Speed:** 20 MPH | **Dir:** S | **Veh Mnvr/Ped Actn:** | | | | 11 | | | **Obj Strk:** | | | |
| **Unit** | **3 :** 4 | **Alchl/Drgs:** | 0 | **Speed:** 20 MPH | **Dir:** S | **Veh Mnvr/Ped Actn:** | | | | 11 | | | **Obj Strk:** | | | |
| 50 | **105105627** | 2.130 | 05/12/2017 14:59 | ANIMAL | $ 1500 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | | 2 |
| **Unit** | **1 :** 1 | **Alchl/Drgs:** | 0 | **Speed:** 30 MPH | **Dir:** W | **Veh Mnvr/Ped Actn:** | | | | 4 | | | **Obj Strk:** | | 17 | |
| 51 | **104364242** | 2.160 | 04/29/2015 17:27 | REAR END, SLOW OR STOP | $ 2000 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 3 | 0 | 0 | 2 |
| **Unit** | **1 :** 1 | **Alchl/Drgs:** | 0 | **Speed:** 30 MPH | **Dir:** W | **Veh Mnvr/Ped Actn:** | | | | 1 | | | **Obj Strk:** | | | |
| **Unit** | **2 :** 1 | **Alchl/Drgs:** | 0 | **Speed:** 30 MPH | **Dir:** N | **Veh Mnvr/Ped Actn:** | | | | 4 | | | **Obj Strk:** | | | |
| 52 | **104927902** | 2.160 | 10/31/2016 17:20 | REAR END, SLOW OR STOP | $ 3500 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 2 |
| **Unit** | **1 :** 4 | **Alchl/Drgs:** | 0 | **Speed:** 30 MPH | **Dir:** W | **Veh Mnvr/Ped Actn:** | | | | 1 | | | **Obj Strk:** | | | |
| **Unit** | **2 :** 1 | **Alchl/Drgs:** | 0 | **Speed:** 30 MPH | **Dir:** W | **Veh Mnvr/Ped Actn:** | | | | 4 | | | **Obj Strk:** | | | |
| 53 | **105109124** | 2.180 | 05/16/2017 15:14 | REAR END, SLOW OR STOP | $ 3000 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | | 2 |
| **Unit** | **1 :** 4 | **Alchl/Drgs:** | 0 | **Speed:** 25 MPH | **Dir:** E | **Veh Mnvr/Ped Actn:** | | | | 4 | | | **Obj Strk:** | | | |
| **Unit** | **2 :** 4 | **Alchl/Drgs:** | 0 | **Speed:** 0 MPH | **Dir:** E | **Veh Mnvr/Ped Actn:** | | | | 1 | | | **Obj Strk:** | | | |
| 54 | **106152992** | 2.201 | 01/02/2020 17:14 | REAR END, SLOW OR STOP | $ 4000 | 0 | 0 | 0 | 0 | 2 | 2 | 1 | 1 | 0 | 0 | |
| **Unit** | **1 :** 1 | **Alchl/Drgs:** | 0 | **Speed:** 30 MPH | **Dir:** W | **Veh Mnvr/Ped Actn:** | | | | 4 | | | **Obj Strk:** | | | |



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## Traffic Engineering Accident Analysis System
## Strip Analysis Report

| Acc No | Crash ID | Milepost | Date | Accident Type | Total Damage | Injuries F | Injuries A | Injuries B | Injuries C | Condition R | Condition L | Condition W | Road Ch | Road Ci | Trfc Ctl Dv | Trfc Ctl Op |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Unit** | **2 :** 1 | **Alchl/Drgs:** | 0 | **Speed:** 0 MPH | **Dir:** W | **Veh Mnvr/Ped Actn:** | | | | 1 | | **Obj Strk:** | | | | |
| 55 | **105687252** | 2.207 | 11/09/2018 19:05 | ANIMAL | $ 3000 | 0 | 0 | 1 | 0 | 2 | 4 | 3 | 1 | 0 | 0 | |
| **Unit** | **1 :** 32 | **Alchl/Drgs:** | 7 | **Speed:** 35 MPH | **Dir:** W | **Veh Mnvr/Ped Actn:** | | | | 4 | | **Obj Strk:** | | | 17 | |
| **Unit** | **2 :** 1 | **Alchl/Drgs:** | 0 | **Speed:** 35 MPH | **Dir:** E | **Veh Mnvr/Ped Actn:** | | | | 4 | | **Obj Strk:** | | | 17 | |

**Legend for Report Details:**

Acc No - Accident Number
Injuries: F - Fatal, A - Class A, B - Class B, C - Class C
Condition: R - Road Surface, L - Ambient Light, W - Weather
Rd Ch - Road Character
Rd Ci - Roadway Contributing Circumstances
Trfc Ctl - Traffic Control: Dv - Device, Op - Operating
Alchl/Drgs - Alcohol Drugs Suspected
Veh Mnvr/Ped Actn - Vehicle Maneuver/Pedestrian Action
Obj Strk - Object Struck



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# Summary Statistics

## High Level Crash Summary

| Crash Type | Number of Crashes | Percent of Total |
|---|---|---|
| Total Crashes | 55 | 100.00 |
| Fatal Crashes | 0 | 0.00 |
| Non-Fatal Injury Crashes | 22 | 40.00 |
| Total Injury Crashes | 22 | 40.00 |
| Property Damage Only Crashes | 33 | 60.00 |
| Night Crashes | 17 | 30.91 |
| Wet Crashes | 9 | 16.36 |
| Alcohol/Drugs Involvement Crashes | 2 | 3.64 |

## Crash Severity Summary

| Crash Type | Number of Crashes | Percent of Total |
|---|---|---|
| Total Crashes | 55 | 100.00 |
| Fatal Crashes | 0 | 0.00 |
| Class A Crashes | 0 | 0.00 |
| Class B Crashes | 6 | 10.91 |
| Class C Crashes | 16 | 29.09 |
| Property Damage Only Crashes | 33 | 60.00 |

## Vehicle Exposure Statistics

**Annual ADT = 15500**

**Total Length = 0.514 (Miles)** **0.827 (Kilometers)**

**Total Vehicle Exposure = 14.55 (MVMT)** **23.41 (MVKMT)**

| Crash Rate | Crashes Per 100 Million Vehicle Miles | Crashes Per 100 Million Vehicle Kilometers |
|---|---|---|
| Total Crash Rate | 378.07 | 234.92 |
| Fatal Crash Rate | 0.00 | 0.00 |
| Non Fatal Crash Rate | 151.23 | 93.97 |
| Night Crash Rate | 116.86 | 72.61 |
| Wet Crash Rate | 61.87 | 38.44 |
| EPDO Rate | 1497.14 | 930.28 |



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criteria provided by the report's creator. The onus is strictly upon the user of this report to exercise due diligence in in
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## Miscellaneous Statistics

| | |
|---|---|
| Severity Index = | 3.96 |
| EPDO Crash Index = | 217.80 |
| Estimated Property Damage Total = $ | 278750.00 |

## Accident Type Summary

| Accident Type | Number of Crashes | Percent of Total |
|---|---|---|
| ANGLE | 4 | 7.27 |
| ANIMAL | 3 | 5.45 |
| HEAD ON | 3 | 5.45 |
| LEFT TURN, DIFFERENT ROADWAYS | 2 | 3.64 |
| LEFT TURN, SAME ROADWAY | 8 | 14.55 |
| PEDALCYCLIST | 1 | 1.82 |
| RAN OFF ROAD - LEFT | 2 | 3.64 |
| RAN OFF ROAD - RIGHT | 4 | 7.27 |
| REAR END, SLOW OR STOP | 21 | 38.18 |
| REAR END, TURN | 2 | 3.64 |
| RIGHT TURN, DIFFERENT ROADWAYS | 2 | 3.64 |
| SIDESWIPE, SAME DIRECTION | 3 | 5.45 |

## Injury Summary

| Injury Type | Number of Injuries | Percent of Total |
|---|---|---|
| Fatal Injuries | 0 | 0.00 |
| Class A Injuries | 0 | 0.00 |
| Class B Injuries | 9 | 27.27 |
| Class C Injuries | 24 | 72.73 |
| Total Non-Fatal Injuries | 33 | 100.00 |
| Total Injuries | 33 | 100.00 |



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criteria provided by the report's creator. The onus is strictly upon the user of this report to exercise due diligence in in
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**Monthly Summary**

| Month | Number of Crashes | Percent of Total |
|---|---|---|
| Jan | 3 | 5.45 |
| Feb | 6 | 10.91 |
| Mar | 3 | 5.45 |
| Apr | 5 | 9.09 |
| May | 5 | 9.09 |
| Jun | 3 | 5.45 |
| Jul | 3 | 5.45 |
| Aug | 7 | 12.73 |
| Sep | 2 | 3.64 |
| Oct | 7 | 12.73 |
| Nov | 6 | 10.91 |
| Dec | 5 | 9.09 |

**Daily Summary**

| Day | Number of Crashes | Percent of Total |
|---|---|---|
| Mon | 10 | 18.18 |
| Tue | 11 | 20.00 |
| Wed | 8 | 14.55 |
| Thu | 5 | 9.09 |
| Fri | 10 | 18.18 |
| Sat | 6 | 10.91 |
| Sun | 5 | 9.09 |



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criteria provided by the report's creator. The onus is strictly upon the user of this report to exercise due diligence in in
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## Hourly Summary

| Hour | Number of Crashes | Percent of Total |
|---|---|---|
| 0000-0059 | 0 | 0.00 |
| 0100-0159 | 2 | 3.64 |
| 0200-0259 | 0 | 0.00 |
| 0300-0359 | 0 | 0.00 |
| 0400-0459 | 0 | 0.00 |
| 0500-0559 | 0 | 0.00 |
| 0600-0659 | 1 | 1.82 |
| 0700-0759 | 0 | 0.00 |
| 0800-0859 | 2 | 3.64 |
| 0900-0959 | 2 | 3.64 |
| 1000-1059 | 3 | 5.45 |
| 1100-1159 | 1 | 1.82 |
| 1200-1259 | 1 | 1.82 |
| 1300-1359 | 2 | 3.64 |
| 1400-1459 | 3 | 5.45 |
| 1500-1559 | 2 | 3.64 |
| 1600-1659 | 7 | 12.73 |
| 1700-1759 | 10 | 18.18 |
| 1800-1859 | 5 | 9.09 |
| 1900-1959 | 6 | 10.91 |
| 2000-2059 | 3 | 5.45 |
| 2100-2159 | 5 | 9.09 |
| 2200-2259 | 0 | 0.00 |
| 2300-2359 | 0 | 0.00 |



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criteria provided by the report's creator. The onus is strictly upon the user of this report to exercise due diligence in in
and further representing this data.

## Light and Road Conditions Summary

| Condition | Dry | Wet | Other | Total |
|---|---|---|---|---|
| Day | 28 | 4 | 0 | 32 |
| Dark | 14 | 3 | 0 | 17 |
| Other | 4 | 2 | 0 | 6 |
| Total | 46 | 9 | 0 | 55 |

## Object Struck Summary

| Object Type | Times Struck | Percent of Total |
|---|---|---|
| ANIMAL | 4 | 40.00 |
| CATCH BASIN OR CULVERT ON SHOULDER | 1 | 10.00 |
| OFFICIAL HIGHWAY SIGN NON-BREAKAWAY | 1 | 10.00 |
| PEDALCYCLIST | 2 | 20.00 |
| TREE | 2 | 20.00 |

## Vehicle Type Summary

| Vehicle Type | Number Involved | Percent of Total |
|---|---|---|
| LIGHT TRUCK (MINI-VAN, PANEL) | 1 | 0.91 |
| PASSENGER CAR | 65 | 59.09 |
| PEDALCYCLE | 1 | 0.91 |
| PEDESTRIAN | 1 | 0.91 |
| PICKUP | 4 | 3.64 |
| SINGLE UNIT TRUCK (2-AXLE, 6-TIRE) | 1 | 0.91 |
| SPORT UTILITY | 28 | 25.45 |
| UNKNOWN | 1 | 0.91 |
| VAN | 8 | 7.27 |



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criteria provided by the report's creator. The onus is strictly upon the user of this report to exercise due diligence in in
and further representing this data.

# Yearly Totals Summary

## Accident Totals

| Year | Total Accidents | Fatal Accidents | Injury Accidents | Property Damage Only Accidents |
|---|---|---|---|---|
| 2015 | 10 | 0 | 3 | 7 |
| 2016 | 12 | 0 | 6 | 6 |
| 2017 | 11 | 0 | 3 | 8 |
| 2018 | 8 | 0 | 3 | 5 |
| 2019 | 13 | 0 | 7 | 6 |
| 2020 | 1 | 0 | 0 | 1 |
| Total | 55 | 0 | 22 | 33 |

## Injury Totals

| Year | Fatal Injuries | Class A, B, or C Injuries |
|---|---|---|
| 2015 | 0 | 4 |
| 2016 | 0 | 10 |
| 2017 | 0 | 3 |
| 2018 | 0 | 3 |
| 2019 | 0 | 13 |
| 2020 | 0 | 0 |
| Total | 0 | 33 |

## Miscellaneous Totals

| Year | Property Damage | EPDO Index |
|---|---|---|
| 2015 | $ 41650 | 32.20 |
| 2016 | $ 82000 | 56.40 |
| 2017 | $ 30750 | 33.20 |
| 2018 | $ 18900 | 30.20 |
| 2019 | $ 101450 | 64.80 |
| 2020 | $ 4000 | 1.00 |
| Total | $ 278750 | 217.80 |

## Type of Accident Totals

| Year | Left Turn | Right Turn | Rear End | Run Off Road & Fixed Object | Angle | Side Swipe | Other |
|---|---|---|---|---|---|---|---|
| 2015 | 2 | 1 | 3 | 2 | 1 | 0 | 1 |
| 2016 | 3 | 0 | 3 | 3 | 0 | 1 | 2 |



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criteria provided by the report's creator. The onus is strictly upon the user of this report to exercise due diligence in in
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| Year | Left Turn | Right Turn | Rear End | Run Off Road & Fixed Object | Angle | Side Swipe | Other |
|---|---|---|---|---|---|---|---|
| 2017 | 2 | 0 | 5 | 1 | 1 | 0 | 2 |
| 2018 | 1 | 1 | 4 | 0 | 0 | 1 | 1 |
| 2019 | 2 | 0 | 7 | 0 | 2 | 1 | 1 |
| 2020 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| Total | 10 | 2 | 23 | 6 | 4 | 3 | 7 |



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criteria provided by the report's creator. The onus is strictly upon the user of this report to exercise due diligence in in
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## Strip Diagram

| Features | Milepost | Crash IDs |
|---|---|---|
| | 1.70 | |
| | 1.71 | |
| | 1.72 | 105338598 \| 105555884 \| 105963780 \| 104924595 |
| NC 86 \| SR 1750 \| SR 1780 \| MARTIN | 1.73 | 104355424 \| 104369919 \| 104490927 \| 104582812 \| |
| LUTHER KING | | 104628361 \| 104667241 \| 104687062 \| 104811851 \| |
| | | 105064389 \| 105061198 \| 105070133 \| 105328703 \| |
| | | 105748689 \| 105472750 \| 105578758 \| 105578503 \| |
| | | 105769948 \| 105924178 \| 105947413 \| 105956966 \| |
| | | 105991720 \| 104929528 \| 105498712 |
| | 1.74 | 105645166 |
| | 1.75 | 106013175 \| 105792928 |
| | 1.76 | 104975623 |
| | 1.77 | 104355632 \| 106032019 |
| | 1.78 | 104459774 \| 105987037 \| 106042065 \| 105339137 |
| | 1.79 | 104573031 |
| | 1.80 | |
| | 1.81 | |
| | 1.82 | 104628690 |
| | 1.83 | |
| | 1.84 | |
| | 1.85 | |
| | 1.86 | |
| | 1.87 | |
| | 1.88 | |
| | 1.89 | 105011787 |
| | 1.90 | |
| | 1.91 | |
| | 1.92 | |
| | 1.93 | 104918134 \| 105909282 |
| | 1.94 | |
| | 1.95 | 104775963 |
| | 1.96 | |
| | 1.97 | |
| | 1.98 | |
| | 1.99 | 104929539 |
| | 2.00 | 105017900 |
| | 2.01 | |
| | 2.02 | |
| SOMERSET | 2.03 | 104355660 \| 104516501 \| 105764719 |
| | 2.04 | |
| | 2.05 | |



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criteria provided by the report's creator. The onus is strictly upon the user of this report to exercise due diligence in in
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| Features | Milepost | Crash IDs |
|---|---|---|
| | 2.06 | |
| | 2.07 | |
| | 2.08 | |
| | 2.09 | |
| | 2.10 | |
| | 2.11 | 105687195 |
| | 2.12 | |
| | 2.13 | 105105627 |
| | 2.14 | |
| | 2.15 | |
| | 2.16 | 104364242 \| 104927902 |
| | 2.17 | |
| | 2.18 | 105109124 |
| CASWELL | 2.19 | |
| | 2.20 | 106152992 |
| | 2.21 | 105687252 |
| | 2.22 | |



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# North Carolina Department of Transportation
# Traffic Engineering Accident Analysis System
# Strip Analysis Report

## Study Criteria Summary

**County:** ORANGE **City:** All and Rural
**Date:** 02/01/2015 **to** 01/31/2020 **Study:** 41000060170
**Location:** NC 86 (Martin Luther King Jr Blvd) From Piney Mountain Rd (Behind Stop Bar) to 150 ft South of Estes Dr (SR 1750/SR1780)

## Report Details

| Acc No | Crash ID | Milepost | Date | Accident Type | Total Damage | Injuries F | Injuries A | Injuries B | Injuries C | Condition R | Condition L | Condition W | Road Ch | Road Ci | Trfc Ctl Dv | Trfc Ctl Op |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | **105046446** | 3.060 | 03/21/2017 08:07 | REAR END, SLOW OR STOP | $ 2450 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | |
| **Unit 1 :** 1 | **Alchl/Drgs:** 0 | **Speed:** 0 MPH | **Dir:** N | **Veh Mnvr/Ped Actn:** 1 | **Obj Strk:** | | | | | | | | | | | |
| **Unit 2 :** 1 | **Alchl/Drgs:** 0 | **Speed:** 10 MPH | **Dir:** N | **Veh Mnvr/Ped Actn:** 4 | **Obj Strk:** | | | | | | | | | | | |
| 2 | **106083593** | 3.063 | 11/19/2019 15:17 | REAR END, SLOW OR STOP | $ 3500 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 3 | 1 |
| **Unit 1 :** 1 | **Alchl/Drgs:** 0 | **Speed:** 35 MPH | **Dir:** N | **Veh Mnvr/Ped Actn:** 4 | **Obj Strk:** | | | | | | | | | | | |
| **Unit 2 :** 1 | **Alchl/Drgs:** 0 | **Speed:** 25 MPH | **Dir:** N | **Veh Mnvr/Ped Actn:** 4 | **Obj Strk:** | | | | | | | | | | | |
| 3 | **105956958** | 3.064 | 08/05/2019 14:50 | REAR END, SLOW OR STOP | $ 6500 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 1 | 0 | 3 | 1 |
| **Unit 1 :** 4 | **Alchl/Drgs:** 0 | **Speed:** 0 MPH | **Dir:** N | **Veh Mnvr/Ped Actn:** 1 | **Obj Strk:** | | | | | | | | | | | |
| **Unit 2 :** 1 | **Alchl/Drgs:** 0 | **Speed:** 35 MPH | **Dir:** N | **Veh Mnvr/Ped Actn:** 4 | **Obj Strk:** | | | | | | | | | | | |
| 4 | **104518633** | 3.070 | 09/30/2015 17:56 | LEFT TURN, SAME ROADWAY | $ 4500 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 3 | 1 |
| **Unit 1 :** 1 | **Alchl/Drgs:** 0 | **Speed:** 5 MPH | **Dir:** S | **Veh Mnvr/Ped Actn:** 8 | **Obj Strk:** | | | | | | | | | | | |
| **Unit 2 :** 1 | **Alchl/Drgs:** 0 | **Speed:** 15 MPH | **Dir:** N | **Veh Mnvr/Ped Actn:** 4 | **Obj Strk:** | | | | | | | | | | | |
| 5 | **104869551** | 3.074 | 09/06/2016 14:17 | REAR END, SLOW OR STOP | $ 4000 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 3 | 1 |
| **Unit 1 :** 4 | **Alchl/Drgs:** 0 | **Speed:** 0 MPH | **Dir:** N | **Veh Mnvr/Ped Actn:** 11 | **Obj Strk:** | | | | | | | | | | | |
| **Unit 2 :** 1 | **Alchl/Drgs:** 0 | **Speed:** 15 MPH | **Dir:** N | **Veh Mnvr/Ped Actn:** 11 | **Obj Strk:** | | | | | | | | | | | |
| 6 | **105278687** | 3.074 | 11/02/2017 17:42 | LEFT TURN, DIFFERENT ROADWAYS | $ 2500 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 1 | 0 | 3 | 1 |
| **Unit 1 :** 6 | **Alchl/Drgs:** 0 | **Speed:** 10 MPH | **Dir:** SW | **Veh Mnvr/Ped Actn:** 8 | **Obj Strk:** | | | | | | | | | | | |
| **Unit 2 :** 1 | **Alchl/Drgs:** 0 | **Speed:** 0 MPH | **Dir:** N | **Veh Mnvr/Ped Actn:** 1 | **Obj Strk:** | | | | | | | | | | | |
| 7 | **105950723** | 3.081 | 07/30/2019 12:20 | REAR END, SLOW OR STOP | $ 1000 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 3 | 1 |
| **Unit 1 :** 3 | **Alchl/Drgs:** 0 | **Speed:** 0 MPH | **Dir:** N | **Veh Mnvr/Ped Actn:** 1 | **Obj Strk:** | | | | | | | | | | | |
| **Unit 2 :** 1 | **Alchl/Drgs:** 0 | **Speed:** 10 MPH | **Dir:** N | **Veh Mnvr/Ped Actn:** 11 | **Obj Strk:** | | | | | | | | | | | |
| 8 | **104355424** | 3.083 | 04/10/2015 17:54 | LEFT TURN, SAME ROADWAY | $ 3800 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 3 | 0 | 3 | 1 |
| **Unit 1 :** 4 | **Alchl/Drgs:** 0 | **Speed:** 30 MPH | **Dir:** N | **Veh Mnvr/Ped Actn:** 4 | **Obj Strk:** | | | | | | | | | | | |



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# North Carolina Department of Transportation
## Traffic Engineering Accident Analysis System
## Strip Analysis Report

| Acc No | Crash ID | Milepost | Date | Accident Type | Total Damage | Injuries F | Injuries A | Injuries B | Injuries C | Condition R | Condition L | Condition W | Road Ch | Road Ci | Trfc Ctl Dv | Trfc Ctl Op |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Unit** | **2 :** 1 | **Alchl/Drgs:** | 0 | **Speed:** 30 MPH | **Dir:** S | **Veh Mnvr/Ped Actn:** | | | | 8 | | **Obj Strk:** | | | | |
| 9 | **104490927** | 3.083 | 09/08/2015 16:06 | LEFT TURN, SAME ROADWAY | $ 12000 | 0 | 0 | 0 | 2 | 1 | 1 | 1 | 1 | 0 | 3 | 1 |
| **Unit** | **1 :** 2 | **Alchl/Drgs:** | 0 | **Speed:** 25 MPH | **Dir:** N | **Veh Mnvr/Ped Actn:** | | | | 4 | | **Obj Strk:** | | | | |
| **Unit** | **2 :** 1 | **Alchl/Drgs:** | 0 | **Speed:** 25 MPH | **Dir:** SE | **Veh Mnvr/Ped Actn:** | | | | 8 | | **Obj Strk:** | | | | |
| 10 | **104582812** | 3.083 | 11/22/2015 01:42 | ANGLE | $ 12000 | 0 | 0 | 0 | 0 | 1 | 4 | 1 | 1 | 0 | 3 | 1 |
| **Unit** | **1 :** 4 | **Alchl/Drgs:** | 0 | **Speed:** 40 MPH | **Dir:** S | **Veh Mnvr/Ped Actn:** | | | | 4 | | **Obj Strk:** | | | | |
| **Unit** | **2 :** 5 | **Alchl/Drgs:** | 0 | **Speed:** 10 MPH | **Dir:** E | **Veh Mnvr/Ped Actn:** | | | | 8 | | **Obj Strk:** | | | | |
| 11 | **104628361** | 3.083 | 01/18/2016 15:54 | LEFT TURN, SAME ROADWAY | $ 10000 | 0 | 0 | 0 | 2 | 1 | 1 | 1 | 1 | 0 | 3 | 1 |
| **Unit** | **1 :** 5 | **Alchl/Drgs:** | 0 | **Speed:** 15 MPH | **Dir:** E | **Veh Mnvr/Ped Actn:** | | | | 8 | | **Obj Strk:** | | | | |
| **Unit** | **2 :** 1 | **Alchl/Drgs:** | 0 | **Speed:** 40 MPH | **Dir:** N | **Veh Mnvr/Ped Actn:** | | | | 4 | | **Obj Strk:** | | | | |
| 12 | **104667241** | 3.083 | 02/19/2016 19:05 | LEFT TURN, SAME ROADWAY | $ 10000 | 0 | 0 | 0 | 1 | 1 | 4 | 1 | 1 | 0 | 3 | 1 |
| **Unit** | **1 :** 1 | **Alchl/Drgs:** | 0 | **Speed:** 20 MPH | **Dir:** S | **Veh Mnvr/Ped Actn:** | | | | 8 | | **Obj Strk:** | | | | |
| **Unit** | **2 :** 5 | **Alchl/Drgs:** | 0 | **Speed:** 45 MPH | **Dir:** N | **Veh Mnvr/Ped Actn:** | | | | 4 | | **Obj Strk:** | | | | |
| 13 | **104687062** | 3.083 | 03/08/2016 18:00 | LEFT TURN, SAME ROADWAY | $ 13000 | 0 | 0 | 0 | 1 | 1 | 2 | 1 | 1 | 0 | 3 | 1 |
| **Unit** | **1 :** 2 | **Alchl/Drgs:** | 0 | **Speed:** 35 MPH | **Dir:** N | **Veh Mnvr/Ped Actn:** | | | | 4 | | **Obj Strk:** | | | | |
| **Unit** | **2 :** 1 | **Alchl/Drgs:** | 0 | **Speed:** 10 MPH | **Dir:** SE | **Veh Mnvr/Ped Actn:** | | | | 8 | | **Obj Strk:** | | | | |
| 14 | **104811851** | 3.083 | 07/09/2016 18:40 | HEAD ON | $ 8000 | 0 | 0 | 2 | 0 | 1 | 1 | 1 | 1 | 0 | 3 | 1 |
| **Unit** | **1 :** 4 | **Alchl/Drgs:** | 0 | **Speed:** 35 MPH | **Dir:** N | **Veh Mnvr/Ped Actn:** | | | | 4 | | **Obj Strk:** | | | | |
| **Unit** | **2 :** 1 | **Alchl/Drgs:** | 0 | **Speed:** 10 MPH | **Dir:** S | **Veh Mnvr/Ped Actn:** | | | | 8 | | **Obj Strk:** | | | | |
| 15 | **105064389** | 3.083 | 04/03/2017 20:46 | LEFT TURN, SAME ROADWAY | $ 6700 | 0 | 0 | 0 | 0 | 2 | 4 | 2 | 3 | 0 | 3 | 1 |
| **Unit** | **1 :** 4 | **Alchl/Drgs:** | 0 | **Speed:** 30 MPH | **Dir:** W | **Veh Mnvr/Ped Actn:** | | | | 4 | | **Obj Strk:** | | | | |
| **Unit** | **2 :** 1 | **Alchl/Drgs:** | 0 | **Speed:** 30 MPH | **Dir:** E | **Veh Mnvr/Ped Actn:** | | | | 8 | | **Obj Strk:** | | | | |
| **Unit** | **3 :** 4 | **Alchl/Drgs:** | 0 | **Speed:** 35 MPH | **Dir:** S | **Veh Mnvr/Ped Actn:** | | | | 1 | | **Obj Strk:** | | | | |
| 16 | **105061198** | 3.083 | 04/03/2017 21:05 | REAR END, TURN | $ 1700 | 0 | 0 | 0 | 0 | 2 | 4 | 2 | 1 | 0 | 3 | 1 |
| **Unit** | **1 :** 4 | **Alchl/Drgs:** | 0 | **Speed:** 5 MPH | **Dir:** S | **Veh Mnvr/Ped Actn:** | | | | 8 | | **Obj Strk:** | | | | |
| **Unit** | **2 :** 1 | **Alchl/Drgs:** | 0 | **Speed:** 5 MPH | **Dir:** S | **Veh Mnvr/Ped Actn:** | | | | 8 | | **Obj Strk:** | | | | |
| 17 | **105070133** | 3.083 | 04/04/2017 20:29 | LEFT TURN, DIFFERENT ROADWAYS | $ 1700 | 0 | 0 | 0 | 0 | 1 | 4 | 1 | 1 | 0 | 3 | 1 |
| **Unit** | **1 :** 1 | **Alchl/Drgs:** | 0 | **Speed:** 15 MPH | **Dir:** E | **Veh Mnvr/Ped Actn:** | | | | 8 | | **Obj Strk:** | | | | |



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| Acc No | Crash ID | Milepost | Date | Accident Type | Total Damage | Injuries F | A | B | C | Condition R | L | W | Road Ch | Ci | Trfc Ctl Dv | Op |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Unit** | **2 :** 1 | **Alchl/Drgs:** | 0 | **Speed:** 35 MPH **Dir:** | N | **Veh Mnvr/Ped Actn:** | | | | 4 | | | **Obj Strk:** | | | |
| 18 | **105214438** | 3.083 | 09/01/2017 11:05 | REAR END, SLOW OR STOP | $ 1800 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 1 | 0 | 3 | 2 |
| **Unit** | **1 :** 1 | **Alchl/Drgs:** | 0 | **Speed:** 10 MPH **Dir:** | N | **Veh Mnvr/Ped Actn:** | | | | 4 | | | **Obj Strk:** | | | |
| **Unit** | **2 :** 1 | **Alchl/Drgs:** | 0 | **Speed:** 0 MPH **Dir:** | N | **Veh Mnvr/Ped Actn:** | | | | 1 | | | **Obj Strk:** | | | |
| 19 | **105328703** | 3.083 | 12/10/2017 18:01 | ANGLE | $ 1500 | 0 | 0 | 0 | 0 | 1 | 4 | 1 | 1 | 0 | 3 | 1 |
| **Unit** | **1 :** 1 | **Alchl/Drgs:** | 0 | **Speed:** 10 MPH **Dir:** | E | **Veh Mnvr/Ped Actn:** | | | | 7 | | | **Obj Strk:** | | | |
| **Unit** | **2 :** 1 | **Alchl/Drgs:** | 0 | **Speed:** 30 MPH **Dir:** | S | **Veh Mnvr/Ped Actn:** | | | | 4 | | | **Obj Strk:** | | | |
| 20 | **105364837** | 3.083 | 01/10/2018 16:44 | ANGLE | $ 10000 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 3 | 1 |
| **Unit** | **1 :** 1 | **Alchl/Drgs:** | 0 | **Speed:** 15 MPH **Dir:** | W | **Veh Mnvr/Ped Actn:** | | | | 4 | | | **Obj Strk:** | | | |
| **Unit** | **2 :** 1 | **Alchl/Drgs:** | 0 | **Speed:** 35 MPH **Dir:** | S | **Veh Mnvr/Ped Actn:** | | | | 4 | | | **Obj Strk:** | | | |
| 21 | **105383107** | 3.083 | 02/02/2018 09:01 | REAR END, SLOW OR STOP | $ 4800 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 3 | 1 |
| **Unit** | **1 :** 1 | **Alchl/Drgs:** | 0 | **Speed:** 3 MPH **Dir:** | N | **Veh Mnvr/Ped Actn:** | | | | 11 | | | **Obj Strk:** | | | |
| **Unit** | **2 :** 1 | **Alchl/Drgs:** | 0 | **Speed:** 25 MPH **Dir:** | N | **Veh Mnvr/Ped Actn:** | | | | 4 | | | **Obj Strk:** | | | |
| 22 | **105472750** | 3.083 | 05/01/2018 20:35 | LEFT TURN, DIFFERENT ROADWAYS | $ 3500 | 0 | 0 | 0 | 0 | 1 | 4 | 1 | 1 | 0 | 3 | 1 |
| **Unit** | **1 :** 4 | **Alchl/Drgs:** | 0 | **Speed:** 15 MPH **Dir:** | W | **Veh Mnvr/Ped Actn:** | | | | 8 | | | **Obj Strk:** | | | |
| **Unit** | **2 :** 1 | **Alchl/Drgs:** | 0 | **Speed:** 30 MPH **Dir:** | E | **Veh Mnvr/Ped Actn:** | | | | 4 | | | **Obj Strk:** | | | |
| 23 | **105578758** | 3.083 | 08/15/2018 16:08 | RIGHT TURN, DIFFERENT ROADWAYS | $ 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 3 | 1 |
| **Unit** | **1 :** 1 | **Alchl/Drgs:** | 0 | **Speed:** 5 MPH **Dir:** | W | **Veh Mnvr/Ped Actn:** | | | | 12 | | | **Obj Strk:** | | | |
| **Unit** | **2 :** 23 | **Alchl/Drgs:** | 0 | **Speed:** 0 MPH **Dir:** | | **Veh Mnvr/Ped Actn:** | | | | | | | **Obj Strk:** | | | |
| 24 | **105578503** | 3.083 | 08/15/2018 16:20 | REAR END, TURN | $ 3150 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 1 | 0 | 3 | 1 |
| **Unit** | **1 :** 1 | **Alchl/Drgs:** | 0 | **Speed:** 10 MPH **Dir:** | E | **Veh Mnvr/Ped Actn:** | | | | 8 | | | **Obj Strk:** | | | |
| **Unit** | **2 :** 1 | **Alchl/Drgs:** | 0 | **Speed:** 10 MPH **Dir:** | E | **Veh Mnvr/Ped Actn:** | | | | 8 | | | **Obj Strk:** | | | |
| 25 | **105769948** | 3.083 | 02/06/2019 21:42 | HEAD ON | $ 8000 | 0 | 0 | 0 | 0 | 1 | 4 | 1 | 1 | 0 | 3 | 1 |
| **Unit** | **1 :** 1 | **Alchl/Drgs:** | 0 | **Speed:** 25 MPH **Dir:** | W | **Veh Mnvr/Ped Actn:** | | | | 8 | | | **Obj Strk:** | | | |
| **Unit** | **2 :** 1 | **Alchl/Drgs:** | 0 | **Speed:** 35 MPH **Dir:** | E | **Veh Mnvr/Ped Actn:** | | | | 4 | | | **Obj Strk:** | | | |
| 26 | **105924178** | 3.083 | 06/19/2019 11:21 | ANGLE | $ 13500 | 0 | 0 | 2 | 0 | 1 | 1 | 2 | 1 | 0 | 3 | 1 |
| **Unit** | **1 :** 5 | **Alchl/Drgs:** | 0 | **Speed:** 35 MPH **Dir:** | S | **Veh Mnvr/Ped Actn:** | | | | 4 | | | **Obj Strk:** | | | |
| **Unit** | **2 :** 1 | **Alchl/Drgs:** | 0 | **Speed:** 10 MPH **Dir:** | NW | **Veh Mnvr/Ped Actn:** | | | | 8 | | | **Obj Strk:** | | | |



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and further representing this data.

# North Carolina Department of Transportation
## Traffic Engineering Accident Analysis System
## Strip Analysis Report

| Acc No | Crash ID | Milepost | Date | Accident Type | Total Damage | Injuries F | Injuries A | Injuries B | Injuries C | Condition R | Condition L | Condition W | Road Ch | Road Ci | Trfc Ctl Dv | Trfc Ctl Op |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 27 | **105947413** | 3.083 | 07/20/2019 21:29 | LEFT TURN, SAME ROADWAY | $ 6000 | 0 | 0 | 0 | 0 | 1 | 4 | 1 | 1 | 0 | 3 | 1 |
| **Unit** | **1 :** 4 | **Alchl/Drgs:** | 0 | **Speed:** 10 MPH | **Dir:** SW | **Veh Mnvr/Ped Actn:** | | | | 8 | | **Obj Strk:** | | | | |
| **Unit** | **2 :** 10 | **Alchl/Drgs:** | 0 | **Speed:** 25 MPH | **Dir:** E | **Veh Mnvr/Ped Actn:** | | | | 4 | | **Obj Strk:** | | | | |
| 28 | **105956966** | 3.083 | 08/01/2019 10:44 | ANGLE | $ 3300 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 3 | 1 |
| **Unit** | **1 :** 1 | **Alchl/Drgs:** | 0 | **Speed:** 30 MPH | **Dir:** S | **Veh Mnvr/Ped Actn:** | | | | 4 | | **Obj Strk:** | | | | |
| **Unit** | **2 :** 1 | **Alchl/Drgs:** | 0 | **Speed:** 25 MPH | **Dir:** E | **Veh Mnvr/Ped Actn:** | | | | 4 | | **Obj Strk:** | | | | |
| 29 | **105991720** | 3.083 | 08/30/2019 16:33 | LEFT TURN, SAME ROADWAY | $ 30000 | 0 | 0 | 1 | 2 | 1 | 1 | 1 | 1 | 0 | 3 | 1 |
| **Unit** | **1 :** 4 | **Alchl/Drgs:** | 0 | **Speed:** 5 MPH | **Dir:** N | **Veh Mnvr/Ped Actn:** | | | | 8 | | **Obj Strk:** | | | | |
| **Unit** | **2 :** 1 | **Alchl/Drgs:** | 0 | **Speed:** 35 MPH | **Dir:** S | **Veh Mnvr/Ped Actn:** | | | | 4 | | **Obj Strk:** | | | | |
| 30 | **104463607** | 3.089 | 08/12/2015 19:19 | REAR END, SLOW OR STOP | $ 8000 | 0 | 0 | 1 | 2 | 1 | 1 | 1 | 1 | 0 | 3 | 1 |
| **Unit** | **1 :** 1 | **Alchl/Drgs:** | 0 | **Speed:** 50 MPH | **Dir:** S | **Veh Mnvr/Ped Actn:** | | | | 11 | | **Obj Strk:** | | | | |
| **Unit** | **2 :** 1 | **Alchl/Drgs:** | 0 | **Speed:** 0 MPH | **Dir:** S | **Veh Mnvr/Ped Actn:** | | | | 1 | | **Obj Strk:** | | | | |
| **Unit** | **3 :** 5 | **Alchl/Drgs:** | 0 | **Speed:** 0 MPH | **Dir:** S | **Veh Mnvr/Ped Actn:** | | | | 1 | | **Obj Strk:** | | | | |
| 31 | **104868507** | 3.089 | 08/29/2016 19:19 | REAR END, SLOW OR STOP | $ 1600 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 3 | 1 |
| **Unit** | **1 :** 32 | **Alchl/Drgs:** | 7 | **Speed:** 15 MPH | **Dir:** SE | **Veh Mnvr/Ped Actn:** | | | | 11 | | **Obj Strk:** | | | | |
| **Unit** | **2 :** 1 | **Alchl/Drgs:** | 0 | **Speed:** 0 MPH | **Dir:** S | **Veh Mnvr/Ped Actn:** | | | | 1 | | **Obj Strk:** | | | | |
| **Unit** | **3 :** 1 | **Alchl/Drgs:** | 0 | **Speed:** 0 MPH | **Dir:** S | **Veh Mnvr/Ped Actn:** | | | | 1 | | **Obj Strk:** | | | | |
| 32 | **106090208** | 3.089 | 11/12/2019 15:11 | REAR END, SLOW OR STOP | $ 3450 | 0 | 0 | 0 | 0 | 2 | 1 | 3 | 1 | 0 | 3 | 1 |
| **Unit** | **1 :** 4 | **Alchl/Drgs:** | 0 | **Speed:** 0 MPH | **Dir:** S | **Veh Mnvr/Ped Actn:** | | | | 1 | | **Obj Strk:** | | | | |
| **Unit** | **2 :** 1 | **Alchl/Drgs:** | 0 | **Speed:** 0 MPH | **Dir:** S | **Veh Mnvr/Ped Actn:** | | | | 1 | | **Obj Strk:** | | | | |
| **Unit** | **3 :** 1 | **Alchl/Drgs:** | 0 | **Speed:** 20 MPH | **Dir:** S | **Veh Mnvr/Ped Actn:** | | | | 11 | | **Obj Strk:** | | | | |
| 33 | **104377944** | 3.090 | 05/06/2015 19:14 | REAR END, SLOW OR STOP | $ 1200 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 3 | 1 |
| **Unit** | **1 :** 4 | **Alchl/Drgs:** | 0 | **Speed:** 0 MPH | **Dir:** S | **Veh Mnvr/Ped Actn:** | | | | 1 | | **Obj Strk:** | | | | |
| **Unit** | **2 :** 1 | **Alchl/Drgs:** | 0 | **Speed:** 5 MPH | **Dir:** S | **Veh Mnvr/Ped Actn:** | | | | 12 | | **Obj Strk:** | | | | |
| 34 | **104641695** | 3.093 | 02/09/2016 18:18 | LEFT TURN, SAME ROADWAY | $ 1600 | 0 | 0 | 0 | 0 | 1 | 4 | 2 | 1 | 0 | 3 | 1 |
| **Unit** | **1 :** 1 | **Alchl/Drgs:** | 0 | **Speed:** 15 MPH | **Dir:** N | **Veh Mnvr/Ped Actn:** | | | | 7 | | **Obj Strk:** | | | | |
| **Unit** | **2 :** 1 | **Alchl/Drgs:** | 0 | **Speed:** 15 MPH | **Dir:** N | **Veh Mnvr/Ped Actn:** | | | | 8 | | **Obj Strk:** | | | | |



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| Acc No | Crash ID | Milepost | Date | Accident Type | Total Damage | Injuries F | A | B | C | Condition R | L | W | Road Ch | Ci | Trfc Ctl Dv | Op |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 35 | **105277831** | 3.093 | 10/27/2017 10:00 | REAR END, SLOW OR STOP | $ 2600 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 3 | 1 |
| **Unit** | **1 :** 1 | **Alchl/Drgs:** | 0 | **Speed:** 30 MPH | **Dir:** S | **Veh Mnvr/Ped Actn:** | | | | 4 | | | **Obj Strk:** | | | |
| **Unit** | **2 :** 1 | **Alchl/Drgs:** | 0 | **Speed:** 0 MPH | **Dir:** S | **Veh Mnvr/Ped Actn:** | | | | 1 | | | **Obj Strk:** | | | |
| 36 | **104975615** | 3.096 | 12/06/2016 08:13 | REAR END, SLOW OR STOP | $ 3000 | 0 | 0 | 0 | 0 | 2 | 1 | 3 | 3 | 0 | 3 | 1 |
| **Unit** | **1 :** 4 | **Alchl/Drgs:** | 0 | **Speed:** 30 MPH | **Dir:** S | **Veh Mnvr/Ped Actn:** | | | | 1 | | | **Obj Strk:** | | | |
| **Unit** | **2 :** 1 | **Alchl/Drgs:** | 0 | **Speed:** 30 MPH | **Dir:** S | **Veh Mnvr/Ped Actn:** | | | | 4 | | | **Obj Strk:** | | | |
| 37 | **105319152** | 3.098 | 12/02/2017 10:21 | REAR END, SLOW OR STOP | $ 3600 | 0 | 0 | 0 | 0 | 2 | 1 | 3 | 1 | 0 | 3 | 1 |
| **Unit** | **1 :** 4 | **Alchl/Drgs:** | 0 | **Speed:** 0 MPH | **Dir:** S | **Veh Mnvr/Ped Actn:** | | | | 1 | | | **Obj Strk:** | | | |
| **Unit** | **2 :** 4 | **Alchl/Drgs:** | 0 | **Speed:** 25 MPH | **Dir:** S | **Veh Mnvr/Ped Actn:** | | | | 4 | | | **Obj Strk:** | | | |
| 38 | **104540526** | 3.101 | 10/24/2015 14:00 | REAR END, SLOW OR STOP | $ 3300 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 3 | 1 |
| **Unit** | **1 :** 1 | **Alchl/Drgs:** | 0 | **Speed:** 30 MPH | **Dir:** S | **Veh Mnvr/Ped Actn:** | | | | 4 | | | **Obj Strk:** | | | |
| **Unit** | **2 :** 1 | **Alchl/Drgs:** | 0 | **Speed:** 0 MPH | **Dir:** S | **Veh Mnvr/Ped Actn:** | | | | 11 | | | **Obj Strk:** | | | |
| 39 | **104975618** | 3.102 | 12/06/2016 19:00 | RAN OFF ROAD - RIGHT | $ 2000 | 0 | 0 | 0 | 0 | 2 | 4 | 3 | 1 | 0 | 3 | 1 |
| **Unit** | **1 :** 1 | **Alchl/Drgs:** | 3 | **Speed:** 30 MPH | **Dir:** N | **Veh Mnvr/Ped Actn:** | | | | 16 | | | **Obj Strk:** | | | |
| 40 | **105041349** | 3.110 | 03/10/2017 16:25 | OTHER NON-COLLISION | $ 4000 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 3 | 3 |
| **Unit** | **1 :** 1 | **Alchl/Drgs:** | 7 | **Speed:** 15 MPH | **Dir:** S | **Veh Mnvr/Ped Actn:** | | | | 11 | | | **Obj Strk:** | | | |
| **Unit** | **2 :** 4 | **Alchl/Drgs:** | 0 | **Speed:** 5 MPH | **Dir:** S | **Veh Mnvr/Ped Actn:** | | | | 11 | | | **Obj Strk:** | | | |
| 41 | **105118457** | 3.110 | 05/24/2017 15:57 | REAR END, SLOW OR STOP | $ 900 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 3 | 1 |
| **Unit** | **1 :** 4 | **Alchl/Drgs:** | 0 | **Speed:** 7 MPH | **Dir:** SE | **Veh Mnvr/Ped Actn:** | | | | 4 | | | **Obj Strk:** | | | |
| **Unit** | **2 :** 1 | **Alchl/Drgs:** | 0 | **Speed:** 0 MPH | **Dir:** SE | **Veh Mnvr/Ped Actn:** | | | | 1 | | | **Obj Strk:** | | | |
| **Unit** | **3 :** 1 | **Alchl/Drgs:** | 0 | **Speed:** 0 MPH | **Dir:** SE | **Veh Mnvr/Ped Actn:** | | | | 1 | | | **Obj Strk:** | | | |
| 42 | **105302117** | 3.110 | 11/18/2017 15:47 | REAR END, SLOW OR STOP | $ 8450 | 0 | 0 | 0 | 1 | 1 | 1 | 2 | 1 | 0 | | |
| **Unit** | **1 :** 2 | **Alchl/Drgs:** | 0 | **Speed:** 0 MPH | **Dir:** S | **Veh Mnvr/Ped Actn:** | | | | 1 | | | **Obj Strk:** | | | |
| **Unit** | **2 :** 1 | **Alchl/Drgs:** | 0 | **Speed:** 30 MPH | **Dir:** S | **Veh Mnvr/Ped Actn:** | | | | 4 | | | **Obj Strk:** | | | |
| 43 | **105950720** | 3.110 | 07/30/2019 18:03 | REAR END, SLOW OR STOP | $ 1000 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 3 | 1 |
| **Unit** | **1 :** 2 | **Alchl/Drgs:** | 0 | **Speed:** 10 MPH | **Dir:** S | **Veh Mnvr/Ped Actn:** | | | | 4 | | | **Obj Strk:** | | | |
| **Unit** | **2 :** 1 | **Alchl/Drgs:** | 0 | **Speed:** 0 MPH | **Dir:** S | **Veh Mnvr/Ped Actn:** | | | | 1 | | | **Obj Strk:** | | | |



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| Acc No | Crash ID | Milepost | Date | Accident Type | Total Damage | Injuries F | A | B | C | Condition R | L | W | Road Ch | Ci | Trfc Ctl Dv | Op |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 44 | **105550242** | 3.111 | 07/18/2018 16:49 | RAN OFF ROAD - LEFT | $ 800 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 3 | 1 |

**Unit 1 :** 1 **Alchl/Drgs:** 0 **Speed:** 0 MPH **Dir:** S **Veh Mnvr/Ped Actn:** 1 **Obj Strk:**
**Unit 2 :** 1 **Alchl/Drgs:** 0 **Speed:** 15 MPH **Dir:** S **Veh Mnvr/Ped Actn:** 4 **Obj Strk:**

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 45 | **104420358** | 3.157 | 06/24/2015 22:45 | OTHER NON-COLLISION | $ 6350 | 0 | 0 | 0 | 0 | 1 | 4 | 1 | 1 | 0 | | |

**Unit 1 :** 1 **Alchl/Drgs:** 3 **Speed:** 75 MPH **Dir:** N **Veh Mnvr/Ped Actn:** 4 **Obj Strk:** 55

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 46 | **104355678** | 3.160 | 03/27/2015 11:49 | REAR END, SLOW OR STOP | $ 3000 | 0 | 0 | 0 | 0 | 2 | 1 | 3 | 2 | 0 | 0 | 1 |

**Unit 1 :** 1 **Alchl/Drgs:** 7 **Speed:** 45 MPH **Dir:** N **Veh Mnvr/Ped Actn:** 4 **Obj Strk:**
**Unit 2 :** 1 **Alchl/Drgs:** 7 **Speed:** 0 MPH **Dir:** N **Veh Mnvr/Ped Actn:** 11 **Obj Strk:**

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 47 | **105241684** | 3.220 | 10/02/2017 07:46 | REAR END, SLOW OR STOP | $ 5475 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | |

**Unit 1 :** 4 **Alchl/Drgs:** 0 **Speed:** 0 MPH **Dir:** S **Veh Mnvr/Ped Actn:** 1 **Obj Strk:**
**Unit 2 :** 1 **Alchl/Drgs:** 0 **Speed:** 20 MPH **Dir:** S **Veh Mnvr/Ped Actn:** 4 **Obj Strk:**

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 48 | **105487456** | 3.220 | 05/19/2018 12:26 | REAR END, SLOW OR STOP | $ 6200 | 0 | 0 | 0 | 0 | 2 | 1 | 3 | 1 | 0 | 5 | 1 |

**Unit 1 :** 4 **Alchl/Drgs:** 0 **Speed:** 35 MPH **Dir:** N **Veh Mnvr/Ped Actn:** 11 **Obj Strk:**
**Unit 2 :** 1 **Alchl/Drgs:** 0 **Speed:** 35 MPH **Dir:** N **Veh Mnvr/Ped Actn:** 4 **Obj Strk:**

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 49 | **105775194** | 3.220 | 02/08/2019 14:03 | REAR END, SLOW OR STOP | $ 11500 | 0 | 0 | 0 | 3 | 1 | 1 | 2 | 1 | 0 | 13 | 1 |

**Unit 1 :** 1 **Alchl/Drgs:** 0 **Speed:** 35 MPH **Dir:** N **Veh Mnvr/Ped Actn:** 1 **Obj Strk:**
**Unit 2 :** 4 **Alchl/Drgs:** 0 **Speed:** 35 MPH **Dir:** N **Veh Mnvr/Ped Actn:** 1 **Obj Strk:**
**Unit 3 :** 4 **Alchl/Drgs:** 0 **Speed:** 35 MPH **Dir:** N **Veh Mnvr/Ped Actn:** 1 **Obj Strk:**
**Unit 4 :** 4 **Alchl/Drgs:** 0 **Speed:** 35 MPH **Dir:** N **Veh Mnvr/Ped Actn:** 11 **Obj Strk:**
**Unit 5 :** 1 **Alchl/Drgs:** 0 **Speed:** 35 MPH **Dir:** N **Veh Mnvr/Ped Actn:** 4 **Obj Strk:**

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 50 | **104576492** | 3.223 | 11/10/2015 07:29 | REAR END, SLOW OR STOP | $ 10500 | 0 | 0 | 0 | 0 | 2 | 1 | 3 | 1 | 0 | | |

**Unit 1 :** 1 **Alchl/Drgs:** 0 **Speed:** 5 MPH **Dir:** S **Veh Mnvr/Ped Actn:** 12 **Obj Strk:**
**Unit 2 :** 1 **Alchl/Drgs:** 0 **Speed:** 5 MPH **Dir:** S **Veh Mnvr/Ped Actn:** 12 **Obj Strk:**
**Unit 3 :** 1 **Alchl/Drgs:** 0 **Speed:** 35 MPH **Dir:** S **Veh Mnvr/Ped Actn:** 4 **Obj Strk:**

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 51 | **105170302** | 3.223 | 07/20/2017 08:58 | REAR END, SLOW OR STOP | $ 8775 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 14 | 1 |

**Unit 1 :** 2 **Alchl/Drgs:** 0 **Speed:** 25 MPH **Dir:** N **Veh Mnvr/Ped Actn:** 11 **Obj Strk:**
**Unit 2 :** 1 **Alchl/Drgs:** 0 **Speed:** 35 MPH **Dir:** N **Veh Mnvr/Ped Actn:** 4 **Obj Strk:**

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 52 | **104441097** | 3.227 | 07/20/2015 08:39 | REAR END, SLOW OR STOP | $ 6800 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 14 | 1 |

**Unit 1 :** 1 **Alchl/Drgs:** 0 **Speed:** 0 MPH **Dir:** N **Veh Mnvr/Ped Actn:** 1 **Obj Strk:**



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and further representing this data.

| Acc No | Crash ID | Milepost | Date | Accident Type | Total Damage | Injuries F | A | B | C | Condition R | L | W | Road Ch | Ci | Trfc Ctl Dv | Op |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Unit** | **2 :** 2 | **Alchl/Drgs:** | 0 | **Speed:** 35 MPH | **Dir:** N | **Veh Mnvr/Ped Actn:** | | | | 4 | | | **Obj Strk:** | | | |
| 53 | **105775541** | 3.229 | 02/11/2019 08:37 | REAR END, SLOW OR STOP | $ 8500 | 0 | 0 | 0 | 0 | 2 | 1 | 3 | 1 | 0 | 14 | 1 |
| **Unit** | **1 :** 1 | **Alchl/Drgs:** | 0 | **Speed:** 0 MPH | **Dir:** N | **Veh Mnvr/Ped Actn:** | | | | 1 | | | **Obj Strk:** | | | |
| **Unit** | **2 :** 1 | **Alchl/Drgs:** | 0 | **Speed:** 15 MPH | **Dir:** N | **Veh Mnvr/Ped Actn:** | | | | 4 | | | **Obj Strk:** | | | |
| 54 | **104889699** | 3.230 | 10/03/2016 12:01 | REAR END, SLOW OR STOP | $ 5000 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 14 | 1 |
| **Unit** | **1 :** 1 | **Alchl/Drgs:** | 0 | **Speed:** 35 MPH | **Dir:** N | **Veh Mnvr/Ped Actn:** | | | | 4 | | | **Obj Strk:** | | | |
| **Unit** | **2 :** 1 | **Alchl/Drgs:** | 0 | **Speed:** 5 MPH | **Dir:** N | **Veh Mnvr/Ped Actn:** | | | | 11 | | | **Obj Strk:** | | | |
| 55 | **105223145** | 3.230 | 09/11/2017 17:53 | RAN OFF ROAD - RIGHT | $ 5000 | 0 | 0 | 0 | 0 | 2 | 1 | 2 | 1 | 0 | | |
| **Unit** | **1 :** 1 | **Alchl/Drgs:** | 0 | **Speed:** 30 MPH | **Dir:** N | **Veh Mnvr/Ped Actn:** | | | | 15 | | | **Obj Strk:** | | 40 | |
| 56 | **105924170** | 3.230 | 06/19/2019 16:20 | REAR END, SLOW OR STOP | $ 11500 | 0 | 0 | 0 | 1 | 1 | 1 | 2 | 1 | 0 | 5 | 1 |
| **Unit** | **1 :** 4 | **Alchl/Drgs:** | 0 | **Speed:** 35 MPH | **Dir:** N | **Veh Mnvr/Ped Actn:** | | | | 11 | | | **Obj Strk:** | | | |
| **Unit** | **2 :** 1 | **Alchl/Drgs:** | 0 | **Speed:** 35 MPH | **Dir:** N | **Veh Mnvr/Ped Actn:** | | | | 4 | | | **Obj Strk:** | | | |
| 57 | **106091641** | 3.233 | 11/01/2019 08:42 | PEDESTRIAN | $ 100 | 0 | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | 9 | 1 |
| **Unit** | **1 :** 24 | **Alchl/Drgs:** | 0 | **Speed:** 0 MPH | **Dir:** | **Veh Mnvr/Ped Actn:** | | | | | | | **Obj Strk:** | | 14 | |
| **Unit** | **2 :** 1 | **Alchl/Drgs:** | 0 | **Speed:** 20 MPH | **Dir:** S | **Veh Mnvr/Ped Actn:** | | | | 12 | | | **Obj Strk:** | | 14 | |
| 58 | **104628338** | 3.240 | 01/26/2016 17:28 | REAR END, SLOW OR STOP | $ 8600 | 0 | 0 | 0 | 0 | 2 | 4 | 2 | 1 | 0 | 0 | |
| **Unit** | **1 :** 3 | **Alchl/Drgs:** | 0 | **Speed:** 0 MPH | **Dir:** N | **Veh Mnvr/Ped Actn:** | | | | 1 | | | **Obj Strk:** | | | |
| **Unit** | **2 :** 4 | **Alchl/Drgs:** | 0 | **Speed:** 0 MPH | **Dir:** N | **Veh Mnvr/Ped Actn:** | | | | 1 | | | **Obj Strk:** | | | |
| **Unit** | **3 :** 4 | **Alchl/Drgs:** | 0 | **Speed:** 25 MPH | **Dir:** N | **Veh Mnvr/Ped Actn:** | | | | 4 | | | **Obj Strk:** | | | |
| 59 | **104654600** | 3.240 | 02/18/2016 08:38 | REAR END, SLOW OR STOP | $ 4500 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | | |
| **Unit** | **1 :** 1 | **Alchl/Drgs:** | 0 | **Speed:** 0 MPH | **Dir:** S | **Veh Mnvr/Ped Actn:** | | | | 11 | | | **Obj Strk:** | | | |
| **Unit** | **2 :** 4 | **Alchl/Drgs:** | 0 | **Speed:** 20 MPH | **Dir:** S | **Veh Mnvr/Ped Actn:** | | | | 11 | | | **Obj Strk:** | | | |
| 60 | **104943056** | 3.240 | 11/14/2016 12:37 | REAR END, SLOW OR STOP | $ 2100 | 0 | 0 | 0 | 0 | 2 | 1 | 3 | 1 | 0 | 14 | 1 |
| **Unit** | **1 :** 1 | **Alchl/Drgs:** | 0 | **Speed:** 0 MPH | **Dir:** S | **Veh Mnvr/Ped Actn:** | | | | 1 | | | **Obj Strk:** | | | |
| **Unit** | **2 :** 1 | **Alchl/Drgs:** | 0 | **Speed:** 35 MPH | **Dir:** S | **Veh Mnvr/Ped Actn:** | | | | 4 | | | **Obj Strk:** | | | |
| 61 | **105310142** | 3.240 | 11/27/2017 10:05 | REAR END, SLOW OR STOP | $ 8400 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 3 | 0 | 0 | 2 |
| **Unit** | **1 :** 1 | **Alchl/Drgs:** | 0 | **Speed:** 30 MPH | **Dir:** S | **Veh Mnvr/Ped Actn:** | | | | 1 | | | **Obj Strk:** | | | |
| **Unit** | **2 :** 1 | **Alchl/Drgs:** | 0 | **Speed:** 30 MPH | **Dir:** S | **Veh Mnvr/Ped Actn:** | | | | 1 | | | **Obj Strk:** | | | |



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| Acc No | Crash ID | Milepost | Date | Accident Type | Total Damage | Injuries F | A | B | C | Condition R | L | W | Road Ch | Ci | Trfc Ctl Dv | Op |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Unit** | **3 :** 1 | **Alchl/Drgs:** | 0 | **Speed:** 35 MPH | **Dir:** S | **Veh Mnvr/Ped Actn:** | | | | 4 | | **Obj Strk:** | | | | |
| 62 | **105612691** | 3.240 | 09/18/2018 07:19 | REAR END, SLOW OR STOP | $ 450 | 0 | 0 | 0 | 2 | 1 | 1 | 1 | 1 | 0 | 14 | 2 |
| **Unit** | **1 :** 4 | **Alchl/Drgs:** | 0 | **Speed:** 10 MPH | **Dir:** S | **Veh Mnvr/Ped Actn:** | | | | 4 | | **Obj Strk:** | | | | |
| **Unit** | **2 :** 1 | **Alchl/Drgs:** | 0 | **Speed:** 0 MPH | **Dir:** S | **Veh Mnvr/Ped Actn:** | | | | 1 | | **Obj Strk:** | | | | |
| 63 | **104436650** | 3.300 | 07/14/2015 08:01 | REAR END, SLOW OR STOP | $ 9750 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | | 3 |
| **Unit** | **1 :** 1 | **Alchl/Drgs:** | 0 | **Speed:** 0 MPH | **Dir:** S | **Veh Mnvr/Ped Actn:** | | | | 1 | | **Obj Strk:** | | | | |
| **Unit** | **2 :** 2 | **Alchl/Drgs:** | 0 | **Speed:** 0 MPH | **Dir:** S | **Veh Mnvr/Ped Actn:** | | | | 1 | | **Obj Strk:** | | | | |
| **Unit** | **3 :** 1 | **Alchl/Drgs:** | 0 | **Speed:** 0 MPH | **Dir:** S | **Veh Mnvr/Ped Actn:** | | | | 4 | | **Obj Strk:** | | | | |
| 64 | **104889332** | 3.340 | 09/21/2016 08:40 | REAR END, SLOW OR STOP | $ 4100 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | |
| **Unit** | **1 :** 1 | **Alchl/Drgs:** | 0 | **Speed:** 35 MPH | **Dir:** S | **Veh Mnvr/Ped Actn:** | | | | 11 | | **Obj Strk:** | | | | |
| **Unit** | **2 :** 1 | **Alchl/Drgs:** | 0 | **Speed:** 5 MPH | **Dir:** S | **Veh Mnvr/Ped Actn:** | | | | 11 | | **Obj Strk:** | | | | |
| 65 | **104547035** | 3.344 | 10/28/2015 11:49 | REAR END, SLOW OR STOP | $ 1400 | 0 | 0 | 0 | 0 | 2 | 1 | 3 | 1 | 0 | 14 | 1 |
| **Unit** | **1 :** 2 | **Alchl/Drgs:** | 0 | **Speed:** 5 MPH | **Dir:** N | **Veh Mnvr/Ped Actn:** | | | | 11 | | **Obj Strk:** | | | | |
| **Unit** | **2 :** 1 | **Alchl/Drgs:** | 0 | **Speed:** 30 MPH | **Dir:** N | **Veh Mnvr/Ped Actn:** | | | | 4 | | **Obj Strk:** | | | | |
| 66 | **105605075** | 3.363 | 09/04/2018 10:37 | REAR END, SLOW OR STOP | $ 9080 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 1 | 0 | 3 | 1 |
| **Unit** | **1 :** 4 | **Alchl/Drgs:** | 0 | **Speed:** 0 MPH | **Dir:** N | **Veh Mnvr/Ped Actn:** | | | | 1 | | **Obj Strk:** | | | | |
| **Unit** | **2 :** 3 | **Alchl/Drgs:** | 0 | **Speed:** 35 MPH | **Dir:** N | **Veh Mnvr/Ped Actn:** | | | | 4 | | **Obj Strk:** | | | | |
| 67 | **104355920** | 3.368 | 04/08/2015 17:55 | REAR END, SLOW OR STOP | $ 1250 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | | 0 | | |
| **Unit** | **1 :** 1 | **Alchl/Drgs:** | 0 | **Speed:** 0 MPH | **Dir:** N | **Veh Mnvr/Ped Actn:** | | | | 11 | | **Obj Strk:** | | | | |
| **Unit** | **2 :** 1 | **Alchl/Drgs:** | 7 | **Speed:** 10 MPH | **Dir:** N | **Veh Mnvr/Ped Actn:** | | | | 4 | | **Obj Strk:** | | | | |
| 68 | **104355625** | 3.372 | 03/06/2015 09:34 | ANGLE | $ 2200 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 3 | 1 |
| **Unit** | **1 :** 1 | **Alchl/Drgs:** | 0 | **Speed:** 10 MPH | **Dir:** NW | **Veh Mnvr/Ped Actn:** | | | | 8 | | **Obj Strk:** | | | | |
| **Unit** | **2 :** 2 | **Alchl/Drgs:** | 0 | **Speed:** 25 MPH | **Dir:** S | **Veh Mnvr/Ped Actn:** | | | | 4 | | **Obj Strk:** | | | | |
| 69 | **105307178** | 3.372 | 11/30/2017 09:15 | LEFT TURN, SAME ROADWAY | $ 7000 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | | 0 | | |
| **Unit** | **1 :** 4 | **Alchl/Drgs:** | 0 | **Speed:** 0 MPH | **Dir:** S | **Veh Mnvr/Ped Actn:** | | | | 4 | | **Obj Strk:** | | | | |
| **Unit** | **2 :** 4 | **Alchl/Drgs:** | 0 | **Speed:** 0 MPH | **Dir:** N | **Veh Mnvr/Ped Actn:** | | | | 8 | | **Obj Strk:** | | | | |
| 70 | **105365499** | 3.372 | 01/12/2018 08:53 | REAR END, SLOW OR STOP | $ 1650 | 0 | 0 | 0 | 0 | 2 | 1 | 2 | 1 | 0 | 3 | 1 |
| **Unit** | **1 :** 2 | **Alchl/Drgs:** | 0 | **Speed:** 15 MPH | **Dir:** SE | **Veh Mnvr/Ped Actn:** | | | | 11 | | **Obj Strk:** | | | | |



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| Acc No | Crash ID | Milepost | Date | Accident Type | Total Damage | Injuries F | Injuries A | Injuries B | Injuries C | Condition R | Condition L | Condition W | Road Ch | Road Ci | Trfc Ctl Dv | Trfc Ctl Op |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

**Unit 2 :** 1 **Alchl/Drgs:** 1 **Speed:** 5 MPH **Dir:** SE **Veh Mnvr/Ped Actn:** 16 **Obj Strk:**

**Unit 3 :** 1 **Alchl/Drgs:** 0 **Speed:** 0 MPH **Dir:** SE **Veh Mnvr/Ped Actn:** 1 **Obj Strk:**

**Legend for Report Details:**

Acc No - Accident Number
Injuries: F - Fatal, A - Class A, B - Class B, C - Class C
Condition: R - Road Surface, L - Ambient Light, W - Weather
Rd Ch - Road Character
Rd Ci - Roadway Contributing Circumstances
Trfc Ctl - Traffic Control: Dv - Device, Op - Operating
Alchl/Drgs - Alcohol Drugs Suspected
Veh Mnvr/Ped Actn - Vehicle Maneuver/Pedestrian Action
Obj Strk - Object Struck



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# Summary Statistics

## High Level Crash Summary

| Crash Type | Number of Crashes | Percent of Total |
|---|---|---|
| Total Crashes | 70 | 100.00 |
| Fatal Crashes | 0 | 0.00 |
| Non-Fatal Injury Crashes | 23 | 32.86 |
| Total Injury Crashes | 23 | 32.86 |
| Property Damage Only Crashes | 47 | 67.14 |
| Night Crashes | 13 | 18.57 |
| Wet Crashes | 15 | 21.43 |
| Alcohol/Drugs Involvement Crashes | 1 | 1.43 |

## Crash Severity Summary

| Crash Type | Number of Crashes | Percent of Total |
|---|---|---|
| Total Crashes | 70 | 100.00 |
| Fatal Crashes | 0 | 0.00 |
| Class A Crashes | 0 | 0.00 |
| Class B Crashes | 5 | 7.14 |
| Class C Crashes | 18 | 25.71 |
| Property Damage Only Crashes | 47 | 67.14 |

## Vehicle Exposure Statistics

**Annual ADT = 27500**

**Total Length = 0.317 (Miles)** **0.51 (Kilometers)**

**Total Vehicle Exposure = 15.92 (MVMT)** **25.62 (MVKMT)**

| Crash Rate | Crashes Per 100 Million Vehicle Miles | Crashes Per 100 Million Vehicle Kilometers |
|---|---|---|
| Total Crash Rate | 439.75 | 273.25 |
| Fatal Crash Rate | 0.00 | 0.00 |
| Non Fatal Crash Rate | 144.49 | 89.78 |
| Night Crash Rate | 81.67 | 50.75 |
| Wet Crash Rate | 94.23 | 58.55 |
| EPDO Rate | 1508.97 | 937.63 |



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criteria provided by the report's creator. The onus is strictly upon the user of this report to exercise due diligence in in
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## Miscellaneous Statistics

| | |
|---|---|
| Severity Index = | 3.43 |
| EPDO Crash Index = | 240.20 |
| Estimated Property Damage Total = $ | 383580.00 |

## Accident Type Summary

| Accident Type | Number of Crashes | Percent of Total |
|---|---|---|
| ANGLE | 6 | 8.57 |
| HEAD ON | 2 | 2.86 |
| LEFT TURN, DIFFERENT ROADWAYS | 3 | 4.29 |
| LEFT TURN, SAME ROADWAY | 11 | 15.71 |
| OTHER NON-COLLISION | 2 | 2.86 |
| PEDESTRIAN | 1 | 1.43 |
| RAN OFF ROAD - LEFT | 1 | 1.43 |
| RAN OFF ROAD - RIGHT | 2 | 2.86 |
| REAR END, SLOW OR STOP | 39 | 55.71 |
| REAR END, TURN | 2 | 2.86 |
| RIGHT TURN, DIFFERENT ROADWAYS | 1 | 1.43 |

## Injury Summary

| Injury Type | Number of Injuries | Percent of Total |
|---|---|---|
| Fatal Injuries | 0 | 0.00 |
| Class A Injuries | 0 | 0.00 |
| Class B Injuries | 7 | 20.59 |
| Class C Injuries | 27 | 79.41 |
| Total Non-Fatal Injuries | 34 | 100.00 |
| Total Injuries | 34 | 100.00 |



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criteria provided by the report's creator. The onus is strictly upon the user of this report to exercise due diligence in in
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**Monthly Summary**

| Month | Number of Crashes | Percent of Total |
|---|---|---|
| Jan | 4 | 5.71 |
| Feb | 7 | 10.00 |
| Mar | 5 | 7.14 |
| Apr | 5 | 7.14 |
| May | 4 | 5.71 |
| Jun | 3 | 4.29 |
| Jul | 8 | 11.43 |
| Aug | 7 | 10.00 |
| Sep | 8 | 11.43 |
| Oct | 5 | 7.14 |
| Nov | 10 | 14.29 |
| Dec | 4 | 5.71 |

**Daily Summary**

| Day | Number of Crashes | Percent of Total |
|---|---|---|
| Mon | 12 | 17.14 |
| Tue | 18 | 25.71 |
| Wed | 15 | 21.43 |
| Thu | 5 | 7.14 |
| Fri | 12 | 17.14 |
| Sat | 6 | 8.57 |
| Sun | 2 | 2.86 |



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criteria provided by the report's creator. The onus is strictly upon the user of this report to exercise due diligence in in
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**Hourly Summary**

| Hour | Number of Crashes | Percent of Total |
|---|---|---|
| 0000-0059 | 0 | 0.00 |
| 0100-0159 | 1 | 1.43 |
| 0200-0259 | 0 | 0.00 |
| 0300-0359 | 0 | 0.00 |
| 0400-0459 | 0 | 0.00 |
| 0500-0559 | 0 | 0.00 |
| 0600-0659 | 0 | 0.00 |
| 0700-0759 | 3 | 4.29 |
| 0800-0859 | 10 | 14.29 |
| 0900-0959 | 3 | 4.29 |
| 1000-1059 | 5 | 7.14 |
| 1100-1159 | 4 | 5.71 |
| 1200-1259 | 4 | 5.71 |
| 1300-1359 | 0 | 0.00 |
| 1400-1459 | 4 | 5.71 |
| 1500-1559 | 5 | 7.14 |
| 1600-1659 | 8 | 11.43 |
| 1700-1759 | 6 | 8.57 |
| 1800-1859 | 5 | 7.14 |
| 1900-1959 | 5 | 7.14 |
| 2000-2059 | 3 | 4.29 |
| 2100-2159 | 3 | 4.29 |
| 2200-2259 | 1 | 1.43 |
| 2300-2359 | 0 | 0.00 |



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criteria provided by the report's creator. The onus is strictly upon the user of this report to exercise due diligence in in
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## Light and Road Conditions Summary

| Condition | Dry | Wet | Other | Total |
|---|---|---|---|---|
| Day | 45 | 11 | 0 | 56 |
| Dark | 9 | 4 | 0 | 13 |
| Other | 1 | 0 | 0 | 1 |
| Total | 55 | 15 | 0 | 70 |

## Object Struck Summary

| Object Type | Times Struck | Percent of Total |
|---|---|---|
| COMMERCIAL SIGN | 1 | 25.00 |
| PEDESTRIAN | 2 | 50.00 |
| TRAFFIC ISLAND CURB OR MEDIAN | 1 | 25.00 |

## Vehicle Type Summary

| Vehicle Type | Number Involved | Percent of Total |
|---|---|---|
| COMMERCIAL BUS | 1 | 0.67 |
| LIGHT TRUCK (MINI-VAN, PANEL) | 3 | 2.00 |
| PASSENGER CAR | 96 | 64.00 |
| PEDALCYCLE | 1 | 0.67 |
| PEDESTRIAN | 1 | 0.67 |
| PICKUP | 10 | 6.67 |
| SINGLE UNIT TRUCK (2-AXLE, 6-TIRE) | 1 | 0.67 |
| SPORT UTILITY | 31 | 20.67 |
| UNKNOWN | 1 | 0.67 |
| VAN | 5 | 3.33 |



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# Yearly Totals Summary

## Accident Totals

| Year | Total Accidents | Fatal Accidents | Injury Accidents | Property Damage Only Accidents |
|---|---|---|---|---|
| 2015 | 15 | 0 | 3 | 12 |
| 2016 | 14 | 0 | 6 | 8 |
| 2017 | 17 | 0 | 3 | 14 |
| 2018 | 10 | 0 | 4 | 6 |
| 2019 | 14 | 0 | 7 | 7 |
| 2020 | 0 | 0 | 0 | 0 |
| Total | 70 | 0 | 23 | 47 |

## Injury Totals

| Year | Fatal Injuries | Class A, B, or C Injuries |
|---|---|---|
| 2015 | 0 | 6 |
| 2016 | 0 | 8 |
| 2017 | 0 | 3 |
| 2018 | 0 | 5 |
| 2019 | 0 | 12 |
| 2020 | 0 | 0 |
| Total | 0 | 34 |

## Miscellaneous Totals

| Year | Property Damage | EPDO Index |
|---|---|---|
| 2015 | $ 86050 | 37.20 |
| 2016 | $ 77500 | 58.40 |
| 2017 | $ 72550 | 39.20 |
| 2018 | $ 39630 | 39.60 |
| 2019 | $ 107850 | 65.80 |
| 2020 | $ 0 | 0.00 |
| Total | $ 383580 | 240.20 |

## Type of Accident Totals

| Year | Left Turn | Right Turn | Rear End | Run Off Road & Fixed Object | Angle | Side Swipe | Other |
|---|---|---|---|---|---|---|---|
| 2015 | 3 | 0 | 9 | 0 | 2 | 0 | 1 |
| 2016 | 4 | 0 | 8 | 1 | 0 | 0 | 1 |



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criteria provided by the report's creator. The onus is strictly upon the user of this report to exercise due diligence in in
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| Year | Left Turn | Right Turn | Rear End | Run Off Road & Fixed Object | Angle | Side Swipe | Other |
|---|---|---|---|---|---|---|---|
| 2017 | 4 | 0 | 10 | 1 | 1 | 0 | 1 |
| 2018 | 1 | 1 | 6 | 1 | 1 | 0 | 0 |
| 2019 | 2 | 0 | 8 | 0 | 2 | 0 | 2 |
| 2020 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 14 | 1 | 41 | 3 | 6 | 0 | 5 |



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criteria provided by the report's creator. The onus is strictly upon the user of this report to exercise due diligence in in
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## Strip Diagram

| Features | Milepost | Crash IDs |
|---|---|---|
| | 3.06 | 105046446 \| 106083593 \| 105956958 |
| | 3.07 | 104518633 \| 104869551 \| 105278687 |
| SR 1750 \| SR 1780 \| ESTES | 3.08 | 105950723 \| 104355424 \| 104490927 \| 104582812 \| 104628361 \| 104667241 \| 104687062 \| 104811851 \| 105064389 \| 105061198 \| 105070133 \| 105214438 \| 105328703 \| 105364837 \| 105383107 \| 105472750 \| 105578758 \| 105578503 \| 105769948 \| 105924178 \| 105947413 \| 105956966 \| 105991720 |
| | 3.09 | 104463607 \| 104868507 \| 106090208 \| 104377944 \| 104641695 \| 105277831 |
| | 3.10 | 104975615 \| 105319152 \| 104540526 \| 104975618 |
| | 3.11 | 105041349 \| 105118457 \| 105302117 \| 105950720 \| 105550242 |
| | 3.12 | |
| | 3.13 | |
| | 3.14 | |
| | 3.15 | |
| | 3.16 | 104420358 \| 104355678 |
| | 3.17 | |
| | 3.18 | |
| MISTYWOOD \| SHADOWWOOD | 3.19 | |
| | 3.20 | |
| | 3.21 | |
| | 3.22 | 105241684 \| 105487456 \| 105775194 \| 104576492 \| 105170302 |
| PEDESTRIAN CROSSING | 3.23 | 104441097 \| 105775541 \| 104889699 \| 105223145 \| 105924170 \| 106091641 |
| | 3.24 | 104628338 \| 104654600 \| 104943056 \| 105310142 \| 105612691 |
| | 3.25 | |
| | 3.26 | |
| | 3.27 | |
| | 3.28 | |
| | 3.29 | |
| | 3.30 | 104436650 |
| | 3.31 | |
| | 3.32 | |
| | 3.33 | |
| | 3.34 | 104889332 \| 104547035 |
| | 3.35 | |
| | 3.36 | 105605075 |


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criteria provided by the report's creator. The onus is strictly upon the user of this report to exercise due diligence in in
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| Features | Milepost | Crash IDs |
|---|---|---|
| MUNICIPAL \| PINEY MOUNTAIN | 3.37 | 104355920 \| 104355625 \| 105307178 \| 105365499 |



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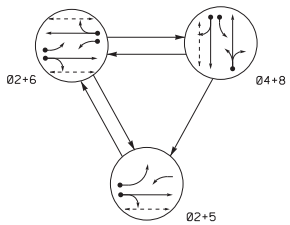
# Appendix C:

# Traffic Signal Plans

| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| NTOR | Sig. 1 |

## PHASING DIAGRAM




PHASING DIAGRAM DETECTION LEGEND

- DETECTED MOVEMENT
- UNDETECTED MOVEMENT (OVERLAP)
- UNSIGNALIZED MOVEMENT
- PEDESTRIAN MOVEMENT

## TABLE OF OPERATION

| SIGNAL FACE | PHASE Ø2+5 | PHASE Ø2+6 | PHASE Ø4+8 | PHASE FLASH |
|---|---|---|---|---|
| 21,22,23 | G | G | R | Y |
| 41,42 | R | R | G | R |
| 51 | ~~F Y~~ | ~~F Y~~ | ~~R~~ | ~~R~~ |
| 61 | ~~F Y~~ | ~~F Y~~ | ~~R~~ | ~~R~~ |
| 62,63 | R | G | R | Y |
| 81,82 | R | R | G | R |
| P21,P22 | W | W | DW | DRK |
| P41,P42 | DW | DW | W | DRK |
| P61,P62 | DW | W | DW | DRK |

## 2070 LOOP & DETECTOR INSTALLATION

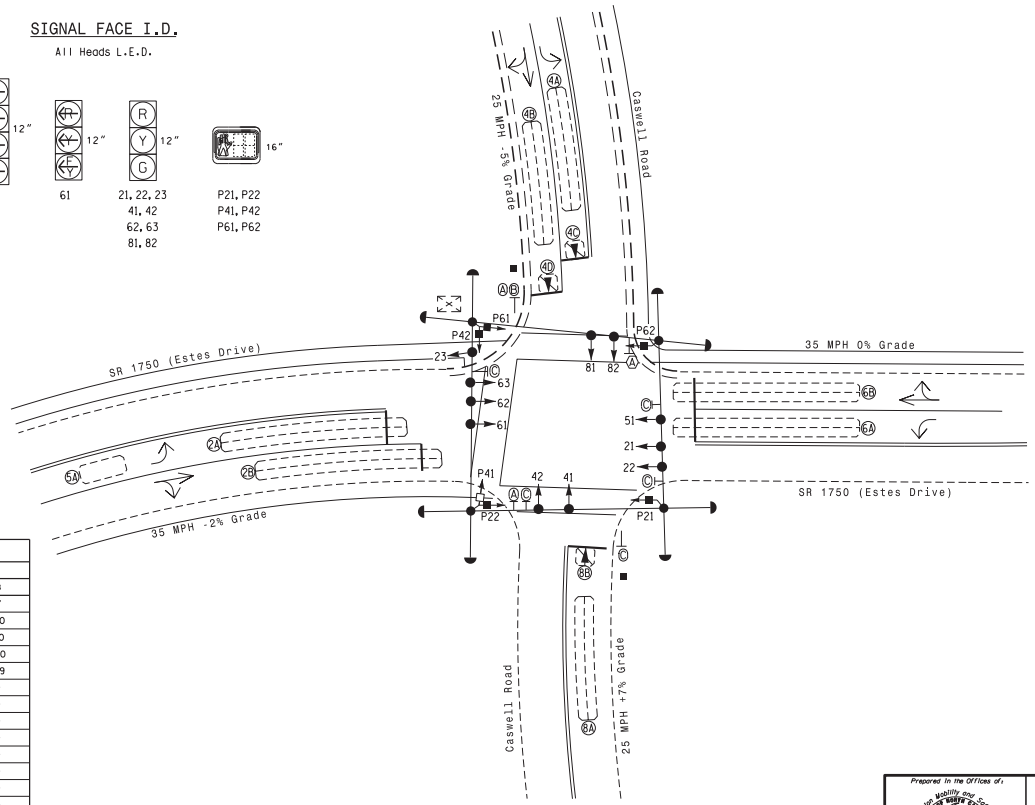
| INDUCTIVE LOOPS | | | | | DETECTOR PROGRAMMING | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| LOOP | SIZE (FT) | DISTANCE FROM STOPBAR (FT) | TURNS | NEW LOOP | PHASE | CALLING | EXTENSION | FULL TIME DELAY | STRETCH TIME | DELAY TIME | SYSTEM LOOP | NEW CARD |
| 2A,2B | 6X60 | +5 | 2-4-2 | - | 2 | Y | Y | - | - | - | - | - |
| 4A | 6X40 | 16 | 2-4-2 | - | 4 | Y | Y | - | - | - | - | - |
| 4B | 6X40 | 16 | 2-4-2 | - | 4 | Y | Y | - | - | - | - | - |
| ✱✱4C | 6X6 | 0 | 2-4-2 Diagonal | - | 4 | Y | Y | - | - | 3 | - | - |
| ✱✱4D | 6X6 | 0 | 2-4-2 Diagonal | - | 4 | Y | Y | - | - | - | - | - |
| 5A | 6X15 | 85 | 2 | - | 5 | Y | Y | - | - | 15 | - | - |
| 6A | 6X60 | +5 | 2-4-2 | - | 6 | Y | Y | - | - | - | - | - |
| 6B | 6X60 | +5 | 2-4-2 | - | 6 | Y | Y | - | - | - | - | - |
| 8A | 6X40 | 16 | 2-4-2 | - | 8 | Y | Y | - | - | - | - | - |
| ✱✱8B | 6X6 | 0 | 2-4-2 Diagonal | - | 8 | Y | Y | - | - | - | - | - |

✱✱ Set Sensitivity to appropriate level to detect a bicycle.

## SIGNAL FACE I.D.

All Heads L.E.D.




## 2070 TIMING CHART

| FEATURE | PHASE 2 | PHASE 4 | PHASE 5 | PHASE 6 | PHASE 8 |
|---|---|---|---|---|---|
| Min Green 1 * | 10 | 7 | 7 | 10 | 7 |
| Extension 1 * | 2.0 | 1.0 | 1.0 | 2.0 | 1.0 |
| Max Green 1 * | 40 | 20 | 20 | 40 | 20 |
| Yellow Clearance | 4.0 | 3.5 | 3.0 | 3.8 | 3.0 |
| Red Clearance | 1.6 | 1.9 | 2.6 | 1.8 | 1.9 |
| Walk 1 * | 7 | 7 | - | 7 | - |
| Don't Walk 1 | 9 | 8 | - | 9 | - |
| Seconds Per Actuation * | - | - | - | - | - |
| Max Variable Initial * | - | - | - | - | - |
| Time Before Reduction * | - | - | - | - | - |
| Time To Reduce * | - | - | - | - | - |
| Minimum Gap | - | - | - | - | - |
| Recall Mode | MIN RECALL | - | - | MIN RECALL | - |
| Vehicle Call Memory | YELLOW | - | - | YELLOW | - |
| Dual Entry | - | ON | - | - | ON |
| Simultaneous Gap | ON | ON | ON | ON | ON |

* These values may be field adjusted. Do not adjust Min Green and Extension times for phases 2 and 6 lower than what is shown. Min Green for all other phases should not be lower than 4 seconds.

3 Phase
Fully Actuated
(Chapel Hill-Carrboro Signal System)

## NOTES

1. Refer to "Roadway Standard Drawings NCDOT" dated January 2018 and "Standard Specifications for Roads and Structures" dated January 2018.
2. Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
3. Phase 5 may be lagged.
4. Set all detector units to presence mode.
5. In the event of loop replacement, refer to the current Signals and Geometrics Design Manual and submit a Plan of Record to the Signals and Geometrics Section.
6. Omit "WALK" and flashing "DON'T WALK" with no pedestrian calls.
7. Program pedestrian heads to countdown the flashing "Don't Walk" time only.
8. Pavement markings are existing.
9. Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.

## LEGEND

| PROPOSED | | EXISTING |
|---|---|---|
| | Traffic Signal Head | |
| | Modified Signal Head | N/A |
| | Sign | |
| | Pedestrian Signal Head With Push Button & Sign | |
| | Signal Pole with Guy | |
| | Signal Pole with Sidewalk Guy | |
| | Inductive Loop Detector | |
| | Controller & Cabinet | |
| | Junction Box | |
| | 2-in Underground Conduit | |
| N/A | Right of Way | |
| | Directional Arrow | |
| | Pavement Marking Arrow | |
| | Install Bike Marking (See Notes 12 & 13) | |
| Ⓐ | "NO TURN ON RED" Sign (R10-11) | Ⓐ |
| Ⓑ | "To Request Green Wait on Line" Sign (R10-22) | Ⓑ |
| Ⓒ | "Turning Traffic Must Yield to Pedestrians" Sign (R10-15) | Ⓒ |

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Prepared in the Offices of:
Transportation Mobility and Safety Division
Traffic Engineering Branch
Signal Design Section
750 N.Greenfield Pkwy,Garner,NC 27529

SR 1750 (Estes Drive)
at Caswell Road
[East Intersection]

Division 7 Orange County Chapel Hill

| | | | |
|---|---|---|---|
| PLAN DATE: | Nov. 2019 | REVIEWED BY: | C. Baek |
| PREPARED BY: | N. LeShure | REVIEWED BY: | |

SCALE 1"=20'

| REVISIONS | INIT. | DATE |
|---|---|---|
| | | |

SEAL
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 034282 CHANGSEOK BAEK

DocuSigned by: Changsek Baek 1/15/2020
SIGNATURE DATE

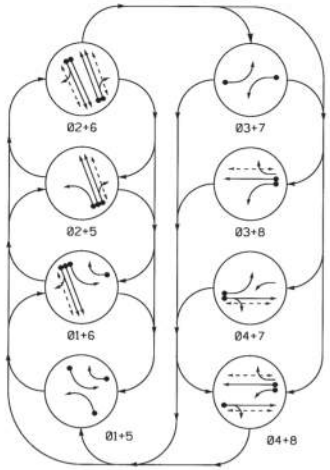
SIG. INVENTORY NO. 07-0219

15-JAN-2020 13:35
S:\ntl55\Sig\ntl55_Signals\Signal Design Section\Central Region\Div 7\Chapel Hill NTOR\07\0219_sig_dsn_20200115.dgn
$$USER

Evaluation Only. Created with Aspose.PDF. Copyright 2002-2018 Aspose Pty Ltd.

| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| 07-0527 | Sig. 1 |

## PHASING DIAGRAM

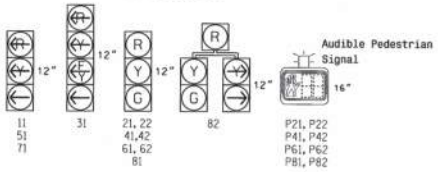



PHASING DIAGRAM DETECTION LEGEND

- DETECTED MOVEMENT
- UNDETECTED MOVEMENT (OVERLAP)
- UNSIGNALIZED MOVEMENT
- PEDESTRIAN MOVEMENT

## SIGNAL FACE I.D.

All Heads L.E.D.



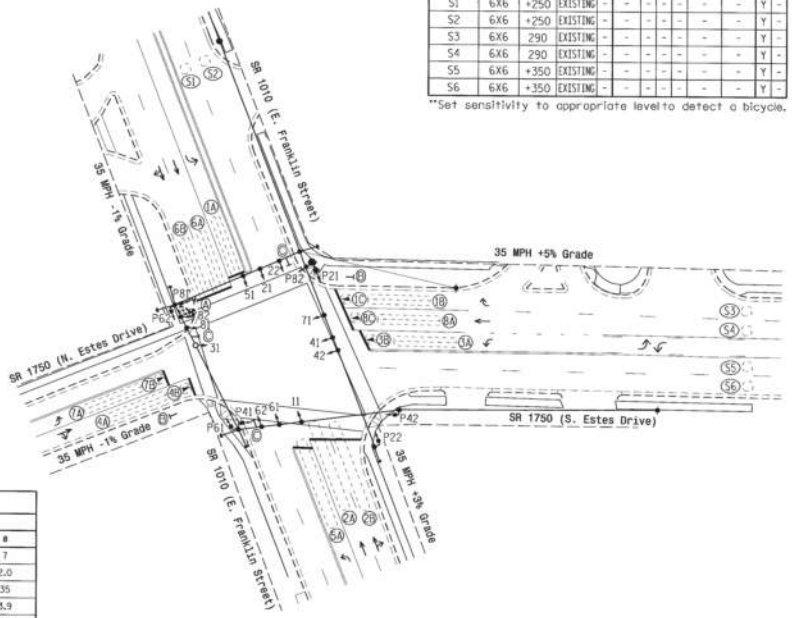

## TABLE OF OPERATION

| SIGNAL FACE | Ø1+5 | Ø1+6 | Ø2+5 | Ø2+6 | Ø3+7 | Ø3+8 | Ø4+7 | Ø4+8 | FLASH |
|---|---|---|---|---|---|---|---|---|---|
| 11 | - | - | R | R | R | R | R | R | R |
| 21, 22 | R | R | G | G | R | R | R | R | Y |
| 31 | R | R | R | R | - | - | F | F | R |
| 41, 42 | R | R | R | R | R | R | G | G | R |
| 51 | - | R | - | R | R | R | R | R | R |
| 61, 62 | R | G | R | G | R | R | R | R | Y |
| 71 | R | R | R | R | - | R | - | R | R |
| 81 | R | R | R | R | R | G | R | G | R |
| 82 | R | R | R | R | R | G | R | G | R |
| P21, P22 | DW | DW | W | W | DW | DW | DW | DW | DRK |
| P41, P42 | DW | DW | DW | DW | DW | DW | W | W | DRK |
| P61, P62 | DW | W | DW | W | DW | DW | DW | DW | DRK |
| P81, P82 | DW | DW | DW | DW | DW | W | DW | W | DRK |

## OASIS 2070L LOOP & DETECTOR INSTALLATION CHART

| INDUCTIVE LOOPS | | | | | DETECTOR PROGRAMMING | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| LOOP | SIZE (FT) | DISTANCE FROM STOPBAR (FT) | TURNS | NEW LOOP | PHASE | CALLING | EXTENSION | FULL TIME DELAY | STRETCH TIME | DELAY TIME | SYSTEM LOOP | NEW CARD |
| 1A | 6X40 | 0 | 2-4-2 | - | 1 | Y | Y | - | - | - | - | - |
| 1B | 6X40 | 16 | 2-4-2 | - | 1 | Y | Y | - | - | 15 | - | - |
| 1C ** | 6X6 | 0 | 2-4-2 (Diagonal) | - | 1 | Y | Y | - | - | 15 | - | - |
| 2A, 2B | 6X60 | +10 | EXISTING | - | 2 | Y | Y | - | - | - | - | - |
| 3A | 6X40 | 16 | 2-4-2 | - | 3 | Y | Y | - | - | 15 | - | - |
| | | | | | 8 | Y | Y | - | - | 3 | - | Y |
| 3B** | 6X6 | 0 | 2-4-2 (Diagonal) | - | 3 | Y | Y | - | - | 15 | - | - |
| | | | | | 8 | Y | Y | - | - | 3 | - | Y |
| 4A | 6X40 | 16 | 2-4-2 | - | 4 | Y | Y | - | - | 10 | - | - |
| 4B** | 6X6 | 0 | 2-4-2 (Diagonal) | - | 4 | Y | Y | - | - | 10 | - | - |
| 5A | 6X60 | +5 | EXISTING | - | 5 | Y | Y | - | - | 3 | - | - |
| 6A, 6B | 6X40 | 0 | EXISTING | - | 6 | Y | Y | - | - | - | - | - |
| 7A | 6X40 | 16 | 2-4-2 | - | 7 | Y | Y | - | - | - | - | - |
| 7B** | 6X6 | 0 | 2-4-2 (Diagonal) | - | 7 | Y | Y | - | - | 3 | - | - |
| 8A | 6X40 | 16 | 2-4-2 | - | 8 | Y | Y | - | - | - | - | - |
| 8C ** | 6X6 | 0 | 2-4-2 (Diagonal) | - | 8 | Y | Y | - | - | - | - | - |
| S1 | 6X6 | +250 | EXISTING | - | - | - | - | - | - | - | Y | - |
| S2 | 6X6 | +250 | EXISTING | - | - | - | - | - | - | - | Y | - |
| S3 | 6X6 | 290 | EXISTING | - | - | - | - | - | - | - | Y | - |
| S4 | 6X6 | 290 | EXISTING | - | - | - | - | - | - | - | Y | - |
| S5 | 6X6 | +350 | EXISTING | - | - | - | - | - | - | - | Y | - |
| S6 | 6X6 | +350 | EXISTING | - | - | - | - | - | - | - | Y | - |

**Set sensitivity to appropriate level to detect a bicycle.




## OASIS 2070L TIMING CHART

| FEATURE | PHASE 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Min Green 1 * | 7 | 10 | 7 | 7 | 7 | 10 | 7 | 7 |
| Extension 1 * | 2.0 | 2.0 | 2.0 | 2.0 | 1.0 | 2.0 | 2.0 | 2.0 |
| Max Green 1 * | 15 | 60 | 30 | 35 | 35 | 60 | 30 | 35 |
| Yellow Clearance | 3.0 | 3.7 | 3.0 | 3.9 | 3.0 | 3.9 | 3.0 | 3.9 |
| Red Clearance | 2.9 | 2.0 | 2.6 | 2.0 | 3.2 | 1.6 | 2.9 | 2.0 |
| Red Revert | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Walk 1 * | - | 7 | - | 7 | - | 7 | - | 7 |
| Don't Walk 1 | - | 23 | - | 21 | - | 9 | - | 18 |
| Seconds Per Actuation * | - | - | - | - | - | - | - | - |
| Max Variable Initial * | - | - | - | - | - | - | - | - |
| Time Before Reduction * | - | - | - | - | - | - | - | - |
| Time To Reduce * | - | - | - | - | - | - | - | - |
| Minimum Gap | - | - | - | - | - | - | - | - |
| Recall Mode | - | MIN RECALL | - | - | - | MIN RECALL | - | - |
| Vehicle Call Memory | - | - | - | - | - | - | - | - |
| Dual Entry | - | - | - | ON | - | - | - | - |
| Simultaneous Gap | ON | ON | ON | ON | ON | ON | ON | ON |

* These values may be field adjusted. Do not adjust Min Green and Extension times for phases 2 and 6 lower than what is shown. Min Green for all other phases should not be lower than 4 seconds.

# 8 Phase
# Fully Actuated
# (Chapel Hill-Carrboro Signal System)

## NOTES

1. Refer to "Roadway Standard Drawings NCDOT" dated January 2012 and "Standard Specifications for Roads and Structures" dated January 2012.
2. Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
3. Phase 1 and/or phase 5 may be lagged.
4. Phase 3 and/or phase 7 may be lagged.
5. Set all detector units to presence mode.
6. In the event of loop replacement, refer to the current ITS and Signals Design Manual and submit a Plan of Record to the Signal Design Section.
7. Omit "WALK" and flashing "DON'T WALK" with no pedestrian calls.
8. Program pedestrian heads to countdown the flashing "Don't Walk" time only.
9. Maintain existing audible pedestrian heads.
10. Pavement markings are existing.
11. Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.

## LEGEND

| PROPOSED | | EXISTING |
|---|---|---|
| | Traffic Signal Head | |
| | Modified Signal Head | N/A |
| | Sign | |
| | Pedestrian Signal Head With Push Button & Sign | |
| | Signal Pole with Guy | |
| | Signal Pole with Sidewalk Guy | |
| | Inductive Loop Detector | |
| | Controller & Cabinet | |
| | Junction Box | |
| | 2-in Underground Conduit | |
| N/A | Right of Way | |
| | Directional Arrow | |
| | Type I Signal Pedestal | |
| | Type II Signal Pedestal | |
| N/A | Bike Markings | |
| Ⓐ | Right Arrow "ONLY" Sign (R3-5R) | Ⓐ |
| Ⓑ | "TO REQUEST GREEN WAIT ON LINE" Sign (R10-22) | Ⓑ |
| Ⓒ | "TURNING TRAFFIC MUST YIELD TO PEDESTRIANS" Sign (R10-15) | Ⓒ |

Signal Upgrade

Prepared in the Offices of:
Transportation Mobility and Safety Division
Traffic Engineering Branch
Signal Design Section
Design Section
750 N.Greenfield Pkwy, Garner, NC 27529

# SR 1010 (E. Franklin Street) at SR 1750 (Estes Drive)

Division 7 Orange County Chapel Hill

PLAN DATE: February 2014 REVIEWED BY:
PREPARED BY: T. L. Averette REVIEWED BY:

SCALE 0 40 1"=40'

| REVISIONS | INIT. | DATE |
|---|---|---|
| | | |

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 026486 ENGINEER ROBERT J. LEWIS
SIGNATURE 3/5/14 DATE
SIG. INVENTORY NO. 07-0527

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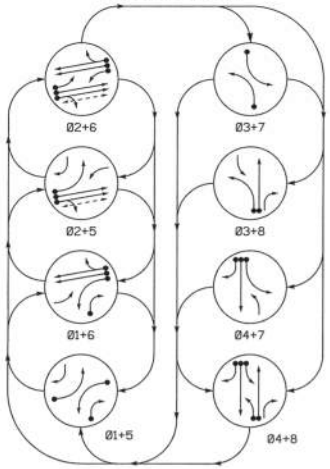
| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| U-4704 | Sig. |

## PHASING DIAGRAM




### PHASING DIAGRAM DETECTION LEGEND

- DETECTED MOVEMENT
- UNDETECTED MOVEMENT (OVERLAP)
- UNSIGNALIZED MOVEMENT
- PEDESTRIAN MOVEMENT

## TABLE OF OPERATION

| SIGNAL FACE | PHASE Ø1+5 | Ø1+6 | Ø2+5 | Ø2+6 | Ø3+7 | Ø3+8 | Ø4+7 | Ø4+8 | FLASH |
|---|---|---|---|---|---|---|---|---|---|
| 11 | ← | ← | ↓ | ↓ | A | A | A | A | A |
| 21, 22 | R | R | G | G | R | R | R | R | Y |
| 31 | A | A | A | A | ← | ← | ↓ | ↓ | A |
| 41 | R | R | R | R | R | R | G | G | R |
| 42 | R/↓ | R | R/↓ | R | R | R | G | G | R |
| 51 | ← | ↓ | ← | ↓ | A | A | A | A | A |
| 61, 62 | R | G | R | G | R | R | R | R | Y |
| 71 | A | A | A | A | ← | ↓ | ← | ↓ | A |
| 81 | R | R | R | R | R | G | R | G | R |
| 82 | R/↓ | R/↓ | R | R | R | G | R | G | R |
| P21,P22 | DW | DW | W | W | DW | DW | DW | DW | DRK |

↓ = Flashing Yellow Arrow
W - Walk
DW - Don't Walk
DRK - Dark

## STANDARD SIGNAL FACE CLEARANCES FOR 4 SECTION LEFT TURN SIGNAL

| FROM | TO ← 1 | TO ← 2 | TO ↓ 1 | TO ↓ 2 | TO A 1 | TO A 2 |
|---|---|---|---|---|---|---|
| ← | - | - | ↓ | A | ↓ | A |
| ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | A |
| A | A | A | A | A | A | A |

↓ = Flashing Yellow Arrow

## 2070L LOOP & DETECTOR INSTALLATION

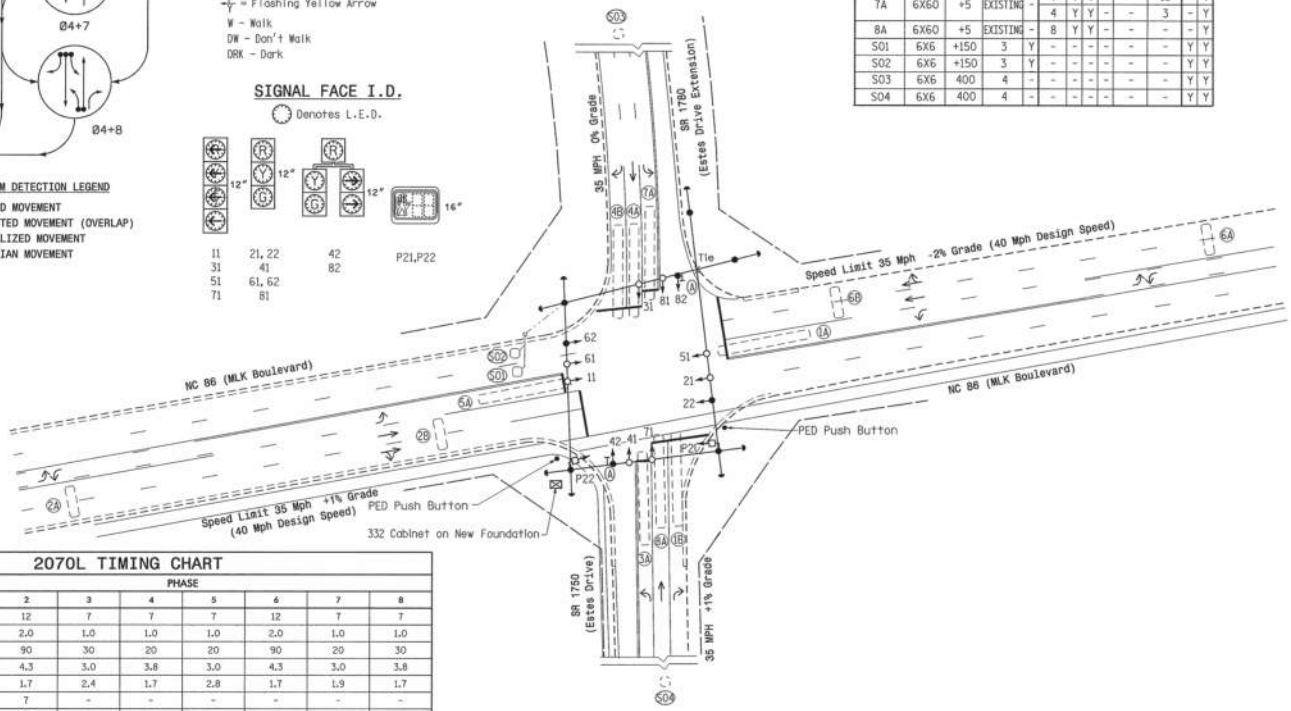
| INDUCTIVE LOOPS: LOOP | SIZE (FT) | DISTANCE FROM STOPBAR (FT) | TURNS | NEW LOOP | DETECTOR PROGRAMMING: PHASE | CALLING | EXTENSION | FULL TIME DELAY | STRETCH TIME | DELAY TIME | SYSTEM LOOP | NEW CARD |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1A | 6X60 | +5 | EXISTING | - | 1 | Y | Y | - | - | 15 | - | Y |
| | | | | | 6 | Y | Y | - | - | - | - | Y |
| 1B | 6X60 | +5 | EXISTING | - | 1 | Y | Y | - | - | 15 | - | Y |
| 2A | 6X20 | 330 | EXISTING | - | 2 | Y | Y | - | 3.1 | - | - | Y |
| 2B | 6X20 | 70 | EXISTING | - | 2 | Y | Y | - | - | - | - | Y |
| 3A | 6X60 | +5 | EXISTING | - | 3 | Y | Y | - | - | 15 | - | Y |
| | | | | | 8 | Y | Y | - | - | 3 | - | Y |
| 4A,4B | 6X60 | +5 | EXISTING | - | 4 | Y | Y | - | - | - | - | Y |
| 5A | 6X60 | +5 | EXISTING | - | 5 | Y | Y | - | - | 15 | - | Y |
| | | | | | 2 | Y | Y | - | - | - | - | Y |
| 6A | 6X20 | 330 | EXISTING | - | 6 | Y | Y | - | 3.1 | - | - | Y |
| 6B | 6X20 | 70 | EXISTING | - | 6 | Y | Y | - | - | - | - | Y |
| 7A | 6X60 | +5 | EXISTING | - | 7 | Y | Y | - | - | 15 | - | Y |
| | | | | | 4 | Y | Y | - | - | 3 | - | Y |
| 8A | 6X60 | +5 | EXISTING | - | 8 | Y | Y | - | - | - | - | Y |
| S01 | 6X6 | +150 | 3 | Y | - | - | - | - | - | - | Y | Y |
| S02 | 6X6 | +150 | 3 | Y | - | - | - | - | - | - | Y | Y |
| S03 | 6X6 | 400 | 4 | - | - | - | - | - | - | - | Y | Y |
| S04 | 6X6 | 400 | 4 | - | - | - | - | - | - | - | Y | Y |

## SIGNAL FACE I.D.

Denotes L.E.D.




11, 31, 51, 71 — 21, 22, 41, 61, 62, 81 — 42, 82 — P21, P22




## 8 Phase Fully Actuated Chapel Hill - Carrboro Signal System

### NOTES

1. Refer to "Roadway Standard Drawings NCDOT" dated July 2006 and "Standard Specifications for Roads and Structures" dated July 2006.
2. Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
3. Phase 1 or phase 5 may be lagged.
4. Phase 3 or phase 7 may be lagged.
5. Set all detector units to presence mode.
6. In the event of loop replacement, refer to the current Signals and Geometrics Design Manual and submit a Plan of Record to the Signals and Geometrics Section.
7. Locate new cabinet so as not to obstruct sight distance of vehicles turning right on red.
8. Omit "WALK" and flashing "DON'T WALK" with no pedestrian calls.
9. Program pedestrian heads to countdown the flashing "Don't Walk" time only.
10. Pavement markings are existing.
11. Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.
12. Reposition existing signal heads numbered 22, 42, 62 and 82.

## LEGEND

| PROPOSED | | EXISTING |
|---|---|---|
| | Traffic Signal Head | |
| | Modified Signal Head | N/A |
| | Sign | |
| | Pedestrian Signal Head With Push Button & Sign | |
| | Signal Pole with Guy | |
| | Signal Pole with Sidewalk Guy | |
| | Inductive Loop Detector | |
| | Controller & Cabinet | |
| | Junction Box | |
| | 2-in Underground Conduit | |
| N/A | Right of Way | |
| | Directional Arrow | |
| | Pavement Marking Arrow | |
| Ⓐ | Right Arrow "ONLY" Sign (R3-5R) | Ⓐ |

## 2070L TIMING CHART

| FEATURE | PHASE 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Min Green 1 * | 7 | 12 | 7 | 7 | 7 | 12 | 7 | 7 |
| Extension 1 * | 1.0 | 2.0 | 1.0 | 1.0 | 1.0 | 2.0 | 1.0 | 1.0 |
| Max Green 1 * | 20 | 90 | 30 | 20 | 20 | 90 | 20 | 30 |
| Yellow Clearance | 3.0 | 4.3 | 3.0 | 3.8 | 3.0 | 4.3 | 3.0 | 3.8 |
| Red Clearance | 2.8 | 1.7 | 2.4 | 1.7 | 2.8 | 1.7 | 1.9 | 1.7 |
| Walk 1 * | - | 7 | - | - | - | - | - | - |
| Don't Walk 1 | - | 21 | - | - | - | - | - | - |
| Seconds Per Actuation * | - | - | - | - | - | - | - | - |
| Max Variable Initial * | - | - | - | - | - | - | - | - |
| Time Before Reduction * | - | - | - | - | - | - | - | - |
| Time To Reduce * | - | - | - | - | - | - | - | - |
| Minimum Gap | - | - | - | - | - | - | - | - |
| Recall Mode | - | MIN RECALL | - | - | - | MIN RECALL | - | - |
| Vehicle Call Memory | - | YELLOW | - | - | - | YELLOW | - | - |
| Dual Entry | - | - | - | ON | - | - | - | ON |
| Simultaneous Gap | ON | ON | ON | ON | ON | ON | ON | ON |

* These values may be field adjusted. Do not adjust Min Green and Extension times for phases 2 and 6 lower than what is shown. Min Green for all other phases should not be lower than 4 seconds.

Signal Upgrade

Prepared in the Offices of: Traffic Engineering and Safety Systems Branch, Division of Highways, State of North Carolina Department of Transportation, 750 N. Greenfield Pkwy, Garner, NC 27529

SCALE 0 40 1"=40'

NC 86 (MLK Boulevard) At SR 1750 (Estes Drive)/ SR 1780 (Estes Drive Extension)

Division 7 Orange County Chapel Hill

PLAN DATE: July 2008 REVIEWED BY: M. Mahboobe

PREPARED BY: K. Waldonado REVIEWED BY:

| REVISIONS | INIT. | DATE |
|---|---|---|
| | | |

SEAL 29904 NORTH CAROLINA PROFESSIONAL ENGINEER JASON P. GALLOWAY

SIGNATURE DATE

SIG. INVENTORY NO. 47-0532

26-AUG-2008 11:21
s:\traffic signals\projects\safety groups\divisions\7\chapel hill systems\47-0532\u4704532_sig_dwg_20080710.dgn
(Bill Cooley)

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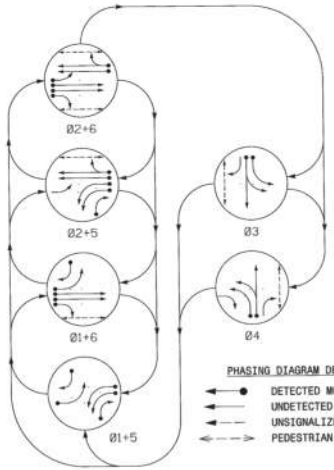
| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| 36249.3038 | Sig-1 |

## PHASING DIAGRAM




PHASING DIAGRAM DETECTION LEGEND

- DETECTED MOVEMENT
- UNDETECTED MOVEMENT (OVERLAP)
- UNSIGNALIZED MOVEMENT
- PEDESTRIAN MOVEMENT

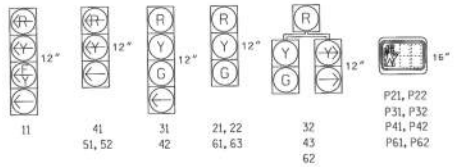
## TABLE OF OPERATION

| SIGNAL FACE | PHASE Ø1+5 | Ø1+6 | Ø2+5 | Ø2+6 | Ø3 | Ø4 | FLASH |
|---|---|---|---|---|---|---|---|
| 11 | ← | ← | ↟ | ↟ | ↟ | ↟ | ↟ |
| 21, 22 | R | R | G | G | R | R | Y |
| 31 | R | R | R | R | G | R | R |
| 32 | R/ | R/ | R | R | G | R | R |
| 41 | ↟ | ↟ | ↟ | ↟ | ↟ | ← | ↟ |
| 42 | R | R | R | R | R | G | R |
| 43 | R/ | R | R/ | R | R | G | R |
| 51, 52 | ← | ↟ | ← | ↟ | ↟ | ↟ | ↟ |
| 61, 63 | R | G | R | G | R | R | Y |
| 62 | R | G | R | G | R | R/ | Y |
| P21, P22 | DW | DW | W | W | DW | DW | DRK |
| P31, P32 | DW | DW | DW | DW | W | DW | DRK |
| P41, P42 | DW | DW | DW | DW | DW | W | DRK |
| P61, P62 | DW | W | DW | W | DW | DW | DRK |

↟ - FLASHING YELLOW ARROW
W-Walk
DW-Don't Walk
DRK-Dark

## SIGNAL FACE I.D.

All Heads L.E.D.



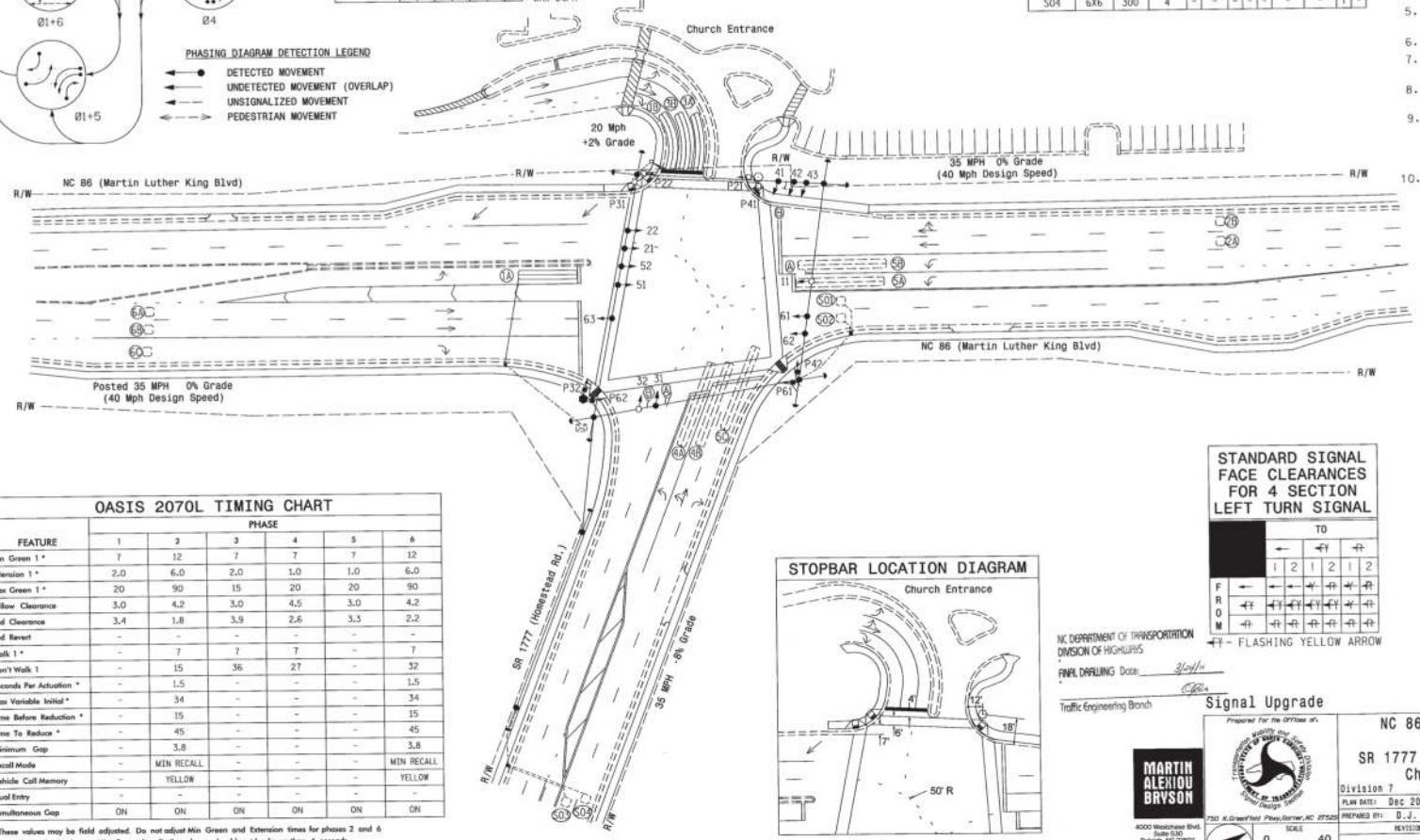

## OASIS 2070L LOOP & DETECTOR INSTALLATION

| INDUCTIVE LOOPS | | | | | DETECTOR PROGRAMMING | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| LOOP | SIZE (FT) | DISTANCE FROM STOPBAR (FT) | TURNS | NEW LOOP | PHASE | CALLING | EXTENSION | FULL TIME DELAY | STRETCH TIME | DELAY TIME | SYSTEM LOOP | NEW CARD |
| 1A | 6X40 | 0 | 2-4-2 | Y | 1 | Y | Y | - | - | 15 | - | Y |
| | | | | | 6 | Y | Y | Y | - | 3 | - | Y |
| 1B | 6X40 | 0 | 2-4-2 | Y | 1 | Y | Y | - | - | 15 | - | Y |
| 2A,2B | 6X6 | 300 | EXISTING | - | 2 | Y | Y | - | - | - | - | - |
| 3A | 6X40 | 0 | 2-4-2 | Y | 3 | Y | Y | - | - | - | - | - |
| 3B | 6X40 | 0 | 2-4-2 | Y | 3 | Y | Y | - | - | - | - | - |
| 4A | 6X60 | +23 | 2-4-2 | - | 4 | Y | Y | - | - | - | - | - |
| 4B | 6X60 | +16 | 2-4-2 | - | 4 | Y | Y | - | - | - | - | - |
| 5A | 6X60 | 0 | 2-4-2 | - | 5 | Y | Y | - | - | 3 | - | - |
| 5B | 6X60 | 10 | 2-4-2 | - | 5 | Y | Y | - | - | - | - | - |
| 5C | 6X60 | +25 | 2-4-2 | - | 5 | Y | Y | - | - | 15 | - | - |
| 6A,6B,6C | 6X6 | 300 | EXISTING | - | 6 | Y | Y | - | - | - | - | - |
| S01 | 6X6 | +175 | 3 | - | - | - | - | - | - | - | Y | - |
| S02 | 6X6 | +175 | 3 | - | - | - | - | - | - | - | Y | - |
| S03 | 6X6 | 300 | 4 | - | - | - | - | - | - | - | Y | - |
| S04 | 6X6 | 300 | 4 | - | - | - | - | - | - | - | Y | - |

## 6 Phase Fully Actuated (Chapel Hill-Carrboro Signal System)

### NOTES

1. Refer to "Roadway Standard Drawings NCDOT" dated July 2006 and "Standard Specifications for Roads and Structures" dated July 2006 and all applicable sections of the latest version of the generic Project Special Provisions. The PSP can be accessed at the following website: "http://www.ncdot. - org/doh/preconstruct/traffic/itss/".
2. Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
3. Phase 1 or phase 5 may be lagged.
4. The order of phase 3 and phase 4 may be reversed.
5. Reposition existing signal head 31 and sign A as shown.
6. Set all detector units to presence mode.
7. Omit "WALK" and flashing "DON'T WALK" with no pedestrian calls.
8. Program pedestrian heads to countdown the flashing "Don't Walk" time only.
9. In the event of loop replacement, refer to the current ITS and Signals Unit Design Manual and submit a Plan of Record to the Signals Section.
10. Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.




## OASIS 2070L TIMING CHART

| FEATURE | PHASE 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| Min Green 1 * | 7 | 12 | 7 | 7 | 7 | 12 |
| Extension 1 * | 2.0 | 6.0 | 2.0 | 1.0 | 1.0 | 6.0 |
| Max Green 1 * | 20 | 90 | 15 | 20 | 20 | 90 |
| Yellow Clearance | 3.0 | 4.2 | 3.0 | 4.5 | 3.0 | 4.2 |
| Red Clearance | 3.4 | 1.8 | 3.9 | 2.6 | 3.3 | 2.2 |
| Red Revert | - | - | - | - | - | - |
| Walk 1 * | - | 7 | 7 | 7 | - | 7 |
| Don't Walk 1 | - | 15 | 36 | 27 | - | 32 |
| Seconds Per Actuation * | - | 1.5 | - | - | - | 1.5 |
| Max Variable Initial * | - | 34 | - | - | - | 34 |
| Time Before Reduction * | - | 15 | - | - | - | 15 |
| Time To Reduce * | - | 45 | - | - | - | 45 |
| Minimum Gap | - | 3.8 | - | - | - | 3.8 |
| Recall Mode | - | MIN RECALL | - | - | - | MIN RECALL |
| Vehicle Call Memory | - | YELLOW | - | - | - | YELLOW |
| Dual Entry | - | - | - | - | - | - |
| Simultaneous Gap | ON | ON | ON | ON | ON | ON |

* These values may be field adjusted. Do not adjust Min Green and Extension times for phases 2 and 6 lower than what is shown. Min Green for all other phases should not be lower than 4 seconds.

## STOPBAR LOCATION DIAGRAM




## STANDARD SIGNAL FACE CLEARANCES FOR 4 SECTION LEFT TURN SIGNAL

| FROM \ TO | ← 1 | ← 2 | ↟ 1 | ↟ 2 | ↟ 1 | ↟ 2 |
|---|---|---|---|---|---|---|
| ← | ← | ← | ↟ | ↟ | ↟ | ↟ |
| ↟ | ↟ | ↟ | ↟ | ↟ | ↟ | ↟ |
| ↟ | ↟ | ↟ | ↟ | ↟ | ↟ | ↟ |

↟ - FLASHING YELLOW ARROW

## LEGEND

| PROPOSED | | EXISTING |
|---|---|---|
| | Traffic Signal Head | |
| | Modified Signal Head | N/A |
| | Sign | |
| | Pedestrian Signal Head With Push Button & Sign | |
| | Pedestrian Pedestal | |
| | Signal Pole with Guy | |
| | Signal Pole with Sidewalk Guy | |
| | Inductive Loop Detector | |
| | Controller & Cabinet | |
| | Junction Box | |
| N/A | Wheel Chair Ramp | |
| | 2-in Underground Conduit | |
| N/A | Right of Way | |
| | Directional Arrow | |
| | Pavement Marking Arrow | |
| | Stopbar | |
| Ⓐ | Left Arrow "ONLY" Sign (R3-5L) | Ⓐ |
| Ⓑ | Combined Through and Left Arrow Sign (R3-6L) | Ⓑ |

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
FINAL DRAWING Date: 3/29/11
Traffic Engineering Branch

# Signal Upgrade

MARTIN ALEXIOU BRYSON
4000 Westchase Blvd.
Suite 530
Raleigh, NC 27607
Tel. 919-829-0326
Fax. 919-829-0329
NC License No: C-3498

Prepared for the Offices of:
Transportation Mobility and Safety Division
Traffic Engineering Branch
Signal Design Section
750 N.Greenfield Pkwy,Garner,NC 27529

SCALE 0 40 1"=40'

## NC 86 (MLK Boulevard) at SR 1777 (Homestead Road)/ Church Entrance

Division 7 Orange County Chapel Hill

| PLAN DATE: Dec 2010 | REVIEWED BY: D.J. Darity |
|---|---|
| PREPARED BY: D.J. Darity | MBB PROJECT NO.: 2010075 |

| REVISIONS | INIT. | DATE |
|---|---|---|
| | | |

SEAL: NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 019824 DONALD J. DARITY
SIGNATURE 3-18-2011 DATE
SIG. INVENTORY NO. 07-1019

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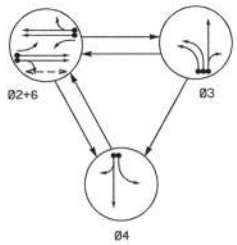
| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| U-4704 | Sig. |

## PHASING DIAGRAM




PHASING DIAGRAM DETECTION LEGEND

- DETECTED MOVEMENT
- UNDETECTED MOVEMENT (OVERLAP)
- UNSIGNALIZED MOVEMENT
- PEDESTRIAN MOVEMENT

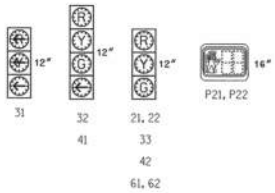
## TABLE OF OPERATION

| SIGNAL FACE | PHASE Ø2+6 | PHASE Ø3 | PHASE Ø4 | PHASE FLASH |
|---|---|---|---|---|
| 21,22 | G | R | R | Y |
| 31 | ~~R~~ | ← | ~~R~~ | ~~R~~ |
| 32 | R | G | R | R |
| 33 | R | G | R | R |
| 41 | R | R | G | R |
| 42 | R | R | G | R |
| 61, 62 | G | R | R | Y |
| P21, P22 | W | DW | DW | DRK |

W - Walk
DW - Don't Walk
DRK - Dark

## SIGNAL FACE I.D.

Denotes L.E.D.




(Re-Wire Heads 21, 22, 61, & 62)

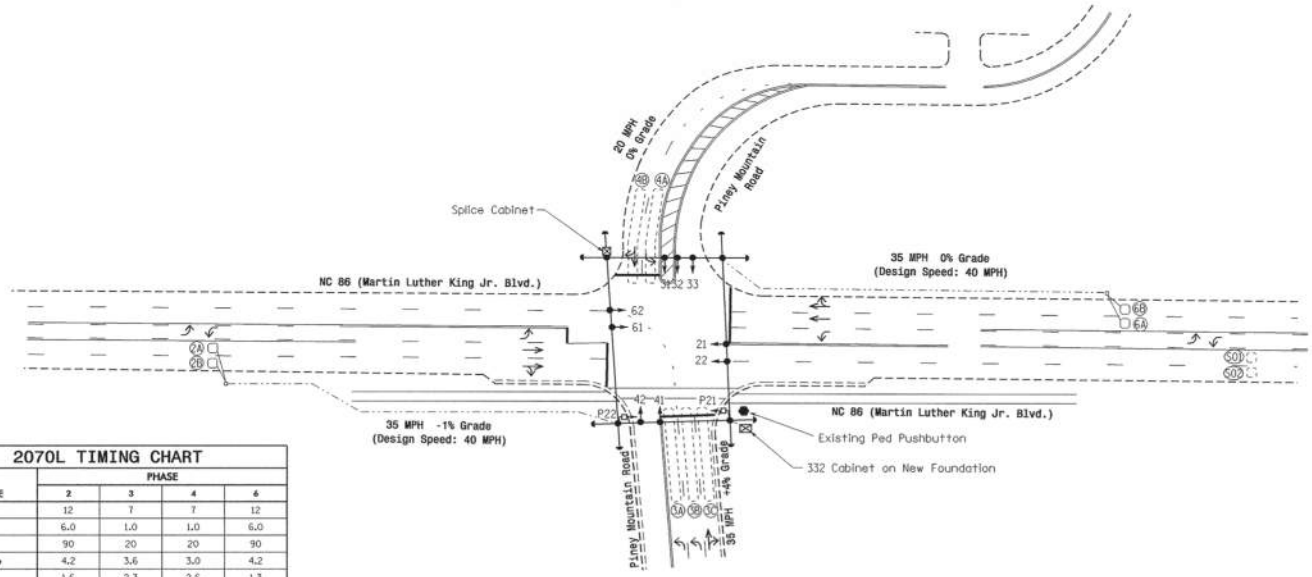
## 2070L LOOP & DETECTOR INSTALLATION

| INDUCTIVE LOOPS | | | | DETECTOR PROGRAMMING | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LOOP | SIZE (FT) | DISTANCE FROM STOPBAR (FT) | TURNS | NEW LOOP | PHASE | CALLING | EXTENSION | FULL TIME DELAY | STRETCH TIME | DELAY TIME | SYSTEM LOOP | NEW CARD |
| 2A | 6X6 | 250 | 4 | Y | 2 | Y | Y | - | - | - | - | Y |
| 2B | 6X6 | 250 | 4 | Y | 2 | Y | Y | - | - | - | - | Y |
| 3A, 3B, 3C | 6X60 | +5 | Existing | - | 3 | Y | Y | - | - | 3 | - | Y |
| 4A, 4B | 6X60 | +5 | Existing | - | 4 | Y | Y | - | - | - | - | Y |
| 6A | 6X6 | 250 | 4 | Y | 6 | Y | Y | - | - | - | - | Y |
| 6B | 6X6 | 250 | 4 | Y | 6 | Y | Y | - | - | - | - | Y |
| SO1 | 6X6 | +410+/- | 4 | - | - | - | - | - | - | - | Y | Y |
| SO2 | 6X6 | +410+/- | 4 | - | - | - | - | - | - | - | Y | Y |

3 Phase
Fully Actuated
Chapel Hill - Carrboro Signal System

## NOTES

1. Refer to "Roadway Standard Drawings NCDOT" dated July 2006 and "Standard Specifications for Roads and Structures" dated July 2006.
2. Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
3. Phase 3 or phase 4 may be lagged.
4. Set all detector units to presence mode.
5. In the event of loop replacement, refer to the current Signals and Geometrics Design Manual and submit a Plan of Record to the Signals and Geometrics Section.
6. Locate new cabinet so as not to obstruct sight distance of vehicles turning right on red.
7. Pavement markings are existing.
8. Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.
9. Omit "WALK" and flashing "DON'T WALK" with no pedestrian calls.
10. Program pedestrian heads to countdown the flashing "Don't Walk" time only.




## LEGEND

| PROPOSED | | EXISTING |
|---|---|---|
| | Traffic Signal Head | |
| | Modified Signal Head | N/A |
| | Sign | |
| | Pedestrian Signal Head With Push Button & Sign | |
| | Signal Pole with Guy | |
| | Signal Pole with Sidewalk Guy | |
| | Inductive Loop Detector | |
| | Controller & Cabinet | |
| | Junction Box | |
| | 2-in Underground Conduit | |
| N/A | Right of Way | |
| | Directional Arrow | |
| | Pavement Marking Arrow | |
| | Pedestrian Signal Pedestal | |

## 2070L TIMING CHART

| FEATURE | PHASE 2 | PHASE 3 | PHASE 4 | PHASE 6 |
|---|---|---|---|---|
| Min Green 1 * | 12 | 7 | 7 | 12 |
| Extension 1 * | 6.0 | 1.0 | 1.0 | 6.0 |
| Max Green 1 * | 90 | 20 | 20 | 90 |
| Yellow Clearance | 4.2 | 3.6 | 3.0 | 4.2 |
| Red Clearance | 1.6 | 2.3 | 2.6 | 1.3 |
| Walk 1 * | 7 | - | - | - |
| Don't Walk 1 | 15 | - | - | - |
| Seconds Per Actuation * | 1.5 | - | - | 1.5 |
| Max Variable Initial * | 29 | - | - | 29 |
| Time Before Reduction * | 15 | - | - | 15 |
| Time To Reduce * | 45 | - | - | 45 |
| Minimum Gap | 3.0 | - | - | 3.0 |
| Recall Mode | MIN RECALL | - | - | MIN RECALL |
| Vehicle Call Memory | YELLOW | - | - | YELLOW |
| Dual Entry | - | - | - | - |
| Simultaneous Gap | ON | ON | ON | ON |

* These values may be field adjusted. Do not adjust Min Green and Extension times for phases 2 and 6 lower than what is shown. Min Green for all other phases should not be lower than 4 seconds.

Signal Upgrade

Prepared in the Offices of: Traffic Engineering Branch, Signals and Geometrics Section, 750 N. Greenfield Pkwy, Garner, NC 27529

SCALE 0 40 1"=40'

NC 86 (Martin Luther King, Jr. Blvd.)
at
Piney Mountain Road

Division 07 Orange County Chapel Hill

PLAN DATE: July 2008 REVIEWED BY: M.Mahbooba
PREPARED BY: Mahbooba/Carter REVIEWED BY:

| REVISIONS | INIT. | DATE |
|---|---|---|
| | | |

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 29904 ENGINEER JASON B. CALLIHAN
SIGNATURE 11/6/08 DATE
SIG. INVENTORY NO. 07-0985

03-OCT-2008 14:31
U:\pw_work\ncdot\projectwise\ty_group\traffic-signal-design\ty_projects\chapel hill system\07-0985\07-0985_sig_dwn_20080708.dgn
jgallihan

# Appendix D:

# Intersection Capacity Analysis Results

| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 4 | 98 | 79 | 563 | 1096 | 118 |
| Future Volume (vph) | 4 | 98 | 79 | 563 | 1096 | 118 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | 125 | 100 | | | 0 |
| Storage Lanes | 1 | 1 | 1 | | | 0 |
| Taper Length (ft) | 100 | | 100 | | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 0.95 |
| Frt | | 0.850 | | | 0.985 | |
| Flt Protected | 0.950 | | 0.950 | | | |
| Satd. Flow (prot) | 1770 | 1509 | 1719 | 3343 | 3425 | 0 |
| Flt Permitted | 0.950 | | 0.950 | | | |
| Satd. Flow (perm) | 1770 | 1509 | 1719 | 3343 | 3425 | 0 |
| Link Speed (mph) | 30 | | | 40 | 40 | |
| Link Distance (ft) | 928 | | | 1413 | 1063 | |
| Travel Time (s) | 21.1 | | | 24.1 | 18.1 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 7% | 5% | 8% | 4% | 2% |
| Adj. Flow (vph) | 4 | 109 | 88 | 626 | 1218 | 131 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 4 | 109 | 88 | 626 | 1349 | 0 |
| Sign Control | Stop | | | Free | Free | |

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 51.8% ICU Level of Service A
Analysis Period (min) 15

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

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 4 | 98 | 79 | 563 | 1096 | 118 |
| Future Vol, veh/h | 4 | 98 | 79 | 563 | 1096 | 118 |
| 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 | 125 | 100 | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 2 | 7 | 5 | 8 | 4 | 2 |
| Mvmt Flow | 4 | 109 | 88 | 626 | 1218 | 131 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 1773 | 675 | 1349 | 0 | - | 0 |
| Stage 1 | 1284 | - | - | - | - | - |
| Stage 2 | 489 | - | - | - | - | - |
| Critical Hdwy | 6.84 | 7.04 | 4.2 | - | - | - |
| Critical Hdwy Stg 1 | 5.84 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.84 | - | - | - | - | - |
| Follow-up Hdwy | 3.52 | 3.37 | 2.25 | - | - | - |
| Pot Cap-1 Maneuver | 74 | 385 | 491 | - | - | - |
| Stage 1 | 224 | - | - | - | - | - |
| Stage 2 | 582 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 61 | 385 | 491 | - | - | - |
| Mov Cap-2 Maneuver | 147 | - | - | - | - | - |
| Stage 1 | 184 | - | - | - | - | - |
| Stage 2 | 582 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 18.5 | 1.7 | 0 |
| HCM LOS | C | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | EBLn2 | SBT | SBR |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | 491 | - | 147 | 385 | - | - |
| HCM Lane V/C Ratio | 0.179 | - | 0.03 | 0.283 | - | - |
| HCM Control Delay (s) | 13.9 | - | 30.3 | 18 | - | - |
| HCM Lane LOS | B | - | D | C | - | - |
| HCM 95th %tile Q(veh) | 0.6 | - | 0.1 | 1.1 | - | - |

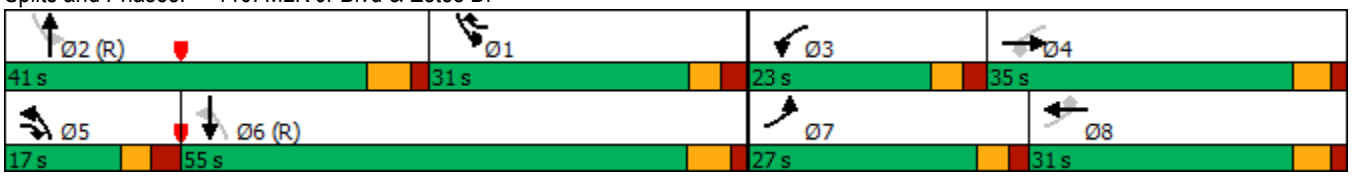
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 264 | 297 | 80 | 177 | 156 | 248 | 34 | 420 | 113 | 357 | 957 | 223 |
| Future Volume (vph) | 264 | 297 | 80 | 177 | 156 | 248 | 34 | 420 | 113 | 357 | 957 | 223 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Grade (%) | | 1% | | | -2% | | | 1% | | | 0% | |
| Storage Length (ft) | 225 | | 350 | 150 | | 200 | 150 | | 0 | 225 | | 0 |
| Storage Lanes | 1 | | 1 | 1 | | 1 | 1 | | 0 | 1 | | 0 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | 0.95 | 0.95 |
| Frt | | | 0.850 | | | 0.850 | | 0.968 | | | 0.972 | |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1761 | 1853 | 1575 | 1770 | 1845 | 1568 | 1761 | 3245 | 0 | 1770 | 3380 | 0 |
| Flt Permitted | 0.440 | | | 0.170 | | | 0.082 | | | 0.245 | | |
| Satd. Flow (perm) | 816 | 1853 | 1575 | 317 | 1845 | 1568 | 152 | 3245 | 0 | 456 | 3380 | 0 |
| Right Turn on Red | | | No | | | No | | | No | | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (mph) | | 35 | | | 35 | | | 40 | | | 40 | |
| Link Distance (ft) | | 1251 | | | 1571 | | | 1063 | | | 1514 | |
| Travel Time (s) | | 24.4 | | | 30.6 | | | 18.1 | | | 25.8 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 2% | 3% | 4% | 4% | 2% | 8% | 4% | 2% | 4% | 3% |
| Adj. Flow (vph) | 293 | 330 | 89 | 197 | 173 | 276 | 38 | 467 | 126 | 397 | 1063 | 248 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 293 | 330 | 89 | 197 | 173 | 276 | 38 | 593 | 0 | 397 | 1311 | 0 |
| Turn Type | D.P+P | NA | pm+ov | D.P+P | NA | pm+ov | D.P+P | NA | | D.P+P | NA | |
| Protected Phases | 7 | 4 | 5 | 3 | 8 | 1 | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 8 | | 4 | 4 | | 8 | 6 | | | 2 | | |
| Detector Phase | 7 | 4 | 5 | 3 | 8 | 1 | 5 | 2 | | 1 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 12.0 | | 7.0 | 12.0 | |
| Minimum Split (s) | 11.9 | 12.5 | 12.8 | 12.4 | 12.5 | 12.8 | 12.8 | 34.0 | | 12.8 | 18.0 | |
| Total Split (s) | 27.0 | 35.0 | 17.0 | 23.0 | 31.0 | 31.0 | 17.0 | 41.0 | | 31.0 | 55.0 | |
| Total Split (%) | 20.8% | 26.9% | 13.1% | 17.7% | 23.8% | 23.8% | 13.1% | 31.5% | | 23.8% | 42.3% | |
| Maximum Green (s) | 22.1 | 29.5 | 11.2 | 17.6 | 25.5 | 25.2 | 11.2 | 35.0 | | 25.2 | 49.0 | |
| Yellow Time (s) | 3.0 | 3.8 | 3.0 | 3.0 | 3.8 | 3.0 | 3.0 | 4.3 | | 3.0 | 4.3 | |
| All-Red Time (s) | 1.9 | 1.7 | 2.8 | 2.4 | 1.7 | 2.8 | 2.8 | 1.7 | | 2.8 | 1.7 | |
| Lost Time Adjust (s) | 0.1 | -0.5 | -0.8 | -0.4 | -0.5 | -0.8 | -0.8 | -1.0 | | -0.8 | -1.0 | |
| Total Lost Time (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | | 5.0 | 5.0 | |
| Lead/Lag | Lead | Lag | Lead | Lead | Lag | Lag | Lead | Lead | | Lag | Lag | |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | | Yes | Yes | |
| Vehicle Extension (s) | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 2.0 | | 1.0 | 2.0 | |
| Recall Mode | None | None | None | None | None | None | None | C-Min | | None | C-Min | |
| Walk Time (s) | | | | | | | | 7.0 | | | | |
| Flash Dont Walk (s) | | | | | | | | 21.0 | | | | |
| Pedestrian Calls (#/hr) | | | | | | | | 0 | | | | |
| Act Effct Green (s) | 40.5 | 26.3 | 39.1 | 40.5 | 21.1 | 55.5 | 69.5 | 35.2 | | 69.5 | 61.7 | |
| Actuated g/C Ratio | 0.31 | 0.20 | 0.30 | 0.31 | 0.16 | 0.43 | 0.53 | 0.27 | | 0.53 | 0.47 | |
| v/c Ratio | 0.74 | 0.88 | 0.19 | 0.77 | 0.58 | 0.41 | 0.21 | 0.68 | | 0.67 | 0.82 | |
| Control Delay | 44.2 | 74.6 | 33.6 | 50.1 | 57.6 | 15.9 | 17.4 | 47.1 | | 32.8 | 28.8 | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Delay | 44.2 | 74.6 | 33.6 | 50.1 | 57.6 | 15.9 | 17.4 | 47.1 | | 32.8 | 28.8 | |
| LOS | D | E | C | D | E | B | B | D | | C | C | |
| Approach Delay | | 57.0 | | | 37.5 | | | 45.3 | | | 29.8 | |
| Approach LOS | | E | | | D | | | D | | | C | |
| Queue Length 50th (ft) | 188 | 269 | 55 | 119 | 136 | 87 | 14 | 240 | | 153 | 371 | |
| Queue Length 95th (ft) | 253 | #392 | 96 | 173 | 204 | 139 | 34 | 299 | | #351 | #684 | |
| Internal Link Dist (ft) | | 1171 | | | 1491 | | | 983 | | | 1434 | |
| Turn Bay Length (ft) | 225 | | 350 | 150 | | 200 | 150 | | | 225 | | |
| Base Capacity (vph) | 427 | 429 | 524 | 307 | 369 | 668 | 234 | 910 | | 591 | 1604 | |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | |
| Reduced v/c Ratio | 0.69 | 0.77 | 0.17 | 0.64 | 0.47 | 0.41 | 0.16 | 0.65 | | 0.67 | 0.82 | |

Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 84 (65%), Referenced to phase 2:NBSB and 6:NBSB, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.88
Intersection Signal Delay: 39.0 Intersection LOS: D
Intersection Capacity Utilization 81.5% ICU Level of Service D
Analysis Period (min) 15
# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 110: MLK Jr Blvd & Estes Dr



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 264 | 297 | 80 | 177 | 156 | 248 | 34 | 420 | 113 | 357 | 957 | 223 |
| Future Volume (veh/h) | 264 | 297 | 80 | 177 | 156 | 248 | 34 | 420 | 113 | 357 | 957 | 223 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1864 | 1864 | 1864 | 1934 | 1919 | 1919 | 1864 | 1776 | 1776 | 1870 | 1841 | 1841 |
| Adj Flow Rate, veh/h | 293 | 330 | 89 | 197 | 173 | 276 | 38 | 467 | 126 | 397 | 1063 | 248 |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 3 | 4 | 4 | 2 | 8 | 8 | 2 | 4 | 4 |
| Cap, veh/h | 380 | 364 | 385 | 266 | 275 | 787 | 344 | 549 | 147 | 686 | 1414 | 328 |
| Arrive On Green | 0.15 | 0.20 | 0.20 | 0.10 | 0.14 | 0.15 | 0.05 | 0.21 | 0.20 | 0.68 | 1.00 | 0.99 |
| Sat Flow, veh/h | 1776 | 1864 | 1580 | 1842 | 1919 | 1626 | 1776 | 2631 | 705 | 1781 | 2817 | 654 |
| Grp Volume(v), veh/h | 293 | 330 | 89 | 197 | 173 | 276 | 38 | 298 | 295 | 397 | 658 | 653 |
| Grp Sat Flow(s),veh/h/ln | 1776 | 1864 | 1580 | 1842 | 1919 | 1626 | 1776 | 1687 | 1649 | 1781 | 1749 | 1723 |
| Q Serve(g_s), s | 18.2 | 22.5 | 5.9 | 10.9 | 11.0 | 5.0 | 1.3 | 22.1 | 22.4 | 5.9 | 0.0 | 0.9 |
| Cycle Q Clear(g_c), s | 18.2 | 22.5 | 5.9 | 10.9 | 11.0 | 5.0 | 1.3 | 22.1 | 22.4 | 5.9 | 0.0 | 0.9 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.43 | 1.00 | | 0.38 |
| Lane Grp Cap(c), veh/h | 380 | 364 | 385 | 266 | 275 | 787 | 344 | 352 | 344 | 686 | 877 | 865 |
| V/C Ratio(X) | 0.77 | 0.91 | 0.23 | 0.74 | 0.63 | 0.35 | 0.11 | 0.85 | 0.86 | 0.58 | 0.75 | 0.76 |
| Avail Cap(c_a), veh/h | 407 | 430 | 442 | 332 | 384 | 879 | 426 | 467 | 457 | 686 | 877 | 865 |
| 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 | 0.81 | 0.81 | 0.81 |
| Uniform Delay (d), s/veh | 39.5 | 51.2 | 39.4 | 38.3 | 52.4 | 7.3 | 13.7 | 49.5 | 49.8 | 14.1 | 0.0 | 0.1 |
| Incr Delay (d2), s/veh | 7.2 | 19.0 | 0.1 | 4.7 | 0.9 | 0.1 | 0.1 | 21.7 | 23.1 | 0.7 | 4.8 | 5.0 |
| 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 | 8.6 | 12.3 | 2.3 | 5.2 | 5.4 | 2.1 | 0.5 | 11.3 | 11.3 | 4.2 | 1.2 | 1.3 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 46.8 | 70.1 | 39.5 | 42.9 | 53.3 | 7.4 | 13.7 | 71.1 | 72.9 | 14.8 | 4.8 | 5.1 |
| LnGrp LOS | D | E | D | D | D | A | B | E | E | B | A | A |
| Approach Vol, veh/h | | 712 | | | 646 | | | 631 | | | 1708 | |
| Approach Delay, s/veh | | 56.7 | | | 30.5 | | | 68.5 | | | 7.2 | |
| Approach LOS | | E | | | C | | | E | | | A | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 49.1 | 32.1 | 18.4 | 30.4 | 11.0 | 70.2 | 25.1 | 23.7 |
| Change Period (Y+Rc), s | * 6 | * 6 | 5.4 | 5.5 | * 5.8 | * 6 | * 4.9 | 5.5 |
| Max Green Setting (Gmax), s | * 25 | * 35 | 17.6 | 29.5 | * 11 | * 49 | * 22 | 25.5 |
| Max Q Clear Time (g_c+I1), s | 7.9 | 24.4 | 12.9 | 24.5 | 3.3 | 2.9 | 20.2 | 13.0 |
| Green Ext Time (p_c), s | 0.1 | 1.7 | 0.0 | 0.4 | 0.0 | 6.5 | 0.0 | 0.4 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 31.3 |
| HCM 6th LOS | C |

Notes

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

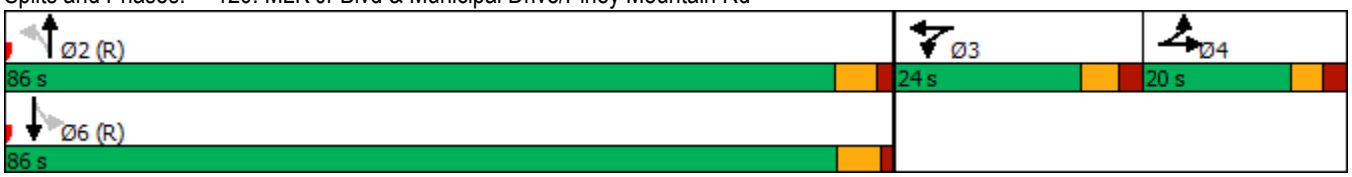
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 2 | 0 | 7 | 160 | 1 | 38 | 14 | 855 | 63 | 20 | 1370 | 2 |
| Future Volume (vph) | 2 | 0 | 7 | 160 | 1 | 38 | 14 | 855 | 63 | 20 | 1370 | 2 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Grade (%) | | 0% | | | 4% | | | -1% | | | 0% | |
| Storage Length (ft) | 100 | | 0 | 375 | | 0 | 150 | | 0 | 225 | | 0 |
| Storage Lanes | 1 | | 0 | 2 | | 0 | 1 | | 0 | 1 | | 0 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 0.97 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | 0.95 | 0.95 |
| Frt | | 0.850 | | | 0.853 | | | 0.990 | | | | |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1770 | 1252 | 0 | 3332 | 1542 | 0 | 1499 | 3418 | 0 | 1641 | 3505 | 0 |
| Flt Permitted | 0.950 | | | 0.950 | | | 0.137 | | | 0.260 | | |
| Satd. Flow (perm) | 1770 | 1252 | 0 | 3332 | 1542 | 0 | 216 | 3418 | 0 | 449 | 3505 | 0 |
| Right Turn on Red | | | No | | | No | | | No | | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (mph) | | 20 | | | 35 | | | 40 | | | 40 | |
| Link Distance (ft) | | 554 | | | 663 | | | 1514 | | | 2618 | |
| Travel Time (s) | | 18.9 | | | 12.9 | | | 25.8 | | | 44.6 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 29% | 3% | 2% | 3% | 21% | 5% | 6% | 10% | 3% | 2% |
| Adj. Flow (vph) | 2 | 0 | 8 | 178 | 1 | 42 | 16 | 950 | 70 | 22 | 1522 | 2 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 2 | 8 | 0 | 178 | 43 | 0 | 16 | 1020 | 0 | 22 | 1524 | 0 |
| Turn Type | Split | NA | | Split | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | 4 | 4 | | 3 | 3 | | | 2 | | | 6 | |
| Permitted Phases | | | | | | | 2 | | | 6 | | |
| Detector Phase | 4 | 4 | | 3 | 3 | | 2 | 2 | | 6 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | | 7.0 | 7.0 | | 12.0 | 12.0 | | 12.0 | 12.0 | |
| Minimum Split (s) | 12.6 | 12.6 | | 12.9 | 12.9 | | 27.8 | 27.8 | | 17.5 | 17.5 | |
| Total Split (s) | 20.0 | 20.0 | | 24.0 | 24.0 | | 86.0 | 86.0 | | 86.0 | 86.0 | |
| Total Split (%) | 15.4% | 15.4% | | 18.5% | 18.5% | | 66.2% | 66.2% | | 66.2% | 66.2% | |
| Maximum Green (s) | 14.4 | 14.4 | | 18.1 | 18.1 | | 80.2 | 80.2 | | 80.5 | 80.5 | |
| Yellow Time (s) | 3.0 | 3.0 | | 3.6 | 3.6 | | 4.2 | 4.2 | | 4.2 | 4.2 | |
| All-Red Time (s) | 2.6 | 2.6 | | 2.3 | 2.3 | | 1.6 | 1.6 | | 1.3 | 1.3 | |
| Lost Time Adjust (s) | -0.6 | -0.6 | | -0.9 | -0.9 | | -0.8 | -0.8 | | -0.5 | -0.5 | |
| Total Lost Time (s) | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | |
| Lead/Lag | Lag | Lag | | Lead | Lead | | | | | | | |
| Lead-Lag Optimize? | Yes | Yes | | Yes | Yes | | | | | | | |
| Vehicle Extension (s) | 1.0 | 1.0 | | 1.0 | 1.0 | | 6.0 | 6.0 | | 6.0 | 6.0 | |
| Minimum Gap (s) | 1.0 | 1.0 | | 1.0 | 1.0 | | 6.0 | 6.0 | | 6.0 | 6.0 | |
| Time Before Reduce (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 15.0 | 15.0 | | 15.0 | 15.0 | |
| Time To Reduce (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 45.0 | 45.0 | | 45.0 | 45.0 | |
| Recall Mode | None | None | | None | None | | C-Min | C-Min | | C-Min | C-Min | |
| Walk Time (s) | | | | | | | 7.0 | 7.0 | | | | |
| Flash Dont Walk (s) | | | | | | | 15.0 | 15.0 | | | | |
| Pedestrian Calls (#/hr) | | | | | | | 0 | 0 | | | | |
| Act Effct Green (s) | 7.6 | 7.6 | | 11.3 | 11.3 | | 103.7 | 103.7 | | 103.7 | 103.7 | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Actuated g/C Ratio | 0.06 | 0.06 | | 0.09 | 0.09 | | 0.80 | 0.80 | | 0.80 | 0.80 | |
| v/c Ratio | 0.02 | 0.11 | | 0.62 | 0.32 | | 0.09 | 0.37 | | 0.06 | 0.55 | |
| Control Delay | 58.0 | 61.6 | | 66.3 | 61.2 | | 5.9 | 4.2 | | 1.6 | 2.8 | |
| Queue Delay | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Delay | 58.0 | 61.6 | | 66.3 | 61.2 | | 5.9 | 4.2 | | 1.6 | 2.8 | |
| LOS | E | E | | E | E | | A | A | | A | A | |
| Approach Delay | | 60.9 | | | 65.3 | | | 4.2 | | | 2.8 | |
| Approach LOS | | E | | | E | | | A | | | A | |
| Queue Length 50th (ft) | 2 | 7 | | 75 | 35 | | 0 | 31 | | 2 | 71 | |
| Queue Length 95th (ft) | 11 | 24 | | 112 | 72 | | m7 | 201 | | m2 | 49 | |
| Internal Link Dist (ft) | | 474 | | | 583 | | | 1434 | | | 2538 | |
| Turn Bay Length (ft) | 100 | | | 375 | | | 150 | | | 225 | | |
| Base Capacity (vph) | 204 | 144 | | 486 | 225 | | 172 | 2725 | | 358 | 2794 | |
| Starvation Cap Reductn | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Spillback Cap Reductn | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Storage Cap Reductn | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Reduced v/c Ratio | 0.01 | 0.06 | | 0.37 | 0.19 | | 0.09 | 0.37 | | 0.06 | 0.55 | |

Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 80 (62%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.62
Intersection Signal Delay: 8.4 Intersection LOS: A
Intersection Capacity Utilization 57.5% ICU Level of Service B
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 120: MLK Jr Blvd & Municipal Drive/Piney Mountain Rd



HCM 6th Edition methodology expects strict NEMA phasing.

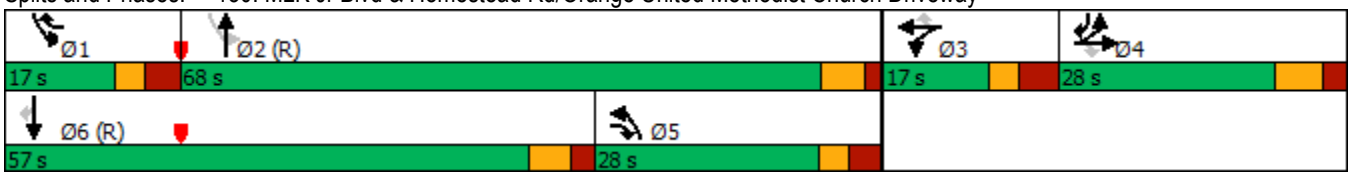
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 220 | 6 | 246 | 2 | 0 | 1 | 106 | 787 | 2 | 9 | 1144 | 121 |
| Future Volume (vph) | 220 | 6 | 246 | 2 | 0 | 1 | 106 | 787 | 2 | 9 | 1144 | 121 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 125 | | 0 | 125 | | 0 | 525 | | 0 | 250 | | 375 |
| Storage Lanes | 1 | | 1 | 2 | | 1 | 2 | | 0 | 1 | | 1 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 0.95 | 0.95 | 1.00 | 0.95 | 0.95 | 1.00 | 0.97 | 0.95 | 0.95 | 1.00 | 0.95 | 1.00 |
| Frt | | | 0.850 | | | 0.850 | | | | | | 0.850 |
| Flt Protected | 0.950 | 0.955 | | 0.950 | 0.950 | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1618 | 1630 | 1583 | 1681 | 1681 | 1583 | 3242 | 3468 | 0 | 1770 | 3505 | 1482 |
| Flt Permitted | 0.950 | 0.955 | | 0.950 | 0.950 | | 0.950 | | | 0.287 | | |
| Satd. Flow (perm) | 1618 | 1630 | 1583 | 1681 | 1681 | 1583 | 3242 | 3468 | 0 | 535 | 3505 | 1482 |
| Right Turn on Red | | | No | | | No | | | No | | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (mph) | | 35 | | | 20 | | | 40 | | | 40 | |
| Link Distance (ft) | | 1248 | | | 314 | | | 1137 | | | 1345 | |
| Travel Time (s) | | 24.3 | | | 10.7 | | | 19.4 | | | 22.9 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 6% | 2% | 2% | 2% | 2% | 2% | 8% | 4% | 50% | 2% | 3% | 9% |
| Adj. Flow (vph) | 244 | 7 | 273 | 2 | 0 | 1 | 118 | 874 | 2 | 10 | 1271 | 134 |
| Shared Lane Traffic (%) | 49% | | | 50% | | | | | | | | |
| Lane Group Flow (vph) | 124 | 127 | 273 | 1 | 1 | 1 | 118 | 876 | 0 | 10 | 1271 | 134 |
| Turn Type | Split | NA | pm+ov | Split | NA | pm+ov | Prot | NA | | D.P+P | NA | pm+ov |
| Protected Phases | 4 | 4 | 5 | 3 | 3 | 1 | 5 | 2 | | 1 | 6 | 4 |
| Permitted Phases | | | 4 | | | 3 | | | | 2 | | 6 |
| Detector Phase | 4 | 4 | 5 | 3 | 3 | 1 | 5 | 2 | | 1 | 6 | 4 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 12.0 | | 7.0 | 12.0 | 7.0 |
| Minimum Split (s) | 14.1 | 14.1 | 13.3 | 13.9 | 13.9 | 13.4 | 13.3 | 28.0 | | 13.4 | 45.4 | 14.1 |
| Total Split (s) | 28.0 | 28.0 | 28.0 | 17.0 | 17.0 | 17.0 | 28.0 | 68.0 | | 17.0 | 57.0 | 28.0 |
| Total Split (%) | 21.5% | 21.5% | 21.5% | 13.1% | 13.1% | 13.1% | 21.5% | 52.3% | | 13.1% | 43.8% | 21.5% |
| Maximum Green (s) | 20.9 | 20.9 | 21.7 | 10.1 | 10.1 | 10.6 | 21.7 | 62.0 | | 10.6 | 50.6 | 20.9 |
| Yellow Time (s) | 4.5 | 4.5 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 4.2 | | 3.0 | 4.2 | 4.5 |
| All-Red Time (s) | 2.6 | 2.6 | 3.3 | 3.9 | 3.9 | 3.4 | 3.3 | 1.8 | | 3.4 | 2.2 | 2.6 |
| Lost Time Adjust (s) | -2.1 | -2.1 | -1.3 | -1.9 | -1.9 | -1.4 | -1.3 | -1.0 | | -1.4 | -1.4 | -2.1 |
| Total Lost Time (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | | 5.0 | 5.0 | 5.0 |
| Lead/Lag | Lag | Lag | Lag | Lead | Lead | Lead | Lag | Lag | | Lead | Lead | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | | Yes | Yes | Yes |
| Vehicle Extension (s) | 1.0 | 1.0 | 1.0 | 2.0 | 2.0 | 2.0 | 1.0 | 6.0 | | 2.0 | 6.0 | 1.0 |
| Minimum Gap (s) | 1.0 | 1.0 | 1.0 | 2.0 | 2.0 | 2.0 | 1.0 | 6.0 | | 2.0 | 6.0 | 1.0 |
| Time Before Reduce (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 15.0 | | 0.0 | 15.0 | 0.0 |
| Time To Reduce (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 45.0 | | 0.0 | 45.0 | 0.0 |
| Recall Mode | None | None | None | None | None | None | None | C-Min | | None | C-Min | None |
| Walk Time (s) | | | | | | | | 7.0 | | | 7.0 | |
| Flash Dont Walk (s) | | | | | | | | 15.0 | | | 32.0 | |
| Pedestrian Calls (#/hr) | | | | | | | | 0 | | | 0 | |
| Act Effct Green (s) | 15.7 | 15.7 | 40.7 | 8.9 | 8.9 | 10.2 | 21.1 | 96.2 | | 99.6 | 75.5 | 96.1 |
| Actuated g/C Ratio | 0.12 | 0.12 | 0.31 | 0.07 | 0.07 | 0.08 | 0.16 | 0.74 | | 0.77 | 0.58 | 0.74 |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| v/c Ratio | 0.64 | 0.65 | 0.55 | 0.01 | 0.01 | 0.01 | 0.22 | 0.34 | | 0.02 | 0.62 | 0.12 |
| Control Delay | 68.5 | 69.1 | 37.2 | 57.0 | 57.0 | 40.0 | 54.7 | 8.4 | | 5.7 | 21.9 | 6.3 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Total Delay | 68.5 | 69.1 | 37.2 | 57.0 | 57.0 | 40.0 | 54.7 | 8.4 | | 5.7 | 21.9 | 6.3 |
| LOS | E | E | D | E | E | D | D | A | | A | C | A |
| Approach Delay | | 52.4 | | | 51.3 | | | 13.9 | | | 20.3 | |
| Approach LOS | | D | | | D | | | B | | | C | |
| Queue Length 50th (ft) | 106 | 109 | 184 | 1 | 1 | 1 | 51 | 141 | | 1 | 347 | 28 |
| Queue Length 95th (ft) | 168 | 173 | 206 | 7 | 7 | 5 | 84 | 400 | | 9 | 591 | 70 |
| Internal Link Dist (ft) | | 1168 | | | 234 | | | 1057 | | | 1265 | |
| Turn Bay Length (ft) | 125 | | | 125 | | | 525 | | | 250 | | 375 |
| Base Capacity (vph) | 286 | 288 | 488 | 155 | 155 | 168 | 573 | 2566 | | 529 | 2035 | 1087 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.43 | 0.44 | 0.56 | 0.01 | 0.01 | 0.01 | 0.21 | 0.34 | | 0.02 | 0.62 | 0.12 |

Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 39 (30%), Referenced to phase 2:NBSB and 6:SBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.65
Intersection Signal Delay: 23.9 Intersection LOS: C
Intersection Capacity Utilization 65.2% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 130: MLK Jr Blvd & Homestead Rd/Orange United Methodist Church Driveway



HCM 6th Edition methodology expects strict NEMA phasing.

| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 10 | 757 | 571 | 6 | 13 | 10 |
| Future Volume (vph) | 10 | 757 | 571 | 6 | 13 | 10 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | | 0.999 | | 0.941 | |
| Flt Protected | | 0.999 | | | 0.973 | |
| Satd. Flow (prot) | 0 | 1861 | 1843 | 0 | 1649 | 0 |
| Flt Permitted | | 0.999 | | | 0.973 | |
| Satd. Flow (perm) | 0 | 1861 | 1843 | 0 | 1649 | 0 |
| Link Speed (mph) | | 35 | 35 | | 30 | |
| Link Distance (ft) | | 1571 | 840 | | 813 | |
| Travel Time (s) | | 30.6 | 16.4 | | 18.5 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 3% | 2% | 2% | 10% |
| Adj. Flow (vph) | 11 | 841 | 634 | 7 | 14 | 11 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 852 | 641 | 0 | 25 | 0 |
| Sign Control | | Free | Free | | Stop | |

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 57.8% ICU Level of Service B
Analysis Period (min) 15

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.5 |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 10 | 757 | 571 | 6 | 13 | 10 |
| Future Vol, veh/h | 10 | 757 | 571 | 6 | 13 | 10 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | - |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 2 | 2 | 3 | 2 | 2 | 10 |
| Mvmt Flow | 11 | 841 | 634 | 7 | 14 | 11 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 641 | 0 | - | 0 | 1501 | 638 |
| Stage 1 | - | - | - | - | 638 | - |
| Stage 2 | - | - | - | - | 863 | - |
| Critical Hdwy | 4.12 | - | - | - | 6.42 | 6.3 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.42 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.42 | - |
| Follow-up Hdwy | 2.218 | - | - | - | 3.518 | 3.39 |
| Pot Cap-1 Maneuver | 943 | - | - | - | 134 | 463 |
| Stage 1 | - | - | - | - | 526 | - |
| Stage 2 | - | - | - | - | 413 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | 943 | - | - | - | 131 | 463 |
| Mov Cap-2 Maneuver | - | - | - | - | 131 | - |
| Stage 1 | - | - | - | - | 514 | - |
| Stage 2 | - | - | - | - | 413 | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 0.1 | 0 | 26.9 |
| HCM LOS | | | D |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|
| Capacity (veh/h) | 943 | - | - | - | 190 |
| HCM Lane V/C Ratio | 0.012 | - | - | - | 0.135 |
| HCM Control Delay (s) | 8.9 | 0 | - | - | 26.9 |
| HCM Lane LOS | A | A | - | - | D |
| HCM 95th %tile Q(veh) | 0 | - | - | - | 0.5 |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 180 | 588 | 2 | 1 | 442 | 32 | 8 | 9 | 7 | 43 | 2 | 127 |
| Future Volume (vph) | 180 | 588 | 2 | 1 | 442 | 32 | 8 | 9 | 7 | 43 | 2 | 127 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Grade (%) | | -2% | | | 0% | | | 7% | | | -5% | |
| Storage Length (ft) | 250 | | 0 | 125 | | 0 | 0 | | 0 | 100 | | 0 |
| Storage Lanes | 1 | | 0 | 1 | | 0 | 0 | | 0 | 1 | | 0 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | | | | 0.990 | | | 0.960 | | | 0.852 | |
| Flt Protected | 0.950 | | | 0.950 | | | | 0.984 | | 0.950 | | |
| Satd. Flow (prot) | 1787 | 1881 | 0 | 1770 | 1811 | 0 | 0 | 1698 | 0 | 1814 | 1596 | 0 |
| Flt Permitted | 0.401 | | | 0.376 | | | | 0.888 | | 0.740 | | |
| Satd. Flow (perm) | 754 | 1881 | 0 | 700 | 1811 | 0 | 0 | 1532 | 0 | 1413 | 1596 | 0 |
| Right Turn on Red | | | No | | | No | | | No | | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (mph) | | 35 | | | 35 | | | 25 | | | 25 | |
| Link Distance (ft) | | 961 | | | 940 | | | 384 | | | 262 | |
| Travel Time (s) | | 18.7 | | | 18.3 | | | 10.5 | | | 7.1 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 2% | 2% | 4% | 2% | 2% | 2% | 2% | 2% | 2% | 4% |
| Adj. Flow (vph) | 200 | 653 | 2 | 1 | 491 | 36 | 9 | 10 | 8 | 48 | 2 | 141 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 200 | 655 | 0 | 1 | 527 | 0 | 0 | 27 | 0 | 48 | 143 | 0 |
| Turn Type | D.P+P | NA | | D.Pm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | 5 | 2 | | | 6 | | | 8 | | | 4 | |
| Permitted Phases | 6 | | | 2 | | | 8 | | | 4 | | |
| Detector Phase | 5 | 2 | | 2 | 6 | | 8 | 8 | | 4 | 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 10.0 | | 10.0 | 10.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | |
| Minimum Split (s) | 12.6 | 21.6 | | 21.6 | 21.6 | | 11.9 | 11.9 | | 20.4 | 20.4 | |
| Total Split (s) | 21.0 | 90.0 | | 90.0 | 69.0 | | 30.0 | 30.0 | | 30.0 | 30.0 | |
| Total Split (%) | 17.5% | 75.0% | | 75.0% | 57.5% | | 25.0% | 25.0% | | 25.0% | 25.0% | |
| Maximum Green (s) | 15.4 | 84.4 | | 84.4 | 63.4 | | 25.1 | 25.1 | | 24.6 | 24.6 | |
| Yellow Time (s) | 3.0 | 4.0 | | 4.0 | 3.8 | | 3.0 | 3.0 | | 3.5 | 3.5 | |
| All-Red Time (s) | 2.6 | 1.6 | | 1.6 | 1.8 | | 1.9 | 1.9 | | 1.9 | 1.9 | |
| Lost Time Adjust (s) | -0.6 | -0.6 | | -0.6 | -0.6 | | | 0.1 | | -0.4 | -0.4 | |
| Total Lost Time (s) | 5.0 | 5.0 | | 5.0 | 5.0 | | | 5.0 | | 5.0 | 5.0 | |
| Lead/Lag | Lead | | | | Lag | | | | | | | |
| Lead-Lag Optimize? | Yes | | | | Yes | | | | | | | |
| Vehicle Extension (s) | 1.0 | 2.0 | | 2.0 | 2.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | |
| Recall Mode | None | C-Min | | C-Min | C-Min | | None | None | | None | None | |
| Walk Time (s) | | 7.0 | | 7.0 | 7.0 | | | | | 7.0 | 7.0 | |
| Flash Dont Walk (s) | | 9.0 | | 9.0 | 9.0 | | | | | 8.0 | 8.0 | |
| Pedestrian Calls (#/hr) | | 0 | | 0 | 0 | | | | | 0 | 0 | |
| Act Effct Green (s) | 90.4 | 95.4 | | 95.4 | 80.2 | | | 13.3 | | 14.6 | 14.6 | |
| Actuated g/C Ratio | 0.75 | 0.80 | | 0.80 | 0.67 | | | 0.11 | | 0.12 | 0.12 | |
| v/c Ratio | 0.31 | 0.44 | | 0.00 | 0.44 | | | 0.16 | | 0.28 | 0.74 | |
| Control Delay | 4.7 | 5.4 | | 2.0 | 4.1 | | | 47.2 | | 50.0 | 72.0 | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Queue Delay | 0.0 | 0.0 | | 0.0 | 0.0 | | | 0.0 | | 0.0 | 0.0 | |
| Total Delay | 4.7 | 5.4 | | 2.0 | 4.1 | | | 47.2 | | 50.0 | 72.0 | |
| LOS | A | A | | A | A | | | D | | D | E | |
| Approach Delay | | 5.3 | | | 4.1 | | | 47.2 | | | 66.5 | |
| Approach LOS | | A | | | A | | | D | | | E | |
| Queue Length 50th (ft) | 29 | 130 | | 0 | 25 | | | 19 | | 34 | 108 | |
| Queue Length 95th (ft) | 61 | 239 | | m0 | 227 | | | 45 | | 69 | 170 | |
| Internal Link Dist (ft) | | 881 | | | 860 | | | 304 | | | 182 | |
| Turn Bay Length (ft) | 250 | | | 125 | | | | | | 100 | | |
| Base Capacity (vph) | 733 | 1495 | | 556 | 1210 | | | 319 | | 294 | 332 | |
| Starvation Cap Reductn | 0 | 0 | | 0 | 0 | | | 0 | | 0 | 0 | |
| Spillback Cap Reductn | 0 | 0 | | 0 | 0 | | | 0 | | 0 | 0 | |
| Storage Cap Reductn | 0 | 0 | | 0 | 0 | | | 0 | | 0 | 0 | |
| Reduced v/c Ratio | 0.27 | 0.44 | | 0.00 | 0.44 | | | 0.08 | | 0.16 | 0.43 | |

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 63 (53%), Referenced to phase 2:EBWB and 6:EBWB, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.74
Intersection Signal Delay: 12.9 Intersection LOS: B
Intersection Capacity Utilization 60.2% ICU Level of Service B
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 210: Caswell Rd & Estes Dr

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 180 | 588 | 2 | 1 | 442 | 32 | 8 | 9 | 7 | 43 | 2 | 127 |
| Future Volume (veh/h) | 180 | 588 | 2 | 1 | 442 | 32 | 8 | 9 | 7 | 43 | 2 | 127 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1949 | 1949 | 1949 | 1870 | 1841 | 1841 | 1582 | 1582 | 1582 | 2067 | 2067 | 2067 |
| Adj Flow Rate, veh/h | 200 | 653 | 2 | 1 | 491 | 36 | 9 | 10 | 8 | 48 | 2 | 141 |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 4 | 4 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 236 | 1329 | 4 | 217 | 1149 | 84 | 48 | 41 | 21 | 177 | 3 | 177 |
| Arrive On Green | 0.09 | 0.68 | 0.68 | 0.09 | 0.68 | 0.67 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 |
| Sat Flow, veh/h | 1856 | 1942 | 6 | 1781 | 1694 | 124 | 83 | 417 | 210 | 1541 | 25 | 1731 |
| Grp Volume(v), veh/h | 200 | 0 | 655 | 1 | 0 | 527 | 27 | 0 | 0 | 48 | 0 | 143 |
| Grp Sat Flow(s),veh/h/ln | 1856 | 0 | 1948 | 1781 | 0 | 1818 | 710 | 0 | 0 | 1541 | 0 | 1755 |
| Q Serve(g_s), s | 8.8 | 0.0 | 19.2 | 0.1 | 0.0 | 15.8 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 9.6 |
| Cycle Q Clear(g_c), s | 8.8 | 0.0 | 19.2 | 0.1 | 0.0 | 15.8 | 9.7 | 0.0 | 0.0 | 5.2 | 0.0 | 9.6 |
| Prop In Lane | 1.00 | | 0.00 | 1.00 | | 0.07 | 0.33 | | 0.30 | 1.00 | | 0.99 |
| Lane Grp Cap(c), veh/h | 236 | 0 | 1333 | 0 | 0 | 1233 | 110 | 0 | 0 | 177 | 0 | 179 |
| V/C Ratio(X) | 0.85 | 0.00 | 0.49 | 0.00 | 0.00 | 0.43 | 0.25 | 0.00 | 0.00 | 0.27 | 0.00 | 0.80 |
| Avail Cap(c_a), veh/h | 307 | 0 | 1380 | 0 | 0 | 1233 | 253 | 0 | 0 | 340 | 0 | 366 |
| 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 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 44.7 | 0.0 | 9.0 | 0.0 | 0.0 | 8.8 | 49.8 | 0.0 | 0.0 | 50.7 | 0.0 | 52.9 |
| Incr Delay (d2), s/veh | 12.7 | 0.0 | 1.3 | 0.0 | 0.0 | 1.1 | 0.4 | 0.0 | 0.0 | 0.3 | 0.0 | 3.1 |
| 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 | 6.4 | 0.0 | 7.8 | 0.0 | 0.0 | 6.0 | 0.8 | 0.0 | 0.0 | 1.4 | 0.0 | 4.4 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 57.4 | 0.0 | 10.3 | 0.0 | 0.0 | 9.9 | 50.3 | 0.0 | 0.0 | 51.0 | 0.0 | 56.0 |
| LnGrp LOS | E | A | B | A | A | A | D | A | A | D | A | E |
| Approach Vol, veh/h | | 855 | | | 528 | | | 27 | | | 191 | |
| Approach Delay, s/veh | | 21.3 | | | 9.8 | | | 50.3 | | | 54.7 | |
| Approach LOS | | C | | | A | | | D | | | D | |

| Timer - Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 15.6 | 87.2 | | 17.2 | 16.4 | 86.4 | | 17.2 |
| Change Period (Y+Rc), s | * 5.6 | * 5.6 | | * 5.4 | 5.6 | 5.6 | | * 5.4 |
| Max Green Setting (Gmax), s | * 84 | * 84 | | * 25 | 15.4 | 63.4 | | * 25 |
| Max Q Clear Time (g_c+I1), s | 2.1 | 21.2 | | 11.6 | 10.8 | 17.8 | | 11.7 |
| Green Ext Time (p_c), s | 0.0 | 3.0 | | 0.3 | 0.0 | 2.2 | | 0.0 |

Intersection Summary

| | | |
|---|---|---|
| HCM 6th Ctrl Delay | | 22.0 |
| HCM 6th LOS | | C |

Notes

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

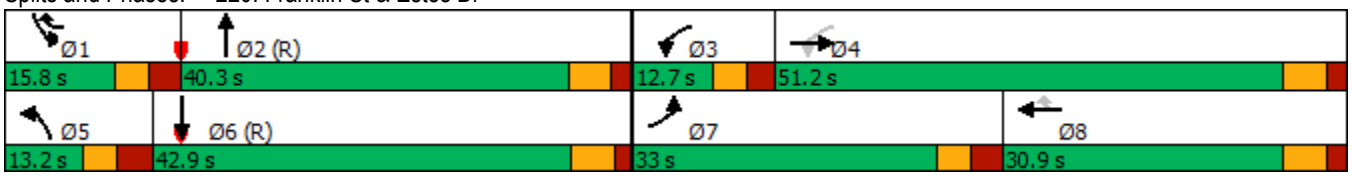
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 306 | 289 | 43 | 103 | 194 | 109 | 41 | 359 | 78 | 91 | 544 | 240 |
| Future Volume (vph) | 306 | 289 | 43 | 103 | 194 | 109 | 41 | 359 | 78 | 91 | 544 | 240 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Grade (%) | | -1% | | | 3% | | | -1% | | | 5% | |
| Storage Length (ft) | 550 | | 0 | 150 | | 0 | 150 | | 0 | 300 | | 0 |
| Storage Lanes | 1 | | 0 | 1 | | 1 | 1 | | 0 | 1 | | 0 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | 0.95 | 0.95 |
| Frt | | 0.980 | | | | 0.850 | | 0.973 | | | 0.954 | |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1778 | 1835 | 0 | 1710 | 1766 | 1530 | 1778 | 3379 | 0 | 1660 | 3260 | 0 |
| Flt Permitted | 0.950 | | | 0.306 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (perm) | 1778 | 1835 | 0 | 551 | 1766 | 1530 | 1778 | 3379 | 0 | 1660 | 3260 | 0 |
| Right Turn on Red | | | No | | | No | | | No | | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (mph) | | 35 | | | 35 | | | 35 | | | 35 | |
| Link Distance (ft) | | 2406 | | | 987 | | | 1748 | | | 1202 | |
| Travel Time (s) | | 46.9 | | | 19.2 | | | 34.1 | | | 23.4 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 2% | 4% | 6% | 4% | 2% | 5% | 2% | 6% | 3% | 3% |
| Adj. Flow (vph) | 340 | 321 | 48 | 114 | 216 | 121 | 46 | 399 | 87 | 101 | 604 | 267 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 340 | 369 | 0 | 114 | 216 | 121 | 46 | 486 | 0 | 101 | 871 | 0 |
| Turn Type | Prot | NA | | D.P+P | NA | pm+ov | Prot | NA | | Prot | NA | |
| Protected Phases | 7 | 4 | | 3 | 8 | 1 | 5 | 2 | | 1 | 6 | |
| Permitted Phases | | | | 4 | | 8 | | | | | | |
| Detector Phase | 7 | 4 | | 3 | 8 | 1 | 5 | 2 | | 1 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | | 7.0 | 7.0 | 7.0 | 7.0 | 10.0 | | 7.0 | 10.0 | |
| Minimum Split (s) | 12.9 | 33.9 | | 12.6 | 30.9 | 12.9 | 13.2 | 35.7 | | 12.9 | 21.5 | |
| Total Split (s) | 33.0 | 51.2 | | 12.7 | 30.9 | 15.8 | 13.2 | 40.3 | | 15.8 | 42.9 | |
| Total Split (%) | 27.5% | 42.7% | | 10.6% | 25.8% | 13.2% | 11.0% | 33.6% | | 13.2% | 35.8% | |
| Maximum Green (s) | 27.1 | 45.3 | | 7.1 | 25.0 | 9.9 | 7.0 | 34.6 | | 9.9 | 37.4 | |
| Yellow Time (s) | 3.0 | 3.9 | | 3.0 | 3.9 | 3.0 | 3.0 | 3.7 | | 3.0 | 3.9 | |
| All-Red Time (s) | 2.9 | 2.0 | | 2.6 | 2.0 | 2.9 | 3.2 | 2.0 | | 2.9 | 1.6 | |
| Lost Time Adjust (s) | -0.9 | -0.9 | | -0.6 | -0.9 | -0.9 | -1.2 | -0.7 | | -0.9 | -0.5 | |
| Total Lost Time (s) | 5.0 | 5.0 | | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | | 5.0 | 5.0 | |
| Lead/Lag | Lead | Lag | | Lead | Lag | Lead | Lead | Lag | | Lead | Lag | |
| Lead-Lag Optimize? | Yes | Yes | | Yes | Yes | Yes | Yes | Yes | | Yes | Yes | |
| Vehicle Extension (s) | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 1.0 | 2.0 | | 2.0 | 2.0 | |
| Recall Mode | None | None | | None | None | None | None | C-Min | | None | C-Min | |
| Walk Time (s) | | 7.0 | | | 7.0 | | | 7.0 | | | 7.0 | |
| Flash Dont Walk (s) | | 21.0 | | | 18.0 | | | 23.0 | | | 9.0 | |
| Pedestrian Calls (#/hr) | | 0 | | | 0 | | | 0 | | | 0 | |
| Act Effct Green (s) | 26.2 | 37.6 | | 45.9 | 19.7 | 36.0 | 8.4 | 42.8 | | 11.3 | 48.4 | |
| Actuated g/C Ratio | 0.22 | 0.31 | | 0.38 | 0.16 | 0.30 | 0.07 | 0.36 | | 0.09 | 0.40 | |
| v/c Ratio | 0.88 | 0.64 | | 0.39 | 0.74 | 0.26 | 0.37 | 0.40 | | 0.65 | 0.66 | |
| Control Delay | 72.4 | 35.2 | | 23.9 | 63.0 | 32.0 | 62.3 | 32.1 | | 71.6 | 34.8 | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Queue Delay | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Delay | 72.4 | 35.2 | | 23.9 | 63.0 | 32.0 | 62.3 | 32.1 | | 71.6 | 34.8 | |
| LOS | E | D | | C | E | C | E | C | | E | C | |
| Approach Delay | | 53.0 | | | 44.8 | | | 34.7 | | | 38.7 | |
| Approach LOS | | D | | | D | | | C | | | D | |
| Queue Length 50th (ft) | 205 | 234 | | 51 | 161 | 70 | 35 | 157 | | 76 | 308 | |
| Queue Length 95th (ft) | #413 | 229 | | 81 | 233 | 114 | 75 | 217 | | #158 | 414 | |
| Internal Link Dist (ft) | | 2326 | | | 907 | | | 1668 | | | 1122 | |
| Turn Bay Length (ft) | 550 | | | 150 | | | 150 | | | 300 | | |
| Base Capacity (vph) | 417 | 706 | | 290 | 381 | 466 | 124 | 1205 | | 164 | 1314 | |
| Starvation Cap Reductn | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | |
| Spillback Cap Reductn | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | |
| Storage Cap Reductn | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | |
| Reduced v/c Ratio | 0.82 | 0.52 | | 0.39 | 0.57 | 0.26 | 0.37 | 0.40 | | 0.62 | 0.66 | |

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.88
Intersection Signal Delay: 42.7 Intersection LOS: D
Intersection Capacity Utilization 72.4% ICU Level of Service C
Analysis Period (min) 15
# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 220: Franklin St & Estes Dr



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 306 | 289 | 43 | 103 | 194 | 109 | 41 | 359 | 78 | 91 | 544 | 240 |
| Future Volume (veh/h) | 306 | 289 | 43 | 103 | 194 | 109 | 41 | 359 | 78 | 91 | 544 | 240 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1909 | 1909 | 1909 | 1788 | 1758 | 1788 | 1909 | 1864 | 1864 | 1664 | 1708 | 1708 |
| Adj Flow Rate, veh/h | 340 | 321 | 48 | 114 | 216 | 121 | 46 | 399 | 87 | 101 | 604 | 267 |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 4 | 6 | 4 | 2 | 5 | 5 | 6 | 3 | 3 |
| Cap, veh/h | 378 | 475 | 71 | 281 | 262 | 352 | 101 | 1138 | 246 | 133 | 918 | 405 |
| Arrive On Green | 0.21 | 0.29 | 0.29 | 0.06 | 0.15 | 0.15 | 0.06 | 0.39 | 0.39 | 0.08 | 0.42 | 0.42 |
| Sat Flow, veh/h | 1818 | 1623 | 243 | 1703 | 1758 | 1515 | 1818 | 2897 | 626 | 1585 | 2190 | 967 |
| Grp Volume(v), veh/h | 340 | 0 | 369 | 114 | 216 | 121 | 46 | 242 | 244 | 101 | 447 | 424 |
| Grp Sat Flow(s),veh/h/ln | 1818 | 0 | 1866 | 1703 | 1758 | 1515 | 1818 | 1771 | 1752 | 1585 | 1623 | 1534 |
| Q Serve(g_s), s | 21.9 | 0.0 | 20.9 | 5.6 | 14.3 | 8.0 | 2.9 | 11.6 | 11.8 | 7.5 | 26.5 | 26.6 |
| Cycle Q Clear(g_c), s | 21.9 | 0.0 | 20.9 | 5.6 | 14.3 | 8.0 | 2.9 | 11.6 | 11.8 | 7.5 | 26.5 | 26.6 |
| Prop In Lane | 1.00 | | 0.13 | 1.00 | | 1.00 | 1.00 | | 0.36 | 1.00 | | 0.63 |
| Lane Grp Cap(c), veh/h | 378 | 0 | 546 | 281 | 262 | 352 | 101 | 696 | 688 | 133 | 680 | 643 |
| V/C Ratio(X) | 0.90 | 0.00 | 0.68 | 0.41 | 0.83 | 0.34 | 0.45 | 0.35 | 0.35 | 0.76 | 0.66 | 0.66 |
| Avail Cap(c_a), veh/h | 424 | 0 | 718 | 281 | 379 | 454 | 124 | 696 | 688 | 143 | 680 | 643 |
| 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 | 0.00 | 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 | 46.3 | 0.0 | 37.5 | 28.9 | 49.6 | 38.4 | 54.9 | 25.6 | 25.8 | 53.8 | 27.9 | 28.1 |
| Incr Delay (d2), s/veh | 19.0 | 0.0 | 0.7 | 0.3 | 6.3 | 0.2 | 1.2 | 1.4 | 1.4 | 17.2 | 4.9 | 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 | 11.7 | 0.0 | 9.5 | 2.3 | 6.7 | 3.0 | 1.4 | 5.1 | 5.1 | 3.6 | 11.0 | 10.5 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 65.3 | 0.0 | 38.2 | 29.2 | 55.8 | 38.6 | 56.1 | 27.0 | 27.2 | 71.0 | 32.9 | 33.3 |
| LnGrp LOS | E | A | D | C | E | D | E | C | C | E | C | C |
| Approach Vol, veh/h | | 709 | | | 451 | | | 532 | | | 972 | |
| Approach Delay, s/veh | | 51.2 | | | 44.5 | | | 29.6 | | | 37.0 | |
| Approach LOS | | D | | | D | | | C | | | D | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 15.1 | 52.1 | 12.7 | 40.1 | 11.7 | 55.5 | 30.0 | 22.9 |
| Change Period (Y+Rc), s | 5.9 | * 5.7 | 5.6 | 5.9 | * 6.2 | * 5.7 | 5.9 | 5.9 |
| Max Green Setting (Gmax), s | 9.9 | * 35 | 7.1 | 45.3 | * 7 | * 37 | 27.1 | 25.0 |
| Max Q Clear Time (g_c+I1), s | 9.5 | 13.8 | 7.6 | 22.9 | 4.9 | 28.6 | 23.9 | 16.3 |
| Green Ext Time (p_c), s | 0.0 | 1.8 | 0.0 | 1.4 | 0.0 | 2.6 | 0.2 | 0.6 |

Intersection Summary

| | |
|---|---|
| HCM 6th Ctrl Delay | 40.6 |
| HCM 6th LOS | D |

Notes

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

| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 19 | 61 | 78 | 596 | 564 | 32 |
| Future Volume (vph) | 19 | 61 | 78 | 596 | 564 | 32 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | 125 | 100 | | | 0 |
| Storage Lanes | 1 | 1 | 1 | | | 0 |
| Taper Length (ft) | 100 | | 100 | | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 0.95 |
| Frt | | 0.850 | | | 0.992 | |
| Flt Protected | 0.950 | | 0.950 | | | |
| Satd. Flow (prot) | 1719 | 1538 | 1752 | 3438 | 3445 | 0 |
| Flt Permitted | 0.950 | | 0.950 | | | |
| Satd. Flow (perm) | 1719 | 1538 | 1752 | 3438 | 3445 | 0 |
| Link Speed (mph) | 30 | | | 40 | 40 | |
| Link Distance (ft) | 928 | | | 1413 | 1063 | |
| Travel Time (s) | 21.1 | | | 24.1 | 18.1 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 5% | 5% | 3% | 5% | 4% | 3% |
| Adj. Flow (vph) | 21 | 68 | 87 | 662 | 627 | 36 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 21 | 68 | 87 | 662 | 663 | 0 |
| Sign Control | Stop | | | Free | Free | |

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 34.3% ICU Level of Service A
Analysis Period (min) 15

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

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 19 | 61 | 78 | 596 | 564 | 32 |
| Future Vol, veh/h | 19 | 61 | 78 | 596 | 564 | 32 |
| 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 | 125 | 100 | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 5 | 5 | 3 | 5 | 4 | 3 |
| Mvmt Flow | 21 | 68 | 87 | 662 | 627 | 36 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 1150 | 332 | 663 | 0 | - | 0 |
| Stage 1 | 645 | - | - | - | - | - |
| Stage 2 | 505 | - | - | - | - | - |
| Critical Hdwy | 6.9 | 7 | 4.16 | - | - | - |
| Critical Hdwy Stg 1 | 5.9 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.9 | - | - | - | - | - |
| Follow-up Hdwy | 3.55 | 3.35 | 2.23 | - | - | - |
| Pot Cap-1 Maneuver | 187 | 655 | 915 | - | - | - |
| Stage 1 | 476 | - | - | - | - | - |
| Stage 2 | 563 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 169 | 655 | 915 | - | - | - |
| Mov Cap-2 Maneuver | 298 | - | - | - | - | - |
| Stage 1 | 431 | - | - | - | - | - |
| Stage 2 | 563 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 12.7 | 1.1 | 0 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | EBLn2 | SBT | SBR |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | 915 | - | 298 | 655 | - | - |
| HCM Lane V/C Ratio | 0.095 | - | 0.071 | 0.103 | - | - |
| HCM Control Delay (s) | 9.3 | - | 18 | 11.1 | - | - |
| HCM Lane LOS | A | - | C | B | - | - |
| HCM 95th %tile Q(veh) | 0.3 | - | 0.2 | 0.3 | - | - |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 180 | 170 | 25 | 120 | 181 | 196 | 41 | 465 | 109 | 209 | 451 | 163 |
| Future Volume (vph) | 180 | 170 | 25 | 120 | 181 | 196 | 41 | 465 | 109 | 209 | 451 | 163 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Grade (%) | | 1% | | | -2% | | | 1% | | | 0% | |
| Storage Length (ft) | 225 | | 350 | 150 | | 200 | 150 | | 0 | 225 | | 0 |
| Storage Lanes | 1 | | 1 | 1 | | 1 | 1 | | 0 | 1 | | 0 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | 0.95 | 0.95 |
| Frt | | | 0.850 | | | 0.850 | | 0.972 | | | 0.960 | |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1761 | 1853 | 1488 | 1770 | 1881 | 1599 | 1604 | 3343 | 0 | 1736 | 3286 | 0 |
| Flt Permitted | 0.321 | | | 0.349 | | | 0.344 | | | 0.345 | | |
| Satd. Flow (perm) | 595 | 1853 | 1488 | 650 | 1881 | 1599 | 581 | 3343 | 0 | 630 | 3286 | 0 |
| Right Turn on Red | | | No | | | No | | | No | | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (mph) | | 35 | | | 35 | | | 40 | | | 40 | |
| Link Distance (ft) | | 1251 | | | 1571 | | | 1063 | | | 1514 | |
| Travel Time (s) | | 24.4 | | | 30.6 | | | 18.1 | | | 25.8 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 8% | 3% | 2% | 2% | 12% | 5% | 2% | 4% | 6% | 4% |
| Adj. Flow (vph) | 200 | 189 | 28 | 133 | 201 | 218 | 46 | 517 | 121 | 232 | 501 | 181 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 200 | 189 | 28 | 133 | 201 | 218 | 46 | 638 | 0 | 232 | 682 | 0 |
| Turn Type | D.P+P | NA | pm+ov | D.P+P | NA | pm+ov | D.P+P | NA | | D.P+P | NA | |
| Protected Phases | 7 | 4 | 5 | 3 | 8 | 1 | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 8 | | 4 | 4 | | 8 | 6 | | | 2 | | |
| Detector Phase | 7 | 4 | 5 | 3 | 8 | 1 | 5 | 2 | | 1 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 12.0 | | 7.0 | 12.0 | |
| Minimum Split (s) | 11.9 | 12.5 | 12.8 | 12.4 | 12.5 | 12.8 | 12.8 | 34.0 | | 12.8 | 18.0 | |
| Total Split (s) | 21.0 | 36.0 | 14.0 | 15.0 | 30.0 | 25.0 | 14.0 | 44.0 | | 25.0 | 55.0 | |
| Total Split (%) | 17.5% | 30.0% | 11.7% | 12.5% | 25.0% | 20.8% | 11.7% | 36.7% | | 20.8% | 45.8% | |
| Maximum Green (s) | 16.1 | 30.5 | 8.2 | 9.6 | 24.5 | 19.2 | 8.2 | 38.0 | | 19.2 | 49.0 | |
| Yellow Time (s) | 3.0 | 3.8 | 3.0 | 3.0 | 3.8 | 3.0 | 3.0 | 4.3 | | 3.0 | 4.3 | |
| All-Red Time (s) | 1.9 | 1.7 | 2.8 | 2.4 | 1.7 | 2.8 | 2.8 | 1.7 | | 2.8 | 1.7 | |
| Lost Time Adjust (s) | 0.1 | -0.5 | -0.8 | -0.4 | -0.5 | -0.8 | -0.8 | -1.0 | | -0.8 | -1.0 | |
| Total Lost Time (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | | 5.0 | 5.0 | |
| Lead/Lag | Lag | Lag | Lead | Lead | Lead | Lead | Lead | Lag | | Lead | Lag | |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | | Yes | Yes | |
| Vehicle Extension (s) | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 2.0 | | 1.0 | 2.0 | |
| Recall Mode | None | None | None | None | None | None | None | C-Min | | None | C-Min | |
| Walk Time (s) | | | | | | | | 7.0 | | | | |
| Flash Dont Walk (s) | | | | | | | | 21.0 | | | | |
| Pedestrian Calls (#/hr) | | | | | | | | 0 | | | | |
| Act Effct Green (s) | 26.5 | 15.9 | 28.7 | 26.5 | 16.8 | 31.8 | 74.5 | 58.5 | | 73.5 | 68.2 | |
| Actuated g/C Ratio | 0.22 | 0.13 | 0.24 | 0.22 | 0.14 | 0.26 | 0.62 | 0.49 | | 0.61 | 0.57 | |
| v/c Ratio | 0.88 | 0.77 | 0.08 | 0.55 | 0.76 | 0.52 | 0.11 | 0.39 | | 0.44 | 0.37 | |
| Control Delay | 82.6 | 70.0 | 33.8 | 36.9 | 59.0 | 20.7 | 10.1 | 22.5 | | 11.7 | 11.7 | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Delay | 82.6 | 70.0 | 33.8 | 36.9 | 59.0 | 20.7 | 10.1 | 22.5 | | 11.7 | 11.7 | |
| LOS | F | E | C | D | E | C | B | C | | B | B | |
| Approach Delay | | 73.6 | | | 38.6 | | | 21.7 | | | 11.7 | |
| Approach LOS | | E | | | D | | | C | | | B | |
| Queue Length 50th (ft) | 130 | 144 | 17 | 69 | 136 | 69 | 12 | 160 | | 51 | 198 | |
| Queue Length 95th (ft) | 177 | 211 | 39 | 93 | 182 | 73 | 33 | 262 | | 71 | 121 | |
| Internal Link Dist (ft) | | 1171 | | | 1491 | | | 983 | | | 1434 | |
| Turn Bay Length (ft) | 225 | | 350 | 150 | | 200 | 150 | | | 225 | | |
| Base Capacity (vph) | 318 | 478 | 371 | 253 | 391 | 490 | 442 | 1629 | | 588 | 1868 | |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | |
| Reduced v/c Ratio | 0.63 | 0.40 | 0.08 | 0.53 | 0.51 | 0.44 | 0.10 | 0.39 | | 0.39 | 0.37 | |

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 51 (43%), Referenced to phase 2:NBSB and 6:NBSB, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.88
Intersection Signal Delay: 30.2 Intersection LOS: C
Intersection Capacity Utilization 64.1% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 110: MLK Jr Blvd & Estes Dr

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 180 | 170 | 25 | 120 | 181 | 196 | 41 | 465 | 109 | 209 | 451 | 163 |
| Future Volume (veh/h) | 180 | 170 | 25 | 120 | 181 | 196 | 41 | 465 | 109 | 209 | 451 | 163 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1864 | 1864 | 1776 | 1934 | 1949 | 1949 | 1716 | 1820 | 1820 | 1841 | 1811 | 1811 |
| Adj Flow Rate, veh/h | 200 | 189 | 28 | 133 | 201 | 218 | 46 | 517 | 121 | 232 | 501 | 181 |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Percent Heavy Veh, % | 2 | 2 | 8 | 3 | 2 | 2 | 12 | 5 | 5 | 4 | 6 | 6 |
| Cap, veh/h | 225 | 246 | 281 | 248 | 243 | 352 | 540 | 1489 | 347 | 542 | 1410 | 506 |
| Arrive On Green | 0.08 | 0.13 | 0.13 | 0.08 | 0.12 | 0.13 | 0.05 | 0.53 | 0.53 | 0.17 | 1.00 | 1.00 |
| Sat Flow, veh/h | 1776 | 1864 | 1505 | 1842 | 1949 | 1651 | 1635 | 2784 | 648 | 1753 | 2480 | 891 |
| Grp Volume(v), veh/h | 200 | 189 | 28 | 133 | 201 | 218 | 46 | 320 | 318 | 232 | 347 | 335 |
| Grp Sat Flow(s),veh/h/ln | 1776 | 1864 | 1505 | 1842 | 1949 | 1651 | 1635 | 1729 | 1703 | 1753 | 1721 | 1651 |
| Q Serve(g_s), s | 8.0 | 11.7 | 1.8 | 7.4 | 12.1 | 10.4 | 1.3 | 12.7 | 12.9 | 7.5 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 8.0 | 11.7 | 1.8 | 7.4 | 12.1 | 10.4 | 1.3 | 12.7 | 12.9 | 7.5 | 0.0 | 0.0 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.38 | 1.00 | | 0.54 |
| Lane Grp Cap(c), veh/h | 225 | 246 | 281 | 248 | 243 | 352 | 540 | 925 | 911 | 542 | 978 | 938 |
| V/C Ratio(X) | 0.89 | 0.77 | 0.10 | 0.54 | 0.83 | 0.62 | 0.09 | 0.35 | 0.35 | 0.43 | 0.35 | 0.36 |
| Avail Cap(c_a), veh/h | 315 | 482 | 471 | 254 | 406 | 490 | 577 | 925 | 911 | 683 | 978 | 938 |
| 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 | 0.97 | 0.97 | 0.97 |
| Uniform Delay (d), s/veh | 52.5 | 50.3 | 40.4 | 40.8 | 51.2 | 23.5 | 9.0 | 15.9 | 16.1 | 10.0 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 15.7 | 1.9 | 0.1 | 1.0 | 2.7 | 0.7 | 0.0 | 1.0 | 1.1 | 0.2 | 1.0 | 1.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 6.8 | 5.6 | 0.7 | 3.4 | 6.0 | 4.0 | 0.4 | 5.0 | 5.1 | 2.3 | 0.3 | 0.3 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 68.2 | 52.2 | 40.5 | 41.9 | 54.0 | 24.1 | 9.0 | 17.0 | 17.1 | 10.2 | 1.0 | 1.0 |
| LnGrp LOS | E | D | D | D | D | C | A | B | B | B | A | A |
| Approach Vol, veh/h | | 417 | | | 552 | | | 684 | | | 914 | |
| Approach Delay, s/veh | | 59.1 | | | 39.3 | | | 16.5 | | | 3.3 | |
| Approach LOS | | E | | | D | | | B | | | A | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 15.3 | 69.2 | 14.7 | 20.8 | 11.3 | 73.2 | 15.5 | 20.0 |
| Change Period (Y+Rc), s | * 5.8 | * 6 | 5.4 | 5.5 | * 5.8 | * 6 | 5.5 | * 5.5 |
| Max Green Setting (Gmax), s | * 19 | * 38 | 9.6 | 30.5 | * 8.2 | * 49 | 16.1 | * 25 |
| Max Q Clear Time (g_c+I1), s | 9.5 | 14.9 | 9.4 | 13.7 | 3.3 | 2.0 | 10.0 | 14.1 |
| Green Ext Time (p_c), s | 0.1 | 2.3 | 0.0 | 0.3 | 0.0 | 2.7 | 0.0 | 0.4 |

Intersection Summary

| | |
|---|---|
| HCM 6th Ctrl Delay | 23.6 |
| HCM 6th LOS | C |

Notes

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

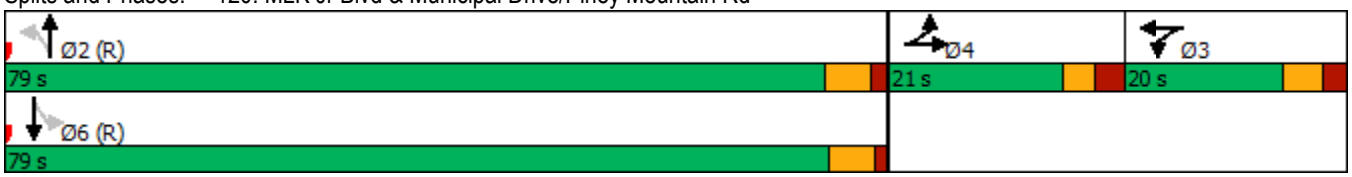
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 3 | 0 | 14 | 63 | 1 | 23 | 21 | 767 | 53 | 25 | 746 | 2 |
| Future Volume (vph) | 3 | 0 | 14 | 63 | 1 | 23 | 21 | 767 | 53 | 25 | 746 | 2 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Grade (%) | | 0% | | | 4% | | | -1% | | | 0% | |
| Storage Length (ft) | 100 | | 0 | 375 | | 0 | 150 | | 0 | 225 | | 0 |
| Storage Lanes | 1 | | 0 | 2 | | 0 | 1 | | 0 | 1 | | 0 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 0.97 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | 0.95 | 0.95 |
| Frt | | 0.850 | | | 0.856 | | | 0.990 | | | | |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1770 | 1129 | 0 | 3364 | 1466 | 0 | 1463 | 3489 | 0 | 1770 | 3471 | 0 |
| Flt Permitted | 0.950 | | | 0.950 | | | 0.328 | | | 0.299 | | |
| Satd. Flow (perm) | 1770 | 1129 | 0 | 3364 | 1466 | 0 | 505 | 3489 | 0 | 557 | 3471 | 0 |
| Right Turn on Red | | | No | | | No | | | No | | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (mph) | | 20 | | | 35 | | | 40 | | | 40 | |
| Link Distance (ft) | | 554 | | | 663 | | | 1514 | | | 2618 | |
| Travel Time (s) | | 18.9 | | | 12.9 | | | 25.8 | | | 44.6 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 43% | 2% | 2% | 9% | 24% | 3% | 2% | 2% | 4% | 2% |
| Adj. Flow (vph) | 3 | 0 | 16 | 70 | 1 | 26 | 23 | 852 | 59 | 28 | 829 | 2 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 3 | 16 | 0 | 70 | 27 | 0 | 23 | 911 | 0 | 28 | 831 | 0 |
| Turn Type | Split | NA | | Split | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | 4 | 4 | | 3 | 3 | | | 2 | | | 6 | |
| Permitted Phases | | | | | | | 2 | | | 6 | | |
| Detector Phase | 4 | 4 | | 3 | 3 | | 2 | 2 | | 6 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | | 7.0 | 7.0 | | 12.0 | 12.0 | | 12.0 | 12.0 | |
| Minimum Split (s) | 12.6 | 12.6 | | 12.9 | 12.9 | | 27.8 | 27.8 | | 17.5 | 17.5 | |
| Total Split (s) | 21.0 | 21.0 | | 20.0 | 20.0 | | 79.0 | 79.0 | | 79.0 | 79.0 | |
| Total Split (%) | 17.5% | 17.5% | | 16.7% | 16.7% | | 65.8% | 65.8% | | 65.8% | 65.8% | |
| Maximum Green (s) | 15.4 | 15.4 | | 14.1 | 14.1 | | 73.2 | 73.2 | | 73.5 | 73.5 | |
| Yellow Time (s) | 3.0 | 3.0 | | 3.6 | 3.6 | | 4.2 | 4.2 | | 4.2 | 4.2 | |
| All-Red Time (s) | 2.6 | 2.6 | | 2.3 | 2.3 | | 1.6 | 1.6 | | 1.3 | 1.3 | |
| Lost Time Adjust (s) | -0.6 | -0.6 | | -0.9 | -0.9 | | -0.8 | -0.8 | | -0.5 | -0.5 | |
| Total Lost Time (s) | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | |
| Lead/Lag | Lead | Lead | | Lag | Lag | | | | | | | |
| Lead-Lag Optimize? | Yes | Yes | | Yes | Yes | | | | | | | |
| Vehicle Extension (s) | 1.0 | 1.0 | | 1.0 | 1.0 | | 6.0 | 6.0 | | 6.0 | 6.0 | |
| Minimum Gap (s) | 1.0 | 1.0 | | 1.0 | 1.0 | | 6.0 | 6.0 | | 6.0 | 6.0 | |
| Time Before Reduce (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 15.0 | 15.0 | | 15.0 | 15.0 | |
| Time To Reduce (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 45.0 | 45.0 | | 45.0 | 45.0 | |
| Recall Mode | None | None | | None | None | | C-Min | C-Min | | C-Min | C-Min | |
| Walk Time (s) | | | | | | | 7.0 | 7.0 | | | | |
| Flash Dont Walk (s) | | | | | | | 15.0 | 15.0 | | | | |
| Pedestrian Calls (#/hr) | | | | | | | 0 | 0 | | | | |
| Act Effct Green (s) | 7.8 | 7.8 | | 8.2 | 8.2 | | 100.1 | 100.1 | | 100.1 | 100.1 | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Actuated g/C Ratio | 0.06 | 0.06 | | 0.07 | 0.07 | | 0.83 | 0.83 | | 0.83 | 0.83 | |
| v/c Ratio | 0.03 | 0.22 | | 0.30 | 0.27 | | 0.05 | 0.31 | | 0.06 | 0.29 | |
| Control Delay | 52.7 | 60.5 | | 56.7 | 59.9 | | 3.2 | 2.8 | | 1.2 | 1.1 | |
| Queue Delay | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Delay | 52.7 | 60.5 | | 56.7 | 59.9 | | 3.2 | 2.8 | | 1.2 | 1.1 | |
| LOS | D | E | | E | E | | A | A | | A | A | |
| Approach Delay | | 59.3 | | | 57.5 | | | 2.8 | | | 1.2 | |
| Approach LOS | | E | | | E | | | A | | | A | |
| Queue Length 50th (ft) | 2 | 12 | | 27 | 20 | | 1 | 25 | | 1 | 14 | |
| Queue Length 95th (ft) | 13 | 36 | | 51 | 51 | | m10 | 126 | | m4 | 32 | |
| Internal Link Dist (ft) | | 474 | | | 583 | | | 1434 | | | 2538 | |
| Turn Bay Length (ft) | 100 | | | 375 | | | 150 | | | 225 | | |
| Base Capacity (vph) | 236 | 150 | | 420 | 183 | | 421 | 2910 | | 464 | 2895 | |
| Starvation Cap Reductn | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Spillback Cap Reductn | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Storage Cap Reductn | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Reduced v/c Ratio | 0.01 | 0.11 | | 0.17 | 0.15 | | 0.05 | 0.31 | | 0.06 | 0.29 | |

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 55 (46%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 55
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.31
Intersection Signal Delay: 5.4 Intersection LOS: A
Intersection Capacity Utilization 39.7% ICU Level of Service A
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 120: MLK Jr Blvd & Municipal Drive/Piney Mountain Rd



HCM 6th Edition methodology expects strict NEMA phasing.

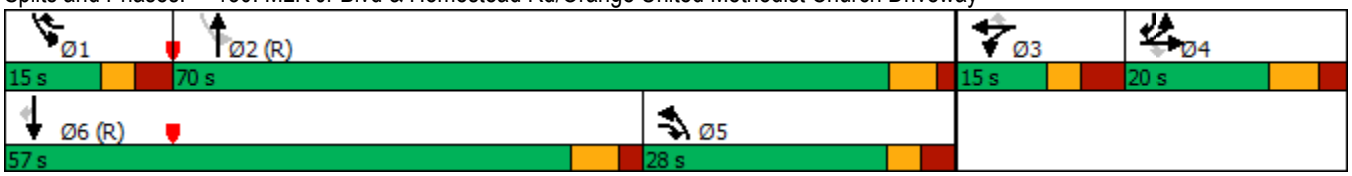
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 107 | 2 | 186 | 11 | 7 | 14 | 153 | 638 | 2 | 19 | 576 | 93 |
| Future Volume (vph) | 107 | 2 | 186 | 11 | 7 | 14 | 153 | 638 | 2 | 19 | 576 | 93 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 125 | | 0 | 125 | | 0 | 525 | | 0 | 250 | | 375 |
| Storage Lanes | 1 | | 1 | 2 | | 1 | 2 | | 0 | 1 | | 1 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 0.95 | 0.95 | 1.00 | 0.95 | 0.95 | 1.00 | 0.97 | 0.95 | 0.95 | 1.00 | 0.95 | 1.00 |
| Frt | | | 0.850 | | | 0.850 | | | | | | 0.850 |
| Flt Protected | 0.950 | 0.954 | | 0.950 | 0.990 | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1603 | 1612 | 1538 | 1681 | 1752 | 1583 | 3400 | 3500 | 0 | 1719 | 3471 | 1495 |
| Flt Permitted | 0.950 | 0.954 | | 0.950 | 0.990 | | 0.950 | | | 0.353 | | |
| Satd. Flow (perm) | 1603 | 1612 | 1538 | 1681 | 1752 | 1583 | 3400 | 3500 | 0 | 639 | 3471 | 1495 |
| Right Turn on Red | | | No | | | No | | | No | | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (mph) | | 35 | | | 20 | | | 40 | | | 40 | |
| Link Distance (ft) | | 1248 | | | 314 | | | 1137 | | | 1345 | |
| Travel Time (s) | | 24.3 | | | 10.7 | | | 19.4 | | | 22.9 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 7% | 2% | 5% | 2% | 2% | 2% | 3% | 3% | 50% | 5% | 4% | 8% |
| Adj. Flow (vph) | 119 | 2 | 207 | 12 | 8 | 16 | 170 | 709 | 2 | 21 | 640 | 103 |
| Shared Lane Traffic (%) | 49% | | | 18% | | | | | | | | |
| Lane Group Flow (vph) | 61 | 60 | 207 | 10 | 10 | 16 | 170 | 711 | 0 | 21 | 640 | 103 |
| Turn Type | Split | NA | pm+ov | Split | NA | pm+ov | Prot | NA | | D.P+P | NA | pm+ov |
| Protected Phases | 4 | 4 | 5 | 3 | 3 | 1 | 5 | 2 | | 1 | 6 | 4 |
| Permitted Phases | | | 4 | | | 3 | | | | 2 | | 6 |
| Detector Phase | 4 | 4 | 5 | 3 | 3 | 1 | 5 | 2 | | 1 | 6 | 4 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 12.0 | | 7.0 | 12.0 | 7.0 |
| Minimum Split (s) | 14.1 | 14.1 | 13.3 | 13.9 | 13.9 | 13.4 | 13.3 | 28.0 | | 13.4 | 45.4 | 14.1 |
| Total Split (s) | 20.0 | 20.0 | 28.0 | 15.0 | 15.0 | 15.0 | 28.0 | 70.0 | | 15.0 | 57.0 | 20.0 |
| Total Split (%) | 16.7% | 16.7% | 23.3% | 12.5% | 12.5% | 12.5% | 23.3% | 58.3% | | 12.5% | 47.5% | 16.7% |
| Maximum Green (s) | 12.9 | 12.9 | 21.7 | 8.1 | 8.1 | 8.6 | 21.7 | 64.0 | | 8.6 | 50.6 | 12.9 |
| Yellow Time (s) | 4.5 | 4.5 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 4.2 | | 3.0 | 4.2 | 4.5 |
| All-Red Time (s) | 2.6 | 2.6 | 3.3 | 3.9 | 3.9 | 3.4 | 3.3 | 1.8 | | 3.4 | 2.2 | 2.6 |
| Lost Time Adjust (s) | -2.1 | -2.1 | -1.3 | -1.9 | -1.9 | -1.4 | -1.3 | -1.0 | | -1.4 | -1.4 | -2.1 |
| Total Lost Time (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | | 5.0 | 5.0 | 5.0 |
| Lead/Lag | Lag | Lag | Lag | Lead | Lead | Lead | Lag | Lag | | Lead | Lead | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | | Yes | Yes | Yes |
| Vehicle Extension (s) | 1.0 | 1.0 | 1.0 | 2.0 | 2.0 | 2.0 | 1.0 | 6.0 | | 2.0 | 6.0 | 1.0 |
| Minimum Gap (s) | 1.0 | 1.0 | 1.0 | 2.0 | 2.0 | 2.0 | 1.0 | 6.0 | | 2.0 | 6.0 | 1.0 |
| Time Before Reduce (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 15.0 | | 0.0 | 15.0 | 0.0 |
| Time To Reduce (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 45.0 | | 0.0 | 45.0 | 0.0 |
| Recall Mode | None | None | None | None | None | None | None | C-Min | | None | C-Min | None |
| Walk Time (s) | | | | | | | | 7.0 | | | 7.0 | |
| Flash Dont Walk (s) | | | | | | | | 15.0 | | | 32.0 | |
| Pedestrian Calls (#/hr) | | | | | | | | 0 | | | 0 | |
| Act Effct Green (s) | 10.8 | 10.8 | 31.0 | 8.9 | 8.9 | 12.0 | 17.1 | 85.6 | | 90.6 | 71.5 | 87.3 |
| Actuated g/C Ratio | 0.09 | 0.09 | 0.26 | 0.07 | 0.07 | 0.10 | 0.14 | 0.71 | | 0.76 | 0.60 | 0.73 |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| v/c Ratio | 0.42 | 0.41 | 0.52 | 0.08 | 0.08 | 0.10 | 0.35 | 0.28 | | 0.04 | 0.31 | 0.09 |
| Control Delay | 60.2 | 59.7 | 35.8 | 53.4 | 53.3 | 35.6 | 39.1 | 4.0 | | 5.1 | 14.5 | 6.8 |
| 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 | 60.2 | 59.7 | 35.8 | 53.4 | 53.3 | 35.6 | 39.1 | 4.0 | | 5.1 | 14.5 | 6.8 |
| LOS | E | E | D | D | D | D | D | A | | A | B | A |
| Approach Delay | | 44.7 | | | 45.5 | | | 10.8 | | | 13.2 | |
| Approach LOS | | D | | | D | | | B | | | B | |
| Queue Length 50th (ft) | 48 | 47 | 134 | 7 | 7 | 12 | 67 | 60 | | 2 | 106 | 17 |
| Queue Length 95th (ft) | 92 | 91 | 155 | 26 | 26 | 24 | 67 | 150 | | 13 | 216 | 55 |
| Internal Link Dist (ft) | | 1168 | | | 234 | | | 1057 | | | 1265 | |
| Turn Bay Length (ft) | 125 | | | 125 | | | 525 | | | 250 | | 375 |
| Base Capacity (vph) | 200 | 201 | 410 | 140 | 146 | 178 | 651 | 2495 | | 577 | 2066 | 1072 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.30 | 0.30 | 0.50 | 0.07 | 0.07 | 0.09 | 0.26 | 0.28 | | 0.04 | 0.31 | 0.10 |

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 105 (88%), Referenced to phase 2:NBSB and 6:SBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.52
Intersection Signal Delay: 17.9 Intersection LOS: B
Intersection Capacity Utilization 45.8% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 130: MLK Jr Blvd & Homestead Rd/Orange United Methodist Church Driveway



HCM 6th Edition methodology expects strict NEMA phasing.

| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 11 | 477 | 489 | 11 | 12 | 8 |
| Future Volume (vph) | 11 | 477 | 489 | 11 | 12 | 8 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | | 0.997 | | 0.945 | |
| Flt Protected | | 0.999 | | | 0.971 | |
| Satd. Flow (prot) | 0 | 1858 | 1851 | 0 | 1565 | 0 |
| Flt Permitted | | 0.999 | | | 0.971 | |
| Satd. Flow (perm) | 0 | 1858 | 1851 | 0 | 1565 | 0 |
| Link Speed (mph) | | 35 | 35 | | 30 | |
| Link Distance (ft) | | 1571 | 840 | | 813 | |
| Travel Time (s) | | 30.6 | 16.4 | | 18.5 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 9% | 2% | 2% | 18% | 2% | 25% |
| Adj. Flow (vph) | 12 | 530 | 543 | 12 | 13 | 9 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 542 | 555 | 0 | 22 | 0 |
| Sign Control | | Free | Free | | Stop | |

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 43.9% ICU Level of Service A
Analysis Period (min) 15

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.5 |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 11 | 477 | 489 | 11 | 12 | 8 |
| Future Vol, veh/h | 11 | 477 | 489 | 11 | 12 | 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 | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 9 | 2 | 2 | 18 | 2 | 25 |
| Mvmt Flow | 12 | 530 | 543 | 12 | 13 | 9 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 555 | 0 | - | 0 | 1103 | 549 |
| Stage 1 | - | - | - | - | 549 | - |
| Stage 2 | - | - | - | - | 554 | - |
| Critical Hdwy | 4.19 | - | - | - | 6.42 | 6.45 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.42 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.42 | - |
| Follow-up Hdwy | 2.281 | - | - | - | 3.518 | 3.525 |
| Pot Cap-1 Maneuver | 981 | - | - | - | 234 | 494 |
| Stage 1 | - | - | - | - | 579 | - |
| Stage 2 | - | - | - | - | 575 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | 981 | - | - | - | 230 | 494 |
| Mov Cap-2 Maneuver | - | - | - | - | 230 | - |
| Stage 1 | - | - | - | - | 569 | - |
| Stage 2 | - | - | - | - | 575 | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 0.2 | 0 | 18.3 |
| HCM LOS | | | C |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|
| Capacity (veh/h) | 981 | - | - | - | 293 |
| HCM Lane V/C Ratio | 0.012 | - | - | - | 0.076 |
| HCM Control Delay (s) | 8.7 | 0 | - | - | 18.3 |
| HCM Lane LOS | A | A | - | - | C |
| HCM 95th %tile Q(veh) | 0 | - | - | - | 0.2 |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 56 | 431 | 2 | 1 | 423 | 26 | 2 | 4 | 2 | 23 | 0 | 75 |
| Future Volume (vph) | 56 | 431 | 2 | 1 | 423 | 26 | 2 | 4 | 2 | 23 | 0 | 75 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Grade (%) | | -2% | | | 0% | | | 7% | | | -5% | |
| Storage Length (ft) | 250 | | 0 | 125 | | 0 | 0 | | 0 | 100 | | 0 |
| Storage Lanes | 1 | | 0 | 1 | | 0 | 0 | | 0 | 1 | | 0 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | 0.999 | | | 0.991 | | | 0.966 | | | 0.850 | |
| Flt Protected | 0.950 | | | 0.950 | | | | 0.988 | | 0.950 | | |
| Satd. Flow (prot) | 1753 | 1879 | 0 | 1770 | 1844 | 0 | 0 | 1535 | 0 | 1814 | 1592 | 0 |
| Flt Permitted | 0.445 | | | 0.479 | | | | 0.924 | | 0.752 | | |
| Satd. Flow (perm) | 821 | 1879 | 0 | 892 | 1844 | 0 | 0 | 1436 | 0 | 1436 | 1592 | 0 |
| Right Turn on Red | | | No | | | No | | | No | | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (mph) | | 35 | | | 35 | | | 25 | | | 25 | |
| Link Distance (ft) | | 961 | | | 940 | | | 384 | | | 262 | |
| Travel Time (s) | | 18.7 | | | 18.3 | | | 10.5 | | | 7.1 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 4% | 2% | 2% | 2% | 2% | 4% | 50% | 2% | 2% | 2% | 2% | 4% |
| Adj. Flow (vph) | 62 | 479 | 2 | 1 | 470 | 29 | 2 | 4 | 2 | 26 | 0 | 83 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 62 | 481 | 0 | 1 | 499 | 0 | 0 | 8 | 0 | 26 | 83 | 0 |
| Turn Type | D.P+P | NA | | D.Pm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | 5 | 2 | | | 6 | | | 8 | | | 4 | |
| Permitted Phases | 6 | | | 2 | | | 8 | | | 4 | | |
| Detector Phase | 5 | 2 | | 2 | 6 | | 8 | 8 | | 4 | 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 10.0 | | 10.0 | 10.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | |
| Minimum Split (s) | 12.6 | 21.6 | | 21.6 | 21.6 | | 11.9 | 11.9 | | 20.4 | 20.4 | |
| Total Split (s) | 17.0 | 92.0 | | 92.0 | 75.0 | | 28.0 | 28.0 | | 28.0 | 28.0 | |
| Total Split (%) | 14.2% | 76.7% | | 76.7% | 62.5% | | 23.3% | 23.3% | | 23.3% | 23.3% | |
| Maximum Green (s) | 11.4 | 86.4 | | 86.4 | 69.4 | | 23.1 | 23.1 | | 22.6 | 22.6 | |
| Yellow Time (s) | 3.0 | 4.0 | | 4.0 | 3.8 | | 3.0 | 3.0 | | 3.5 | 3.5 | |
| All-Red Time (s) | 2.6 | 1.6 | | 1.6 | 1.8 | | 1.9 | 1.9 | | 1.9 | 1.9 | |
| Lost Time Adjust (s) | -0.6 | -0.6 | | -0.6 | -0.6 | | | 0.1 | | -0.4 | -0.4 | |
| Total Lost Time (s) | 5.0 | 5.0 | | 5.0 | 5.0 | | | 5.0 | | 5.0 | 5.0 | |
| Lead/Lag | Lead | | | | Lag | | | | | | | |
| Lead-Lag Optimize? | Yes | | | | Yes | | | | | | | |
| Vehicle Extension (s) | 1.0 | 2.0 | | 2.0 | 2.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | |
| Recall Mode | None | C-Min | | C-Min | C-Min | | None | None | | None | None | |
| Walk Time (s) | | 7.0 | | 7.0 | 7.0 | | | | | 7.0 | 7.0 | |
| Flash Dont Walk (s) | | 9.0 | | 9.0 | 9.0 | | | | | 8.0 | 8.0 | |
| Pedestrian Calls (#/hr) | | 0 | | 0 | 0 | | | | | 0 | 0 | |
| Act Effct Green (s) | 98.0 | 103.0 | | 103.0 | 92.9 | | | 8.5 | | 10.5 | 10.5 | |
| Actuated g/C Ratio | 0.82 | 0.86 | | 0.86 | 0.77 | | | 0.07 | | 0.09 | 0.09 | |
| v/c Ratio | 0.09 | 0.30 | | 0.00 | 0.35 | | | 0.08 | | 0.21 | 0.60 | |
| Control Delay | 2.2 | 2.4 | | 1.0 | 2.1 | | | 51.6 | | 53.3 | 69.6 | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Queue Delay | 0.0 | 0.0 | | 0.0 | 0.0 | | | 0.0 | | 0.0 | 0.0 | |
| Total Delay | 2.2 | 2.4 | | 1.0 | 2.1 | | | 51.6 | | 53.3 | 69.6 | |
| LOS | A | A | | A | A | | | D | | D | E | |
| Approach Delay | | 2.4 | | | 2.1 | | | 51.6 | | | 65.7 | |
| Approach LOS | | A | | | A | | | D | | | E | |
| Queue Length 50th (ft) | 1 | 20 | | 0 | 18 | | | 6 | | 19 | 63 | |
| Queue Length 95th (ft) | 14 | 75 | | m0 | 36 | | | 21 | | 47 | 113 | |
| Internal Link Dist (ft) | | 881 | | | 860 | | | 304 | | | 182 | |
| Turn Bay Length (ft) | 250 | | | 125 | | | | | | 100 | | |
| Base Capacity (vph) | 787 | 1612 | | 765 | 1427 | | | 275 | | 275 | 305 | |
| Starvation Cap Reductn | 0 | 0 | | 0 | 0 | | | 0 | | 0 | 0 | |
| Spillback Cap Reductn | 0 | 0 | | 0 | 0 | | | 0 | | 0 | 0 | |
| Storage Cap Reductn | 0 | 0 | | 0 | 0 | | | 0 | | 0 | 0 | |
| Reduced v/c Ratio | 0.08 | 0.30 | | 0.00 | 0.35 | | | 0.03 | | 0.09 | 0.27 | |

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 55 (46%), Referenced to phase 2:EBWB and 6:EBWB, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.60
Intersection Signal Delay: 8.5 Intersection LOS: A
Intersection Capacity Utilization 49.5% ICU Level of Service A
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 210: Caswell Rd & Estes Dr

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 56 | 431 | 2 | 1 | 423 | 26 | 2 | 4 | 2 | 23 | 0 | 75 |
| Future Volume (veh/h) | 56 | 431 | 2 | 1 | 423 | 26 | 2 | 4 | 2 | 23 | 0 | 75 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1919 | 1949 | 1949 | 1870 | 1870 | 1870 | 1582 | 1582 | 1582 | 2067 | 2067 | 2067 |
| Adj Flow Rate, veh/h | 62 | 479 | 2 | 1 | 470 | 29 | 2 | 4 | 2 | 26 | 0 | 83 |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Percent Heavy Veh, % | 4 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 162 | 1397 | 6 | 217 | 1312 | 81 | 43 | 48 | 18 | 158 | 0 | 116 |
| Arrive On Green | 0.06 | 0.72 | 0.72 | 0.09 | 0.75 | 0.75 | 0.06 | 0.06 | 0.06 | 0.07 | 0.00 | 0.06 |
| Sat Flow, veh/h | 1827 | 1939 | 8 | 1781 | 1743 | 108 | 90 | 778 | 289 | 1558 | 0 | 1751 |
| Grp Volume(v), veh/h | 62 | 0 | 481 | 1 | 0 | 499 | 8 | 0 | 0 | 26 | 0 | 83 |
| Grp Sat Flow(s),veh/h/ln | 1827 | 0 | 1947 | 1781 | 0 | 1851 | 1158 | 0 | 0 | 1558 | 0 | 1751 |
| Q Serve(g_s), s | 0.9 | 0.0 | 11.0 | 0.1 | 0.0 | 11.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 5.6 |
| Cycle Q Clear(g_c), s | 0.9 | 0.0 | 11.0 | 0.1 | 0.0 | 11.0 | 5.6 | 0.0 | 0.0 | 2.1 | 0.0 | 5.6 |
| Prop In Lane | 1.00 | | 0.00 | 1.00 | | 0.06 | 0.25 | | 0.25 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 162 | 0 | 1402 | 0 | 0 | 1393 | 111 | 0 | 0 | 158 | 0 | 116 |
| V/C Ratio(X) | 0.38 | 0.00 | 0.34 | 0.00 | 0.00 | 0.36 | 0.07 | 0.00 | 0.00 | 0.16 | 0.00 | 0.71 |
| Avail Cap(c_a), veh/h | 243 | 0 | 1412 | 0 | 0 | 1393 | 288 | 0 | 0 | 353 | 0 | 336 |
| 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 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 34.5 | 0.0 | 6.2 | 0.0 | 0.0 | 5.0 | 53.0 | 0.0 | 0.0 | 53.3 | 0.0 | 55.1 |
| Incr Delay (d2), s/veh | 0.5 | 0.0 | 0.7 | 0.0 | 0.0 | 0.7 | 0.1 | 0.0 | 0.0 | 0.2 | 0.0 | 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 | 1.3 | 0.0 | 4.2 | 0.0 | 0.0 | 3.8 | 0.2 | 0.0 | 0.0 | 0.8 | 0.0 | 2.6 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 35.1 | 0.0 | 6.9 | 0.0 | 0.0 | 5.8 | 53.1 | 0.0 | 0.0 | 53.4 | 0.0 | 58.1 |
| LnGrp LOS | D | A | A | A | A | A | D | A | A | D | A | E |
| Approach Vol, veh/h | | 543 | | | 500 | | | 8 | | | 109 | |
| Approach Delay, s/veh | | 10.1 | | | 5.7 | | | 53.1 | | | 57.0 | |
| Approach LOS | | B | | | A | | | D | | | E | |

| Timer - Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 15.6 | 91.4 | | 13.0 | 11.7 | 95.3 | | 13.0 |
| Change Period (Y+Rc), s | * 5.6 | * 5.6 | | * 5.4 | 5.6 | 5.6 | | * 5.4 |
| Max Green Setting (Gmax), s | * 86 | * 86 | | * 23 | 11.4 | 69.4 | | * 23 |
| Max Q Clear Time (g_c+I1), s | 2.1 | 13.0 | | 7.6 | 2.9 | 13.0 | | 7.6 |
| Green Ext Time (p_c), s | 0.0 | 2.0 | | 0.1 | 0.0 | 2.1 | | 0.0 |

Intersection Summary

| | | |
|---|---|---|
| HCM 6th Ctrl Delay | | 12.9 |
| HCM 6th LOS | | B |

Notes

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

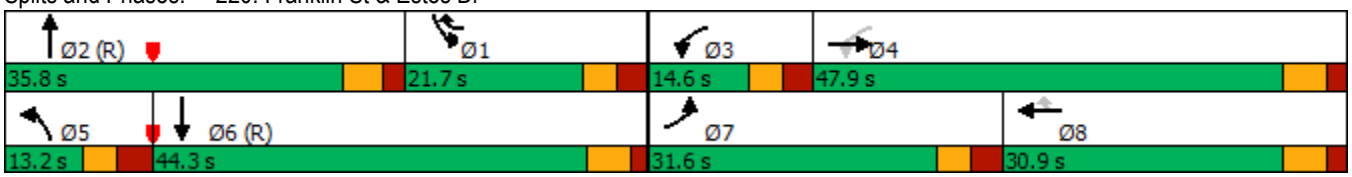
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 221 | 199 | 36 | 154 | 216 | 181 | 35 | 396 | 128 | 116 | 387 | 199 |
| Future Volume (vph) | 221 | 199 | 36 | 154 | 216 | 181 | 35 | 396 | 128 | 116 | 387 | 199 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Grade (%) | | -1% | | | 3% | | | -1% | | | 5% | |
| Storage Length (ft) | 550 | | 0 | 150 | | 0 | 150 | | 0 | 300 | | 0 |
| Storage Lanes | 1 | | 0 | 1 | | 1 | 1 | | 0 | 1 | | 0 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | 0.95 | 0.95 |
| Frt | | 0.977 | | | | 0.850 | | 0.963 | | | 0.949 | |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1778 | 1829 | 0 | 1743 | 1835 | 1560 | 1778 | 3375 | 0 | 1725 | 3254 | 0 |
| Flt Permitted | 0.950 | | | 0.396 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (perm) | 1778 | 1829 | 0 | 727 | 1835 | 1560 | 1778 | 3375 | 0 | 1725 | 3254 | 0 |
| Right Turn on Red | | | No | | | No | | | No | | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (mph) | | 35 | | | 35 | | | 35 | | | 35 | |
| Link Distance (ft) | | 2406 | | | 987 | | | 1748 | | | 1202 | |
| Travel Time (s) | | 46.9 | | | 19.2 | | | 34.1 | | | 23.4 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 2% | 2% | 2% | 2% | 2% | 4% | 2% | 2% | 3% | 2% |
| Adj. Flow (vph) | 246 | 221 | 40 | 171 | 240 | 201 | 39 | 440 | 142 | 129 | 430 | 221 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 246 | 261 | 0 | 171 | 240 | 201 | 39 | 582 | 0 | 129 | 651 | 0 |
| Turn Type | Prot | NA | | D.P+P | NA | pm+ov | Prot | NA | | Prot | NA | |
| Protected Phases | 7 | 4 | | 3 | 8 | 1 | 5 | 2 | | 1 | 6 | |
| Permitted Phases | | | | 4 | | 8 | | | | | | |
| Detector Phase | 7 | 4 | | 3 | 8 | 1 | 5 | 2 | | 1 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | | 7.0 | 7.0 | 7.0 | 7.0 | 10.0 | | 7.0 | 10.0 | |
| Minimum Split (s) | 12.9 | 33.9 | | 12.6 | 30.9 | 12.9 | 13.2 | 35.7 | | 12.9 | 21.5 | |
| Total Split (s) | 31.6 | 47.9 | | 14.6 | 30.9 | 21.7 | 13.2 | 35.8 | | 21.7 | 44.3 | |
| Total Split (%) | 26.3% | 39.9% | | 12.2% | 25.8% | 18.1% | 11.0% | 29.8% | | 18.1% | 36.9% | |
| Maximum Green (s) | 25.7 | 42.0 | | 9.0 | 25.0 | 15.8 | 7.0 | 30.1 | | 15.8 | 38.8 | |
| Yellow Time (s) | 3.0 | 3.9 | | 3.0 | 3.9 | 3.0 | 3.0 | 3.7 | | 3.0 | 3.9 | |
| All-Red Time (s) | 2.9 | 2.0 | | 2.6 | 2.0 | 2.9 | 3.2 | 2.0 | | 2.9 | 1.6 | |
| Lost Time Adjust (s) | -0.9 | -0.9 | | -0.6 | -0.9 | -0.9 | -1.2 | -0.7 | | -0.9 | -0.5 | |
| Total Lost Time (s) | 5.0 | 5.0 | | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | | 5.0 | 5.0 | |
| Lead/Lag | Lead | Lag | | Lead | Lag | Lag | Lead | Lead | | Lag | Lag | |
| Lead-Lag Optimize? | Yes | Yes | | Yes | Yes | Yes | Yes | Yes | | Yes | Yes | |
| Vehicle Extension (s) | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 1.0 | 2.0 | | 2.0 | 2.0 | |
| Recall Mode | None | None | | None | None | None | None | C-Min | | None | C-Min | |
| Walk Time (s) | | 7.0 | | | 7.0 | | | 7.0 | | | 7.0 | |
| Flash Dont Walk (s) | | 21.0 | | | 18.0 | | | 23.0 | | | 9.0 | |
| Pedestrian Calls (#/hr) | | 0 | | | 0 | | | 0 | | | 0 | |
| Act Effct Green (s) | 21.3 | 30.5 | | 41.8 | 20.5 | 34.4 | 8.3 | 44.3 | | 13.9 | 55.2 | |
| Actuated g/C Ratio | 0.18 | 0.25 | | 0.35 | 0.17 | 0.29 | 0.07 | 0.37 | | 0.12 | 0.46 | |
| v/c Ratio | 0.78 | 0.56 | | 0.49 | 0.77 | 0.45 | 0.32 | 0.47 | | 0.65 | 0.43 | |
| Control Delay | 57.5 | 33.8 | | 28.4 | 63.2 | 21.3 | 60.6 | 33.0 | | 65.4 | 26.2 | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Queue Delay | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Delay | 57.5 | 33.8 | | 28.4 | 63.2 | 21.3 | 60.6 | 33.0 | | 65.4 | 26.2 | |
| LOS | E | C | | C | E | C | E | C | | E | C | |
| Approach Delay | | 45.3 | | | 39.7 | | | 34.7 | | | 32.7 | |
| Approach LOS | | D | | | D | | | C | | | C | |
| Queue Length 50th (ft) | 155 | 199 | | 87 | 179 | 75 | 29 | 182 | | 97 | 193 | |
| Queue Length 95th (ft) | 233 | 176 | | 120 | 257 | 88 | 66 | 277 | | 160 | 286 | |
| Internal Link Dist (ft) | | 2326 | | | 907 | | | 1668 | | | 1122 | |
| Turn Bay Length (ft) | 550 | | | 150 | | | 150 | | | 300 | | |
| Base Capacity (vph) | 394 | 653 | | 350 | 396 | 483 | 122 | 1245 | | 240 | 1498 | |
| Starvation Cap Reductn | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | |
| Spillback Cap Reductn | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | |
| Storage Cap Reductn | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | |
| Reduced v/c Ratio | 0.62 | 0.40 | | 0.49 | 0.61 | 0.42 | 0.32 | 0.47 | | 0.54 | 0.43 | |

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 112 (93%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.78
Intersection Signal Delay: 37.4 Intersection LOS: D
Intersection Capacity Utilization 63.2% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 220: Franklin St & Estes Dr



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 221 | 199 | 36 | 154 | 216 | 181 | 35 | 396 | 128 | 116 | 387 | 199 |
| Future Volume (veh/h) | 221 | 199 | 36 | 154 | 216 | 181 | 35 | 396 | 128 | 116 | 387 | 199 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1909 | 1909 | 1909 | 1817 | 1817 | 1817 | 1909 | 1879 | 1879 | 1723 | 1708 | 1708 |
| Adj Flow Rate, veh/h | 246 | 221 | 40 | 171 | 240 | 201 | 39 | 440 | 142 | 129 | 430 | 221 |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 4 | 2 | 3 | 3 |
| Cap, veh/h | 287 | 372 | 67 | 317 | 288 | 738 | 95 | 523 | 167 | 525 | 960 | 488 |
| Arrive On Green | 0.16 | 0.24 | 0.23 | 0.08 | 0.16 | 0.16 | 0.05 | 0.20 | 0.19 | 0.32 | 0.46 | 0.46 |
| Sat Flow, veh/h | 1818 | 1573 | 285 | 1731 | 1817 | 1540 | 1818 | 2660 | 851 | 1641 | 2081 | 1059 |
| Grp Volume(v), veh/h | 246 | 0 | 261 | 171 | 240 | 201 | 39 | 294 | 288 | 129 | 334 | 317 |
| Grp Sat Flow(s),veh/h/ln | 1818 | 0 | 1858 | 1731 | 1817 | 1540 | 1818 | 1785 | 1726 | 1641 | 1623 | 1518 |
| Q Serve(g_s), s | 15.8 | 0.0 | 15.0 | 9.0 | 15.4 | 3.5 | 2.5 | 19.0 | 19.3 | 7.0 | 16.8 | 17.1 |
| Cycle Q Clear(g_c), s | 15.8 | 0.0 | 15.0 | 9.0 | 15.4 | 3.5 | 2.5 | 19.0 | 19.3 | 7.0 | 16.8 | 17.1 |
| Prop In Lane | 1.00 | | 0.15 | 1.00 | | 1.00 | 1.00 | | 0.49 | 1.00 | | 0.70 |
| Lane Grp Cap(c), veh/h | 287 | 0 | 439 | 317 | 288 | 738 | 95 | 351 | 340 | 525 | 748 | 700 |
| V/C Ratio(X) | 0.86 | 0.00 | 0.59 | 0.54 | 0.83 | 0.27 | 0.41 | 0.84 | 0.85 | 0.25 | 0.45 | 0.45 |
| Avail Cap(c_a), veh/h | 403 | 0 | 664 | 317 | 392 | 825 | 124 | 458 | 443 | 525 | 748 | 700 |
| 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 | 0.00 | 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 | 49.2 | 0.0 | 40.8 | 32.4 | 48.9 | 6.2 | 55.1 | 46.3 | 46.6 | 30.1 | 21.9 | 22.2 |
| Incr Delay (d2), s/veh | 9.3 | 0.0 | 0.5 | 1.0 | 8.0 | 0.1 | 1.0 | 20.6 | 22.3 | 0.1 | 1.9 | 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 | 7.8 | 0.0 | 6.9 | 3.8 | 7.5 | 1.4 | 1.2 | 10.3 | 10.3 | 2.8 | 6.7 | 6.4 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 58.6 | 0.0 | 41.2 | 33.5 | 56.9 | 6.3 | 56.1 | 66.9 | 69.0 | 30.2 | 23.9 | 24.3 |
| LnGrp LOS | E | A | D | C | E | A | E | E | E | C | C | C |
| Approach Vol, veh/h | | 507 | | | 612 | | | 621 | | | 780 | |
| Approach Delay, s/veh | | 49.6 | | | 33.7 | | | 67.2 | | | 25.1 | |
| Approach LOS | | D | | | C | | | E | | | C | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 43.4 | 28.6 | 14.6 | 33.4 | 11.3 | 60.7 | 23.9 | 24.0 |
| Change Period (Y+Rc), s | * 5.9 | 5.7 | 5.6 | 5.9 | * 6.2 | * 5.9 | 5.9 | 5.9 |
| Max Green Setting (Gmax), s | * 16 | 30.1 | 9.0 | 42.0 | * 7 | * 39 | 25.7 | 25.0 |
| Max Q Clear Time (g_c+I1), s | 9.0 | 21.3 | 11.0 | 17.0 | 4.5 | 19.1 | 17.8 | 17.4 |
| Green Ext Time (p_c), s | 0.1 | 1.6 | 0.0 | 0.9 | 0.0 | 2.5 | 0.2 | 0.8 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 42.5 |
| HCM 6th LOS | D |

Notes

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

| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 31 | 59 | 23 | 1285 | 862 | 5 |
| Future Volume (vph) | 31 | 59 | 23 | 1285 | 862 | 5 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | 125 | 100 | | | 0 |
| Storage Lanes | 1 | 1 | 1 | | | 0 |
| Taper Length (ft) | 100 | | 100 | | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 0.95 |
| Frt | | 0.850 | | | 0.999 | |
| Flt Protected | 0.950 | | 0.950 | | | |
| Satd. Flow (prot) | 1770 | 1538 | 1656 | 3539 | 3502 | 0 |
| Flt Permitted | 0.950 | | 0.950 | | | |
| Satd. Flow (perm) | 1770 | 1538 | 1656 | 3539 | 3502 | 0 |
| Link Speed (mph) | 30 | | | 40 | 40 | |
| Link Distance (ft) | 928 | | | 1413 | 1063 | |
| Travel Time (s) | 21.1 | | | 24.1 | 18.1 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 5% | 9% | 2% | 3% | 2% |
| Adj. Flow (vph) | 34 | 66 | 26 | 1428 | 958 | 6 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 34 | 66 | 26 | 1428 | 964 | 0 |
| Sign Control | Stop | | | Free | Free | |

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 45.5% ICU Level of Service A
Analysis Period (min) 15

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.8 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 31 | 59 | 23 | 1285 | 862 | 5 |
| Future Vol, veh/h | 31 | 59 | 23 | 1285 | 862 | 5 |
| 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 | 125 | 100 | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 2 | 5 | 9 | 2 | 3 | 2 |
| Mvmt Flow | 34 | 66 | 26 | 1428 | 958 | 6 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 1727 | 482 | 964 | 0 | - | 0 |
| Stage 1 | 961 | - | - | - | - | - |
| Stage 2 | 766 | - | - | - | - | - |
| Critical Hdwy | 6.84 | 7 | 4.28 | - | - | - |
| Critical Hdwy Stg 1 | 5.84 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.84 | - | - | - | - | - |
| Follow-up Hdwy | 3.52 | 3.35 | 2.29 | - | - | - |
| Pot Cap-1 Maneuver | 80 | 522 | 668 | - | - | - |
| Stage 1 | 332 | - | - | - | - | - |
| Stage 2 | 419 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 77 | 522 | 668 | - | - | - |
| Mov Cap-2 Maneuver | 200 | - | - | - | - | - |
| Stage 1 | 319 | - | - | - | - | - |
| Stage 2 | 419 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 17.7 | 0.2 | 0 |
| HCM LOS | C | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | EBLn2 | SBT | SBR |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | 668 | - | 200 | 522 | - | - |
| HCM Lane V/C Ratio | 0.038 | - | 0.172 | 0.126 | - | - |
| HCM Control Delay (s) | 10.6 | - | 26.7 | 12.9 | - | - |
| HCM Lane LOS | B | - | D | B | - | - |
| HCM 95th %tile Q(veh) | 0.1 | - | 0.6 | 0.4 | - | - |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 225 | 239 | 56 | 165 | 301 | 415 | 66 | 1044 | 206 | 220 | 646 | 203 |
| Future Volume (vph) | 225 | 239 | 56 | 165 | 301 | 415 | 66 | 1044 | 206 | 220 | 646 | 203 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Grade (%) | | 1% | | | -2% | | | 1% | | | 0% | |
| Storage Length (ft) | 225 | | 350 | 150 | | 200 | 150 | | 0 | 225 | | 0 |
| Storage Lanes | 1 | | 1 | 1 | | 1 | 1 | | 0 | 1 | | 0 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | 0.95 | 0.95 |
| Frt | | | 0.850 | | | 0.850 | | 0.975 | | | 0.964 | |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1761 | 1853 | 1575 | 1787 | 1881 | 1599 | 1761 | 3433 | 0 | 1770 | 3387 | 0 |
| Flt Permitted | 0.163 | | | 0.314 | | | 0.206 | | | 0.067 | | |
| Satd. Flow (perm) | 302 | 1853 | 1575 | 591 | 1881 | 1599 | 382 | 3433 | 0 | 125 | 3387 | 0 |
| Right Turn on Red | | | No | | | No | | | No | | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (mph) | | 35 | | | 35 | | | 40 | | | 40 | |
| Link Distance (ft) | | 1251 | | | 1571 | | | 1063 | | | 1514 | |
| Travel Time (s) | | 24.4 | | | 30.6 | | | 18.1 | | | 25.8 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 2% | 2% | 2% | 2% | 2% | 2% | 2% | 2% | 3% | 2% |
| Adj. Flow (vph) | 250 | 266 | 62 | 183 | 334 | 461 | 73 | 1160 | 229 | 244 | 718 | 226 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 250 | 266 | 62 | 183 | 334 | 461 | 73 | 1389 | 0 | 244 | 944 | 0 |
| Turn Type | D.P+P | NA | pm+ov | D.P+P | NA | pm+ov | D.P+P | NA | | D.P+P | NA | |
| Protected Phases | 7 | 4 | 5 | 3 | 8 | 1 | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 8 | | 4 | 4 | | 8 | 6 | | | 2 | | |
| Detector Phase | 7 | 4 | 5 | 3 | 8 | 1 | 5 | 2 | | 1 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 12.0 | | 7.0 | 12.0 | |
| Minimum Split (s) | 11.9 | 12.5 | 12.8 | 12.4 | 12.5 | 12.8 | 12.8 | 34.0 | | 12.8 | 18.0 | |
| Total Split (s) | 25.0 | 33.0 | 22.0 | 20.0 | 28.0 | 21.0 | 22.0 | 66.0 | | 21.0 | 65.0 | |
| Total Split (%) | 17.9% | 23.6% | 15.7% | 14.3% | 20.0% | 15.0% | 15.7% | 47.1% | | 15.0% | 46.4% | |
| Maximum Green (s) | 20.1 | 27.5 | 16.2 | 14.6 | 22.5 | 15.2 | 16.2 | 60.0 | | 15.2 | 59.0 | |
| Yellow Time (s) | 3.0 | 3.8 | 3.0 | 3.0 | 3.8 | 3.0 | 3.0 | 4.3 | | 3.0 | 4.3 | |
| All-Red Time (s) | 1.9 | 1.7 | 2.8 | 2.4 | 1.7 | 2.8 | 2.8 | 1.7 | | 2.8 | 1.7 | |
| Lost Time Adjust (s) | 0.1 | -0.5 | -0.8 | -0.4 | -0.5 | -0.8 | -0.8 | -1.0 | | -0.8 | -1.0 | |
| Total Lost Time (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | | 5.0 | 5.0 | |
| Lead/Lag | Lead | Lag | Lead | Lead | Lag | Lag | Lead | Lead | | Lag | Lag | |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | | Yes | Yes | |
| Vehicle Extension (s) | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 2.0 | | 1.0 | 2.0 | |
| Recall Mode | None | None | None | None | None | None | None | C-Min | | None | C-Min | |
| Walk Time (s) | | | | | | | | 7.0 | | | | |
| Flash Dont Walk (s) | | | | | | | | 21.0 | | | | |
| Pedestrian Calls (#/hr) | | | | | | | | 0 | | | | |
| Act Effct Green (s) | 43.0 | 29.9 | 42.9 | 43.0 | 25.2 | 42.0 | 77.0 | 60.1 | | 77.0 | 69.0 | |
| Actuated g/C Ratio | 0.31 | 0.21 | 0.31 | 0.31 | 0.18 | 0.30 | 0.55 | 0.43 | | 0.55 | 0.49 | |
| v/c Ratio | 0.90 | 0.67 | 0.13 | 0.62 | 0.99 | 0.96 | 0.25 | 0.94 | | 0.92 | 0.57 | |
| Control Delay | 71.9 | 60.7 | 36.8 | 44.2 | 102.6 | 69.9 | 14.9 | 51.6 | | 81.9 | 19.0 | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Delay | 71.9 | 60.7 | 36.8 | 44.2 | 102.6 | 69.9 | 14.9 | 51.6 | | 81.9 | 19.0 | |
| LOS | E | E | D | D | F | E | B | D | | F | B | |
| Approach Delay | | 63.0 | | | 76.3 | | | 49.7 | | | 31.9 | |
| Approach LOS | | E | | | E | | | D | | | C | |
| Queue Length 50th (ft) | 174 | 227 | 41 | 122 | ~335 | ~308 | 28 | 622 | | 183 | 390 | |
| Queue Length 95th (ft) | #318 | 331 | 79 | 187 | #534 | #589 | 51 | #777 | | #346 | 328 | |
| Internal Link Dist (ft) | | 1171 | | | 1491 | | | 983 | | | 1434 | |
| Turn Bay Length (ft) | 225 | | 350 | 150 | | 200 | 150 | | | 225 | | |
| Base Capacity (vph) | 304 | 395 | 584 | 316 | 338 | 480 | 391 | 1495 | | 266 | 1669 | |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | |
| Reduced v/c Ratio | 0.82 | 0.67 | 0.11 | 0.58 | 0.99 | 0.96 | 0.19 | 0.93 | | 0.92 | 0.57 | |

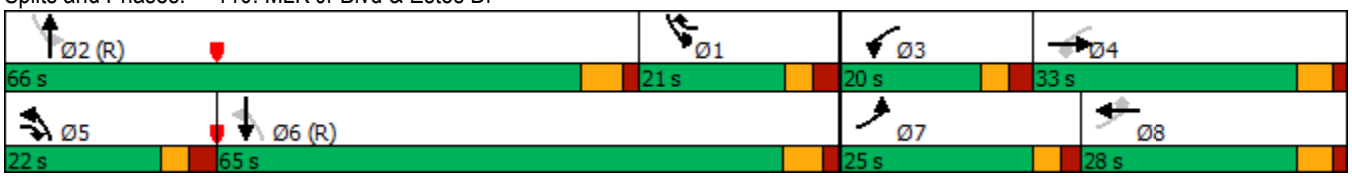
Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 16 (11%), Referenced to phase 2:NBSB and 6:NBSB, Start of Green
Natural Cycle: 110
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.99
Intersection Signal Delay: 52.7 Intersection LOS: D
Intersection Capacity Utilization 92.6% ICU Level of Service F
Analysis Period (min) 15

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

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

Splits and Phases: 110: MLK Jr Blvd & Estes Dr



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 225 | 239 | 56 | 165 | 301 | 415 | 66 | 1044 | 206 | 220 | 646 | 203 |
| Future Volume (veh/h) | 225 | 239 | 56 | 165 | 301 | 415 | 66 | 1044 | 206 | 220 | 646 | 203 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1864 | 1864 | 1864 | 1949 | 1949 | 1949 | 1864 | 1864 | 1864 | 1870 | 1856 | 1856 |
| Adj Flow Rate, veh/h | 250 | 266 | 62 | 183 | 334 | 461 | 73 | 1160 | 229 | 244 | 718 | 226 |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 3 |
| Cap, veh/h | 282 | 373 | 403 | 299 | 320 | 508 | 364 | 1240 | 243 | 318 | 1346 | 424 |
| Arrive On Green | 0.13 | 0.20 | 0.20 | 0.09 | 0.16 | 0.17 | 0.05 | 0.42 | 0.41 | 0.19 | 0.68 | 0.67 |
| Sat Flow, veh/h | 1776 | 1864 | 1580 | 1856 | 1949 | 1651 | 1776 | 2952 | 579 | 1781 | 2638 | 830 |
| Grp Volume(v), veh/h | 250 | 266 | 62 | 183 | 334 | 461 | 73 | 693 | 696 | 244 | 480 | 464 |
| Grp Sat Flow(s),veh/h/ln | 1776 | 1864 | 1580 | 1856 | 1949 | 1651 | 1776 | 1771 | 1760 | 1781 | 1763 | 1706 |
| Q Serve(g_s), s | 16.3 | 18.6 | 4.3 | 10.8 | 23.0 | 13.3 | 2.6 | 52.2 | 53.1 | 12.6 | 19.2 | 19.4 |
| Cycle Q Clear(g_c), s | 16.3 | 18.6 | 4.3 | 10.8 | 23.0 | 13.3 | 2.6 | 52.2 | 53.1 | 12.6 | 19.2 | 19.4 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.33 | 1.00 | | 0.49 |
| Lane Grp Cap(c), veh/h | 282 | 373 | 403 | 299 | 320 | 508 | 364 | 744 | 739 | 318 | 899 | 870 |
| V/C Ratio(X) | 0.89 | 0.71 | 0.15 | 0.61 | 1.04 | 0.91 | 0.20 | 0.93 | 0.94 | 0.77 | 0.53 | 0.53 |
| Avail Cap(c_a), veh/h | 305 | 373 | 403 | 323 | 320 | 508 | 486 | 772 | 767 | 318 | 899 | 870 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.33 | 1.33 | 1.33 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.92 | 0.92 | 0.92 |
| Uniform Delay (d), s/veh | 42.9 | 52.3 | 40.5 | 40.2 | 58.5 | 24.8 | 15.6 | 38.7 | 39.1 | 52.0 | 14.1 | 14.4 |
| Incr Delay (d2), s/veh | 22.8 | 5.5 | 0.1 | 1.9 | 62.0 | 19.5 | 0.1 | 20.0 | 21.5 | 8.9 | 2.1 | 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 | 8.9 | 9.3 | 1.7 | 5.1 | 16.8 | 6.9 | 1.1 | 26.0 | 26.6 | 8.4 | 6.6 | 6.5 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 65.6 | 57.7 | 40.5 | 42.1 | 120.5 | 44.3 | 15.7 | 58.7 | 60.6 | 61.0 | 16.2 | 16.5 |
| LnGrp LOS | E | E | D | D | F | D | B | E | E | E | B | B |
| Approach Vol, veh/h | | 578 | | | 978 | | | 1462 | | | 1188 | |
| Approach Delay, s/veh | | 59.3 | | | 69.9 | | | 57.5 | | | 25.5 | |
| Approach LOS | | E | | | E | | | E | | | C | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 25.0 | 63.8 | 18.2 | 33.0 | 12.4 | 76.4 | 23.2 | 28.0 |
| Change Period (Y+Rc), s | * 6 | * 6 | 5.4 | 5.5 | * 5.8 | * 6 | * 4.9 | 5.5 |
| Max Green Setting (Gmax), s | * 15 | * 60 | 14.6 | 27.5 | * 16 | * 59 | * 20 | 22.5 |
| Max Q Clear Time (g_c+I1), s | 14.6 | 55.1 | 12.8 | 20.6 | 4.6 | 21.4 | 18.3 | 25.0 |
| Green Ext Time (p_c), s | 0.0 | 2.7 | 0.0 | 0.3 | 0.0 | 4.0 | 0.0 | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 51.6 |
| HCM 6th LOS | D |

Notes

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

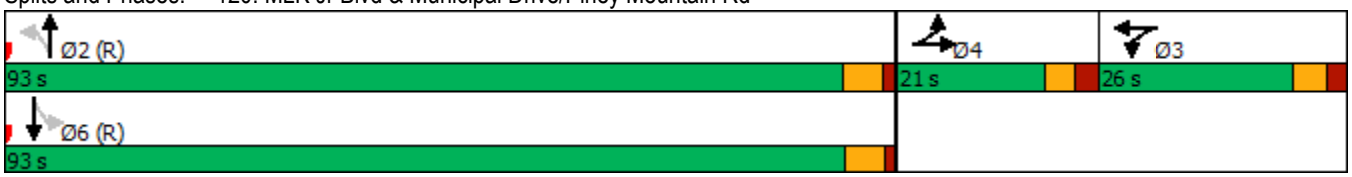
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 24 | 7 | 26 | 102 | 1 | 31 | 14 | 1532 | 138 | 42 | 941 | 18 |
| Future Volume (vph) | 24 | 7 | 26 | 102 | 1 | 31 | 14 | 1532 | 138 | 42 | 941 | 18 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Grade (%) | | 0% | | | 4% | | | -1% | | | 0% | |
| Storage Length (ft) | 100 | | 0 | 375 | | 0 | 150 | | 0 | 225 | | 0 |
| Storage Lanes | 1 | | 0 | 2 | | 0 | 1 | | 0 | 1 | | 0 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 0.97 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | 0.95 | 0.95 |
| Frt | | 0.882 | | | 0.854 | | | 0.988 | | | 0.997 | |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1736 | 1643 | 0 | 3364 | 1488 | 0 | 1778 | 3514 | 0 | 1770 | 3529 | 0 |
| Flt Permitted | 0.950 | | | 0.950 | | | 0.246 | | | 0.085 | | |
| Satd. Flow (perm) | 1736 | 1643 | 0 | 3364 | 1488 | 0 | 461 | 3514 | 0 | 158 | 3529 | 0 |
| Right Turn on Red | | | No | | | No | | | No | | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (mph) | | 20 | | | 35 | | | 40 | | | 40 | |
| Link Distance (ft) | | 554 | | | 663 | | | 1514 | | | 2618 | |
| Travel Time (s) | | 18.9 | | | 12.9 | | | 25.8 | | | 44.6 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 4% | 2% | 2% | 2% | 2% | 7% | 2% | 2% | 2% | 2% | 2% | 2% |
| Adj. Flow (vph) | 27 | 8 | 29 | 113 | 1 | 34 | 16 | 1702 | 153 | 47 | 1046 | 20 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 27 | 37 | 0 | 113 | 35 | 0 | 16 | 1855 | 0 | 47 | 1066 | 0 |
| Turn Type | Split | NA | | Split | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | 4 | 4 | | 3 | 3 | | | 2 | | | 6 | |
| Permitted Phases | | | | | | | 2 | | | 6 | | |
| Detector Phase | 4 | 4 | | 3 | 3 | | 2 | 2 | | 6 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | | 7.0 | 7.0 | | 12.0 | 12.0 | | 12.0 | 12.0 | |
| Minimum Split (s) | 12.6 | 12.6 | | 12.9 | 12.9 | | 27.8 | 27.8 | | 17.5 | 17.5 | |
| Total Split (s) | 21.0 | 21.0 | | 26.0 | 26.0 | | 93.0 | 93.0 | | 93.0 | 93.0 | |
| Total Split (%) | 15.0% | 15.0% | | 18.6% | 18.6% | | 66.4% | 66.4% | | 66.4% | 66.4% | |
| Maximum Green (s) | 15.4 | 15.4 | | 20.1 | 20.1 | | 87.2 | 87.2 | | 87.5 | 87.5 | |
| Yellow Time (s) | 3.0 | 3.0 | | 3.6 | 3.6 | | 4.2 | 4.2 | | 4.2 | 4.2 | |
| All-Red Time (s) | 2.6 | 2.6 | | 2.3 | 2.3 | | 1.6 | 1.6 | | 1.3 | 1.3 | |
| Lost Time Adjust (s) | -0.6 | -0.6 | | -0.9 | -0.9 | | -0.8 | -0.8 | | -0.5 | -0.5 | |
| Total Lost Time (s) | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | |
| Lead/Lag | Lead | Lead | | Lag | Lag | | | | | | | |
| Lead-Lag Optimize? | Yes | Yes | | Yes | Yes | | | | | | | |
| Vehicle Extension (s) | 1.0 | 1.0 | | 1.0 | 1.0 | | 6.0 | 6.0 | | 6.0 | 6.0 | |
| Minimum Gap (s) | 1.0 | 1.0 | | 1.0 | 1.0 | | 6.0 | 6.0 | | 6.0 | 6.0 | |
| Time Before Reduce (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 15.0 | 15.0 | | 15.0 | 15.0 | |
| Time To Reduce (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 45.0 | 45.0 | | 45.0 | 45.0 | |
| Recall Mode | None | None | | None | None | | C-Min | C-Min | | C-Min | C-Min | |
| Walk Time (s) | | | | | | | 7.0 | 7.0 | | | | |
| Flash Dont Walk (s) | | | | | | | 15.0 | 15.0 | | | | |
| Pedestrian Calls (#/hr) | | | | | | | 0 | 0 | | | | |
| Act Effct Green (s) | 8.4 | 8.4 | | 9.4 | 9.4 | | 109.8 | 109.8 | | 109.8 | 109.8 | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Actuated g/C Ratio | 0.06 | 0.06 | | 0.07 | 0.07 | | 0.78 | 0.78 | | 0.78 | 0.78 | |
| v/c Ratio | 0.26 | 0.38 | | 0.50 | 0.35 | | 0.04 | 0.67 | | 0.38 | 0.39 | |
| Control Delay | 68.8 | 74.1 | | 70.6 | 71.8 | | 2.7 | 3.8 | | 25.4 | 11.1 | |
| Queue Delay | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Delay | 68.8 | 74.1 | | 70.6 | 71.8 | | 2.7 | 3.8 | | 25.4 | 11.1 | |
| LOS | E | E | | E | E | | A | A | | C | B | |
| Approach Delay | | 71.8 | | | 70.9 | | | 3.8 | | | 11.7 | |
| Approach LOS | | E | | | E | | | A | | | B | |
| Queue Length 50th (ft) | 24 | 33 | | 52 | 31 | | 2 | 187 | | 31 | 367 | |
| Queue Length 95th (ft) | 56 | 71 | | 84 | 68 | | m2 | m215 | | 59 | 427 | |
| Internal Link Dist (ft) | | 474 | | | 583 | | | 1434 | | | 2538 | |
| Turn Bay Length (ft) | 100 | | | 375 | | | 150 | | | 225 | | |
| Base Capacity (vph) | 198 | 187 | | 504 | 223 | | 361 | 2754 | | 123 | 2766 | |
| Starvation Cap Reductn | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Spillback Cap Reductn | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Storage Cap Reductn | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Reduced v/c Ratio | 0.14 | 0.20 | | 0.22 | 0.16 | | 0.04 | 0.67 | | 0.38 | 0.39 | |

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 133 (95%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.67
Intersection Signal Delay: 11.1 Intersection LOS: B
Intersection Capacity Utilization 64.7% ICU Level of Service C
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 120: MLK Jr Blvd & Municipal Drive/Piney Mountain Rd



HCM 6th Edition methodology expects strict NEMA phasing.

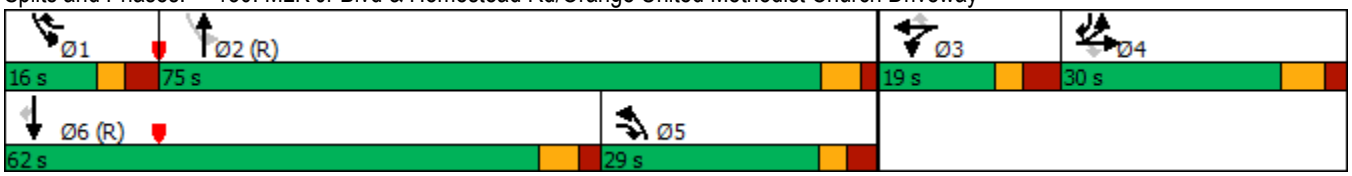
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 203 | 0 | 177 | 2 | 2 | 1 | 250 | 1337 | 0 | 7 | 822 | 191 |
| Future Volume (vph) | 203 | 0 | 177 | 2 | 2 | 1 | 250 | 1337 | 0 | 7 | 822 | 191 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 125 | | 0 | 125 | | 0 | 525 | | 0 | 250 | | 375 |
| Storage Lanes | 1 | | 1 | 2 | | 1 | 2 | | 0 | 1 | | 1 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 0.95 | 0.95 | 1.00 | 0.95 | 0.95 | 1.00 | 0.97 | 0.95 | 0.95 | 1.00 | 0.95 | 1.00 |
| Frt | | | 0.850 | | | 0.850 | | | | | | 0.850 |
| Flt Protected | 0.950 | 0.950 | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1681 | 1681 | 1583 | 1681 | 1770 | 1583 | 3433 | 3539 | 0 | 1770 | 3539 | 1583 |
| Flt Permitted | 0.950 | 0.950 | | 0.950 | | | 0.950 | | | 0.126 | | |
| Satd. Flow (perm) | 1681 | 1681 | 1583 | 1681 | 1770 | 1583 | 3433 | 3539 | 0 | 235 | 3539 | 1583 |
| Right Turn on Red | | | No | | | No | | | No | | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (mph) | | 35 | | | 20 | | | 40 | | | 40 | |
| Link Distance (ft) | | 1248 | | | 314 | | | 1137 | | | 1345 | |
| Travel Time (s) | | 24.3 | | | 10.7 | | | 19.4 | | | 22.9 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Adj. Flow (vph) | 226 | 0 | 197 | 2 | 2 | 1 | 278 | 1486 | 0 | 8 | 913 | 212 |
| Shared Lane Traffic (%) | 50% | | | 10% | | | | | | | | |
| Lane Group Flow (vph) | 113 | 113 | 197 | 2 | 2 | 1 | 278 | 1486 | 0 | 8 | 913 | 212 |
| Turn Type | Split | NA | pm+ov | Split | NA | pm+ov | Prot | NA | | D.P+P | NA | pm+ov |
| Protected Phases | 4 | 4 | 5 | 3 | 3 | 1 | 5 | 2 | | 1 | 6 | 4 |
| Permitted Phases | | | 4 | | | 3 | | | | 2 | | 6 |
| Detector Phase | 4 | 4 | 5 | 3 | 3 | 1 | 5 | 2 | | 1 | 6 | 4 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 12.0 | | 7.0 | 12.0 | 7.0 |
| Minimum Split (s) | 14.1 | 14.1 | 13.3 | 13.9 | 13.9 | 13.4 | 13.3 | 28.0 | | 13.4 | 45.4 | 14.1 |
| Total Split (s) | 30.0 | 30.0 | 29.0 | 19.0 | 19.0 | 16.0 | 29.0 | 75.0 | | 16.0 | 62.0 | 30.0 |
| Total Split (%) | 21.4% | 21.4% | 20.7% | 13.6% | 13.6% | 11.4% | 20.7% | 53.6% | | 11.4% | 44.3% | 21.4% |
| Maximum Green (s) | 22.9 | 22.9 | 22.7 | 12.1 | 12.1 | 9.6 | 22.7 | 69.0 | | 9.6 | 55.6 | 22.9 |
| Yellow Time (s) | 4.5 | 4.5 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 4.2 | | 3.0 | 4.2 | 4.5 |
| All-Red Time (s) | 2.6 | 2.6 | 3.3 | 3.9 | 3.9 | 3.4 | 3.3 | 1.8 | | 3.4 | 2.2 | 2.6 |
| Lost Time Adjust (s) | -2.1 | -2.1 | -1.3 | -1.9 | -1.9 | -1.4 | -1.3 | -1.0 | | -1.4 | -1.4 | -2.1 |
| Total Lost Time (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | | 5.0 | 5.0 | 5.0 |
| Lead/Lag | Lag | Lag | Lag | Lead | Lead | Lead | Lag | Lag | | Lead | Lead | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | | Yes | Yes | Yes |
| Vehicle Extension (s) | 1.0 | 1.0 | 1.0 | 2.0 | 2.0 | 2.0 | 1.0 | 6.0 | | 2.0 | 6.0 | 1.0 |
| Minimum Gap (s) | 1.0 | 1.0 | 1.0 | 2.0 | 2.0 | 2.0 | 1.0 | 6.0 | | 2.0 | 6.0 | 1.0 |
| Time Before Reduce (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 15.0 | | 0.0 | 15.0 | 0.0 |
| Time To Reduce (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 45.0 | | 0.0 | 45.0 | 0.0 |
| Recall Mode | None | None | None | None | None | None | None | C-Min | | None | C-Min | None |
| Walk Time (s) | | | | | | | | 7.0 | | | 7.0 | |
| Flash Dont Walk (s) | | | | | | | | 15.0 | | | 32.0 | |
| Pedestrian Calls (#/hr) | | | | | | | | 0 | | | 0 | |
| Act Effct Green (s) | 14.9 | 14.9 | 48.1 | 8.9 | 8.9 | 10.2 | 29.1 | 106.9 | | 110.3 | 78.2 | 98.1 |
| Actuated g/C Ratio | 0.11 | 0.11 | 0.34 | 0.06 | 0.06 | 0.07 | 0.21 | 0.76 | | 0.79 | 0.56 | 0.70 |
| v/c Ratio | 0.63 | 0.63 | 0.36 | 0.02 | 0.02 | 0.01 | 0.39 | 0.55 | | 0.03 | 0.46 | 0.19 |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Control Delay | 74.8 | 74.8 | 32.4 | 62.0 | 62.0 | 45.0 | 36.4 | 4.8 | | 5.3 | 21.0 | 8.6 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Total Delay | 74.8 | 74.8 | 32.4 | 62.0 | 62.0 | 45.0 | 36.4 | 4.8 | | 5.3 | 21.0 | 8.6 |
| LOS | E | E | C | E | E | D | D | A | | A | C | A |
| Approach Delay | | 55.0 | | | 58.6 | | | 9.8 | | | 18.6 | |
| Approach LOS | | E | | | E | | | A | | | B | |
| Queue Length 50th (ft) | 105 | 105 | 122 | 2 | 2 | 1 | 88 | 35 | | 1 | 270 | 68 |
| Queue Length 95th (ft) | 169 | 169 | 169 | 11 | 11 | 5 | 156 | 365 | | 8 | 368 | 108 |
| Internal Link Dist (ft) | | 1168 | | | 234 | | | 1057 | | | 1265 | |
| Turn Bay Length (ft) | 125 | | | 125 | | | 525 | | | 250 | | 375 |
| Base Capacity (vph) | 300 | 300 | 540 | 168 | 177 | 144 | 731 | 2702 | | 307 | 1975 | 1107 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.38 | 0.38 | 0.36 | 0.01 | 0.01 | 0.01 | 0.38 | 0.55 | | 0.03 | 0.46 | 0.19 |

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 71 (51%), Referenced to phase 2:NBSB and 6:SBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.63
Intersection Signal Delay: 18.6 Intersection LOS: B
Intersection Capacity Utilization 67.6% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 130: MLK Jr Blvd & Homestead Rd/Orange United Methodist Church Driveway



HCM 6th Edition methodology expects strict NEMA phasing.

| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 2 | 663 | 875 | 15 | 14 | 6 |
| Future Volume (vph) | 2 | 663 | 875 | 15 | 14 | 6 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | | 0.998 | | 0.959 | |
| Flt Protected | | | | | 0.966 | |
| Satd. Flow (prot) | 0 | 1863 | 1859 | 0 | 1726 | 0 |
| Flt Permitted | | | | | 0.966 | |
| Satd. Flow (perm) | 0 | 1863 | 1859 | 0 | 1726 | 0 |
| Link Speed (mph) | | 35 | 35 | | 30 | |
| Link Distance (ft) | | 1571 | 840 | | 813 | |
| Travel Time (s) | | 30.6 | 16.4 | | 18.5 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Adj. Flow (vph) | 2 | 737 | 972 | 17 | 16 | 7 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 739 | 989 | 0 | 23 | 0 |
| Sign Control | | Free | Free | | Stop | |

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 57.0% ICU Level of Service B
Analysis Period (min) 15

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.5 |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 2 | 663 | 875 | 15 | 14 | 6 |
| Future Vol, veh/h | 2 | 663 | 875 | 15 | 14 | 6 |
| 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 | 2 | 737 | 972 | 17 | 16 | 7 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 989 | 0 | - | 0 | 1722 | 981 |
| Stage 1 | - | - | - | - | 981 | - |
| Stage 2 | - | - | - | - | 741 | - |
| 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 | 699 | - | - | - | 98 | 303 |
| Stage 1 | - | - | - | - | 363 | - |
| Stage 2 | - | - | - | - | 471 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | 699 | - | - | - | 98 | 303 |
| Mov Cap-2 Maneuver | - | - | - | - | 98 | - |
| Stage 1 | - | - | - | - | 361 | - |
| Stage 2 | - | - | - | - | 471 | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 0 | 40.6 |
| HCM LOS | | | E |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|
| Capacity (veh/h) | 699 | - | - | - | 123 |
| HCM Lane V/C Ratio | 0.003 | - | - | - | 0.181 |
| HCM Control Delay (s) | 10.2 | 0 | - | - | 40.6 |
| HCM Lane LOS | B | A | - | - | E |
| HCM 95th %tile Q(veh) | 0 | - | - | - | 0.6 |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 115 | 555 | 7 | 2 | 721 | 49 | 2 | 3 | 1 | 35 | 3 | 167 |
| Future Volume (vph) | 115 | 555 | 7 | 2 | 721 | 49 | 2 | 3 | 1 | 35 | 3 | 167 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Grade (%) | | -2% | | | 0% | | | 7% | | | -5% | |
| Storage Length (ft) | 250 | | 0 | 125 | | 0 | 0 | | 0 | 100 | | 0 |
| Storage Lanes | 1 | | 0 | 1 | | 0 | 0 | | 0 | 1 | | 0 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | 0.998 | | | 0.991 | | | 0.977 | | | 0.852 | |
| Flt Protected | 0.950 | | | 0.950 | | | | 0.984 | | 0.950 | | |
| Satd. Flow (prot) | 1787 | 1878 | 0 | 1770 | 1846 | 0 | 0 | 1728 | 0 | 1814 | 1627 | 0 |
| Flt Permitted | 0.211 | | | 0.384 | | | | 0.921 | | 0.754 | | |
| Satd. Flow (perm) | 397 | 1878 | 0 | 715 | 1846 | 0 | 0 | 1617 | 0 | 1440 | 1627 | 0 |
| Right Turn on Red | | | No | | | No | | | No | | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (mph) | | 35 | | | 35 | | | 25 | | | 25 | |
| Link Distance (ft) | | 961 | | | 940 | | | 384 | | | 262 | |
| Travel Time (s) | | 18.7 | | | 18.3 | | | 10.5 | | | 7.1 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Adj. Flow (vph) | 128 | 617 | 8 | 2 | 801 | 54 | 2 | 3 | 1 | 39 | 3 | 186 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 128 | 625 | 0 | 2 | 855 | 0 | 0 | 6 | 0 | 39 | 189 | 0 |
| Turn Type | D.P+P | NA | | D.Pm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | 5 | 2 | | | 6 | | | 8 | | | 4 | |
| Permitted Phases | 6 | | | 2 | | | 8 | | | 4 | | |
| Detector Phase | 5 | 2 | | 2 | 6 | | 8 | 8 | | 4 | 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 10.0 | | 10.0 | 10.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | |
| Minimum Split (s) | 12.6 | 21.6 | | 21.6 | 21.6 | | 11.9 | 11.9 | | 20.4 | 20.4 | |
| Total Split (s) | 13.0 | 93.0 | | 93.0 | 80.0 | | 27.0 | 27.0 | | 27.0 | 27.0 | |
| Total Split (%) | 10.8% | 77.5% | | 77.5% | 66.7% | | 22.5% | 22.5% | | 22.5% | 22.5% | |
| Maximum Green (s) | 7.4 | 87.4 | | 87.4 | 74.4 | | 22.1 | 22.1 | | 21.6 | 21.6 | |
| Yellow Time (s) | 3.0 | 4.0 | | 4.0 | 3.8 | | 3.0 | 3.0 | | 3.5 | 3.5 | |
| All-Red Time (s) | 2.6 | 1.6 | | 1.6 | 1.8 | | 1.9 | 1.9 | | 1.9 | 1.9 | |
| Lost Time Adjust (s) | -0.6 | -0.6 | | -0.6 | -0.6 | | | 0.1 | | -0.4 | -0.4 | |
| Total Lost Time (s) | 5.0 | 5.0 | | 5.0 | 5.0 | | | 5.0 | | 5.0 | 5.0 | |
| Lead/Lag | Lead | | | | Lag | | | | | | | |
| Lead-Lag Optimize? | Yes | | | | Yes | | | | | | | |
| Vehicle Extension (s) | 1.0 | 2.0 | | 2.0 | 2.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | |
| Recall Mode | None | C-Min | | C-Min | C-Min | | None | None | | None | None | |
| Walk Time (s) | | 7.0 | | 7.0 | 7.0 | | | | | 7.0 | 7.0 | |
| Flash Dont Walk (s) | | 9.0 | | 9.0 | 9.0 | | | | | 8.0 | 8.0 | |
| Pedestrian Calls (#/hr) | | 0 | | 0 | 0 | | | | | 0 | 0 | |
| Act Effct Green (s) | 87.8 | 92.8 | | 92.8 | 80.2 | | | 9.9 | | 17.2 | 17.2 | |
| Actuated g/C Ratio | 0.73 | 0.77 | | 0.77 | 0.67 | | | 0.08 | | 0.14 | 0.14 | |
| v/c Ratio | 0.34 | 0.43 | | 0.00 | 0.69 | | | 0.05 | | 0.19 | 0.81 | |
| Control Delay | 6.4 | 6.2 | | 2.5 | 13.2 | | | 47.2 | | 45.5 | 75.2 | |
| Queue Delay | 0.0 | 0.0 | | 0.0 | 0.0 | | | 0.0 | | 0.0 | 0.0 | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total Delay | 6.4 | 6.2 | | 2.5 | 13.2 | | | 47.2 | | 45.5 | 75.2 | |
| LOS | A | A | | A | B | | | D | | D | E | |
| Approach Delay | | 6.2 | | | 13.2 | | | 47.2 | | | 70.1 | |
| Approach LOS | | A | | | B | | | D | | | E | |
| Queue Length 50th (ft) | 21 | 142 | | 1 | 276 | | | 5 | | 27 | 143 | |
| Queue Length 95th (ft) | 42 | 233 | | m0 | m403 | | | 16 | | 58 | 218 | |
| Internal Link Dist (ft) | | 881 | | | 860 | | | 304 | | | 182 | |
| Turn Bay Length (ft) | 250 | | | 125 | | | | | | 100 | | |
| Base Capacity (vph) | 384 | 1452 | | 553 | 1233 | | | 296 | | 264 | 298 | |
| Starvation Cap Reductn | 0 | 0 | | 0 | 0 | | | 0 | | 0 | 0 | |
| Spillback Cap Reductn | 0 | 0 | | 0 | 0 | | | 0 | | 0 | 0 | |
| Storage Cap Reductn | 0 | 0 | | 0 | 0 | | | 0 | | 0 | 0 | |
| Reduced v/c Ratio | 0.33 | 0.43 | | 0.00 | 0.69 | | | 0.02 | | 0.15 | 0.63 | |

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 27 (23%), Referenced to phase 2:EBWB and 6:EBWB, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.81
Intersection Signal Delay: 17.5 Intersection LOS: B
Intersection Capacity Utilization 70.3% ICU Level of Service C
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 210: Caswell Rd & Estes Dr

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 115 | 555 | 7 | 2 | 721 | 49 | 2 | 3 | 1 | 35 | 3 | 167 |
| Future Volume (veh/h) | 115 | 555 | 7 | 2 | 721 | 49 | 2 | 3 | 1 | 35 | 3 | 167 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1949 | 1949 | 1949 | 1870 | 1870 | 1870 | 1582 | 1582 | 1582 | 2067 | 2067 | 2067 |
| Adj Flow Rate, veh/h | 128 | 617 | 8 | 2 | 801 | 54 | 2 | 3 | 1 | 39 | 3 | 186 |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 176 | 1265 | 16 | 217 | 1187 | 80 | 48 | 53 | 12 | 190 | 4 | 220 |
| Arrive On Green | 0.06 | 0.66 | 0.65 | 0.09 | 0.68 | 0.68 | 0.12 | 0.12 | 0.12 | 0.13 | 0.13 | 0.12 |
| Sat Flow, veh/h | 1856 | 1919 | 25 | 1781 | 1733 | 117 | 66 | 426 | 98 | 1561 | 28 | 1728 |
| Grp Volume(v), veh/h | 128 | 0 | 625 | 2 | 0 | 855 | 6 | 0 | 0 | 39 | 0 | 189 |
| Grp Sat Flow(s),veh/h/ln | 1856 | 0 | 1944 | 1781 | 0 | 1849 | 590 | 0 | 0 | 1561 | 0 | 1756 |
| Q Serve(g_s), s | 4.2 | 0.0 | 19.4 | 0.1 | 0.0 | 32.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 12.6 |
| Cycle Q Clear(g_c), s | 4.2 | 0.0 | 19.4 | 0.1 | 0.0 | 32.5 | 12.7 | 0.0 | 0.0 | 4.7 | 0.0 | 12.6 |
| Prop In Lane | 1.00 | | 0.01 | 1.00 | | 0.06 | 0.33 | | 0.17 | 1.00 | | 0.98 |
| Lane Grp Cap(c), veh/h | 176 | 0 | 1281 | 0 | 0 | 1267 | 113 | 0 | 0 | 190 | 0 | 224 |
| V/C Ratio(X) | 0.73 | 0.00 | 0.49 | 0.00 | 0.00 | 0.68 | 0.05 | 0.00 | 0.00 | 0.21 | 0.00 | 0.84 |
| Avail Cap(c_a), veh/h | 184 | 0 | 1426 | 0 | 0 | 1267 | 191 | 0 | 0 | 277 | 0 | 322 |
| 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 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 42.2 | 0.0 | 10.3 | 0.0 | 0.0 | 11.1 | 46.6 | 0.0 | 0.0 | 47.7 | 0.0 | 51.4 |
| Incr Delay (d2), s/veh | 11.1 | 0.0 | 1.3 | 0.0 | 0.0 | 2.9 | 0.1 | 0.0 | 0.0 | 0.2 | 0.0 | 9.2 |
| 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 | 3.3 | 0.0 | 8.1 | 0.0 | 0.0 | 12.8 | 0.2 | 0.0 | 0.0 | 1.1 | 0.0 | 6.2 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 53.3 | 0.0 | 11.6 | 0.0 | 0.0 | 14.0 | 46.7 | 0.0 | 0.0 | 47.9 | 0.0 | 60.6 |
| LnGrp LOS | D | A | B | A | A | B | D | A | A | D | A | E |
| Approach Vol, veh/h | | 753 | | | 857 | | | 6 | | | 228 | |
| Approach Delay, s/veh | | 18.7 | | | 14.0 | | | 46.7 | | | 58.4 | |
| Approach LOS | | B | | | B | | | D | | | E | |

| Timer - Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 15.6 | 84.1 | | 20.3 | 12.5 | 87.2 | | 20.3 |
| Change Period (Y+Rc), s | * 5.6 | * 5.6 | | * 5.4 | 5.6 | 5.6 | | * 5.4 |
| Max Green Setting (Gmax), s | * 87 | * 87 | | * 22 | 7.4 | 74.4 | | * 22 |
| Max Q Clear Time (g_c+I1), s | 2.1 | 21.4 | | 14.6 | 6.2 | 34.5 | | 14.7 |
| Green Ext Time (p_c), s | 0.0 | 2.8 | | 0.3 | 0.0 | 4.5 | | 0.0 |

Intersection Summary

| | | |
|---|---|---|
| HCM 6th Ctrl Delay | | 21.5 |
| HCM 6th LOS | | C |

Notes

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

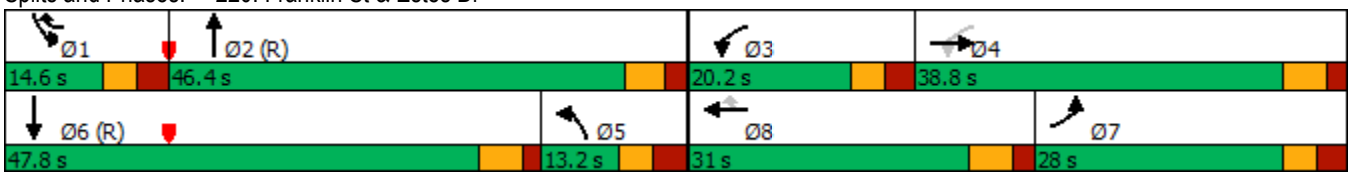
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 285 | 255 | 51 | 181 | 298 | 241 | 53 | 736 | 168 | 110 | 553 | 421 |
| Future Volume (vph) | 285 | 255 | 51 | 181 | 298 | 241 | 53 | 736 | 168 | 110 | 553 | 421 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Grade (%) | | -1% | | | 3% | | | -1% | | | 5% | |
| Storage Length (ft) | 550 | | 0 | 150 | | 0 | 150 | | 0 | 300 | | 0 |
| Storage Lanes | 1 | | 0 | 1 | | 1 | 1 | | 0 | 1 | | 0 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | 0.95 | 0.95 |
| Frt | | 0.975 | | | | 0.850 | | 0.972 | | | 0.935 | |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1778 | 1825 | 0 | 1743 | 1835 | 1560 | 1778 | 3457 | 0 | 1725 | 3226 | 0 |
| Flt Permitted | 0.950 | | | 0.313 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (perm) | 1778 | 1825 | 0 | 574 | 1835 | 1560 | 1778 | 3457 | 0 | 1725 | 3226 | 0 |
| Right Turn on Red | | | No | | | No | | | No | | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (mph) | | 35 | | | 35 | | | 35 | | | 35 | |
| Link Distance (ft) | | 2406 | | | 987 | | | 1748 | | | 1202 | |
| Travel Time (s) | | 46.9 | | | 19.2 | | | 34.1 | | | 23.4 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Adj. Flow (vph) | 317 | 283 | 57 | 201 | 331 | 268 | 59 | 818 | 187 | 122 | 614 | 468 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 317 | 340 | 0 | 201 | 331 | 268 | 59 | 1005 | 0 | 122 | 1082 | 0 |
| Turn Type | Prot | NA | | D.P+P | NA | pm+ov | Prot | NA | | Prot | NA | |
| Protected Phases | 7 | 4 | | 3 | 8 | 1 | 5 | 2 | | 1 | 6 | |
| Permitted Phases | | | | 4 | | 8 | | | | | | |
| Detector Phase | 7 | 4 | | 3 | 8 | 1 | 5 | 2 | | 1 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | | 7.0 | 7.0 | 7.0 | 7.0 | 10.0 | | 7.0 | 10.0 | |
| Minimum Split (s) | 12.9 | 33.9 | | 12.6 | 30.9 | 12.9 | 13.2 | 35.7 | | 12.9 | 21.5 | |
| Total Split (s) | 28.0 | 38.8 | | 20.2 | 31.0 | 14.6 | 13.2 | 46.4 | | 14.6 | 47.8 | |
| Total Split (%) | 23.3% | 32.3% | | 16.8% | 25.8% | 12.2% | 11.0% | 38.7% | | 12.2% | 39.8% | |
| Maximum Green (s) | 22.1 | 32.9 | | 14.6 | 25.1 | 8.7 | 7.0 | 40.7 | | 8.7 | 42.3 | |
| Yellow Time (s) | 3.0 | 3.9 | | 3.0 | 3.9 | 3.0 | 3.0 | 3.7 | | 3.0 | 3.9 | |
| All-Red Time (s) | 2.9 | 2.0 | | 2.6 | 2.0 | 2.9 | 3.2 | 2.0 | | 2.9 | 1.6 | |
| Lost Time Adjust (s) | -0.9 | -0.9 | | -0.6 | -0.9 | -0.9 | -1.2 | -0.7 | | -0.9 | -0.5 | |
| Total Lost Time (s) | 5.0 | 5.0 | | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | | 5.0 | 5.0 | |
| Lead/Lag | Lag | Lag | | Lead | Lead | Lead | Lag | Lag | | Lead | Lead | |
| Lead-Lag Optimize? | Yes | Yes | | Yes | Yes | Yes | Yes | Yes | | Yes | Yes | |
| Vehicle Extension (s) | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 1.0 | 2.0 | | 2.0 | 2.0 | |
| Recall Mode | None | None | | None | None | None | None | C-Min | | None | C-Min | |
| Walk Time (s) | | 7.0 | | | 7.0 | | | 7.0 | | | 7.0 | |
| Flash Dont Walk (s) | | 21.0 | | | 18.0 | | | 23.0 | | | 9.0 | |
| Pedestrian Calls (#/hr) | | 0 | | | 0 | | | 0 | | | 0 | |
| Act Effct Green (s) | 23.1 | 34.4 | | 47.5 | 24.4 | 34.2 | 8.2 | 42.8 | | 9.8 | 47.0 | |
| Actuated g/C Ratio | 0.19 | 0.29 | | 0.40 | 0.20 | 0.28 | 0.07 | 0.36 | | 0.08 | 0.39 | |
| v/c Ratio | 0.93 | 0.65 | | 0.57 | 0.89 | 0.60 | 0.49 | 0.82 | | 0.87 | 0.86 | |
| Control Delay | 82.0 | 46.4 | | 28.0 | 72.1 | 26.1 | 68.0 | 41.9 | | 102.4 | 43.0 | |
| Queue Delay | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total Delay | 82.0 | 46.4 | | 28.0 | 72.1 | 26.1 | 68.0 | 41.9 | | 102.4 | 43.0 | |
| LOS | F | D | | C | E | C | E | D | | F | D | |
| Approach Delay | | 63.6 | | | 45.6 | | | 43.4 | | | 49.0 | |
| Approach LOS | | E | | | D | | | D | | | D | |
| Queue Length 50th (ft) | 232 | 175 | | 95 | 247 | 102 | 45 | 376 | | 95 | 423 | |
| Queue Length 95th (ft) | #431 | 362 | | 149 | #398 | 163 | 90 | 464 | | #211 | #563 | |
| Internal Link Dist (ft) | | 2326 | | | 907 | | | 1668 | | | 1122 | |
| Turn Bay Length (ft) | 550 | | | 150 | | | 150 | | | 300 | | |
| Base Capacity (vph) | 345 | 529 | | 384 | 397 | 444 | 121 | 1231 | | 140 | 1262 | |
| Starvation Cap Reductn | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | |
| Spillback Cap Reductn | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | |
| Storage Cap Reductn | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | |
| Reduced v/c Ratio | 0.92 | 0.64 | | 0.52 | 0.83 | 0.60 | 0.49 | 0.82 | | 0.87 | 0.86 | |

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 84 (70%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 110
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.93
Intersection Signal Delay: 49.2 Intersection LOS: D
Intersection Capacity Utilization 82.8% ICU Level of Service E
Analysis Period (min) 15
# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 220: Franklin St & Estes Dr



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 285 | 255 | 51 | 181 | 298 | 241 | 53 | 736 | 168 | 110 | 553 | 421 |
| Future Volume (veh/h) | 285 | 255 | 51 | 181 | 298 | 241 | 53 | 736 | 168 | 110 | 553 | 421 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1909 | 1909 | 1909 | 1817 | 1817 | 1817 | 1909 | 1909 | 1909 | 1723 | 1723 | 1723 |
| Adj Flow Rate, veh/h | 317 | 283 | 57 | 201 | 331 | 268 | 59 | 818 | 187 | 122 | 614 | 468 |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 349 | 454 | 91 | 371 | 372 | 438 | 146 | 1035 | 236 | 131 | 631 | 481 |
| Arrive On Green | 0.19 | 0.29 | 0.29 | 0.10 | 0.20 | 0.20 | 0.08 | 0.35 | 0.35 | 0.08 | 0.36 | 0.35 |
| Sat Flow, veh/h | 1818 | 1543 | 311 | 1731 | 1817 | 1540 | 1818 | 2932 | 670 | 1641 | 1770 | 1347 |
| Grp Volume(v), veh/h | 317 | 0 | 340 | 201 | 331 | 268 | 59 | 506 | 499 | 122 | 568 | 514 |
| Grp Sat Flow(s),veh/h/ln | 1818 | 0 | 1853 | 1731 | 1817 | 1540 | 1818 | 1814 | 1789 | 1641 | 1637 | 1481 |
| Q Serve(g_s), s | 20.5 | 0.0 | 19.0 | 9.6 | 21.3 | 9.9 | 3.7 | 30.0 | 30.1 | 8.9 | 41.0 | 41.1 |
| Cycle Q Clear(g_c), s | 20.5 | 0.0 | 19.0 | 9.6 | 21.3 | 9.9 | 3.7 | 30.0 | 30.1 | 8.9 | 41.0 | 41.1 |
| Prop In Lane | 1.00 | | 0.17 | 1.00 | | 1.00 | 1.00 | | 0.37 | 1.00 | | 0.91 |
| Lane Grp Cap(c), veh/h | 349 | 0 | 546 | 371 | 372 | 438 | 146 | 640 | 631 | 131 | 584 | 528 |
| V/C Ratio(X) | 0.91 | 0.00 | 0.62 | 0.54 | 0.89 | 0.61 | 0.40 | 0.79 | 0.79 | 0.93 | 0.97 | 0.97 |
| Avail Cap(c_a), veh/h | 349 | 0 | 546 | 414 | 394 | 457 | 146 | 640 | 631 | 131 | 584 | 528 |
| 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 | 0.00 | 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 | 47.5 | 0.0 | 36.6 | 26.8 | 46.4 | 14.8 | 52.5 | 34.9 | 35.0 | 54.9 | 38.0 | 38.3 |
| Incr Delay (d2), s/veh | 26.3 | 0.0 | 1.7 | 0.5 | 19.8 | 1.5 | 0.7 | 9.6 | 9.8 | 56.5 | 31.0 | 33.2 |
| 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 | 11.7 | 0.0 | 8.8 | 3.9 | 11.5 | 3.4 | 1.7 | 14.7 | 14.5 | 5.7 | 21.0 | 19.4 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 73.8 | 0.0 | 38.3 | 27.3 | 66.2 | 16.4 | 53.1 | 44.5 | 44.7 | 111.3 | 69.0 | 71.5 |
| LnGrp LOS | E | A | D | C | E | B | D | D | D | F | E | E |
| Approach Vol, veh/h | | 657 | | | 800 | | | 1064 | | | 1204 | |
| Approach Delay, s/veh | | 55.4 | | | 39.7 | | | 45.1 | | | 74.4 | |
| Approach LOS | | E | | | D | | | D | | | E | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 14.6 | 47.8 | 17.2 | 40.3 | 14.6 | 47.8 | 28.0 | 29.6 |
| Change Period (Y+Rc), s | 5.9 | * 6.2 | 5.6 | 5.9 | * 6.2 | * 5.5 | 5.9 | 5.9 |
| Max Green Setting (Gmax), s | 8.7 | * 41 | 14.6 | 32.9 | * 7 | * 42 | 22.1 | 25.1 |
| Max Q Clear Time (g_c+I1), s | 10.9 | 32.1 | 11.6 | 21.0 | 5.7 | 43.1 | 22.5 | 23.3 |
| Green Ext Time (p_c), s | 0.0 | 2.9 | 0.1 | 1.0 | 0.0 | 0.0 | 0.0 | 0.4 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 55.2 |
| HCM 6th LOS | E |

Notes

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

| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 4 | 100 | 81 | 595 | 1155 | 120 |
| Future Volume (vph) | 4 | 100 | 81 | 595 | 1155 | 120 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | 125 | 100 | | | 0 |
| Storage Lanes | 1 | 1 | 1 | | | 0 |
| Taper Length (ft) | 100 | | 100 | | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 0.95 |
| Frt | | 0.850 | | | 0.986 | |
| Flt Protected | 0.950 | | 0.950 | | | |
| Satd. Flow (prot) | 1770 | 1509 | 1719 | 3343 | 3429 | 0 |
| Flt Permitted | 0.950 | | 0.950 | | | |
| Satd. Flow (perm) | 1770 | 1509 | 1719 | 3343 | 3429 | 0 |
| Link Speed (mph) | 30 | | | 40 | 40 | |
| Link Distance (ft) | 928 | | | 1413 | 1063 | |
| Travel Time (s) | 21.1 | | | 24.1 | 18.1 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 7% | 5% | 8% | 4% | 2% |
| Adj. Flow (vph) | 4 | 111 | 90 | 661 | 1283 | 133 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 4 | 111 | 90 | 661 | 1416 | 0 |
| Sign Control | Stop | | | Free | Free | |

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 53.6% ICU Level of Service A
Analysis Period (min) 15

| Intersection | |
|---|---|
| Int Delay, s/veh | 1.6 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 4 | 100 | 81 | 595 | 1155 | 120 |
| Future Vol, veh/h | 4 | 100 | 81 | 595 | 1155 | 120 |
| 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 | 125 | 100 | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 2 | 7 | 5 | 8 | 4 | 2 |
| Mvmt Flow | 4 | 111 | 90 | 661 | 1283 | 133 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 1861 | 708 | 1416 | 0 | - | 0 |
| Stage 1 | 1350 | - | - | - | - | - |
| Stage 2 | 511 | - | - | - | - | - |
| Critical Hdwy | 6.84 | 7.04 | 4.2 | - | - | - |
| Critical Hdwy Stg 1 | 5.84 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.84 | - | - | - | - | - |
| Follow-up Hdwy | 3.52 | 3.37 | 2.25 | - | - | - |
| Pot Cap-1 Maneuver | 65 | 366 | 462 | - | - | - |
| Stage 1 | 206 | - | - | - | - | - |
| Stage 2 | 567 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 52 | 366 | 462 | - | - | - |
| Mov Cap-2 Maneuver | 133 | - | - | - | - | - |
| Stage 1 | 166 | - | - | - | - | - |
| Stage 2 | 567 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 19.6 | 1.8 | 0 |
| HCM LOS | C | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | EBLn2 | SBT | SBR |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | 462 | - | 133 | 366 | - | - |
| HCM Lane V/C Ratio | 0.195 | - | 0.033 | 0.304 | - | - |
| HCM Control Delay (s) | 14.7 | - | 33 | 19.1 | - | - |
| HCM Lane LOS | B | - | D | C | - | - |
| HCM 95th %tile Q(veh) | 0.7 | - | 0.1 | 1.3 | - | - |

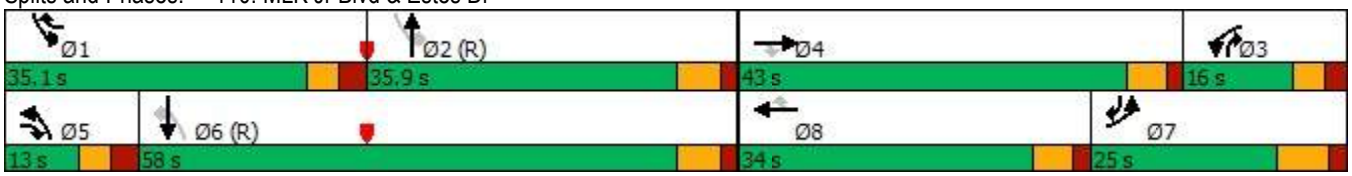
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 282 | 396 | 82 | 185 | 203 | 279 | 35 | 447 | 117 | 401 | 1008 | 227 |
| Future Volume (vph) | 282 | 396 | 82 | 185 | 203 | 279 | 35 | 447 | 117 | 401 | 1008 | 227 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Grade (%) | | 1% | | | -2% | | | 1% | | | 0% | |
| Storage Length (ft) | 300 | | 225 | 300 | | 250 | 150 | | 300 | 225 | | 150 |
| Storage Lanes | 2 | | 1 | 2 | | 1 | 1 | | 1 | 1 | | 1 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 0.97 | 1.00 | 1.00 | 0.97 | 1.00 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 |
| Frt | | | 0.850 | | | 0.850 | | | 0.850 | | | 0.850 |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 3416 | 1853 | 1575 | 3434 | 1845 | 1568 | 1761 | 3326 | 1545 | 1770 | 3471 | 1568 |
| Flt Permitted | 0.950 | | | 0.950 | | | 0.121 | | | 0.328 | | |
| Satd. Flow (perm) | 3416 | 1853 | 1575 | 3434 | 1845 | 1568 | 224 | 3326 | 1545 | 611 | 3471 | 1568 |
| Right Turn on Red | | | No | | | No | | | No | | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (mph) | | 35 | | | 35 | | | 40 | | | 40 | |
| Link Distance (ft) | | 1251 | | | 1571 | | | 1063 | | | 1514 | |
| Travel Time (s) | | 24.4 | | | 30.6 | | | 18.1 | | | 25.8 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 2% | 3% | 4% | 4% | 2% | 8% | 4% | 2% | 4% | 3% |
| Adj. Flow (vph) | 313 | 440 | 91 | 206 | 226 | 310 | 39 | 497 | 130 | 446 | 1120 | 252 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 313 | 440 | 91 | 206 | 226 | 310 | 39 | 497 | 130 | 446 | 1120 | 252 |
| Turn Type | Prot | NA | pm+ov | Prot | NA | pm+ov | D.P+P | NA | pm+ov | D.P+P | NA | pm+ov |
| Protected Phases | 7 | 4 | 5 | 3 | 8 | 1 | 5 | 2 | 3 | 1 | 6 | 7 |
| Permitted Phases | | | 4 | | | 8 | 6 | | 2 | 2 | | 6 |
| Detector Phase | 7 | 4 | 5 | 3 | 8 | 1 | 5 | 2 | 3 | 1 | 6 | 7 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 12.0 | 7.0 | 7.0 | 12.0 | 7.0 |
| Minimum Split (s) | 14.0 | 12.5 | 12.8 | 12.4 | 12.5 | 12.8 | 12.8 | 34.0 | 12.4 | 12.8 | 18.0 | 14.0 |
| Total Split (s) | 25.0 | 43.0 | 13.0 | 16.0 | 34.0 | 35.1 | 13.0 | 35.9 | 16.0 | 35.1 | 58.0 | 25.0 |
| Total Split (%) | 19.2% | 33.1% | 10.0% | 12.3% | 26.2% | 27.0% | 10.0% | 27.6% | 12.3% | 27.0% | 44.6% | 19.2% |
| Maximum Green (s) | 18.0 | 37.5 | 7.2 | 10.6 | 28.5 | 29.3 | 7.2 | 29.9 | 10.6 | 29.3 | 52.0 | 18.0 |
| Yellow Time (s) | 5.0 | 3.8 | 3.0 | 3.0 | 3.8 | 3.0 | 3.0 | 4.3 | 3.0 | 3.0 | 4.3 | 5.0 |
| All-Red Time (s) | 2.0 | 1.7 | 2.8 | 2.4 | 1.7 | 2.8 | 2.8 | 1.7 | 2.4 | 2.8 | 1.7 | 2.0 |
| Lost Time Adjust (s) | 0.1 | -0.5 | -0.8 | -0.4 | -0.5 | -0.8 | -0.8 | -1.0 | 0.0 | -0.8 | -1.0 | 0.0 |
| Total Lost Time (s) | 7.1 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.4 | 5.0 | 5.0 | 7.0 |
| Lead/Lag | Lag | Lead | Lead | Lag | Lead | Lead | Lead | Lag | Lag | Lead | Lag | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Vehicle Extension (s) | 3.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 2.0 | 1.0 | 1.0 | 2.0 | 3.0 |
| Recall Mode | None | None | None | None | None | None | None | C-Min | None | None | C-Min | None |
| Walk Time (s) | | | | | | | | 7.0 | | | | |
| Flash Dont Walk (s) | | | | | | | | 21.0 | | | | |
| Pedestrian Calls (#/hr) | | | | | | | | 0 | | | | |
| Act Effct Green (s) | 22.4 | 34.0 | 41.8 | 10.4 | 19.9 | 49.2 | 65.6 | 36.3 | 45.9 | 65.6 | 57.8 | 78.3 |
| Actuated g/C Ratio | 0.17 | 0.26 | 0.32 | 0.08 | 0.15 | 0.38 | 0.50 | 0.28 | 0.35 | 0.50 | 0.44 | 0.60 |
| v/c Ratio | 0.53 | 0.91 | 0.18 | 0.75 | 0.80 | 0.52 | 0.19 | 0.53 | 0.24 | 0.78 | 0.73 | 0.27 |
| Control Delay | 52.7 | 69.8 | 20.2 | 75.7 | 73.3 | 18.9 | 18.0 | 43.8 | 17.2 | 30.8 | 23.7 | 6.1 |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 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 | 52.7 | 69.8 | 20.2 | 75.7 | 73.3 | 18.9 | 18.0 | 43.8 | 17.2 | 30.8 | 23.7 | 6.1 |
| LOS | D | E | C | E | E | B | B | D | B | C | C | A |
| Approach Delay | | 58.1 | | | 51.2 | | | 37.1 | | | 23.0 | |
| Approach LOS | | E | | | D | | | D | | | C | |
| Queue Length 50th (ft) | 121 | 354 | 40 | 88 | 186 | 93 | 16 | 198 | 40 | 158 | 450 | 34 |
| Queue Length 95th (ft) | 177 | #506 | 69 | #137 | 261 | 137 | 36 | 260 | 70 | #325 | 377 | 79 |
| Internal Link Dist (ft) | | 1171 | | | 1491 | | | 983 | | | 1434 | |
| Turn Bay Length (ft) | 300 | | 225 | 300 | | 250 | 150 | | 300 | 225 | | 150 |
| Base Capacity (vph) | 588 | 543 | 508 | 294 | 411 | 607 | 207 | 933 | 554 | 585 | 1546 | 944 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.53 | 0.81 | 0.18 | 0.70 | 0.55 | 0.51 | 0.19 | 0.53 | 0.23 | 0.76 | 0.72 | 0.27 |

Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 5 (4%), Referenced to phase 2:NBSB and 6:NBSB, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.91
Intersection Signal Delay: 37.8 Intersection LOS: D
Intersection Capacity Utilization 77.9% ICU Level of Service D
Analysis Period (min) 15
# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 110: MLK Jr Blvd & Estes Dr



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 282 | 396 | 82 | 185 | 203 | 279 | 35 | 447 | 117 | 401 | 1008 | 227 |
| Future Volume (veh/h) | 282 | 396 | 82 | 185 | 203 | 279 | 35 | 447 | 117 | 401 | 1008 | 227 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1864 | 1864 | 1864 | 1934 | 1919 | 1919 | 1864 | 1776 | 1835 | 1870 | 1841 | 1856 |
| Adj Flow Rate, veh/h | 313 | 440 | 91 | 206 | 226 | 310 | 39 | 497 | 130 | 446 | 1120 | 252 |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 3 | 4 | 4 | 2 | 8 | 4 | 2 | 4 | 3 |
| Cap, veh/h | 645 | 474 | 479 | 269 | 265 | 564 | 289 | 1006 | 564 | 563 | 1601 | 1003 |
| Arrive On Green | 0.19 | 0.25 | 0.26 | 0.08 | 0.14 | 0.14 | 0.05 | 0.30 | 0.29 | 0.41 | 0.92 | 0.90 |
| Sat Flow, veh/h | 3445 | 1864 | 1580 | 3573 | 1919 | 1626 | 1776 | 3374 | 1555 | 1781 | 3497 | 1572 |
| Grp Volume(v), veh/h | 313 | 440 | 91 | 206 | 226 | 310 | 39 | 497 | 130 | 446 | 1120 | 252 |
| Grp Sat Flow(s),veh/h/ln | 1722 | 1864 | 1580 | 1786 | 1919 | 1626 | 1776 | 1687 | 1555 | 1781 | 1749 | 1572 |
| Q Serve(g_s), s | 10.6 | 30.0 | 3.9 | 7.4 | 15.0 | 10.1 | 1.5 | 15.8 | 2.9 | 24.0 | 9.8 | 0.5 |
| Cycle Q Clear(g_c), s | 10.6 | 30.0 | 3.9 | 7.4 | 15.0 | 10.1 | 1.5 | 15.8 | 2.9 | 24.0 | 9.8 | 0.5 |
| 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 | 645 | 474 | 479 | 269 | 265 | 564 | 289 | 1006 | 564 | 563 | 1601 | 1003 |
| V/C Ratio(X) | 0.49 | 0.93 | 0.19 | 0.77 | 0.85 | 0.55 | 0.13 | 0.49 | 0.23 | 0.79 | 0.70 | 0.25 |
| Avail Cap(c_a), veh/h | 645 | 545 | 540 | 302 | 428 | 702 | 315 | 1006 | 564 | 608 | 1601 | 1003 |
| 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 | 0.78 | 0.78 | 0.78 |
| Uniform Delay (d), s/veh | 47.2 | 47.3 | 17.6 | 59.0 | 54.7 | 13.2 | 16.8 | 37.6 | 10.3 | 17.5 | 3.4 | 0.5 |
| Incr Delay (d2), s/veh | 0.6 | 19.8 | 0.1 | 8.4 | 4.8 | 0.3 | 0.1 | 1.7 | 1.0 | 4.6 | 2.0 | 0.5 |
| 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 | 4.6 | 16.3 | 1.7 | 3.6 | 7.5 | 3.4 | 0.6 | 6.7 | 1.4 | 6.6 | 1.9 | 0.3 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 47.8 | 67.2 | 17.6 | 67.4 | 59.5 | 13.5 | 16.9 | 39.3 | 11.3 | 22.1 | 5.4 | 0.9 |
| LnGrp LOS | D | E | B | E | E | B | B | D | B | C | A | A |
| Approach Vol, veh/h | | 844 | | | 742 | | | 666 | | | 1818 | |
| Approach Delay, s/veh | | 54.7 | | | 42.5 | | | 32.5 | | | 8.9 | |
| Approach LOS | | D | | | D | | | C | | | A | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 31.9 | 43.8 | 16.4 | 38.0 | 11.1 | 64.5 | 31.4 | 23.0 |
| Change Period (Y+Rc), s | * 5.8 | * 6 | 7.0 | * 5.5 | * 5.8 | * 6 | 7.0 | 5.5 |
| Max Green Setting (Gmax), s | * 29 | * 30 | 10.6 | * 38 | * 7.2 | * 52 | 18.0 | 28.5 |
| Max Q Clear Time (g_c+I1), s | 26.0 | 17.8 | 9.4 | 32.0 | 3.5 | 11.8 | 12.6 | 17.0 |
| Green Ext Time (p_c), s | 0.1 | 1.9 | 0.0 | 0.6 | 0.0 | 6.4 | 0.5 | 0.5 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 28.4 |
| HCM 6th LOS | C |

Notes

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

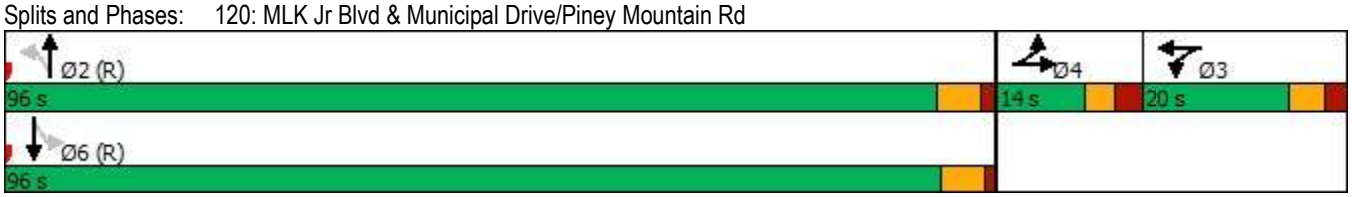
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 2 | 0 | 7 | 163 | 1 | 41 | 14 | 930 | 64 | 22 | 1466 | 2 |
| Future Volume (vph) | 2 | 0 | 7 | 163 | 1 | 41 | 14 | 930 | 64 | 22 | 1466 | 2 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Grade (%) | | 0% | | | 4% | | | -1% | | | 0% | |
| Storage Length (ft) | 100 | | 0 | 375 | | 0 | 150 | | 0 | 225 | | 0 |
| Storage Lanes | 1 | | 0 | 2 | | 0 | 1 | | 0 | 1 | | 0 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 0.97 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | 0.95 | 0.95 |
| Frt | | 0.850 | | | 0.853 | | | 0.990 | | | | |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1770 | 1252 | 0 | 3332 | 1542 | 0 | 1499 | 3419 | 0 | 1641 | 3505 | 0 |
| Flt Permitted | 0.950 | | | 0.950 | | | 0.118 | | | 0.235 | | |
| Satd. Flow (perm) | 1770 | 1252 | 0 | 3332 | 1542 | 0 | 186 | 3419 | 0 | 406 | 3505 | 0 |
| Right Turn on Red | | | No | | | No | | | No | | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (mph) | | 20 | | | 35 | | | 40 | | | 40 | |
| Link Distance (ft) | | 554 | | | 663 | | | 1514 | | | 2618 | |
| Travel Time (s) | | 18.9 | | | 12.9 | | | 25.8 | | | 44.6 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 29% | 3% | 2% | 3% | 21% | 5% | 6% | 10% | 3% | 2% |
| Adj. Flow (vph) | 2 | 0 | 8 | 181 | 1 | 46 | 16 | 1033 | 71 | 24 | 1629 | 2 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 2 | 8 | 0 | 181 | 47 | 0 | 16 | 1104 | 0 | 24 | 1631 | 0 |
| Turn Type | Split | NA | | Split | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | 4 | 4 | | 3 | 3 | | | 2 | | | 6 | |
| Permitted Phases | | | | | | | 2 | | | 6 | | |
| Detector Phase | 4 | 4 | | 3 | 3 | | 2 | 2 | | 6 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | | 7.0 | 7.0 | | 12.0 | 12.0 | | 12.0 | 12.0 | |
| Minimum Split (s) | 12.6 | 12.6 | | 12.9 | 12.9 | | 27.8 | 27.8 | | 17.5 | 17.5 | |
| Total Split (s) | 14.0 | 14.0 | | 20.0 | 20.0 | | 96.0 | 96.0 | | 96.0 | 96.0 | |
| Total Split (%) | 10.8% | 10.8% | | 15.4% | 15.4% | | 73.8% | 73.8% | | 73.8% | 73.8% | |
| Maximum Green (s) | 8.4 | 8.4 | | 14.1 | 14.1 | | 90.2 | 90.2 | | 90.5 | 90.5 | |
| Yellow Time (s) | 3.0 | 3.0 | | 3.6 | 3.6 | | 4.2 | 4.2 | | 4.2 | 4.2 | |
| All-Red Time (s) | 2.6 | 2.6 | | 2.3 | 2.3 | | 1.6 | 1.6 | | 1.3 | 1.3 | |
| Lost Time Adjust (s) | -0.6 | -0.6 | | -0.9 | -0.9 | | -0.8 | -0.8 | | -0.5 | -0.5 | |
| Total Lost Time (s) | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | |
| Lead/Lag | Lead | Lead | | Lag | Lag | | | | | | | |
| Lead-Lag Optimize? | Yes | Yes | | Yes | Yes | | | | | | | |
| Vehicle Extension (s) | 1.0 | 1.0 | | 1.0 | 1.0 | | 6.0 | 6.0 | | 6.0 | 6.0 | |
| Minimum Gap (s) | 1.0 | 1.0 | | 1.0 | 1.0 | | 6.0 | 6.0 | | 6.0 | 6.0 | |
| Time Before Reduce (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 15.0 | 15.0 | | 15.0 | 15.0 | |
| Time To Reduce (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 45.0 | 45.0 | | 45.0 | 45.0 | |
| Recall Mode | None | None | | None | None | | C-Min | C-Min | | C-Min | C-Min | |
| Walk Time (s) | | | | | | | 7.0 | 7.0 | | | | |
| Flash Dont Walk (s) | | | | | | | 15.0 | 15.0 | | | | |
| Pedestrian Calls (#/hr) | | | | | | | 0 | 0 | | | | |
| Act Effct Green (s) | 7.6 | 7.6 | | 11.4 | 11.4 | | 103.6 | 103.6 | | 103.6 | 103.6 | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Actuated g/C Ratio | 0.06 | 0.06 | | 0.09 | 0.09 | | 0.80 | 0.80 | | 0.80 | 0.80 | |
| v/c Ratio | 0.02 | 0.11 | | 0.62 | 0.35 | | 0.11 | 0.41 | | 0.07 | 0.58 | |
| Control Delay | 58.0 | 61.6 | | 66.4 | 62.1 | | 5.5 | 3.5 | | 1.7 | 3.9 | |
| Queue Delay | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Delay | 58.0 | 61.6 | | 66.4 | 62.1 | | 5.5 | 3.5 | | 1.7 | 3.9 | |
| LOS | E | E | | E | E | | A | A | | A | A | |
| Approach Delay | | 60.9 | | | 65.5 | | | 3.5 | | | 3.8 | |
| Approach LOS | | E | | | E | | | A | | | A | |
| Queue Length 50th (ft) | 2 | 7 | | 77 | 38 | | 1 | 41 | | 1 | 50 | |
| Queue Length 95th (ft) | 11 | 24 | | 113 | 77 | | m6 | 149 | | m2 | 61 | |
| Internal Link Dist (ft) | | 474 | | | 583 | | | 1434 | | | 2538 | |
| Turn Bay Length (ft) | 100 | | | 375 | | | 150 | | | 225 | | |
| Base Capacity (vph) | 122 | 86 | | 384 | 177 | | 148 | 2724 | | 323 | 2792 | |
| Starvation Cap Reductn | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Spillback Cap Reductn | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Storage Cap Reductn | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Reduced v/c Ratio | 0.02 | 0.09 | | 0.47 | 0.27 | | 0.11 | 0.41 | | 0.07 | 0.58 | |

Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 89 (68%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.62
Intersection Signal Delay: 8.6 Intersection LOS: A
Intersection Capacity Utilization 60.2% ICU Level of Service B
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 120: MLK Jr Blvd & Municipal Drive/Piney Mountain Rd



HCM 6th Edition methodology expects strict NEMA phasing.

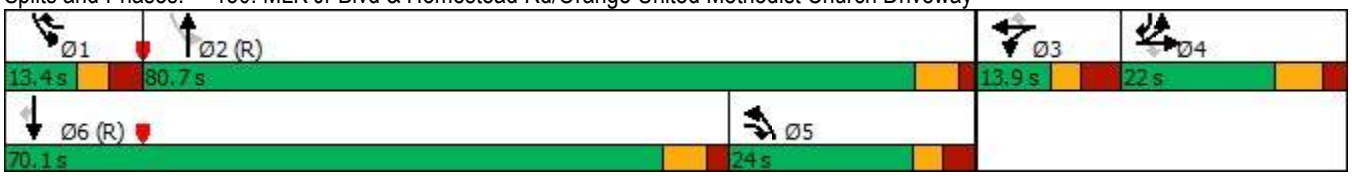
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 224 | 6 | 256 | 2 | 0 | 1 | 113 | 858 | 2 | 9 | 1232 | 123 |
| Future Volume (vph) | 224 | 6 | 256 | 2 | 0 | 1 | 113 | 858 | 2 | 9 | 1232 | 123 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 125 | | 0 | 125 | | 0 | 525 | | 0 | 250 | | 375 |
| Storage Lanes | 1 | | 1 | 2 | | 1 | 2 | | 0 | 1 | | 1 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 0.95 | 0.95 | 1.00 | 0.95 | 0.95 | 1.00 | 0.97 | 0.95 | 0.95 | 1.00 | 0.95 | 1.00 |
| Frt | | | 0.850 | | | 0.850 | | | | | | 0.850 |
| Flt Protected | 0.950 | 0.955 | | 0.950 | 0.950 | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1618 | 1630 | 1583 | 1681 | 1681 | 1583 | 3242 | 3468 | 0 | 1770 | 3505 | 1482 |
| Flt Permitted | 0.950 | 0.955 | | 0.950 | 0.950 | | 0.950 | | | 0.261 | | |
| Satd. Flow (perm) | 1618 | 1630 | 1583 | 1681 | 1681 | 1583 | 3242 | 3468 | 0 | 486 | 3505 | 1482 |
| Right Turn on Red | | | No | | | No | | | No | | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (mph) | | 35 | | | 20 | | | 40 | | | 40 | |
| Link Distance (ft) | | 1248 | | | 314 | | | 1137 | | | 1345 | |
| Travel Time (s) | | 24.3 | | | 10.7 | | | 19.4 | | | 22.9 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 6% | 2% | 2% | 2% | 2% | 2% | 8% | 4% | 50% | 2% | 3% | 9% |
| Adj. Flow (vph) | 249 | 7 | 284 | 2 | 0 | 1 | 126 | 953 | 2 | 10 | 1369 | 137 |
| Shared Lane Traffic (%) | 49% | | | 50% | | | | | | | | |
| Lane Group Flow (vph) | 127 | 129 | 284 | 1 | 1 | 1 | 126 | 955 | 0 | 10 | 1369 | 137 |
| Turn Type | Split | NA | pm+ov | Split | NA | pm+ov | Prot | NA | | D.P+P | NA | pm+ov |
| Protected Phases | 4 | 4 | 5 | 3 | 3 | 1 | 5 | 2 | | 1 | 6 | 4 |
| Permitted Phases | | | 4 | | | 3 | | | | 2 | | 6 |
| Detector Phase | 4 | 4 | 5 | 3 | 3 | 1 | 5 | 2 | | 1 | 6 | 4 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 12.0 | | 7.0 | 12.0 | 7.0 |
| Minimum Split (s) | 14.1 | 14.1 | 13.3 | 13.9 | 13.9 | 13.4 | 13.3 | 28.0 | | 13.4 | 45.4 | 14.1 |
| Total Split (s) | 22.0 | 22.0 | 24.0 | 13.9 | 13.9 | 13.4 | 24.0 | 80.7 | | 13.4 | 70.1 | 22.0 |
| Total Split (%) | 16.9% | 16.9% | 18.5% | 10.7% | 10.7% | 10.3% | 18.5% | 62.1% | | 10.3% | 53.9% | 16.9% |
| Maximum Green (s) | 14.9 | 14.9 | 17.7 | 7.0 | 7.0 | 7.0 | 17.7 | 74.7 | | 7.0 | 63.7 | 14.9 |
| Yellow Time (s) | 4.5 | 4.5 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 4.2 | | 3.0 | 4.2 | 4.5 |
| All-Red Time (s) | 2.6 | 2.6 | 3.3 | 3.9 | 3.9 | 3.4 | 3.3 | 1.8 | | 3.4 | 2.2 | 2.6 |
| Lost Time Adjust (s) | -2.1 | -2.1 | -1.3 | -1.9 | -1.9 | -1.4 | -1.3 | -1.0 | | -1.4 | -1.4 | -2.1 |
| Total Lost Time (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | | 5.0 | 5.0 | 5.0 |
| Lead/Lag | Lag | Lag | Lag | Lead | Lead | Lead | Lag | Lag | | Lead | Lead | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | | Yes | Yes | Yes |
| Vehicle Extension (s) | 1.0 | 1.0 | 1.0 | 2.0 | 2.0 | 2.0 | 1.0 | 6.0 | | 2.0 | 6.0 | 1.0 |
| Minimum Gap (s) | 1.0 | 1.0 | 1.0 | 2.0 | 2.0 | 2.0 | 1.0 | 6.0 | | 2.0 | 6.0 | 1.0 |
| Time Before Reduce (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 15.0 | | 0.0 | 15.0 | 0.0 |
| Time To Reduce (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 45.0 | | 0.0 | 45.0 | 0.0 |
| Recall Mode | None | None | None | None | None | None | None | C-Min | | None | C-Min | None |
| Walk Time (s) | | | | | | | | 7.0 | | | 7.0 | |
| Flash Dont Walk (s) | | | | | | | | 15.0 | | | 32.0 | |
| Pedestrian Calls (#/hr) | | | | | | | | 0 | | | 0 | |
| Act Effct Green (s) | 14.8 | 14.8 | 37.4 | 8.9 | 8.9 | 10.2 | 18.6 | 97.1 | | 100.4 | 78.8 | 98.6 |
| Actuated g/C Ratio | 0.11 | 0.11 | 0.29 | 0.07 | 0.07 | 0.08 | 0.14 | 0.75 | | 0.77 | 0.61 | 0.76 |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| v/c Ratio | 0.69 | 0.70 | 0.62 | 0.01 | 0.01 | 0.01 | 0.27 | 0.37 | | 0.02 | 0.64 | 0.12 |
| Control Delay | 74.4 | 74.7 | 43.7 | 57.0 | 57.0 | 41.0 | 44.0 | 4.9 | | 4.9 | 19.8 | 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 |
| Total Delay | 74.4 | 74.7 | 43.7 | 57.0 | 57.0 | 41.0 | 44.0 | 4.9 | | 4.9 | 19.8 | 5.3 |
| LOS | E | E | D | E | E | D | D | A | | A | B | A |
| Approach Delay | | 58.3 | | | 51.7 | | | 9.5 | | | 18.4 | |
| Approach LOS | | E | | | D | | | A | | | B | |
| Queue Length 50th (ft) | 109 | 110 | 203 | 1 | 1 | 1 | 43 | 74 | | 1 | 360 | 24 |
| Queue Length 95th (ft) | 181 | 182 | 246 | 7 | 7 | 5 | 65 | 288 | | 8 | 577 | 64 |
| Internal Link Dist (ft) | | 1168 | | | 234 | | | 1057 | | | 1265 | |
| Turn Bay Length (ft) | 125 | | | 125 | | | 525 | | | 250 | | 375 |
| Base Capacity (vph) | 214 | 216 | 451 | 115 | 115 | 124 | 481 | 2589 | | 458 | 2124 | 1112 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.59 | 0.60 | 0.63 | 0.01 | 0.01 | 0.01 | 0.26 | 0.37 | | 0.02 | 0.64 | 0.12 |

Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 40 (31%), Referenced to phase 2:NBSB and 6:SBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.70
Intersection Signal Delay: 22.2 Intersection LOS: C
Intersection Capacity Utilization 68.2% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 130: MLK Jr Blvd & Homestead Rd/Orange United Methodist Church Driveway



HCM 6th Edition methodology expects strict NEMA phasing.

| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 16 | 898 | 646 | 10 | 22 | 21 |
| Future Volume (vph) | 16 | 898 | 646 | 10 | 22 | 21 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 100 | | | 0 | 0 | 0 |
| Storage Lanes | 1 | | | 0 | 1 | 0 |
| Taper Length (ft) | 100 | | | | 100 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | | 0.998 | | 0.934 | |
| Flt Protected | 0.950 | | | | 0.975 | |
| Satd. Flow (prot) | 1770 | 1863 | 1841 | 0 | 1634 | 0 |
| Flt Permitted | 0.950 | | | | 0.975 | |
| Satd. Flow (perm) | 1770 | 1863 | 1841 | 0 | 1634 | 0 |
| Link Speed (mph) | | 35 | 35 | | 30 | |
| Link Distance (ft) | | 1571 | 840 | | 813 | |
| Travel Time (s) | | 30.6 | 16.4 | | 18.5 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 3% | 2% | 2% | 10% |
| Adj. Flow (vph) | 18 | 998 | 718 | 11 | 24 | 23 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 18 | 998 | 729 | 0 | 47 | 0 |
| Sign Control | | Free | Free | | Stop | |

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 57.3% ICU Level of Service B
Analysis Period (min) 15

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

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 16 | 898 | 646 | 10 | 22 | 21 |
| Future Vol, veh/h | 16 | 898 | 646 | 10 | 22 | 21 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 100 | - | - | - | 0 | - |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 2 | 2 | 3 | 2 | 2 | 10 |
| Mvmt Flow | 18 | 998 | 718 | 11 | 24 | 23 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 729 | 0 | - | 0 | 1758 | 724 |
| Stage 1 | - | - | - | - | 724 | - |
| Stage 2 | - | - | - | - | 1034 | - |
| Critical Hdwy | 4.12 | - | - | - | 6.42 | 6.3 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.42 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.42 | - |
| Follow-up Hdwy | 2.218 | - | - | - | 3.518 | 3.39 |
| Pot Cap-1 Maneuver | 875 | - | - | - | 93 | 413 |
| Stage 1 | - | - | - | - | 480 | - |
| Stage 2 | - | - | - | - | 343 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | 875 | - | - | - | 91 | 413 |
| Mov Cap-2 Maneuver | - | - | - | - | 91 | - |
| Stage 1 | - | - | - | - | 470 | - |
| Stage 2 | - | - | - | - | 343 | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 0.2 | 0 | 40.9 |
| HCM LOS | | | E |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|
| Capacity (veh/h) | 875 | - | - | - | 147 |
| HCM Lane V/C Ratio | 0.02 | - | - | - | 0.325 |
| HCM Control Delay (s) | 9.2 | - | - | - | 40.9 |
| HCM Lane LOS | A | - | - | - | E |
| HCM 95th %tile Q(veh) | 0.1 | - | - | - | 1.3 |

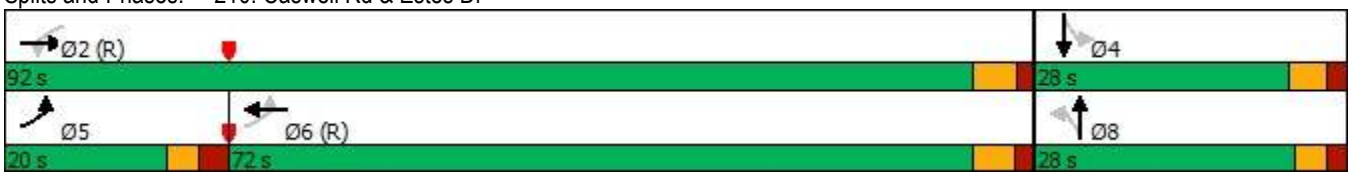
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 184 | 734 | 2 | 1 | 518 | 33 | 8 | 9 | 7 | 44 | 2 | 130 |
| Future Volume (vph) | 184 | 734 | 2 | 1 | 518 | 33 | 8 | 9 | 7 | 44 | 2 | 130 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Grade (%) | | -2% | | | 0% | | | 7% | | | -5% | |
| Storage Length (ft) | 250 | | 0 | 125 | | 0 | 0 | | 0 | 100 | | 0 |
| Storage Lanes | 1 | | 0 | 1 | | 0 | 0 | | 0 | 1 | | 0 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | | | | 0.991 | | | 0.960 | | | 0.852 | |
| Flt Protected | 0.950 | | | 0.950 | | | | 0.984 | | 0.950 | | |
| Satd. Flow (prot) | 1787 | 1881 | 0 | 1770 | 1813 | 0 | 0 | 1698 | 0 | 1814 | 1596 | 0 |
| Flt Permitted | 0.347 | | | 0.299 | | | | 0.888 | | 0.740 | | |
| Satd. Flow (perm) | 653 | 1881 | 0 | 557 | 1813 | 0 | 0 | 1532 | 0 | 1413 | 1596 | 0 |
| Right Turn on Red | | | No | | | No | | | No | | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (mph) | | 35 | | | 35 | | | 25 | | | 25 | |
| Link Distance (ft) | | 961 | | | 940 | | | 384 | | | 262 | |
| Travel Time (s) | | 18.7 | | | 18.3 | | | 10.5 | | | 7.1 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 2% | 2% | 4% | 2% | 2% | 2% | 2% | 2% | 2% | 4% |
| Adj. Flow (vph) | 204 | 816 | 2 | 1 | 576 | 37 | 9 | 10 | 8 | 49 | 2 | 144 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 204 | 818 | 0 | 1 | 613 | 0 | 0 | 27 | 0 | 49 | 146 | 0 |
| Turn Type | D.P+P | NA | | D.Pm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | 5 | 2 | | | 6 | | | 8 | | | 4 | |
| Permitted Phases | 6 | | | 2 | | | 8 | | | 4 | | |
| Detector Phase | 5 | 2 | | 2 | 6 | | 8 | 8 | | 4 | 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 10.0 | | 10.0 | 10.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | |
| Minimum Split (s) | 12.6 | 21.6 | | 21.6 | 21.6 | | 11.9 | 11.9 | | 20.4 | 20.4 | |
| Total Split (s) | 20.0 | 92.0 | | 92.0 | 72.0 | | 28.0 | 28.0 | | 28.0 | 28.0 | |
| Total Split (%) | 16.7% | 76.7% | | 76.7% | 60.0% | | 23.3% | 23.3% | | 23.3% | 23.3% | |
| Maximum Green (s) | 14.4 | 86.4 | | 86.4 | 66.4 | | 23.1 | 23.1 | | 22.6 | 22.6 | |
| Yellow Time (s) | 3.0 | 4.0 | | 4.0 | 3.8 | | 3.0 | 3.0 | | 3.5 | 3.5 | |
| All-Red Time (s) | 2.6 | 1.6 | | 1.6 | 1.8 | | 1.9 | 1.9 | | 1.9 | 1.9 | |
| Lost Time Adjust (s) | -0.6 | -0.6 | | -0.6 | -0.6 | | | 0.1 | | -0.4 | -0.4 | |
| Total Lost Time (s) | 5.0 | 5.0 | | 5.0 | 5.0 | | | 5.0 | | 5.0 | 5.0 | |
| Lead/Lag | Lead | | | | Lag | | | | | | | |
| Lead-Lag Optimize? | Yes | | | | Yes | | | | | | | |
| Vehicle Extension (s) | 1.0 | 2.0 | | 2.0 | 2.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | |
| Recall Mode | None | C-Min | | C-Min | C-Min | | None | None | | None | None | |
| Walk Time (s) | | 7.0 | | 7.0 | 7.0 | | | | | 7.0 | 7.0 | |
| Flash Dont Walk (s) | | 9.0 | | 9.0 | 9.0 | | | | | 8.0 | 8.0 | |
| Pedestrian Calls (#/hr) | | 0 | | 0 | 0 | | | | | 0 | 0 | |
| Act Effct Green (s) | 90.2 | 95.2 | | 95.2 | 79.7 | | | 13.4 | | 14.8 | 14.8 | |
| Actuated g/C Ratio | 0.75 | 0.79 | | 0.79 | 0.66 | | | 0.11 | | 0.12 | 0.12 | |
| v/c Ratio | 0.35 | 0.55 | | 0.00 | 0.51 | | | 0.16 | | 0.28 | 0.74 | |
| Control Delay | 5.2 | 6.8 | | 2.0 | 6.5 | | | 47.0 | | 49.9 | 72.3 | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Queue Delay | 0.0 | 0.0 | | 0.0 | 0.0 | | | 0.0 | | 0.0 | 0.0 | |
| Total Delay | 5.2 | 6.8 | | 2.0 | 6.5 | | | 47.0 | | 49.9 | 72.3 | |
| LOS | A | A | | A | A | | | D | | D | E | |
| Approach Delay | | 6.5 | | | 6.5 | | | 47.0 | | | 66.7 | |
| Approach LOS | | A | | | A | | | D | | | E | |
| Queue Length 50th (ft) | 30 | 189 | | 0 | 86 | | | 19 | | 35 | 111 | |
| Queue Length 95th (ft) | 63 | 348 | | m0 | 191 | | | 45 | | 70 | 173 | |
| Internal Link Dist (ft) | | 881 | | | 860 | | | 304 | | | 182 | |
| Turn Bay Length (ft) | 250 | | | 125 | | | | | | 100 | | |
| Base Capacity (vph) | 653 | 1492 | | 441 | 1204 | | | 293 | | 270 | 305 | |
| Starvation Cap Reductn | 0 | 0 | | 0 | 0 | | | 0 | | 0 | 0 | |
| Spillback Cap Reductn | 0 | 0 | | 0 | 0 | | | 0 | | 0 | 0 | |
| Storage Cap Reductn | 0 | 0 | | 0 | 0 | | | 0 | | 0 | 0 | |
| Reduced v/c Ratio | 0.31 | 0.55 | | 0.00 | 0.51 | | | 0.09 | | 0.18 | 0.48 | |

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 105 (88%), Referenced to phase 2:EBWB and 6:EBWB, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.74
Intersection Signal Delay: 13.4 Intersection LOS: B
Intersection Capacity Utilization 67.9% ICU Level of Service C
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 210: Caswell Rd & Estes Dr



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 184 | 734 | 2 | 1 | 518 | 33 | 8 | 9 | 7 | 44 | 2 | 130 |
| Future Volume (veh/h) | 184 | 734 | 2 | 1 | 518 | 33 | 8 | 9 | 7 | 44 | 2 | 130 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1949 | 1949 | 1949 | 1870 | 1841 | 1841 | 1582 | 1582 | 1582 | 2067 | 2067 | 2067 |
| Adj Flow Rate, veh/h | 204 | 816 | 2 | 1 | 576 | 37 | 9 | 10 | 8 | 49 | 2 | 144 |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 4 | 4 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 240 | 1327 | 3 | 217 | 1154 | 74 | 48 | 41 | 21 | 177 | 2 | 179 |
| Arrive On Green | 0.10 | 0.68 | 0.68 | 0.09 | 0.67 | 0.67 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 |
| Sat Flow, veh/h | 1856 | 1943 | 5 | 1781 | 1711 | 110 | 81 | 411 | 207 | 1541 | 24 | 1731 |
| Grp Volume(v), veh/h | 204 | 0 | 818 | 1 | 0 | 613 | 27 | 0 | 0 | 49 | 0 | 146 |
| Grp Sat Flow(s),veh/h/ln | 1856 | 0 | 1948 | 1781 | 0 | 1821 | 699 | 0 | 0 | 1541 | 0 | 1755 |
| Q Serve(g_s), s | 9.0 | 0.0 | 27.5 | 0.1 | 0.0 | 19.8 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 9.8 |
| Cycle Q Clear(g_c), s | 9.0 | 0.0 | 27.5 | 0.1 | 0.0 | 19.8 | 9.9 | 0.0 | 0.0 | 5.4 | 0.0 | 9.8 |
| Prop In Lane | 1.00 | | 0.00 | 1.00 | | 0.06 | 0.33 | | 0.30 | 1.00 | | 0.99 |
| Lane Grp Cap(c), veh/h | 240 | 0 | 1331 | 0 | 0 | 1228 | 110 | 0 | 0 | 177 | 0 | 182 |
| V/C Ratio(X) | 0.85 | 0.00 | 0.61 | 0.00 | 0.00 | 0.50 | 0.25 | 0.00 | 0.00 | 0.28 | 0.00 | 0.80 |
| Avail Cap(c_a), veh/h | 292 | 0 | 1412 | 0 | 0 | 1228 | 229 | 0 | 0 | 313 | 0 | 336 |
| 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 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 45.4 | 0.0 | 10.4 | 0.0 | 0.0 | 9.6 | 49.7 | 0.0 | 0.0 | 50.6 | 0.0 | 52.8 |
| Incr Delay (d2), s/veh | 15.4 | 0.0 | 2.1 | 0.0 | 0.0 | 1.5 | 0.4 | 0.0 | 0.0 | 0.3 | 0.0 | 3.1 |
| 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 | 6.7 | 0.0 | 11.3 | 0.0 | 0.0 | 7.7 | 0.8 | 0.0 | 0.0 | 1.4 | 0.0 | 4.5 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 60.8 | 0.0 | 12.5 | 0.0 | 0.0 | 11.1 | 50.1 | 0.0 | 0.0 | 50.9 | 0.0 | 55.9 |
| LnGrp LOS | E | A | B | A | A | B | D | A | A | D | A | E |
| Approach Vol, veh/h | | 1022 | | | 614 | | | 27 | | | 195 | |
| Approach Delay, s/veh | | 22.2 | | | 11.0 | | | 50.1 | | | 54.7 | |
| Approach LOS | | C | | | B | | | D | | | D | |
| Timer - Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 | | | | |
| Phs Duration (G+Y+Rc), s | 15.6 | 87.0 | | 17.4 | 16.6 | 85.9 | | 17.4 | | | | |
| Change Period (Y+Rc), s | * 5.6 | * 5.6 | | * 5.4 | 5.6 | 5.6 | | * 5.4 | | | | |
| Max Green Setting (Gmax), s | * 86 | * 86 | | * 23 | 14.4 | 66.4 | | * 23 | | | | |
| Max Q Clear Time (g_c+I1), s | 2.1 | 29.5 | | 11.8 | 11.0 | 21.8 | | 11.9 | | | | |
| Green Ext Time (p_c), s | 0.0 | 4.2 | | 0.3 | 0.0 | 2.7 | | 0.0 | | | | |

Intersection Summary

| | |
|---|---|
| HCM 6th Ctrl Delay | 22.3 |
| HCM 6th LOS | C |

Notes

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

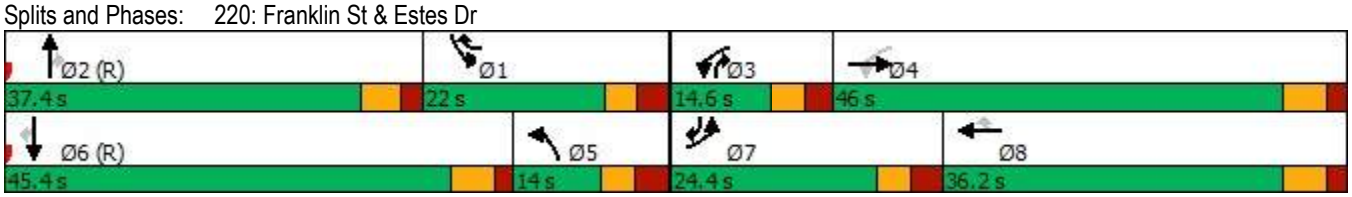
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 321 | 416 | 48 | 123 | 255 | 119 | 44 | 366 | 120 | 110 | 555 | 253 |
| Future Volume (vph) | 321 | 416 | 48 | 123 | 255 | 119 | 44 | 366 | 120 | 110 | 555 | 253 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Grade (%) | | -1% | | | 3% | | | -1% | | | 5% | |
| Storage Length (ft) | 300 | | 400 | 150 | | 0 | 150 | | 150 | 300 | | 350 |
| Storage Lanes | 2 | | 1 | 1 | | 1 | 1 | | 1 | 1 | | 1 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 0.97 | 0.95 | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 |
| Frt | | 0.985 | | | | 0.850 | | | 0.850 | | | 0.850 |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 3450 | 3504 | 0 | 1710 | 1766 | 1530 | 1778 | 3455 | 1591 | 1660 | 3417 | 1529 |
| Flt Permitted | 0.950 | | | 0.298 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (perm) | 3450 | 3504 | 0 | 536 | 1766 | 1530 | 1778 | 3455 | 1591 | 1660 | 3417 | 1529 |
| Right Turn on Red | | | No | | | No | | | No | | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (mph) | | 35 | | | 35 | | | 35 | | | 35 | |
| Link Distance (ft) | | 2406 | | | 987 | | | 1748 | | | 1202 | |
| Travel Time (s) | | 46.9 | | | 19.2 | | | 34.1 | | | 23.4 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 2% | 4% | 6% | 4% | 2% | 5% | 2% | 6% | 3% | 3% |
| Adj. Flow (vph) | 357 | 462 | 53 | 137 | 283 | 132 | 49 | 407 | 133 | 122 | 617 | 281 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 357 | 515 | 0 | 137 | 283 | 132 | 49 | 407 | 133 | 122 | 617 | 281 |
| Turn Type | Prot | NA | | D.P+P | NA | pm+ov | Prot | NA | pm+ov | Prot | NA | pm+ov |
| Protected Phases | 7 | 4 | | 3 | 8 | 1 | 5 | 2 | 3 | 1 | 6 | 7 |
| Permitted Phases | | | | 4 | | 8 | | | 2 | | | 6 |
| Detector Phase | 7 | 4 | | 3 | 8 | 1 | 5 | 2 | 3 | 1 | 6 | 7 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | | 7.0 | 7.0 | 7.0 | 7.0 | 10.0 | 7.0 | 7.0 | 10.0 | 7.0 |
| Minimum Split (s) | 12.9 | 33.9 | | 12.6 | 30.9 | 12.9 | 13.2 | 35.7 | 12.6 | 12.9 | 21.5 | 12.9 |
| Total Split (s) | 24.4 | 46.0 | | 14.6 | 36.2 | 22.0 | 14.0 | 37.4 | 14.6 | 22.0 | 45.4 | 24.4 |
| Total Split (%) | 20.3% | 38.3% | | 12.2% | 30.2% | 18.3% | 11.7% | 31.2% | 12.2% | 18.3% | 37.8% | 20.3% |
| Maximum Green (s) | 18.5 | 40.1 | | 9.0 | 30.3 | 16.1 | 7.8 | 31.7 | 9.0 | 16.1 | 39.9 | 18.5 |
| Yellow Time (s) | 3.0 | 3.9 | | 3.0 | 3.9 | 3.0 | 3.0 | 3.7 | 3.0 | 3.0 | 3.9 | 3.0 |
| All-Red Time (s) | 2.9 | 2.0 | | 2.6 | 2.0 | 2.9 | 3.2 | 2.0 | 2.6 | 2.9 | 1.6 | 2.9 |
| Lost Time Adjust (s) | -0.9 | -0.9 | | -0.6 | -0.9 | -0.9 | -1.2 | -0.7 | 0.0 | -0.9 | -0.5 | 0.0 |
| Total Lost Time (s) | 5.0 | 5.0 | | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.6 | 5.0 | 5.0 | 5.9 |
| Lead/Lag | Lead | Lag | | Lead | Lag | Lag | Lag | Lead | Lead | Lag | Lead | Lead |
| Lead-Lag Optimize? | Yes | Yes | | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Vehicle Extension (s) | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 1.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Recall Mode | None | None | | None | None | None | None | C-Min | None | None | C-Min | None |
| Walk Time (s) | | 7.0 | | | 7.0 | | | 7.0 | | | 7.0 | |
| Flash Dont Walk (s) | | 21.0 | | | 18.0 | | | 23.0 | | | 9.0 | |
| Pedestrian Calls (#/hr) | | 0 | | | 0 | | | 0 | | | 0 | |
| Act Effct Green (s) | 17.5 | 30.8 | | 42.0 | 24.4 | 38.8 | 9.1 | 43.7 | 53.7 | 14.4 | 51.5 | 68.5 |
| Actuated g/C Ratio | 0.15 | 0.26 | | 0.35 | 0.20 | 0.32 | 0.08 | 0.36 | 0.45 | 0.12 | 0.43 | 0.57 |
| v/c Ratio | 0.71 | 0.57 | | 0.46 | 0.79 | 0.27 | 0.36 | 0.32 | 0.19 | 0.62 | 0.42 | 0.32 |
| Control Delay | 53.5 | 36.0 | | 27.6 | 60.6 | 16.5 | 60.1 | 31.6 | 13.1 | 62.7 | 28.0 | 10.3 |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 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 | 53.5 | 36.0 | | 27.6 | 60.6 | 16.5 | 60.1 | 31.6 | 13.1 | 62.7 | 28.0 | 10.3 |
| LOS | D | D | | C | E | B | E | C | B | E | C | B |
| Approach Delay | | 43.1 | | | 41.9 | | | 29.8 | | | 27.3 | |
| Approach LOS | | D | | | D | | | C | | | C | |
| Queue Length 50th (ft) | 125 | 186 | | 69 | 210 | 48 | 37 | 118 | 36 | 92 | 178 | 70 |
| Queue Length 95th (ft) | 158 | 198 | | 95 | 287 | 50 | 76 | 202 | 76 | 148 | 281 | 134 |
| Internal Link Dist (ft) | | 2326 | | | 907 | | | 1668 | | | 1122 | |
| Turn Bay Length (ft) | 300 | | | 150 | | | 150 | | 150 | 300 | | 350 |
| Base Capacity (vph) | 572 | 1197 | | 301 | 462 | 536 | 140 | 1296 | 716 | 244 | 1500 | 902 |
| Starvation Cap Reductn | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.62 | 0.43 | | 0.46 | 0.61 | 0.25 | 0.35 | 0.31 | 0.19 | 0.50 | 0.41 | 0.31 |

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 68 (57%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.79
Intersection Signal Delay: 35.0 Intersection LOS: C
Intersection Capacity Utilization 60.4% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 220: Franklin St & Estes Dr



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 321 | 416 | 48 | 123 | 255 | 119 | 44 | 366 | 120 | 110 | 555 | 253 |
| Future Volume (veh/h) | 321 | 416 | 48 | 123 | 255 | 119 | 44 | 366 | 120 | 110 | 555 | 253 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1909 | 1909 | 1909 | 1788 | 1758 | 1788 | 1909 | 1864 | 1909 | 1664 | 1708 | 1708 |
| Adj Flow Rate, veh/h | 357 | 462 | 53 | 137 | 283 | 132 | 49 | 407 | 133 | 122 | 617 | 281 |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 4 | 6 | 4 | 2 | 5 | 2 | 6 | 3 | 3 |
| Cap, veh/h | 442 | 764 | 87 | 284 | 330 | 845 | 533 | 524 | 351 | 586 | 737 | 493 |
| Arrive On Green | 0.13 | 0.23 | 0.23 | 0.08 | 0.19 | 0.19 | 0.29 | 0.15 | 0.14 | 0.37 | 0.23 | 0.22 |
| Sat Flow, veh/h | 3528 | 3281 | 375 | 1703 | 1758 | 1515 | 1818 | 3542 | 1618 | 1585 | 3246 | 1448 |
| Grp Volume(v), veh/h | 357 | 255 | 260 | 137 | 283 | 132 | 49 | 407 | 133 | 122 | 617 | 281 |
| Grp Sat Flow(s),veh/h/ln | 1764 | 1814 | 1842 | 1703 | 1758 | 1515 | 1818 | 1771 | 1618 | 1585 | 1623 | 1448 |
| Q Serve(g_s), s | 11.8 | 15.0 | 15.2 | 7.2 | 18.7 | 1.8 | 2.3 | 13.3 | 3.0 | 6.3 | 21.8 | 6.6 |
| Cycle Q Clear(g_c), s | 11.8 | 15.0 | 15.2 | 7.2 | 18.7 | 1.8 | 2.3 | 13.3 | 3.0 | 6.3 | 21.8 | 6.6 |
| Prop In Lane | 1.00 | | 0.20 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 442 | 423 | 429 | 284 | 330 | 845 | 533 | 524 | 351 | 586 | 737 | 493 |
| V/C Ratio(X) | 0.81 | 0.60 | 0.61 | 0.48 | 0.86 | 0.16 | 0.09 | 0.78 | 0.38 | 0.21 | 0.84 | 0.57 |
| Avail Cap(c_a), veh/h | 570 | 620 | 629 | 284 | 457 | 954 | 533 | 956 | 549 | 586 | 1093 | 652 |
| 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 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 51.1 | 41.1 | 41.2 | 32.2 | 47.2 | 3.9 | 30.8 | 49.2 | 16.1 | 25.8 | 44.3 | 12.3 |
| Incr Delay (d2), s/veh | 5.0 | 0.5 | 0.5 | 0.5 | 8.7 | 0.0 | 0.0 | 10.8 | 3.1 | 0.1 | 10.9 | 4.7 |
| 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 | 6.7 | 6.9 | 3.0 | 8.9 | 0.8 | 1.0 | 6.6 | 1.8 | 2.4 | 9.7 | 3.4 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 56.1 | 41.6 | 41.7 | 32.6 | 55.9 | 3.9 | 30.8 | 60.0 | 19.2 | 25.9 | 55.2 | 17.0 |
| LnGrp LOS | E | D | D | C | E | A | C | E | B | C | E | B |
| Approach Vol, veh/h | | 872 | | | 552 | | | 589 | | | 1020 | |
| Approach Delay, s/veh | | 47.6 | | | 37.7 | | | 48.4 | | | 41.2 | |
| Approach LOS | | D | | | D | | | D | | | D | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 49.7 | 22.7 | 14.6 | 33.0 | 40.2 | 32.2 | 20.0 | 27.5 |
| Change Period (Y+Rc), s | * 6.2 | * 5.7 | 5.6 | 5.9 | * 6.2 | * 5.5 | 5.9 | 5.9 |
| Max Green Setting (Gmax), s | * 16 | * 32 | 9.0 | 40.1 | * 7.8 | * 40 | 18.5 | 30.3 |
| Max Q Clear Time (g_c+I1), s | 8.3 | 15.3 | 9.2 | 17.2 | 4.3 | 23.8 | 13.8 | 20.7 |
| Green Ext Time (p_c), s | 0.1 | 1.8 | 0.0 | 1.9 | 0.0 | 3.0 | 0.3 | 0.9 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 43.8 |
| HCM 6th LOS | D |

Notes

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

| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 19 | 62 | 80 | 626 | 600 | 33 |
| Future Volume (vph) | 19 | 62 | 80 | 626 | 600 | 33 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | 125 | 100 | | | 0 |
| Storage Lanes | 1 | 1 | 1 | | | 0 |
| Taper Length (ft) | 100 | | 100 | | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 0.95 |
| Frt | | 0.850 | | | 0.992 | |
| Flt Protected | 0.950 | | 0.950 | | | |
| Satd. Flow (prot) | 1719 | 1538 | 1752 | 3438 | 3445 | 0 |
| Flt Permitted | 0.950 | | 0.950 | | | |
| Satd. Flow (perm) | 1719 | 1538 | 1752 | 3438 | 3445 | 0 |
| Link Speed (mph) | 30 | | | 40 | 40 | |
| Link Distance (ft) | 928 | | | 1413 | 1063 | |
| Travel Time (s) | 21.1 | | | 24.1 | 18.1 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 5% | 5% | 3% | 5% | 4% | 3% |
| Adj. Flow (vph) | 21 | 69 | 89 | 696 | 667 | 37 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 21 | 69 | 89 | 696 | 704 | 0 |
| Sign Control | Stop | | | Free | Free | |

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 35.4% ICU Level of Service A
Analysis Period (min) 15

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

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 19 | 62 | 80 | 626 | 600 | 33 |
| Future Vol, veh/h | 19 | 62 | 80 | 626 | 600 | 33 |
| 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 | 125 | 100 | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 5 | 5 | 3 | 5 | 4 | 3 |
| Mvmt Flow | 21 | 69 | 89 | 696 | 667 | 37 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 1212 | 352 | 704 | 0 | - | 0 |
| Stage 1 | 686 | - | - | - | - | - |
| Stage 2 | 526 | - | - | - | - | - |
| Critical Hdwy | 6.9 | 7 | 4.16 | - | - | - |
| Critical Hdwy Stg 1 | 5.9 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.9 | - | - | - | - | - |
| Follow-up Hdwy | 3.55 | 3.35 | 2.23 | - | - | - |
| Pot Cap-1 Maneuver | 170 | 636 | 883 | - | - | - |
| Stage 1 | 453 | - | - | - | - | - |
| Stage 2 | 549 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 153 | 636 | 883 | - | - | - |
| Mov Cap-2 Maneuver | 281 | - | - | - | - | - |
| Stage 1 | 407 | - | - | - | - | - |
| Stage 2 | 549 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 13.1 | 1.1 | 0 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | EBLn2 | SBT | SBR |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | 883 | - | 281 | 636 | - | - |
| HCM Lane V/C Ratio | 0.101 | - | 0.075 | 0.108 | - | - |
| HCM Control Delay (s) | 9.5 | - | 18.8 | 11.3 | - | - |
| HCM Lane LOS | A | - | C | B | - | - |
| HCM 95th %tile Q(veh) | 0.3 | - | 0.2 | 0.4 | - | - |

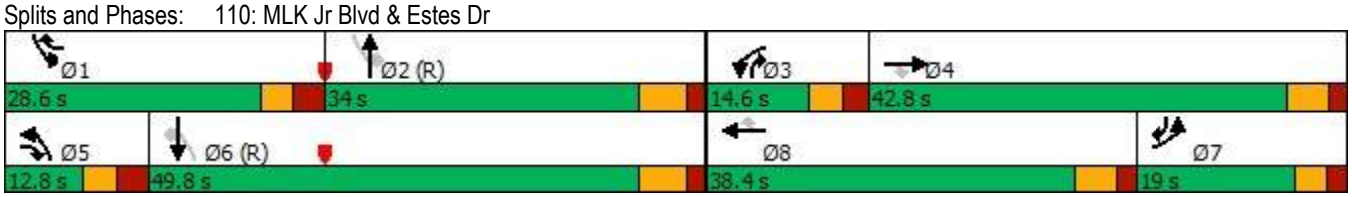
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 191 | 312 | 26 | 124 | 299 | 239 | 42 | 490 | 113 | 259 | 483 | 166 |
| Future Volume (vph) | 191 | 312 | 26 | 124 | 299 | 239 | 42 | 490 | 113 | 259 | 483 | 166 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Grade (%) | | 1% | | | -2% | | | 1% | | | 0% | |
| Storage Length (ft) | 300 | | 225 | 300 | | 250 | 150 | | 300 | 225 | | 150 |
| Storage Lanes | 2 | | 1 | 2 | | 1 | 1 | | 1 | 1 | | 1 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 0.97 | 1.00 | 1.00 | 0.97 | 1.00 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 |
| Frt | | | 0.850 | | | 0.850 | | | 0.850 | | | 0.850 |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 3416 | 1853 | 1488 | 3434 | 1881 | 1599 | 1604 | 3421 | 1575 | 1736 | 3406 | 1553 |
| Flt Permitted | 0.950 | | | 0.950 | | | 0.399 | | | 0.356 | | |
| Satd. Flow (perm) | 3416 | 1853 | 1488 | 3434 | 1881 | 1599 | 673 | 3421 | 1575 | 650 | 3406 | 1553 |
| Right Turn on Red | | | No | | | No | | | No | | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (mph) | | 35 | | | 35 | | | 40 | | | 40 | |
| Link Distance (ft) | | 1251 | | | 1571 | | | 1063 | | | 1514 | |
| Travel Time (s) | | 24.4 | | | 30.6 | | | 18.1 | | | 25.8 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 8% | 3% | 2% | 2% | 12% | 5% | 2% | 4% | 6% | 4% |
| Adj. Flow (vph) | 212 | 347 | 29 | 138 | 332 | 266 | 47 | 544 | 126 | 288 | 537 | 184 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 212 | 347 | 29 | 138 | 332 | 266 | 47 | 544 | 126 | 288 | 537 | 184 |
| Turn Type | Prot | NA | pm+ov | Prot | NA | pm+ov | D.P+P | NA | pm+ov | D.P+P | NA | pm+ov |
| Protected Phases | 7 | 4 | 5 | 3 | 8 | 1 | 5 | 2 | 3 | 1 | 6 | 7 |
| Permitted Phases | | | 4 | | | 8 | 6 | | 2 | 2 | | 6 |
| Detector Phase | 7 | 4 | 5 | 3 | 8 | 1 | 5 | 2 | 3 | 1 | 6 | 7 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 12.0 | 7.0 | 7.0 | 12.0 | 7.0 |
| Minimum Split (s) | 11.9 | 12.5 | 12.8 | 12.4 | 12.5 | 12.8 | 12.8 | 34.0 | 12.4 | 12.8 | 18.0 | 11.9 |
| Total Split (s) | 19.0 | 42.8 | 12.8 | 14.6 | 38.4 | 28.6 | 12.8 | 34.0 | 14.6 | 28.6 | 49.8 | 19.0 |
| Total Split (%) | 15.8% | 35.7% | 10.7% | 12.2% | 32.0% | 23.8% | 10.7% | 28.3% | 12.2% | 23.8% | 41.5% | 15.8% |
| Maximum Green (s) | 14.1 | 37.3 | 7.0 | 9.2 | 32.9 | 22.8 | 7.0 | 28.0 | 9.2 | 22.8 | 43.8 | 14.1 |
| Yellow Time (s) | 3.0 | 3.8 | 3.0 | 3.0 | 3.8 | 3.0 | 3.0 | 4.3 | 3.0 | 3.0 | 4.3 | 3.0 |
| All-Red Time (s) | 1.9 | 1.7 | 2.8 | 2.4 | 1.7 | 2.8 | 2.8 | 1.7 | 2.4 | 2.8 | 1.7 | 1.9 |
| Lost Time Adjust (s) | 0.1 | -0.5 | -0.8 | -0.4 | -0.5 | -0.8 | -0.8 | -1.0 | 0.0 | -0.8 | -1.0 | 0.0 |
| Total Lost Time (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.4 | 5.0 | 5.0 | 4.9 |
| Lead/Lag | Lag | Lag | Lead | Lead | Lead | Lead | Lead | Lag | Lead | Lead | Lag | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Vehicle Extension (s) | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 2.0 | 1.0 | 1.0 | 2.0 | 1.0 |
| Recall Mode | None | None | None | None | None | None | None | C-Min | None | None | C-Min | None |
| Walk Time (s) | | | | | | | | 7.0 | | | | |
| Flash Dont Walk (s) | | | | | | | | 21.0 | | | | |
| Pedestrian Calls (#/hr) | | | | | | | | 0 | | | | |
| Act Effct Green (s) | 11.0 | 27.7 | 40.5 | 8.6 | 25.2 | 44.2 | 64.8 | 44.8 | 57.9 | 63.8 | 58.5 | 70.7 |
| Actuated g/C Ratio | 0.09 | 0.23 | 0.34 | 0.07 | 0.21 | 0.37 | 0.54 | 0.37 | 0.48 | 0.53 | 0.49 | 0.59 |
| v/c Ratio | 0.68 | 0.81 | 0.06 | 0.56 | 0.84 | 0.45 | 0.11 | 0.43 | 0.17 | 0.56 | 0.32 | 0.20 |
| Control Delay | 63.6 | 58.3 | 24.2 | 54.5 | 50.4 | 10.8 | 14.7 | 32.0 | 21.4 | 20.0 | 15.5 | 5.5 |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 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 | 63.6 | 58.3 | 24.2 | 54.5 | 50.4 | 10.8 | 14.7 | 32.0 | 21.4 | 20.0 | 15.5 | 5.5 |
| LOS | E | E | C | D | D | B | B | C | C | B | B | A |
| Approach Delay | | 58.5 | | | 36.8 | | | 29.0 | | | 15.0 | |
| Approach LOS | | E | | | D | | | C | | | B | |
| Queue Length 50th (ft) | 83 | 257 | 15 | 46 | 248 | 100 | 15 | 165 | 54 | 82 | 142 | 33 |
| Queue Length 95th (ft) | 121 | 328 | 32 | 82 | 339 | 73 | 41 | 263 | 115 | 175 | 111 | 57 |
| Internal Link Dist (ft) | | 1171 | | | 1491 | | | 983 | | | 1434 | |
| Turn Bay Length (ft) | 300 | | 225 | 300 | | 250 | 150 | | 300 | 225 | | 150 |
| Base Capacity (vph) | 400 | 583 | 501 | 275 | 523 | 650 | 423 | 1276 | 774 | 575 | 1660 | 940 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.53 | 0.60 | 0.06 | 0.50 | 0.63 | 0.41 | 0.11 | 0.43 | 0.16 | 0.50 | 0.32 | 0.20 |

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 56 (47%), Referenced to phase 2:NBSB and 6:NBSB, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.84
Intersection Signal Delay: 31.9 Intersection LOS: C
Intersection Capacity Utilization 66.8% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 110: MLK Jr Blvd & Estes Dr



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 191 | 312 | 26 | 124 | 299 | 239 | 42 | 490 | 113 | 259 | 483 | 166 |
| Future Volume (veh/h) | 191 | 312 | 26 | 124 | 299 | 239 | 42 | 490 | 113 | 259 | 483 | 166 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1864 | 1864 | 1776 | 1934 | 1949 | 1949 | 1716 | 1820 | 1864 | 1841 | 1811 | 1841 |
| Adj Flow Rate, veh/h | 212 | 347 | 29 | 138 | 332 | 266 | 47 | 544 | 126 | 288 | 537 | 184 |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Percent Heavy Veh, % | 2 | 2 | 8 | 3 | 2 | 2 | 12 | 5 | 2 | 4 | 6 | 4 |
| Cap, veh/h | 265 | 397 | 404 | 218 | 375 | 516 | 485 | 1526 | 775 | 520 | 1743 | 898 |
| Arrive On Green | 0.08 | 0.21 | 0.22 | 0.06 | 0.19 | 0.19 | 0.05 | 0.44 | 0.43 | 0.24 | 1.00 | 1.00 |
| Sat Flow, veh/h | 3445 | 1864 | 1505 | 3573 | 1949 | 1651 | 1635 | 3458 | 1580 | 1753 | 3441 | 1560 |
| Grp Volume(v), veh/h | 212 | 347 | 29 | 138 | 332 | 266 | 47 | 544 | 126 | 288 | 537 | 184 |
| Grp Sat Flow(s),veh/h/ln | 1722 | 1864 | 1505 | 1786 | 1949 | 1651 | 1635 | 1729 | 1580 | 1753 | 1721 | 1560 |
| Q Serve(g_s), s | 7.3 | 21.6 | 1.7 | 4.5 | 19.9 | 11.0 | 1.6 | 12.5 | 5.3 | 11.3 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 7.3 | 21.6 | 1.7 | 4.5 | 19.9 | 11.0 | 1.6 | 12.5 | 5.3 | 11.3 | 0.0 | 0.0 |
| 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 | 265 | 397 | 404 | 218 | 375 | 516 | 485 | 1526 | 775 | 520 | 1743 | 898 |
| V/C Ratio(X) | 0.80 | 0.87 | 0.07 | 0.63 | 0.89 | 0.52 | 0.10 | 0.36 | 0.16 | 0.55 | 0.31 | 0.20 |
| Avail Cap(c_a), veh/h | 402 | 587 | 557 | 286 | 542 | 658 | 505 | 1526 | 775 | 658 | 1743 | 898 |
| 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 | 0.96 | 0.96 | 0.96 |
| Uniform Delay (d), s/veh | 54.5 | 45.7 | 32.7 | 55.0 | 47.2 | 17.2 | 12.1 | 22.2 | 16.9 | 13.2 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 3.4 | 6.9 | 0.0 | 1.1 | 9.1 | 0.3 | 0.0 | 0.7 | 0.4 | 0.3 | 0.4 | 0.5 |
| 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 | 10.6 | 0.6 | 2.1 | 10.5 | 4.1 | 0.6 | 5.1 | 2.0 | 3.4 | 0.1 | 0.1 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 57.9 | 52.6 | 32.8 | 56.1 | 56.3 | 17.5 | 12.1 | 22.9 | 17.4 | 13.5 | 0.4 | 0.5 |
| LnGrp LOS | E | D | C | E | E | B | B | C | B | B | A | A |
| Approach Vol, veh/h | | 588 | | | 736 | | | 717 | | | 1009 | |
| Approach Delay, s/veh | | 53.5 | | | 42.2 | | | 21.2 | | | 4.2 | |
| Approach LOS | | D | | | D | | | C | | | A | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 19.1 | 58.0 | 12.3 | 30.6 | 11.3 | 65.8 | 14.8 | 28.1 |
| Change Period (Y+Rc), s | * 5.8 | * 6 | 5.4 | 5.5 | * 5.8 | * 6 | 5.5 | * 5.5 |
| Max Green Setting (Gmax), s | * 23 | * 28 | 9.2 | 37.3 | * 7 | * 44 | 14.1 | * 33 |
| Max Q Clear Time (g_c+I1), s | 13.3 | 14.5 | 6.5 | 23.6 | 3.6 | 2.0 | 9.3 | 21.9 |
| Green Ext Time (p_c), s | 0.1 | 2.1 | 0.0 | 0.6 | 0.0 | 2.6 | 0.1 | 0.7 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 26.9 |
| HCM 6th LOS | C |

Notes

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

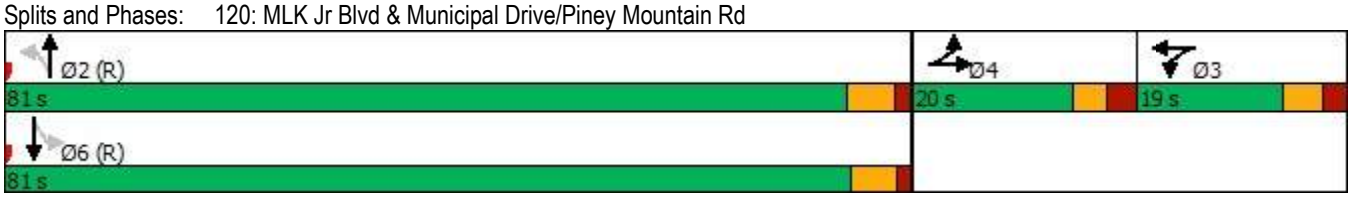
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 3 | 0 | 14 | 64 | 1 | 24 | 21 | 845 | 54 | 27 | 830 | 2 |
| Future Volume (vph) | 3 | 0 | 14 | 64 | 1 | 24 | 21 | 845 | 54 | 27 | 830 | 2 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Grade (%) | | 0% | | | 4% | | | -1% | | | 0% | |
| Storage Length (ft) | 100 | | 0 | 375 | | 0 | 150 | | 0 | 225 | | 0 |
| Storage Lanes | 1 | | 0 | 2 | | 0 | 1 | | 0 | 1 | | 0 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 0.97 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | 0.95 | 0.95 |
| Frt | | 0.850 | | | 0.855 | | | 0.991 | | | | |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1770 | 1129 | 0 | 3364 | 1464 | 0 | 1463 | 3493 | 0 | 1770 | 3471 | 0 |
| Flt Permitted | 0.950 | | | 0.950 | | | 0.295 | | | 0.270 | | |
| Satd. Flow (perm) | 1770 | 1129 | 0 | 3364 | 1464 | 0 | 454 | 3493 | 0 | 503 | 3471 | 0 |
| Right Turn on Red | | | No | | | No | | | No | | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (mph) | | 20 | | | 35 | | | 40 | | | 40 | |
| Link Distance (ft) | | 554 | | | 663 | | | 1514 | | | 2618 | |
| Travel Time (s) | | 18.9 | | | 12.9 | | | 25.8 | | | 44.6 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 43% | 2% | 2% | 9% | 24% | 3% | 2% | 2% | 4% | 2% |
| Adj. Flow (vph) | 3 | 0 | 16 | 71 | 1 | 27 | 23 | 939 | 60 | 30 | 922 | 2 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 3 | 16 | 0 | 71 | 28 | 0 | 23 | 999 | 0 | 30 | 924 | 0 |
| Turn Type | Split | NA | | Split | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | 4 | 4 | | 3 | 3 | | | 2 | | | 6 | |
| Permitted Phases | | | | | | | 2 | | | 6 | | |
| Detector Phase | 4 | 4 | | 3 | 3 | | 2 | 2 | | 6 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | | 7.0 | 7.0 | | 12.0 | 12.0 | | 12.0 | 12.0 | |
| Minimum Split (s) | 12.6 | 12.6 | | 12.9 | 12.9 | | 27.8 | 27.8 | | 17.5 | 17.5 | |
| Total Split (s) | 20.0 | 20.0 | | 19.0 | 19.0 | | 81.0 | 81.0 | | 81.0 | 81.0 | |
| Total Split (%) | 16.7% | 16.7% | | 15.8% | 15.8% | | 67.5% | 67.5% | | 67.5% | 67.5% | |
| Maximum Green (s) | 14.4 | 14.4 | | 13.1 | 13.1 | | 75.2 | 75.2 | | 75.5 | 75.5 | |
| Yellow Time (s) | 3.0 | 3.0 | | 3.6 | 3.6 | | 4.2 | 4.2 | | 4.2 | 4.2 | |
| All-Red Time (s) | 2.6 | 2.6 | | 2.3 | 2.3 | | 1.6 | 1.6 | | 1.3 | 1.3 | |
| Lost Time Adjust (s) | -0.6 | -0.6 | | -0.9 | -0.9 | | -0.8 | -0.8 | | -0.5 | -0.5 | |
| Total Lost Time (s) | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | |
| Lead/Lag | Lead | Lead | | Lag | Lag | | | | | | | |
| Lead-Lag Optimize? | Yes | Yes | | Yes | Yes | | | | | | | |
| Vehicle Extension (s) | 1.0 | 1.0 | | 1.0 | 1.0 | | 6.0 | 6.0 | | 6.0 | 6.0 | |
| Minimum Gap (s) | 1.0 | 1.0 | | 1.0 | 1.0 | | 6.0 | 6.0 | | 6.0 | 6.0 | |
| Time Before Reduce (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 15.0 | 15.0 | | 15.0 | 15.0 | |
| Time To Reduce (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 45.0 | 45.0 | | 45.0 | 45.0 | |
| Recall Mode | None | None | | None | None | | C-Min | C-Min | | C-Min | C-Min | |
| Walk Time (s) | | | | | | | 7.0 | 7.0 | | | | |
| Flash Dont Walk (s) | | | | | | | 15.0 | 15.0 | | | | |
| Pedestrian Calls (#/hr) | | | | | | | 0 | 0 | | | | |
| Act Effct Green (s) | 7.8 | 7.8 | | 8.2 | 8.2 | | 100.1 | 100.1 | | 100.1 | 100.1 | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Actuated g/C Ratio | 0.06 | 0.06 | | 0.07 | 0.07 | | 0.83 | 0.83 | | 0.83 | 0.83 | |
| v/c Ratio | 0.03 | 0.22 | | 0.31 | 0.28 | | 0.06 | 0.34 | | 0.07 | 0.32 | |
| Control Delay | 52.7 | 60.5 | | 56.7 | 60.2 | | 2.6 | 2.1 | | 1.1 | 0.9 | |
| Queue Delay | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Delay | 52.7 | 60.5 | | 56.7 | 60.2 | | 2.6 | 2.1 | | 1.1 | 0.9 | |
| LOS | D | E | | E | E | | A | A | | A | A | |
| Approach Delay | | 59.3 | | | 57.7 | | | 2.1 | | | 0.9 | |
| Approach LOS | | E | | | E | | | A | | | A | |
| Queue Length 50th (ft) | 2 | 12 | | 27 | 21 | | 1 | 27 | | 1 | 24 | |
| Queue Length 95th (ft) | 13 | 36 | | 51 | 52 | | m7 | 76 | | m4 | 32 | |
| Internal Link Dist (ft) | | 474 | | | 583 | | | 1434 | | | 2538 | |
| Turn Bay Length (ft) | 100 | | | 375 | | | 150 | | | 225 | | |
| Base Capacity (vph) | 221 | 141 | | 392 | 170 | | 378 | 2913 | | 419 | 2894 | |
| Starvation Cap Reductn | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Spillback Cap Reductn | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Storage Cap Reductn | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Reduced v/c Ratio | 0.01 | 0.11 | | 0.18 | 0.16 | | 0.06 | 0.34 | | 0.07 | 0.32 | |

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 55 (46%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 55
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.34
Intersection Signal Delay: 4.7 Intersection LOS: A
Intersection Capacity Utilization 41.9% ICU Level of Service A
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 120: MLK Jr Blvd & Municipal Drive/Piney Mountain Rd



HCM 6th Edition methodology expects strict NEMA phasing.

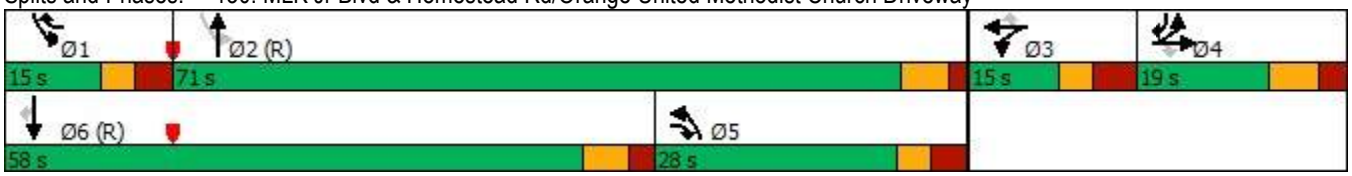
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 109 | 2 | 194 | 11 | 7 | 14 | 160 | 710 | 2 | 19 | 654 | 95 |
| Future Volume (vph) | 109 | 2 | 194 | 11 | 7 | 14 | 160 | 710 | 2 | 19 | 654 | 95 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 125 | | 0 | 125 | | 0 | 525 | | 0 | 250 | | 375 |
| Storage Lanes | 1 | | 1 | 2 | | 1 | 2 | | 0 | 1 | | 1 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 0.95 | 0.95 | 1.00 | 0.95 | 0.95 | 1.00 | 0.97 | 0.95 | 0.95 | 1.00 | 0.95 | 1.00 |
| Frt | | | 0.850 | | | 0.850 | | | | | | 0.850 |
| Flt Protected | 0.950 | 0.954 | | 0.950 | 0.990 | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1603 | 1612 | 1538 | 1681 | 1752 | 1583 | 3400 | 3501 | 0 | 1719 | 3471 | 1495 |
| Flt Permitted | 0.950 | 0.954 | | 0.950 | 0.990 | | 0.950 | | | 0.320 | | |
| Satd. Flow (perm) | 1603 | 1612 | 1538 | 1681 | 1752 | 1583 | 3400 | 3501 | 0 | 579 | 3471 | 1495 |
| Right Turn on Red | | | No | | | No | | | No | | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (mph) | | 35 | | | 20 | | | 40 | | | 40 | |
| Link Distance (ft) | | 1248 | | | 314 | | | 1137 | | | 1345 | |
| Travel Time (s) | | 24.3 | | | 10.7 | | | 19.4 | | | 22.9 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 7% | 2% | 5% | 2% | 2% | 2% | 3% | 3% | 50% | 5% | 4% | 8% |
| Adj. Flow (vph) | 121 | 2 | 216 | 12 | 8 | 16 | 178 | 789 | 2 | 21 | 727 | 106 |
| Shared Lane Traffic (%) | 49% | | | 18% | | | | | | | | |
| Lane Group Flow (vph) | 62 | 61 | 216 | 10 | 10 | 16 | 178 | 791 | 0 | 21 | 727 | 106 |
| Turn Type | Split | NA | pm+ov | Split | NA | pm+ov | Prot | NA | | D.P+P | NA | pm+ov |
| Protected Phases | 4 | 4 | 5 | 3 | 3 | 1 | 5 | 2 | | 1 | 6 | 4 |
| Permitted Phases | | | 4 | | | 3 | | | | 2 | | 6 |
| Detector Phase | 4 | 4 | 5 | 3 | 3 | 1 | 5 | 2 | | 1 | 6 | 4 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 12.0 | | 7.0 | 12.0 | 7.0 |
| Minimum Split (s) | 14.1 | 14.1 | 13.3 | 13.9 | 13.9 | 13.4 | 13.3 | 28.0 | | 13.4 | 45.4 | 14.1 |
| Total Split (s) | 19.0 | 19.0 | 28.0 | 15.0 | 15.0 | 15.0 | 28.0 | 71.0 | | 15.0 | 58.0 | 19.0 |
| Total Split (%) | 15.8% | 15.8% | 23.3% | 12.5% | 12.5% | 12.5% | 23.3% | 59.2% | | 12.5% | 48.3% | 15.8% |
| Maximum Green (s) | 11.9 | 11.9 | 21.7 | 8.1 | 8.1 | 8.6 | 21.7 | 65.0 | | 8.6 | 51.6 | 11.9 |
| Yellow Time (s) | 4.5 | 4.5 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 4.2 | | 3.0 | 4.2 | 4.5 |
| All-Red Time (s) | 2.6 | 2.6 | 3.3 | 3.9 | 3.9 | 3.4 | 3.3 | 1.8 | | 3.4 | 2.2 | 2.6 |
| Lost Time Adjust (s) | -2.1 | -2.1 | -1.3 | -1.9 | -1.9 | -1.4 | -1.3 | -1.0 | | -1.4 | -1.4 | -2.1 |
| Total Lost Time (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | | 5.0 | 5.0 | 5.0 |
| Lead/Lag | Lag | Lag | Lag | Lead | Lead | Lead | Lag | Lag | | Lead | Lead | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | | Yes | Yes | Yes |
| Vehicle Extension (s) | 1.0 | 1.0 | 1.0 | 2.0 | 2.0 | 2.0 | 1.0 | 6.0 | | 2.0 | 6.0 | 1.0 |
| Minimum Gap (s) | 1.0 | 1.0 | 1.0 | 2.0 | 2.0 | 2.0 | 1.0 | 6.0 | | 2.0 | 6.0 | 1.0 |
| Time Before Reduce (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 15.0 | | 0.0 | 15.0 | 0.0 |
| Time To Reduce (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 45.0 | | 0.0 | 45.0 | 0.0 |
| Recall Mode | None | None | None | None | None | None | None | C-Min | | None | C-Min | None |
| Walk Time (s) | | | | | | | | 7.0 | | | 7.0 | |
| Flash Dont Walk (s) | | | | | | | | 15.0 | | | 32.0 | |
| Pedestrian Calls (#/hr) | | | | | | | | 0 | | | 0 | |
| Act Effct Green (s) | 10.9 | 10.9 | 31.5 | 8.9 | 8.9 | 12.0 | 17.6 | 85.5 | | 90.5 | 71.0 | 86.9 |
| Actuated g/C Ratio | 0.09 | 0.09 | 0.26 | 0.07 | 0.07 | 0.10 | 0.15 | 0.71 | | 0.75 | 0.59 | 0.72 |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| v/c Ratio | 0.43 | 0.42 | 0.54 | 0.08 | 0.08 | 0.10 | 0.36 | 0.32 | | 0.04 | 0.35 | 0.10 |
| Control Delay | 60.2 | 59.8 | 35.9 | 53.4 | 53.3 | 35.5 | 36.2 | 4.4 | | 5.1 | 15.3 | 7.0 |
| 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 | 60.2 | 59.8 | 35.9 | 53.4 | 53.3 | 35.5 | 36.2 | 4.4 | | 5.1 | 15.3 | 7.0 |
| LOS | E | E | D | D | D | D | D | A | | A | B | A |
| Approach Delay | | 44.6 | | | 45.4 | | | 10.2 | | | 14.0 | |
| Approach LOS | | D | | | D | | | B | | | B | |
| Queue Length 50th (ft) | 49 | 48 | 140 | 7 | 7 | 12 | 57 | 87 | | 2 | 127 | 18 |
| Queue Length 95th (ft) | 94 | 92 | 161 | 26 | 26 | 24 | 63 | 156 | | 13 | 252 | 56 |
| Internal Link Dist (ft) | | 1168 | | | 234 | | | 1057 | | | 1265 | |
| Turn Bay Length (ft) | 125 | | | 125 | | | 525 | | | 250 | | 375 |
| Base Capacity (vph) | 187 | 188 | 413 | 140 | 146 | 178 | 651 | 2494 | | 536 | 2053 | 1071 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.33 | 0.32 | 0.52 | 0.07 | 0.07 | 0.09 | 0.27 | 0.32 | | 0.04 | 0.35 | 0.10 |

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 113 (94%), Referenced to phase 2:NBSB and 6:SBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.54
Intersection Signal Delay: 17.6 Intersection LOS: B
Intersection Capacity Utilization 48.4% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 130: MLK Jr Blvd & Homestead Rd/Orange United Methodist Church Driveway



HCM 6th Edition methodology expects strict NEMA phasing.

| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 15 | 669 | 649 | 15 | 16 | 13 |
| Future Volume (vph) | 15 | 669 | 649 | 15 | 16 | 13 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 100 | | | 0 | 0 | 0 |
| Storage Lanes | 1 | | | 0 | 1 | 0 |
| Taper Length (ft) | 100 | | | | 100 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | | 0.997 | | 0.941 | |
| Flt Protected | 0.950 | | | | 0.973 | |
| Satd. Flow (prot) | 1656 | 1863 | 1850 | 0 | 1552 | 0 |
| Flt Permitted | 0.950 | | | | 0.973 | |
| Satd. Flow (perm) | 1656 | 1863 | 1850 | 0 | 1552 | 0 |
| Link Speed (mph) | | 35 | 35 | | 30 | |
| Link Distance (ft) | | 1571 | 840 | | 813 | |
| Travel Time (s) | | 30.6 | 16.4 | | 18.5 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 9% | 2% | 2% | 18% | 2% | 25% |
| Adj. Flow (vph) | 17 | 743 | 721 | 17 | 18 | 14 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 17 | 743 | 738 | 0 | 32 | 0 |
| Sign Control | | Free | Free | | Stop | |

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 45.2% ICU Level of Service A
Analysis Period (min) 15

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

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 15 | 669 | 649 | 15 | 16 | 13 |
| Future Vol, veh/h | 15 | 669 | 649 | 15 | 16 | 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 | 100 | - | - | - | 0 | - |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 9 | 2 | 2 | 18 | 2 | 25 |
| Mvmt Flow | 17 | 743 | 721 | 17 | 18 | 14 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 738 | 0 | - | 0 | 1507 | 730 |
| Stage 1 | - | - | - | - | 730 | - |
| Stage 2 | - | - | - | - | 777 | - |
| Critical Hdwy | 4.19 | - | - | - | 6.42 | 6.45 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.42 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.42 | - |
| Follow-up Hdwy | 2.281 | - | - | - | 3.518 | 3.525 |
| Pot Cap-1 Maneuver | 837 | - | - | - | 133 | 386 |
| Stage 1 | - | - | - | - | 477 | - |
| Stage 2 | - | - | - | - | 453 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | 837 | - | - | - | 130 | 386 |
| Mov Cap-2 Maneuver | - | - | - | - | 130 | - |
| Stage 1 | - | - | - | - | 467 | - |
| Stage 2 | - | - | - | - | 453 | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 0.2 | 0 | 28.5 |
| HCM LOS | | | D |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|
| Capacity (veh/h) | 837 | - | - | - | 185 |
| HCM Lane V/C Ratio | 0.02 | - | - | - | 0.174 |
| HCM Control Delay (s) | 9.4 | - | - | - | 28.5 |
| HCM Lane LOS | A | - | - | - | D |
| HCM 95th %tile Q(veh) | 0.1 | - | - | - | 0.6 |

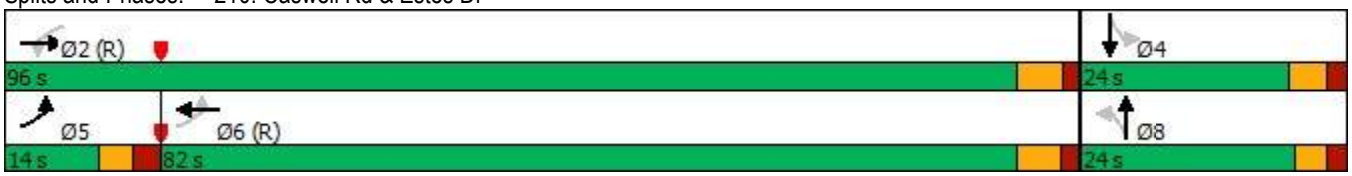
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 57 | 626 | 2 | 1 | 585 | 27 | 2 | 4 | 2 | 23 | 0 | 77 |
| Future Volume (vph) | 57 | 626 | 2 | 1 | 585 | 27 | 2 | 4 | 2 | 23 | 0 | 77 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Grade (%) | | -2% | | | 0% | | | 7% | | | -5% | |
| Storage Length (ft) | 250 | | 0 | 125 | | 0 | 0 | | 0 | 100 | | 0 |
| Storage Lanes | 1 | | 0 | 1 | | 0 | 0 | | 0 | 1 | | 0 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | | | | 0.993 | | | 0.966 | | | 0.850 | |
| Flt Protected | 0.950 | | | 0.950 | | | | 0.988 | | 0.950 | | |
| Satd. Flow (prot) | 1753 | 1881 | 0 | 1770 | 1848 | 0 | 0 | 1535 | 0 | 1814 | 1592 | 0 |
| Flt Permitted | 0.345 | | | 0.371 | | | | 0.924 | | 0.752 | | |
| Satd. Flow (perm) | 637 | 1881 | 0 | 691 | 1848 | 0 | 0 | 1436 | 0 | 1436 | 1592 | 0 |
| Right Turn on Red | | | No | | | No | | | No | | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (mph) | | 35 | | | 35 | | | 25 | | | 25 | |
| Link Distance (ft) | | 961 | | | 940 | | | 384 | | | 262 | |
| Travel Time (s) | | 18.7 | | | 18.3 | | | 10.5 | | | 7.1 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 4% | 2% | 2% | 2% | 2% | 4% | 50% | 2% | 2% | 2% | 2% | 4% |
| Adj. Flow (vph) | 63 | 696 | 2 | 1 | 650 | 30 | 2 | 4 | 2 | 26 | 0 | 86 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 63 | 698 | 0 | 1 | 680 | 0 | 0 | 8 | 0 | 26 | 86 | 0 |
| Turn Type | D.P+P | NA | | D.Pm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | 5 | 2 | | | 6 | | | 8 | | | 4 | |
| Permitted Phases | 6 | | | 2 | | | 8 | | | 4 | | |
| Detector Phase | 5 | 2 | | 2 | 6 | | 8 | 8 | | 4 | 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 10.0 | | 10.0 | 10.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | |
| Minimum Split (s) | 12.6 | 21.6 | | 21.6 | 21.6 | | 11.9 | 11.9 | | 20.4 | 20.4 | |
| Total Split (s) | 14.0 | 96.0 | | 96.0 | 82.0 | | 24.0 | 24.0 | | 24.0 | 24.0 | |
| Total Split (%) | 11.7% | 80.0% | | 80.0% | 68.3% | | 20.0% | 20.0% | | 20.0% | 20.0% | |
| Maximum Green (s) | 8.4 | 90.4 | | 90.4 | 76.4 | | 19.1 | 19.1 | | 18.6 | 18.6 | |
| Yellow Time (s) | 3.0 | 4.0 | | 4.0 | 3.8 | | 3.0 | 3.0 | | 3.5 | 3.5 | |
| All-Red Time (s) | 2.6 | 1.6 | | 1.6 | 1.8 | | 1.9 | 1.9 | | 1.9 | 1.9 | |
| Lost Time Adjust (s) | -0.6 | -0.6 | | -0.6 | -0.6 | | | 0.1 | | -0.4 | -0.4 | |
| Total Lost Time (s) | 5.0 | 5.0 | | 5.0 | 5.0 | | | 5.0 | | 5.0 | 5.0 | |
| Lead/Lag | Lead | | | | Lag | | | | | | | |
| Lead-Lag Optimize? | Yes | | | | Yes | | | | | | | |
| Vehicle Extension (s) | 1.0 | 2.0 | | 2.0 | 2.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | |
| Recall Mode | None | C-Min | | C-Min | C-Min | | None | None | | None | None | |
| Walk Time (s) | | 7.0 | | 7.0 | 7.0 | | | | | 7.0 | 7.0 | |
| Flash Dont Walk (s) | | 9.0 | | 9.0 | 9.0 | | | | | 8.0 | 8.0 | |
| Pedestrian Calls (#/hr) | | 0 | | 0 | 0 | | | | | 0 | 0 | |
| Act Effct Green (s) | 97.8 | 102.8 | | 102.8 | 92.7 | | | 8.6 | | 10.7 | 10.7 | |
| Actuated g/C Ratio | 0.82 | 0.86 | | 0.86 | 0.77 | | | 0.07 | | 0.09 | 0.09 | |
| v/c Ratio | 0.11 | 0.43 | | 0.00 | 0.48 | | | 0.08 | | 0.20 | 0.61 | |
| Control Delay | 1.5 | 1.8 | | 3.0 | 7.2 | | | 51.4 | | 52.9 | 69.9 | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Queue Delay | 0.0 | 0.0 | | 0.0 | 0.0 | | | 0.0 | | 0.0 | 0.0 | |
| Total Delay | 1.5 | 1.8 | | 3.0 | 7.2 | | | 51.4 | | 52.9 | 69.9 | |
| LOS | A | A | | A | A | | | D | | D | E | |
| Approach Delay | | 1.8 | | | 7.1 | | | 51.4 | | | 65.9 | |
| Approach LOS | | A | | | A | | | D | | | E | |
| Queue Length 50th (ft) | 2 | 28 | | 0 | 162 | | | 6 | | 19 | 66 | |
| Queue Length 95th (ft) | m6 | 43 | | m0 | 293 | | | 21 | | 47 | 116 | |
| Internal Link Dist (ft) | | 881 | | | 860 | | | 304 | | | 182 | |
| Turn Bay Length (ft) | 250 | | | 125 | | | | | | 100 | | |
| Base Capacity (vph) | 608 | 1611 | | 591 | 1427 | | | 227 | | 227 | 252 | |
| Starvation Cap Reductn | 0 | 0 | | 0 | 0 | | | 0 | | 0 | 0 | |
| Spillback Cap Reductn | 0 | 0 | | 0 | 0 | | | 0 | | 0 | 0 | |
| Storage Cap Reductn | 0 | 0 | | 0 | 0 | | | 0 | | 0 | 0 | |
| Reduced v/c Ratio | 0.10 | 0.43 | | 0.00 | 0.48 | | | 0.04 | | 0.11 | 0.34 | |

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 113 (94%), Referenced to phase 2:EBWB and 6:EBWB, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.61
Intersection Signal Delay: 9.0 Intersection LOS: A
Intersection Capacity Utilization 59.7% ICU Level of Service B
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 210: Caswell Rd & Estes Dr



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 57 | 626 | 2 | 1 | 585 | 27 | 2 | 4 | 2 | 23 | 0 | 77 |
| Future Volume (veh/h) | 57 | 626 | 2 | 1 | 585 | 27 | 2 | 4 | 2 | 23 | 0 | 77 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1919 | 1949 | 1949 | 1870 | 1870 | 1870 | 1582 | 1582 | 1582 | 2067 | 2067 | 2067 |
| Adj Flow Rate, veh/h | 63 | 696 | 2 | 1 | 650 | 30 | 2 | 4 | 2 | 26 | 0 | 86 |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Percent Heavy Veh, % | 4 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 163 | 1396 | 4 | 217 | 1332 | 61 | 43 | 49 | 18 | 158 | 0 | 119 |
| Arrive On Green | 0.06 | 0.72 | 0.71 | 0.09 | 0.75 | 0.75 | 0.06 | 0.06 | 0.06 | 0.07 | 0.00 | 0.06 |
| Sat Flow, veh/h | 1827 | 1942 | 6 | 1781 | 1774 | 82 | 88 | 766 | 284 | 1558 | 0 | 1751 |
| Grp Volume(v), veh/h | 63 | 0 | 698 | 1 | 0 | 680 | 8 | 0 | 0 | 26 | 0 | 86 |
| Grp Sat Flow(s),veh/h/ln | 1827 | 0 | 1948 | 1781 | 0 | 1856 | 1138 | 0 | 0 | 1558 | 0 | 1751 |
| Q Serve(g_s), s | 0.8 | 0.0 | 18.9 | 0.1 | 0.0 | 17.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 5.8 |
| Cycle Q Clear(g_c), s | 0.8 | 0.0 | 18.9 | 0.1 | 0.0 | 17.3 | 5.8 | 0.0 | 0.0 | 2.1 | 0.0 | 5.8 |
| Prop In Lane | 1.00 | | 0.00 | 1.00 | | 0.04 | 0.25 | | 0.25 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 163 | 0 | 1400 | 0 | 0 | 1393 | 111 | 0 | 0 | 158 | 0 | 119 |
| V/C Ratio(X) | 0.39 | 0.00 | 0.50 | 0.00 | 0.00 | 0.49 | 0.07 | 0.00 | 0.00 | 0.16 | 0.00 | 0.72 |
| Avail Cap(c_a), veh/h | 197 | 0 | 1477 | 0 | 0 | 1393 | 241 | 0 | 0 | 299 | 0 | 277 |
| 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 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 36.6 | 0.0 | 7.4 | 0.0 | 0.0 | 5.9 | 52.8 | 0.0 | 0.0 | 53.1 | 0.0 | 55.0 |
| Incr Delay (d2), s/veh | 0.6 | 0.0 | 1.3 | 0.0 | 0.0 | 1.2 | 0.1 | 0.0 | 0.0 | 0.2 | 0.0 | 3.1 |
| 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 | 1.4 | 0.0 | 7.3 | 0.0 | 0.0 | 6.1 | 0.2 | 0.0 | 0.0 | 0.8 | 0.0 | 2.7 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 37.2 | 0.0 | 8.7 | 0.0 | 0.0 | 7.1 | 52.9 | 0.0 | 0.0 | 53.3 | 0.0 | 58.1 |
| LnGrp LOS | D | A | A | A | A | A | D | A | A | D | A | E |
| Approach Vol, veh/h | | 761 | | | 681 | | | 8 | | | 112 | |
| Approach Delay, s/veh | | 11.0 | | | 7.1 | | | 52.9 | | | 57.0 | |
| Approach LOS | | B | | | A | | | D | | | E | |

| Timer - Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 15.6 | 91.2 | | 13.2 | 11.7 | 95.1 | | 13.2 |
| Change Period (Y+Rc), s | * 5.6 | * 5.6 | | * 5.4 | 5.6 | 5.6 | | * 5.4 |
| Max Green Setting (Gmax), s | * 90 | * 90 | | * 19 | 8.4 | 76.4 | | * 19 |
| Max Q Clear Time (g_c+I1), s | 2.1 | 20.9 | | 7.8 | 2.8 | 19.3 | | 7.8 |
| Green Ext Time (p_c), s | 0.0 | 3.3 | | 0.1 | 0.0 | 3.2 | | 0.0 |

Intersection Summary

| | | | |
|---|---|---|---|
| HCM 6th Ctrl Delay | | | 12.8 |
| HCM 6th LOS | | | B |

Notes

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

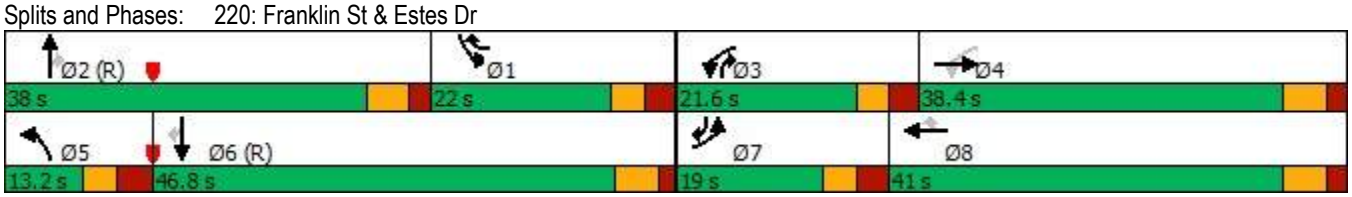
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 232 | 380 | 39 | 207 | 366 | 207 | 38 | 404 | 191 | 144 | 395 | 209 |
| Future Volume (vph) | 232 | 380 | 39 | 207 | 366 | 207 | 38 | 404 | 191 | 144 | 395 | 209 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Grade (%) | | -1% | | | 3% | | | -1% | | | 5% | |
| Storage Length (ft) | 300 | | 400 | 150 | | 0 | 150 | | 150 | 300 | | 350 |
| Storage Lanes | 2 | | 1 | 1 | | 1 | 1 | | 1 | 1 | | 1 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 0.97 | 0.95 | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 |
| Frt | | 0.986 | | | | 0.850 | | | 0.850 | | | 0.850 |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 3450 | 3507 | 0 | 1743 | 1835 | 1560 | 1778 | 3489 | 1591 | 1725 | 3417 | 1544 |
| Flt Permitted | 0.950 | | | 0.331 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (perm) | 3450 | 3507 | 0 | 607 | 1835 | 1560 | 1778 | 3489 | 1591 | 1725 | 3417 | 1544 |
| Right Turn on Red | | | No | | | No | | | No | | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (mph) | | 35 | | | 35 | | | 35 | | | 35 | |
| Link Distance (ft) | | 2406 | | | 987 | | | 1748 | | | 1202 | |
| Travel Time (s) | | 46.9 | | | 19.2 | | | 34.1 | | | 23.4 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 2% | 2% | 2% | 2% | 2% | 4% | 2% | 2% | 3% | 2% |
| Adj. Flow (vph) | 258 | 422 | 43 | 230 | 407 | 230 | 42 | 449 | 212 | 160 | 439 | 232 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 258 | 465 | 0 | 230 | 407 | 230 | 42 | 449 | 212 | 160 | 439 | 232 |
| Turn Type | Prot | NA | | D.P+P | NA | pm+ov | Prot | NA | pm+ov | Prot | NA | pm+ov |
| Protected Phases | 7 | 4 | | 3 | 8 | 1 | 5 | 2 | 3 | 1 | 6 | 7 |
| Permitted Phases | | | | 4 | | 8 | | | 2 | | | 6 |
| Detector Phase | 7 | 4 | | 3 | 8 | 1 | 5 | 2 | 3 | 1 | 6 | 7 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | | 7.0 | 7.0 | 7.0 | 7.0 | 10.0 | 7.0 | 7.0 | 10.0 | 7.0 |
| Minimum Split (s) | 12.9 | 33.9 | | 12.6 | 30.9 | 12.9 | 13.2 | 35.7 | 12.6 | 12.9 | 21.5 | 12.9 |
| Total Split (s) | 19.0 | 38.4 | | 21.6 | 41.0 | 22.0 | 13.2 | 38.0 | 21.6 | 22.0 | 46.8 | 19.0 |
| Total Split (%) | 15.8% | 32.0% | | 18.0% | 34.2% | 18.3% | 11.0% | 31.7% | 18.0% | 18.3% | 39.0% | 15.8% |
| Maximum Green (s) | 13.1 | 32.5 | | 16.0 | 35.1 | 16.1 | 7.0 | 32.3 | 16.0 | 16.1 | 41.3 | 13.1 |
| Yellow Time (s) | 3.0 | 3.9 | | 3.0 | 3.9 | 3.0 | 3.0 | 3.7 | 3.0 | 3.0 | 3.9 | 3.0 |
| All-Red Time (s) | 2.9 | 2.0 | | 2.6 | 2.0 | 2.9 | 3.2 | 2.0 | 2.6 | 2.9 | 1.6 | 2.9 |
| Lost Time Adjust (s) | -0.9 | -0.9 | | -0.6 | -0.9 | -0.9 | -1.2 | -0.7 | 0.0 | -0.9 | -0.5 | 0.0 |
| Total Lost Time (s) | 5.0 | 5.0 | | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.6 | 5.0 | 5.0 | 5.9 |
| Lead/Lag | Lead | Lag | | Lead | Lag | Lag | Lead | Lead | Lead | Lag | Lag | Lead |
| Lead-Lag Optimize? | Yes | Yes | | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Vehicle Extension (s) | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 1.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Recall Mode | None | None | | None | None | None | None | C-Min | None | None | C-Min | None |
| Walk Time (s) | | 7.0 | | | 7.0 | | | 7.0 | | | 7.0 | |
| Flash Dont Walk (s) | | 21.0 | | | 18.0 | | | 23.0 | | | 9.0 | |
| Pedestrian Calls (#/hr) | | 0 | | | 0 | | | 0 | | | 0 | |
| Act Effct Green (s) | 13.8 | 29.3 | | 44.6 | 30.9 | 47.4 | 8.3 | 38.9 | 53.0 | 16.5 | 49.7 | 67.6 |
| Actuated g/C Ratio | 0.12 | 0.24 | | 0.37 | 0.26 | 0.40 | 0.07 | 0.32 | 0.44 | 0.14 | 0.41 | 0.56 |
| v/c Ratio | 0.65 | 0.54 | | 0.62 | 0.86 | 0.37 | 0.34 | 0.40 | 0.30 | 0.68 | 0.31 | 0.27 |
| Control Delay | 52.1 | 36.7 | | 30.5 | 60.7 | 15.3 | 61.4 | 35.4 | 13.6 | 62.9 | 26.8 | 16.5 |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 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 | 52.1 | 36.7 | | 30.5 | 60.7 | 15.3 | 61.4 | 35.4 | 13.6 | 62.9 | 26.8 | 16.5 |
| LOS | D | D | | C | E | B | E | D | B | E | C | B |
| Approach Delay | | 42.2 | | | 40.7 | | | 30.4 | | | 30.9 | |
| Approach LOS | | D | | | D | | | C | | | C | |
| Queue Length 50th (ft) | 93 | 168 | | 116 | 298 | 78 | 32 | 144 | 60 | 120 | 125 | 95 |
| Queue Length 95th (ft) | 142 | 203 | | 161 | 404 | 86 | 70 | 222 | 101 | 184 | 183 | 159 |
| Internal Link Dist (ft) | | 2326 | | | 907 | | | 1668 | | | 1122 | |
| Turn Bay Length (ft) | 300 | | | 150 | | | 150 | | 150 | 300 | | 350 |
| Base Capacity (vph) | 425 | 980 | | 396 | 550 | 640 | 122 | 1189 | 725 | 264 | 1436 | 882 |
| Starvation Cap Reductn | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.61 | 0.47 | | 0.58 | 0.74 | 0.36 | 0.34 | 0.38 | 0.29 | 0.61 | 0.31 | 0.26 |

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 114 (95%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.86
Intersection Signal Delay: 36.1 Intersection LOS: D
Intersection Capacity Utilization 61.7% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 220: Franklin St & Estes Dr



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 232 | 380 | 39 | 207 | 366 | 207 | 38 | 404 | 191 | 144 | 395 | 209 |
| Future Volume (veh/h) | 232 | 380 | 39 | 207 | 366 | 207 | 38 | 404 | 191 | 144 | 395 | 209 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1909 | 1909 | 1909 | 1817 | 1817 | 1817 | 1909 | 1879 | 1909 | 1723 | 1708 | 1723 |
| Adj Flow Rate, veh/h | 258 | 422 | 43 | 230 | 407 | 230 | 42 | 449 | 212 | 160 | 439 | 232 |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 2 | 2 | 3 | 2 |
| Cap, veh/h | 341 | 748 | 76 | 370 | 456 | 888 | 98 | 573 | 441 | 534 | 1391 | 750 |
| Arrive On Green | 0.10 | 0.22 | 0.22 | 0.12 | 0.25 | 0.25 | 0.05 | 0.16 | 0.15 | 0.33 | 0.43 | 0.42 |
| Sat Flow, veh/h | 3528 | 3325 | 337 | 1731 | 1817 | 1540 | 1818 | 3571 | 1618 | 1641 | 3246 | 1460 |
| Grp Volume(v), veh/h | 258 | 229 | 236 | 230 | 407 | 230 | 42 | 449 | 212 | 160 | 439 | 232 |
| Grp Sat Flow(s),veh/h/ln | 1764 | 1814 | 1849 | 1731 | 1817 | 1540 | 1818 | 1785 | 1618 | 1641 | 1623 | 1460 |
| Q Serve(g_s), s | 8.6 | 13.5 | 13.6 | 12.0 | 25.9 | 2.8 | 2.7 | 14.5 | 4.8 | 8.7 | 10.7 | 11.0 |
| Cycle Q Clear(g_c), s | 8.6 | 13.5 | 13.6 | 12.0 | 25.9 | 2.8 | 2.7 | 14.5 | 4.8 | 8.7 | 10.7 | 11.0 |
| Prop In Lane | 1.00 | | 0.18 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 341 | 408 | 416 | 370 | 456 | 888 | 98 | 573 | 441 | 534 | 1391 | 750 |
| V/C Ratio(X) | 0.76 | 0.56 | 0.57 | 0.62 | 0.89 | 0.26 | 0.43 | 0.78 | 0.48 | 0.30 | 0.32 | 0.31 |
| Avail Cap(c_a), veh/h | 412 | 505 | 515 | 398 | 545 | 963 | 124 | 982 | 626 | 534 | 1391 | 750 |
| 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 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 52.8 | 41.3 | 41.4 | 30.7 | 43.4 | 3.9 | 55.0 | 48.4 | 14.2 | 30.3 | 22.7 | 16.9 |
| Incr Delay (d2), s/veh | 5.0 | 0.5 | 0.5 | 1.8 | 13.6 | 0.1 | 1.1 | 10.3 | 3.7 | 0.1 | 0.6 | 1.1 |
| 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 | 6.0 | 6.2 | 5.1 | 13.2 | 1.1 | 1.3 | 7.2 | 2.7 | 3.5 | 4.2 | 3.8 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 57.8 | 41.7 | 41.8 | 32.5 | 57.0 | 3.9 | 56.1 | 58.7 | 17.9 | 30.4 | 23.2 | 18.0 |
| LnGrp LOS | E | D | D | C | E | A | E | E | B | C | C | B |
| Approach Vol, veh/h | | 723 | | | 867 | | | 703 | | | 831 | |
| Approach Delay, s/veh | | 47.5 | | | 36.4 | | | 46.2 | | | 23.1 | |
| Approach LOS | | D | | | D | | | D | | | C | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 44.0 | 24.3 | 19.7 | 32.0 | 11.5 | 56.8 | 16.6 | 35.1 |
| Change Period (Y+Rc), s | * 5.9 | 5.7 | 5.6 | 5.9 | * 6.2 | * 5.9 | 5.9 | 5.9 |
| Max Green Setting (Gmax), s | * 16 | 32.3 | 16.0 | 32.5 | * 7 | * 41 | 13.1 | 35.1 |
| Max Q Clear Time (g_c+I1), s | 10.7 | 16.5 | 14.0 | 15.6 | 4.7 | 13.0 | 10.6 | 27.9 |
| Green Ext Time (p_c), s | 0.1 | 2.1 | 0.1 | 1.6 | 0.0 | 2.3 | 0.1 | 1.3 |

Intersection Summary

| | |
|---|---|
| HCM 6th Ctrl Delay | 37.7 |
| HCM 6th LOS | D |

Notes

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

| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 32 | 60 | 23 | 1341 | 916 | 5 |
| Future Volume (vph) | 32 | 60 | 23 | 1341 | 916 | 5 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | 125 | 100 | | | 0 |
| Storage Lanes | 1 | 1 | 1 | | | 0 |
| Taper Length (ft) | 100 | | 100 | | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 0.95 |
| Frt | | 0.850 | | | 0.999 | |
| Flt Protected | 0.950 | | 0.950 | | | |
| Satd. Flow (prot) | 1770 | 1538 | 1656 | 3539 | 3502 | 0 |
| Flt Permitted | 0.950 | | 0.950 | | | |
| Satd. Flow (perm) | 1770 | 1538 | 1656 | 3539 | 3502 | 0 |
| Link Speed (mph) | 30 | | | 40 | 40 | |
| Link Distance (ft) | 928 | | | 1413 | 1063 | |
| Travel Time (s) | 21.1 | | | 24.1 | 18.1 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 5% | 9% | 2% | 3% | 2% |
| Adj. Flow (vph) | 36 | 67 | 26 | 1490 | 1018 | 6 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 36 | 67 | 26 | 1490 | 1024 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No |
| Lane Alignment | Left | Right | Left | Left | Left | Right |
| Median Width(ft) | 12 | | | 12 | 12 | |
| Link Offset(ft) | 0 | | | 0 | 0 | |
| Crosswalk Width(ft) | 16 | | | 16 | 16 | |
| Two way Left Turn Lane | | | | Yes | Yes | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | 9 | 15 | | | 9 |
| Sign Control | Stop | | | Free | Free | |

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 47.1% ICU Level of Service A
Analysis Period (min) 15

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.8 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 32 | 60 | 23 | 1341 | 916 | 5 |
| Future Vol, veh/h | 32 | 60 | 23 | 1341 | 916 | 5 |
| 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 | 125 | 100 | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 2 | 5 | 9 | 2 | 3 | 2 |
| Mvmt Flow | 36 | 67 | 26 | 1490 | 1018 | 6 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 1818 | 512 | 1024 | 0 | - | 0 |
| Stage 1 | 1021 | - | - | - | - | - |
| Stage 2 | 797 | - | - | - | - | - |
| Critical Hdwy | 6.84 | 7 | 4.28 | - | - | - |
| Critical Hdwy Stg 1 | 5.84 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.84 | - | - | - | - | - |
| Follow-up Hdwy | 3.52 | 3.35 | 2.29 | - | - | - |
| Pot Cap-1 Maneuver | 69 | 499 | 633 | - | - | - |
| Stage 1 | 309 | - | - | - | - | - |
| Stage 2 | 404 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 66 | 499 | 633 | - | - | - |
| Mov Cap-2 Maneuver | 185 | - | - | - | - | - |
| Stage 1 | 296 | - | - | - | - | - |
| Stage 2 | 404 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 18.8 | 0.2 | 0 |
| HCM LOS | C | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | EBLn2 | SBT | SBR |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | 633 | - | 185 | 499 | - | - |
| HCM Lane V/C Ratio | 0.04 | - | 0.192 | 0.134 | - | - |
| HCM Control Delay (s) | 10.9 | - | 29 | 13.3 | - | - |
| HCM Lane LOS | B | - | D | B | - | - |
| HCM 95th %tile Q(veh) | 0.1 | - | 0.7 | 0.5 | - | - |

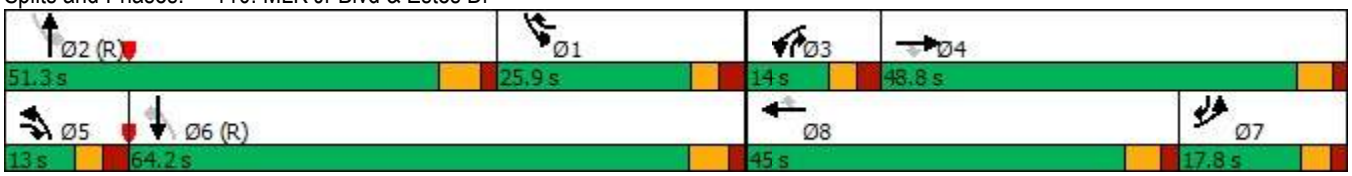
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 236 | 428 | 57 | 172 | 492 | 483 | 67 | 1091 | 215 | 286 | 692 | 207 |
| Future Volume (vph) | 236 | 428 | 57 | 172 | 492 | 483 | 67 | 1091 | 215 | 286 | 692 | 207 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Grade (%) | | 1% | | | -2% | | | 1% | | | 0% | |
| Storage Length (ft) | 300 | | 225 | 300 | | 250 | 150 | | 300 | 225 | | 150 |
| Storage Lanes | 2 | | 1 | 2 | | 1 | 1 | | 1 | 1 | | 1 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 0.97 | 1.00 | 1.00 | 0.97 | 1.00 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 |
| Frt | | | 0.850 | | | 0.850 | | | 0.850 | | | 0.850 |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 3416 | 1853 | 1575 | 3467 | 1881 | 1599 | 1761 | 3522 | 1575 | 1770 | 3505 | 1583 |
| Flt Permitted | 0.950 | | | 0.950 | | | 0.249 | | | 0.086 | | |
| Satd. Flow (perm) | 3416 | 1853 | 1575 | 3467 | 1881 | 1599 | 462 | 3522 | 1575 | 160 | 3505 | 1583 |
| Right Turn on Red | | | No | | | No | | | No | | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (mph) | | 35 | | | 35 | | | 40 | | | 40 | |
| Link Distance (ft) | | 1251 | | | 1571 | | | 1063 | | | 1514 | |
| Travel Time (s) | | 24.4 | | | 30.6 | | | 18.1 | | | 25.8 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 2% | 2% | 2% | 2% | 2% | 2% | 2% | 2% | 3% | 2% |
| Adj. Flow (vph) | 262 | 476 | 63 | 191 | 547 | 537 | 74 | 1212 | 239 | 318 | 769 | 230 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 262 | 476 | 63 | 191 | 547 | 537 | 74 | 1212 | 239 | 318 | 769 | 230 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 24 | | | 24 | | | 12 | | | 12 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | Yes | | | Yes | |
| Headway Factor | 1.01 | 1.01 | 1.01 | 0.99 | 0.99 | 0.99 | 1.01 | 1.01 | 1.01 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | 1 | 1 | 2 | 1 | 1 | 2 | 1 | 1 | 2 | 1 |
| Detector Template | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Leading Detector (ft) | 20 | 100 | 20 | 20 | 100 | 20 | 20 | 100 | 20 | 20 | 100 | 20 |
| Trailing Detector (ft) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Detector 1 Position(ft) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Detector 1 Size(ft) | 20 | 6 | 20 | 20 | 6 | 20 | 20 | 6 | 20 | 20 | 6 | 20 |
| Detector 1 Type | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (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 |
| Detector 1 Queue (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 |
| Detector 1 Delay (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 |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | 6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | Prot | NA | pm+ov | Prot | NA | pm+ov | D.P+P | NA | pm+ov | D.P+P | NA | pm+ov |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Protected Phases | 7 | 4 | 5 | 3 | 8 | 1 | 5 | 2 | 3 | 1 | 6 | 7 |
| Permitted Phases | | | 4 | | | 8 | 6 | | 2 | 2 | | 6 |
| Detector Phase | 7 | 4 | 5 | 3 | 8 | 1 | 5 | 2 | 3 | 1 | 6 | 7 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 12.0 | 7.0 | 7.0 | 12.0 | 7.0 |
| Minimum Split (s) | 11.9 | 12.5 | 12.8 | 12.4 | 12.5 | 12.8 | 12.8 | 34.0 | 12.4 | 12.8 | 18.0 | 11.9 |
| Total Split (s) | 17.8 | 48.8 | 13.0 | 14.0 | 45.0 | 25.9 | 13.0 | 51.3 | 14.0 | 25.9 | 64.2 | 17.8 |
| Total Split (%) | 12.7% | 34.9% | 9.3% | 10.0% | 32.1% | 18.5% | 9.3% | 36.6% | 10.0% | 18.5% | 45.9% | 12.7% |
| Maximum Green (s) | 12.9 | 43.3 | 7.2 | 8.6 | 39.5 | 20.1 | 7.2 | 45.3 | 8.6 | 20.1 | 58.2 | 12.9 |
| Yellow Time (s) | 3.0 | 3.8 | 3.0 | 3.0 | 3.8 | 3.0 | 3.0 | 4.3 | 3.0 | 3.0 | 4.3 | 3.0 |
| All-Red Time (s) | 1.9 | 1.7 | 2.8 | 2.4 | 1.7 | 2.8 | 2.8 | 1.7 | 2.4 | 2.8 | 1.7 | 1.9 |
| Lost Time Adjust (s) | 0.1 | -0.5 | -0.8 | -0.4 | -0.5 | -0.8 | -0.8 | -1.0 | 0.0 | -0.8 | -1.0 | 0.0 |
| Total Lost Time (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.4 | 5.0 | 5.0 | 4.9 |
| Lead/Lag | Lag | Lag | Lead | Lead | Lead | Lag | Lead | Lead | Lead | Lag | Lag | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Vehicle Extension (s) | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 2.0 | 1.0 | 1.0 | 2.0 | 1.0 |
| Recall Mode | None | None | None | None | None | None | None | C-Min | None | None | C-Min | None |
| Walk Time (s) | | | | | | | | 7.0 | | | | |
| Flash Dont Walk (s) | | | | | | | | 21.0 | | | | |
| Pedestrian Calls (#/hr) | | | | | | | | 0 | | | | |
| Act Effct Green (s) | 12.3 | 43.4 | 56.2 | 9.0 | 40.0 | 65.9 | 67.7 | 46.8 | 54.9 | 67.7 | 59.8 | 72.3 |
| Actuated g/C Ratio | 0.09 | 0.31 | 0.40 | 0.06 | 0.29 | 0.47 | 0.48 | 0.33 | 0.39 | 0.48 | 0.43 | 0.52 |
| v/c Ratio | 0.87 | 0.83 | 0.10 | 0.86 | 1.02 | 0.71 | 0.25 | 1.03 | 0.39 | 1.00 | 0.51 | 0.28 |
| Control Delay | 90.5 | 58.5 | 26.5 | 98.0 | 92.5 | 36.1 | 19.4 | 79.7 | 18.5 | 88.1 | 18.8 | 7.1 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 90.5 | 58.5 | 26.5 | 98.0 | 92.5 | 36.1 | 19.4 | 79.7 | 18.5 | 88.1 | 18.8 | 7.1 |
| LOS | F | E | C | F | F | D | B | E | B | F | B | A |
| Approach Delay | | 66.5 | | | 69.6 | | | 67.2 | | | 33.5 | |
| Approach LOS | | E | | | E | | | E | | | C | |

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 12 (9%), Referenced to phase 2:NBSB and 6:NBSB, Start of Green
Natural Cycle: 110
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.03
Intersection Signal Delay: 58.7 Intersection LOS: E
Intersection Capacity Utilization 95.3% ICU Level of Service F
Analysis Period (min) 15

Splits and Phases: 110: MLK Jr Blvd & Estes Dr



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 236 | 428 | 57 | 172 | 492 | 483 | 67 | 1091 | 215 | 286 | 692 | 207 |
| Future Volume (veh/h) | 236 | 428 | 57 | 172 | 492 | 483 | 67 | 1091 | 215 | 286 | 692 | 207 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1864 | 1864 | 1864 | 1949 | 1949 | 1949 | 1864 | 1864 | 1864 | 1870 | 1856 | 1870 |
| Adj Flow Rate, veh/h | 262 | 476 | 63 | 191 | 547 | 537 | 74 | 1212 | 239 | 318 | 769 | 230 |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 2 |
| Cap, veh/h | 305 | 586 | 584 | 231 | 557 | 792 | 397 | 1172 | 608 | 393 | 1661 | 877 |
| Arrive On Green | 0.09 | 0.31 | 0.32 | 0.06 | 0.29 | 0.29 | 0.05 | 0.33 | 0.32 | 0.38 | 0.94 | 0.93 |
| Sat Flow, veh/h | 3445 | 1864 | 1580 | 3600 | 1949 | 1651 | 1776 | 3542 | 1580 | 1781 | 3526 | 1585 |
| Grp Volume(v), veh/h | 262 | 476 | 63 | 191 | 547 | 537 | 74 | 1212 | 239 | 318 | 769 | 230 |
| Grp Sat Flow(s),veh/h/ln | 1722 | 1864 | 1580 | 1800 | 1949 | 1651 | 1776 | 1771 | 1580 | 1781 | 1763 | 1585 |
| Q Serve(g_s), s | 10.5 | 32.9 | 3.7 | 7.3 | 39.0 | 8.3 | 2.9 | 46.3 | 8.7 | 17.7 | 3.1 | 0.3 |
| Cycle Q Clear(g_c), s | 10.5 | 32.9 | 3.7 | 7.3 | 39.0 | 8.3 | 2.9 | 46.3 | 8.7 | 17.7 | 3.1 | 0.3 |
| 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 | 305 | 586 | 584 | 231 | 557 | 792 | 397 | 1172 | 608 | 393 | 1661 | 877 |
| V/C Ratio(X) | 0.86 | 0.81 | 0.11 | 0.83 | 0.98 | 0.68 | 0.19 | 1.03 | 0.39 | 0.81 | 0.46 | 0.26 |
| Avail Cap(c_a), veh/h | 315 | 586 | 584 | 231 | 557 | 792 | 404 | 1172 | 608 | 393 | 1661 | 877 |
| 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 | 0.90 | 0.90 | 0.90 |
| Uniform Delay (d), s/veh | 62.9 | 44.2 | 29.0 | 64.7 | 49.7 | 28.1 | 16.7 | 46.8 | 14.4 | 38.9 | 2.2 | 1.1 |
| Incr Delay (d2), s/veh | 18.9 | 7.9 | 0.0 | 19.9 | 33.5 | 1.9 | 0.1 | 35.6 | 1.9 | 10.1 | 0.8 | 0.7 |
| 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 | 5.4 | 16.3 | 1.4 | 4.0 | 23.9 | 14.0 | 1.2 | 25.6 | 3.3 | 8.7 | 0.9 | 0.5 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 81.9 | 52.1 | 29.0 | 84.6 | 83.1 | 30.0 | 16.8 | 82.5 | 16.3 | 49.0 | 3.1 | 1.7 |
| LnGrp LOS | F | D | C | F | F | C | B | F | B | D | A | A |
| Approach Vol, veh/h | | 801 | | | 1275 | | | 1525 | | | 1317 | |
| Approach Delay, s/veh | | 60.0 | | | 61.0 | | | 68.9 | | | 13.9 | |
| Approach LOS | | E | | | E | | | E | | | B | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 32.0 | 51.3 | 14.0 | 49.0 | 12.4 | 70.9 | 18.0 | 45.0 |
| Change Period (Y+Rc), s | * 6 | * 6 | 5.4 | 5.5 | * 5.8 | * 6 | 5.5 | * 5.5 |
| Max Green Setting (Gmax), s | * 20 | * 45 | 8.6 | 43.3 | * 7.2 | * 58 | 12.9 | * 40 |
| Max Q Clear Time (g_c+I1), s | 19.7 | 48.3 | 9.3 | 34.9 | 4.9 | 5.1 | 12.5 | 41.0 |
| Green Ext Time (p_c), s | 0.0 | 0.0 | 0.0 | 0.7 | 0.0 | 3.9 | 0.0 | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 50.7 |
| HCM 6th LOS | D |

Notes

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

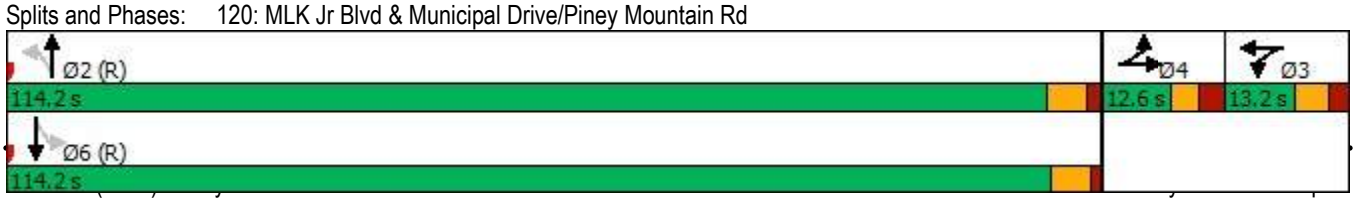
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 24 | 7 | 27 | 104 | 1 | 34 | 14 | 1655 | 141 | 45 | 1054 | 18 |
| Future Volume (vph) | 24 | 7 | 27 | 104 | 1 | 34 | 14 | 1655 | 141 | 45 | 1054 | 18 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Grade (%) | | 0% | | | 4% | | | -1% | | | 0% | |
| Storage Length (ft) | 100 | | 0 | 375 | | 0 | 150 | | 0 | 225 | | 0 |
| Storage Lanes | 1 | | 0 | 2 | | 0 | 1 | | 0 | 1 | | 0 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 0.97 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | 0.95 | 0.95 |
| Frt | | 0.882 | | | 0.854 | | | 0.988 | | | 0.997 | |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1736 | 1643 | 0 | 3364 | 1488 | 0 | 1778 | 3514 | 0 | 1770 | 3529 | 0 |
| Flt Permitted | 0.950 | | | 0.950 | | | 0.214 | | | 0.070 | | |
| Satd. Flow (perm) | 1736 | 1643 | 0 | 3364 | 1488 | 0 | 401 | 3514 | 0 | 130 | 3529 | 0 |
| Right Turn on Red | | | No | | | No | | | No | | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (mph) | | 20 | | | 35 | | | 40 | | | 40 | |
| Link Distance (ft) | | 554 | | | 663 | | | 1514 | | | 2618 | |
| Travel Time (s) | | 18.9 | | | 12.9 | | | 25.8 | | | 44.6 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 4% | 2% | 2% | 2% | 2% | 7% | 2% | 2% | 2% | 2% | 2% | 2% |
| Adj. Flow (vph) | 27 | 8 | 30 | 116 | 1 | 38 | 16 | 1839 | 157 | 50 | 1171 | 20 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 27 | 38 | 0 | 116 | 39 | 0 | 16 | 1996 | 0 | 50 | 1191 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 24 | | | 24 | | | 12 | | | 12 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | Yes | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.03 | 1.03 | 1.03 | 0.99 | 0.99 | 0.99 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | 1 | 2 | | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | | Left | Thru | | Left | Thru | | Left | Thru | |
| Leading Detector (ft) | 20 | 100 | | 20 | 100 | | 20 | 100 | | 20 | 100 | |
| Trailing Detector (ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Position(ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Size(ft) | 20 | 6 | | 20 | 6 | | 20 | 6 | | 20 | 6 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | 6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | Split | NA | | Split | NA | | Perm | NA | | Perm | NA | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Protected Phases | 4 | 4 | | 3 | 3 | | | 2 | | | 6 | |
| Permitted Phases | | | | | | | 2 | | | 6 | | |
| Detector Phase | 4 | 4 | | 3 | 3 | | 2 | 2 | | 6 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | | 7.0 | 7.0 | | 12.0 | 12.0 | | 12.0 | 12.0 | |
| Minimum Split (s) | 12.6 | 12.6 | | 12.9 | 12.9 | | 27.8 | 27.8 | | 17.5 | 17.5 | |
| Total Split (s) | 12.6 | 12.6 | | 13.2 | 13.2 | | 114.2 | 114.2 | | 114.2 | 114.2 | |
| Total Split (%) | 9.0% | 9.0% | | 9.4% | 9.4% | | 81.6% | 81.6% | | 81.6% | 81.6% | |
| Maximum Green (s) | 7.0 | 7.0 | | 7.3 | 7.3 | | 108.4 | 108.4 | | 108.7 | 108.7 | |
| Yellow Time (s) | 3.0 | 3.0 | | 3.6 | 3.6 | | 4.2 | 4.2 | | 4.2 | 4.2 | |
| All-Red Time (s) | 2.6 | 2.6 | | 2.3 | 2.3 | | 1.6 | 1.6 | | 1.3 | 1.3 | |
| Lost Time Adjust (s) | -0.6 | -0.6 | | -0.9 | -0.9 | | -0.8 | -0.8 | | -0.5 | -0.5 | |
| Total Lost Time (s) | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | |
| Lead/Lag | Lead | Lead | | Lag | Lag | | | | | | | |
| Lead-Lag Optimize? | Yes | Yes | | Yes | Yes | | | | | | | |
| Vehicle Extension (s) | 1.0 | 1.0 | | 1.0 | 1.0 | | 6.0 | 6.0 | | 6.0 | 6.0 | |
| Minimum Gap (s) | 1.0 | 1.0 | | 1.0 | 1.0 | | 6.0 | 6.0 | | 6.0 | 6.0 | |
| Time Before Reduce (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 15.0 | 15.0 | | 15.0 | 15.0 | |
| Time To Reduce (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 45.0 | 45.0 | | 45.0 | 45.0 | |
| Recall Mode | None | None | | None | None | | C-Min | C-Min | | C-Min | C-Min | |
| Walk Time (s) | | | | | | | 7.0 | 7.0 | | | | |
| Flash Dont Walk (s) | | | | | | | 15.0 | 15.0 | | | | |
| Pedestrian Calls (#/hr) | | | | | | | 0 | 0 | | | | |
| Act Effct Green (s) | 7.6 | 7.6 | | 8.1 | 8.1 | | 111.8 | 111.8 | | 111.8 | 111.8 | |
| Actuated g/C Ratio | 0.05 | 0.05 | | 0.06 | 0.06 | | 0.80 | 0.80 | | 0.80 | 0.80 | |
| v/c Ratio | 0.29 | 0.43 | | 0.60 | 0.46 | | 0.05 | 0.71 | | 0.49 | 0.42 | |
| Control Delay | 71.8 | 79.1 | | 77.6 | 81.2 | | 2.0 | 3.5 | | 36.3 | 10.0 | |
| Queue Delay | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Delay | 71.8 | 79.1 | | 77.6 | 81.2 | | 2.0 | 3.5 | | 36.3 | 10.0 | |
| LOS | E | E | | E | F | | A | A | | D | B | |
| Approach Delay | | 76.1 | | | 78.5 | | | 3.5 | | | 11.1 | |
| Approach LOS | | E | | | E | | | A | | | B | |

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.71
Intersection Signal Delay: 10.9 Intersection LOS: B
Intersection Capacity Utilization 68.2% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 120: MLK Jr Blvd & Municipal Drive/Piney Mountain Rd



HCM 6th Edition methodology expects strict NEMA phasing.

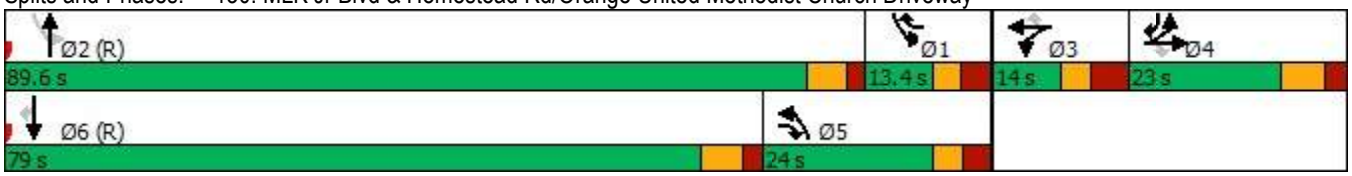
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 207 | 0 | 186 | 2 | 2 | 1 | 260 | 1453 | 0 | 7 | 929 | 195 |
| Future Volume (vph) | 207 | 0 | 186 | 2 | 2 | 1 | 260 | 1453 | 0 | 7 | 929 | 195 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 125 | | 0 | 125 | | 0 | 525 | | 0 | 250 | | 375 |
| Storage Lanes | 1 | | 1 | 2 | | 1 | 2 | | 0 | 1 | | 1 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 0.95 | 0.95 | 1.00 | 0.95 | 0.95 | 1.00 | 0.97 | 0.95 | 0.95 | 1.00 | 0.95 | 1.00 |
| Frt | | | 0.850 | | | 0.850 | | | | | | 0.850 |
| Flt Protected | 0.950 | 0.950 | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1681 | 1681 | 1583 | 1681 | 1770 | 1583 | 3433 | 3539 | 0 | 1770 | 3539 | 1583 |
| Flt Permitted | 0.950 | 0.950 | | 0.950 | | | 0.950 | | | 0.103 | | |
| Satd. Flow (perm) | 1681 | 1681 | 1583 | 1681 | 1770 | 1583 | 3433 | 3539 | 0 | 192 | 3539 | 1583 |
| Right Turn on Red | | | No | | | No | | | No | | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (mph) | | 35 | | | 20 | | | 40 | | | 40 | |
| Link Distance (ft) | | 1248 | | | 314 | | | 1137 | | | 1345 | |
| Travel Time (s) | | 24.3 | | | 10.7 | | | 19.4 | | | 22.9 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Adj. Flow (vph) | 230 | 0 | 207 | 2 | 2 | 1 | 289 | 1614 | 0 | 8 | 1032 | 217 |
| Shared Lane Traffic (%) | 50% | | | 10% | | | | | | | | |
| Lane Group Flow (vph) | 115 | 115 | 207 | 2 | 2 | 1 | 289 | 1614 | 0 | 8 | 1032 | 217 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 12 | | | 12 | | | 24 | | | 24 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | Yes | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | 1 | 1 | 2 | 1 | 1 | 2 | | 1 | 2 | 1 |
| Detector Template | Left | Thru | Right | Left | Thru | Right | Left | Thru | | Left | Thru | Right |
| Leading Detector (ft) | 20 | 100 | 20 | 20 | 100 | 20 | 20 | 100 | | 20 | 100 | 20 |
| Trailing Detector (ft) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 |
| Detector 1 Position(ft) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 |
| Detector 1 Size(ft) | 20 | 6 | 20 | 20 | 6 | 20 | 20 | 6 | | 20 | 6 | 20 |
| Detector 1 Type | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Detector 1 Queue (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Detector 1 Delay (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | 6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | Split | NA | pm+ov | Split | NA | pm+ov | Prot | NA | | D.P+P | NA | pm+ov |
| Protected Phases | 4 | 4 | 5 | 3 | 3 | 1 | 5 | 2 | | 1 | 6 | 4 |
| Permitted Phases | | | 4 | | | 3 | | | | 2 | | 6 |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Detector Phase | 4 | 4 | 5 | 3 | 3 | 1 | 5 | 2 | | 1 | 6 | 4 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 12.0 | | 7.0 | 12.0 | 7.0 |
| Minimum Split (s) | 14.1 | 14.1 | 13.3 | 13.9 | 13.9 | 13.4 | 13.3 | 28.0 | | 13.4 | 45.4 | 14.1 |
| Total Split (s) | 23.0 | 23.0 | 24.0 | 14.0 | 14.0 | 13.4 | 24.0 | 89.6 | | 13.4 | 79.0 | 23.0 |
| Total Split (%) | 16.4% | 16.4% | 17.1% | 10.0% | 10.0% | 9.6% | 17.1% | 64.0% | | 9.6% | 56.4% | 16.4% |
| Maximum Green (s) | 15.9 | 15.9 | 17.7 | 7.1 | 7.1 | 7.0 | 17.7 | 83.6 | | 7.0 | 72.6 | 15.9 |
| Yellow Time (s) | 4.5 | 4.5 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 4.2 | | 3.0 | 4.2 | 4.5 |
| All-Red Time (s) | 2.6 | 2.6 | 3.3 | 3.9 | 3.9 | 3.4 | 3.3 | 1.8 | | 3.4 | 2.2 | 2.6 |
| Lost Time Adjust (s) | -2.1 | -2.1 | -1.3 | -1.9 | -1.9 | -1.4 | -1.3 | -1.0 | | -1.4 | -1.4 | -2.1 |
| Total Lost Time (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | | 5.0 | 5.0 | 5.0 |
| Lead/Lag | Lag | Lag | Lag | Lead | Lead | Lag | Lag | Lead | | Lag | Lead | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | | Yes | Yes | Yes |
| Vehicle Extension (s) | 1.0 | 1.0 | 1.0 | 2.0 | 2.0 | 2.0 | 1.0 | 6.0 | | 2.0 | 6.0 | 1.0 |
| Minimum Gap (s) | 1.0 | 1.0 | 1.0 | 2.0 | 2.0 | 2.0 | 1.0 | 6.0 | | 2.0 | 6.0 | 1.0 |
| Time Before Reduce (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 15.0 | | 0.0 | 15.0 | 0.0 |
| Time To Reduce (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 45.0 | | 0.0 | 45.0 | 0.0 |
| Recall Mode | None | None | None | None | None | None | None | C-Min | | None | C-Min | None |
| Walk Time (s) | | | | | | | | 7.0 | | | 7.0 | |
| Flash Dont Walk (s) | | | | | | | | 15.0 | | | 32.0 | |
| Pedestrian Calls (#/hr) | | | | | | | | 0 | | | 0 | |
| Act Effct Green (s) | 14.5 | 14.5 | 41.9 | 8.9 | 8.9 | 11.2 | 23.3 | 107.3 | | 115.7 | 84.4 | 103.9 |
| Actuated g/C Ratio | 0.10 | 0.10 | 0.30 | 0.06 | 0.06 | 0.08 | 0.17 | 0.77 | | 0.83 | 0.60 | 0.74 |
| v/c Ratio | 0.66 | 0.66 | 0.44 | 0.02 | 0.02 | 0.01 | 0.51 | 0.59 | | 0.03 | 0.48 | 0.18 |
| Control Delay | 77.8 | 77.8 | 37.9 | 62.0 | 62.0 | 54.0 | 42.5 | 5.1 | | 5.1 | 18.6 | 7.0 |
| 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 | 77.8 | 77.8 | 37.9 | 62.0 | 62.0 | 54.0 | 42.5 | 5.1 | | 5.1 | 18.6 | 7.0 |
| LOS | E | E | D | E | E | D | D | A | | A | B | A |
| Approach Delay | | 58.9 | | | 60.4 | | | 10.8 | | | 16.5 | |
| Approach LOS | | E | | | E | | | B | | | B | |

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 61 (44%), Referenced to phase 2:NBSB and 6:SBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.66
Intersection Signal Delay: 18.7 Intersection LOS: B
Intersection Capacity Utilization 70.9% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 130: MLK Jr Blvd & Homestead Rd/Orange United Methodist Church Driveway



HCM 6th Edition methodology expects strict NEMA phasing.

| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 14 | 915 | 1132 | 25 | 23 | 15 |
| Future Volume (vph) | 14 | 915 | 1132 | 25 | 23 | 15 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 100 | | | 0 | 0 | 0 |
| Storage Lanes | 1 | | | 0 | 1 | 0 |
| Taper Length (ft) | 100 | | | | 100 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | | 0.997 | | 0.947 | |
| Flt Protected | 0.950 | | | | 0.971 | |
| Satd. Flow (prot) | 1770 | 1863 | 1857 | 0 | 1713 | 0 |
| Flt Permitted | 0.950 | | | | 0.971 | |
| Satd. Flow (perm) | 1770 | 1863 | 1857 | 0 | 1713 | 0 |
| Link Speed (mph) | | 35 | 35 | | 30 | |
| Link Distance (ft) | | 1571 | 840 | | 813 | |
| Travel Time (s) | | 30.6 | 16.4 | | 18.5 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Adj. Flow (vph) | 16 | 1017 | 1258 | 28 | 26 | 17 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 16 | 1017 | 1286 | 0 | 43 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Left | Right | Left | Right |
| Median Width(ft) | | 24 | 24 | | 12 | |
| Link Offset(ft) | | 0 | 0 | | 0 | |
| Crosswalk Width(ft) | | 16 | 16 | | 16 | |
| Two way Left Turn Lane | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | | 9 | 15 | 9 |
| Sign Control | | Free | Free | | Stop | |

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 71.1% ICU Level of Service C
Analysis Period (min) 15

| Intersection | |
|---|---|
| Int Delay, s/veh | 2.9 |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 14 | 915 | 1132 | 25 | 23 | 15 |
| Future Vol, veh/h | 14 | 915 | 1132 | 25 | 23 | 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 | 100 | - | - | - | 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 | 16 | 1017 | 1258 | 28 | 26 | 17 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 1286 | 0 | - | 0 | 2321 | 1272 |
| Stage 1 | - | - | - | - | 1272 | - |
| Stage 2 | - | - | - | - | 1049 | - |
| 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 | 539 | - | - | - | 41 | 205 |
| Stage 1 | - | - | - | - | 263 | - |
| Stage 2 | - | - | - | - | 337 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | 539 | - | - | - | 40 | 205 |
| Mov Cap-2 Maneuver | - | - | - | - | 40 | - |
| Stage 1 | - | - | - | - | 255 | - |
| Stage 2 | - | - | - | - | 337 | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 0.2 | 0 | 156.1 |
| HCM LOS | | | F |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|
| Capacity (veh/h) | 539 | - | - | - | 59 |
| HCM Lane V/C Ratio | 0.029 | - | - | - | 0.716 |
| HCM Control Delay (s) | 11.9 | - | - | - | 156.1 |
| HCM Lane LOS | B | - | - | - | F |
| HCM 95th %tile Q(veh) | 0.1 | - | - | - | 3.1 |

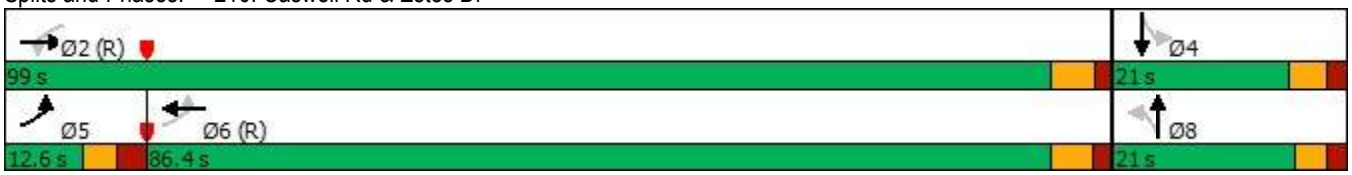
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 117 | 814 | 7 | 2 | 985 | 50 | 2 | 3 | 1 | 36 | 3 | 170 |
| Future Volume (vph) | 117 | 814 | 7 | 2 | 985 | 50 | 2 | 3 | 1 | 36 | 3 | 170 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Grade (%) | | -2% | | | 0% | | | 7% | | | -5% | |
| Storage Length (ft) | 250 | | 0 | 125 | | 0 | 0 | | 0 | 100 | | 0 |
| Storage Lanes | 1 | | 0 | 1 | | 0 | 0 | | 0 | 1 | | 0 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | 0.999 | | | 0.993 | | | 0.977 | | | 0.852 | |
| Flt Protected | 0.950 | | | 0.950 | | | | 0.984 | | 0.950 | | |
| Satd. Flow (prot) | 1787 | 1879 | 0 | 1770 | 1850 | 0 | 0 | 1728 | 0 | 1814 | 1627 | 0 |
| Flt Permitted | 0.061 | | | 0.253 | | | | 0.915 | | 0.754 | | |
| Satd. Flow (perm) | 115 | 1879 | 0 | 471 | 1850 | 0 | 0 | 1607 | 0 | 1440 | 1627 | 0 |
| Right Turn on Red | | | No | | | No | | | No | | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (mph) | | 35 | | | 35 | | | 25 | | | 25 | |
| Link Distance (ft) | | 961 | | | 940 | | | 384 | | | 262 | |
| Travel Time (s) | | 18.7 | | | 18.3 | | | 10.5 | | | 7.1 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Adj. Flow (vph) | 130 | 904 | 8 | 2 | 1094 | 56 | 2 | 3 | 1 | 40 | 3 | 189 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 130 | 912 | 0 | 2 | 1150 | 0 | 0 | 6 | 0 | 40 | 192 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 12 | | | 12 | | | 12 | | | 12 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 0.99 | 0.99 | 0.99 | 1.00 | 1.00 | 1.00 | 1.05 | 1.05 | 1.05 | 0.97 | 0.97 | 0.97 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | 1 | 2 | | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | | Left | Thru | | Left | Thru | | Left | Thru | |
| Leading Detector (ft) | 20 | 100 | | 20 | 100 | | 20 | 100 | | 20 | 100 | |
| Trailing Detector (ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Position(ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Size(ft) | 20 | 6 | | 20 | 6 | | 20 | 6 | | 20 | 6 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | 6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | D.P+P | NA | | D.Pm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | 5 | 2 | | | 6 | | | 8 | | | 4 | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Permitted Phases | 6 | | | 2 | | | 8 | | | 4 | | |
| Detector Phase | 5 | 2 | | 2 | 6 | | 8 | 8 | | 4 | 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 10.0 | | 10.0 | 10.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | |
| Minimum Split (s) | 12.6 | 21.6 | | 21.6 | 21.6 | | 11.9 | 11.9 | | 20.4 | 20.4 | |
| Total Split (s) | 12.6 | 99.0 | | 99.0 | 86.4 | | 21.0 | 21.0 | | 21.0 | 21.0 | |
| Total Split (%) | 10.5% | 82.5% | | 82.5% | 72.0% | | 17.5% | 17.5% | | 17.5% | 17.5% | |
| Maximum Green (s) | 7.0 | 93.4 | | 93.4 | 80.8 | | 16.1 | 16.1 | | 15.6 | 15.6 | |
| Yellow Time (s) | 3.0 | 4.0 | | 4.0 | 3.8 | | 3.0 | 3.0 | | 3.5 | 3.5 | |
| All-Red Time (s) | 2.6 | 1.6 | | 1.6 | 1.8 | | 1.9 | 1.9 | | 1.9 | 1.9 | |
| Lost Time Adjust (s) | -0.6 | -0.6 | | -0.6 | -0.6 | | | 0.1 | | -0.4 | -0.4 | |
| Total Lost Time (s) | 5.0 | 5.0 | | 5.0 | 5.0 | | | 5.0 | | 5.0 | 5.0 | |
| Lead/Lag | Lead | | | | Lag | | | | | | | |
| Lead-Lag Optimize? | Yes | | | | Yes | | | | | | | |
| Vehicle Extension (s) | 1.0 | 2.0 | | 2.0 | 2.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | |
| Recall Mode | None | C-Min | | C-Min | C-Min | | None | None | | None | None | |
| Walk Time (s) | | 7.0 | | 7.0 | 7.0 | | | | | 7.0 | 7.0 | |
| Flash Dont Walk (s) | | 9.0 | | 9.0 | 9.0 | | | | | 8.0 | 8.0 | |
| Pedestrian Calls (#/hr) | | 0 | | 0 | 0 | | | | | 0 | 0 | |
| Act Effct Green (s) | 89.3 | 94.3 | | 94.3 | 81.7 | | | 8.7 | | 15.7 | 15.7 | |
| Actuated g/C Ratio | 0.74 | 0.79 | | 0.79 | 0.68 | | | 0.07 | | 0.13 | 0.13 | |
| v/c Ratio | 0.68 | 0.62 | | 0.01 | 0.91 | | | 0.05 | | 0.21 | 0.91 | |
| Control Delay | 36.6 | 7.6 | | 1.5 | 20.4 | | | 50.2 | | 49.5 | 92.9 | |
| Queue Delay | 0.0 | 0.0 | | 0.0 | 0.0 | | | 0.0 | | 0.0 | 0.0 | |
| Total Delay | 36.6 | 7.6 | | 1.5 | 20.4 | | | 50.2 | | 49.5 | 92.9 | |
| LOS | D | A | | A | C | | | D | | D | F | |
| Approach Delay | | 11.3 | | | 20.4 | | | 50.2 | | | 85.4 | |
| Approach LOS | | B | | | C | | | D | | | F | |

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 67 (56%), Referenced to phase 2:EBWB and 6:EBWB, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.91
Intersection Signal Delay: 22.7 Intersection LOS: C
Intersection Capacity Utilization 84.5% ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 210: Caswell Rd & Estes Dr



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 117 | 814 | 7 | 2 | 985 | 50 | 2 | 3 | 1 | 36 | 3 | 170 |
| Future Volume (veh/h) | 117 | 814 | 7 | 2 | 985 | 50 | 2 | 3 | 1 | 36 | 3 | 170 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1949 | 1949 | 1949 | 1870 | 1870 | 1870 | 1582 | 1582 | 1582 | 2067 | 2067 | 2067 |
| Adj Flow Rate, veh/h | 130 | 904 | 8 | 2 | 1094 | 56 | 2 | 3 | 1 | 40 | 3 | 189 |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 176 | 1271 | 11 | 217 | 1208 | 62 | 47 | 51 | 12 | 188 | 3 | 220 |
| Arrive On Green | 0.06 | 0.66 | 0.65 | 0.09 | 0.68 | 0.68 | 0.12 | 0.12 | 0.12 | 0.13 | 0.13 | 0.12 |
| Sat Flow, veh/h | 1856 | 1929 | 17 | 1781 | 1764 | 90 | 59 | 415 | 95 | 1561 | 27 | 1728 |
| Grp Volume(v), veh/h | 130 | 0 | 912 | 2 | 0 | 1150 | 6 | 0 | 0 | 40 | 0 | 192 |
| Grp Sat Flow(s),veh/h/ln | 1856 | 0 | 1946 | 1781 | 0 | 1854 | 569 | 0 | 0 | 1561 | 0 | 1756 |
| Q Serve(g_s), s | 4.3 | 0.0 | 36.1 | 0.1 | 0.0 | 61.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 12.9 |
| Cycle Q Clear(g_c), s | 4.3 | 0.0 | 36.1 | 0.1 | 0.0 | 61.8 | 12.9 | 0.0 | 0.0 | 4.9 | 0.0 | 12.9 |
| Prop In Lane | 1.00 | | 0.01 | 1.00 | | 0.05 | 0.33 | | 0.17 | 1.00 | | 0.98 |
| Lane Grp Cap(c), veh/h | 176 | 0 | 1282 | 0 | 0 | 1270 | 111 | 0 | 0 | 188 | 0 | 224 |
| V/C Ratio(X) | 0.74 | 0.00 | 0.71 | 0.00 | 0.00 | 0.91 | 0.05 | 0.00 | 0.00 | 0.21 | 0.00 | 0.86 |
| Avail Cap(c_a), veh/h | 178 | 0 | 1524 | 0 | 0 | 1270 | 124 | 0 | 0 | 197 | 0 | 234 |
| 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 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 45.2 | 0.0 | 13.1 | 0.0 | 0.0 | 15.7 | 46.6 | 0.0 | 0.0 | 47.8 | 0.0 | 51.5 |
| Incr Delay (d2), s/veh | 13.1 | 0.0 | 3.4 | 0.0 | 0.0 | 10.8 | 0.1 | 0.0 | 0.0 | 0.2 | 0.0 | 23.7 |
| 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 | 0.0 | 15.4 | 0.0 | 0.0 | 26.3 | 0.2 | 0.0 | 0.0 | 1.1 | 0.0 | 7.2 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 58.4 | 0.0 | 16.5 | 0.0 | 0.0 | 26.5 | 46.7 | 0.0 | 0.0 | 48.0 | 0.0 | 75.2 |
| LnGrp LOS | E | A | B | A | A | C | D | A | A | D | A | E |
| Approach Vol, veh/h | | 1042 | | | 1152 | | | 6 | | | 232 | |
| Approach Delay, s/veh | | 21.7 | | | 26.5 | | | 46.7 | | | 70.5 | |
| Approach LOS | | C | | | C | | | D | | | E | |

| Timer - Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 15.6 | 84.1 | | 20.3 | 12.5 | 87.2 | | 20.3 |
| Change Period (Y+Rc), s | * 5.6 | * 5.6 | | * 5.4 | 5.6 | 5.6 | | * 5.4 |
| Max Green Setting (Gmax), s | * 93 | * 93 | | * 16 | 7.0 | 80.8 | | * 16 |
| Max Q Clear Time (g_c+I1), s | 2.1 | 38.1 | | 14.9 | 6.3 | 63.8 | | 14.9 |
| Green Ext Time (p_c), s | 0.0 | 5.1 | | 0.0 | 0.0 | 6.3 | | 0.0 |

Intersection Summary

| | | |
|---|---|---|
| HCM 6th Ctrl Delay | | 28.7 |
| HCM 6th LOS | | C |

Notes

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

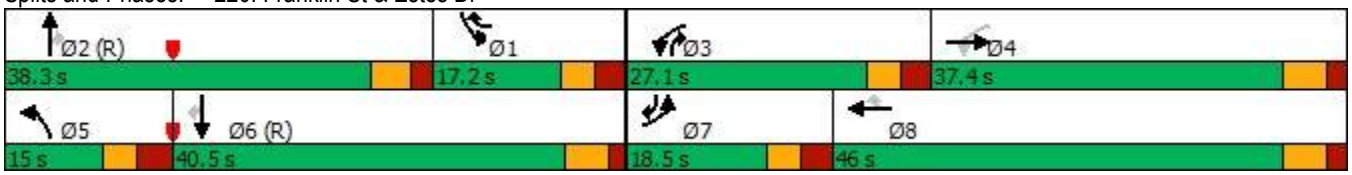
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 299 | 496 | 56 | 266 | 540 | 281 | 58 | 751 | 251 | 146 | 564 | 439 |
| Future Volume (vph) | 299 | 496 | 56 | 266 | 540 | 281 | 58 | 751 | 251 | 146 | 564 | 439 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Grade (%) | | -1% | | | 3% | | | -1% | | | 5% | |
| Storage Length (ft) | 300 | | 400 | 150 | | 0 | 150 | | 150 | 300 | | 350 |
| Storage Lanes | 2 | | 1 | 1 | | 1 | 1 | | 1 | 1 | | 1 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 0.97 | 0.95 | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 |
| Frt | | 0.985 | | | | 0.850 | | | 0.850 | | | 0.850 |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 3450 | 3504 | 0 | 1743 | 1835 | 1560 | 1778 | 3557 | 1591 | 1725 | 3451 | 1544 |
| Flt Permitted | 0.950 | | | 0.267 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (perm) | 3450 | 3504 | 0 | 490 | 1835 | 1560 | 1778 | 3557 | 1591 | 1725 | 3451 | 1544 |
| Right Turn on Red | | | No | | | No | | | No | | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (mph) | | 35 | | | 35 | | | 35 | | | 35 | |
| Link Distance (ft) | | 2406 | | | 987 | | | 1748 | | | 1202 | |
| Travel Time (s) | | 46.9 | | | 19.2 | | | 34.1 | | | 23.4 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Adj. Flow (vph) | 332 | 551 | 62 | 296 | 600 | 312 | 64 | 834 | 279 | 162 | 627 | 488 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 332 | 613 | 0 | 296 | 600 | 312 | 64 | 834 | 279 | 162 | 627 | 488 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 24 | | | 24 | | | 12 | | | 12 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | Yes | | | Yes | | | Yes | |
| Headway Factor | 0.99 | 0.99 | 0.99 | 1.02 | 1.02 | 1.02 | 0.99 | 0.99 | 0.99 | 1.03 | 1.03 | 1.03 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | 1 | 2 | 1 | 1 | 2 | 1 | 1 | 2 | 1 |
| Detector Template | Left | Thru | | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Leading Detector (ft) | 20 | 100 | | 20 | 100 | 20 | 20 | 100 | 20 | 20 | 100 | 20 |
| Trailing Detector (ft) | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Detector 1 Position(ft) | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Detector 1 Size(ft) | 20 | 6 | | 20 | 6 | 20 | 20 | 6 | 20 | 20 | 6 | 20 |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | 6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | Prot | NA | | D.P+P | NA | pm+ov | Prot | NA | pm+ov | Prot | NA | pm+ov |
| Protected Phases | 7 | 4 | | 3 | 8 | 1 | 5 | 2 | 3 | 1 | 6 | 7 |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Permitted Phases | | | | 4 | | 8 | | | 2 | | | 6 |
| Detector Phase | 7 | 4 | | 3 | 8 | 1 | 5 | 2 | 3 | 1 | 6 | 7 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | | 7.0 | 7.0 | 7.0 | 7.0 | 10.0 | 7.0 | 7.0 | 10.0 | 7.0 |
| Minimum Split (s) | 12.9 | 33.9 | | 12.6 | 30.9 | 12.9 | 13.2 | 35.7 | 12.6 | 12.9 | 21.5 | 12.9 |
| Total Split (s) | 18.5 | 37.4 | | 27.1 | 46.0 | 17.2 | 15.0 | 38.3 | 27.1 | 17.2 | 40.5 | 18.5 |
| Total Split (%) | 15.4% | 31.2% | | 22.6% | 38.3% | 14.3% | 12.5% | 31.9% | 22.6% | 14.3% | 33.8% | 15.4% |
| Maximum Green (s) | 12.6 | 31.5 | | 21.5 | 40.1 | 11.3 | 8.8 | 32.6 | 21.5 | 11.3 | 35.0 | 12.6 |
| Yellow Time (s) | 3.0 | 3.9 | | 3.0 | 3.9 | 3.0 | 3.0 | 3.7 | 3.0 | 3.0 | 3.9 | 3.0 |
| All-Red Time (s) | 2.9 | 2.0 | | 2.6 | 2.0 | 2.9 | 3.2 | 2.0 | 2.6 | 2.9 | 1.6 | 2.9 |
| Lost Time Adjust (s) | -0.9 | -0.9 | | -0.6 | -0.9 | -0.9 | -1.2 | -0.7 | 0.0 | -0.9 | -0.5 | 0.0 |
| Total Lost Time (s) | 5.0 | 5.0 | | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.6 | 5.0 | 5.0 | 5.9 |
| Lead/Lag | Lead | Lag | | Lead | Lag | Lag | Lead | Lead | Lead | Lag | Lag | Lead |
| Lead-Lag Optimize? | Yes | Yes | | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Vehicle Extension (s) | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 1.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Recall Mode | None | None | | None | None | None | None | C-Min | None | None | C-Min | None |
| Walk Time (s) | | 7.0 | | | 7.0 | | | 7.0 | | | 7.0 | |
| Flash Dont Walk (s) | | 21.0 | | | 18.0 | | | 23.0 | | | 9.0 | |
| Pedestrian Calls (#/hr) | | 0 | | | 0 | | | 0 | | | 0 | |
| Act Effct Green (s) | 13.4 | 36.6 | | 53.9 | 40.5 | 53.3 | 9.1 | 33.3 | 49.4 | 12.8 | 39.7 | 57.2 |
| Actuated g/C Ratio | 0.11 | 0.30 | | 0.45 | 0.34 | 0.44 | 0.08 | 0.28 | 0.41 | 0.11 | 0.33 | 0.48 |
| v/c Ratio | 0.86 | 0.57 | | 0.74 | 0.97 | 0.45 | 0.48 | 0.85 | 0.43 | 0.88 | 0.55 | 0.66 |
| Control Delay | 65.6 | 35.5 | | 30.8 | 69.2 | 16.1 | 65.2 | 50.3 | 15.9 | 94.7 | 36.3 | 30.9 |
| 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 | 65.6 | 35.5 | | 30.8 | 69.2 | 16.1 | 65.2 | 50.3 | 15.9 | 94.7 | 36.3 | 30.9 |
| LOS | E | D | | C | E | B | E | D | B | F | D | C |
| Approach Delay | | 46.0 | | | 46.1 | | | 43.0 | | | 41.7 | |
| Approach LOS | | D | | | D | | | D | | | D | |

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 104 (87%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 110
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.97
Intersection Signal Delay: 44.0 Intersection LOS: D
Intersection Capacity Utilization 82.5% ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 220: Franklin St & Estes Dr



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 299 | 496 | 56 | 266 | 540 | 281 | 58 | 751 | 251 | 146 | 564 | 439 |
| Future Volume (veh/h) | 299 | 496 | 56 | 266 | 540 | 281 | 58 | 751 | 251 | 146 | 564 | 439 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1909 | 1909 | 1909 | 1817 | 1817 | 1817 | 1909 | 1909 | 1909 | 1723 | 1723 | 1723 |
| Adj Flow Rate, veh/h | 332 | 551 | 62 | 296 | 600 | 312 | 64 | 834 | 279 | 162 | 627 | 488 |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 397 | 1043 | 117 | 436 | 621 | 712 | 112 | 939 | 623 | 198 | 1029 | 606 |
| Arrive On Green | 0.11 | 0.32 | 0.31 | 0.14 | 0.34 | 0.34 | 0.06 | 0.26 | 0.25 | 0.12 | 0.31 | 0.31 |
| Sat Flow, veh/h | 3528 | 3288 | 369 | 1731 | 1817 | 1540 | 1818 | 3628 | 1618 | 1641 | 3274 | 1460 |
| Grp Volume(v), veh/h | 332 | 303 | 310 | 296 | 600 | 312 | 64 | 834 | 279 | 162 | 627 | 488 |
| Grp Sat Flow(s),veh/h/ln | 1764 | 1814 | 1843 | 1731 | 1817 | 1540 | 1818 | 1814 | 1618 | 1641 | 1637 | 1460 |
| Q Serve(g_s), s | 11.1 | 16.4 | 16.6 | 13.6 | 38.9 | 4.5 | 4.1 | 26.6 | 9.0 | 11.6 | 19.5 | 35.2 |
| Cycle Q Clear(g_c), s | 11.1 | 16.4 | 16.6 | 13.6 | 38.9 | 4.5 | 4.1 | 26.6 | 9.0 | 11.6 | 19.5 | 35.2 |
| Prop In Lane | 1.00 | | 0.20 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 397 | 576 | 585 | 436 | 621 | 712 | 112 | 939 | 623 | 198 | 1029 | 606 |
| V/C Ratio(X) | 0.84 | 0.53 | 0.53 | 0.68 | 0.97 | 0.44 | 0.57 | 0.89 | 0.45 | 0.82 | 0.61 | 0.80 |
| Avail Cap(c_a), veh/h | 397 | 576 | 585 | 518 | 621 | 712 | 152 | 1007 | 653 | 198 | 1029 | 606 |
| 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 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 52.2 | 33.6 | 33.7 | 23.6 | 38.8 | 8.1 | 54.8 | 42.8 | 11.3 | 51.5 | 34.9 | 30.8 |
| Incr Delay (d2), s/veh | 13.7 | 0.5 | 0.5 | 1.8 | 27.6 | 0.2 | 1.7 | 12.3 | 2.3 | 21.9 | 2.7 | 10.9 |
| 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 | 5.6 | 7.2 | 7.4 | 5.6 | 21.6 | 2.6 | 1.9 | 13.3 | 3.4 | 5.9 | 8.0 | 13.8 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 65.9 | 34.0 | 34.2 | 25.4 | 66.4 | 8.2 | 56.5 | 55.1 | 13.6 | 73.4 | 37.6 | 41.7 |
| LnGrp LOS | E | C | C | C | E | A | E | E | B | E | D | D |
| Approach Vol, veh/h | | 945 | | | 1208 | | | 1177 | | | 1277 | |
| Approach Delay, s/veh | | 45.2 | | | 41.4 | | | 45.3 | | | 43.7 | |
| Approach LOS | | D | | | D | | | D | | | D | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 19.4 | 36.1 | 21.4 | 43.1 | 12.4 | 43.1 | 18.5 | 46.0 |
| Change Period (Y+Rc), s | * 5.9 | 5.7 | 5.6 | 5.9 | * 6.2 | * 5.9 | 5.9 | 5.9 |
| Max Green Setting (Gmax), s | * 11 | 32.6 | 21.5 | 31.5 | * 8.8 | * 35 | 12.6 | 40.1 |
| Max Q Clear Time (g_c+I1), s | 13.6 | 28.6 | 15.6 | 18.6 | 6.1 | 37.2 | 13.1 | 40.9 |
| Green Ext Time (p_c), s | 0.0 | 1.8 | 0.2 | 2.0 | 0.0 | 0.0 | 0.0 | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 43.8 |
| HCM 6th LOS | D |

Notes

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

| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 4 | 100 | 81 | 613 | 1177 | 120 |
| Future Volume (vph) | 4 | 100 | 81 | 613 | 1177 | 120 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | 125 | 100 | | | 0 |
| Storage Lanes | 1 | 1 | 1 | | | 0 |
| Taper Length (ft) | 100 | | 100 | | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 0.95 |
| Frt | | 0.850 | | | 0.986 | |
| Flt Protected | 0.950 | | 0.950 | | | |
| Satd. Flow (prot) | 1770 | 1509 | 1719 | 3343 | 3429 | 0 |
| Flt Permitted | 0.950 | | 0.950 | | | |
| Satd. Flow (perm) | 1770 | 1509 | 1719 | 3343 | 3429 | 0 |
| Link Speed (mph) | 30 | | | 40 | 40 | |
| Link Distance (ft) | 928 | | | 1413 | 1063 | |
| Travel Time (s) | 21.1 | | | 24.1 | 18.1 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 7% | 5% | 8% | 4% | 2% |
| Adj. Flow (vph) | 4 | 111 | 90 | 681 | 1308 | 133 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 4 | 111 | 90 | 681 | 1441 | 0 |
| Sign Control | Stop | | | Free | Free | |

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 54.2% ICU Level of Service A
Analysis Period (min) 15

| Intersection | |
|---|---|
| Int Delay, s/veh | 1.6 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 4 | 100 | 81 | 613 | 1177 | 120 |
| Future Vol, veh/h | 4 | 100 | 81 | 613 | 1177 | 120 |
| 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 | 125 | 100 | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 2 | 7 | 5 | 8 | 4 | 2 |
| Mvmt Flow | 4 | 111 | 90 | 681 | 1308 | 133 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 1896 | 721 | 1441 | 0 | - | 0 |
| Stage 1 | 1375 | - | - | - | - | - |
| Stage 2 | 521 | - | - | - | - | - |
| Critical Hdwy | 6.84 | 7.04 | 4.2 | - | - | - |
| Critical Hdwy Stg 1 | 5.84 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.84 | - | - | - | - | - |
| Follow-up Hdwy | 3.52 | 3.37 | 2.25 | - | - | - |
| Pot Cap-1 Maneuver | 61 | 359 | 452 | - | - | - |
| Stage 1 | 200 | - | - | - | - | - |
| Stage 2 | 561 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 49 | 359 | 452 | - | - | - |
| Mov Cap-2 Maneuver | 128 | - | - | - | - | - |
| Stage 1 | 160 | - | - | - | - | - |
| Stage 2 | 561 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 20.1 | 1.7 | 0 |
| HCM LOS | C | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | EBLn2 | SBT | SBR |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | 452 | - | 128 | 359 | - | - |
| HCM Lane V/C Ratio | 0.199 | - | 0.035 | 0.31 | - | - |
| HCM Control Delay (s) | 14.9 | - | 34.1 | 19.5 | - | - |
| HCM Lane LOS | B | - | D | C | - | - |
| HCM 95th %tile Q(veh) | 0.7 | - | 0.1 | 1.3 | - | - |

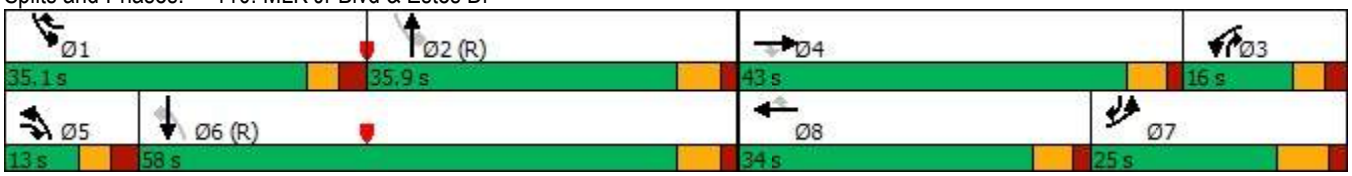
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 288 | 402 | 82 | 207 | 218 | 279 | 35 | 462 | 121 | 443 | 1008 | 227 |
| Future Volume (vph) | 288 | 402 | 82 | 207 | 218 | 279 | 35 | 462 | 121 | 443 | 1008 | 227 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Grade (%) | | 1% | | | -2% | | | 1% | | | 0% | |
| Storage Length (ft) | 300 | | 225 | 300 | | 250 | 150 | | 300 | 225 | | 150 |
| Storage Lanes | 2 | | 1 | 2 | | 1 | 1 | | 1 | 1 | | 1 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 0.97 | 1.00 | 1.00 | 0.97 | 1.00 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 |
| Frt | | | 0.850 | | | 0.850 | | | 0.850 | | | 0.850 |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 3416 | 1853 | 1575 | 3434 | 1845 | 1568 | 1761 | 3326 | 1545 | 1770 | 3471 | 1568 |
| Flt Permitted | 0.950 | | | 0.950 | | | 0.117 | | | 0.289 | | |
| Satd. Flow (perm) | 3416 | 1853 | 1575 | 3434 | 1845 | 1568 | 217 | 3326 | 1545 | 538 | 3471 | 1568 |
| Right Turn on Red | | | No | | | No | | | No | | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (mph) | | 35 | | | 35 | | | 40 | | | 40 | |
| Link Distance (ft) | | 1251 | | | 756 | | | 1063 | | | 369 | |
| Travel Time (s) | | 24.4 | | | 14.7 | | | 18.1 | | | 6.3 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 2% | 3% | 4% | 4% | 2% | 8% | 4% | 2% | 4% | 3% |
| Adj. Flow (vph) | 320 | 447 | 91 | 230 | 242 | 310 | 39 | 513 | 134 | 492 | 1120 | 252 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 320 | 447 | 91 | 230 | 242 | 310 | 39 | 513 | 134 | 492 | 1120 | 252 |
| Turn Type | Prot | NA | pm+ov | Prot | NA | pm+ov | D.P+P | NA | pm+ov | D.P+P | NA | pm+ov |
| Protected Phases | 7 | 4 | 5 | 3 | 8 | 1 | 5 | 2 | 3 | 1 | 6 | 7 |
| Permitted Phases | | | 4 | | | 8 | 6 | | 2 | 2 | | 6 |
| Detector Phase | 7 | 4 | 5 | 3 | 8 | 1 | 5 | 2 | 3 | 1 | 6 | 7 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 12.0 | 7.0 | 7.0 | 12.0 | 7.0 |
| Minimum Split (s) | 14.0 | 12.5 | 12.8 | 12.4 | 12.5 | 12.8 | 12.8 | 34.0 | 12.4 | 12.8 | 18.0 | 14.0 |
| Total Split (s) | 25.0 | 43.0 | 13.0 | 16.0 | 34.0 | 35.1 | 13.0 | 35.9 | 16.0 | 35.1 | 58.0 | 25.0 |
| Total Split (%) | 19.2% | 33.1% | 10.0% | 12.3% | 26.2% | 27.0% | 10.0% | 27.6% | 12.3% | 27.0% | 44.6% | 19.2% |
| Maximum Green (s) | 18.0 | 37.5 | 7.2 | 10.6 | 28.5 | 29.3 | 7.2 | 29.9 | 10.6 | 29.3 | 52.0 | 18.0 |
| Yellow Time (s) | 5.0 | 3.8 | 3.0 | 3.0 | 3.8 | 3.0 | 3.0 | 4.3 | 3.0 | 3.0 | 4.3 | 5.0 |
| All-Red Time (s) | 2.0 | 1.7 | 2.8 | 2.4 | 1.7 | 2.8 | 2.8 | 1.7 | 2.4 | 2.8 | 1.7 | 2.0 |
| Lost Time Adjust (s) | 0.1 | -0.5 | -0.8 | -0.4 | -0.5 | -0.8 | -0.8 | -1.0 | 0.0 | -0.8 | -1.0 | 0.0 |
| Total Lost Time (s) | 7.1 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.4 | 5.0 | 5.0 | 7.0 |
| Lead/Lag | Lag | Lead | Lead | Lag | Lead | Lead | Lead | Lag | Lag | Lead | Lag | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Vehicle Extension (s) | 3.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 2.0 | 1.0 | 1.0 | 2.0 | 3.0 |
| Recall Mode | None | None | None | None | None | None | None | C-Min | None | None | C-Min | None |
| Walk Time (s) | | | | | | | | 7.0 | | | | |
| Flash Dont Walk (s) | | | | | | | | 21.0 | | | | |
| Pedestrian Calls (#/hr) | | | | | | | | 0 | | | | |
| Act Effct Green (s) | 22.3 | 34.3 | 42.1 | 11.1 | 21.0 | 53.0 | 64.6 | 32.6 | 42.9 | 64.6 | 56.8 | 77.2 |
| Actuated g/C Ratio | 0.17 | 0.26 | 0.32 | 0.09 | 0.16 | 0.41 | 0.50 | 0.25 | 0.33 | 0.50 | 0.44 | 0.59 |
| v/c Ratio | 0.55 | 0.92 | 0.18 | 0.79 | 0.81 | 0.49 | 0.20 | 0.62 | 0.26 | 0.86 | 0.74 | 0.27 |
| Control Delay | 53.4 | 70.4 | 19.9 | 77.5 | 72.9 | 16.9 | 18.4 | 47.9 | 18.2 | 38.4 | 24.8 | 6.6 |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 53.4 | 70.4 | 19.9 | 77.5 | 72.9 | 16.9 | 18.4 | 47.9 | 18.2 | 38.4 | 24.8 | 6.6 |
| LOS | D | E | B | E | E | B | B | D | B | D | C | A |
| Approach Delay | | 58.7 | | | 52.0 | | | 40.4 | | | 26.0 | |
| Approach LOS | | E | | | D | | | D | | | C | |
| Queue Length 50th (ft) | 124 | 360 | 38 | 97 | 199 | 86 | 16 | 219 | 41 | 176 | 463 | 33 |
| Queue Length 95th (ft) | 184 | #519 | 69 | #162 | 276 | 137 | 36 | 268 | 72 | #485 | 390 | 87 |
| Internal Link Dist (ft) | | 1171 | | | 676 | | | 983 | | | 289 | |
| Turn Bay Length (ft) | 300 | | 225 | 300 | | 250 | 150 | | 300 | 225 | | 150 |
| Base Capacity (vph) | 584 | 543 | 512 | 302 | 411 | 640 | 203 | 867 | 514 | 571 | 1520 | 931 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.55 | 0.82 | 0.18 | 0.76 | 0.59 | 0.48 | 0.19 | 0.59 | 0.26 | 0.86 | 0.74 | 0.27 |

Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 5 (4%), Referenced to phase 2:NBSB and 6:NBSB, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.92
Intersection Signal Delay: 39.9 Intersection LOS: D
Intersection Capacity Utilization 81.0% ICU Level of Service D
Analysis Period (min) 15
# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 110: MLK Jr Blvd & Estes Dr



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 288 | 402 | 82 | 207 | 218 | 279 | 35 | 462 | 121 | 443 | 1008 | 227 |
| Future Volume (veh/h) | 288 | 402 | 82 | 207 | 218 | 279 | 35 | 462 | 121 | 443 | 1008 | 227 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1864 | 1864 | 1864 | 1934 | 1919 | 1919 | 1864 | 1776 | 1835 | 1870 | 1841 | 1856 |
| Adj Flow Rate, veh/h | 320 | 447 | 91 | 230 | 242 | 310 | 39 | 513 | 134 | 492 | 1120 | 252 |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 3 | 4 | 4 | 2 | 8 | 4 | 2 | 4 | 3 |
| Cap, veh/h | 651 | 480 | 485 | 292 | 281 | 618 | 278 | 888 | 519 | 569 | 1566 | 990 |
| Arrive On Green | 0.19 | 0.26 | 0.26 | 0.08 | 0.15 | 0.15 | 0.05 | 0.26 | 0.26 | 0.46 | 0.90 | 0.88 |
| Sat Flow, veh/h | 3445 | 1864 | 1580 | 3573 | 1919 | 1626 | 1776 | 3374 | 1555 | 1781 | 3497 | 1572 |
| Grp Volume(v), veh/h | 320 | 447 | 91 | 230 | 242 | 310 | 39 | 513 | 134 | 492 | 1120 | 252 |
| Grp Sat Flow(s),veh/h/ln | 1722 | 1864 | 1580 | 1786 | 1919 | 1626 | 1776 | 1687 | 1555 | 1781 | 1749 | 1572 |
| Q Serve(g_s), s | 10.8 | 30.4 | 3.8 | 8.2 | 16.0 | 9.0 | 1.5 | 17.2 | 3.3 | 28.4 | 12.1 | 0.6 |
| Cycle Q Clear(g_c), s | 10.8 | 30.4 | 3.8 | 8.2 | 16.0 | 9.0 | 1.5 | 17.2 | 3.3 | 28.4 | 12.1 | 0.6 |
| 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 | 651 | 480 | 485 | 292 | 281 | 618 | 278 | 888 | 519 | 569 | 1566 | 990 |
| V/C Ratio(X) | 0.49 | 0.93 | 0.19 | 0.79 | 0.86 | 0.50 | 0.14 | 0.58 | 0.26 | 0.86 | 0.72 | 0.25 |
| Avail Cap(c_a), veh/h | 651 | 545 | 540 | 302 | 428 | 743 | 304 | 888 | 519 | 569 | 1566 | 990 |
| 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 | 47.1 | 47.1 | 17.0 | 58.6 | 54.2 | 11.5 | 17.7 | 41.6 | 11.4 | 18.1 | 4.4 | 0.6 |
| Incr Delay (d2), s/veh | 0.6 | 20.4 | 0.1 | 11.5 | 7.1 | 0.2 | 0.1 | 2.7 | 1.2 | 12.5 | 2.8 | 0.6 |
| 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 | 4.7 | 16.7 | 1.7 | 4.2 | 8.2 | 2.9 | 0.6 | 7.4 | 1.6 | 8.7 | 2.5 | 0.4 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 47.7 | 67.5 | 17.1 | 70.0 | 61.3 | 11.8 | 17.8 | 44.4 | 12.6 | 30.7 | 7.2 | 1.2 |
| LnGrp LOS | D | E | B | E | E | B | B | D | B | C | A | A |
| Approach Vol, veh/h | | 858 | | | 782 | | | 686 | | | 1864 | |
| Approach Delay, s/veh | | 54.8 | | | 44.2 | | | 36.7 | | | 12.6 | |
| Approach LOS | | D | | | D | | | D | | | B | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 35.1 | 39.2 | 17.2 | 38.5 | 11.1 | 63.2 | 31.7 | 24.0 |
| Change Period (Y+Rc), s | * 5.8 | * 6 | 7.0 | * 5.5 | * 5.8 | * 6 | 7.0 | 5.5 |
| Max Green Setting (Gmax), s | * 29 | * 30 | 10.6 | * 38 | * 7.2 | * 52 | 18.0 | 28.5 |
| Max Q Clear Time (g_c+I1), s | 30.4 | 19.2 | 10.2 | 32.4 | 3.5 | 14.1 | 12.8 | 18.0 |
| Green Ext Time (p_c), s | 0.0 | 1.8 | 0.0 | 0.5 | 0.0 | 6.4 | 0.5 | 0.5 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 31.1 |
| HCM 6th LOS | C |

Notes

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

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 50 | 1008 | 21 | 0 | 1678 |
| Future Volume (vph) | 0 | 50 | 1008 | 21 | 0 | 1678 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Grade (%) | 0% | | -1% | | | 0% |
| Lane Util. Factor | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | 0.95 |
| Frt | | 0.865 | 0.997 | | | |
| Flt Protected | | | | | | |
| Satd. Flow (prot) | 0 | 1611 | 3546 | 0 | 0 | 3539 |
| Flt Permitted | | | | | | |
| Satd. Flow (perm) | 0 | 1611 | 3546 | 0 | 0 | 3539 |
| Link Speed (mph) | 25 | | 40 | | | 40 |
| Link Distance (ft) | 329 | | 369 | | | 1145 |
| Travel Time (s) | 9.0 | | 6.3 | | | 19.5 |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Adj. Flow (vph) | 0 | 56 | 1120 | 23 | 0 | 1864 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 56 | 1143 | 0 | 0 | 1864 |
| Sign Control | Stop | | Free | | | Free |

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 49.7% ICU Level of Service A
Analysis Period (min) 15

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

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 0 | 50 | 1008 | 21 | 0 | 1678 |
| Future Vol, veh/h | 0 | 50 | 1008 | 21 | 0 | 1678 |
| 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 | - | -1 | - | - | 0 |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 56 | 1120 | 23 | 0 | 1864 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | - | 572 | 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 | 463 | - | - | 0 | - |
| Stage 1 | 0 | - | - | - | 0 | - |
| Stage 2 | 0 | - | - | - | 0 | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | - | 463 | - | - | - | - |
| Mov Cap-2 Maneuver | - | - | - | - | - | - |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 13.8 | 0 | 0 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBT |
|---|---|---|---|---|
| Capacity (veh/h) | - | - | 463 | - |
| HCM Lane V/C Ratio | - | - | 0.12 | - |
| HCM Control Delay (s) | - | - | 13.8 | - |
| HCM Lane LOS | - | - | B | - |
| HCM 95th %tile Q(veh) | - | - | 0.4 | - |

| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 52 | 914 | 667 | 50 | 60 | 37 |
| Future Volume (vph) | 52 | 914 | 667 | 50 | 60 | 37 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Grade (%) | | 0% | -2% | | 0% | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | | 0.991 | | 0.949 | |
| Flt Protected | | 0.997 | | | 0.970 | |
| Satd. Flow (prot) | 0 | 1857 | 1864 | 0 | 1715 | 0 |
| Flt Permitted | | 0.997 | | | 0.970 | |
| Satd. Flow (perm) | 0 | 1857 | 1864 | 0 | 1715 | 0 |
| Link Speed (mph) | | 35 | 35 | | 25 | |
| Link Distance (ft) | | 756 | 815 | | 412 | |
| Travel Time (s) | | 14.7 | 15.9 | | 11.2 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Adj. Flow (vph) | 58 | 1016 | 741 | 56 | 67 | 41 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 1074 | 797 | 0 | 108 | 0 |
| Sign Control | | Free | Free | | Stop | |

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 102.8% ICU Level of Service G
Analysis Period (min) 15

| Intersection | | | | | | |
|---|---|---|---|---|---|---|
| Int Delay, s/veh | 12.3 | | | | | |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 52 | 914 | 667 | 50 | 60 | 37 |
| Future Vol, veh/h | 52 | 914 | 667 | 50 | 60 | 37 |
| 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 | -2 | - | 0 | - |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 58 | 1016 | 741 | 56 | 67 | 41 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 797 | 0 | - | 0 | 1901 | 769 |
| Stage 1 | - | - | - | - | 769 | - |
| Stage 2 | - | - | - | - | 1132 | - |
| 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 | 825 | - | - | - | 76 | 401 |
| Stage 1 | - | - | - | - | 457 | - |
| Stage 2 | - | - | - | - | 308 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | 825 | - | - | - | ~ 64 | 401 |
| Mov Cap-2 Maneuver | - | - | - | - | ~ 64 | - |
| Stage 1 | - | - | - | - | 383 | - |
| Stage 2 | - | - | - | - | 308 | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 0.5 | 0 | 220.7 |
| HCM LOS | | | F |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|
| Capacity (veh/h) | 825 | - | - | - | 94 |
| HCM Lane V/C Ratio | 0.07 | - | - | - | 1.147 |
| HCM Control Delay (s) | 9.7 | 0 | - | - | 220.7 |
| HCM Lane LOS | A | A | - | - | F |
| HCM 95th %tile Q(veh) | 0.2 | - | - | - | 7.3 |

Notes

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

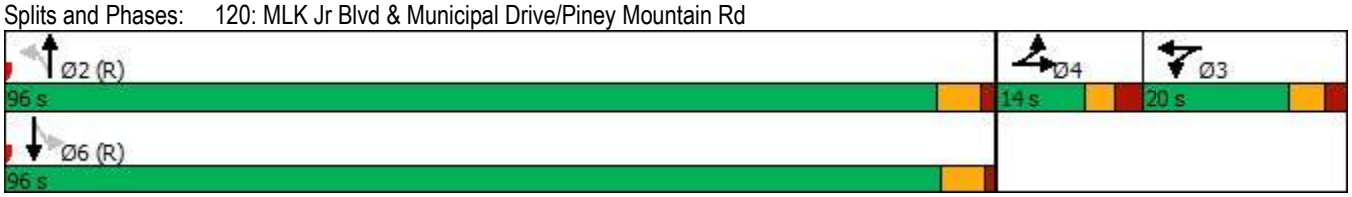
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 2 | 0 | 7 | 167 | 1 | 41 | 14 | 975 | 68 | 22 | 1504 | 2 |
| Future Volume (vph) | 2 | 0 | 7 | 167 | 1 | 41 | 14 | 975 | 68 | 22 | 1504 | 2 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Grade (%) | | 0% | | | 4% | | | -1% | | | 0% | |
| Storage Length (ft) | 100 | | 0 | 375 | | 0 | 150 | | 0 | 225 | | 0 |
| Storage Lanes | 1 | | 0 | 2 | | 0 | 1 | | 0 | 1 | | 0 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 0.97 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | 0.95 | 0.95 |
| Frt | | 0.850 | | | 0.853 | | | 0.990 | | | | |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1770 | 1252 | 0 | 3332 | 1542 | 0 | 1499 | 3419 | 0 | 1641 | 3505 | 0 |
| Flt Permitted | 0.950 | | | 0.950 | | | 0.111 | | | 0.219 | | |
| Satd. Flow (perm) | 1770 | 1252 | 0 | 3332 | 1542 | 0 | 175 | 3419 | 0 | 378 | 3505 | 0 |
| Right Turn on Red | | | No | | | No | | | No | | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (mph) | | 20 | | | 35 | | | 40 | | | 40 | |
| Link Distance (ft) | | 554 | | | 663 | | | 1145 | | | 2618 | |
| Travel Time (s) | | 18.9 | | | 12.9 | | | 19.5 | | | 44.6 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 29% | 3% | 2% | 3% | 21% | 5% | 6% | 10% | 3% | 2% |
| Adj. Flow (vph) | 2 | 0 | 8 | 186 | 1 | 46 | 16 | 1083 | 76 | 24 | 1671 | 2 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 2 | 8 | 0 | 186 | 47 | 0 | 16 | 1159 | 0 | 24 | 1673 | 0 |
| Turn Type | Split | NA | | Split | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | 4 | 4 | | 3 | 3 | | | 2 | | | 6 | |
| Permitted Phases | | | | | | | 2 | | | 6 | | |
| Detector Phase | 4 | 4 | | 3 | 3 | | 2 | 2 | | 6 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | | 7.0 | 7.0 | | 12.0 | 12.0 | | 12.0 | 12.0 | |
| Minimum Split (s) | 12.6 | 12.6 | | 12.9 | 12.9 | | 27.8 | 27.8 | | 17.5 | 17.5 | |
| Total Split (s) | 14.0 | 14.0 | | 20.0 | 20.0 | | 96.0 | 96.0 | | 96.0 | 96.0 | |
| Total Split (%) | 10.8% | 10.8% | | 15.4% | 15.4% | | 73.8% | 73.8% | | 73.8% | 73.8% | |
| Maximum Green (s) | 8.4 | 8.4 | | 14.1 | 14.1 | | 90.2 | 90.2 | | 90.5 | 90.5 | |
| Yellow Time (s) | 3.0 | 3.0 | | 3.6 | 3.6 | | 4.2 | 4.2 | | 4.2 | 4.2 | |
| All-Red Time (s) | 2.6 | 2.6 | | 2.3 | 2.3 | | 1.6 | 1.6 | | 1.3 | 1.3 | |
| Lost Time Adjust (s) | -0.6 | -0.6 | | -0.9 | -0.9 | | -0.8 | -0.8 | | -0.5 | -0.5 | |
| Total Lost Time (s) | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | |
| Lead/Lag | Lead | Lead | | Lag | Lag | | | | | | | |
| Lead-Lag Optimize? | Yes | Yes | | Yes | Yes | | | | | | | |
| Vehicle Extension (s) | 1.0 | 1.0 | | 1.0 | 1.0 | | 6.0 | 6.0 | | 6.0 | 6.0 | |
| Minimum Gap (s) | 1.0 | 1.0 | | 1.0 | 1.0 | | 6.0 | 6.0 | | 6.0 | 6.0 | |
| Time Before Reduce (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 15.0 | 15.0 | | 15.0 | 15.0 | |
| Time To Reduce (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 45.0 | 45.0 | | 45.0 | 45.0 | |
| Recall Mode | None | None | | None | None | | C-Min | C-Min | | C-Min | C-Min | |
| Walk Time (s) | | | | | | | 7.0 | 7.0 | | | | |
| Flash Dont Walk (s) | | | | | | | 15.0 | 15.0 | | | | |
| Pedestrian Calls (#/hr) | | | | | | | 0 | 0 | | | | |
| Act Effct Green (s) | 7.6 | 7.6 | | 11.6 | 11.6 | | 103.4 | 103.4 | | 103.4 | 103.4 | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Actuated g/C Ratio | 0.06 | 0.06 | | 0.09 | 0.09 | | 0.80 | 0.80 | | 0.80 | 0.80 | |
| v/c Ratio | 0.02 | 0.11 | | 0.63 | 0.34 | | 0.12 | 0.43 | | 0.08 | 0.60 | |
| Control Delay | 58.0 | 61.6 | | 66.4 | 61.6 | | 6.2 | 4.1 | | 1.7 | 4.0 | |
| Queue Delay | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Delay | 58.0 | 61.6 | | 66.4 | 61.6 | | 6.2 | 4.1 | | 1.7 | 4.0 | |
| LOS | E | E | | E | E | | A | A | | A | A | |
| Approach Delay | | 60.9 | | | 65.5 | | | 4.2 | | | 4.0 | |
| Approach LOS | | E | | | E | | | A | | | A | |
| Queue Length 50th (ft) | 2 | 7 | | 79 | 38 | | 1 | 64 | | 1 | 23 | |
| Queue Length 95th (ft) | 11 | 24 | | 116 | 77 | | m7 | 165 | | m2 | 64 | |
| Internal Link Dist (ft) | | 474 | | | 583 | | | 1065 | | | 2538 | |
| Turn Bay Length (ft) | 100 | | | 375 | | | 150 | | | 225 | | |
| Base Capacity (vph) | 122 | 86 | | 385 | 177 | | 139 | 2719 | | 300 | 2787 | |
| Starvation Cap Reductn | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Spillback Cap Reductn | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Storage Cap Reductn | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Reduced v/c Ratio | 0.02 | 0.09 | | 0.48 | 0.27 | | 0.12 | 0.43 | | 0.08 | 0.60 | |

Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 89 (68%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.63
Intersection Signal Delay: 8.8 Intersection LOS: A
Intersection Capacity Utilization 61.4% ICU Level of Service B
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 120: MLK Jr Blvd & Municipal Drive/Piney Mountain Rd



HCM 6th Edition methodology expects strict NEMA phasing.

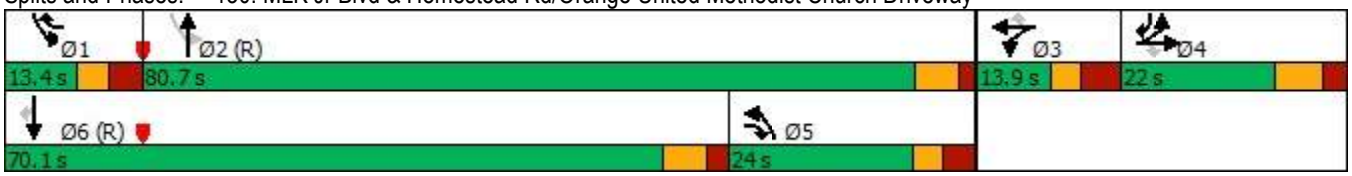
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 224 | 6 | 263 | 2 | 0 | 1 | 122 | 895 | 2 | 9 | 1263 | 123 |
| Future Volume (vph) | 224 | 6 | 263 | 2 | 0 | 1 | 122 | 895 | 2 | 9 | 1263 | 123 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 125 | | 0 | 125 | | 0 | 525 | | 0 | 250 | | 375 |
| Storage Lanes | 1 | | 1 | 2 | | 1 | 2 | | 0 | 1 | | 1 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 0.95 | 0.95 | 1.00 | 0.95 | 0.95 | 1.00 | 0.97 | 0.95 | 0.95 | 1.00 | 0.95 | 1.00 |
| Frt | | | 0.850 | | | 0.850 | | | | | | 0.850 |
| Flt Protected | 0.950 | 0.955 | | 0.950 | 0.950 | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1618 | 1630 | 1583 | 1681 | 1681 | 1583 | 3242 | 3468 | 0 | 1770 | 3505 | 1482 |
| Flt Permitted | 0.950 | 0.955 | | 0.950 | 0.950 | | 0.950 | | | 0.247 | | |
| Satd. Flow (perm) | 1618 | 1630 | 1583 | 1681 | 1681 | 1583 | 3242 | 3468 | 0 | 460 | 3505 | 1482 |
| Right Turn on Red | | | No | | | No | | | No | | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (mph) | | 35 | | | 20 | | | 40 | | | 40 | |
| Link Distance (ft) | | 1248 | | | 314 | | | 1137 | | | 1345 | |
| Travel Time (s) | | 24.3 | | | 10.7 | | | 19.4 | | | 22.9 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 6% | 2% | 2% | 2% | 2% | 2% | 8% | 4% | 50% | 2% | 3% | 9% |
| Adj. Flow (vph) | 249 | 7 | 292 | 2 | 0 | 1 | 136 | 994 | 2 | 10 | 1403 | 137 |
| Shared Lane Traffic (%) | 49% | | | 50% | | | | | | | | |
| Lane Group Flow (vph) | 127 | 129 | 292 | 1 | 1 | 1 | 136 | 996 | 0 | 10 | 1403 | 137 |
| Turn Type | Split | NA | pm+ov | Split | NA | pm+ov | Prot | NA | | D.P+P | NA | pm+ov |
| Protected Phases | 4 | 4 | 5 | 3 | 3 | 1 | 5 | 2 | | 1 | 6 | 4 |
| Permitted Phases | | | 4 | | | 3 | | | | 2 | | 6 |
| Detector Phase | 4 | 4 | 5 | 3 | 3 | 1 | 5 | 2 | | 1 | 6 | 4 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 12.0 | | 7.0 | 12.0 | 7.0 |
| Minimum Split (s) | 14.1 | 14.1 | 13.3 | 13.9 | 13.9 | 13.4 | 13.3 | 28.0 | | 13.4 | 45.4 | 14.1 |
| Total Split (s) | 22.0 | 22.0 | 24.0 | 13.9 | 13.9 | 13.4 | 24.0 | 80.7 | | 13.4 | 70.1 | 22.0 |
| Total Split (%) | 16.9% | 16.9% | 18.5% | 10.7% | 10.7% | 10.3% | 18.5% | 62.1% | | 10.3% | 53.9% | 16.9% |
| Maximum Green (s) | 14.9 | 14.9 | 17.7 | 7.0 | 7.0 | 7.0 | 17.7 | 74.7 | | 7.0 | 63.7 | 14.9 |
| Yellow Time (s) | 4.5 | 4.5 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 4.2 | | 3.0 | 4.2 | 4.5 |
| All-Red Time (s) | 2.6 | 2.6 | 3.3 | 3.9 | 3.9 | 3.4 | 3.3 | 1.8 | | 3.4 | 2.2 | 2.6 |
| Lost Time Adjust (s) | -2.1 | -2.1 | -1.3 | -1.9 | -1.9 | -1.4 | -1.3 | -1.0 | | -1.4 | -1.4 | -2.1 |
| Total Lost Time (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | | 5.0 | 5.0 | 5.0 |
| Lead/Lag | Lag | Lag | Lag | Lead | Lead | Lead | Lag | Lag | | Lead | Lead | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | | Yes | Yes | Yes |
| Vehicle Extension (s) | 1.0 | 1.0 | 1.0 | 2.0 | 2.0 | 2.0 | 1.0 | 6.0 | | 2.0 | 6.0 | 1.0 |
| Minimum Gap (s) | 1.0 | 1.0 | 1.0 | 2.0 | 2.0 | 2.0 | 1.0 | 6.0 | | 2.0 | 6.0 | 1.0 |
| Time Before Reduce (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 15.0 | | 0.0 | 15.0 | 0.0 |
| Time To Reduce (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 45.0 | | 0.0 | 45.0 | 0.0 |
| Recall Mode | None | None | None | None | None | None | None | C-Min | | None | C-Min | None |
| Walk Time (s) | | | | | | | | 7.0 | | | 7.0 | |
| Flash Dont Walk (s) | | | | | | | | 15.0 | | | 32.0 | |
| Pedestrian Calls (#/hr) | | | | | | | | 0 | | | 0 | |
| Act Effct Green (s) | 14.8 | 14.8 | 37.5 | 8.9 | 8.9 | 10.2 | 18.7 | 97.1 | | 100.4 | 78.7 | 98.5 |
| Actuated g/C Ratio | 0.11 | 0.11 | 0.29 | 0.07 | 0.07 | 0.08 | 0.14 | 0.75 | | 0.77 | 0.61 | 0.76 |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| v/c Ratio | 0.69 | 0.70 | 0.64 | 0.01 | 0.01 | 0.01 | 0.29 | 0.38 | | 0.02 | 0.66 | 0.12 |
| Control Delay | 74.4 | 74.7 | 44.5 | 57.0 | 57.0 | 41.0 | 45.6 | 5.7 | | 4.9 | 20.2 | 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 |
| Total Delay | 74.4 | 74.7 | 44.5 | 57.0 | 57.0 | 41.0 | 45.6 | 5.7 | | 4.9 | 20.2 | 5.3 |
| LOS | E | E | D | E | E | D | D | A | | A | C | A |
| Approach Delay | | 58.5 | | | 51.7 | | | 10.5 | | | 18.8 | |
| Approach LOS | | E | | | D | | | B | | | B | |
| Queue Length 50th (ft) | 109 | 110 | 210 | 1 | 1 | 1 | 38 | 80 | | 1 | 375 | 24 |
| Queue Length 95th (ft) | 181 | 182 | 253 | 7 | 7 | 5 | 72 | 305 | | 8 | 601 | 64 |
| Internal Link Dist (ft) | | 1168 | | | 234 | | | 1057 | | | 1265 | |
| Turn Bay Length (ft) | 125 | | | 125 | | | 525 | | | 250 | | 375 |
| Base Capacity (vph) | 214 | 216 | 451 | 115 | 115 | 124 | 481 | 2589 | | 440 | 2123 | 1111 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.59 | 0.60 | 0.65 | 0.01 | 0.01 | 0.01 | 0.28 | 0.38 | | 0.02 | 0.66 | 0.12 |

Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 40 (31%), Referenced to phase 2:NBSB and 6:SBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.70
Intersection Signal Delay: 22.7 Intersection LOS: C
Intersection Capacity Utilization 69.5% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 130: MLK Jr Blvd & Homestead Rd/Orange United Methodist Church Driveway



HCM 6th Edition methodology expects strict NEMA phasing.

| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 17 | 956 | 695 | 10 | 22 | 22 |
| Future Volume (vph) | 17 | 956 | 695 | 10 | 22 | 22 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 100 | | | 0 | 0 | 0 |
| Storage Lanes | 1 | | | 0 | 1 | 0 |
| Taper Length (ft) | 100 | | | | 100 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | | 0.998 | | 0.932 | |
| Flt Protected | 0.950 | | | | 0.976 | |
| Satd. Flow (prot) | 1770 | 1863 | 1841 | 0 | 1630 | 0 |
| Flt Permitted | 0.950 | | | | 0.976 | |
| Satd. Flow (perm) | 1770 | 1863 | 1841 | 0 | 1630 | 0 |
| Link Speed (mph) | | 35 | 35 | | 30 | |
| Link Distance (ft) | | 815 | 840 | | 813 | |
| Travel Time (s) | | 15.9 | 16.4 | | 18.5 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 3% | 2% | 2% | 10% |
| Adj. Flow (vph) | 19 | 1062 | 772 | 11 | 24 | 24 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 19 | 1062 | 783 | 0 | 48 | 0 |
| Sign Control | | Free | Free | | Stop | |

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 60.3% ICU Level of Service B
Analysis Period (min) 15

| Intersection | |
|---|---|
| Int Delay, s/veh | 1.4 |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 17 | 956 | 695 | 10 | 22 | 22 |
| Future Vol, veh/h | 17 | 956 | 695 | 10 | 22 | 22 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 100 | - | - | - | 0 | - |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 2 | 2 | 3 | 2 | 2 | 10 |
| Mvmt Flow | 19 | 1062 | 772 | 11 | 24 | 24 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 783 | 0 | - | 0 | 1878 | 778 |
| Stage 1 | - | - | - | - | 778 | - |
| Stage 2 | - | - | - | - | 1100 | - |
| Critical Hdwy | 4.12 | - | - | - | 6.42 | 6.3 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.42 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.42 | - |
| Follow-up Hdwy | 2.218 | - | - | - | 3.518 | 3.39 |
| Pot Cap-1 Maneuver | 835 | - | - | - | 78 | 384 |
| Stage 1 | - | - | - | - | 453 | - |
| Stage 2 | - | - | - | - | 319 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | 835 | - | - | - | 76 | 384 |
| Mov Cap-2 Maneuver | - | - | - | - | 76 | - |
| Stage 1 | - | - | - | - | 443 | - |
| Stage 2 | - | - | - | - | 319 | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 0.2 | 0 | 50.1 |
| HCM LOS | | | F |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|
| Capacity (veh/h) | 835 | - | - | - | 127 |
| HCM Lane V/C Ratio | 0.023 | - | - | - | 0.385 |
| HCM Control Delay (s) | 9.4 | - | - | - | 50.1 |
| HCM Lane LOS | A | - | - | - | F |
| HCM 95th %tile Q(veh) | 0.1 | - | - | - | 1.6 |

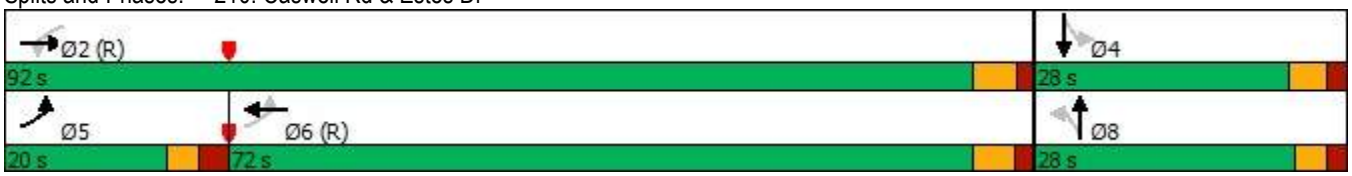
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 185 | 789 | 3 | 1 | 565 | 33 | 9 | 9 | 7 | 44 | 2 | 131 |
| Future Volume (vph) | 185 | 789 | 3 | 1 | 565 | 33 | 9 | 9 | 7 | 44 | 2 | 131 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Grade (%) | | -2% | | | 0% | | | 7% | | | -5% | |
| Storage Length (ft) | 250 | | 0 | 125 | | 0 | 0 | | 0 | 100 | | 0 |
| Storage Lanes | 1 | | 0 | 1 | | 0 | 0 | | 0 | 1 | | 0 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | 0.999 | | | 0.992 | | | 0.961 | | | 0.852 | |
| Flt Protected | 0.950 | | | 0.950 | | | | 0.982 | | 0.950 | | |
| Satd. Flow (prot) | 1787 | 1879 | 0 | 1770 | 1814 | 0 | 0 | 1696 | 0 | 1814 | 1596 | 0 |
| Flt Permitted | 0.314 | | | 0.270 | | | | 0.879 | | 0.739 | | |
| Satd. Flow (perm) | 591 | 1879 | 0 | 503 | 1814 | 0 | 0 | 1518 | 0 | 1411 | 1596 | 0 |
| Right Turn on Red | | | No | | | No | | | No | | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (mph) | | 35 | | | 35 | | | 25 | | | 25 | |
| Link Distance (ft) | | 961 | | | 940 | | | 384 | | | 262 | |
| Travel Time (s) | | 18.7 | | | 18.3 | | | 10.5 | | | 7.1 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 2% | 2% | 4% | 2% | 2% | 2% | 2% | 2% | 2% | 4% |
| Adj. Flow (vph) | 206 | 877 | 3 | 1 | 628 | 37 | 10 | 10 | 8 | 49 | 2 | 146 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 206 | 880 | 0 | 1 | 665 | 0 | 0 | 28 | 0 | 49 | 148 | 0 |
| Turn Type | D.P+P | NA | | D.Pm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | 5 | 2 | | | 6 | | | 8 | | | 4 | |
| Permitted Phases | 6 | | | 2 | | | 8 | | | 4 | | |
| Detector Phase | 5 | 2 | | 2 | 6 | | 8 | 8 | | 4 | 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 10.0 | | 10.0 | 10.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | |
| Minimum Split (s) | 12.6 | 21.6 | | 21.6 | 21.6 | | 11.9 | 11.9 | | 20.4 | 20.4 | |
| Total Split (s) | 20.0 | 92.0 | | 92.0 | 72.0 | | 28.0 | 28.0 | | 28.0 | 28.0 | |
| Total Split (%) | 16.7% | 76.7% | | 76.7% | 60.0% | | 23.3% | 23.3% | | 23.3% | 23.3% | |
| Maximum Green (s) | 14.4 | 86.4 | | 86.4 | 66.4 | | 23.1 | 23.1 | | 22.6 | 22.6 | |
| Yellow Time (s) | 3.0 | 4.0 | | 4.0 | 3.8 | | 3.0 | 3.0 | | 3.5 | 3.5 | |
| All-Red Time (s) | 2.6 | 1.6 | | 1.6 | 1.8 | | 1.9 | 1.9 | | 1.9 | 1.9 | |
| Lost Time Adjust (s) | -0.6 | -0.6 | | -0.6 | -0.6 | | | 0.1 | | -0.4 | -0.4 | |
| Total Lost Time (s) | 5.0 | 5.0 | | 5.0 | 5.0 | | | 5.0 | | 5.0 | 5.0 | |
| Lead/Lag | Lead | | | | Lag | | | | | | | |
| Lead-Lag Optimize? | Yes | | | | Yes | | | | | | | |
| Vehicle Extension (s) | 1.0 | 2.0 | | 2.0 | 2.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | |
| Recall Mode | None | C-Min | | C-Min | C-Min | | None | None | | None | None | |
| Walk Time (s) | | 7.0 | | 7.0 | 7.0 | | | | | 7.0 | 7.0 | |
| Flash Dont Walk (s) | | 9.0 | | 9.0 | 9.0 | | | | | 8.0 | 8.0 | |
| Pedestrian Calls (#/hr) | | 0 | | 0 | 0 | | | | | 0 | 0 | |
| Act Effct Green (s) | 90.0 | 95.0 | | 95.0 | 79.3 | | | 13.5 | | 15.0 | 15.0 | |
| Actuated g/C Ratio | 0.75 | 0.79 | | 0.79 | 0.66 | | | 0.11 | | 0.12 | 0.12 | |
| v/c Ratio | 0.37 | 0.59 | | 0.00 | 0.56 | | | 0.16 | | 0.28 | 0.74 | |
| Control Delay | 5.6 | 7.5 | | 2.0 | 7.6 | | | 47.0 | | 49.6 | 72.0 | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Queue Delay | 0.0 | 0.0 | | 0.0 | 0.0 | | | 0.0 | | 0.0 | 0.0 | |
| Total Delay | 5.6 | 7.5 | | 2.0 | 7.6 | | | 47.0 | | 49.6 | 72.0 | |
| LOS | A | A | | A | A | | | D | | D | E | |
| Approach Delay | | 7.2 | | | 7.6 | | | 47.0 | | | 66.4 | |
| Approach LOS | | A | | | A | | | D | | | E | |
| Queue Length 50th (ft) | 31 | 219 | | 0 | 151 | | | 20 | | 35 | 112 | |
| Queue Length 95th (ft) | 64 | 403 | | m0 | 213 | | | 46 | | 70 | 175 | |
| Internal Link Dist (ft) | | 881 | | | 860 | | | 304 | | | 182 | |
| Turn Bay Length (ft) | 250 | | | 125 | | | | | | 100 | | |
| Base Capacity (vph) | 610 | 1487 | | 398 | 1198 | | | 290 | | 270 | 305 | |
| Starvation Cap Reductn | 0 | 0 | | 0 | 0 | | | 0 | | 0 | 0 | |
| Spillback Cap Reductn | 0 | 0 | | 0 | 0 | | | 0 | | 0 | 0 | |
| Storage Cap Reductn | 0 | 0 | | 0 | 0 | | | 0 | | 0 | 0 | |
| Reduced v/c Ratio | 0.34 | 0.59 | | 0.00 | 0.56 | | | 0.10 | | 0.18 | 0.49 | |

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 105 (88%), Referenced to phase 2:EBWB and 6:EBWB, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.74
Intersection Signal Delay: 13.8 Intersection LOS: B
Intersection Capacity Utilization 71.8% ICU Level of Service C
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 210: Caswell Rd & Estes Dr



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 185 | 789 | 3 | 1 | 565 | 33 | 9 | 9 | 7 | 44 | 2 | 131 |
| Future Volume (veh/h) | 185 | 789 | 3 | 1 | 565 | 33 | 9 | 9 | 7 | 44 | 2 | 131 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1949 | 1949 | 1949 | 1870 | 1841 | 1841 | 1582 | 1582 | 1582 | 2067 | 2067 | 2067 |
| Adj Flow Rate, veh/h | 206 | 877 | 3 | 1 | 628 | 37 | 10 | 10 | 8 | 49 | 2 | 146 |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 4 | 4 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 242 | 1324 | 5 | 217 | 1157 | 68 | 49 | 38 | 19 | 180 | 2 | 181 |
| Arrive On Green | 0.10 | 0.68 | 0.68 | 0.09 | 0.67 | 0.67 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 |
| Sat Flow, veh/h | 1856 | 1941 | 7 | 1781 | 1721 | 101 | 85 | 382 | 187 | 1541 | 24 | 1731 |
| Grp Volume(v), veh/h | 206 | 0 | 880 | 1 | 0 | 665 | 28 | 0 | 0 | 49 | 0 | 148 |
| Grp Sat Flow(s),veh/h/ln | 1856 | 0 | 1947 | 1781 | 0 | 1822 | 654 | 0 | 0 | 1541 | 0 | 1755 |
| Q Serve(g_s), s | 9.1 | 0.0 | 31.5 | 0.1 | 0.0 | 22.6 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 9.9 |
| Cycle Q Clear(g_c), s | 9.1 | 0.0 | 31.5 | 0.1 | 0.0 | 22.6 | 10.0 | 0.0 | 0.0 | 5.3 | 0.0 | 9.9 |
| Prop In Lane | 1.00 | | 0.00 | 1.00 | | 0.06 | 0.36 | | 0.29 | 1.00 | | 0.99 |
| Lane Grp Cap(c), veh/h | 242 | 0 | 1328 | 0 | 0 | 1225 | 107 | 0 | 0 | 180 | 0 | 184 |
| V/C Ratio(X) | 0.85 | 0.00 | 0.66 | 0.00 | 0.00 | 0.54 | 0.26 | 0.00 | 0.00 | 0.27 | 0.00 | 0.81 |
| Avail Cap(c_a), veh/h | 292 | 0 | 1412 | 0 | 0 | 1225 | 224 | 0 | 0 | 314 | 0 | 336 |
| 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 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 45.4 | 0.0 | 11.1 | 0.0 | 0.0 | 10.2 | 49.6 | 0.0 | 0.0 | 50.5 | 0.0 | 52.7 |
| Incr Delay (d2), s/veh | 15.8 | 0.0 | 2.6 | 0.0 | 0.0 | 1.7 | 0.5 | 0.0 | 0.0 | 0.3 | 0.0 | 3.1 |
| 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 | 6.8 | 0.0 | 13.0 | 0.0 | 0.0 | 8.8 | 0.8 | 0.0 | 0.0 | 1.4 | 0.0 | 4.6 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 61.2 | 0.0 | 13.7 | 0.0 | 0.0 | 11.9 | 50.1 | 0.0 | 0.0 | 50.8 | 0.0 | 55.8 |
| LnGrp LOS | E | A | B | A | A | B | D | A | A | D | A | E |
| Approach Vol, veh/h | | 1086 | | | 666 | | | 28 | | | 197 | |
| Approach Delay, s/veh | | 22.7 | | | 11.9 | | | 50.1 | | | 54.6 | |
| Approach LOS | | C | | | B | | | D | | | D | |
| Timer - Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 | | | | |
| Phs Duration (G+Y+Rc), s | 15.6 | 86.8 | | 17.6 | 16.8 | 85.7 | | 17.6 | | | | |
| Change Period (Y+Rc), s | * 5.6 | * 5.6 | | * 5.4 | 5.6 | 5.6 | | * 5.4 | | | | |
| Max Green Setting (Gmax), s | * 86 | * 86 | | * 23 | 14.4 | 66.4 | | * 23 | | | | |
| Max Q Clear Time (g_c+I1), s | 2.1 | 33.5 | | 11.9 | 11.1 | 24.6 | | 12.0 | | | | |
| Green Ext Time (p_c), s | 0.0 | 4.7 | | 0.3 | 0.0 | 3.1 | | 0.0 | | | | |

Intersection Summary

| | |
|---|---|
| HCM 6th Ctrl Delay | 22.6 |
| HCM 6th LOS | C |

Notes

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

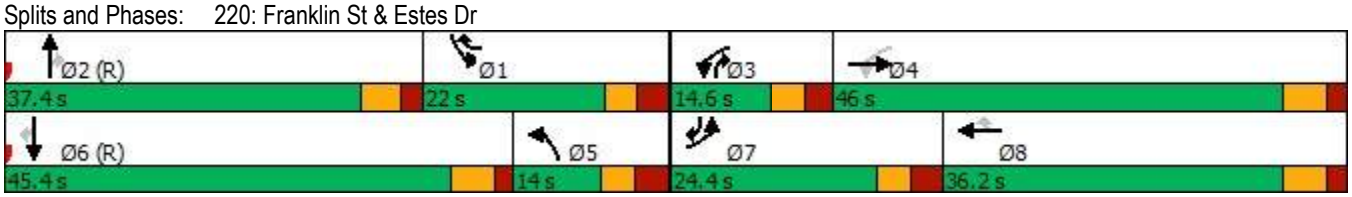
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 343 | 435 | 63 | 123 | 271 | 119 | 56 | 366 | 120 | 110 | 555 | 271 |
| Future Volume (vph) | 343 | 435 | 63 | 123 | 271 | 119 | 56 | 366 | 120 | 110 | 555 | 271 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Grade (%) | | -1% | | | 3% | | | -1% | | | 5% | |
| Storage Length (ft) | 300 | | 400 | 150 | | 0 | 150 | | 150 | 300 | | 350 |
| Storage Lanes | 2 | | 1 | 1 | | 1 | 1 | | 1 | 1 | | 1 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 0.97 | 0.95 | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 |
| Frt | | 0.981 | | | | 0.850 | | | 0.850 | | | 0.850 |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 3450 | 3489 | 0 | 1710 | 1766 | 1530 | 1778 | 3455 | 1591 | 1660 | 3417 | 1529 |
| Flt Permitted | 0.950 | | | 0.282 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (perm) | 3450 | 3489 | 0 | 507 | 1766 | 1530 | 1778 | 3455 | 1591 | 1660 | 3417 | 1529 |
| Right Turn on Red | | | No | | | No | | | No | | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (mph) | | 35 | | | 35 | | | 35 | | | 35 | |
| Link Distance (ft) | | 2406 | | | 987 | | | 1748 | | | 1202 | |
| Travel Time (s) | | 46.9 | | | 19.2 | | | 34.1 | | | 23.4 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 2% | 4% | 6% | 4% | 2% | 5% | 2% | 6% | 3% | 3% |
| Adj. Flow (vph) | 381 | 483 | 70 | 137 | 301 | 132 | 62 | 407 | 133 | 122 | 617 | 301 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 381 | 553 | 0 | 137 | 301 | 132 | 62 | 407 | 133 | 122 | 617 | 301 |
| Turn Type | Prot | NA | | D.P+P | NA | pm+ov | Prot | NA | pm+ov | Prot | NA | pm+ov |
| Protected Phases | 7 | 4 | | 3 | 8 | 1 | 5 | 2 | 3 | 1 | 6 | 7 |
| Permitted Phases | | | | 4 | | 8 | | | 2 | | | 6 |
| Detector Phase | 7 | 4 | | 3 | 8 | 1 | 5 | 2 | 3 | 1 | 6 | 7 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | | 7.0 | 7.0 | 7.0 | 7.0 | 10.0 | 7.0 | 7.0 | 10.0 | 7.0 |
| Minimum Split (s) | 12.9 | 33.9 | | 12.6 | 30.9 | 12.9 | 13.2 | 35.7 | 12.6 | 12.9 | 21.5 | 12.9 |
| Total Split (s) | 24.4 | 46.0 | | 14.6 | 36.2 | 22.0 | 14.0 | 37.4 | 14.6 | 22.0 | 45.4 | 24.4 |
| Total Split (%) | 20.3% | 38.3% | | 12.2% | 30.2% | 18.3% | 11.7% | 31.2% | 12.2% | 18.3% | 37.8% | 20.3% |
| Maximum Green (s) | 18.5 | 40.1 | | 9.0 | 30.3 | 16.1 | 7.8 | 31.7 | 9.0 | 16.1 | 39.9 | 18.5 |
| Yellow Time (s) | 3.0 | 3.9 | | 3.0 | 3.9 | 3.0 | 3.0 | 3.7 | 3.0 | 3.0 | 3.9 | 3.0 |
| All-Red Time (s) | 2.9 | 2.0 | | 2.6 | 2.0 | 2.9 | 3.2 | 2.0 | 2.6 | 2.9 | 1.6 | 2.9 |
| Lost Time Adjust (s) | -0.9 | -0.9 | | -0.6 | -0.9 | -0.9 | -1.2 | -0.7 | 0.0 | -0.9 | -0.5 | 0.0 |
| Total Lost Time (s) | 5.0 | 5.0 | | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.6 | 5.0 | 5.0 | 5.9 |
| Lead/Lag | Lead | Lag | | Lead | Lag | Lag | Lag | Lead | Lead | Lag | Lead | Lead |
| Lead-Lag Optimize? | Yes | Yes | | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Vehicle Extension (s) | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 1.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Recall Mode | None | None | | None | None | None | None | C-Min | None | None | C-Min | None |
| Walk Time (s) | | 7.0 | | | 7.0 | | | 7.0 | | | 7.0 | |
| Flash Dont Walk (s) | | 21.0 | | | 18.0 | | | 23.0 | | | 9.0 | |
| Pedestrian Calls (#/hr) | | 0 | | | 0 | | | 0 | | | 0 | |
| Act Effct Green (s) | 18.3 | 32.6 | | 43.5 | 25.2 | 40.2 | 9.6 | 41.5 | 51.1 | 15.0 | 49.6 | 67.3 |
| Actuated g/C Ratio | 0.15 | 0.27 | | 0.36 | 0.21 | 0.34 | 0.08 | 0.35 | 0.43 | 0.12 | 0.41 | 0.56 |
| v/c Ratio | 0.72 | 0.58 | | 0.47 | 0.81 | 0.26 | 0.44 | 0.34 | 0.20 | 0.59 | 0.44 | 0.35 |
| Control Delay | 54.8 | 34.3 | | 27.0 | 62.2 | 15.7 | 61.9 | 33.3 | 14.2 | 60.0 | 29.5 | 10.9 |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 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 | 54.8 | 34.3 | | 27.0 | 62.2 | 15.7 | 61.9 | 33.3 | 14.2 | 60.0 | 29.5 | 10.9 |
| LOS | D | C | | C | E | B | E | C | B | E | C | B |
| Approach Delay | | 42.7 | | | 43.0 | | | 32.0 | | | 27.7 | |
| Approach LOS | | D | | | D | | | C | | | C | |
| Queue Length 50th (ft) | 124 | 198 | | 67 | 223 | 46 | 47 | 122 | 38 | 91 | 184 | 80 |
| Queue Length 95th (ft) | 172 | 190 | | 96 | 308 | 48 | 91 | 205 | 78 | 145 | 285 | 141 |
| Internal Link Dist (ft) | | 2326 | | | 907 | | | 1668 | | | 1122 | |
| Turn Bay Length (ft) | 300 | | | 150 | | | 150 | | 150 | 300 | | 350 |
| Base Capacity (vph) | 581 | 1192 | | 297 | 459 | 552 | 147 | 1242 | 682 | 251 | 1450 | 881 |
| Starvation Cap Reductn | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.66 | 0.46 | | 0.46 | 0.66 | 0.24 | 0.42 | 0.33 | 0.20 | 0.49 | 0.43 | 0.34 |

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 68 (57%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.81
Intersection Signal Delay: 35.8 Intersection LOS: D
Intersection Capacity Utilization 61.9% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 220: Franklin St & Estes Dr



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 343 | 435 | 63 | 123 | 271 | 119 | 56 | 366 | 120 | 110 | 555 | 271 |
| Future Volume (veh/h) | 343 | 435 | 63 | 123 | 271 | 119 | 56 | 366 | 120 | 110 | 555 | 271 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1909 | 1909 | 1909 | 1788 | 1758 | 1788 | 1909 | 1864 | 1909 | 1664 | 1708 | 1708 |
| Adj Flow Rate, veh/h | 381 | 483 | 70 | 137 | 301 | 132 | 62 | 407 | 133 | 122 | 617 | 301 |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 4 | 6 | 4 | 2 | 5 | 2 | 6 | 3 | 3 |
| Cap, veh/h | 465 | 794 | 115 | 287 | 347 | 835 | 503 | 524 | 351 | 560 | 738 | 503 |
| Arrive On Green | 0.13 | 0.25 | 0.24 | 0.08 | 0.20 | 0.20 | 0.28 | 0.15 | 0.14 | 0.35 | 0.23 | 0.22 |
| Sat Flow, veh/h | 3528 | 3182 | 459 | 1703 | 1758 | 1515 | 1818 | 3542 | 1618 | 1585 | 3246 | 1448 |
| Grp Volume(v), veh/h | 381 | 274 | 279 | 137 | 301 | 132 | 62 | 407 | 133 | 122 | 617 | 301 |
| Grp Sat Flow(s),veh/h/ln | 1764 | 1814 | 1827 | 1703 | 1758 | 1515 | 1818 | 1771 | 1618 | 1585 | 1623 | 1448 |
| Q Serve(g_s), s | 12.6 | 16.1 | 16.2 | 7.1 | 19.9 | 1.9 | 3.1 | 13.3 | 3.1 | 6.5 | 21.8 | 7.5 |
| Cycle Q Clear(g_c), s | 12.6 | 16.1 | 16.2 | 7.1 | 19.9 | 1.9 | 3.1 | 13.3 | 3.1 | 6.5 | 21.8 | 7.5 |
| Prop In Lane | 1.00 | | 0.25 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 465 | 453 | 456 | 287 | 347 | 835 | 503 | 524 | 351 | 560 | 738 | 503 |
| V/C Ratio(X) | 0.82 | 0.61 | 0.61 | 0.48 | 0.87 | 0.16 | 0.12 | 0.78 | 0.38 | 0.22 | 0.84 | 0.60 |
| Avail Cap(c_a), veh/h | 570 | 620 | 624 | 288 | 457 | 930 | 503 | 956 | 548 | 560 | 1093 | 661 |
| 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 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 50.7 | 39.8 | 40.0 | 30.9 | 46.6 | 4.0 | 32.5 | 49.2 | 15.9 | 27.2 | 44.2 | 12.0 |
| Incr Delay (d2), s/veh | 6.3 | 0.5 | 0.5 | 0.5 | 10.7 | 0.0 | 0.0 | 10.8 | 3.1 | 0.1 | 10.9 | 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 | 5.9 | 7.1 | 7.3 | 2.9 | 9.6 | 0.8 | 1.4 | 6.6 | 1.8 | 2.4 | 9.7 | 3.6 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 57.0 | 40.3 | 40.5 | 31.3 | 57.3 | 4.0 | 32.5 | 60.0 | 19.0 | 27.2 | 55.1 | 17.2 |
| LnGrp LOS | E | D | D | C | E | A | C | E | B | C | E | B |
| Approach Vol, veh/h | | 934 | | | 570 | | | 602 | | | 1040 | |
| Approach Delay, s/veh | | 47.2 | | | 38.7 | | | 48.1 | | | 40.8 | |
| Approach LOS | | D | | | D | | | D | | | D | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 47.7 | 22.7 | 14.6 | 35.0 | 38.2 | 32.3 | 20.8 | 28.7 |
| Change Period (Y+Rc), s | * 6.2 | * 5.7 | 5.6 | 5.9 | * 6.2 | * 5.5 | 5.9 | 5.9 |
| Max Green Setting (Gmax), s | * 16 | * 32 | 9.0 | 40.1 | * 7.8 | * 40 | 18.5 | 30.3 |
| Max Q Clear Time (g_c+I1), s | 8.5 | 15.3 | 9.1 | 18.2 | 5.1 | 23.8 | 14.6 | 21.9 |
| Green Ext Time (p_c), s | 0.1 | 1.8 | 0.0 | 2.0 | 0.0 | 3.0 | 0.3 | 0.9 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 43.7 |
| HCM 6th LOS | D |

Notes

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

| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 19 | 62 | 80 | 639 | 613 | 33 |
| Future Volume (vph) | 19 | 62 | 80 | 639 | 613 | 33 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | 125 | 100 | | | 0 |
| Storage Lanes | 1 | 1 | 1 | | | 0 |
| Taper Length (ft) | 100 | | 100 | | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 0.95 |
| Frt | | 0.850 | | | 0.992 | |
| Flt Protected | 0.950 | | 0.950 | | | |
| Satd. Flow (prot) | 1719 | 1538 | 1752 | 3438 | 3445 | 0 |
| Flt Permitted | 0.950 | | 0.950 | | | |
| Satd. Flow (perm) | 1719 | 1538 | 1752 | 3438 | 3445 | 0 |
| Link Speed (mph) | 30 | | | 40 | 40 | |
| Link Distance (ft) | 928 | | | 1413 | 1063 | |
| Travel Time (s) | 21.1 | | | 24.1 | 18.1 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 5% | 5% | 3% | 5% | 4% | 3% |
| Adj. Flow (vph) | 21 | 69 | 89 | 710 | 681 | 37 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 21 | 69 | 89 | 710 | 718 | 0 |
| Sign Control | Stop | | | Free | Free | |

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 35.8% ICU Level of Service A
Analysis Period (min) 15

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

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 19 | 62 | 80 | 639 | 613 | 33 |
| Future Vol, veh/h | 19 | 62 | 80 | 639 | 613 | 33 |
| 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 | 125 | 100 | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 5 | 5 | 3 | 5 | 4 | 3 |
| Mvmt Flow | 21 | 69 | 89 | 710 | 681 | 37 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 1233 | 359 | 718 | 0 | - | 0 |
| Stage 1 | 700 | - | - | - | - | - |
| Stage 2 | 533 | - | - | - | - | - |
| Critical Hdwy | 6.9 | 7 | 4.16 | - | - | - |
| Critical Hdwy Stg 1 | 5.9 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.9 | - | - | - | - | - |
| Follow-up Hdwy | 3.55 | 3.35 | 2.23 | - | - | - |
| Pot Cap-1 Maneuver | 165 | 629 | 872 | - | - | - |
| Stage 1 | 446 | - | - | - | - | - |
| Stage 2 | 544 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 148 | 629 | 872 | - | - | - |
| Mov Cap-2 Maneuver | 276 | - | - | - | - | - |
| Stage 1 | 401 | - | - | - | - | - |
| Stage 2 | 544 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 13.2 | 1.1 | 0 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | EBLn2 | SBT | SBR |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | 872 | - | 276 | 629 | - | - |
| HCM Lane V/C Ratio | 0.102 | - | 0.076 | 0.11 | - | - |
| HCM Control Delay (s) | 9.6 | - | 19.1 | 11.4 | - | - |
| HCM Lane LOS | A | - | C | B | - | - |
| HCM 95th %tile Q(veh) | 0.3 | - | 0.2 | 0.4 | - | - |

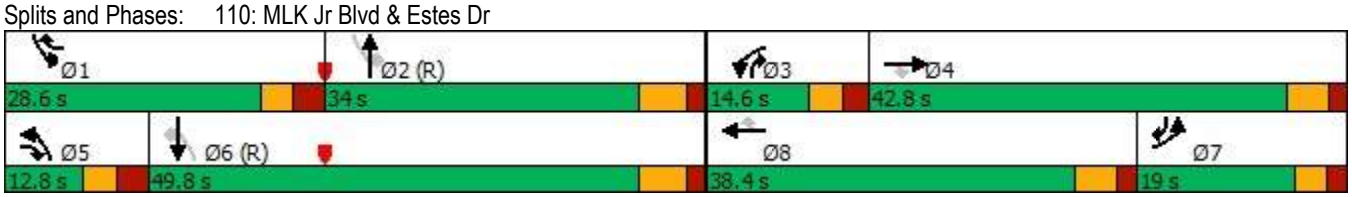
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 195 | 316 | 26 | 138 | 308 | 239 | 42 | 500 | 116 | 289 | 482 | 166 |
| Future Volume (vph) | 195 | 316 | 26 | 138 | 308 | 239 | 42 | 500 | 116 | 289 | 482 | 166 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Grade (%) | | 1% | | | -2% | | | 1% | | | 0% | |
| Storage Length (ft) | 300 | | 225 | 300 | | 250 | 150 | | 300 | 225 | | 150 |
| Storage Lanes | 2 | | 1 | 2 | | 1 | 1 | | 1 | 1 | | 1 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 0.97 | 1.00 | 1.00 | 0.97 | 1.00 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 |
| Frt | | | 0.850 | | | 0.850 | | | 0.850 | | | 0.850 |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 3416 | 1853 | 1488 | 3434 | 1881 | 1599 | 1604 | 3421 | 1575 | 1736 | 3406 | 1553 |
| Flt Permitted | 0.950 | | | 0.950 | | | 0.399 | | | 0.338 | | |
| Satd. Flow (perm) | 3416 | 1853 | 1488 | 3434 | 1881 | 1599 | 673 | 3421 | 1575 | 617 | 3406 | 1553 |
| Right Turn on Red | | | No | | | No | | | No | | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (mph) | | 35 | | | 35 | | | 40 | | | 40 | |
| Link Distance (ft) | | 1251 | | | 768 | | | 1063 | | | 363 | |
| Travel Time (s) | | 24.4 | | | 15.0 | | | 18.1 | | | 6.2 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 8% | 3% | 2% | 2% | 12% | 5% | 2% | 4% | 6% | 4% |
| Adj. Flow (vph) | 217 | 351 | 29 | 153 | 342 | 266 | 47 | 556 | 129 | 321 | 536 | 184 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 217 | 351 | 29 | 153 | 342 | 266 | 47 | 556 | 129 | 321 | 536 | 184 |
| Turn Type | Prot | NA | pm+ov | Prot | NA | pm+ov | D.P+P | NA | pm+ov | D.P+P | NA | pm+ov |
| Protected Phases | 7 | 4 | 5 | 3 | 8 | 1 | 5 | 2 | 3 | 1 | 6 | 7 |
| Permitted Phases | | | 4 | | | 8 | 6 | | 2 | 2 | | 6 |
| Detector Phase | 7 | 4 | 5 | 3 | 8 | 1 | 5 | 2 | 3 | 1 | 6 | 7 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 12.0 | 7.0 | 7.0 | 12.0 | 7.0 |
| Minimum Split (s) | 11.9 | 12.5 | 12.8 | 12.4 | 12.5 | 12.8 | 12.8 | 34.0 | 12.4 | 12.8 | 18.0 | 11.9 |
| Total Split (s) | 19.0 | 42.8 | 12.8 | 14.6 | 38.4 | 28.6 | 12.8 | 34.0 | 14.6 | 28.6 | 49.8 | 19.0 |
| Total Split (%) | 15.8% | 35.7% | 10.7% | 12.2% | 32.0% | 23.8% | 10.7% | 28.3% | 12.2% | 23.8% | 41.5% | 15.8% |
| Maximum Green (s) | 14.1 | 37.3 | 7.0 | 9.2 | 32.9 | 22.8 | 7.0 | 28.0 | 9.2 | 22.8 | 43.8 | 14.1 |
| Yellow Time (s) | 3.0 | 3.8 | 3.0 | 3.0 | 3.8 | 3.0 | 3.0 | 4.3 | 3.0 | 3.0 | 4.3 | 3.0 |
| All-Red Time (s) | 1.9 | 1.7 | 2.8 | 2.4 | 1.7 | 2.8 | 2.8 | 1.7 | 2.4 | 2.8 | 1.7 | 1.9 |
| Lost Time Adjust (s) | 0.1 | -0.5 | -0.8 | -0.4 | -0.5 | -0.8 | -0.8 | -1.0 | 0.0 | -0.8 | -1.0 | 0.0 |
| Total Lost Time (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.4 | 5.0 | 5.0 | 4.9 |
| Lead/Lag | Lag | Lag | Lead | Lead | Lead | Lead | Lead | Lag | Lead | Lead | Lag | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Vehicle Extension (s) | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 2.0 | 1.0 | 1.0 | 2.0 | 1.0 |
| Recall Mode | None | None | None | None | None | None | None | C-Min | None | None | C-Min | None |
| Walk Time (s) | | | | | | | | 7.0 | | | | |
| Flash Dont Walk (s) | | | | | | | | 21.0 | | | | |
| Pedestrian Calls (#/hr) | | | | | | | | 0 | | | | |
| Act Effct Green (s) | 11.0 | 27.9 | 40.7 | 8.9 | 25.8 | 46.5 | 64.2 | 42.5 | 56.0 | 63.2 | 58.0 | 70.2 |
| Actuated g/C Ratio | 0.09 | 0.23 | 0.34 | 0.07 | 0.22 | 0.39 | 0.54 | 0.35 | 0.47 | 0.53 | 0.48 | 0.58 |
| v/c Ratio | 0.69 | 0.82 | 0.06 | 0.60 | 0.85 | 0.43 | 0.11 | 0.46 | 0.18 | 0.62 | 0.33 | 0.20 |
| Control Delay | 64.6 | 58.3 | 24.1 | 56.3 | 52.9 | 11.1 | 14.9 | 33.9 | 22.4 | 24.8 | 15.6 | 5.7 |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 64.6 | 58.3 | 24.1 | 56.3 | 52.9 | 11.1 | 14.9 | 33.9 | 22.4 | 24.8 | 15.6 | 5.7 |
| LOS | E | E | C | E | D | B | B | C | C | C | B | A |
| Approach Delay | | 58.9 | | | 39.0 | | | 30.7 | | | 16.7 | |
| Approach LOS | | E | | | D | | | C | | | B | |
| Queue Length 50th (ft) | 85 | 260 | 15 | 52 | 257 | 95 | 15 | 176 | 57 | 91 | 141 | 34 |
| Queue Length 95th (ft) | 124 | 331 | 32 | 90 | 345 | 89 | 41 | 268 | 118 | 220 | 114 | 55 |
| Internal Link Dist (ft) | | 1171 | | | 688 | | | 983 | | | 283 | |
| Turn Bay Length (ft) | 300 | | 225 | 300 | | 250 | 150 | | 300 | 225 | | 150 |
| Base Capacity (vph) | 398 | 583 | 504 | 279 | 523 | 658 | 420 | 1212 | 746 | 556 | 1645 | 931 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.55 | 0.60 | 0.06 | 0.55 | 0.65 | 0.40 | 0.11 | 0.46 | 0.17 | 0.58 | 0.33 | 0.20 |

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 56 (47%), Referenced to phase 2:NBSB and 6:NBSB, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.85
Intersection Signal Delay: 33.4 Intersection LOS: C
Intersection Capacity Utilization 69.0% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 110: MLK Jr Blvd & Estes Dr



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 195 | 316 | 26 | 138 | 308 | 239 | 42 | 500 | 116 | 289 | 482 | 166 |
| Future Volume (veh/h) | 195 | 316 | 26 | 138 | 308 | 239 | 42 | 500 | 116 | 289 | 482 | 166 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1864 | 1864 | 1776 | 1934 | 1949 | 1949 | 1716 | 1820 | 1864 | 1841 | 1811 | 1841 |
| Adj Flow Rate, veh/h | 217 | 351 | 29 | 153 | 342 | 266 | 47 | 556 | 129 | 321 | 536 | 184 |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Percent Heavy Veh, % | 2 | 2 | 8 | 3 | 2 | 2 | 12 | 5 | 2 | 4 | 6 | 4 |
| Cap, veh/h | 270 | 408 | 412 | 221 | 384 | 551 | 481 | 1449 | 741 | 522 | 1720 | 890 |
| Arrive On Green | 0.08 | 0.22 | 0.22 | 0.06 | 0.20 | 0.20 | 0.05 | 0.42 | 0.41 | 0.27 | 1.00 | 0.98 |
| Sat Flow, veh/h | 3445 | 1864 | 1505 | 3573 | 1949 | 1651 | 1635 | 3458 | 1580 | 1753 | 3441 | 1560 |
| Grp Volume(v), veh/h | 217 | 351 | 29 | 153 | 342 | 266 | 47 | 556 | 129 | 321 | 536 | 184 |
| Grp Sat Flow(s),veh/h/ln | 1722 | 1864 | 1505 | 1786 | 1949 | 1651 | 1635 | 1729 | 1580 | 1753 | 1721 | 1560 |
| Q Serve(g_s), s | 7.4 | 21.7 | 1.7 | 5.0 | 20.5 | 10.5 | 1.6 | 13.4 | 5.7 | 13.2 | 0.0 | 0.1 |
| Cycle Q Clear(g_c), s | 7.4 | 21.7 | 1.7 | 5.0 | 20.5 | 10.5 | 1.6 | 13.4 | 5.7 | 13.2 | 0.0 | 0.1 |
| 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 | 270 | 408 | 412 | 221 | 384 | 551 | 481 | 1449 | 741 | 522 | 1720 | 890 |
| V/C Ratio(X) | 0.80 | 0.86 | 0.07 | 0.69 | 0.89 | 0.48 | 0.10 | 0.38 | 0.17 | 0.61 | 0.31 | 0.21 |
| Avail Cap(c_a), veh/h | 402 | 587 | 557 | 286 | 542 | 685 | 501 | 1449 | 741 | 633 | 1720 | 890 |
| 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 | 54.4 | 45.1 | 32.2 | 55.2 | 46.9 | 15.7 | 12.5 | 24.1 | 18.4 | 13.7 | 0.0 | 0.1 |
| Incr Delay (d2), s/veh | 4.0 | 6.4 | 0.0 | 2.6 | 10.1 | 0.2 | 0.0 | 0.8 | 0.5 | 0.5 | 0.5 | 0.5 |
| 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 | 10.6 | 0.6 | 2.3 | 10.9 | 3.8 | 0.6 | 5.5 | 2.2 | 3.8 | 0.1 | 0.2 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 58.4 | 51.5 | 32.3 | 57.8 | 56.9 | 16.0 | 12.5 | 24.9 | 18.9 | 14.2 | 0.5 | 0.7 |
| LnGrp LOS | E | D | C | E | E | B | B | C | B | B | A | A |
| Approach Vol, veh/h | | 597 | | | 761 | | | 732 | | | 1041 | |
| Approach Delay, s/veh | | 53.1 | | | 42.8 | | | 23.1 | | | 4.7 | |
| Approach LOS | | D | | | D | | | C | | | A | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 21.1 | 55.3 | 12.4 | 31.3 | 11.3 | 65.0 | 15.0 | 28.7 |
| Change Period (Y+Rc), s | * 5.8 | * 6 | 5.4 | 5.5 | * 5.8 | * 6 | 5.5 | * 5.5 |
| Max Green Setting (Gmax), s | * 23 | * 28 | 9.2 | 37.3 | * 7 | * 44 | 14.1 | * 33 |
| Max Q Clear Time (g_c+I1), s | 15.2 | 15.4 | 7.0 | 23.7 | 3.6 | 2.1 | 9.4 | 22.5 |
| Green Ext Time (p_c), s | 0.1 | 2.1 | 0.0 | 0.6 | 0.0 | 2.6 | 0.1 | 0.7 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 27.5 |
| HCM 6th LOS | C |

Notes

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

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 31 | 918 | 17 | 0 | 937 |
| Future Volume (vph) | 0 | 31 | 918 | 17 | 0 | 937 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Grade (%) | 0% | | -1% | | | 0% |
| Lane Util. Factor | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | 0.95 |
| Frt | | 0.865 | 0.997 | | | |
| Flt Protected | | | | | | |
| Satd. Flow (prot) | 0 | 1611 | 3546 | 0 | 0 | 3539 |
| Flt Permitted | | | | | | |
| Satd. Flow (perm) | 0 | 1611 | 3546 | 0 | 0 | 3539 |
| Link Speed (mph) | 25 | | 40 | | | 40 |
| Link Distance (ft) | 394 | | 363 | | | 1151 |
| Travel Time (s) | 10.7 | | 6.2 | | | 19.6 |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Adj. Flow (vph) | 0 | 34 | 1020 | 19 | 0 | 1041 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 34 | 1039 | 0 | 0 | 1041 |
| Sign Control | Stop | | Free | | | Free |

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 35.9% ICU Level of Service A
Analysis Period (min) 15

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

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 0 | 31 | 918 | 17 | 0 | 937 |
| Future Vol, veh/h | 0 | 31 | 918 | 17 | 0 | 937 |
| 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 | - | -1 | - | - | 0 |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 34 | 1020 | 19 | 0 | 1041 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | - | 520 | 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 | 501 | - | - | 0 | - |
| Stage 1 | 0 | - | - | - | 0 | - |
| Stage 2 | 0 | - | - | - | 0 | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | - | 501 | - | - | - | - |
| Mov Cap-2 Maneuver | - | - | - | - | - | - |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |

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

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBT |
|---|---|---|---|---|
| Capacity (veh/h) | - | - | 501 | - |
| HCM Lane V/C Ratio | - | - | 0.069 | - |
| HCM Control Delay (s) | - | - | 12.7 | - |
| HCM Lane LOS | - | - | B | - |
| HCM 95th %tile Q(veh) | - | - | 0.2 | - |

| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 38 | 683 | 661 | 36 | 36 | 23 |
| Future Volume (vph) | 38 | 683 | 661 | 36 | 36 | 23 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Grade (%) | | 0% | -2% | | 0% | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | | 0.993 | | 0.947 | |
| Flt Protected | | 0.997 | | | 0.971 | |
| Satd. Flow (prot) | 0 | 1857 | 1868 | 0 | 1713 | 0 |
| Flt Permitted | | 0.997 | | | 0.971 | |
| Satd. Flow (perm) | 0 | 1857 | 1868 | 0 | 1713 | 0 |
| Link Speed (mph) | | 35 | 35 | | 25 | |
| Link Distance (ft) | | 768 | 803 | | 373 | |
| Travel Time (s) | | 15.0 | 15.6 | | 10.2 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Adj. Flow (vph) | 42 | 759 | 734 | 40 | 40 | 26 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 801 | 774 | 0 | 66 | 0 |
| Sign Control | | Free | Free | | Stop | |

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 77.0% ICU Level of Service D
Analysis Period (min) 15

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

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 38 | 683 | 661 | 36 | 36 | 23 |
| Future Vol, veh/h | 38 | 683 | 661 | 36 | 36 | 23 |
| 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 | -2 | - | 0 | - |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 42 | 759 | 734 | 40 | 40 | 26 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 774 | 0 | - | 0 | 1597 | 754 |
| Stage 1 | - | - | - | - | 754 | - |
| Stage 2 | - | - | - | - | 843 | - |
| 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 | 842 | - | - | - | 117 | 409 |
| Stage 1 | - | - | - | - | 465 | - |
| Stage 2 | - | - | - | - | 422 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | 842 | - | - | - | 107 | 409 |
| Mov Cap-2 Maneuver | - | - | - | - | 107 | - |
| Stage 1 | - | - | - | - | 425 | - |
| Stage 2 | - | - | - | - | 422 | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 0.5 | 0 | 46.4 |
| HCM LOS | | | E |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|
| Capacity (veh/h) | 842 | - | - | - | 150 |
| HCM Lane V/C Ratio | 0.05 | - | - | - | 0.437 |
| HCM Control Delay (s) | 9.5 | 0 | - | - | 46.4 |
| HCM Lane LOS | A | A | - | - | E |
| HCM 95th %tile Q(veh) | 0.2 | - | - | - | 2 |

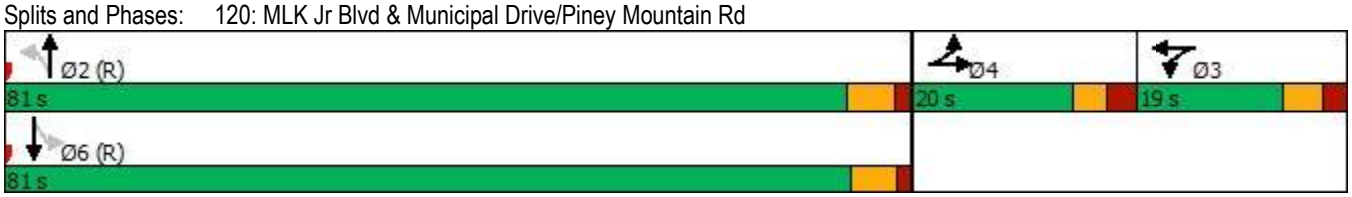
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 3 | 0 | 14 | 67 | 1 | 24 | 21 | 871 | 57 | 27 | 857 | 2 |
| Future Volume (vph) | 3 | 0 | 14 | 67 | 1 | 24 | 21 | 871 | 57 | 27 | 857 | 2 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Grade (%) | | 0% | | | 4% | | | -1% | | | 0% | |
| Storage Length (ft) | 100 | | 0 | 375 | | 0 | 150 | | 0 | 225 | | 0 |
| Storage Lanes | 1 | | 0 | 2 | | 0 | 1 | | 0 | 1 | | 0 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 0.97 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | 0.95 | 0.95 |
| Frt | | 0.850 | | | 0.855 | | | 0.991 | | | | |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1770 | 1129 | 0 | 3364 | 1464 | 0 | 1463 | 3493 | 0 | 1770 | 3471 | 0 |
| Flt Permitted | 0.950 | | | 0.950 | | | 0.285 | | | 0.260 | | |
| Satd. Flow (perm) | 1770 | 1129 | 0 | 3364 | 1464 | 0 | 439 | 3493 | 0 | 484 | 3471 | 0 |
| Right Turn on Red | | | No | | | No | | | No | | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (mph) | | 20 | | | 35 | | | 40 | | | 40 | |
| Link Distance (ft) | | 554 | | | 663 | | | 1151 | | | 2618 | |
| Travel Time (s) | | 18.9 | | | 12.9 | | | 19.6 | | | 44.6 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 43% | 2% | 2% | 9% | 24% | 3% | 2% | 2% | 4% | 2% |
| Adj. Flow (vph) | 3 | 0 | 16 | 74 | 1 | 27 | 23 | 968 | 63 | 30 | 952 | 2 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 3 | 16 | 0 | 74 | 28 | 0 | 23 | 1031 | 0 | 30 | 954 | 0 |
| Turn Type | Split | NA | | Split | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | 4 | 4 | | 3 | 3 | | | 2 | | | 6 | |
| Permitted Phases | | | | | | | 2 | | | 6 | | |
| Detector Phase | 4 | 4 | | 3 | 3 | | 2 | 2 | | 6 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | | 7.0 | 7.0 | | 12.0 | 12.0 | | 12.0 | 12.0 | |
| Minimum Split (s) | 12.6 | 12.6 | | 12.9 | 12.9 | | 27.8 | 27.8 | | 17.5 | 17.5 | |
| Total Split (s) | 20.0 | 20.0 | | 19.0 | 19.0 | | 81.0 | 81.0 | | 81.0 | 81.0 | |
| Total Split (%) | 16.7% | 16.7% | | 15.8% | 15.8% | | 67.5% | 67.5% | | 67.5% | 67.5% | |
| Maximum Green (s) | 14.4 | 14.4 | | 13.1 | 13.1 | | 75.2 | 75.2 | | 75.5 | 75.5 | |
| Yellow Time (s) | 3.0 | 3.0 | | 3.6 | 3.6 | | 4.2 | 4.2 | | 4.2 | 4.2 | |
| All-Red Time (s) | 2.6 | 2.6 | | 2.3 | 2.3 | | 1.6 | 1.6 | | 1.3 | 1.3 | |
| Lost Time Adjust (s) | -0.6 | -0.6 | | -0.9 | -0.9 | | -0.8 | -0.8 | | -0.5 | -0.5 | |
| Total Lost Time (s) | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | |
| Lead/Lag | Lead | Lead | | Lag | Lag | | | | | | | |
| Lead-Lag Optimize? | Yes | Yes | | Yes | Yes | | | | | | | |
| Vehicle Extension (s) | 1.0 | 1.0 | | 1.0 | 1.0 | | 6.0 | 6.0 | | 6.0 | 6.0 | |
| Minimum Gap (s) | 1.0 | 1.0 | | 1.0 | 1.0 | | 6.0 | 6.0 | | 6.0 | 6.0 | |
| Time Before Reduce (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 15.0 | 15.0 | | 15.0 | 15.0 | |
| Time To Reduce (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 45.0 | 45.0 | | 45.0 | 45.0 | |
| Recall Mode | None | None | | None | None | | C-Min | C-Min | | C-Min | C-Min | |
| Walk Time (s) | | | | | | | 7.0 | 7.0 | | | | |
| Flash Dont Walk (s) | | | | | | | 15.0 | 15.0 | | | | |
| Pedestrian Calls (#/hr) | | | | | | | 0 | 0 | | | | |
| Act Effct Green (s) | 7.8 | 7.8 | | 8.2 | 8.2 | | 100.1 | 100.1 | | 100.1 | 100.1 | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Actuated g/C Ratio | 0.06 | 0.06 | | 0.07 | 0.07 | | 0.83 | 0.83 | | 0.83 | 0.83 | |
| v/c Ratio | 0.03 | 0.22 | | 0.32 | 0.28 | | 0.06 | 0.35 | | 0.07 | 0.33 | |
| Control Delay | 52.7 | 60.5 | | 56.9 | 60.2 | | 2.7 | 2.2 | | 1.1 | 1.0 | |
| Queue Delay | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Delay | 52.7 | 60.5 | | 56.9 | 60.2 | | 2.7 | 2.2 | | 1.1 | 1.0 | |
| LOS | D | E | | E | E | | A | A | | A | A | |
| Approach Delay | | 59.3 | | | 57.8 | | | 2.2 | | | 1.0 | |
| Approach LOS | | E | | | E | | | A | | | A | |
| Queue Length 50th (ft) | 2 | 12 | | 28 | 21 | | 1 | 29 | | 1 | 27 | |
| Queue Length 95th (ft) | 13 | 36 | | 53 | 52 | | m7 | 84 | | m4 | 32 | |
| Internal Link Dist (ft) | | 474 | | | 583 | | | 1071 | | | 2538 | |
| Turn Bay Length (ft) | 100 | | | 375 | | | 150 | | | 225 | | |
| Base Capacity (vph) | 221 | 141 | | 392 | 170 | | 366 | 2913 | | 403 | 2894 | |
| Starvation Cap Reductn | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Spillback Cap Reductn | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Storage Cap Reductn | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Reduced v/c Ratio | 0.01 | 0.11 | | 0.19 | 0.16 | | 0.06 | 0.35 | | 0.07 | 0.33 | |

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 55 (46%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 55
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.35
Intersection Signal Delay: 4.8 Intersection LOS: A
Intersection Capacity Utilization 42.8% ICU Level of Service A
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 120: MLK Jr Blvd & Municipal Drive/Piney Mountain Rd



HCM 6th Edition methodology expects strict NEMA phasing.

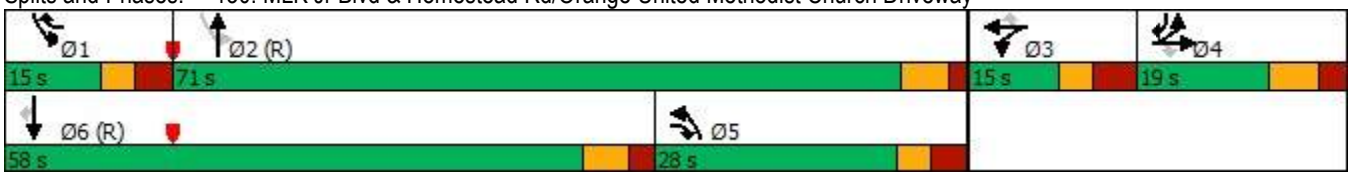
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 109 | 2 | 199 | 11 | 7 | 14 | 165 | 731 | 2 | 19 | 676 | 95 |
| Future Volume (vph) | 109 | 2 | 199 | 11 | 7 | 14 | 165 | 731 | 2 | 19 | 676 | 95 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 125 | | 0 | 125 | | 0 | 525 | | 0 | 250 | | 375 |
| Storage Lanes | 1 | | 1 | 2 | | 1 | 2 | | 0 | 1 | | 1 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 0.95 | 0.95 | 1.00 | 0.95 | 0.95 | 1.00 | 0.97 | 0.95 | 0.95 | 1.00 | 0.95 | 1.00 |
| Frt | | | 0.850 | | | 0.850 | | | | | | 0.850 |
| Flt Protected | 0.950 | 0.954 | | 0.950 | 0.990 | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1603 | 1612 | 1538 | 1681 | 1752 | 1583 | 3400 | 3501 | 0 | 1719 | 3471 | 1495 |
| Flt Permitted | 0.950 | 0.954 | | 0.950 | 0.990 | | 0.950 | | | 0.310 | | |
| Satd. Flow (perm) | 1603 | 1612 | 1538 | 1681 | 1752 | 1583 | 3400 | 3501 | 0 | 561 | 3471 | 1495 |
| Right Turn on Red | | | No | | | No | | | No | | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (mph) | | 35 | | | 20 | | | 40 | | | 40 | |
| Link Distance (ft) | | 1248 | | | 314 | | | 1137 | | | 1345 | |
| Travel Time (s) | | 24.3 | | | 10.7 | | | 19.4 | | | 22.9 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 7% | 2% | 5% | 2% | 2% | 2% | 3% | 3% | 50% | 5% | 4% | 8% |
| Adj. Flow (vph) | 121 | 2 | 221 | 12 | 8 | 16 | 183 | 812 | 2 | 21 | 751 | 106 |
| Shared Lane Traffic (%) | 49% | | | 18% | | | | | | | | |
| Lane Group Flow (vph) | 62 | 61 | 221 | 10 | 10 | 16 | 183 | 814 | 0 | 21 | 751 | 106 |
| Turn Type | Split | NA | pm+ov | Split | NA | pm+ov | Prot | NA | | D.P+P | NA | pm+ov |
| Protected Phases | 4 | 4 | 5 | 3 | 3 | 1 | 5 | 2 | | 1 | 6 | 4 |
| Permitted Phases | | | 4 | | | 3 | | | | 2 | | 6 |
| Detector Phase | 4 | 4 | 5 | 3 | 3 | 1 | 5 | 2 | | 1 | 6 | 4 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 12.0 | | 7.0 | 12.0 | 7.0 |
| Minimum Split (s) | 14.1 | 14.1 | 13.3 | 13.9 | 13.9 | 13.4 | 13.3 | 28.0 | | 13.4 | 45.4 | 14.1 |
| Total Split (s) | 19.0 | 19.0 | 28.0 | 15.0 | 15.0 | 15.0 | 28.0 | 71.0 | | 15.0 | 58.0 | 19.0 |
| Total Split (%) | 15.8% | 15.8% | 23.3% | 12.5% | 12.5% | 12.5% | 23.3% | 59.2% | | 12.5% | 48.3% | 15.8% |
| Maximum Green (s) | 11.9 | 11.9 | 21.7 | 8.1 | 8.1 | 8.6 | 21.7 | 65.0 | | 8.6 | 51.6 | 11.9 |
| Yellow Time (s) | 4.5 | 4.5 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 4.2 | | 3.0 | 4.2 | 4.5 |
| All-Red Time (s) | 2.6 | 2.6 | 3.3 | 3.9 | 3.9 | 3.4 | 3.3 | 1.8 | | 3.4 | 2.2 | 2.6 |
| Lost Time Adjust (s) | -2.1 | -2.1 | -1.3 | -1.9 | -1.9 | -1.4 | -1.3 | -1.0 | | -1.4 | -1.4 | -2.1 |
| Total Lost Time (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | | 5.0 | 5.0 | 5.0 |
| Lead/Lag | Lag | Lag | Lag | Lead | Lead | Lead | Lag | Lag | | Lead | Lead | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | | Yes | Yes | Yes |
| Vehicle Extension (s) | 1.0 | 1.0 | 1.0 | 2.0 | 2.0 | 2.0 | 1.0 | 6.0 | | 2.0 | 6.0 | 1.0 |
| Minimum Gap (s) | 1.0 | 1.0 | 1.0 | 2.0 | 2.0 | 2.0 | 1.0 | 6.0 | | 2.0 | 6.0 | 1.0 |
| Time Before Reduce (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 15.0 | | 0.0 | 15.0 | 0.0 |
| Time To Reduce (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 45.0 | | 0.0 | 45.0 | 0.0 |
| Recall Mode | None | None | None | None | None | None | None | C-Min | | None | C-Min | None |
| Walk Time (s) | | | | | | | | 7.0 | | | 7.0 | |
| Flash Dont Walk (s) | | | | | | | | 15.0 | | | 32.0 | |
| Pedestrian Calls (#/hr) | | | | | | | | 0 | | | 0 | |
| Act Effct Green (s) | 10.9 | 10.9 | 31.7 | 8.9 | 8.9 | 12.0 | 17.8 | 85.5 | | 90.5 | 70.7 | 86.6 |
| Actuated g/C Ratio | 0.09 | 0.09 | 0.26 | 0.07 | 0.07 | 0.10 | 0.15 | 0.71 | | 0.75 | 0.59 | 0.72 |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| v/c Ratio | 0.43 | 0.42 | 0.54 | 0.08 | 0.08 | 0.10 | 0.36 | 0.33 | | 0.04 | 0.37 | 0.10 |
| Control Delay | 60.2 | 59.8 | 36.0 | 53.4 | 53.3 | 35.5 | 34.5 | 4.0 | | 5.1 | 15.6 | 7.1 |
| 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 | 60.2 | 59.8 | 36.0 | 53.4 | 53.3 | 35.5 | 34.5 | 4.0 | | 5.1 | 15.6 | 7.1 |
| LOS | E | E | D | D | D | D | C | A | | A | B | A |
| Approach Delay | | 44.6 | | | 45.4 | | | 9.6 | | | 14.3 | |
| Approach LOS | | D | | | D | | | A | | | B | |
| Queue Length 50th (ft) | 49 | 48 | 143 | 7 | 7 | 12 | 52 | 87 | | 2 | 133 | 18 |
| Queue Length 95th (ft) | 94 | 92 | 164 | 26 | 26 | 24 | 63 | 172 | | 13 | 263 | 57 |
| Internal Link Dist (ft) | | 1168 | | | 234 | | | 1057 | | | 1265 | |
| Turn Bay Length (ft) | 125 | | | 125 | | | 525 | | | 250 | | 375 |
| Base Capacity (vph) | 187 | 188 | 415 | 140 | 146 | 178 | 651 | 2494 | | 524 | 2046 | 1068 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.33 | 0.32 | 0.53 | 0.07 | 0.07 | 0.09 | 0.28 | 0.33 | | 0.04 | 0.37 | 0.10 |

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 113 (94%), Referenced to phase 2:NBSB and 6:SBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.54
Intersection Signal Delay: 17.3 Intersection LOS: B
Intersection Capacity Utilization 49.3% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 130: MLK Jr Blvd & Homestead Rd/Orange United Methodist Church Driveway



HCM 6th Edition methodology expects strict NEMA phasing.

| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 16 | 703 | 683 | 15 | 16 | 14 |
| Future Volume (vph) | 16 | 703 | 683 | 15 | 16 | 14 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 100 | | | 0 | 0 | 0 |
| Storage Lanes | 1 | | | 0 | 1 | 0 |
| Taper Length (ft) | 100 | | | | 100 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | | 0.997 | | 0.936 | |
| Flt Protected | 0.950 | | | | 0.974 | |
| Satd. Flow (prot) | 1656 | 1863 | 1851 | 0 | 1535 | 0 |
| Flt Permitted | 0.950 | | | | 0.974 | |
| Satd. Flow (perm) | 1656 | 1863 | 1851 | 0 | 1535 | 0 |
| Link Speed (mph) | | 35 | 35 | | 30 | |
| Link Distance (ft) | | 803 | 840 | | 813 | |
| Travel Time (s) | | 15.6 | 16.4 | | 18.5 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 9% | 2% | 2% | 18% | 2% | 25% |
| Adj. Flow (vph) | 18 | 781 | 759 | 17 | 18 | 16 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 18 | 781 | 776 | 0 | 34 | 0 |
| Sign Control | | Free | Free | | Stop | |

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 47.0% ICU Level of Service A
Analysis Period (min) 15

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

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 16 | 703 | 683 | 15 | 16 | 14 |
| Future Vol, veh/h | 16 | 703 | 683 | 15 | 16 | 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 | 100 | - | - | - | 0 | - |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 9 | 2 | 2 | 18 | 2 | 25 |
| Mvmt Flow | 18 | 781 | 759 | 17 | 18 | 16 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 776 | 0 | - | 0 | 1585 | 768 |
| Stage 1 | - | - | - | - | 768 | - |
| Stage 2 | - | - | - | - | 817 | - |
| Critical Hdwy | 4.19 | - | - | - | 6.42 | 6.45 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.42 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.42 | - |
| Follow-up Hdwy | 2.281 | - | - | - | 3.518 | 3.525 |
| Pot Cap-1 Maneuver | 810 | - | - | - | 119 | 367 |
| Stage 1 | - | - | - | - | 458 | - |
| Stage 2 | - | - | - | - | 434 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | 810 | - | - | - | 116 | 367 |
| Mov Cap-2 Maneuver | - | - | - | - | 116 | - |
| Stage 1 | - | - | - | - | 448 | - |
| Stage 2 | - | - | - | - | 434 | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 0.2 | 0 | 31.3 |
| HCM LOS | | | D |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|
| Capacity (veh/h) | 810 | - | - | - | 170 |
| HCM Lane V/C Ratio | 0.022 | - | - | - | 0.196 |
| HCM Control Delay (s) | 9.5 | - | - | - | 31.3 |
| HCM Lane LOS | A | - | - | - | D |
| HCM 95th %tile Q(veh) | 0.1 | - | - | - | 0.7 |

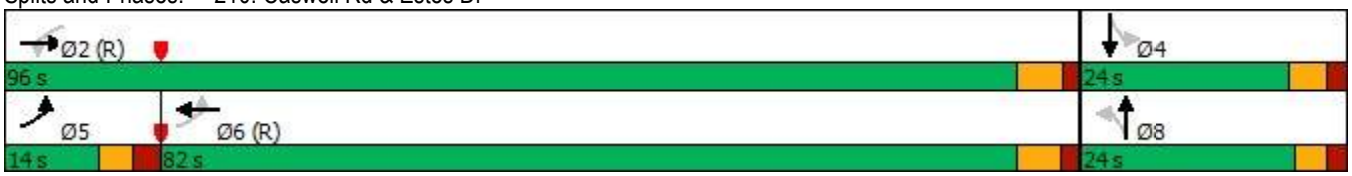
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 58 | 658 | 3 | 1 | 618 | 27 | 3 | 4 | 2 | 23 | 0 | 78 |
| Future Volume (vph) | 58 | 658 | 3 | 1 | 618 | 27 | 3 | 4 | 2 | 23 | 0 | 78 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Grade (%) | | -2% | | | 0% | | | 7% | | | -5% | |
| Storage Length (ft) | 250 | | 0 | 125 | | 0 | 0 | | 0 | 100 | | 0 |
| Storage Lanes | 1 | | 0 | 1 | | 0 | 0 | | 0 | 1 | | 0 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | 0.999 | | | 0.994 | | | 0.970 | | | 0.850 | |
| Flt Protected | 0.950 | | | 0.950 | | | | 0.984 | | 0.950 | | |
| Satd. Flow (prot) | 1753 | 1879 | 0 | 1770 | 1850 | 0 | 0 | 1483 | 0 | 1814 | 1592 | 0 |
| Flt Permitted | 0.320 | | | 0.350 | | | | 0.907 | | 0.752 | | |
| Satd. Flow (perm) | 590 | 1879 | 0 | 652 | 1850 | 0 | 0 | 1367 | 0 | 1436 | 1592 | 0 |
| Right Turn on Red | | | No | | | No | | | No | | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (mph) | | 35 | | | 35 | | | 25 | | | 25 | |
| Link Distance (ft) | | 961 | | | 940 | | | 384 | | | 262 | |
| Travel Time (s) | | 18.7 | | | 18.3 | | | 10.5 | | | 7.1 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 4% | 2% | 2% | 2% | 2% | 4% | 50% | 2% | 2% | 2% | 2% | 4% |
| Adj. Flow (vph) | 64 | 731 | 3 | 1 | 687 | 30 | 3 | 4 | 2 | 26 | 0 | 87 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 64 | 734 | 0 | 1 | 717 | 0 | 0 | 9 | 0 | 26 | 87 | 0 |
| Turn Type | D.P+P | NA | | D.Pm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | 5 | 2 | | | 6 | | | 8 | | | 4 | |
| Permitted Phases | 6 | | | 2 | | | 8 | | | 4 | | |
| Detector Phase | 5 | 2 | | 2 | 6 | | 8 | 8 | | 4 | 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 10.0 | | 10.0 | 10.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | |
| Minimum Split (s) | 12.6 | 21.6 | | 21.6 | 21.6 | | 11.9 | 11.9 | | 20.4 | 20.4 | |
| Total Split (s) | 14.0 | 96.0 | | 96.0 | 82.0 | | 24.0 | 24.0 | | 24.0 | 24.0 | |
| Total Split (%) | 11.7% | 80.0% | | 80.0% | 68.3% | | 20.0% | 20.0% | | 20.0% | 20.0% | |
| Maximum Green (s) | 8.4 | 90.4 | | 90.4 | 76.4 | | 19.1 | 19.1 | | 18.6 | 18.6 | |
| Yellow Time (s) | 3.0 | 4.0 | | 4.0 | 3.8 | | 3.0 | 3.0 | | 3.5 | 3.5 | |
| All-Red Time (s) | 2.6 | 1.6 | | 1.6 | 1.8 | | 1.9 | 1.9 | | 1.9 | 1.9 | |
| Lost Time Adjust (s) | -0.6 | -0.6 | | -0.6 | -0.6 | | | 0.1 | | -0.4 | -0.4 | |
| Total Lost Time (s) | 5.0 | 5.0 | | 5.0 | 5.0 | | | 5.0 | | 5.0 | 5.0 | |
| Lead/Lag | Lead | | | | Lag | | | | | | | |
| Lead-Lag Optimize? | Yes | | | | Yes | | | | | | | |
| Vehicle Extension (s) | 1.0 | 2.0 | | 2.0 | 2.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | |
| Recall Mode | None | C-Min | | C-Min | C-Min | | None | None | | None | None | |
| Walk Time (s) | | 7.0 | | 7.0 | 7.0 | | | | | 7.0 | 7.0 | |
| Flash Dont Walk (s) | | 9.0 | | 9.0 | 9.0 | | | | | 8.0 | 8.0 | |
| Pedestrian Calls (#/hr) | | 0 | | 0 | 0 | | | | | 0 | 0 | |
| Act Effct Green (s) | 95.2 | 99.2 | | 99.2 | 89.1 | | | 8.6 | | 10.8 | 10.8 | |
| Actuated g/C Ratio | 0.79 | 0.83 | | 0.83 | 0.74 | | | 0.07 | | 0.09 | 0.09 | |
| v/c Ratio | 0.12 | 0.47 | | 0.00 | 0.52 | | | 0.09 | | 0.20 | 0.61 | |
| Control Delay | 1.5 | 2.2 | | 2.0 | 7.5 | | | 52.0 | | 52.7 | 70.0 | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Queue Delay | 0.0 | 0.0 | | 0.0 | 0.0 | | | 0.0 | | 0.0 | 0.0 | |
| Total Delay | 1.5 | 2.2 | | 2.0 | 7.5 | | | 52.0 | | 52.7 | 70.0 | |
| LOS | A | A | | A | A | | | D | | D | E | |
| Approach Delay | | 2.2 | | | 7.5 | | | 52.0 | | | 66.0 | |
| Approach LOS | | A | | | A | | | D | | | E | |
| Queue Length 50th (ft) | 3 | 32 | | 0 | 182 | | | 7 | | 19 | 66 | |
| Queue Length 95th (ft) | m4 | 46 | | m0 | 269 | | | 22 | | 47 | 117 | |
| Internal Link Dist (ft) | | 881 | | | 860 | | | 304 | | | 182 | |
| Turn Bay Length (ft) | 250 | | | 125 | | | | | | 100 | | |
| Base Capacity (vph) | 561 | 1553 | | 539 | 1374 | | | 216 | | 227 | 252 | |
| Starvation Cap Reductn | 0 | 0 | | 0 | 0 | | | 0 | | 0 | 0 | |
| Spillback Cap Reductn | 0 | 0 | | 0 | 0 | | | 0 | | 0 | 0 | |
| Storage Cap Reductn | 0 | 0 | | 0 | 0 | | | 0 | | 0 | 0 | |
| Reduced v/c Ratio | 0.11 | 0.47 | | 0.00 | 0.52 | | | 0.04 | | 0.11 | 0.35 | |

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 113 (94%), Referenced to phase 2:EBWB and 6:EBWB, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.61
Intersection Signal Delay: 9.2 Intersection LOS: A
Intersection Capacity Utilization 61.5% ICU Level of Service B
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 210: Caswell Rd & Estes Dr



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 58 | 658 | 3 | 1 | 618 | 27 | 3 | 4 | 2 | 23 | 0 | 78 |
| Future Volume (veh/h) | 58 | 658 | 3 | 1 | 618 | 27 | 3 | 4 | 2 | 23 | 0 | 78 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1919 | 1949 | 1949 | 1870 | 1870 | 1870 | 1582 | 1582 | 1582 | 2067 | 2067 | 2067 |
| Adj Flow Rate, veh/h | 64 | 731 | 3 | 1 | 687 | 30 | 3 | 4 | 2 | 26 | 0 | 87 |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Percent Heavy Veh, % | 4 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 163 | 1392 | 6 | 217 | 1334 | 58 | 47 | 41 | 14 | 160 | 0 | 120 |
| Arrive On Green | 0.06 | 0.72 | 0.71 | 0.09 | 0.75 | 0.74 | 0.07 | 0.06 | 0.07 | 0.07 | 0.00 | 0.07 |
| Sat Flow, veh/h | 1827 | 1939 | 8 | 1781 | 1779 | 78 | 113 | 631 | 213 | 1558 | 0 | 1751 |
| Grp Volume(v), veh/h | 64 | 0 | 734 | 1 | 0 | 717 | 9 | 0 | 0 | 26 | 0 | 87 |
| Grp Sat Flow(s),veh/h/ln | 1827 | 0 | 1947 | 1781 | 0 | 1856 | 958 | 0 | 0 | 1558 | 0 | 1751 |
| Q Serve(g_s), s | 0.8 | 0.0 | 20.5 | 0.1 | 0.0 | 18.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 5.8 |
| Cycle Q Clear(g_c), s | 0.8 | 0.0 | 20.5 | 0.1 | 0.0 | 18.9 | 5.9 | 0.0 | 0.0 | 2.1 | 0.0 | 5.8 |
| Prop In Lane | 1.00 | | 0.00 | 1.00 | | 0.04 | 0.33 | | 0.22 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 163 | 0 | 1398 | 0 | 0 | 1392 | 103 | 0 | 0 | 160 | 0 | 120 |
| V/C Ratio(X) | 0.39 | 0.00 | 0.53 | 0.00 | 0.00 | 0.52 | 0.09 | 0.00 | 0.00 | 0.16 | 0.00 | 0.72 |
| Avail Cap(c_a), veh/h | 197 | 0 | 1477 | 0 | 0 | 1392 | 228 | 0 | 0 | 300 | 0 | 277 |
| 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 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 36.6 | 0.0 | 7.7 | 0.0 | 0.0 | 6.1 | 52.8 | 0.0 | 0.0 | 53.0 | 0.0 | 55.0 |
| Incr Delay (d2), s/veh | 0.6 | 0.0 | 1.4 | 0.0 | 0.0 | 1.4 | 0.1 | 0.0 | 0.0 | 0.2 | 0.0 | 3.1 |
| 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 | 1.4 | 0.0 | 8.0 | 0.0 | 0.0 | 6.7 | 0.3 | 0.0 | 0.0 | 0.8 | 0.0 | 2.7 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 37.2 | 0.0 | 9.1 | 0.0 | 0.0 | 7.5 | 53.0 | 0.0 | 0.0 | 53.2 | 0.0 | 58.0 |
| LnGrp LOS | D | A | A | A | A | A | D | A | A | D | A | E |
| Approach Vol, veh/h | | 798 | | | 718 | | | 9 | | | 113 | |
| Approach Delay, s/veh | | 11.3 | | | 7.5 | | | 53.0 | | | 56.9 | |
| Approach LOS | | B | | | A | | | D | | | E | |

| Timer - Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 15.6 | 91.2 | | 13.2 | 11.8 | 95.0 | | 13.2 |
| Change Period (Y+Rc), s | * 5.6 | * 5.6 | | * 5.4 | 5.6 | 5.6 | | * 5.4 |
| Max Green Setting (Gmax), s | * 90 | * 90 | | * 19 | 8.4 | 76.4 | | * 19 |
| Max Q Clear Time (g_c+I1), s | 2.1 | 22.5 | | 7.8 | 2.8 | 20.9 | | 7.9 |
| Green Ext Time (p_c), s | 0.0 | 3.5 | | 0.1 | 0.0 | 3.4 | | 0.0 |

Intersection Summary

| | | | |
|---|---|---|---|
| HCM 6th Ctrl Delay | | | 13.0 |
| HCM 6th LOS | | | B |

Notes

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

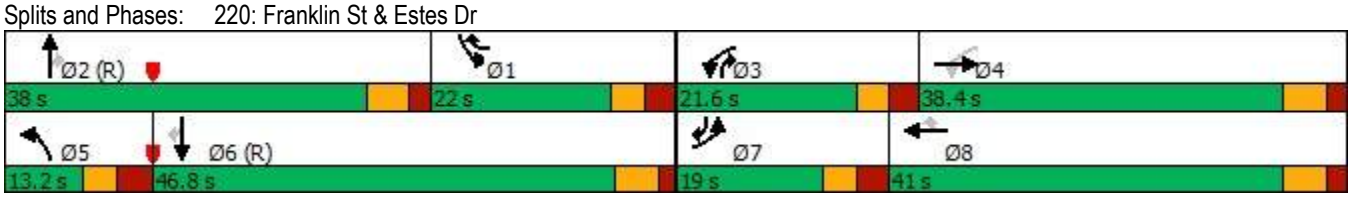
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 245 | 391 | 48 | 207 | 377 | 207 | 47 | 404 | 191 | 144 | 395 | 222 |
| Future Volume (vph) | 245 | 391 | 48 | 207 | 377 | 207 | 47 | 404 | 191 | 144 | 395 | 222 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Grade (%) | | -1% | | | 3% | | | -1% | | | 5% | |
| Storage Length (ft) | 300 | | 400 | 150 | | 0 | 150 | | 150 | 300 | | 350 |
| Storage Lanes | 2 | | 1 | 1 | | 1 | 1 | | 1 | 1 | | 1 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 0.97 | 0.95 | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 |
| Frt | | 0.984 | | | | 0.850 | | | 0.850 | | | 0.850 |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 3450 | 3500 | 0 | 1743 | 1835 | 1560 | 1778 | 3489 | 1591 | 1725 | 3417 | 1544 |
| Flt Permitted | 0.950 | | | 0.320 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (perm) | 3450 | 3500 | 0 | 587 | 1835 | 1560 | 1778 | 3489 | 1591 | 1725 | 3417 | 1544 |
| Right Turn on Red | | | No | | | No | | | No | | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (mph) | | 35 | | | 35 | | | 35 | | | 35 | |
| Link Distance (ft) | | 2406 | | | 987 | | | 1748 | | | 1202 | |
| Travel Time (s) | | 46.9 | | | 19.2 | | | 34.1 | | | 23.4 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 2% | 2% | 2% | 2% | 2% | 4% | 2% | 2% | 3% | 2% |
| Adj. Flow (vph) | 272 | 434 | 53 | 230 | 419 | 230 | 52 | 449 | 212 | 160 | 439 | 247 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 272 | 487 | 0 | 230 | 419 | 230 | 52 | 449 | 212 | 160 | 439 | 247 |
| Turn Type | Prot | NA | | D.P+P | NA | pm+ov | Prot | NA | pm+ov | Prot | NA | pm+ov |
| Protected Phases | 7 | 4 | | 3 | 8 | 1 | 5 | 2 | 3 | 1 | 6 | 7 |
| Permitted Phases | | | | 4 | | 8 | | | 2 | | | 6 |
| Detector Phase | 7 | 4 | | 3 | 8 | 1 | 5 | 2 | 3 | 1 | 6 | 7 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | | 7.0 | 7.0 | 7.0 | 7.0 | 10.0 | 7.0 | 7.0 | 10.0 | 7.0 |
| Minimum Split (s) | 12.9 | 33.9 | | 12.6 | 30.9 | 12.9 | 13.2 | 35.7 | 12.6 | 12.9 | 21.5 | 12.9 |
| Total Split (s) | 19.0 | 38.4 | | 21.6 | 41.0 | 22.0 | 13.2 | 38.0 | 21.6 | 22.0 | 46.8 | 19.0 |
| Total Split (%) | 15.8% | 32.0% | | 18.0% | 34.2% | 18.3% | 11.0% | 31.7% | 18.0% | 18.3% | 39.0% | 15.8% |
| Maximum Green (s) | 13.1 | 32.5 | | 16.0 | 35.1 | 16.1 | 7.0 | 32.3 | 16.0 | 16.1 | 41.3 | 13.1 |
| Yellow Time (s) | 3.0 | 3.9 | | 3.0 | 3.9 | 3.0 | 3.0 | 3.7 | 3.0 | 3.0 | 3.9 | 3.0 |
| All-Red Time (s) | 2.9 | 2.0 | | 2.6 | 2.0 | 2.9 | 3.2 | 2.0 | 2.6 | 2.9 | 1.6 | 2.9 |
| Lost Time Adjust (s) | -0.9 | -0.9 | | -0.6 | -0.9 | -0.9 | -1.2 | -0.7 | 0.0 | -0.9 | -0.5 | 0.0 |
| Total Lost Time (s) | 5.0 | 5.0 | | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.6 | 5.0 | 5.0 | 5.9 |
| Lead/Lag | Lead | Lag | | Lead | Lag | Lag | Lead | Lead | Lead | Lag | Lag | Lead |
| Lead-Lag Optimize? | Yes | Yes | | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Vehicle Extension (s) | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 1.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Recall Mode | None | None | | None | None | None | None | C-Min | None | None | C-Min | None |
| Walk Time (s) | | 7.0 | | | 7.0 | | | 7.0 | | | 7.0 | |
| Flash Dont Walk (s) | | 21.0 | | | 18.0 | | | 23.0 | | | 9.0 | |
| Pedestrian Calls (#/hr) | | 0 | | | 0 | | | 0 | | | 0 | |
| Act Effct Green (s) | 14.2 | 30.6 | | 45.8 | 31.6 | 48.1 | 8.5 | 37.8 | 51.8 | 16.5 | 48.4 | 66.7 |
| Actuated g/C Ratio | 0.12 | 0.26 | | 0.38 | 0.26 | 0.40 | 0.07 | 0.32 | 0.43 | 0.14 | 0.40 | 0.56 |
| v/c Ratio | 0.67 | 0.55 | | 0.62 | 0.87 | 0.37 | 0.42 | 0.41 | 0.31 | 0.68 | 0.32 | 0.29 |
| Control Delay | 52.7 | 35.1 | | 29.9 | 60.5 | 14.9 | 63.9 | 36.3 | 14.2 | 63.0 | 27.7 | 17.2 |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 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 | 52.7 | 35.1 | | 29.9 | 60.5 | 14.9 | 63.9 | 36.3 | 14.2 | 63.0 | 27.7 | 17.2 |
| LOS | D | D | | C | E | B | E | D | B | E | C | B |
| Approach Delay | | 41.4 | | | 40.6 | | | 31.7 | | | 31.3 | |
| Approach LOS | | D | | | D | | | C | | | C | |
| Queue Length 50th (ft) | 98 | 173 | | 113 | 307 | 75 | 39 | 146 | 62 | 120 | 128 | 104 |
| Queue Length 95th (ft) | 148 | 214 | | 161 | 418 | 86 | 82 | 222 | 101 | 184 | 183 | 170 |
| Internal Link Dist (ft) | | 2326 | | | 907 | | | 1668 | | | 1122 | |
| Turn Bay Length (ft) | 300 | | | 150 | | | 150 | | 150 | 300 | | 350 |
| Base Capacity (vph) | 431 | 988 | | 396 | 551 | 650 | 125 | 1165 | 710 | 264 | 1412 | 868 |
| Starvation Cap Reductn | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.63 | 0.49 | | 0.58 | 0.76 | 0.35 | 0.42 | 0.39 | 0.30 | 0.61 | 0.31 | 0.28 |

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 114 (95%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.87
Intersection Signal Delay: 36.4 Intersection LOS: D
Intersection Capacity Utilization 62.6% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 220: Franklin St & Estes Dr



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 245 | 391 | 48 | 207 | 377 | 207 | 47 | 404 | 191 | 144 | 395 | 222 |
| Future Volume (veh/h) | 245 | 391 | 48 | 207 | 377 | 207 | 47 | 404 | 191 | 144 | 395 | 222 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1909 | 1909 | 1909 | 1817 | 1817 | 1817 | 1909 | 1879 | 1909 | 1723 | 1708 | 1723 |
| Adj Flow Rate, veh/h | 272 | 434 | 53 | 230 | 419 | 230 | 52 | 449 | 212 | 160 | 439 | 247 |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 2 | 2 | 3 | 2 |
| Cap, veh/h | 354 | 769 | 93 | 372 | 467 | 882 | 106 | 573 | 438 | 518 | 1346 | 735 |
| Arrive On Green | 0.10 | 0.24 | 0.23 | 0.12 | 0.26 | 0.26 | 0.06 | 0.16 | 0.15 | 0.32 | 0.41 | 0.41 |
| Sat Flow, veh/h | 3528 | 3256 | 396 | 1731 | 1817 | 1540 | 1818 | 3571 | 1618 | 1641 | 3246 | 1460 |
| Grp Volume(v), veh/h | 272 | 241 | 246 | 230 | 419 | 230 | 52 | 449 | 212 | 160 | 439 | 247 |
| Grp Sat Flow(s),veh/h/ln | 1764 | 1814 | 1838 | 1731 | 1817 | 1540 | 1818 | 1785 | 1618 | 1641 | 1623 | 1460 |
| Q Serve(g_s), s | 9.0 | 14.0 | 14.2 | 11.9 | 26.7 | 2.8 | 3.3 | 14.5 | 5.0 | 8.9 | 11.0 | 12.1 |
| Cycle Q Clear(g_c), s | 9.0 | 14.0 | 14.2 | 11.9 | 26.7 | 2.8 | 3.3 | 14.5 | 5.0 | 8.9 | 11.0 | 12.1 |
| Prop In Lane | 1.00 | | 0.22 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 354 | 428 | 434 | 372 | 467 | 882 | 106 | 573 | 438 | 518 | 1346 | 735 |
| V/C Ratio(X) | 0.77 | 0.56 | 0.57 | 0.62 | 0.90 | 0.26 | 0.49 | 0.78 | 0.48 | 0.31 | 0.33 | 0.34 |
| Avail Cap(c_a), veh/h | 412 | 505 | 512 | 401 | 545 | 948 | 124 | 982 | 623 | 518 | 1346 | 735 |
| 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 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 52.6 | 40.4 | 40.5 | 29.9 | 43.1 | 3.9 | 54.8 | 48.4 | 14.1 | 31.1 | 23.8 | 17.8 |
| Incr Delay (d2), s/veh | 6.0 | 0.4 | 0.4 | 1.7 | 14.7 | 0.1 | 1.3 | 10.3 | 3.8 | 0.1 | 0.6 | 1.2 |
| 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 | 4.3 | 6.3 | 6.4 | 5.0 | 13.7 | 1.1 | 1.6 | 7.2 | 2.6 | 3.5 | 4.3 | 4.2 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 58.6 | 40.8 | 40.9 | 31.6 | 57.7 | 4.0 | 56.1 | 58.7 | 17.9 | 31.3 | 24.4 | 19.0 |
| LnGrp LOS | E | D | D | C | E | A | E | E | B | C | C | B |
| Approach Vol, veh/h | | 759 | | | 879 | | | 713 | | | 846 | |
| Approach Delay, s/veh | | 47.2 | | | 36.8 | | | 46.4 | | | 24.1 | |
| Approach LOS | | D | | | D | | | D | | | C | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 42.9 | 24.3 | 19.5 | 33.3 | 12.0 | 55.2 | 17.0 | 35.8 |
| Change Period (Y+Rc), s | * 5.9 | 5.7 | 5.6 | 5.9 | * 6.2 | * 5.9 | 5.9 | 5.9 |
| Max Green Setting (Gmax), s | * 16 | 32.3 | 16.0 | 32.5 | * 7 | * 41 | 13.1 | 35.1 |
| Max Q Clear Time (g_c+I1), s | 10.9 | 16.5 | 13.9 | 16.2 | 5.3 | 14.1 | 11.0 | 28.7 |
| Green Ext Time (p_c), s | 0.1 | 2.1 | 0.1 | 1.6 | 0.0 | 2.3 | 0.1 | 1.2 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 38.1 |
| HCM 6th LOS | D |

Notes

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

| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 32 | 60 | 23 | 1357 | 928 | 5 |
| Future Volume (vph) | 32 | 60 | 23 | 1357 | 928 | 5 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | 125 | 100 | | | 0 |
| Storage Lanes | 1 | 1 | 1 | | | 0 |
| Taper Length (ft) | 100 | | 100 | | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 0.95 |
| Frt | | 0.850 | | | 0.999 | |
| Flt Protected | 0.950 | | 0.950 | | | |
| Satd. Flow (prot) | 1770 | 1538 | 1656 | 3539 | 3502 | 0 |
| Flt Permitted | 0.950 | | 0.950 | | | |
| Satd. Flow (perm) | 1770 | 1538 | 1656 | 3539 | 3502 | 0 |
| Link Speed (mph) | 30 | | | 40 | 40 | |
| Link Distance (ft) | 928 | | | 1413 | 1063 | |
| Travel Time (s) | 21.1 | | | 24.1 | 18.1 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 5% | 9% | 2% | 3% | 2% |
| Adj. Flow (vph) | 36 | 67 | 26 | 1508 | 1031 | 6 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 36 | 67 | 26 | 1508 | 1037 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No |
| Lane Alignment | Left | Right | Left | Left | Left | Right |
| Median Width(ft) | 12 | | | 12 | 12 | |
| Link Offset(ft) | 0 | | | 0 | 0 | |
| Crosswalk Width(ft) | 16 | | | 16 | 16 | |
| Two way Left Turn Lane | | | | Yes | Yes | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | 9 | 15 | | | 9 |
| Sign Control | Stop | | | Free | Free | |

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 47.5% ICU Level of Service A
Analysis Period (min) 15

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.8 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 32 | 60 | 23 | 1357 | 928 | 5 |
| Future Vol, veh/h | 32 | 60 | 23 | 1357 | 928 | 5 |
| 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 | 125 | 100 | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 2 | 5 | 9 | 2 | 3 | 2 |
| Mvmt Flow | 36 | 67 | 26 | 1508 | 1031 | 6 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 1840 | 519 | 1037 | 0 | - | 0 |
| Stage 1 | 1034 | - | - | - | - | - |
| Stage 2 | 806 | - | - | - | - | - |
| Critical Hdwy | 6.84 | 7 | 4.28 | - | - | - |
| Critical Hdwy Stg 1 | 5.84 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.84 | - | - | - | - | - |
| Follow-up Hdwy | 3.52 | 3.35 | 2.29 | - | - | - |
| Pot Cap-1 Maneuver | 67 | 494 | 626 | - | - | - |
| Stage 1 | 304 | - | - | - | - | - |
| Stage 2 | 400 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 64 | 494 | 626 | - | - | - |
| Mov Cap-2 Maneuver | 182 | - | - | - | - | - |
| Stage 1 | 291 | - | - | - | - | - |
| Stage 2 | 400 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 19 | 0.2 | 0 |
| HCM LOS | C | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | EBLn2 | SBT | SBR |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | 626 | - | 182 | 494 | - | - |
| HCM Lane V/C Ratio | 0.041 | - | 0.195 | 0.135 | - | - |
| HCM Control Delay (s) | 11 | - | 29.5 | 13.4 | - | - |
| HCM Lane LOS | B | - | D | B | - | - |
| HCM 95th %tile Q(veh) | 0.1 | - | 0.7 | 0.5 | - | - |

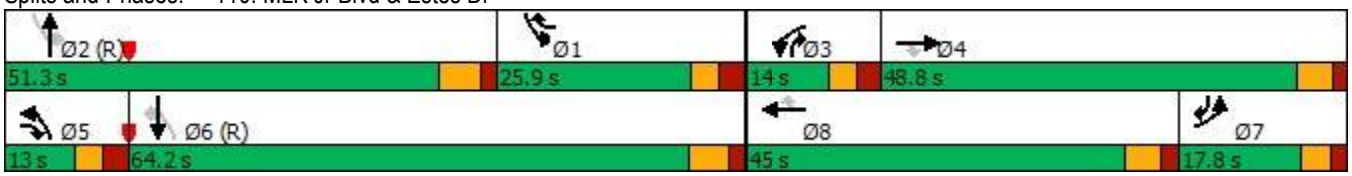
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 241 | 433 | 57 | 187 | 500 | 483 | 67 | 1104 | 218 | 325 | 689 | 207 |
| Future Volume (vph) | 241 | 433 | 57 | 187 | 500 | 483 | 67 | 1104 | 218 | 325 | 689 | 207 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Grade (%) | | 1% | | | -2% | | | 1% | | | 0% | |
| Storage Length (ft) | 300 | | 225 | 300 | | 250 | 150 | | 300 | 225 | | 150 |
| Storage Lanes | 2 | | 1 | 2 | | 1 | 1 | | 1 | 1 | | 1 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 0.97 | 1.00 | 1.00 | 0.97 | 1.00 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 |
| Frt | | | 0.850 | | | 0.850 | | | 0.850 | | | 0.850 |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 3416 | 1853 | 1575 | 3467 | 1881 | 1599 | 1761 | 3522 | 1575 | 1770 | 3505 | 1583 |
| Flt Permitted | 0.950 | | | 0.950 | | | 0.251 | | | 0.086 | | |
| Satd. Flow (perm) | 3416 | 1853 | 1575 | 3467 | 1881 | 1599 | 465 | 3522 | 1575 | 160 | 3505 | 1583 |
| Right Turn on Red | | | No | | | No | | | No | | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (mph) | | 35 | | | 35 | | | 40 | | | 40 | |
| Link Distance (ft) | | 1251 | | | 793 | | | 1063 | | | 363 | |
| Travel Time (s) | | 24.4 | | | 15.4 | | | 18.1 | | | 6.2 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 2% | 2% | 2% | 2% | 2% | 2% | 2% | 2% | 3% | 2% |
| Adj. Flow (vph) | 268 | 481 | 63 | 208 | 556 | 537 | 74 | 1227 | 242 | 361 | 766 | 230 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 268 | 481 | 63 | 208 | 556 | 537 | 74 | 1227 | 242 | 361 | 766 | 230 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 24 | | | 24 | | | 12 | | | 12 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | Yes | | | | |
| Headway Factor | 1.01 | 1.01 | 1.01 | 0.99 | 0.99 | 0.99 | 1.01 | 1.01 | 1.01 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | 1 | 1 | 2 | 1 | 1 | 2 | 1 | 1 | 2 | 1 |
| Detector Template | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Leading Detector (ft) | 20 | 100 | 20 | 20 | 100 | 20 | 20 | 100 | 20 | 20 | 100 | 20 |
| Trailing Detector (ft) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Detector 1 Position(ft) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Detector 1 Size(ft) | 20 | 6 | 20 | 20 | 6 | 20 | 20 | 6 | 20 | 20 | 6 | 20 |
| Detector 1 Type | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (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 |
| Detector 1 Queue (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 |
| Detector 1 Delay (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 |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | 6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | Prot | NA | pm+ov | Prot | NA | pm+ov | D.P+P | NA | pm+ov | D.P+P | NA | pm+ov |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Protected Phases | 7 | 4 | 5 | 3 | 8 | 1 | 5 | 2 | 3 | 1 | 6 | 7 |
| Permitted Phases | | | 4 | | | 8 | 6 | | 2 | 2 | | 6 |
| Detector Phase | 7 | 4 | 5 | 3 | 8 | 1 | 5 | 2 | 3 | 1 | 6 | 7 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 12.0 | 7.0 | 7.0 | 12.0 | 7.0 |
| Minimum Split (s) | 11.9 | 12.5 | 12.8 | 12.4 | 12.5 | 12.8 | 12.8 | 34.0 | 12.4 | 12.8 | 18.0 | 11.9 |
| Total Split (s) | 17.8 | 48.8 | 13.0 | 14.0 | 45.0 | 25.9 | 13.0 | 51.3 | 14.0 | 25.9 | 64.2 | 17.8 |
| Total Split (%) | 12.7% | 34.9% | 9.3% | 10.0% | 32.1% | 18.5% | 9.3% | 36.6% | 10.0% | 18.5% | 45.9% | 12.7% |
| Maximum Green (s) | 12.9 | 43.3 | 7.2 | 8.6 | 39.5 | 20.1 | 7.2 | 45.3 | 8.6 | 20.1 | 58.2 | 12.9 |
| Yellow Time (s) | 3.0 | 3.8 | 3.0 | 3.0 | 3.8 | 3.0 | 3.0 | 4.3 | 3.0 | 3.0 | 4.3 | 3.0 |
| All-Red Time (s) | 1.9 | 1.7 | 2.8 | 2.4 | 1.7 | 2.8 | 2.8 | 1.7 | 2.4 | 2.8 | 1.7 | 1.9 |
| Lost Time Adjust (s) | 0.1 | -0.5 | -0.8 | -0.4 | -0.5 | -0.8 | -0.8 | -1.0 | 0.0 | -0.8 | -1.0 | 0.0 |
| Total Lost Time (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.4 | 5.0 | 5.0 | 4.9 |
| Lead/Lag | Lag | Lag | Lead | Lead | Lead | Lag | Lead | Lead | Lead | Lag | Lag | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Vehicle Extension (s) | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 2.0 | 1.0 | 1.0 | 2.0 | 1.0 |
| Recall Mode | None | None | None | None | None | None | None | C-Min | None | None | C-Min | None |
| Walk Time (s) | | | | | | | | 7.0 | | | | |
| Flash Dont Walk (s) | | | | | | | | 21.0 | | | | |
| Pedestrian Calls (#/hr) | | | | | | | | 0 | | | | |
| Act Effct Green (s) | 12.4 | 43.4 | 56.3 | 9.0 | 40.0 | 65.9 | 67.6 | 46.7 | 54.9 | 67.6 | 59.7 | 72.3 |
| Actuated g/C Ratio | 0.09 | 0.31 | 0.40 | 0.06 | 0.29 | 0.47 | 0.48 | 0.33 | 0.39 | 0.48 | 0.43 | 0.52 |
| v/c Ratio | 0.89 | 0.84 | 0.10 | 0.94 | 1.04 | 0.71 | 0.25 | 1.05 | 0.39 | 1.14 | 0.51 | 0.28 |
| Control Delay | 92.3 | 59.2 | 26.5 | 110.4 | 96.6 | 36.1 | 19.4 | 83.8 | 18.6 | 127.5 | 18.7 | 7.1 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 92.3 | 59.2 | 26.5 | 110.4 | 96.6 | 36.1 | 19.4 | 83.8 | 18.6 | 127.5 | 18.7 | 7.1 |
| LOS | F | E | C | F | F | D | B | F | B | F | B | A |
| Approach Delay | | 67.6 | | | 73.8 | | | 70.5 | | | 45.7 | |
| Approach LOS | | E | | | E | | | E | | | D | |

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 12 (9%), Referenced to phase 2:NBSB and 6:NBSB, Start of Green
Natural Cycle: 110
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.14
Intersection Signal Delay: 64.2 Intersection LOS: E
Intersection Capacity Utilization 98.4% ICU Level of Service F
Analysis Period (min) 15

Splits and Phases: 110: MLK Jr Blvd & Estes Dr



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 241 | 433 | 57 | 187 | 500 | 483 | 67 | 1104 | 218 | 325 | 689 | 207 |
| Future Volume (veh/h) | 241 | 433 | 57 | 187 | 500 | 483 | 67 | 1104 | 218 | 325 | 689 | 207 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1864 | 1864 | 1864 | 1949 | 1949 | 1949 | 1864 | 1864 | 1864 | 1870 | 1856 | 1870 |
| Adj Flow Rate, veh/h | 268 | 481 | 63 | 208 | 556 | 537 | 74 | 1227 | 242 | 361 | 766 | 230 |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 2 |
| Cap, veh/h | 311 | 589 | 586 | 231 | 557 | 882 | 441 | 1172 | 608 | 490 | 1852 | 966 |
| Arrive On Green | 0.09 | 0.32 | 0.32 | 0.06 | 0.29 | 0.29 | 0.05 | 0.33 | 0.32 | 0.49 | 1.00 | 1.00 |
| Sat Flow, veh/h | 3445 | 1864 | 1580 | 3600 | 1949 | 1651 | 1776 | 3542 | 1580 | 1781 | 3526 | 1585 |
| Grp Volume(v), veh/h | 268 | 481 | 63 | 208 | 556 | 537 | 74 | 1227 | 242 | 361 | 766 | 230 |
| Grp Sat Flow(s),veh/h/ln | 1722 | 1864 | 1580 | 1800 | 1949 | 1651 | 1776 | 1771 | 1580 | 1781 | 1763 | 1585 |
| Q Serve(g_s), s | 10.7 | 33.3 | 3.7 | 8.0 | 39.9 | 0.0 | 2.6 | 46.3 | 8.9 | 17.4 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 10.7 | 33.3 | 3.7 | 8.0 | 39.9 | 0.0 | 2.6 | 46.3 | 8.9 | 17.4 | 0.0 | 0.0 |
| 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 | 311 | 589 | 586 | 231 | 557 | 882 | 441 | 1172 | 608 | 490 | 1852 | 966 |
| V/C Ratio(X) | 0.86 | 0.82 | 0.11 | 0.90 | 1.00 | 0.61 | 0.17 | 1.05 | 0.40 | 0.74 | 0.41 | 0.24 |
| Avail Cap(c_a), veh/h | 315 | 589 | 586 | 231 | 557 | 882 | 448 | 1172 | 608 | 490 | 1852 | 966 |
| 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 | 62.8 | 44.1 | 28.8 | 65.0 | 50.0 | 22.5 | 13.1 | 46.8 | 16.9 | 30.0 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 19.8 | 8.2 | 0.0 | 32.7 | 37.8 | 0.9 | 0.1 | 39.6 | 1.9 | 5.1 | 0.7 | 0.6 |
| 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 | 16.6 | 1.4 | 4.7 | 25.0 | 12.2 | 1.0 | 26.3 | 3.3 | 7.7 | 0.2 | 0.2 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 82.6 | 52.3 | 28.9 | 97.7 | 87.7 | 23.4 | 13.1 | 86.4 | 18.8 | 35.1 | 0.7 | 0.6 |
| LnGrp LOS | F | D | C | F | F | C | B | F | B | D | A | A |
| Approach Vol, veh/h | | 812 | | | 1301 | | | 1543 | | | 1357 | |
| Approach Delay, s/veh | | 60.5 | | | 62.8 | | | 72.3 | | | 9.8 | |
| Approach LOS | | E | | | E | | | E | | | A | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 39.6 | 51.3 | 14.0 | 49.2 | 12.4 | 78.5 | 18.2 | 45.0 |
| Change Period (Y+Rc), s | * 6 | * 6 | 5.4 | 5.5 | * 5.8 | * 6 | 5.5 | * 5.5 |
| Max Green Setting (Gmax), s | * 20 | * 45 | 8.6 | 43.3 | * 7.2 | * 58 | 12.9 | * 40 |
| Max Q Clear Time (g_c+I1), s | 19.4 | 48.3 | 10.0 | 35.3 | 4.6 | 2.0 | 12.7 | 41.9 |
| Green Ext Time (p_c), s | 0.0 | 0.0 | 0.0 | 0.7 | 0.0 | 3.9 | 0.0 | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 51.0 |
| HCM 6th LOS | D |

Notes

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

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 31 | 1805 | 23 | 0 | 1221 |
| Future Volume (vph) | 0 | 31 | 1805 | 23 | 0 | 1221 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Grade (%) | 0% | | -1% | | | 0% |
| Lane Util. Factor | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | 0.95 |
| Frt | | 0.865 | 0.998 | | | |
| Flt Protected | | | | | | |
| Satd. Flow (prot) | 0 | 1611 | 3550 | 0 | 0 | 3539 |
| Flt Permitted | | | | | | |
| Satd. Flow (perm) | 0 | 1611 | 3550 | 0 | 0 | 3539 |
| Link Speed (mph) | 25 | | 40 | | | 40 |
| Link Distance (ft) | 303 | | 363 | | | 1151 |
| Travel Time (s) | 8.3 | | 6.2 | | | 19.6 |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Adj. Flow (vph) | 0 | 34 | 2006 | 26 | 0 | 1357 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 34 | 2032 | 0 | 0 | 1357 |
| Enter Blocked Intersection | No | No | No | No | No | No |
| Lane Alignment | Left | Right | Left | Right | Left | Left |
| Median Width(ft) | 0 | | 12 | | | 12 |
| Link Offset(ft) | 0 | | 0 | | | 0 |
| Crosswalk Width(ft) | 16 | | 16 | | | 16 |
| Two way Left Turn Lane | | | | | | |
| Headway Factor | 1.00 | 1.00 | 0.99 | 0.99 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | 9 | | 9 | 15 | |
| Sign Control | Stop | | Free | | | Free |

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 60.6% ICU Level of Service B
Analysis Period (min) 15

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

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 0 | 31 | 1805 | 23 | 0 | 1221 |
| Future Vol, veh/h | 0 | 31 | 1805 | 23 | 0 | 1221 |
| 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 | - | -1 | - | - | 0 |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 34 | 2006 | 26 | 0 | 1357 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | - | 1016 | 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, % | | | - | - | | - |
| Mov Cap-1 Maneuver | - | 236 | - | - | - | - |
| Mov Cap-2 Maneuver | - | - | - | - | - | - |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 22.8 | 0 | 0 |
| HCM LOS | C | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBT |
|---|---|---|---|---|
| Capacity (veh/h) | - | - | 236 | - |
| HCM Lane V/C Ratio | - | - | 0.146 | - |
| HCM Control Delay (s) | - | - | 22.8 | - |
| HCM Lane LOS | - | - | C | - |
| HCM 95th %tile Q(veh) | - | - | 0.5 | - |

| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 50 | 927 | 1144 | 47 | 35 | 24 |
| Future Volume (vph) | 50 | 927 | 1144 | 47 | 35 | 24 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Grade (%) | | 0% | -2% | | 0% | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | | 0.995 | | 0.945 | |
| Flt Protected | | 0.997 | | | 0.971 | |
| Satd. Flow (prot) | 0 | 1857 | 1872 | 0 | 1709 | 0 |
| Flt Permitted | | 0.997 | | | 0.971 | |
| Satd. Flow (perm) | 0 | 1857 | 1872 | 0 | 1709 | 0 |
| Link Speed (mph) | | 35 | 35 | | 25 | |
| Link Distance (ft) | | 793 | 778 | | 374 | |
| Travel Time (s) | | 15.4 | 15.2 | | 10.2 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Adj. Flow (vph) | 56 | 1030 | 1271 | 52 | 39 | 27 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 1086 | 1323 | 0 | 66 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Left | Right | Left | Right |
| Median Width(ft) | | 24 | 24 | | 12 | |
| Link Offset(ft) | | 0 | 0 | | 0 | |
| Crosswalk Width(ft) | | 16 | 16 | | 16 | |
| Two way Left Turn Lane | | | | | | |
| Headway Factor | 1.00 | 1.00 | 0.99 | 0.99 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | | 9 | 15 | 9 |
| Sign Control | | Free | Free | | Stop | |

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 99.7% ICU Level of Service F
Analysis Period (min) 15

| Intersection | |
|---|---|
| Int Delay, s/veh | 14.4 |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 50 | 927 | 1144 | 47 | 35 | 24 |
| Future Vol, veh/h | 50 | 927 | 1144 | 47 | 35 | 24 |
| 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 | -2 | - | 0 | - |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 56 | 1030 | 1271 | 52 | 39 | 27 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 1323 | 0 | - | 0 | 2439 | 1297 |
| Stage 1 | - | - | - | - | 1297 | - |
| Stage 2 | - | - | - | - | 1142 | - |
| 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 | 522 | - | - | - | ~ 35 | 198 |
| Stage 1 | - | - | - | - | 256 | - |
| Stage 2 | - | - | - | - | 304 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | 522 | - | - | - | ~ 26 | 198 |
| Mov Cap-2 Maneuver | - | - | - | - | ~ 26 | - |
| Stage 1 | - | - | - | - | 192 | - |
| Stage 2 | - | - | - | - | 304 | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 0.7 | 0 | $ 533.8 |
| HCM LOS | | | F |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|
| Capacity (veh/h) | 522 | - | - | - | 40 |
| HCM Lane V/C Ratio | 0.106 | - | - | - | 1.639 |
| HCM Control Delay (s) | 12.7 | 0 | - | - | $ 533.8 |
| HCM Lane LOS | B | A | - | - | F |
| HCM 95th %tile Q(veh) | 0.4 | - | - | - | 6.8 |

Notes

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

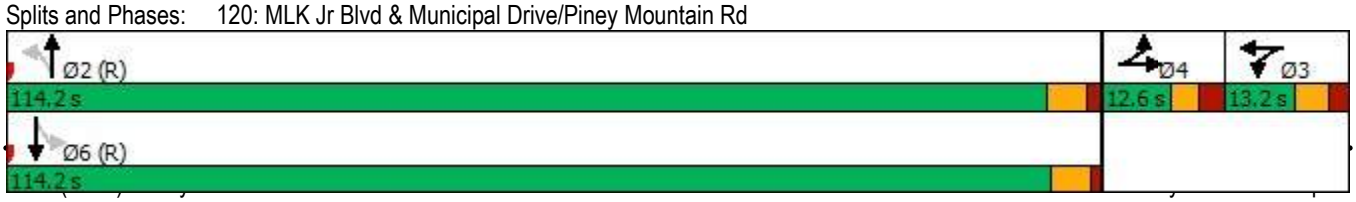
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 24 | 7 | 27 | 107 | 1 | 34 | 14 | 1679 | 143 | 45 | 1087 | 18 |
| Future Volume (vph) | 24 | 7 | 27 | 107 | 1 | 34 | 14 | 1679 | 143 | 45 | 1087 | 18 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Grade (%) | | 0% | | | 4% | | | -1% | | | 0% | |
| Storage Length (ft) | 100 | | 0 | 375 | | 0 | 150 | | 0 | 225 | | 0 |
| Storage Lanes | 1 | | 0 | 2 | | 0 | 1 | | 0 | 1 | | 0 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 0.97 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | 0.95 | 0.95 |
| Frt | | 0.882 | | | 0.854 | | | 0.988 | | | 0.998 | |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1736 | 1643 | 0 | 3364 | 1488 | 0 | 1778 | 3514 | 0 | 1770 | 3532 | 0 |
| Flt Permitted | 0.950 | | | 0.950 | | | 0.205 | | | 0.067 | | |
| Satd. Flow (perm) | 1736 | 1643 | 0 | 3364 | 1488 | 0 | 384 | 3514 | 0 | 125 | 3532 | 0 |
| Right Turn on Red | | | No | | | No | | | No | | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (mph) | | 20 | | | 35 | | | 40 | | | 40 | |
| Link Distance (ft) | | 554 | | | 663 | | | 1151 | | | 2618 | |
| Travel Time (s) | | 18.9 | | | 12.9 | | | 19.6 | | | 44.6 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 4% | 2% | 2% | 2% | 2% | 7% | 2% | 2% | 2% | 2% | 2% | 2% |
| Adj. Flow (vph) | 27 | 8 | 30 | 119 | 1 | 38 | 16 | 1866 | 159 | 50 | 1208 | 20 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 27 | 38 | 0 | 119 | 39 | 0 | 16 | 2025 | 0 | 50 | 1228 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 24 | | | 24 | | | 12 | | | 12 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.03 | 1.03 | 1.03 | 0.99 | 0.99 | 0.99 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | 1 | 2 | | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | | Left | Thru | | Left | Thru | | Left | Thru | |
| Leading Detector (ft) | 20 | 100 | | 20 | 100 | | 20 | 100 | | 20 | 100 | |
| Trailing Detector (ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Position(ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Size(ft) | 20 | 6 | | 20 | 6 | | 20 | 6 | | 20 | 6 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | 6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | Split | NA | | Split | NA | | Perm | NA | | Perm | NA | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Protected Phases | 4 | 4 | | 3 | 3 | | | 2 | | | 6 | |
| Permitted Phases | | | | | | | 2 | | | 6 | | |
| Detector Phase | 4 | 4 | | 3 | 3 | | 2 | 2 | | 6 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | | 7.0 | 7.0 | | 12.0 | 12.0 | | 12.0 | 12.0 | |
| Minimum Split (s) | 12.6 | 12.6 | | 12.9 | 12.9 | | 27.8 | 27.8 | | 17.5 | 17.5 | |
| Total Split (s) | 12.6 | 12.6 | | 13.2 | 13.2 | | 114.2 | 114.2 | | 114.2 | 114.2 | |
| Total Split (%) | 9.0% | 9.0% | | 9.4% | 9.4% | | 81.6% | 81.6% | | 81.6% | 81.6% | |
| Maximum Green (s) | 7.0 | 7.0 | | 7.3 | 7.3 | | 108.4 | 108.4 | | 108.7 | 108.7 | |
| Yellow Time (s) | 3.0 | 3.0 | | 3.6 | 3.6 | | 4.2 | 4.2 | | 4.2 | 4.2 | |
| All-Red Time (s) | 2.6 | 2.6 | | 2.3 | 2.3 | | 1.6 | 1.6 | | 1.3 | 1.3 | |
| Lost Time Adjust (s) | -0.6 | -0.6 | | -0.9 | -0.9 | | -0.8 | -0.8 | | -0.5 | -0.5 | |
| Total Lost Time (s) | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | |
| Lead/Lag | Lead | Lead | | Lag | Lag | | | | | | | |
| Lead-Lag Optimize? | Yes | Yes | | Yes | Yes | | | | | | | |
| Vehicle Extension (s) | 1.0 | 1.0 | | 1.0 | 1.0 | | 6.0 | 6.0 | | 6.0 | 6.0 | |
| Minimum Gap (s) | 1.0 | 1.0 | | 1.0 | 1.0 | | 6.0 | 6.0 | | 6.0 | 6.0 | |
| Time Before Reduce (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 15.0 | 15.0 | | 15.0 | 15.0 | |
| Time To Reduce (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 45.0 | 45.0 | | 45.0 | 45.0 | |
| Recall Mode | None | None | | None | None | | C-Min | C-Min | | C-Min | C-Min | |
| Walk Time (s) | | | | | | | 7.0 | 7.0 | | | | |
| Flash Dont Walk (s) | | | | | | | 15.0 | 15.0 | | | | |
| Pedestrian Calls (#/hr) | | | | | | | 0 | 0 | | | | |
| Act Effct Green (s) | 7.6 | 7.6 | | 8.1 | 8.1 | | 111.8 | 111.8 | | 111.8 | 111.8 | |
| Actuated g/C Ratio | 0.05 | 0.05 | | 0.06 | 0.06 | | 0.80 | 0.80 | | 0.80 | 0.80 | |
| v/c Ratio | 0.29 | 0.43 | | 0.61 | 0.45 | | 0.05 | 0.72 | | 0.51 | 0.44 | |
| Control Delay | 71.8 | 79.1 | | 78.2 | 80.9 | | 2.0 | 3.7 | | 38.8 | 10.3 | |
| Queue Delay | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Delay | 71.8 | 79.1 | | 78.2 | 80.9 | | 2.0 | 3.7 | | 38.8 | 10.3 | |
| LOS | E | E | | E | F | | A | A | | D | B | |
| Approach Delay | | 76.1 | | | 78.9 | | | 3.7 | | | 11.4 | |
| Approach LOS | | E | | | E | | | A | | | B | |

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.72
Intersection Signal Delay: 11.1 Intersection LOS: B
Intersection Capacity Utilization 69.0% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 120: MLK Jr Blvd & Municipal Drive/Piney Mountain Rd



HCM 6th Edition methodology expects strict NEMA phasing.

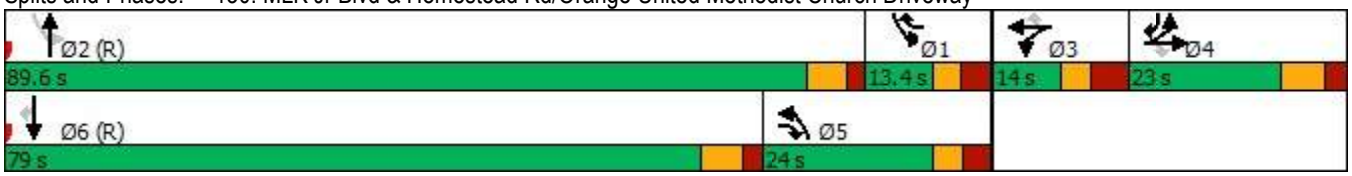
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 207 | 0 | 192 | 2 | 2 | 1 | 265 | 1472 | 0 | 7 | 956 | 195 |
| Future Volume (vph) | 207 | 0 | 192 | 2 | 2 | 1 | 265 | 1472 | 0 | 7 | 956 | 195 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 125 | | 0 | 125 | | 0 | 525 | | 0 | 250 | | 375 |
| Storage Lanes | 1 | | 1 | 2 | | 1 | 2 | | 0 | 1 | | 1 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 0.95 | 0.95 | 1.00 | 0.95 | 0.95 | 1.00 | 0.97 | 0.95 | 0.95 | 1.00 | 0.95 | 1.00 |
| Frt | | | 0.850 | | | 0.850 | | | | | | 0.850 |
| Flt Protected | 0.950 | 0.950 | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1681 | 1681 | 1583 | 1681 | 1770 | 1583 | 3433 | 3539 | 0 | 1770 | 3539 | 1583 |
| Flt Permitted | 0.950 | 0.950 | | 0.950 | | | 0.950 | | | 0.100 | | |
| Satd. Flow (perm) | 1681 | 1681 | 1583 | 1681 | 1770 | 1583 | 3433 | 3539 | 0 | 186 | 3539 | 1583 |
| Right Turn on Red | | | No | | | No | | | No | | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (mph) | | 35 | | | 20 | | | 40 | | | 40 | |
| Link Distance (ft) | | 1248 | | | 314 | | | 1137 | | | 1345 | |
| Travel Time (s) | | 24.3 | | | 10.7 | | | 19.4 | | | 22.9 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Adj. Flow (vph) | 230 | 0 | 213 | 2 | 2 | 1 | 294 | 1636 | 0 | 8 | 1062 | 217 |
| Shared Lane Traffic (%) | 50% | | | 10% | | | | | | | | |
| Lane Group Flow (vph) | 115 | 115 | 213 | 2 | 2 | 1 | 294 | 1636 | 0 | 8 | 1062 | 217 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 12 | | | 12 | | | 24 | | | 24 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | Yes | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | 1 | 1 | 2 | 1 | 1 | 2 | | 1 | 2 | 1 |
| Detector Template | Left | Thru | Right | Left | Thru | Right | Left | Thru | | Left | Thru | Right |
| Leading Detector (ft) | 20 | 100 | 20 | 20 | 100 | 20 | 20 | 100 | | 20 | 100 | 20 |
| Trailing Detector (ft) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 |
| Detector 1 Position(ft) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 |
| Detector 1 Size(ft) | 20 | 6 | 20 | 20 | 6 | 20 | 20 | 6 | | 20 | 6 | 20 |
| Detector 1 Type | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Detector 1 Queue (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Detector 1 Delay (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | 6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | Split | NA | pm+ov | Split | NA | pm+ov | Prot | NA | | D.P+P | NA | pm+ov |
| Protected Phases | 4 | 4 | 5 | 3 | 3 | 1 | 5 | 2 | | 1 | 6 | 4 |
| Permitted Phases | | | 4 | | | 3 | | | | 2 | | 6 |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Detector Phase | 4 | 4 | 5 | 3 | 3 | 1 | 5 | 2 | | 1 | 6 | 4 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 12.0 | | 7.0 | 12.0 | 7.0 |
| Minimum Split (s) | 14.1 | 14.1 | 13.3 | 13.9 | 13.9 | 13.4 | 13.3 | 28.0 | | 13.4 | 45.4 | 14.1 |
| Total Split (s) | 23.0 | 23.0 | 24.0 | 14.0 | 14.0 | 13.4 | 24.0 | 89.6 | | 13.4 | 79.0 | 23.0 |
| Total Split (%) | 16.4% | 16.4% | 17.1% | 10.0% | 10.0% | 9.6% | 17.1% | 64.0% | | 9.6% | 56.4% | 16.4% |
| Maximum Green (s) | 15.9 | 15.9 | 17.7 | 7.1 | 7.1 | 7.0 | 17.7 | 83.6 | | 7.0 | 72.6 | 15.9 |
| Yellow Time (s) | 4.5 | 4.5 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 4.2 | | 3.0 | 4.2 | 4.5 |
| All-Red Time (s) | 2.6 | 2.6 | 3.3 | 3.9 | 3.9 | 3.4 | 3.3 | 1.8 | | 3.4 | 2.2 | 2.6 |
| Lost Time Adjust (s) | -2.1 | -2.1 | -1.3 | -1.9 | -1.9 | -1.4 | -1.3 | -1.0 | | -1.4 | -1.4 | -2.1 |
| Total Lost Time (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | | 5.0 | 5.0 | 5.0 |
| Lead/Lag | Lag | Lag | Lag | Lead | Lead | Lag | Lag | Lead | | Lag | Lead | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | | Yes | Yes | Yes |
| Vehicle Extension (s) | 1.0 | 1.0 | 1.0 | 2.0 | 2.0 | 2.0 | 1.0 | 6.0 | | 2.0 | 6.0 | 1.0 |
| Minimum Gap (s) | 1.0 | 1.0 | 1.0 | 2.0 | 2.0 | 2.0 | 1.0 | 6.0 | | 2.0 | 6.0 | 1.0 |
| Time Before Reduce (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 15.0 | | 0.0 | 15.0 | 0.0 |
| Time To Reduce (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 45.0 | | 0.0 | 45.0 | 0.0 |
| Recall Mode | None | None | None | None | None | None | None | C-Min | | None | C-Min | None |
| Walk Time (s) | | | | | | | | 7.0 | | | 7.0 | |
| Flash Dont Walk (s) | | | | | | | | 15.0 | | | 32.0 | |
| Pedestrian Calls (#/hr) | | | | | | | | 0 | | | 0 | |
| Act Effct Green (s) | 14.5 | 14.5 | 41.6 | 8.9 | 8.9 | 11.2 | 23.1 | 107.3 | | 115.7 | 84.6 | 104.2 |
| Actuated g/C Ratio | 0.10 | 0.10 | 0.30 | 0.06 | 0.06 | 0.08 | 0.16 | 0.77 | | 0.83 | 0.60 | 0.74 |
| v/c Ratio | 0.66 | 0.66 | 0.45 | 0.02 | 0.02 | 0.01 | 0.52 | 0.60 | | 0.03 | 0.50 | 0.18 |
| Control Delay | 77.8 | 77.8 | 38.7 | 62.0 | 62.0 | 54.0 | 42.8 | 5.2 | | 5.1 | 18.5 | 6.8 |
| 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 | 77.8 | 77.8 | 38.7 | 62.0 | 62.0 | 54.0 | 42.8 | 5.2 | | 5.1 | 18.5 | 6.8 |
| LOS | E | E | D | E | E | D | D | A | | A | B | A |
| Approach Delay | | 59.0 | | | 60.4 | | | 10.9 | | | 16.4 | |
| Approach LOS | | E | | | E | | | B | | | B | |

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 61 (44%), Referenced to phase 2:NBSB and 6:SBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.66
Intersection Signal Delay: 18.7 Intersection LOS: B
Intersection Capacity Utilization 71.4% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 130: MLK Jr Blvd & Homestead Rd/Orange United Methodist Church Driveway



HCM 6th Edition methodology expects strict NEMA phasing.

| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 15 | 946 | 1175 | 25 | 23 | 16 |
| Future Volume (vph) | 15 | 946 | 1175 | 25 | 23 | 16 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 100 | | | 0 | 0 | 0 |
| Storage Lanes | 1 | | | 0 | 1 | 0 |
| Taper Length (ft) | 100 | | | | 100 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | | 0.997 | | 0.945 | |
| Flt Protected | 0.950 | | | | 0.971 | |
| Satd. Flow (prot) | 1770 | 1863 | 1857 | 0 | 1709 | 0 |
| Flt Permitted | 0.950 | | | | 0.971 | |
| Satd. Flow (perm) | 1770 | 1863 | 1857 | 0 | 1709 | 0 |
| Link Speed (mph) | | 35 | 35 | | 30 | |
| Link Distance (ft) | | 778 | 840 | | 813 | |
| Travel Time (s) | | 15.2 | 16.4 | | 18.5 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Adj. Flow (vph) | 17 | 1051 | 1306 | 28 | 26 | 18 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 17 | 1051 | 1334 | 0 | 44 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Left | Right | Left | Right |
| Median Width(ft) | | 12 | 12 | | 12 | |
| Link Offset(ft) | | 0 | 0 | | 0 | |
| Crosswalk Width(ft) | | 16 | 16 | | 16 | |
| Two way Left Turn Lane | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | | 9 | 15 | 9 |
| Sign Control | | Free | Free | | Stop | |

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 73.4% ICU Level of Service D
Analysis Period (min) 15

| Intersection | |
|---|---|
| Int Delay, s/veh | 3.5 |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 15 | 946 | 1175 | 25 | 23 | 16 |
| Future Vol, veh/h | 15 | 946 | 1175 | 25 | 23 | 16 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 100 | - | - | - | 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 | 17 | 1051 | 1306 | 28 | 26 | 18 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 1334 | 0 | - | 0 | 2405 | 1320 |
| Stage 1 | - | - | - | - | 1320 | - |
| Stage 2 | - | - | - | - | 1085 | - |
| 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 | 517 | - | - | - | 36 | 192 |
| Stage 1 | - | - | - | - | 250 | - |
| Stage 2 | - | - | - | - | 324 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | 517 | - | - | - | 35 | 192 |
| Mov Cap-2 Maneuver | - | - | - | - | 35 | - |
| Stage 1 | - | - | - | - | 242 | - |
| Stage 2 | - | - | - | - | 324 | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 0.2 | 0 | 195.2 |
| HCM LOS | | | F |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|
| Capacity (veh/h) | 517 | - | - | - | 53 |
| HCM Lane V/C Ratio | 0.032 | - | - | - | 0.818 |
| HCM Control Delay (s) | 12.2 | - | - | - | 195.2 |
| HCM Lane LOS | B | - | - | - | F |
| HCM 95th %tile Q(veh) | 0.1 | - | - | - | 3.5 |

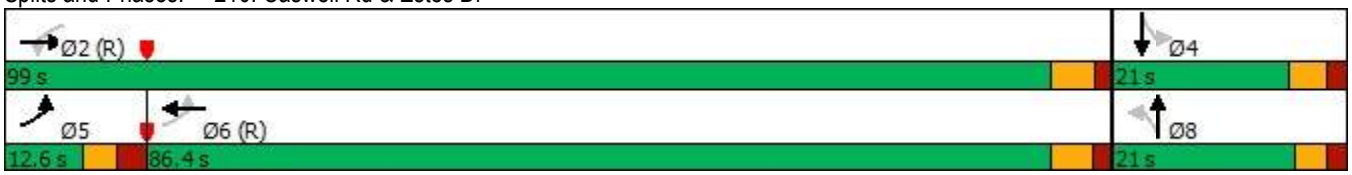
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 118 | 843 | 8 | 2 | 1026 | 50 | 3 | 3 | 1 | 36 | 3 | 171 |
| Future Volume (vph) | 118 | 843 | 8 | 2 | 1026 | 50 | 3 | 3 | 1 | 36 | 3 | 171 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Grade (%) | | -2% | | | 0% | | | 7% | | | -5% | |
| Storage Length (ft) | 250 | | 0 | 125 | | 0 | 0 | | 0 | 100 | | 0 |
| Storage Lanes | 1 | | 0 | 1 | | 0 | 0 | | 0 | 1 | | 0 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | 0.999 | | | 0.993 | | | 0.981 | | | 0.852 | |
| Flt Protected | 0.950 | | | 0.950 | | | | 0.979 | | 0.950 | | |
| Satd. Flow (prot) | 1787 | 1879 | 0 | 1770 | 1850 | 0 | 0 | 1726 | 0 | 1814 | 1627 | 0 |
| Flt Permitted | 0.049 | | | 0.239 | | | | 0.886 | | 0.753 | | |
| Satd. Flow (perm) | 92 | 1879 | 0 | 445 | 1850 | 0 | 0 | 1562 | 0 | 1438 | 1627 | 0 |
| Right Turn on Red | | | No | | | No | | | No | | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (mph) | | 35 | | | 35 | | | 25 | | | 25 | |
| Link Distance (ft) | | 961 | | | 940 | | | 384 | | | 262 | |
| Travel Time (s) | | 18.7 | | | 18.3 | | | 10.5 | | | 7.1 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Adj. Flow (vph) | 131 | 937 | 9 | 2 | 1140 | 56 | 3 | 3 | 1 | 40 | 3 | 190 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 131 | 946 | 0 | 2 | 1196 | 0 | 0 | 7 | 0 | 40 | 193 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 12 | | | 12 | | | 12 | | | 12 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 0.99 | 0.99 | 0.99 | 1.00 | 1.00 | 1.00 | 1.05 | 1.05 | 1.05 | 0.97 | 0.97 | 0.97 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | 1 | 2 | | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | | Left | Thru | | Left | Thru | | Left | Thru | |
| Leading Detector (ft) | 20 | 100 | | 20 | 100 | | 20 | 100 | | 20 | 100 | |
| Trailing Detector (ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Position(ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Size(ft) | 20 | 6 | | 20 | 6 | | 20 | 6 | | 20 | 6 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | 6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | D.P+P | NA | | D.Pm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | 5 | 2 | | | 6 | | | 8 | | | 4 | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Permitted Phases | 6 | | | 2 | | | 8 | | | 4 | | |
| Detector Phase | 5 | 2 | | 2 | 6 | | 8 | 8 | | 4 | 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 10.0 | | 10.0 | 10.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | |
| Minimum Split (s) | 12.6 | 21.6 | | 21.6 | 21.6 | | 11.9 | 11.9 | | 20.4 | 20.4 | |
| Total Split (s) | 12.6 | 99.0 | | 99.0 | 86.4 | | 21.0 | 21.0 | | 21.0 | 21.0 | |
| Total Split (%) | 10.5% | 82.5% | | 82.5% | 72.0% | | 17.5% | 17.5% | | 17.5% | 17.5% | |
| Maximum Green (s) | 7.0 | 93.4 | | 93.4 | 80.8 | | 16.1 | 16.1 | | 15.6 | 15.6 | |
| Yellow Time (s) | 3.0 | 4.0 | | 4.0 | 3.8 | | 3.0 | 3.0 | | 3.5 | 3.5 | |
| All-Red Time (s) | 2.6 | 1.6 | | 1.6 | 1.8 | | 1.9 | 1.9 | | 1.9 | 1.9 | |
| Lost Time Adjust (s) | -0.6 | -0.6 | | -0.6 | -0.6 | | | 0.1 | | -0.4 | -0.4 | |
| Total Lost Time (s) | 5.0 | 5.0 | | 5.0 | 5.0 | | | 5.0 | | 5.0 | 5.0 | |
| Lead/Lag | Lead | | | | Lag | | | | | | | |
| Lead-Lag Optimize? | Yes | | | | Yes | | | | | | | |
| Vehicle Extension (s) | 1.0 | 2.0 | | 2.0 | 2.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | |
| Recall Mode | None | C-Min | | C-Min | C-Min | | None | None | | None | None | |
| Walk Time (s) | | 7.0 | | 7.0 | 7.0 | | | | | 7.0 | 7.0 | |
| Flash Dont Walk (s) | | 9.0 | | 9.0 | 9.0 | | | | | 8.0 | 8.0 | |
| Pedestrian Calls (#/hr) | | 0 | | 0 | 0 | | | | | 0 | 0 | |
| Act Effct Green (s) | 89.5 | 94.5 | | 94.5 | 81.9 | | | 8.7 | | 15.5 | 15.5 | |
| Actuated g/C Ratio | 0.75 | 0.79 | | 0.79 | 0.68 | | | 0.07 | | 0.13 | 0.13 | |
| v/c Ratio | 0.75 | 0.64 | | 0.01 | 0.95 | | | 0.06 | | 0.22 | 0.92 | |
| Control Delay | 49.9 | 8.0 | | 1.5 | 22.5 | | | 50.5 | | 49.7 | 97.1 | |
| Queue Delay | 0.0 | 0.0 | | 0.0 | 0.0 | | | 0.0 | | 0.0 | 0.0 | |
| Total Delay | 49.9 | 8.0 | | 1.5 | 22.5 | | | 50.5 | | 49.7 | 97.1 | |
| LOS | D | A | | A | C | | | D | | D | F | |
| Approach Delay | | 13.1 | | | 22.5 | | | 50.5 | | | 88.9 | |
| Approach LOS | | B | | | C | | | D | | | F | |

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 67 (56%), Referenced to phase 2:EBWB and 6:EBWB, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.95
Intersection Signal Delay: 24.7 Intersection LOS: C
Intersection Capacity Utilization 86.8% ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 210: Caswell Rd & Estes Dr



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 118 | 843 | 8 | 2 | 1026 | 50 | 3 | 3 | 1 | 36 | 3 | 171 |
| Future Volume (veh/h) | 118 | 843 | 8 | 2 | 1026 | 50 | 3 | 3 | 1 | 36 | 3 | 171 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1949 | 1949 | 1949 | 1870 | 1870 | 1870 | 1582 | 1582 | 1582 | 2067 | 2067 | 2067 |
| Adj Flow Rate, veh/h | 131 | 937 | 9 | 2 | 1140 | 56 | 3 | 3 | 1 | 40 | 3 | 190 |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 176 | 1269 | 12 | 217 | 1210 | 59 | 52 | 38 | 8 | 201 | 3 | 221 |
| Arrive On Green | 0.06 | 0.66 | 0.65 | 0.09 | 0.68 | 0.68 | 0.12 | 0.12 | 0.12 | 0.13 | 0.13 | 0.12 |
| Sat Flow, veh/h | 1856 | 1927 | 19 | 1781 | 1768 | 87 | 73 | 304 | 63 | 1561 | 27 | 1728 |
| Grp Volume(v), veh/h | 131 | 0 | 946 | 2 | 0 | 1196 | 7 | 0 | 0 | 40 | 0 | 193 |
| Grp Sat Flow(s),veh/h/ln | 1856 | 0 | 1945 | 1781 | 0 | 1855 | 440 | 0 | 0 | 1561 | 0 | 1756 |
| Q Serve(g_s), s | 4.4 | 0.0 | 38.8 | 0.1 | 0.0 | 68.8 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 12.9 |
| Cycle Q Clear(g_c), s | 4.4 | 0.0 | 38.8 | 0.1 | 0.0 | 68.8 | 13.0 | 0.0 | 0.0 | 4.3 | 0.0 | 12.9 |
| Prop In Lane | 1.00 | | 0.01 | 1.00 | | 0.05 | 0.43 | | 0.14 | 1.00 | | 0.98 |
| Lane Grp Cap(c), veh/h | 176 | 0 | 1281 | 0 | 0 | 1269 | 98 | 0 | 0 | 201 | 0 | 225 |
| V/C Ratio(X) | 0.74 | 0.00 | 0.74 | 0.00 | 0.00 | 0.94 | 0.07 | 0.00 | 0.00 | 0.20 | 0.00 | 0.86 |
| Avail Cap(c_a), veh/h | 178 | 0 | 1524 | 0 | 0 | 1269 | 109 | 0 | 0 | 210 | 0 | 234 |
| 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 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 45.3 | 0.0 | 13.6 | 0.0 | 0.0 | 16.8 | 46.7 | 0.0 | 0.0 | 47.5 | 0.0 | 51.4 |
| Incr Delay (d2), s/veh | 13.7 | 0.0 | 3.8 | 0.0 | 0.0 | 14.8 | 0.1 | 0.0 | 0.0 | 0.2 | 0.0 | 23.9 |
| 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 | 0.0 | 16.6 | 0.0 | 0.0 | 30.2 | 0.2 | 0.0 | 0.0 | 1.1 | 0.0 | 7.2 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 59.0 | 0.0 | 17.5 | 0.0 | 0.0 | 31.6 | 46.8 | 0.0 | 0.0 | 47.7 | 0.0 | 75.4 |
| LnGrp LOS | E | A | B | A | A | C | D | A | A | D | A | E |
| Approach Vol, veh/h | | 1077 | | | 1198 | | | 7 | | | 233 | |
| Approach Delay, s/veh | | 22.5 | | | 31.5 | | | 46.8 | | | 70.6 | |
| Approach LOS | | C | | | C | | | D | | | E | |

| Timer - Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 15.6 | 84.0 | | 20.4 | 12.5 | 87.1 | | 20.4 |
| Change Period (Y+Rc), s | * 5.6 | * 5.6 | | * 5.4 | 5.6 | 5.6 | | * 5.4 |
| Max Green Setting (Gmax), s | * 93 | * 93 | | * 16 | 7.0 | 80.8 | | * 16 |
| Max Q Clear Time (g_c+I1), s | 2.1 | 40.8 | | 14.9 | 6.4 | 70.8 | | 15.0 |
| Green Ext Time (p_c), s | 0.0 | 5.4 | | 0.0 | 0.0 | 5.0 | | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 31.3 |
| HCM 6th LOS | C |

Notes

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

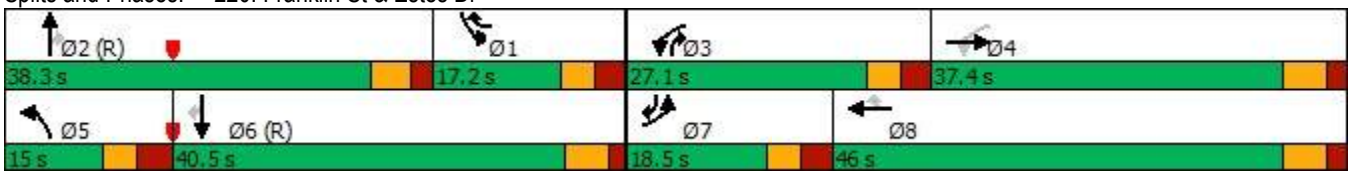
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 311 | 506 | 64 | 266 | 554 | 281 | 69 | 751 | 251 | 146 | 564 | 455 |
| Future Volume (vph) | 311 | 506 | 64 | 266 | 554 | 281 | 69 | 751 | 251 | 146 | 564 | 455 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Grade (%) | | -1% | | | 3% | | | -1% | | | 5% | |
| Storage Length (ft) | 300 | | 400 | 150 | | 0 | 150 | | 150 | 300 | | 350 |
| Storage Lanes | 2 | | 1 | 1 | | 1 | 1 | | 1 | 1 | | 1 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 0.97 | 0.95 | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 |
| Frt | | 0.983 | | | | 0.850 | | | 0.850 | | | 0.850 |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 3450 | 3496 | 0 | 1743 | 1835 | 1560 | 1778 | 3557 | 1591 | 1725 | 3451 | 1544 |
| Flt Permitted | 0.950 | | | 0.260 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (perm) | 3450 | 3496 | 0 | 477 | 1835 | 1560 | 1778 | 3557 | 1591 | 1725 | 3451 | 1544 |
| Right Turn on Red | | | No | | | No | | | No | | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (mph) | | 35 | | | 35 | | | 35 | | | 35 | |
| Link Distance (ft) | | 2406 | | | 987 | | | 1748 | | | 1202 | |
| Travel Time (s) | | 46.9 | | | 19.2 | | | 34.1 | | | 23.4 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Adj. Flow (vph) | 346 | 562 | 71 | 296 | 616 | 312 | 77 | 834 | 279 | 162 | 627 | 506 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 346 | 633 | 0 | 296 | 616 | 312 | 77 | 834 | 279 | 162 | 627 | 506 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 24 | | | 24 | | | 12 | | | 12 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | Yes | | | Yes | | | Yes | |
| Headway Factor | 0.99 | 0.99 | 0.99 | 1.02 | 1.02 | 1.02 | 0.99 | 0.99 | 0.99 | 1.03 | 1.03 | 1.03 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | 1 | 2 | 1 | 1 | 2 | 1 | 1 | 2 | 1 |
| Detector Template | Left | Thru | | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Leading Detector (ft) | 20 | 100 | | 20 | 100 | 20 | 20 | 100 | 20 | 20 | 100 | 20 |
| Trailing Detector (ft) | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Detector 1 Position(ft) | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Detector 1 Size(ft) | 20 | 6 | | 20 | 6 | 20 | 20 | 6 | 20 | 20 | 6 | 20 |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | 6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | Prot | NA | | D.P+P | NA | pm+ov | Prot | NA | pm+ov | Prot | NA | pm+ov |
| Protected Phases | 7 | 4 | | 3 | 8 | 1 | 5 | 2 | 3 | 1 | 6 | 7 |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Permitted Phases | | | | 4 | | 8 | | | 2 | | | 6 |
| Detector Phase | 7 | 4 | | 3 | 8 | 1 | 5 | 2 | 3 | 1 | 6 | 7 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | | 7.0 | 7.0 | 7.0 | 7.0 | 10.0 | 7.0 | 7.0 | 10.0 | 7.0 |
| Minimum Split (s) | 12.9 | 33.9 | | 12.6 | 30.9 | 12.9 | 13.2 | 35.7 | 12.6 | 12.9 | 21.5 | 12.9 |
| Total Split (s) | 18.5 | 37.4 | | 27.1 | 46.0 | 17.2 | 15.0 | 38.3 | 27.1 | 17.2 | 40.5 | 18.5 |
| Total Split (%) | 15.4% | 31.2% | | 22.6% | 38.3% | 14.3% | 12.5% | 31.9% | 22.6% | 14.3% | 33.8% | 15.4% |
| Maximum Green (s) | 12.6 | 31.5 | | 21.5 | 40.1 | 11.3 | 8.8 | 32.6 | 21.5 | 11.3 | 35.0 | 12.6 |
| Yellow Time (s) | 3.0 | 3.9 | | 3.0 | 3.9 | 3.0 | 3.0 | 3.7 | 3.0 | 3.0 | 3.9 | 3.0 |
| All-Red Time (s) | 2.9 | 2.0 | | 2.6 | 2.0 | 2.9 | 3.2 | 2.0 | 2.6 | 2.9 | 1.6 | 2.9 |
| Lost Time Adjust (s) | -0.9 | -0.9 | | -0.6 | -0.9 | -0.9 | -1.2 | -0.7 | 0.0 | -0.9 | -0.5 | 0.0 |
| Total Lost Time (s) | 5.0 | 5.0 | | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.6 | 5.0 | 5.0 | 5.9 |
| Lead/Lag | Lead | Lag | | Lead | Lag | Lag | Lead | Lead | Lead | Lag | Lag | Lead |
| Lead-Lag Optimize? | Yes | Yes | | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Vehicle Extension (s) | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 1.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Recall Mode | None | None | | None | None | None | None | C-Min | None | None | C-Min | None |
| Walk Time (s) | | 7.0 | | | 7.0 | | | 7.0 | | | 7.0 | |
| Flash Dont Walk (s) | | 21.0 | | | 18.0 | | | 23.0 | | | 9.0 | |
| Pedestrian Calls (#/hr) | | 0 | | | 0 | | | 0 | | | 0 | |
| Act Effct Green (s) | 13.6 | 37.5 | | 54.9 | 41.3 | 54.1 | 9.2 | 32.3 | 48.4 | 12.8 | 38.5 | 56.2 |
| Actuated g/C Ratio | 0.11 | 0.31 | | 0.46 | 0.34 | 0.45 | 0.08 | 0.27 | 0.40 | 0.11 | 0.32 | 0.47 |
| v/c Ratio | 0.89 | 0.58 | | 0.74 | 0.98 | 0.44 | 0.56 | 0.87 | 0.43 | 0.88 | 0.57 | 0.70 |
| Control Delay | 68.3 | 34.3 | | 30.7 | 70.2 | 15.8 | 69.5 | 52.8 | 16.2 | 94.7 | 37.1 | 32.8 |
| 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 | 68.3 | 34.3 | | 30.7 | 70.2 | 15.8 | 69.5 | 52.8 | 16.2 | 94.7 | 37.1 | 32.8 |
| LOS | E | C | | C | E | B | E | D | B | F | D | C |
| Approach Delay | | 46.3 | | | 46.8 | | | 45.3 | | | 42.6 | |
| Approach LOS | | D | | | D | | | D | | | D | |

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 104 (87%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 110
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.98
Intersection Signal Delay: 45.1 Intersection LOS: D
Intersection Capacity Utilization 83.5% ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 220: Franklin St & Estes Dr



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 311 | 506 | 64 | 266 | 554 | 281 | 69 | 751 | 251 | 146 | 564 | 455 |
| Future Volume (veh/h) | 311 | 506 | 64 | 266 | 554 | 281 | 69 | 751 | 251 | 146 | 564 | 455 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1909 | 1909 | 1909 | 1817 | 1817 | 1817 | 1909 | 1909 | 1909 | 1723 | 1723 | 1723 |
| Adj Flow Rate, veh/h | 346 | 562 | 71 | 296 | 616 | 312 | 77 | 834 | 279 | 162 | 627 | 506 |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 397 | 1029 | 130 | 429 | 621 | 712 | 116 | 939 | 623 | 198 | 1021 | 603 |
| Arrive On Green | 0.11 | 0.32 | 0.31 | 0.14 | 0.34 | 0.34 | 0.06 | 0.26 | 0.25 | 0.12 | 0.31 | 0.31 |
| Sat Flow, veh/h | 3528 | 3241 | 408 | 1731 | 1817 | 1540 | 1818 | 3628 | 1618 | 1641 | 3274 | 1460 |
| Grp Volume(v), veh/h | 346 | 314 | 319 | 296 | 616 | 312 | 77 | 834 | 279 | 162 | 627 | 506 |
| Grp Sat Flow(s),veh/h/ln | 1764 | 1814 | 1836 | 1731 | 1817 | 1540 | 1818 | 1814 | 1618 | 1641 | 1637 | 1460 |
| Q Serve(g_s), s | 11.6 | 17.1 | 17.3 | 13.6 | 40.5 | 4.5 | 5.0 | 26.6 | 9.0 | 11.6 | 19.6 | 36.9 |
| Cycle Q Clear(g_c), s | 11.6 | 17.1 | 17.3 | 13.6 | 40.5 | 4.5 | 5.0 | 26.6 | 9.0 | 11.6 | 19.6 | 36.9 |
| Prop In Lane | 1.00 | | 0.22 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 397 | 576 | 583 | 429 | 621 | 712 | 116 | 939 | 623 | 198 | 1021 | 603 |
| V/C Ratio(X) | 0.87 | 0.55 | 0.55 | 0.69 | 0.99 | 0.44 | 0.66 | 0.89 | 0.45 | 0.82 | 0.61 | 0.84 |
| Avail Cap(c_a), veh/h | 397 | 576 | 583 | 511 | 621 | 712 | 152 | 1007 | 653 | 198 | 1021 | 603 |
| 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 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 52.4 | 33.8 | 33.9 | 23.8 | 39.3 | 8.1 | 54.9 | 42.8 | 11.3 | 51.5 | 35.1 | 31.7 |
| Incr Delay (d2), s/veh | 18.0 | 0.6 | 0.6 | 2.1 | 34.0 | 0.2 | 2.8 | 12.3 | 2.3 | 21.9 | 2.8 | 13.2 |
| 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 | 6.1 | 7.6 | 7.7 | 5.7 | 23.4 | 2.6 | 2.4 | 13.3 | 3.4 | 5.9 | 8.1 | 15.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 70.4 | 34.4 | 34.6 | 25.9 | 73.3 | 8.2 | 57.8 | 55.1 | 13.6 | 73.4 | 37.9 | 44.9 |
| LnGrp LOS | E | C | C | C | E | A | E | E | B | E | D | D |
| Approach Vol, veh/h | | 979 | | | 1224 | | | 1190 | | | 1295 | |
| Approach Delay, s/veh | | 47.2 | | | 45.2 | | | 45.5 | | | 45.0 | |
| Approach LOS | | D | | | D | | | D | | | D | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 19.4 | 36.1 | 21.4 | 43.1 | 12.7 | 42.8 | 18.5 | 46.0 |
| Change Period (Y+Rc), s | * 5.9 | 5.7 | 5.6 | 5.9 | * 6.2 | * 5.9 | 5.9 | 5.9 |
| Max Green Setting (Gmax), s | * 11 | 32.6 | 21.5 | 31.5 | * 8.8 | * 35 | 12.6 | 40.1 |
| Max Q Clear Time (g_c+I1), s | 13.6 | 28.6 | 15.6 | 19.3 | 7.0 | 38.9 | 13.6 | 42.5 |
| Green Ext Time (p_c), s | 0.0 | 1.8 | 0.2 | 2.0 | 0.0 | 0.0 | 0.0 | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 45.7 |
| HCM 6th LOS | D |

Notes

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

| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 4 | 100 | 81 | 613 | 1177 | 120 |
| Future Volume (vph) | 4 | 100 | 81 | 613 | 1177 | 120 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | 125 | 100 | | | 0 |
| Storage Lanes | 1 | 1 | 1 | | | 0 |
| Taper Length (ft) | 100 | | 100 | | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 0.95 |
| Frt | | 0.850 | | | 0.986 | |
| Flt Protected | 0.950 | | 0.950 | | | |
| Satd. Flow (prot) | 1770 | 1509 | 1719 | 3343 | 3429 | 0 |
| Flt Permitted | 0.950 | | 0.950 | | | |
| Satd. Flow (perm) | 1770 | 1509 | 1719 | 3343 | 3429 | 0 |
| Link Speed (mph) | 30 | | | 40 | 40 | |
| Link Distance (ft) | 928 | | | 1413 | 1063 | |
| Travel Time (s) | 21.1 | | | 24.1 | 18.1 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 7% | 5% | 8% | 4% | 2% |
| Adj. Flow (vph) | 4 | 111 | 90 | 681 | 1308 | 133 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 4 | 111 | 90 | 681 | 1441 | 0 |
| Sign Control | Stop | | | Free | Free | |

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 54.2% ICU Level of Service A
Analysis Period (min) 15

| Intersection | |
|---|---|
| Int Delay, s/veh | 1.6 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 4 | 100 | 81 | 613 | 1177 | 120 |
| Future Vol, veh/h | 4 | 100 | 81 | 613 | 1177 | 120 |
| 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 | 125 | 100 | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 2 | 7 | 5 | 8 | 4 | 2 |
| Mvmt Flow | 4 | 111 | 90 | 681 | 1308 | 133 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 1896 | 721 | 1441 | 0 | - | 0 |
| Stage 1 | 1375 | - | - | - | - | - |
| Stage 2 | 521 | - | - | - | - | - |
| Critical Hdwy | 6.84 | 7.04 | 4.2 | - | - | - |
| Critical Hdwy Stg 1 | 5.84 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.84 | - | - | - | - | - |
| Follow-up Hdwy | 3.52 | 3.37 | 2.25 | - | - | - |
| Pot Cap-1 Maneuver | 61 | 359 | 452 | - | - | - |
| Stage 1 | 200 | - | - | - | - | - |
| Stage 2 | 561 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 49 | 359 | 452 | - | - | - |
| Mov Cap-2 Maneuver | 128 | - | - | - | - | - |
| Stage 1 | 160 | - | - | - | - | - |
| Stage 2 | 561 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 20.1 | 1.7 | 0 |
| HCM LOS | C | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | EBLn2 | SBT | SBR |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | 452 | - | 128 | 359 | - | - |
| HCM Lane V/C Ratio | 0.199 | - | 0.035 | 0.31 | - | - |
| HCM Control Delay (s) | 14.9 | - | 34.1 | 19.5 | - | - |
| HCM Lane LOS | B | - | D | C | - | - |
| HCM 95th %tile Q(veh) | 0.7 | - | 0.1 | 1.3 | - | - |

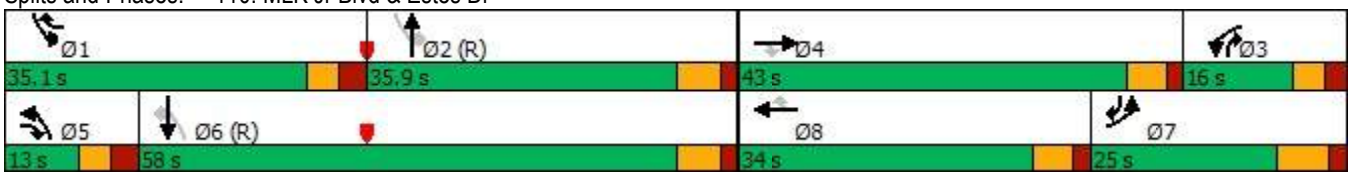
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 288 | 402 | 82 | 207 | 218 | 279 | 35 | 462 | 121 | 443 | 1008 | 227 |
| Future Volume (vph) | 288 | 402 | 82 | 207 | 218 | 279 | 35 | 462 | 121 | 443 | 1008 | 227 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Grade (%) | | 1% | | | -2% | | | 1% | | | 0% | |
| Storage Length (ft) | 300 | | 225 | 300 | | 0 | 150 | | 300 | 225 | | 150 |
| Storage Lanes | 2 | | 1 | 2 | | 1 | 1 | | 1 | 1 | | 1 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 0.97 | 1.00 | 1.00 | 0.97 | 1.00 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 |
| Frt | | | 0.850 | | | 0.850 | | | 0.850 | | | 0.850 |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 3416 | 1853 | 1575 | 3434 | 1845 | 1568 | 1761 | 3326 | 1545 | 1770 | 3471 | 1568 |
| Flt Permitted | 0.950 | | | 0.950 | | | 0.117 | | | 0.289 | | |
| Satd. Flow (perm) | 3416 | 1853 | 1575 | 3434 | 1845 | 1568 | 217 | 3326 | 1545 | 538 | 3471 | 1568 |
| Right Turn on Red | | | No | | | No | | | No | | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (mph) | | 35 | | | 35 | | | 40 | | | 40 | |
| Link Distance (ft) | | 1251 | | | 756 | | | 1063 | | | 369 | |
| Travel Time (s) | | 24.4 | | | 14.7 | | | 18.1 | | | 6.3 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 2% | 3% | 4% | 4% | 2% | 8% | 4% | 2% | 4% | 3% |
| Adj. Flow (vph) | 320 | 447 | 91 | 230 | 242 | 310 | 39 | 513 | 134 | 492 | 1120 | 252 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 320 | 447 | 91 | 230 | 242 | 310 | 39 | 513 | 134 | 492 | 1120 | 252 |
| Turn Type | Prot | NA | pm+ov | Prot | NA | pm+ov | D.P+P | NA | pm+ov | D.P+P | NA | pm+ov |
| Protected Phases | 7 | 4 | 5 | 3 | 8 | 1 | 5 | 2 | 3 | 1 | 6 | 7 |
| Permitted Phases | | | 4 | | | 8 | 6 | | 2 | 2 | | 6 |
| Detector Phase | 7 | 4 | 5 | 3 | 8 | 1 | 5 | 2 | 3 | 1 | 6 | 7 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 12.0 | 7.0 | 7.0 | 12.0 | 7.0 |
| Minimum Split (s) | 14.0 | 12.5 | 12.8 | 12.4 | 12.5 | 12.8 | 12.8 | 34.0 | 12.4 | 12.8 | 18.0 | 14.0 |
| Total Split (s) | 25.0 | 43.0 | 13.0 | 16.0 | 34.0 | 35.1 | 13.0 | 35.9 | 16.0 | 35.1 | 58.0 | 25.0 |
| Total Split (%) | 19.2% | 33.1% | 10.0% | 12.3% | 26.2% | 27.0% | 10.0% | 27.6% | 12.3% | 27.0% | 44.6% | 19.2% |
| Maximum Green (s) | 18.0 | 37.5 | 7.2 | 10.6 | 28.5 | 29.3 | 7.2 | 29.9 | 10.6 | 29.3 | 52.0 | 18.0 |
| Yellow Time (s) | 5.0 | 3.8 | 3.0 | 3.0 | 3.8 | 3.0 | 3.0 | 4.3 | 3.0 | 3.0 | 4.3 | 5.0 |
| All-Red Time (s) | 2.0 | 1.7 | 2.8 | 2.4 | 1.7 | 2.8 | 2.8 | 1.7 | 2.4 | 2.8 | 1.7 | 2.0 |
| Lost Time Adjust (s) | 0.1 | -0.5 | -0.8 | -0.4 | -0.5 | -0.8 | -0.8 | -1.0 | 0.0 | -0.8 | -1.0 | 0.0 |
| Total Lost Time (s) | 7.1 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.4 | 5.0 | 5.0 | 7.0 |
| Lead/Lag | Lag | Lead | Lead | Lag | Lead | Lead | Lead | Lag | Lag | Lead | Lag | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Vehicle Extension (s) | 3.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 2.0 | 1.0 | 1.0 | 2.0 | 3.0 |
| Recall Mode | None | None | None | None | None | None | None | C-Min | None | None | C-Min | None |
| Walk Time (s) | | | | | | | | 7.0 | | | | |
| Flash Dont Walk (s) | | | | | | | | 21.0 | | | | |
| Pedestrian Calls (#/hr) | | | | | | | | 0 | | | | |
| Act Effct Green (s) | 22.3 | 34.3 | 42.1 | 11.1 | 21.0 | 53.0 | 64.6 | 32.6 | 42.9 | 64.6 | 56.8 | 77.2 |
| Actuated g/C Ratio | 0.17 | 0.26 | 0.32 | 0.09 | 0.16 | 0.41 | 0.50 | 0.25 | 0.33 | 0.50 | 0.44 | 0.59 |
| v/c Ratio | 0.55 | 0.92 | 0.18 | 0.79 | 0.81 | 0.49 | 0.20 | 0.62 | 0.26 | 0.86 | 0.74 | 0.27 |
| Control Delay | 53.4 | 70.4 | 19.9 | 77.5 | 72.9 | 16.9 | 18.4 | 47.9 | 18.2 | 38.4 | 24.8 | 6.6 |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 53.4 | 70.4 | 19.9 | 77.5 | 72.9 | 16.9 | 18.4 | 47.9 | 18.2 | 38.4 | 24.8 | 6.6 |
| LOS | D | E | B | E | E | B | B | D | B | D | C | A |
| Approach Delay | | 58.7 | | | 52.0 | | | 40.4 | | | 26.0 | |
| Approach LOS | | E | | | D | | | D | | | C | |
| Queue Length 50th (ft) | 124 | 360 | 38 | 97 | 199 | 86 | 16 | 219 | 41 | 176 | 463 | 33 |
| Queue Length 95th (ft) | 184 | #519 | 69 | #162 | 276 | 137 | 36 | 268 | 72 | #485 | 390 | 87 |
| Internal Link Dist (ft) | | 1171 | | | 676 | | | 983 | | | 289 | |
| Turn Bay Length (ft) | 300 | | 225 | 300 | | | 150 | | 300 | 225 | | 150 |
| Base Capacity (vph) | 584 | 543 | 512 | 302 | 411 | 640 | 203 | 867 | 514 | 571 | 1520 | 931 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.55 | 0.82 | 0.18 | 0.76 | 0.59 | 0.48 | 0.19 | 0.59 | 0.26 | 0.86 | 0.74 | 0.27 |

Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 5 (4%), Referenced to phase 2:NBSB and 6:NBSB, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.92
Intersection Signal Delay: 39.9 Intersection LOS: D
Intersection Capacity Utilization 81.0% ICU Level of Service D
Analysis Period (min) 15
# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 110: MLK Jr Blvd & Estes Dr



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 288 | 402 | 82 | 207 | 218 | 279 | 35 | 462 | 121 | 443 | 1008 | 227 |
| Future Volume (veh/h) | 288 | 402 | 82 | 207 | 218 | 279 | 35 | 462 | 121 | 443 | 1008 | 227 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1864 | 1864 | 1864 | 1934 | 1919 | 1919 | 1864 | 1776 | 1835 | 1870 | 1841 | 1856 |
| Adj Flow Rate, veh/h | 320 | 447 | 91 | 230 | 242 | 310 | 39 | 513 | 134 | 492 | 1120 | 252 |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 3 | 4 | 4 | 2 | 8 | 4 | 2 | 4 | 3 |
| Cap, veh/h | 651 | 480 | 485 | 292 | 281 | 618 | 278 | 888 | 519 | 569 | 1566 | 990 |
| Arrive On Green | 0.19 | 0.26 | 0.26 | 0.08 | 0.15 | 0.15 | 0.05 | 0.26 | 0.26 | 0.46 | 0.90 | 0.88 |
| Sat Flow, veh/h | 3445 | 1864 | 1580 | 3573 | 1919 | 1626 | 1776 | 3374 | 1555 | 1781 | 3497 | 1572 |
| Grp Volume(v), veh/h | 320 | 447 | 91 | 230 | 242 | 310 | 39 | 513 | 134 | 492 | 1120 | 252 |
| Grp Sat Flow(s),veh/h/ln | 1722 | 1864 | 1580 | 1786 | 1919 | 1626 | 1776 | 1687 | 1555 | 1781 | 1749 | 1572 |
| Q Serve(g_s), s | 10.8 | 30.4 | 3.8 | 8.2 | 16.0 | 9.0 | 1.5 | 17.2 | 3.3 | 28.4 | 12.1 | 0.6 |
| Cycle Q Clear(g_c), s | 10.8 | 30.4 | 3.8 | 8.2 | 16.0 | 9.0 | 1.5 | 17.2 | 3.3 | 28.4 | 12.1 | 0.6 |
| 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 | 651 | 480 | 485 | 292 | 281 | 618 | 278 | 888 | 519 | 569 | 1566 | 990 |
| V/C Ratio(X) | 0.49 | 0.93 | 0.19 | 0.79 | 0.86 | 0.50 | 0.14 | 0.58 | 0.26 | 0.86 | 0.72 | 0.25 |
| Avail Cap(c_a), veh/h | 651 | 545 | 540 | 302 | 428 | 743 | 304 | 888 | 519 | 569 | 1566 | 990 |
| 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 | 47.1 | 47.1 | 17.0 | 58.6 | 54.2 | 11.5 | 17.7 | 41.6 | 11.4 | 18.1 | 4.4 | 0.6 |
| Incr Delay (d2), s/veh | 0.6 | 20.4 | 0.1 | 11.5 | 7.1 | 0.2 | 0.1 | 2.7 | 1.2 | 12.5 | 2.8 | 0.6 |
| 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 | 4.7 | 16.7 | 1.7 | 4.2 | 8.2 | 2.9 | 0.6 | 7.4 | 1.6 | 8.7 | 2.5 | 0.4 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 47.7 | 67.5 | 17.1 | 70.0 | 61.3 | 11.8 | 17.8 | 44.4 | 12.6 | 30.7 | 7.2 | 1.2 |
| LnGrp LOS | D | E | B | E | E | B | B | D | B | C | A | A |
| Approach Vol, veh/h | | 858 | | | 782 | | | 686 | | | 1864 | |
| Approach Delay, s/veh | | 54.8 | | | 44.2 | | | 36.7 | | | 12.6 | |
| Approach LOS | | D | | | D | | | D | | | B | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 35.1 | 39.2 | 17.2 | 38.5 | 11.1 | 63.2 | 31.7 | 24.0 |
| Change Period (Y+Rc), s | * 5.8 | * 6 | 7.0 | * 5.5 | * 5.8 | * 6 | 7.0 | 5.5 |
| Max Green Setting (Gmax), s | * 29 | * 30 | 10.6 | * 38 | * 7.2 | * 52 | 18.0 | 28.5 |
| Max Q Clear Time (g_c+I1), s | 30.4 | 19.2 | 10.2 | 32.4 | 3.5 | 14.1 | 12.8 | 18.0 |
| Green Ext Time (p_c), s | 0.0 | 1.8 | 0.0 | 0.5 | 0.0 | 6.4 | 0.5 | 0.5 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 31.1 |
| HCM 6th LOS | C |

Notes

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

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 50 | 1008 | 21 | 0 | 1678 |
| Future Volume (vph) | 0 | 50 | 1008 | 21 | 0 | 1678 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Grade (%) | 0% | | -1% | | | 0% |
| Storage Length (ft) | 0 | 0 | | 100 | 0 | |
| Storage Lanes | 0 | 1 | | 1 | 0 | |
| Taper Length (ft) | 100 | | | | 100 | |
| Lane Util. Factor | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 |
| Frt | | 0.865 | | 0.850 | | |
| Flt Protected | | | | | | |
| Satd. Flow (prot) | 0 | 1611 | 3557 | 1591 | 0 | 3539 |
| Flt Permitted | | | | | | |
| Satd. Flow (perm) | 0 | 1611 | 3557 | 1591 | 0 | 3539 |
| Link Speed (mph) | 25 | | 40 | | | 40 |
| Link Distance (ft) | 329 | | 369 | | | 1145 |
| Travel Time (s) | 9.0 | | 6.3 | | | 19.5 |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Adj. Flow (vph) | 0 | 56 | 1120 | 23 | 0 | 1864 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 56 | 1120 | 23 | 0 | 1864 |
| Sign Control | Stop | | Free | | | Free |

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 49.7% ICU Level of Service A
Analysis Period (min) 15

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

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | ↱ | ↑↑ | ↱ | | ↑↑ |
| Traffic Vol, veh/h | 0 | 50 | 1008 | 21 | 0 | 1678 |
| Future Vol, veh/h | 0 | 50 | 1008 | 21 | 0 | 1678 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | 0 | - | 100 | - | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | -1 | - | - | 0 |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 56 | 1120 | 23 | 0 | 1864 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | - | 560 | 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 | 472 | - | - | 0 | - |
| Stage 1 | 0 | - | - | - | 0 | - |
| Stage 2 | 0 | - | - | - | 0 | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | - | 472 | - | - | - | - |
| Mov Cap-2 Maneuver | - | - | - | - | - | - |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 13.6 | 0 | 0 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBT |
|---|---|---|---|---|
| Capacity (veh/h) | - | - | 472 | - |
| HCM Lane V/C Ratio | - | - | 0.118 | - |
| HCM Control Delay (s) | - | - | 13.6 | - |
| HCM Lane LOS | - | - | B | - |
| HCM 95th %tile Q(veh) | - | - | 0.4 | - |

| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 52 | 914 | 667 | 50 | 60 | 37 |
| Future Volume (vph) | 52 | 914 | 667 | 50 | 60 | 37 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Grade (%) | | 0% | -2% | | 0% | |
| Storage Length (ft) | 100 | | | 150 | 0 | 100 |
| Storage Lanes | 1 | | | 1 | 1 | 1 |
| Taper Length (ft) | 100 | | | | 100 | |
| Lane Util. Factor | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | 1.00 |
| Frt | | | 0.989 | | | 0.850 |
| Flt Protected | 0.950 | | | | 0.950 | |
| Satd. Flow (prot) | 1770 | 1863 | 3535 | 0 | 1770 | 1583 |
| Flt Permitted | 0.950 | | | | 0.950 | |
| Satd. Flow (perm) | 1770 | 1863 | 3535 | 0 | 1770 | 1583 |
| Link Speed (mph) | | 35 | 35 | | 25 | |
| Link Distance (ft) | | 756 | 815 | | 412 | |
| Travel Time (s) | | 14.7 | 15.9 | | 11.2 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Adj. Flow (vph) | 58 | 1016 | 741 | 56 | 67 | 41 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 58 | 1016 | 797 | 0 | 67 | 41 |
| Sign Control | | Free | Free | | Stop | |

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 58.1% ICU Level of Service B
Analysis Period (min) 15

Intersection

| | |
|---|---|
| Int Delay, s/veh | 8.6 |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 52 | 914 | 667 | 50 | 60 | 37 |
| Future Vol, veh/h | 52 | 914 | 667 | 50 | 60 | 37 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 100 | - | - | 150 | 0 | 100 |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | -2 | - | 0 | - |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 58 | 1016 | 741 | 56 | 67 | 41 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 797 | 0 | - | 0 | 1901 | 399 |
| Stage 1 | - | - | - | - | 769 | - |
| Stage 2 | - | - | - | - | 1132 | - |
| Critical Hdwy | 4.13 | - | - | - | 6.63 | 6.93 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.83 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.43 | - |
| Follow-up Hdwy | 2.219 | - | - | - | 3.519 | 3.319 |
| Pot Cap-1 Maneuver | 823 | - | - | - | 68 | 601 |
| Stage 1 | - | - | - | - | 419 | - |
| Stage 2 | - | - | - | - | 307 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | 823 | - | - | - | ~ 63 | 601 |
| Mov Cap-2 Maneuver | - | - | - | - | ~ 63 | - |
| Stage 1 | - | - | - | - | 390 | - |
| Stage 2 | - | - | - | - | 307 | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 0.5 | 0 | 153.2 |
| HCM LOS | | | F |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 | SBLn2 |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | 823 | - | - | - | 63 | 601 |
| HCM Lane V/C Ratio | 0.07 | - | - | - | 1.058 | 0.068 |
| HCM Control Delay (s) | 9.7 | - | - | - | 240.7 | 11.4 |
| HCM Lane LOS | A | - | - | - | F | B |
| HCM 95th %tile Q(veh) | 0.2 | - | - | - | 5.2 | 0.2 |

Notes

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

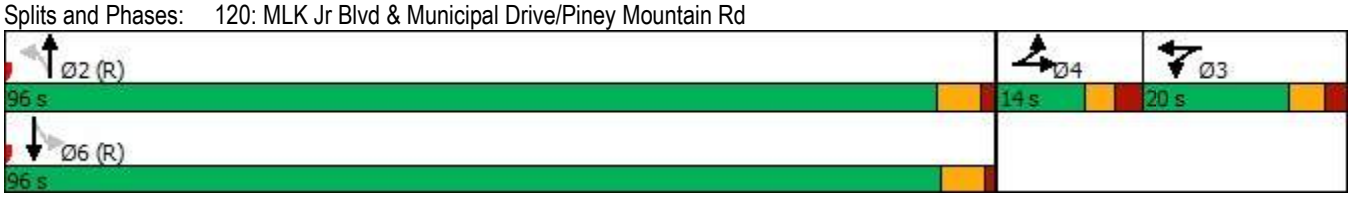
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 2 | 0 | 7 | 167 | 1 | 41 | 14 | 975 | 68 | 22 | 1504 | 2 |
| Future Volume (vph) | 2 | 0 | 7 | 167 | 1 | 41 | 14 | 975 | 68 | 22 | 1504 | 2 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Grade (%) | | 0% | | | 4% | | | -1% | | | 0% | |
| Storage Length (ft) | 100 | | 0 | 375 | | 0 | 150 | | 0 | 225 | | 0 |
| Storage Lanes | 1 | | 0 | 2 | | 0 | 1 | | 0 | 1 | | 0 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 0.97 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | 0.95 | 0.95 |
| Frt | | 0.850 | | | 0.853 | | | 0.990 | | | | |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1770 | 1252 | 0 | 3332 | 1542 | 0 | 1499 | 3419 | 0 | 1641 | 3505 | 0 |
| Flt Permitted | 0.950 | | | 0.950 | | | 0.111 | | | 0.219 | | |
| Satd. Flow (perm) | 1770 | 1252 | 0 | 3332 | 1542 | 0 | 175 | 3419 | 0 | 378 | 3505 | 0 |
| Right Turn on Red | | | No | | | No | | | No | | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (mph) | | 20 | | | 35 | | | 40 | | | 40 | |
| Link Distance (ft) | | 554 | | | 663 | | | 1145 | | | 2618 | |
| Travel Time (s) | | 18.9 | | | 12.9 | | | 19.5 | | | 44.6 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 29% | 3% | 2% | 3% | 21% | 5% | 6% | 10% | 3% | 2% |
| Adj. Flow (vph) | 2 | 0 | 8 | 186 | 1 | 46 | 16 | 1083 | 76 | 24 | 1671 | 2 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 2 | 8 | 0 | 186 | 47 | 0 | 16 | 1159 | 0 | 24 | 1673 | 0 |
| Turn Type | Split | NA | | Split | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | 4 | 4 | | 3 | 3 | | | 2 | | | 6 | |
| Permitted Phases | | | | | | | 2 | | | 6 | | |
| Detector Phase | 4 | 4 | | 3 | 3 | | 2 | 2 | | 6 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | | 7.0 | 7.0 | | 12.0 | 12.0 | | 12.0 | 12.0 | |
| Minimum Split (s) | 12.6 | 12.6 | | 12.9 | 12.9 | | 27.8 | 27.8 | | 17.5 | 17.5 | |
| Total Split (s) | 14.0 | 14.0 | | 20.0 | 20.0 | | 96.0 | 96.0 | | 96.0 | 96.0 | |
| Total Split (%) | 10.8% | 10.8% | | 15.4% | 15.4% | | 73.8% | 73.8% | | 73.8% | 73.8% | |
| Maximum Green (s) | 8.4 | 8.4 | | 14.1 | 14.1 | | 90.2 | 90.2 | | 90.5 | 90.5 | |
| Yellow Time (s) | 3.0 | 3.0 | | 3.6 | 3.6 | | 4.2 | 4.2 | | 4.2 | 4.2 | |
| All-Red Time (s) | 2.6 | 2.6 | | 2.3 | 2.3 | | 1.6 | 1.6 | | 1.3 | 1.3 | |
| Lost Time Adjust (s) | -0.6 | -0.6 | | -0.9 | -0.9 | | -0.8 | -0.8 | | -0.5 | -0.5 | |
| Total Lost Time (s) | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | |
| Lead/Lag | Lead | Lead | | Lag | Lag | | | | | | | |
| Lead-Lag Optimize? | Yes | Yes | | Yes | Yes | | | | | | | |
| Vehicle Extension (s) | 1.0 | 1.0 | | 1.0 | 1.0 | | 6.0 | 6.0 | | 6.0 | 6.0 | |
| Minimum Gap (s) | 1.0 | 1.0 | | 1.0 | 1.0 | | 6.0 | 6.0 | | 6.0 | 6.0 | |
| Time Before Reduce (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 15.0 | 15.0 | | 15.0 | 15.0 | |
| Time To Reduce (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 45.0 | 45.0 | | 45.0 | 45.0 | |
| Recall Mode | None | None | | None | None | | C-Min | C-Min | | C-Min | C-Min | |
| Walk Time (s) | | | | | | | 7.0 | 7.0 | | | | |
| Flash Dont Walk (s) | | | | | | | 15.0 | 15.0 | | | | |
| Pedestrian Calls (#/hr) | | | | | | | 0 | 0 | | | | |
| Act Effct Green (s) | 7.6 | 7.6 | | 11.6 | 11.6 | | 103.4 | 103.4 | | 103.4 | 103.4 | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Actuated g/C Ratio | 0.06 | 0.06 | | 0.09 | 0.09 | | 0.80 | 0.80 | | 0.80 | 0.80 | |
| v/c Ratio | 0.02 | 0.11 | | 0.63 | 0.34 | | 0.12 | 0.43 | | 0.08 | 0.60 | |
| Control Delay | 58.0 | 61.6 | | 66.4 | 61.6 | | 6.2 | 4.1 | | 1.7 | 4.0 | |
| Queue Delay | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Delay | 58.0 | 61.6 | | 66.4 | 61.6 | | 6.2 | 4.1 | | 1.7 | 4.0 | |
| LOS | E | E | | E | E | | A | A | | A | A | |
| Approach Delay | | 60.9 | | | 65.5 | | | 4.2 | | | 4.0 | |
| Approach LOS | | E | | | E | | | A | | | A | |
| Queue Length 50th (ft) | 2 | 7 | | 79 | 38 | | 1 | 64 | | 1 | 23 | |
| Queue Length 95th (ft) | 11 | 24 | | 116 | 77 | | m7 | 165 | | m2 | 64 | |
| Internal Link Dist (ft) | | 474 | | | 583 | | | 1065 | | | 2538 | |
| Turn Bay Length (ft) | 100 | | | 375 | | | 150 | | | 225 | | |
| Base Capacity (vph) | 122 | 86 | | 385 | 177 | | 139 | 2719 | | 300 | 2787 | |
| Starvation Cap Reductn | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Spillback Cap Reductn | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Storage Cap Reductn | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Reduced v/c Ratio | 0.02 | 0.09 | | 0.48 | 0.27 | | 0.12 | 0.43 | | 0.08 | 0.60 | |

Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 89 (68%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.63
Intersection Signal Delay: 8.8 Intersection LOS: A
Intersection Capacity Utilization 61.4% ICU Level of Service B
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 120: MLK Jr Blvd & Municipal Drive/Piney Mountain Rd



HCM 6th Edition methodology expects strict NEMA phasing.

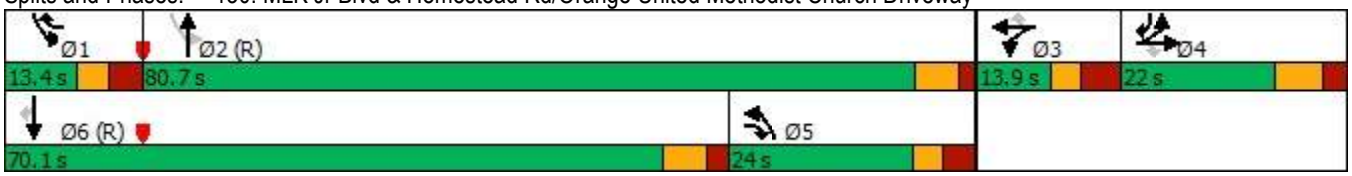
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 224 | 6 | 263 | 2 | 0 | 1 | 122 | 895 | 2 | 9 | 1263 | 123 |
| Future Volume (vph) | 224 | 6 | 263 | 2 | 0 | 1 | 122 | 895 | 2 | 9 | 1263 | 123 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 125 | | 0 | 125 | | 0 | 525 | | 0 | 250 | | 375 |
| Storage Lanes | 1 | | 1 | 2 | | 1 | 2 | | 0 | 1 | | 1 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 0.95 | 0.95 | 1.00 | 0.95 | 0.95 | 1.00 | 0.97 | 0.95 | 0.95 | 1.00 | 0.95 | 1.00 |
| Frt | | | 0.850 | | | 0.850 | | | | | | 0.850 |
| Flt Protected | 0.950 | 0.955 | | 0.950 | 0.950 | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1618 | 1630 | 1583 | 1681 | 1681 | 1583 | 3242 | 3468 | 0 | 1770 | 3505 | 1482 |
| Flt Permitted | 0.950 | 0.955 | | 0.950 | 0.950 | | 0.950 | | | 0.247 | | |
| Satd. Flow (perm) | 1618 | 1630 | 1583 | 1681 | 1681 | 1583 | 3242 | 3468 | 0 | 460 | 3505 | 1482 |
| Right Turn on Red | | | No | | | No | | | No | | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (mph) | | 35 | | | 20 | | | 40 | | | 40 | |
| Link Distance (ft) | | 1248 | | | 314 | | | 1137 | | | 1345 | |
| Travel Time (s) | | 24.3 | | | 10.7 | | | 19.4 | | | 22.9 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 6% | 2% | 2% | 2% | 2% | 2% | 8% | 4% | 50% | 2% | 3% | 9% |
| Adj. Flow (vph) | 249 | 7 | 292 | 2 | 0 | 1 | 136 | 994 | 2 | 10 | 1403 | 137 |
| Shared Lane Traffic (%) | 49% | | | 50% | | | | | | | | |
| Lane Group Flow (vph) | 127 | 129 | 292 | 1 | 1 | 1 | 136 | 996 | 0 | 10 | 1403 | 137 |
| Turn Type | Split | NA | pm+ov | Split | NA | pm+ov | Prot | NA | | D.P+P | NA | pm+ov |
| Protected Phases | 4 | 4 | 5 | 3 | 3 | 1 | 5 | 2 | | 1 | 6 | 4 |
| Permitted Phases | | | 4 | | | 3 | | | | 2 | | 6 |
| Detector Phase | 4 | 4 | 5 | 3 | 3 | 1 | 5 | 2 | | 1 | 6 | 4 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 12.0 | | 7.0 | 12.0 | 7.0 |
| Minimum Split (s) | 14.1 | 14.1 | 13.3 | 13.9 | 13.9 | 13.4 | 13.3 | 28.0 | | 13.4 | 45.4 | 14.1 |
| Total Split (s) | 22.0 | 22.0 | 24.0 | 13.9 | 13.9 | 13.4 | 24.0 | 80.7 | | 13.4 | 70.1 | 22.0 |
| Total Split (%) | 16.9% | 16.9% | 18.5% | 10.7% | 10.7% | 10.3% | 18.5% | 62.1% | | 10.3% | 53.9% | 16.9% |
| Maximum Green (s) | 14.9 | 14.9 | 17.7 | 7.0 | 7.0 | 7.0 | 17.7 | 74.7 | | 7.0 | 63.7 | 14.9 |
| Yellow Time (s) | 4.5 | 4.5 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 4.2 | | 3.0 | 4.2 | 4.5 |
| All-Red Time (s) | 2.6 | 2.6 | 3.3 | 3.9 | 3.9 | 3.4 | 3.3 | 1.8 | | 3.4 | 2.2 | 2.6 |
| Lost Time Adjust (s) | -2.1 | -2.1 | -1.3 | -1.9 | -1.9 | -1.4 | -1.3 | -1.0 | | -1.4 | -1.4 | -2.1 |
| Total Lost Time (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | | 5.0 | 5.0 | 5.0 |
| Lead/Lag | Lag | Lag | Lag | Lead | Lead | Lead | Lag | Lag | | Lead | Lead | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | | Yes | Yes | Yes |
| Vehicle Extension (s) | 1.0 | 1.0 | 1.0 | 2.0 | 2.0 | 2.0 | 1.0 | 6.0 | | 2.0 | 6.0 | 1.0 |
| Minimum Gap (s) | 1.0 | 1.0 | 1.0 | 2.0 | 2.0 | 2.0 | 1.0 | 6.0 | | 2.0 | 6.0 | 1.0 |
| Time Before Reduce (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 15.0 | | 0.0 | 15.0 | 0.0 |
| Time To Reduce (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 45.0 | | 0.0 | 45.0 | 0.0 |
| Recall Mode | None | None | None | None | None | None | None | C-Min | | None | C-Min | None |
| Walk Time (s) | | | | | | | | 7.0 | | | 7.0 | |
| Flash Dont Walk (s) | | | | | | | | 15.0 | | | 32.0 | |
| Pedestrian Calls (#/hr) | | | | | | | | 0 | | | 0 | |
| Act Effct Green (s) | 14.8 | 14.8 | 37.5 | 8.9 | 8.9 | 10.2 | 18.7 | 97.1 | | 100.4 | 78.7 | 98.5 |
| Actuated g/C Ratio | 0.11 | 0.11 | 0.29 | 0.07 | 0.07 | 0.08 | 0.14 | 0.75 | | 0.77 | 0.61 | 0.76 |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| v/c Ratio | 0.69 | 0.70 | 0.64 | 0.01 | 0.01 | 0.01 | 0.29 | 0.38 | | 0.02 | 0.66 | 0.12 |
| Control Delay | 74.4 | 74.7 | 44.5 | 57.0 | 57.0 | 41.0 | 45.6 | 5.7 | | 4.9 | 20.2 | 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 |
| Total Delay | 74.4 | 74.7 | 44.5 | 57.0 | 57.0 | 41.0 | 45.6 | 5.7 | | 4.9 | 20.2 | 5.3 |
| LOS | E | E | D | E | E | D | D | A | | A | C | A |
| Approach Delay | | 58.5 | | | 51.7 | | | 10.5 | | | 18.8 | |
| Approach LOS | | E | | | D | | | B | | | B | |
| Queue Length 50th (ft) | 109 | 110 | 210 | 1 | 1 | 1 | 38 | 80 | | 1 | 375 | 24 |
| Queue Length 95th (ft) | 181 | 182 | 253 | 7 | 7 | 5 | 72 | 305 | | 8 | 601 | 64 |
| Internal Link Dist (ft) | | 1168 | | | 234 | | | 1057 | | | 1265 | |
| Turn Bay Length (ft) | 125 | | | 125 | | | 525 | | | 250 | | 375 |
| Base Capacity (vph) | 214 | 216 | 451 | 115 | 115 | 124 | 481 | 2589 | | 440 | 2123 | 1111 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.59 | 0.60 | 0.65 | 0.01 | 0.01 | 0.01 | 0.28 | 0.38 | | 0.02 | 0.66 | 0.12 |

Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 40 (31%), Referenced to phase 2:NBSB and 6:SBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.70
Intersection Signal Delay: 22.7 Intersection LOS: C
Intersection Capacity Utilization 69.5% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 130: MLK Jr Blvd & Homestead Rd/Orange United Methodist Church Driveway



HCM 6th Edition methodology expects strict NEMA phasing.

| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 17 | 956 | 695 | 10 | 22 | 22 |
| Future Volume (vph) | 17 | 956 | 695 | 10 | 22 | 22 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 100 | | | 0 | 0 | 0 |
| Storage Lanes | 1 | | | 0 | 1 | 0 |
| Taper Length (ft) | 100 | | | | 100 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | | 0.998 | | 0.932 | |
| Flt Protected | 0.950 | | | | 0.976 | |
| Satd. Flow (prot) | 1770 | 1863 | 1841 | 0 | 1630 | 0 |
| Flt Permitted | 0.950 | | | | 0.976 | |
| Satd. Flow (perm) | 1770 | 1863 | 1841 | 0 | 1630 | 0 |
| Link Speed (mph) | | 35 | 35 | | 30 | |
| Link Distance (ft) | | 815 | 840 | | 813 | |
| Travel Time (s) | | 15.9 | 16.4 | | 18.5 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 3% | 2% | 2% | 10% |
| Adj. Flow (vph) | 19 | 1062 | 772 | 11 | 24 | 24 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 19 | 1062 | 783 | 0 | 48 | 0 |
| Sign Control | | Free | Free | | Stop | |

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 60.3% ICU Level of Service B
Analysis Period (min) 15

| Intersection | |
|---|---|
| Int Delay, s/veh | 1.4 |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 17 | 956 | 695 | 10 | 22 | 22 |
| Future Vol, veh/h | 17 | 956 | 695 | 10 | 22 | 22 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 100 | - | - | - | 0 | - |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 2 | 2 | 3 | 2 | 2 | 10 |
| Mvmt Flow | 19 | 1062 | 772 | 11 | 24 | 24 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 783 | 0 | - | 0 | 1878 | 778 |
| Stage 1 | - | - | - | - | 778 | - |
| Stage 2 | - | - | - | - | 1100 | - |
| Critical Hdwy | 4.12 | - | - | - | 6.42 | 6.3 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.42 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.42 | - |
| Follow-up Hdwy | 2.218 | - | - | - | 3.518 | 3.39 |
| Pot Cap-1 Maneuver | 835 | - | - | - | 78 | 384 |
| Stage 1 | - | - | - | - | 453 | - |
| Stage 2 | - | - | - | - | 319 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | 835 | - | - | - | 76 | 384 |
| Mov Cap-2 Maneuver | - | - | - | - | 76 | - |
| Stage 1 | - | - | - | - | 443 | - |
| Stage 2 | - | - | - | - | 319 | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 0.2 | 0 | 50.1 |
| HCM LOS | | | F |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|
| Capacity (veh/h) | 835 | - | - | - | 127 |
| HCM Lane V/C Ratio | 0.023 | - | - | - | 0.385 |
| HCM Control Delay (s) | 9.4 | - | - | - | 50.1 |
| HCM Lane LOS | A | - | - | - | F |
| HCM 95th %tile Q(veh) | 0.1 | - | - | - | 1.6 |

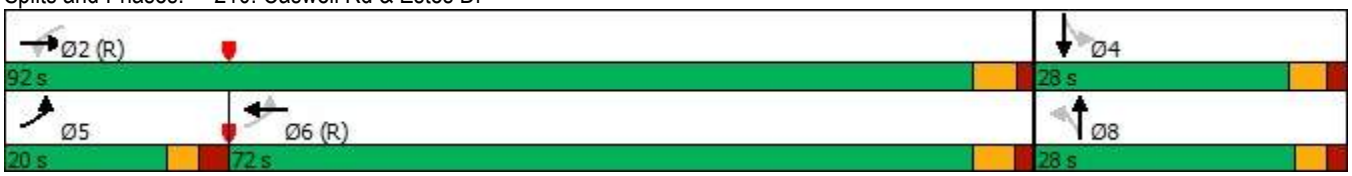
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 185 | 789 | 3 | 1 | 565 | 33 | 9 | 9 | 7 | 44 | 2 | 131 |
| Future Volume (vph) | 185 | 789 | 3 | 1 | 565 | 33 | 9 | 9 | 7 | 44 | 2 | 131 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Grade (%) | | -2% | | | 0% | | | 7% | | | -5% | |
| Storage Length (ft) | 250 | | 0 | 125 | | 0 | 0 | | 0 | 100 | | 0 |
| Storage Lanes | 1 | | 0 | 1 | | 0 | 0 | | 0 | 1 | | 0 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | 0.999 | | | 0.992 | | | 0.961 | | | 0.852 | |
| Flt Protected | 0.950 | | | 0.950 | | | | 0.982 | | 0.950 | | |
| Satd. Flow (prot) | 1787 | 1879 | 0 | 1770 | 1814 | 0 | 0 | 1696 | 0 | 1814 | 1596 | 0 |
| Flt Permitted | 0.316 | | | 0.270 | | | | 0.879 | | 0.739 | | |
| Satd. Flow (perm) | 595 | 1879 | 0 | 503 | 1814 | 0 | 0 | 1518 | 0 | 1411 | 1596 | 0 |
| Right Turn on Red | | | No | | | No | | | No | | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (mph) | | 35 | | | 35 | | | 25 | | | 25 | |
| Link Distance (ft) | | 961 | | | 940 | | | 384 | | | 262 | |
| Travel Time (s) | | 18.7 | | | 18.3 | | | 10.5 | | | 7.1 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 2% | 2% | 4% | 2% | 2% | 2% | 2% | 2% | 2% | 4% |
| Adj. Flow (vph) | 206 | 877 | 3 | 1 | 628 | 37 | 10 | 10 | 8 | 49 | 2 | 146 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 206 | 880 | 0 | 1 | 665 | 0 | 0 | 28 | 0 | 49 | 148 | 0 |
| Turn Type | D.P+P | NA | | D.Pm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | 5 | 2 | | | 6 | | | 8 | | | 4 | |
| Permitted Phases | 6 | | | 2 | | | 8 | | | 4 | | |
| Detector Phase | 5 | 2 | | 2 | 6 | | 8 | 8 | | 4 | 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 10.0 | | 10.0 | 10.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | |
| Minimum Split (s) | 12.6 | 21.6 | | 21.6 | 21.6 | | 11.9 | 11.9 | | 20.4 | 20.4 | |
| Total Split (s) | 20.0 | 92.0 | | 92.0 | 72.0 | | 28.0 | 28.0 | | 28.0 | 28.0 | |
| Total Split (%) | 16.7% | 76.7% | | 76.7% | 60.0% | | 23.3% | 23.3% | | 23.3% | 23.3% | |
| Maximum Green (s) | 14.4 | 86.4 | | 86.4 | 66.4 | | 23.1 | 23.1 | | 22.6 | 22.6 | |
| Yellow Time (s) | 3.0 | 4.0 | | 4.0 | 3.8 | | 3.0 | 3.0 | | 3.5 | 3.5 | |
| All-Red Time (s) | 2.6 | 1.6 | | 1.6 | 1.8 | | 1.9 | 1.9 | | 1.9 | 1.9 | |
| Lost Time Adjust (s) | -0.6 | -0.6 | | -0.6 | -0.6 | | | 0.1 | | -0.4 | -0.4 | |
| Total Lost Time (s) | 5.0 | 5.0 | | 5.0 | 5.0 | | | 5.0 | | 5.0 | 5.0 | |
| Lead/Lag | Lead | | | | Lag | | | | | | | |
| Lead-Lag Optimize? | Yes | | | | Yes | | | | | | | |
| Vehicle Extension (s) | 1.0 | 2.0 | | 2.0 | 2.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | |
| Recall Mode | None | C-Min | | C-Min | C-Min | | None | None | | None | None | |
| Walk Time (s) | | 7.0 | | 7.0 | 7.0 | | | | | 7.0 | 7.0 | |
| Flash Dont Walk (s) | | 9.0 | | 9.0 | 9.0 | | | | | 8.0 | 8.0 | |
| Pedestrian Calls (#/hr) | | 0 | | 0 | 0 | | | | | 0 | 0 | |
| Act Effct Green (s) | 90.0 | 95.0 | | 95.0 | 79.7 | | | 13.5 | | 15.0 | 15.0 | |
| Actuated g/C Ratio | 0.75 | 0.79 | | 0.79 | 0.66 | | | 0.11 | | 0.12 | 0.12 | |
| v/c Ratio | 0.38 | 0.59 | | 0.00 | 0.55 | | | 0.16 | | 0.28 | 0.74 | |
| Control Delay | 5.6 | 7.5 | | 2.0 | 7.3 | | | 47.0 | | 49.6 | 72.0 | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Queue Delay | 0.0 | 0.0 | | 0.0 | 0.0 | | | 0.0 | | 0.0 | 0.0 | |
| Total Delay | 5.6 | 7.5 | | 2.0 | 7.3 | | | 47.0 | | 49.6 | 72.0 | |
| LOS | A | A | | A | A | | | D | | D | E | |
| Approach Delay | | 7.2 | | | 7.3 | | | 47.0 | | | 66.4 | |
| Approach LOS | | A | | | A | | | D | | | E | |
| Queue Length 50th (ft) | 31 | 219 | | 0 | 150 | | | 20 | | 35 | 112 | |
| Queue Length 95th (ft) | 64 | 403 | | m0 | 213 | | | 46 | | 70 | 175 | |
| Internal Link Dist (ft) | | 881 | | | 860 | | | 304 | | | 182 | |
| Turn Bay Length (ft) | 250 | | | 125 | | | | | | 100 | | |
| Base Capacity (vph) | 615 | 1487 | | 398 | 1205 | | | 290 | | 270 | 305 | |
| Starvation Cap Reductn | 0 | 0 | | 0 | 0 | | | 0 | | 0 | 0 | |
| Spillback Cap Reductn | 0 | 0 | | 0 | 0 | | | 0 | | 0 | 0 | |
| Storage Cap Reductn | 0 | 0 | | 0 | 0 | | | 0 | | 0 | 0 | |
| Reduced v/c Ratio | 0.33 | 0.59 | | 0.00 | 0.55 | | | 0.10 | | 0.18 | 0.49 | |

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 105 (88%), Referenced to phase 2:EBWB and 6:EBWB, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.74
Intersection Signal Delay: 13.7 Intersection LOS: B
Intersection Capacity Utilization 71.8% ICU Level of Service C
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 210: Caswell Rd & Estes Dr



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 185 | 789 | 3 | 1 | 565 | 33 | 9 | 9 | 7 | 44 | 2 | 131 |
| Future Volume (veh/h) | 185 | 789 | 3 | 1 | 565 | 33 | 9 | 9 | 7 | 44 | 2 | 131 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1949 | 1949 | 1949 | 1870 | 1841 | 1841 | 1582 | 1582 | 1582 | 2067 | 2067 | 2067 |
| Adj Flow Rate, veh/h | 206 | 877 | 3 | 1 | 628 | 37 | 10 | 10 | 8 | 49 | 2 | 146 |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 4 | 4 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 242 | 1324 | 5 | 217 | 1157 | 68 | 49 | 38 | 19 | 180 | 2 | 181 |
| Arrive On Green | 0.10 | 0.68 | 0.68 | 0.09 | 0.67 | 0.67 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 |
| Sat Flow, veh/h | 1856 | 1941 | 7 | 1781 | 1721 | 101 | 85 | 382 | 187 | 1541 | 24 | 1731 |
| Grp Volume(v), veh/h | 206 | 0 | 880 | 1 | 0 | 665 | 28 | 0 | 0 | 49 | 0 | 148 |
| Grp Sat Flow(s),veh/h/ln | 1856 | 0 | 1947 | 1781 | 0 | 1822 | 654 | 0 | 0 | 1541 | 0 | 1755 |
| Q Serve(g_s), s | 9.1 | 0.0 | 31.5 | 0.1 | 0.0 | 22.6 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 9.9 |
| Cycle Q Clear(g_c), s | 9.1 | 0.0 | 31.5 | 0.1 | 0.0 | 22.6 | 10.0 | 0.0 | 0.0 | 5.3 | 0.0 | 9.9 |
| Prop In Lane | 1.00 | | 0.00 | 1.00 | | 0.06 | 0.36 | | 0.29 | 1.00 | | 0.99 |
| Lane Grp Cap(c), veh/h | 242 | 0 | 1328 | 0 | 0 | 1225 | 107 | 0 | 0 | 180 | 0 | 184 |
| V/C Ratio(X) | 0.85 | 0.00 | 0.66 | 0.00 | 0.00 | 0.54 | 0.26 | 0.00 | 0.00 | 0.27 | 0.00 | 0.81 |
| Avail Cap(c_a), veh/h | 292 | 0 | 1412 | 0 | 0 | 1225 | 224 | 0 | 0 | 314 | 0 | 336 |
| 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 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 45.4 | 0.0 | 11.1 | 0.0 | 0.0 | 10.2 | 49.6 | 0.0 | 0.0 | 50.5 | 0.0 | 52.7 |
| Incr Delay (d2), s/veh | 15.8 | 0.0 | 2.6 | 0.0 | 0.0 | 1.7 | 0.5 | 0.0 | 0.0 | 0.3 | 0.0 | 3.1 |
| 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 | 6.8 | 0.0 | 13.0 | 0.0 | 0.0 | 8.8 | 0.8 | 0.0 | 0.0 | 1.4 | 0.0 | 4.6 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 61.2 | 0.0 | 13.7 | 0.0 | 0.0 | 11.9 | 50.1 | 0.0 | 0.0 | 50.8 | 0.0 | 55.8 |
| LnGrp LOS | E | A | B | A | A | B | D | A | A | D | A | E |
| Approach Vol, veh/h | | 1086 | | | 666 | | | 28 | | | 197 | |
| Approach Delay, s/veh | | 22.7 | | | 11.9 | | | 50.1 | | | 54.6 | |
| Approach LOS | | C | | | B | | | D | | | D | |

| Timer - Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 15.6 | 86.8 | | 17.6 | 16.8 | 85.7 | | 17.6 |
| Change Period (Y+Rc), s | * 5.6 | * 5.6 | | * 5.4 | 5.6 | 5.6 | | * 5.4 |
| Max Green Setting (Gmax), s | * 86 | * 86 | | * 23 | 14.4 | 66.4 | | * 23 |
| Max Q Clear Time (g_c+I1), s | 2.1 | 33.5 | | 11.9 | 11.1 | 24.6 | | 12.0 |
| Green Ext Time (p_c), s | 0.0 | 4.7 | | 0.3 | 0.0 | 3.1 | | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 22.6 |
| HCM 6th LOS | C |

Notes

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

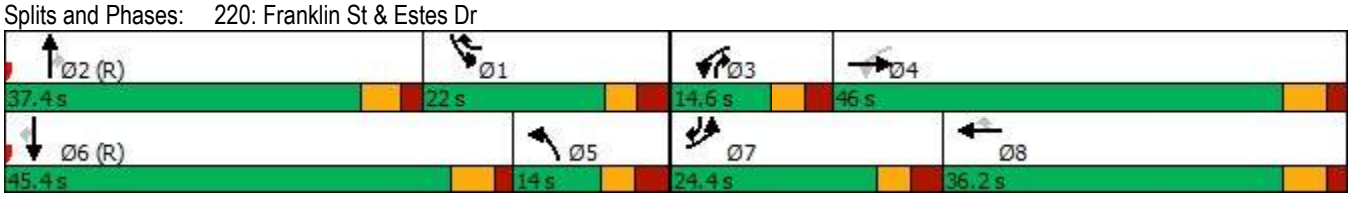
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 343 | 435 | 63 | 123 | 271 | 119 | 56 | 366 | 120 | 110 | 555 | 271 |
| Future Volume (vph) | 343 | 435 | 63 | 123 | 271 | 119 | 56 | 366 | 120 | 110 | 555 | 271 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Grade (%) | | -1% | | | 3% | | | -1% | | | 5% | |
| Storage Length (ft) | 300 | | 400 | 150 | | 0 | 150 | | 150 | 300 | | 350 |
| Storage Lanes | 2 | | 1 | 1 | | 1 | 1 | | 1 | 1 | | 1 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 0.97 | 0.95 | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 |
| Frt | | 0.981 | | | | 0.850 | | | 0.850 | | | 0.850 |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 3450 | 3489 | 0 | 1710 | 1766 | 1530 | 1778 | 3455 | 1591 | 1660 | 3417 | 1529 |
| Flt Permitted | 0.950 | | | 0.282 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (perm) | 3450 | 3489 | 0 | 507 | 1766 | 1530 | 1778 | 3455 | 1591 | 1660 | 3417 | 1529 |
| Right Turn on Red | | | No | | | No | | | No | | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (mph) | | 35 | | | 35 | | | 35 | | | 35 | |
| Link Distance (ft) | | 2406 | | | 987 | | | 1748 | | | 1202 | |
| Travel Time (s) | | 46.9 | | | 19.2 | | | 34.1 | | | 23.4 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 2% | 4% | 6% | 4% | 2% | 5% | 2% | 6% | 3% | 3% |
| Adj. Flow (vph) | 381 | 483 | 70 | 137 | 301 | 132 | 62 | 407 | 133 | 122 | 617 | 301 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 381 | 553 | 0 | 137 | 301 | 132 | 62 | 407 | 133 | 122 | 617 | 301 |
| Turn Type | Prot | NA | | D.P+P | NA | pm+ov | Prot | NA | pm+ov | Prot | NA | pm+ov |
| Protected Phases | 7 | 4 | | 3 | 8 | 1 | 5 | 2 | 3 | 1 | 6 | 7 |
| Permitted Phases | | | | 4 | | 8 | | | 2 | | | 6 |
| Detector Phase | 7 | 4 | | 3 | 8 | 1 | 5 | 2 | 3 | 1 | 6 | 7 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | | 7.0 | 7.0 | 7.0 | 7.0 | 10.0 | 7.0 | 7.0 | 10.0 | 7.0 |
| Minimum Split (s) | 12.9 | 33.9 | | 12.6 | 30.9 | 12.9 | 13.2 | 35.7 | 12.6 | 12.9 | 21.5 | 12.9 |
| Total Split (s) | 24.4 | 46.0 | | 14.6 | 36.2 | 22.0 | 14.0 | 37.4 | 14.6 | 22.0 | 45.4 | 24.4 |
| Total Split (%) | 20.3% | 38.3% | | 12.2% | 30.2% | 18.3% | 11.7% | 31.2% | 12.2% | 18.3% | 37.8% | 20.3% |
| Maximum Green (s) | 18.5 | 40.1 | | 9.0 | 30.3 | 16.1 | 7.8 | 31.7 | 9.0 | 16.1 | 39.9 | 18.5 |
| Yellow Time (s) | 3.0 | 3.9 | | 3.0 | 3.9 | 3.0 | 3.0 | 3.7 | 3.0 | 3.0 | 3.9 | 3.0 |
| All-Red Time (s) | 2.9 | 2.0 | | 2.6 | 2.0 | 2.9 | 3.2 | 2.0 | 2.6 | 2.9 | 1.6 | 2.9 |
| Lost Time Adjust (s) | -0.9 | -0.9 | | -0.6 | -0.9 | -0.9 | -1.2 | -0.7 | 0.0 | -0.9 | -0.5 | 0.0 |
| Total Lost Time (s) | 5.0 | 5.0 | | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.6 | 5.0 | 5.0 | 5.9 |
| Lead/Lag | Lead | Lag | | Lead | Lag | Lag | Lag | Lead | Lead | Lag | Lead | Lead |
| Lead-Lag Optimize? | Yes | Yes | | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Vehicle Extension (s) | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 1.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Recall Mode | None | None | | None | None | None | None | C-Min | None | None | C-Min | None |
| Walk Time (s) | | 7.0 | | | 7.0 | | | 7.0 | | | 7.0 | |
| Flash Dont Walk (s) | | 21.0 | | | 18.0 | | | 23.0 | | | 9.0 | |
| Pedestrian Calls (#/hr) | | 0 | | | 0 | | | 0 | | | 0 | |
| Act Effct Green (s) | 18.3 | 32.6 | | 43.5 | 25.2 | 40.2 | 9.6 | 41.5 | 51.1 | 15.0 | 49.6 | 67.3 |
| Actuated g/C Ratio | 0.15 | 0.27 | | 0.36 | 0.21 | 0.34 | 0.08 | 0.35 | 0.43 | 0.12 | 0.41 | 0.56 |
| v/c Ratio | 0.72 | 0.58 | | 0.47 | 0.81 | 0.26 | 0.44 | 0.34 | 0.20 | 0.59 | 0.44 | 0.35 |
| Control Delay | 54.8 | 34.3 | | 27.0 | 62.2 | 15.7 | 61.9 | 33.3 | 14.2 | 60.0 | 29.5 | 10.9 |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 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 | 54.8 | 34.3 | | 27.0 | 62.2 | 15.7 | 61.9 | 33.3 | 14.2 | 60.0 | 29.5 | 10.9 |
| LOS | D | C | | C | E | B | E | C | B | E | C | B |
| Approach Delay | | 42.7 | | | 43.0 | | | 32.0 | | | 27.7 | |
| Approach LOS | | D | | | D | | | C | | | C | |
| Queue Length 50th (ft) | 124 | 198 | | 67 | 223 | 46 | 47 | 122 | 38 | 91 | 184 | 80 |
| Queue Length 95th (ft) | 172 | 190 | | 96 | 308 | 48 | 91 | 205 | 78 | 145 | 285 | 141 |
| Internal Link Dist (ft) | | 2326 | | | 907 | | | 1668 | | | 1122 | |
| Turn Bay Length (ft) | 300 | | | 150 | | | 150 | | 150 | 300 | | 350 |
| Base Capacity (vph) | 581 | 1192 | | 297 | 459 | 552 | 147 | 1242 | 682 | 251 | 1450 | 881 |
| Starvation Cap Reductn | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.66 | 0.46 | | 0.46 | 0.66 | 0.24 | 0.42 | 0.33 | 0.20 | 0.49 | 0.43 | 0.34 |

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 68 (57%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.81
Intersection Signal Delay: 35.8 Intersection LOS: D
Intersection Capacity Utilization 61.9% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 220: Franklin St & Estes Dr



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 343 | 435 | 63 | 123 | 271 | 119 | 56 | 366 | 120 | 110 | 555 | 271 |
| Future Volume (veh/h) | 343 | 435 | 63 | 123 | 271 | 119 | 56 | 366 | 120 | 110 | 555 | 271 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1909 | 1909 | 1909 | 1788 | 1758 | 1788 | 1909 | 1864 | 1909 | 1664 | 1708 | 1708 |
| Adj Flow Rate, veh/h | 381 | 483 | 70 | 137 | 301 | 132 | 62 | 407 | 133 | 122 | 617 | 301 |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 4 | 6 | 4 | 2 | 5 | 2 | 6 | 3 | 3 |
| Cap, veh/h | 465 | 794 | 115 | 287 | 347 | 835 | 503 | 524 | 351 | 560 | 738 | 503 |
| Arrive On Green | 0.13 | 0.25 | 0.24 | 0.08 | 0.20 | 0.20 | 0.28 | 0.15 | 0.14 | 0.35 | 0.23 | 0.22 |
| Sat Flow, veh/h | 3528 | 3182 | 459 | 1703 | 1758 | 1515 | 1818 | 3542 | 1618 | 1585 | 3246 | 1448 |
| Grp Volume(v), veh/h | 381 | 274 | 279 | 137 | 301 | 132 | 62 | 407 | 133 | 122 | 617 | 301 |
| Grp Sat Flow(s),veh/h/ln | 1764 | 1814 | 1827 | 1703 | 1758 | 1515 | 1818 | 1771 | 1618 | 1585 | 1623 | 1448 |
| Q Serve(g_s), s | 12.6 | 16.1 | 16.2 | 7.1 | 19.9 | 1.9 | 3.1 | 13.3 | 3.1 | 6.5 | 21.8 | 7.5 |
| Cycle Q Clear(g_c), s | 12.6 | 16.1 | 16.2 | 7.1 | 19.9 | 1.9 | 3.1 | 13.3 | 3.1 | 6.5 | 21.8 | 7.5 |
| Prop In Lane | 1.00 | | 0.25 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 465 | 453 | 456 | 287 | 347 | 835 | 503 | 524 | 351 | 560 | 738 | 503 |
| V/C Ratio(X) | 0.82 | 0.61 | 0.61 | 0.48 | 0.87 | 0.16 | 0.12 | 0.78 | 0.38 | 0.22 | 0.84 | 0.60 |
| Avail Cap(c_a), veh/h | 570 | 620 | 624 | 288 | 457 | 930 | 503 | 956 | 548 | 560 | 1093 | 661 |
| 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 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 50.7 | 39.8 | 40.0 | 30.9 | 46.6 | 4.0 | 32.5 | 49.2 | 15.9 | 27.2 | 44.2 | 12.0 |
| Incr Delay (d2), s/veh | 6.3 | 0.5 | 0.5 | 0.5 | 10.7 | 0.0 | 0.0 | 10.8 | 3.1 | 0.1 | 10.9 | 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 | 5.9 | 7.1 | 7.3 | 2.9 | 9.6 | 0.8 | 1.4 | 6.6 | 1.8 | 2.4 | 9.7 | 3.6 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 57.0 | 40.3 | 40.5 | 31.3 | 57.3 | 4.0 | 32.5 | 60.0 | 19.0 | 27.2 | 55.1 | 17.2 |
| LnGrp LOS | E | D | D | C | E | A | C | E | B | C | E | B |
| Approach Vol, veh/h | | 934 | | | 570 | | | 602 | | | 1040 | |
| Approach Delay, s/veh | | 47.2 | | | 38.7 | | | 48.1 | | | 40.8 | |
| Approach LOS | | D | | | D | | | D | | | D | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 47.7 | 22.7 | 14.6 | 35.0 | 38.2 | 32.3 | 20.8 | 28.7 |
| Change Period (Y+Rc), s | * 6.2 | * 5.7 | 5.6 | 5.9 | * 6.2 | * 5.5 | 5.9 | 5.9 |
| Max Green Setting (Gmax), s | * 16 | * 32 | 9.0 | 40.1 | * 7.8 | * 40 | 18.5 | 30.3 |
| Max Q Clear Time (g_c+I1), s | 8.5 | 15.3 | 9.1 | 18.2 | 5.1 | 23.8 | 14.6 | 21.9 |
| Green Ext Time (p_c), s | 0.1 | 1.8 | 0.0 | 2.0 | 0.0 | 3.0 | 0.3 | 0.9 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 43.7 |
| HCM 6th LOS | D |

Notes

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

| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 19 | 62 | 80 | 639 | 613 | 33 |
| Future Volume (vph) | 19 | 62 | 80 | 639 | 613 | 33 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | 125 | 100 | | | 0 |
| Storage Lanes | 1 | 1 | 1 | | | 0 |
| Taper Length (ft) | 100 | | 100 | | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 0.95 |
| Frt | | 0.850 | | | 0.992 | |
| Flt Protected | 0.950 | | 0.950 | | | |
| Satd. Flow (prot) | 1719 | 1538 | 1752 | 3438 | 3445 | 0 |
| Flt Permitted | 0.950 | | 0.950 | | | |
| Satd. Flow (perm) | 1719 | 1538 | 1752 | 3438 | 3445 | 0 |
| Link Speed (mph) | 30 | | | 40 | 40 | |
| Link Distance (ft) | 928 | | | 1413 | 1063 | |
| Travel Time (s) | 21.1 | | | 24.1 | 18.1 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 5% | 5% | 3% | 5% | 4% | 3% |
| Adj. Flow (vph) | 21 | 69 | 89 | 710 | 681 | 37 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 21 | 69 | 89 | 710 | 718 | 0 |
| Sign Control | Stop | | | Free | Free | |

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 35.8% ICU Level of Service A
Analysis Period (min) 15

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

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 19 | 62 | 80 | 639 | 613 | 33 |
| Future Vol, veh/h | 19 | 62 | 80 | 639 | 613 | 33 |
| 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 | 125 | 100 | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 5 | 5 | 3 | 5 | 4 | 3 |
| Mvmt Flow | 21 | 69 | 89 | 710 | 681 | 37 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 1233 | 359 | 718 | 0 | - | 0 |
| Stage 1 | 700 | - | - | - | - | - |
| Stage 2 | 533 | - | - | - | - | - |
| Critical Hdwy | 6.9 | 7 | 4.16 | - | - | - |
| Critical Hdwy Stg 1 | 5.9 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.9 | - | - | - | - | - |
| Follow-up Hdwy | 3.55 | 3.35 | 2.23 | - | - | - |
| Pot Cap-1 Maneuver | 165 | 629 | 872 | - | - | - |
| Stage 1 | 446 | - | - | - | - | - |
| Stage 2 | 544 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 148 | 629 | 872 | - | - | - |
| Mov Cap-2 Maneuver | 276 | - | - | - | - | - |
| Stage 1 | 401 | - | - | - | - | - |
| Stage 2 | 544 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 13.2 | 1.1 | 0 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | EBLn2 | SBT | SBR |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | 872 | - | 276 | 629 | - | - |
| HCM Lane V/C Ratio | 0.102 | - | 0.076 | 0.11 | - | - |
| HCM Control Delay (s) | 9.6 | - | 19.1 | 11.4 | - | - |
| HCM Lane LOS | A | - | C | B | - | - |
| HCM 95th %tile Q(veh) | 0.3 | - | 0.2 | 0.4 | - | - |

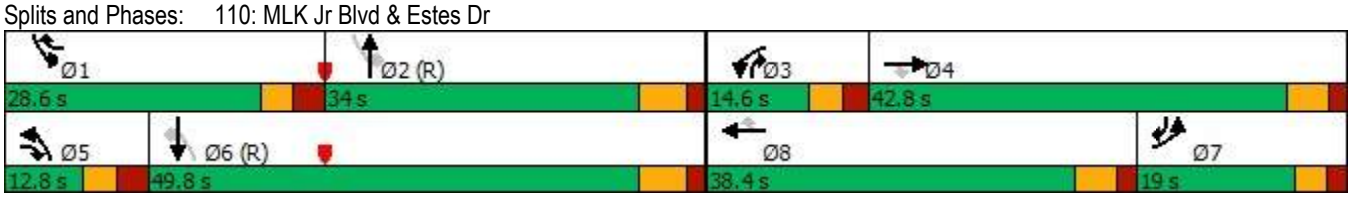
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 195 | 316 | 26 | 138 | 308 | 239 | 42 | 500 | 116 | 289 | 482 | 166 |
| Future Volume (vph) | 195 | 316 | 26 | 138 | 308 | 239 | 42 | 500 | 116 | 289 | 482 | 166 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Grade (%) | | 1% | | | -2% | | | 1% | | | 0% | |
| Storage Length (ft) | 300 | | 225 | 300 | | 0 | 150 | | 300 | 225 | | 150 |
| Storage Lanes | 2 | | 1 | 2 | | 1 | 1 | | 1 | 1 | | 1 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 0.97 | 1.00 | 1.00 | 0.97 | 1.00 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 |
| Frt | | | 0.850 | | | 0.850 | | | 0.850 | | | 0.850 |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 3416 | 1853 | 1488 | 3434 | 1881 | 1599 | 1604 | 3421 | 1575 | 1736 | 3406 | 1553 |
| Flt Permitted | 0.950 | | | 0.950 | | | 0.399 | | | 0.338 | | |
| Satd. Flow (perm) | 3416 | 1853 | 1488 | 3434 | 1881 | 1599 | 673 | 3421 | 1575 | 617 | 3406 | 1553 |
| Right Turn on Red | | | No | | | No | | | No | | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (mph) | | 35 | | | 35 | | | 40 | | | 40 | |
| Link Distance (ft) | | 1251 | | | 768 | | | 1063 | | | 363 | |
| Travel Time (s) | | 24.4 | | | 15.0 | | | 18.1 | | | 6.2 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 8% | 3% | 2% | 2% | 12% | 5% | 2% | 4% | 6% | 4% |
| Adj. Flow (vph) | 217 | 351 | 29 | 153 | 342 | 266 | 47 | 556 | 129 | 321 | 536 | 184 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 217 | 351 | 29 | 153 | 342 | 266 | 47 | 556 | 129 | 321 | 536 | 184 |
| Turn Type | Prot | NA | pm+ov | Prot | NA | pm+ov | D.P+P | NA | pm+ov | D.P+P | NA | pm+ov |
| Protected Phases | 7 | 4 | 5 | 3 | 8 | 1 | 5 | 2 | 3 | 1 | 6 | 7 |
| Permitted Phases | | | 4 | | | 8 | 6 | | 2 | 2 | | 6 |
| Detector Phase | 7 | 4 | 5 | 3 | 8 | 1 | 5 | 2 | 3 | 1 | 6 | 7 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 12.0 | 7.0 | 7.0 | 12.0 | 7.0 |
| Minimum Split (s) | 11.9 | 12.5 | 12.8 | 12.4 | 12.5 | 12.8 | 12.8 | 34.0 | 12.4 | 12.8 | 18.0 | 11.9 |
| Total Split (s) | 19.0 | 42.8 | 12.8 | 14.6 | 38.4 | 28.6 | 12.8 | 34.0 | 14.6 | 28.6 | 49.8 | 19.0 |
| Total Split (%) | 15.8% | 35.7% | 10.7% | 12.2% | 32.0% | 23.8% | 10.7% | 28.3% | 12.2% | 23.8% | 41.5% | 15.8% |
| Maximum Green (s) | 14.1 | 37.3 | 7.0 | 9.2 | 32.9 | 22.8 | 7.0 | 28.0 | 9.2 | 22.8 | 43.8 | 14.1 |
| Yellow Time (s) | 3.0 | 3.8 | 3.0 | 3.0 | 3.8 | 3.0 | 3.0 | 4.3 | 3.0 | 3.0 | 4.3 | 3.0 |
| All-Red Time (s) | 1.9 | 1.7 | 2.8 | 2.4 | 1.7 | 2.8 | 2.8 | 1.7 | 2.4 | 2.8 | 1.7 | 1.9 |
| Lost Time Adjust (s) | 0.1 | -0.5 | -0.8 | -0.4 | -0.5 | -0.8 | -0.8 | -1.0 | 0.0 | -0.8 | -1.0 | 0.0 |
| Total Lost Time (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.4 | 5.0 | 5.0 | 4.9 |
| Lead/Lag | Lag | Lag | Lead | Lead | Lead | Lead | Lead | Lag | Lead | Lead | Lag | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Vehicle Extension (s) | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 2.0 | 1.0 | 1.0 | 2.0 | 1.0 |
| Recall Mode | None | None | None | None | None | None | None | C-Min | None | None | C-Min | None |
| Walk Time (s) | | | | | | | | 7.0 | | | | |
| Flash Dont Walk (s) | | | | | | | | 21.0 | | | | |
| Pedestrian Calls (#/hr) | | | | | | | | 0 | | | | |
| Act Effct Green (s) | 11.0 | 27.9 | 40.7 | 8.9 | 25.8 | 46.5 | 64.2 | 42.5 | 56.0 | 63.2 | 58.0 | 70.2 |
| Actuated g/C Ratio | 0.09 | 0.23 | 0.34 | 0.07 | 0.22 | 0.39 | 0.54 | 0.35 | 0.47 | 0.53 | 0.48 | 0.58 |
| v/c Ratio | 0.69 | 0.82 | 0.06 | 0.60 | 0.85 | 0.43 | 0.11 | 0.46 | 0.18 | 0.62 | 0.33 | 0.20 |
| Control Delay | 64.6 | 58.3 | 24.1 | 56.3 | 52.9 | 11.1 | 14.9 | 33.9 | 22.4 | 24.8 | 15.6 | 5.7 |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 64.6 | 58.3 | 24.1 | 56.3 | 52.9 | 11.1 | 14.9 | 33.9 | 22.4 | 24.8 | 15.6 | 5.7 |
| LOS | E | E | C | E | D | B | B | C | C | C | B | A |
| Approach Delay | | 58.9 | | | 39.0 | | | 30.7 | | | 16.7 | |
| Approach LOS | | E | | | D | | | C | | | B | |
| Queue Length 50th (ft) | 85 | 260 | 15 | 52 | 257 | 95 | 15 | 176 | 57 | 91 | 141 | 34 |
| Queue Length 95th (ft) | 124 | 331 | 32 | 90 | 345 | 89 | 41 | 268 | 118 | 220 | 114 | 55 |
| Internal Link Dist (ft) | | 1171 | | | 688 | | | 983 | | | 283 | |
| Turn Bay Length (ft) | 300 | | 225 | 300 | | | 150 | | 300 | 225 | | 150 |
| Base Capacity (vph) | 398 | 583 | 504 | 279 | 523 | 658 | 420 | 1212 | 746 | 556 | 1645 | 931 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.55 | 0.60 | 0.06 | 0.55 | 0.65 | 0.40 | 0.11 | 0.46 | 0.17 | 0.58 | 0.33 | 0.20 |

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 56 (47%), Referenced to phase 2:NBSB and 6:NBSB, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.85
Intersection Signal Delay: 33.4 Intersection LOS: C
Intersection Capacity Utilization 69.0% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 110: MLK Jr Blvd & Estes Dr



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 195 | 316 | 26 | 138 | 308 | 239 | 42 | 500 | 116 | 289 | 482 | 166 |
| Future Volume (veh/h) | 195 | 316 | 26 | 138 | 308 | 239 | 42 | 500 | 116 | 289 | 482 | 166 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1864 | 1864 | 1776 | 1934 | 1949 | 1949 | 1716 | 1820 | 1864 | 1841 | 1811 | 1841 |
| Adj Flow Rate, veh/h | 217 | 351 | 29 | 153 | 342 | 266 | 47 | 556 | 129 | 321 | 536 | 184 |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Percent Heavy Veh, % | 2 | 2 | 8 | 3 | 2 | 2 | 12 | 5 | 2 | 4 | 6 | 4 |
| Cap, veh/h | 270 | 408 | 412 | 221 | 384 | 551 | 481 | 1449 | 741 | 522 | 1720 | 890 |
| Arrive On Green | 0.08 | 0.22 | 0.22 | 0.06 | 0.20 | 0.20 | 0.05 | 0.42 | 0.41 | 0.27 | 1.00 | 0.98 |
| Sat Flow, veh/h | 3445 | 1864 | 1505 | 3573 | 1949 | 1651 | 1635 | 3458 | 1580 | 1753 | 3441 | 1560 |
| Grp Volume(v), veh/h | 217 | 351 | 29 | 153 | 342 | 266 | 47 | 556 | 129 | 321 | 536 | 184 |
| Grp Sat Flow(s),veh/h/ln | 1722 | 1864 | 1505 | 1786 | 1949 | 1651 | 1635 | 1729 | 1580 | 1753 | 1721 | 1560 |
| Q Serve(g_s), s | 7.4 | 21.7 | 1.7 | 5.0 | 20.5 | 10.5 | 1.6 | 13.4 | 5.7 | 13.2 | 0.0 | 0.1 |
| Cycle Q Clear(g_c), s | 7.4 | 21.7 | 1.7 | 5.0 | 20.5 | 10.5 | 1.6 | 13.4 | 5.7 | 13.2 | 0.0 | 0.1 |
| 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 | 270 | 408 | 412 | 221 | 384 | 551 | 481 | 1449 | 741 | 522 | 1720 | 890 |
| V/C Ratio(X) | 0.80 | 0.86 | 0.07 | 0.69 | 0.89 | 0.48 | 0.10 | 0.38 | 0.17 | 0.61 | 0.31 | 0.21 |
| Avail Cap(c_a), veh/h | 402 | 587 | 557 | 286 | 542 | 685 | 501 | 1449 | 741 | 633 | 1720 | 890 |
| 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 | 54.4 | 45.1 | 32.2 | 55.2 | 46.9 | 15.7 | 12.5 | 24.1 | 18.4 | 13.7 | 0.0 | 0.1 |
| Incr Delay (d2), s/veh | 4.0 | 6.4 | 0.0 | 2.6 | 10.1 | 0.2 | 0.0 | 0.8 | 0.5 | 0.5 | 0.5 | 0.5 |
| 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 | 10.6 | 0.6 | 2.3 | 10.9 | 3.8 | 0.6 | 5.5 | 2.2 | 3.8 | 0.1 | 0.2 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 58.4 | 51.5 | 32.3 | 57.8 | 56.9 | 16.0 | 12.5 | 24.9 | 18.9 | 14.2 | 0.5 | 0.7 |
| LnGrp LOS | E | D | C | E | E | B | B | C | B | B | A | A |
| Approach Vol, veh/h | | 597 | | | 761 | | | 732 | | | 1041 | |
| Approach Delay, s/veh | | 53.1 | | | 42.8 | | | 23.1 | | | 4.7 | |
| Approach LOS | | D | | | D | | | C | | | A | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 21.1 | 55.3 | 12.4 | 31.3 | 11.3 | 65.0 | 15.0 | 28.7 |
| Change Period (Y+Rc), s | * 5.8 | * 6 | 5.4 | 5.5 | * 5.8 | * 6 | 5.5 | * 5.5 |
| Max Green Setting (Gmax), s | * 23 | * 28 | 9.2 | 37.3 | * 7 | * 44 | 14.1 | * 33 |
| Max Q Clear Time (g_c+I1), s | 15.2 | 15.4 | 7.0 | 23.7 | 3.6 | 2.1 | 9.4 | 22.5 |
| Green Ext Time (p_c), s | 0.1 | 2.1 | 0.0 | 0.6 | 0.0 | 2.6 | 0.1 | 0.7 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 27.5 |
| HCM 6th LOS | C |

Notes

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

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 31 | 918 | 17 | 0 | 937 |
| Future Volume (vph) | 0 | 31 | 918 | 17 | 0 | 937 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Grade (%) | 0% | | -1% | | | 0% |
| Storage Length (ft) | 0 | 0 | | 100 | 0 | |
| Storage Lanes | 0 | 1 | | 1 | 0 | |
| Taper Length (ft) | 100 | | | | 100 | |
| Lane Util. Factor | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 |
| Frt | | 0.865 | | 0.850 | | |
| Flt Protected | | | | | | |
| Satd. Flow (prot) | 0 | 1611 | 3557 | 1591 | 0 | 3539 |
| Flt Permitted | | | | | | |
| Satd. Flow (perm) | 0 | 1611 | 3557 | 1591 | 0 | 3539 |
| Link Speed (mph) | 25 | | 40 | | | 40 |
| Link Distance (ft) | 394 | | 363 | | | 1151 |
| Travel Time (s) | 10.7 | | 6.2 | | | 19.6 |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Adj. Flow (vph) | 0 | 34 | 1020 | 19 | 0 | 1041 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 34 | 1020 | 19 | 0 | 1041 |
| Sign Control | Stop | | Free | | | Free |

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 35.4% ICU Level of Service A
Analysis Period (min) 15

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

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | ↱ | ↑↑ | ↱ | | ↑↑ |
| Traffic Vol, veh/h | 0 | 31 | 918 | 17 | 0 | 937 |
| Future Vol, veh/h | 0 | 31 | 918 | 17 | 0 | 937 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | 0 | - | 100 | - | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | -1 | - | - | 0 |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 34 | 1020 | 19 | 0 | 1041 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | - | 510 | 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 | 509 | - | - | 0 | - |
| Stage 1 | 0 | - | - | - | 0 | - |
| Stage 2 | 0 | - | - | - | 0 | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | - | 509 | - | - | - | - |
| Mov Cap-2 Maneuver | - | - | - | - | - | - |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 12.6 | 0 | 0 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBT |
|---|---|---|---|---|
| Capacity (veh/h) | - | - | 509 | - |
| HCM Lane V/C Ratio | - | - | 0.068 | - |
| HCM Control Delay (s) | - | - | 12.6 | - |
| HCM Lane LOS | - | - | B | - |
| HCM 95th %tile Q(veh) | - | - | 0.2 | - |

| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 38 | 683 | 661 | 36 | 36 | 23 |
| Future Volume (vph) | 38 | 683 | 661 | 36 | 36 | 23 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Grade (%) | | 0% | -2% | | 0% | |
| Storage Length (ft) | 100 | | | 150 | 0 | 100 |
| Storage Lanes | 1 | | | 1 | 1 | 1 |
| Taper Length (ft) | 100 | | | | 100 | |
| Lane Util. Factor | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | 1.00 |
| Frt | | | 0.992 | | | 0.850 |
| Flt Protected | 0.950 | | | | 0.950 | |
| Satd. Flow (prot) | 1770 | 1863 | 3546 | 0 | 1770 | 1583 |
| Flt Permitted | 0.950 | | | | 0.950 | |
| Satd. Flow (perm) | 1770 | 1863 | 3546 | 0 | 1770 | 1583 |
| Link Speed (mph) | | 35 | 35 | | 25 | |
| Link Distance (ft) | | 768 | 803 | | 373 | |
| Travel Time (s) | | 15.0 | 15.6 | | 10.2 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Adj. Flow (vph) | 42 | 759 | 734 | 40 | 40 | 26 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 42 | 759 | 774 | 0 | 40 | 26 |
| Sign Control | | Free | Free | | Stop | |

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 45.9% ICU Level of Service A
Analysis Period (min) 15

| Intersection | |
|---|---|
| Int Delay, s/veh | 1.9 |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 38 | 683 | 661 | 36 | 36 | 23 |
| Future Vol, veh/h | 38 | 683 | 661 | 36 | 36 | 23 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 100 | - | - | 150 | 0 | 100 |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | -2 | - | 0 | - |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 42 | 759 | 734 | 40 | 40 | 26 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 774 | 0 | - | 0 | 1597 | 387 |
| Stage 1 | - | - | - | - | 754 | - |
| Stage 2 | - | - | - | - | 843 | - |
| Critical Hdwy | 4.13 | - | - | - | 6.63 | 6.93 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.83 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.43 | - |
| Follow-up Hdwy | 2.219 | - | - | - | 3.519 | 3.319 |
| Pot Cap-1 Maneuver | 839 | - | - | - | 107 | 612 |
| Stage 1 | - | - | - | - | 426 | - |
| Stage 2 | - | - | - | - | 421 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | 839 | - | - | - | 102 | 612 |
| Mov Cap-2 Maneuver | - | - | - | - | 102 | - |
| Stage 1 | - | - | - | - | 405 | - |
| Stage 2 | - | - | - | - | 421 | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 0.5 | 0 | 41.8 |
| HCM LOS | | | E |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 | SBLn2 |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | 839 | - | - | - | 102 | 612 |
| HCM Lane V/C Ratio | 0.05 | - | - | - | 0.392 | 0.042 |
| HCM Control Delay (s) | 9.5 | - | - | - | 61.4 | 11.1 |
| HCM Lane LOS | A | - | - | - | F | B |
| HCM 95th %tile Q(veh) | 0.2 | - | - | - | 1.6 | 0.1 |

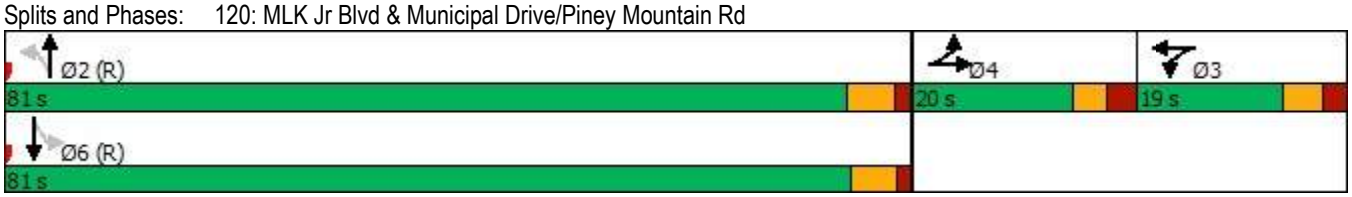
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 3 | 0 | 14 | 67 | 1 | 24 | 21 | 871 | 57 | 27 | 857 | 2 |
| Future Volume (vph) | 3 | 0 | 14 | 67 | 1 | 24 | 21 | 871 | 57 | 27 | 857 | 2 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Grade (%) | | 0% | | | 4% | | | -1% | | | 0% | |
| Storage Length (ft) | 100 | | 0 | 375 | | 0 | 150 | | 0 | 225 | | 0 |
| Storage Lanes | 1 | | 0 | 2 | | 0 | 1 | | 0 | 1 | | 0 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 0.97 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | 0.95 | 0.95 |
| Frt | | 0.850 | | | 0.855 | | | 0.991 | | | | |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1770 | 1129 | 0 | 3364 | 1464 | 0 | 1463 | 3493 | 0 | 1770 | 3471 | 0 |
| Flt Permitted | 0.950 | | | 0.950 | | | 0.285 | | | 0.260 | | |
| Satd. Flow (perm) | 1770 | 1129 | 0 | 3364 | 1464 | 0 | 439 | 3493 | 0 | 484 | 3471 | 0 |
| Right Turn on Red | | | No | | | No | | | No | | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (mph) | | 20 | | | 35 | | | 40 | | | 40 | |
| Link Distance (ft) | | 554 | | | 663 | | | 1151 | | | 2618 | |
| Travel Time (s) | | 18.9 | | | 12.9 | | | 19.6 | | | 44.6 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 43% | 2% | 2% | 9% | 24% | 3% | 2% | 2% | 4% | 2% |
| Adj. Flow (vph) | 3 | 0 | 16 | 74 | 1 | 27 | 23 | 968 | 63 | 30 | 952 | 2 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 3 | 16 | 0 | 74 | 28 | 0 | 23 | 1031 | 0 | 30 | 954 | 0 |
| Turn Type | Split | NA | | Split | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | 4 | 4 | | 3 | 3 | | | 2 | | | 6 | |
| Permitted Phases | | | | | | | 2 | | | 6 | | |
| Detector Phase | 4 | 4 | | 3 | 3 | | 2 | 2 | | 6 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | | 7.0 | 7.0 | | 12.0 | 12.0 | | 12.0 | 12.0 | |
| Minimum Split (s) | 12.6 | 12.6 | | 12.9 | 12.9 | | 27.8 | 27.8 | | 17.5 | 17.5 | |
| Total Split (s) | 20.0 | 20.0 | | 19.0 | 19.0 | | 81.0 | 81.0 | | 81.0 | 81.0 | |
| Total Split (%) | 16.7% | 16.7% | | 15.8% | 15.8% | | 67.5% | 67.5% | | 67.5% | 67.5% | |
| Maximum Green (s) | 14.4 | 14.4 | | 13.1 | 13.1 | | 75.2 | 75.2 | | 75.5 | 75.5 | |
| Yellow Time (s) | 3.0 | 3.0 | | 3.6 | 3.6 | | 4.2 | 4.2 | | 4.2 | 4.2 | |
| All-Red Time (s) | 2.6 | 2.6 | | 2.3 | 2.3 | | 1.6 | 1.6 | | 1.3 | 1.3 | |
| Lost Time Adjust (s) | -0.6 | -0.6 | | -0.9 | -0.9 | | -0.8 | -0.8 | | -0.5 | -0.5 | |
| Total Lost Time (s) | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | |
| Lead/Lag | Lead | Lead | | Lag | Lag | | | | | | | |
| Lead-Lag Optimize? | Yes | Yes | | Yes | Yes | | | | | | | |
| Vehicle Extension (s) | 1.0 | 1.0 | | 1.0 | 1.0 | | 6.0 | 6.0 | | 6.0 | 6.0 | |
| Minimum Gap (s) | 1.0 | 1.0 | | 1.0 | 1.0 | | 6.0 | 6.0 | | 6.0 | 6.0 | |
| Time Before Reduce (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 15.0 | 15.0 | | 15.0 | 15.0 | |
| Time To Reduce (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 45.0 | 45.0 | | 45.0 | 45.0 | |
| Recall Mode | None | None | | None | None | | C-Min | C-Min | | C-Min | C-Min | |
| Walk Time (s) | | | | | | | 7.0 | 7.0 | | | | |
| Flash Dont Walk (s) | | | | | | | 15.0 | 15.0 | | | | |
| Pedestrian Calls (#/hr) | | | | | | | 0 | 0 | | | | |
| Act Effct Green (s) | 7.8 | 7.8 | | 8.2 | 8.2 | | 100.1 | 100.1 | | 100.1 | 100.1 | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Actuated g/C Ratio | 0.06 | 0.06 | | 0.07 | 0.07 | | 0.83 | 0.83 | | 0.83 | 0.83 | |
| v/c Ratio | 0.03 | 0.22 | | 0.32 | 0.28 | | 0.06 | 0.35 | | 0.07 | 0.33 | |
| Control Delay | 52.7 | 60.5 | | 56.9 | 60.2 | | 2.7 | 2.2 | | 1.1 | 1.0 | |
| Queue Delay | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Delay | 52.7 | 60.5 | | 56.9 | 60.2 | | 2.7 | 2.2 | | 1.1 | 1.0 | |
| LOS | D | E | | E | E | | A | A | | A | A | |
| Approach Delay | | 59.3 | | | 57.8 | | | 2.2 | | | 1.0 | |
| Approach LOS | | E | | | E | | | A | | | A | |
| Queue Length 50th (ft) | 2 | 12 | | 28 | 21 | | 1 | 29 | | 1 | 27 | |
| Queue Length 95th (ft) | 13 | 36 | | 53 | 52 | | m7 | 84 | | m4 | 32 | |
| Internal Link Dist (ft) | | 474 | | | 583 | | | 1071 | | | 2538 | |
| Turn Bay Length (ft) | 100 | | | 375 | | | 150 | | | 225 | | |
| Base Capacity (vph) | 221 | 141 | | 392 | 170 | | 366 | 2913 | | 403 | 2894 | |
| Starvation Cap Reductn | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Spillback Cap Reductn | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Storage Cap Reductn | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Reduced v/c Ratio | 0.01 | 0.11 | | 0.19 | 0.16 | | 0.06 | 0.35 | | 0.07 | 0.33 | |

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 55 (46%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 55
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.35
Intersection Signal Delay: 4.8 Intersection LOS: A
Intersection Capacity Utilization 42.8% ICU Level of Service A
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 120: MLK Jr Blvd & Municipal Drive/Piney Mountain Rd



HCM 6th Edition methodology expects strict NEMA phasing.

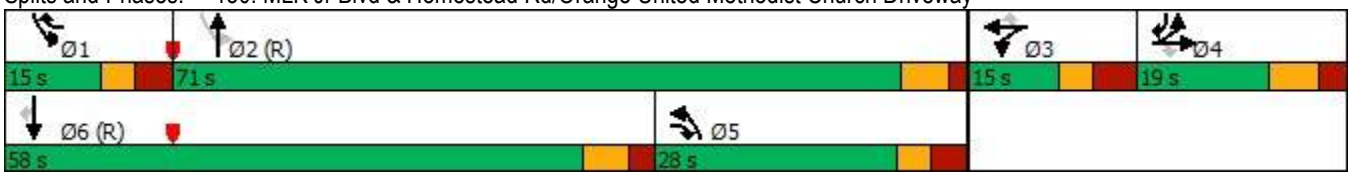
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 109 | 2 | 199 | 11 | 7 | 14 | 165 | 731 | 2 | 19 | 676 | 95 |
| Future Volume (vph) | 109 | 2 | 199 | 11 | 7 | 14 | 165 | 731 | 2 | 19 | 676 | 95 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 125 | | 0 | 125 | | 0 | 525 | | 0 | 250 | | 375 |
| Storage Lanes | 1 | | 1 | 2 | | 1 | 2 | | 0 | 1 | | 1 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 0.95 | 0.95 | 1.00 | 0.95 | 0.95 | 1.00 | 0.97 | 0.95 | 0.95 | 1.00 | 0.95 | 1.00 |
| Frt | | | 0.850 | | | 0.850 | | | | | | 0.850 |
| Flt Protected | 0.950 | 0.954 | | 0.950 | 0.990 | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1603 | 1612 | 1538 | 1681 | 1752 | 1583 | 3400 | 3501 | 0 | 1719 | 3471 | 1495 |
| Flt Permitted | 0.950 | 0.954 | | 0.950 | 0.990 | | 0.950 | | | 0.310 | | |
| Satd. Flow (perm) | 1603 | 1612 | 1538 | 1681 | 1752 | 1583 | 3400 | 3501 | 0 | 561 | 3471 | 1495 |
| Right Turn on Red | | | No | | | No | | | No | | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (mph) | | 35 | | | 20 | | | 40 | | | 40 | |
| Link Distance (ft) | | 1248 | | | 314 | | | 1137 | | | 1345 | |
| Travel Time (s) | | 24.3 | | | 10.7 | | | 19.4 | | | 22.9 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 7% | 2% | 5% | 2% | 2% | 2% | 3% | 3% | 50% | 5% | 4% | 8% |
| Adj. Flow (vph) | 121 | 2 | 221 | 12 | 8 | 16 | 183 | 812 | 2 | 21 | 751 | 106 |
| Shared Lane Traffic (%) | 49% | | | 18% | | | | | | | | |
| Lane Group Flow (vph) | 62 | 61 | 221 | 10 | 10 | 16 | 183 | 814 | 0 | 21 | 751 | 106 |
| Turn Type | Split | NA | pm+ov | Split | NA | pm+ov | Prot | NA | | D.P+P | NA | pm+ov |
| Protected Phases | 4 | 4 | 5 | 3 | 3 | 1 | 5 | 2 | | 1 | 6 | 4 |
| Permitted Phases | | | 4 | | | 3 | | | | 2 | | 6 |
| Detector Phase | 4 | 4 | 5 | 3 | 3 | 1 | 5 | 2 | | 1 | 6 | 4 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 12.0 | | 7.0 | 12.0 | 7.0 |
| Minimum Split (s) | 14.1 | 14.1 | 13.3 | 13.9 | 13.9 | 13.4 | 13.3 | 28.0 | | 13.4 | 45.4 | 14.1 |
| Total Split (s) | 19.0 | 19.0 | 28.0 | 15.0 | 15.0 | 15.0 | 28.0 | 71.0 | | 15.0 | 58.0 | 19.0 |
| Total Split (%) | 15.8% | 15.8% | 23.3% | 12.5% | 12.5% | 12.5% | 23.3% | 59.2% | | 12.5% | 48.3% | 15.8% |
| Maximum Green (s) | 11.9 | 11.9 | 21.7 | 8.1 | 8.1 | 8.6 | 21.7 | 65.0 | | 8.6 | 51.6 | 11.9 |
| Yellow Time (s) | 4.5 | 4.5 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 4.2 | | 3.0 | 4.2 | 4.5 |
| All-Red Time (s) | 2.6 | 2.6 | 3.3 | 3.9 | 3.9 | 3.4 | 3.3 | 1.8 | | 3.4 | 2.2 | 2.6 |
| Lost Time Adjust (s) | -2.1 | -2.1 | -1.3 | -1.9 | -1.9 | -1.4 | -1.3 | -1.0 | | -1.4 | -1.4 | -2.1 |
| Total Lost Time (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | | 5.0 | 5.0 | 5.0 |
| Lead/Lag | Lag | Lag | Lag | Lead | Lead | Lead | Lag | Lag | | Lead | Lead | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | | Yes | Yes | Yes |
| Vehicle Extension (s) | 1.0 | 1.0 | 1.0 | 2.0 | 2.0 | 2.0 | 1.0 | 6.0 | | 2.0 | 6.0 | 1.0 |
| Minimum Gap (s) | 1.0 | 1.0 | 1.0 | 2.0 | 2.0 | 2.0 | 1.0 | 6.0 | | 2.0 | 6.0 | 1.0 |
| Time Before Reduce (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 15.0 | | 0.0 | 15.0 | 0.0 |
| Time To Reduce (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 45.0 | | 0.0 | 45.0 | 0.0 |
| Recall Mode | None | None | None | None | None | None | None | C-Min | | None | C-Min | None |
| Walk Time (s) | | | | | | | | 7.0 | | | 7.0 | |
| Flash Dont Walk (s) | | | | | | | | 15.0 | | | 32.0 | |
| Pedestrian Calls (#/hr) | | | | | | | | 0 | | | 0 | |
| Act Effct Green (s) | 10.9 | 10.9 | 31.7 | 8.9 | 8.9 | 12.0 | 17.8 | 85.5 | | 90.5 | 70.7 | 86.6 |
| Actuated g/C Ratio | 0.09 | 0.09 | 0.26 | 0.07 | 0.07 | 0.10 | 0.15 | 0.71 | | 0.75 | 0.59 | 0.72 |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| v/c Ratio | 0.43 | 0.42 | 0.54 | 0.08 | 0.08 | 0.10 | 0.36 | 0.33 | | 0.04 | 0.37 | 0.10 |
| Control Delay | 60.2 | 59.8 | 36.0 | 53.4 | 53.3 | 35.5 | 34.5 | 4.0 | | 5.1 | 15.6 | 7.1 |
| 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 | 60.2 | 59.8 | 36.0 | 53.4 | 53.3 | 35.5 | 34.5 | 4.0 | | 5.1 | 15.6 | 7.1 |
| LOS | E | E | D | D | D | D | C | A | | A | B | A |
| Approach Delay | | 44.6 | | | 45.4 | | | 9.6 | | | 14.3 | |
| Approach LOS | | D | | | D | | | A | | | B | |
| Queue Length 50th (ft) | 49 | 48 | 143 | 7 | 7 | 12 | 52 | 87 | | 2 | 133 | 18 |
| Queue Length 95th (ft) | 94 | 92 | 164 | 26 | 26 | 24 | 63 | 172 | | 13 | 263 | 57 |
| Internal Link Dist (ft) | | 1168 | | | 234 | | | 1057 | | | 1265 | |
| Turn Bay Length (ft) | 125 | | | 125 | | | 525 | | | 250 | | 375 |
| Base Capacity (vph) | 187 | 188 | 415 | 140 | 146 | 178 | 651 | 2494 | | 524 | 2046 | 1068 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.33 | 0.32 | 0.53 | 0.07 | 0.07 | 0.09 | 0.28 | 0.33 | | 0.04 | 0.37 | 0.10 |

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 113 (94%), Referenced to phase 2:NBSB and 6:SBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.54
Intersection Signal Delay: 17.3 Intersection LOS: B
Intersection Capacity Utilization 49.3% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 130: MLK Jr Blvd & Homestead Rd/Orange United Methodist Church Driveway



HCM 6th Edition methodology expects strict NEMA phasing.

| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 16 | 703 | 683 | 15 | 16 | 14 |
| Future Volume (vph) | 16 | 703 | 683 | 15 | 16 | 14 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 100 | | | 0 | 0 | 0 |
| Storage Lanes | 1 | | | 0 | 1 | 0 |
| Taper Length (ft) | 100 | | | | 100 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | | 0.997 | | 0.936 | |
| Flt Protected | 0.950 | | | | 0.974 | |
| Satd. Flow (prot) | 1656 | 1863 | 1851 | 0 | 1535 | 0 |
| Flt Permitted | 0.950 | | | | 0.974 | |
| Satd. Flow (perm) | 1656 | 1863 | 1851 | 0 | 1535 | 0 |
| Link Speed (mph) | | 35 | 35 | | 30 | |
| Link Distance (ft) | | 803 | 840 | | 813 | |
| Travel Time (s) | | 15.6 | 16.4 | | 18.5 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 9% | 2% | 2% | 18% | 2% | 25% |
| Adj. Flow (vph) | 18 | 781 | 759 | 17 | 18 | 16 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 18 | 781 | 776 | 0 | 34 | 0 |
| Sign Control | | Free | Free | | Stop | |

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 47.0% ICU Level of Service A
Analysis Period (min) 15

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

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 16 | 703 | 683 | 15 | 16 | 14 |
| Future Vol, veh/h | 16 | 703 | 683 | 15 | 16 | 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 | 100 | - | - | - | 0 | - |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 9 | 2 | 2 | 18 | 2 | 25 |
| Mvmt Flow | 18 | 781 | 759 | 17 | 18 | 16 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 776 | 0 | - | 0 | 1585 | 768 |
| Stage 1 | - | - | - | - | 768 | - |
| Stage 2 | - | - | - | - | 817 | - |
| Critical Hdwy | 4.19 | - | - | - | 6.42 | 6.45 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.42 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.42 | - |
| Follow-up Hdwy | 2.281 | - | - | - | 3.518 | 3.525 |
| Pot Cap-1 Maneuver | 810 | - | - | - | 119 | 367 |
| Stage 1 | - | - | - | - | 458 | - |
| Stage 2 | - | - | - | - | 434 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | 810 | - | - | - | 116 | 367 |
| Mov Cap-2 Maneuver | - | - | - | - | 116 | - |
| Stage 1 | - | - | - | - | 448 | - |
| Stage 2 | - | - | - | - | 434 | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 0.2 | 0 | 31.3 |
| HCM LOS | | | D |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|
| Capacity (veh/h) | 810 | - | - | - | 170 |
| HCM Lane V/C Ratio | 0.022 | - | - | - | 0.196 |
| HCM Control Delay (s) | 9.5 | - | - | - | 31.3 |
| HCM Lane LOS | A | - | - | - | D |
| HCM 95th %tile Q(veh) | 0.1 | - | - | - | 0.7 |

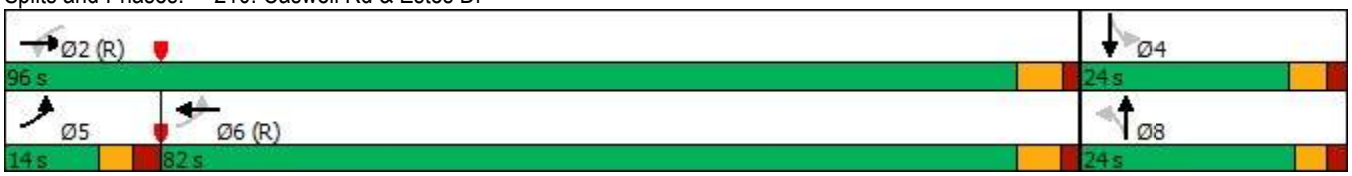
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 58 | 658 | 3 | 1 | 618 | 27 | 3 | 4 | 2 | 23 | 0 | 78 |
| Future Volume (vph) | 58 | 658 | 3 | 1 | 618 | 27 | 3 | 4 | 2 | 23 | 0 | 78 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Grade (%) | | -2% | | | 0% | | | 7% | | | -5% | |
| Storage Length (ft) | 250 | | 0 | 125 | | 0 | 0 | | 0 | 100 | | 0 |
| Storage Lanes | 1 | | 0 | 1 | | 0 | 0 | | 0 | 1 | | 0 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | 0.999 | | | 0.994 | | | 0.970 | | | 0.850 | |
| Flt Protected | 0.950 | | | 0.950 | | | | 0.984 | | 0.950 | | |
| Satd. Flow (prot) | 1753 | 1879 | 0 | 1770 | 1850 | 0 | 0 | 1483 | 0 | 1814 | 1592 | 0 |
| Flt Permitted | 0.320 | | | 0.350 | | | | 0.907 | | 0.752 | | |
| Satd. Flow (perm) | 590 | 1879 | 0 | 652 | 1850 | 0 | 0 | 1367 | 0 | 1436 | 1592 | 0 |
| Right Turn on Red | | | No | | | No | | | No | | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (mph) | | 35 | | | 35 | | | 25 | | | 25 | |
| Link Distance (ft) | | 961 | | | 940 | | | 384 | | | 262 | |
| Travel Time (s) | | 18.7 | | | 18.3 | | | 10.5 | | | 7.1 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 4% | 2% | 2% | 2% | 2% | 4% | 50% | 2% | 2% | 2% | 2% | 4% |
| Adj. Flow (vph) | 64 | 731 | 3 | 1 | 687 | 30 | 3 | 4 | 2 | 26 | 0 | 87 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 64 | 734 | 0 | 1 | 717 | 0 | 0 | 9 | 0 | 26 | 87 | 0 |
| Turn Type | D.P+P | NA | | D.Pm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | 5 | 2 | | | 6 | | | 8 | | | 4 | |
| Permitted Phases | 6 | | | 2 | | | 8 | | | 4 | | |
| Detector Phase | 5 | 2 | | 2 | 6 | | 8 | 8 | | 4 | 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 10.0 | | 10.0 | 10.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | |
| Minimum Split (s) | 12.6 | 21.6 | | 21.6 | 21.6 | | 11.9 | 11.9 | | 20.4 | 20.4 | |
| Total Split (s) | 14.0 | 96.0 | | 96.0 | 82.0 | | 24.0 | 24.0 | | 24.0 | 24.0 | |
| Total Split (%) | 11.7% | 80.0% | | 80.0% | 68.3% | | 20.0% | 20.0% | | 20.0% | 20.0% | |
| Maximum Green (s) | 8.4 | 90.4 | | 90.4 | 76.4 | | 19.1 | 19.1 | | 18.6 | 18.6 | |
| Yellow Time (s) | 3.0 | 4.0 | | 4.0 | 3.8 | | 3.0 | 3.0 | | 3.5 | 3.5 | |
| All-Red Time (s) | 2.6 | 1.6 | | 1.6 | 1.8 | | 1.9 | 1.9 | | 1.9 | 1.9 | |
| Lost Time Adjust (s) | -0.6 | -0.6 | | -0.6 | -0.6 | | | 0.1 | | -0.4 | -0.4 | |
| Total Lost Time (s) | 5.0 | 5.0 | | 5.0 | 5.0 | | | 5.0 | | 5.0 | 5.0 | |
| Lead/Lag | Lead | | | | Lag | | | | | | | |
| Lead-Lag Optimize? | Yes | | | | Yes | | | | | | | |
| Vehicle Extension (s) | 1.0 | 2.0 | | 2.0 | 2.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | |
| Recall Mode | None | C-Min | | C-Min | C-Min | | None | None | | None | None | |
| Walk Time (s) | | 7.0 | | 7.0 | 7.0 | | | | | 7.0 | 7.0 | |
| Flash Dont Walk (s) | | 9.0 | | 9.0 | 9.0 | | | | | 8.0 | 8.0 | |
| Pedestrian Calls (#/hr) | | 0 | | 0 | 0 | | | | | 0 | 0 | |
| Act Effct Green (s) | 95.2 | 99.2 | | 99.2 | 89.1 | | | 8.6 | | 10.8 | 10.8 | |
| Actuated g/C Ratio | 0.79 | 0.83 | | 0.83 | 0.74 | | | 0.07 | | 0.09 | 0.09 | |
| v/c Ratio | 0.12 | 0.47 | | 0.00 | 0.52 | | | 0.09 | | 0.20 | 0.61 | |
| Control Delay | 1.5 | 2.2 | | 2.0 | 7.5 | | | 52.0 | | 52.7 | 70.0 | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Queue Delay | 0.0 | 0.0 | | 0.0 | 0.0 | | | 0.0 | | 0.0 | 0.0 | |
| Total Delay | 1.5 | 2.2 | | 2.0 | 7.5 | | | 52.0 | | 52.7 | 70.0 | |
| LOS | A | A | | A | A | | | D | | D | E | |
| Approach Delay | | 2.2 | | | 7.5 | | | 52.0 | | | 66.0 | |
| Approach LOS | | A | | | A | | | D | | | E | |
| Queue Length 50th (ft) | 3 | 32 | | 0 | 182 | | | 7 | | 19 | 66 | |
| Queue Length 95th (ft) | m4 | 46 | | m0 | 269 | | | 22 | | 47 | 117 | |
| Internal Link Dist (ft) | | 881 | | | 860 | | | 304 | | | 182 | |
| Turn Bay Length (ft) | 250 | | | 125 | | | | | | 100 | | |
| Base Capacity (vph) | 561 | 1553 | | 539 | 1374 | | | 216 | | 227 | 252 | |
| Starvation Cap Reductn | 0 | 0 | | 0 | 0 | | | 0 | | 0 | 0 | |
| Spillback Cap Reductn | 0 | 0 | | 0 | 0 | | | 0 | | 0 | 0 | |
| Storage Cap Reductn | 0 | 0 | | 0 | 0 | | | 0 | | 0 | 0 | |
| Reduced v/c Ratio | 0.11 | 0.47 | | 0.00 | 0.52 | | | 0.04 | | 0.11 | 0.35 | |

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 113 (94%), Referenced to phase 2:EBWB and 6:EBWB, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.61
Intersection Signal Delay: 9.2 Intersection LOS: A
Intersection Capacity Utilization 61.5% ICU Level of Service B
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 210: Caswell Rd & Estes Dr



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 58 | 658 | 3 | 1 | 618 | 27 | 3 | 4 | 2 | 23 | 0 | 78 |
| Future Volume (veh/h) | 58 | 658 | 3 | 1 | 618 | 27 | 3 | 4 | 2 | 23 | 0 | 78 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1919 | 1949 | 1949 | 1870 | 1870 | 1870 | 1582 | 1582 | 1582 | 2067 | 2067 | 2067 |
| Adj Flow Rate, veh/h | 64 | 731 | 3 | 1 | 687 | 30 | 3 | 4 | 2 | 26 | 0 | 87 |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Percent Heavy Veh, % | 4 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 163 | 1392 | 6 | 217 | 1334 | 58 | 47 | 41 | 14 | 160 | 0 | 120 |
| Arrive On Green | 0.06 | 0.72 | 0.71 | 0.09 | 0.75 | 0.74 | 0.07 | 0.06 | 0.07 | 0.07 | 0.00 | 0.07 |
| Sat Flow, veh/h | 1827 | 1939 | 8 | 1781 | 1779 | 78 | 113 | 631 | 213 | 1558 | 0 | 1751 |
| Grp Volume(v), veh/h | 64 | 0 | 734 | 1 | 0 | 717 | 9 | 0 | 0 | 26 | 0 | 87 |
| Grp Sat Flow(s),veh/h/ln | 1827 | 0 | 1947 | 1781 | 0 | 1856 | 958 | 0 | 0 | 1558 | 0 | 1751 |
| Q Serve(g_s), s | 0.8 | 0.0 | 20.5 | 0.1 | 0.0 | 18.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 5.8 |
| Cycle Q Clear(g_c), s | 0.8 | 0.0 | 20.5 | 0.1 | 0.0 | 18.9 | 5.9 | 0.0 | 0.0 | 2.1 | 0.0 | 5.8 |
| Prop In Lane | 1.00 | | 0.00 | 1.00 | | 0.04 | 0.33 | | 0.22 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 163 | 0 | 1398 | 0 | 0 | 1392 | 103 | 0 | 0 | 160 | 0 | 120 |
| V/C Ratio(X) | 0.39 | 0.00 | 0.53 | 0.00 | 0.00 | 0.52 | 0.09 | 0.00 | 0.00 | 0.16 | 0.00 | 0.72 |
| Avail Cap(c_a), veh/h | 197 | 0 | 1477 | 0 | 0 | 1392 | 228 | 0 | 0 | 300 | 0 | 277 |
| 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 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 36.6 | 0.0 | 7.7 | 0.0 | 0.0 | 6.1 | 52.8 | 0.0 | 0.0 | 53.0 | 0.0 | 55.0 |
| Incr Delay (d2), s/veh | 0.6 | 0.0 | 1.4 | 0.0 | 0.0 | 1.4 | 0.1 | 0.0 | 0.0 | 0.2 | 0.0 | 3.1 |
| 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 | 1.4 | 0.0 | 8.0 | 0.0 | 0.0 | 6.7 | 0.3 | 0.0 | 0.0 | 0.8 | 0.0 | 2.7 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 37.2 | 0.0 | 9.1 | 0.0 | 0.0 | 7.5 | 53.0 | 0.0 | 0.0 | 53.2 | 0.0 | 58.0 |
| LnGrp LOS | D | A | A | A | A | A | D | A | A | D | A | E |
| Approach Vol, veh/h | | 798 | | | 718 | | | 9 | | | 113 | |
| Approach Delay, s/veh | | 11.3 | | | 7.5 | | | 53.0 | | | 56.9 | |
| Approach LOS | | B | | | A | | | D | | | E | |

| Timer - Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 15.6 | 91.2 | | 13.2 | 11.8 | 95.0 | | 13.2 |
| Change Period (Y+Rc), s | * 5.6 | * 5.6 | | * 5.4 | 5.6 | 5.6 | | * 5.4 |
| Max Green Setting (Gmax), s | * 90 | * 90 | | * 19 | 8.4 | 76.4 | | * 19 |
| Max Q Clear Time (g_c+I1), s | 2.1 | 22.5 | | 7.8 | 2.8 | 20.9 | | 7.9 |
| Green Ext Time (p_c), s | 0.0 | 3.5 | | 0.1 | 0.0 | 3.4 | | 0.0 |

Intersection Summary

| | | | |
|---|---|---|---|
| HCM 6th Ctrl Delay | | | 13.0 |
| HCM 6th LOS | | | B |

Notes

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

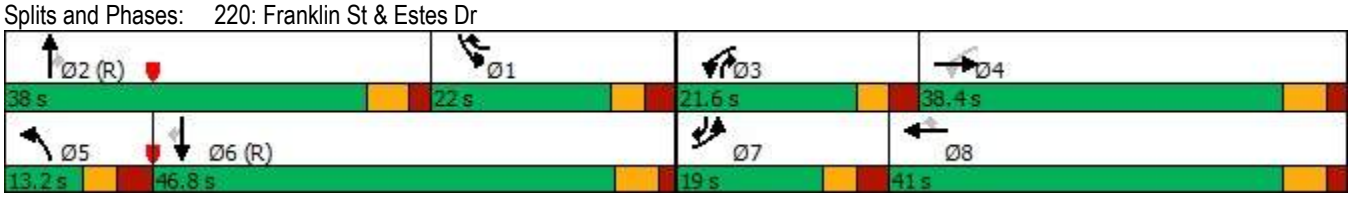
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 245 | 391 | 48 | 207 | 377 | 207 | 47 | 404 | 191 | 144 | 395 | 222 |
| Future Volume (vph) | 245 | 391 | 48 | 207 | 377 | 207 | 47 | 404 | 191 | 144 | 395 | 222 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Grade (%) | | -1% | | | 3% | | | -1% | | | 5% | |
| Storage Length (ft) | 300 | | 400 | 150 | | 0 | 150 | | 150 | 300 | | 350 |
| Storage Lanes | 2 | | 1 | 1 | | 1 | 1 | | 1 | 1 | | 1 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 0.97 | 0.95 | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 |
| Frt | | 0.984 | | | | 0.850 | | | 0.850 | | | 0.850 |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 3450 | 3500 | 0 | 1743 | 1835 | 1560 | 1778 | 3489 | 1591 | 1725 | 3417 | 1544 |
| Flt Permitted | 0.950 | | | 0.320 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (perm) | 3450 | 3500 | 0 | 587 | 1835 | 1560 | 1778 | 3489 | 1591 | 1725 | 3417 | 1544 |
| Right Turn on Red | | | No | | | No | | | No | | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (mph) | | 35 | | | 35 | | | 35 | | | 35 | |
| Link Distance (ft) | | 2406 | | | 987 | | | 1748 | | | 1202 | |
| Travel Time (s) | | 46.9 | | | 19.2 | | | 34.1 | | | 23.4 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 2% | 2% | 2% | 2% | 2% | 4% | 2% | 2% | 3% | 2% |
| Adj. Flow (vph) | 272 | 434 | 53 | 230 | 419 | 230 | 52 | 449 | 212 | 160 | 439 | 247 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 272 | 487 | 0 | 230 | 419 | 230 | 52 | 449 | 212 | 160 | 439 | 247 |
| Turn Type | Prot | NA | | D.P+P | NA | pm+ov | Prot | NA | pm+ov | Prot | NA | pm+ov |
| Protected Phases | 7 | 4 | | 3 | 8 | 1 | 5 | 2 | 3 | 1 | 6 | 7 |
| Permitted Phases | | | | 4 | | 8 | | | 2 | | | 6 |
| Detector Phase | 7 | 4 | | 3 | 8 | 1 | 5 | 2 | 3 | 1 | 6 | 7 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | | 7.0 | 7.0 | 7.0 | 7.0 | 10.0 | 7.0 | 7.0 | 10.0 | 7.0 |
| Minimum Split (s) | 12.9 | 33.9 | | 12.6 | 30.9 | 12.9 | 13.2 | 35.7 | 12.6 | 12.9 | 21.5 | 12.9 |
| Total Split (s) | 19.0 | 38.4 | | 21.6 | 41.0 | 22.0 | 13.2 | 38.0 | 21.6 | 22.0 | 46.8 | 19.0 |
| Total Split (%) | 15.8% | 32.0% | | 18.0% | 34.2% | 18.3% | 11.0% | 31.7% | 18.0% | 18.3% | 39.0% | 15.8% |
| Maximum Green (s) | 13.1 | 32.5 | | 16.0 | 35.1 | 16.1 | 7.0 | 32.3 | 16.0 | 16.1 | 41.3 | 13.1 |
| Yellow Time (s) | 3.0 | 3.9 | | 3.0 | 3.9 | 3.0 | 3.0 | 3.7 | 3.0 | 3.0 | 3.9 | 3.0 |
| All-Red Time (s) | 2.9 | 2.0 | | 2.6 | 2.0 | 2.9 | 3.2 | 2.0 | 2.6 | 2.9 | 1.6 | 2.9 |
| Lost Time Adjust (s) | -0.9 | -0.9 | | -0.6 | -0.9 | -0.9 | -1.2 | -0.7 | 0.0 | -0.9 | -0.5 | 0.0 |
| Total Lost Time (s) | 5.0 | 5.0 | | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.6 | 5.0 | 5.0 | 5.9 |
| Lead/Lag | Lead | Lag | | Lead | Lag | Lag | Lead | Lead | Lead | Lag | Lag | Lead |
| Lead-Lag Optimize? | Yes | Yes | | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Vehicle Extension (s) | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 1.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Recall Mode | None | None | | None | None | None | None | C-Min | None | None | C-Min | None |
| Walk Time (s) | | 7.0 | | | 7.0 | | | 7.0 | | | 7.0 | |
| Flash Dont Walk (s) | | 21.0 | | | 18.0 | | | 23.0 | | | 9.0 | |
| Pedestrian Calls (#/hr) | | 0 | | | 0 | | | 0 | | | 0 | |
| Act Effct Green (s) | 14.2 | 30.6 | | 45.8 | 31.6 | 48.1 | 8.5 | 37.8 | 51.8 | 16.5 | 48.4 | 66.7 |
| Actuated g/C Ratio | 0.12 | 0.26 | | 0.38 | 0.26 | 0.40 | 0.07 | 0.32 | 0.43 | 0.14 | 0.40 | 0.56 |
| v/c Ratio | 0.67 | 0.55 | | 0.62 | 0.87 | 0.37 | 0.42 | 0.41 | 0.31 | 0.68 | 0.32 | 0.29 |
| Control Delay | 52.7 | 35.1 | | 29.9 | 60.5 | 14.9 | 63.9 | 36.3 | 14.2 | 63.0 | 27.7 | 17.2 |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 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 | 52.7 | 35.1 | | 29.9 | 60.5 | 14.9 | 63.9 | 36.3 | 14.2 | 63.0 | 27.7 | 17.2 |
| LOS | D | D | | C | E | B | E | D | B | E | C | B |
| Approach Delay | | 41.4 | | | 40.6 | | | 31.7 | | | 31.3 | |
| Approach LOS | | D | | | D | | | C | | | C | |
| Queue Length 50th (ft) | 98 | 173 | | 113 | 307 | 75 | 39 | 146 | 62 | 120 | 128 | 104 |
| Queue Length 95th (ft) | 148 | 214 | | 161 | 418 | 86 | 82 | 222 | 101 | 184 | 183 | 170 |
| Internal Link Dist (ft) | | 2326 | | | 907 | | | 1668 | | | 1122 | |
| Turn Bay Length (ft) | 300 | | | 150 | | | 150 | | 150 | 300 | | 350 |
| Base Capacity (vph) | 431 | 988 | | 396 | 551 | 650 | 125 | 1165 | 710 | 264 | 1412 | 868 |
| Starvation Cap Reductn | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.63 | 0.49 | | 0.58 | 0.76 | 0.35 | 0.42 | 0.39 | 0.30 | 0.61 | 0.31 | 0.28 |

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 114 (95%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.87
Intersection Signal Delay: 36.4 Intersection LOS: D
Intersection Capacity Utilization 62.6% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 220: Franklin St & Estes Dr



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 245 | 391 | 48 | 207 | 377 | 207 | 47 | 404 | 191 | 144 | 395 | 222 |
| Future Volume (veh/h) | 245 | 391 | 48 | 207 | 377 | 207 | 47 | 404 | 191 | 144 | 395 | 222 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1909 | 1909 | 1909 | 1817 | 1817 | 1817 | 1909 | 1879 | 1909 | 1723 | 1708 | 1723 |
| Adj Flow Rate, veh/h | 272 | 434 | 53 | 230 | 419 | 230 | 52 | 449 | 212 | 160 | 439 | 247 |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 2 | 2 | 3 | 2 |
| Cap, veh/h | 354 | 769 | 93 | 372 | 467 | 882 | 106 | 573 | 438 | 518 | 1346 | 735 |
| Arrive On Green | 0.10 | 0.24 | 0.23 | 0.12 | 0.26 | 0.26 | 0.06 | 0.16 | 0.15 | 0.32 | 0.41 | 0.41 |
| Sat Flow, veh/h | 3528 | 3256 | 396 | 1731 | 1817 | 1540 | 1818 | 3571 | 1618 | 1641 | 3246 | 1460 |
| Grp Volume(v), veh/h | 272 | 241 | 246 | 230 | 419 | 230 | 52 | 449 | 212 | 160 | 439 | 247 |
| Grp Sat Flow(s),veh/h/ln | 1764 | 1814 | 1838 | 1731 | 1817 | 1540 | 1818 | 1785 | 1618 | 1641 | 1623 | 1460 |
| Q Serve(g_s), s | 9.0 | 14.0 | 14.2 | 11.9 | 26.7 | 2.8 | 3.3 | 14.5 | 5.0 | 8.9 | 11.0 | 12.1 |
| Cycle Q Clear(g_c), s | 9.0 | 14.0 | 14.2 | 11.9 | 26.7 | 2.8 | 3.3 | 14.5 | 5.0 | 8.9 | 11.0 | 12.1 |
| Prop In Lane | 1.00 | | 0.22 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 354 | 428 | 434 | 372 | 467 | 882 | 106 | 573 | 438 | 518 | 1346 | 735 |
| V/C Ratio(X) | 0.77 | 0.56 | 0.57 | 0.62 | 0.90 | 0.26 | 0.49 | 0.78 | 0.48 | 0.31 | 0.33 | 0.34 |
| Avail Cap(c_a), veh/h | 412 | 505 | 512 | 401 | 545 | 948 | 124 | 982 | 623 | 518 | 1346 | 735 |
| 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 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 52.6 | 40.4 | 40.5 | 29.9 | 43.1 | 3.9 | 54.8 | 48.4 | 14.1 | 31.1 | 23.8 | 17.8 |
| Incr Delay (d2), s/veh | 6.0 | 0.4 | 0.4 | 1.7 | 14.7 | 0.1 | 1.3 | 10.3 | 3.8 | 0.1 | 0.6 | 1.2 |
| 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 | 4.3 | 6.3 | 6.4 | 5.0 | 13.7 | 1.1 | 1.6 | 7.2 | 2.6 | 3.5 | 4.3 | 4.2 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 58.6 | 40.8 | 40.9 | 31.6 | 57.7 | 4.0 | 56.1 | 58.7 | 17.9 | 31.3 | 24.4 | 19.0 |
| LnGrp LOS | E | D | D | C | E | A | E | E | B | C | C | B |
| Approach Vol, veh/h | | 759 | | | 879 | | | 713 | | | 846 | |
| Approach Delay, s/veh | | 47.2 | | | 36.8 | | | 46.4 | | | 24.1 | |
| Approach LOS | | D | | | D | | | D | | | C | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 42.9 | 24.3 | 19.5 | 33.3 | 12.0 | 55.2 | 17.0 | 35.8 |
| Change Period (Y+Rc), s | * 5.9 | 5.7 | 5.6 | 5.9 | * 6.2 | * 5.9 | 5.9 | 5.9 |
| Max Green Setting (Gmax), s | * 16 | 32.3 | 16.0 | 32.5 | * 7 | * 41 | 13.1 | 35.1 |
| Max Q Clear Time (g_c+I1), s | 10.9 | 16.5 | 13.9 | 16.2 | 5.3 | 14.1 | 11.0 | 28.7 |
| Green Ext Time (p_c), s | 0.1 | 2.1 | 0.1 | 1.6 | 0.0 | 2.3 | 0.1 | 1.2 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 38.1 |
| HCM 6th LOS | D |

Notes

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

| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 32 | 60 | 23 | 1357 | 928 | 5 |
| Future Volume (vph) | 32 | 60 | 23 | 1357 | 928 | 5 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | 125 | 100 | | | 0 |
| Storage Lanes | 1 | 1 | 1 | | | 0 |
| Taper Length (ft) | 100 | | 100 | | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 0.95 |
| Frt | | 0.850 | | | 0.999 | |
| Flt Protected | 0.950 | | 0.950 | | | |
| Satd. Flow (prot) | 1770 | 1538 | 1656 | 3539 | 3502 | 0 |
| Flt Permitted | 0.950 | | 0.950 | | | |
| Satd. Flow (perm) | 1770 | 1538 | 1656 | 3539 | 3502 | 0 |
| Link Speed (mph) | 30 | | | 40 | 40 | |
| Link Distance (ft) | 928 | | | 1413 | 1063 | |
| Travel Time (s) | 21.1 | | | 24.1 | 18.1 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 5% | 9% | 2% | 3% | 2% |
| Adj. Flow (vph) | 36 | 67 | 26 | 1508 | 1031 | 6 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 36 | 67 | 26 | 1508 | 1037 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No |
| Lane Alignment | Left | Right | Left | Left | Left | Right |
| Median Width(ft) | 12 | | | 12 | 12 | |
| Link Offset(ft) | 0 | | | 0 | 0 | |
| Crosswalk Width(ft) | 16 | | | 16 | 16 | |
| Two way Left Turn Lane | | | | Yes | Yes | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | 9 | 15 | | | 9 |
| Sign Control | Stop | | | Free | Free | |

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 47.5% ICU Level of Service A
Analysis Period (min) 15

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.8 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 32 | 60 | 23 | 1357 | 928 | 5 |
| Future Vol, veh/h | 32 | 60 | 23 | 1357 | 928 | 5 |
| 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 | 125 | 100 | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 2 | 5 | 9 | 2 | 3 | 2 |
| Mvmt Flow | 36 | 67 | 26 | 1508 | 1031 | 6 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 1840 | 519 | 1037 | 0 | - | 0 |
| Stage 1 | 1034 | - | - | - | - | - |
| Stage 2 | 806 | - | - | - | - | - |
| Critical Hdwy | 6.84 | 7 | 4.28 | - | - | - |
| Critical Hdwy Stg 1 | 5.84 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.84 | - | - | - | - | - |
| Follow-up Hdwy | 3.52 | 3.35 | 2.29 | - | - | - |
| Pot Cap-1 Maneuver | 67 | 494 | 626 | - | - | - |
| Stage 1 | 304 | - | - | - | - | - |
| Stage 2 | 400 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 64 | 494 | 626 | - | - | - |
| Mov Cap-2 Maneuver | 182 | - | - | - | - | - |
| Stage 1 | 291 | - | - | - | - | - |
| Stage 2 | 400 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 19 | 0.2 | 0 |
| HCM LOS | C | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | EBLn2 | SBT | SBR |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | 626 | - | 182 | 494 | - | - |
| HCM Lane V/C Ratio | 0.041 | - | 0.195 | 0.135 | - | - |
| HCM Control Delay (s) | 11 | - | 29.5 | 13.4 | - | - |
| HCM Lane LOS | B | - | D | B | - | - |
| HCM 95th %tile Q(veh) | 0.1 | - | 0.7 | 0.5 | - | - |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 241 | 433 | 57 | 187 | 500 | 483 | 67 | 1104 | 218 | 325 | 689 | 207 |
| Future Volume (vph) | 241 | 433 | 57 | 187 | 500 | 483 | 67 | 1104 | 218 | 325 | 689 | 207 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Grade (%) | | 1% | | | -2% | | | 1% | | | 0% | |
| Storage Length (ft) | 300 | | 225 | 300 | | 0 | 150 | | 300 | 225 | | 150 |
| Storage Lanes | 2 | | 1 | 2 | | 1 | 1 | | 1 | 1 | | 1 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 0.97 | 1.00 | 1.00 | 0.97 | 1.00 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 |
| Frt | | | 0.850 | | | 0.850 | | | 0.850 | | | 0.850 |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 3416 | 1853 | 1575 | 3467 | 1881 | 1599 | 1761 | 3522 | 1575 | 1770 | 3505 | 1583 |
| Flt Permitted | 0.950 | | | 0.950 | | | 0.251 | | | 0.086 | | |
| Satd. Flow (perm) | 3416 | 1853 | 1575 | 3467 | 1881 | 1599 | 465 | 3522 | 1575 | 160 | 3505 | 1583 |
| Right Turn on Red | | | No | | | No | | | No | | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (mph) | | 35 | | | 35 | | | 40 | | | 40 | |
| Link Distance (ft) | | 1251 | | | 793 | | | 1063 | | | 363 | |
| Travel Time (s) | | 24.4 | | | 15.4 | | | 18.1 | | | 6.2 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 2% | 2% | 2% | 2% | 2% | 2% | 2% | 2% | 3% | 2% |
| Adj. Flow (vph) | 268 | 481 | 63 | 208 | 556 | 537 | 74 | 1227 | 242 | 361 | 766 | 230 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 268 | 481 | 63 | 208 | 556 | 537 | 74 | 1227 | 242 | 361 | 766 | 230 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 24 | | | 24 | | | 12 | | | 12 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | Yes | | | | |
| Headway Factor | 1.01 | 1.01 | 1.01 | 0.99 | 0.99 | 0.99 | 1.01 | 1.01 | 1.01 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | 1 | 1 | 2 | 1 | 1 | 2 | 1 | 1 | 2 | 1 |
| Detector Template | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Leading Detector (ft) | 20 | 100 | 20 | 20 | 100 | 20 | 20 | 100 | 20 | 20 | 100 | 20 |
| Trailing Detector (ft) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Detector 1 Position(ft) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Detector 1 Size(ft) | 20 | 6 | 20 | 20 | 6 | 20 | 20 | 6 | 20 | 20 | 6 | 20 |
| Detector 1 Type | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (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 |
| Detector 1 Queue (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 |
| Detector 1 Delay (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 |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | 6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | Prot | NA | pm+ov | Prot | NA | pm+ov | D.P+P | NA | pm+ov | D.P+P | NA | pm+ov |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Protected Phases | 7 | 4 | 5 | 3 | 8 | 1 | 5 | 2 | 3 | 1 | 6 | 7 |
| Permitted Phases | | | 4 | | | 8 | 6 | | 2 | 2 | | 6 |
| Detector Phase | 7 | 4 | 5 | 3 | 8 | 1 | 5 | 2 | 3 | 1 | 6 | 7 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 12.0 | 7.0 | 7.0 | 12.0 | 7.0 |
| Minimum Split (s) | 11.9 | 12.5 | 12.8 | 12.4 | 12.5 | 12.8 | 12.8 | 34.0 | 12.4 | 12.8 | 18.0 | 11.9 |
| Total Split (s) | 17.8 | 48.8 | 13.0 | 14.0 | 45.0 | 25.9 | 13.0 | 51.3 | 14.0 | 25.9 | 64.2 | 17.8 |
| Total Split (%) | 12.7% | 34.9% | 9.3% | 10.0% | 32.1% | 18.5% | 9.3% | 36.6% | 10.0% | 18.5% | 45.9% | 12.7% |
| Maximum Green (s) | 12.9 | 43.3 | 7.2 | 8.6 | 39.5 | 20.1 | 7.2 | 45.3 | 8.6 | 20.1 | 58.2 | 12.9 |
| Yellow Time (s) | 3.0 | 3.8 | 3.0 | 3.0 | 3.8 | 3.0 | 3.0 | 4.3 | 3.0 | 3.0 | 4.3 | 3.0 |
| All-Red Time (s) | 1.9 | 1.7 | 2.8 | 2.4 | 1.7 | 2.8 | 2.8 | 1.7 | 2.4 | 2.8 | 1.7 | 1.9 |
| Lost Time Adjust (s) | 0.1 | -0.5 | -0.8 | -0.4 | -0.5 | -0.8 | -0.8 | -1.0 | 0.0 | -0.8 | -1.0 | 0.0 |
| Total Lost Time (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.4 | 5.0 | 5.0 | 4.9 |
| Lead/Lag | Lag | Lag | Lead | Lead | Lead | Lag | Lead | Lead | Lead | Lag | Lag | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Vehicle Extension (s) | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 2.0 | 1.0 | 1.0 | 2.0 | 1.0 |
| Recall Mode | None | None | None | None | None | None | None | C-Min | None | None | C-Min | None |
| Walk Time (s) | | | | | | | | 7.0 | | | | |
| Flash Dont Walk (s) | | | | | | | | 21.0 | | | | |
| Pedestrian Calls (#/hr) | | | | | | | | 0 | | | | |
| Act Effct Green (s) | 12.4 | 43.4 | 56.3 | 9.0 | 40.0 | 65.9 | 67.6 | 46.7 | 54.9 | 67.6 | 59.7 | 72.3 |
| Actuated g/C Ratio | 0.09 | 0.31 | 0.40 | 0.06 | 0.29 | 0.47 | 0.48 | 0.33 | 0.39 | 0.48 | 0.43 | 0.52 |
| v/c Ratio | 0.89 | 0.84 | 0.10 | 0.94 | 1.04 | 0.71 | 0.25 | 1.05 | 0.39 | 1.14 | 0.51 | 0.28 |
| Control Delay | 92.3 | 59.2 | 26.5 | 110.4 | 96.6 | 36.1 | 19.4 | 83.8 | 18.6 | 127.5 | 18.7 | 7.1 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 92.3 | 59.2 | 26.5 | 110.4 | 96.6 | 36.1 | 19.4 | 83.8 | 18.6 | 127.5 | 18.7 | 7.1 |
| LOS | F | E | C | F | F | D | B | F | B | F | B | A |
| Approach Delay | | 67.6 | | | 73.8 | | | 70.5 | | | 45.7 | |
| Approach LOS | | E | | | E | | | E | | | D | |
| Queue Length 50th (ft) | 126 | 407 | 35 | 98 | ~543 | 382 | 33 | ~641 | 96 | ~332 | 183 | 23 |
| Queue Length 95th (ft) | #203 | #582 | 67 | #178 | #773 | 527 | 61 | #780 | 143 | #529 | 119 | 55 |
| Internal Link Dist (ft) | | 1171 | | | 713 | | | 983 | | | 283 | |
| Turn Bay Length (ft) | 300 | | 225 | 300 | | | 150 | | 300 | 225 | | 150 |
| Base Capacity (vph) | 312 | 579 | 634 | 222 | 537 | 752 | 298 | 1174 | 617 | 317 | 1495 | 822 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.86 | 0.83 | 0.10 | 0.94 | 1.04 | 0.71 | 0.25 | 1.05 | 0.39 | 1.14 | 0.51 | 0.28 |

Intersection Summary

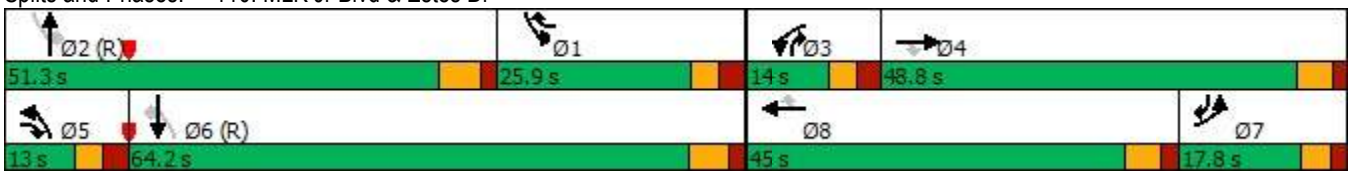
Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 12 (9%), Referenced to phase 2:NBSB and 6:NBSB, Start of Green
Natural Cycle: 110
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.14
Intersection Signal Delay: 64.2 Intersection LOS: E
Intersection Capacity Utilization 98.4% ICU Level of Service F

Analysis Period (min) 15

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

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

Splits and Phases: 110: MLK Jr Blvd & Estes Dr



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 241 | 433 | 57 | 187 | 500 | 483 | 67 | 1104 | 218 | 325 | 689 | 207 |
| Future Volume (veh/h) | 241 | 433 | 57 | 187 | 500 | 483 | 67 | 1104 | 218 | 325 | 689 | 207 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1864 | 1864 | 1864 | 1949 | 1949 | 1949 | 1864 | 1864 | 1864 | 1870 | 1856 | 1870 |
| Adj Flow Rate, veh/h | 268 | 481 | 63 | 208 | 556 | 537 | 74 | 1227 | 242 | 361 | 766 | 230 |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 2 |
| Cap, veh/h | 311 | 589 | 586 | 231 | 557 | 882 | 441 | 1172 | 608 | 490 | 1852 | 966 |
| Arrive On Green | 0.09 | 0.32 | 0.32 | 0.06 | 0.29 | 0.29 | 0.05 | 0.33 | 0.32 | 0.49 | 1.00 | 1.00 |
| Sat Flow, veh/h | 3445 | 1864 | 1580 | 3600 | 1949 | 1651 | 1776 | 3542 | 1580 | 1781 | 3526 | 1585 |
| Grp Volume(v), veh/h | 268 | 481 | 63 | 208 | 556 | 537 | 74 | 1227 | 242 | 361 | 766 | 230 |
| Grp Sat Flow(s),veh/h/ln | 1722 | 1864 | 1580 | 1800 | 1949 | 1651 | 1776 | 1771 | 1580 | 1781 | 1763 | 1585 |
| Q Serve(g_s), s | 10.7 | 33.3 | 3.7 | 8.0 | 39.9 | 0.0 | 2.6 | 46.3 | 8.9 | 17.4 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 10.7 | 33.3 | 3.7 | 8.0 | 39.9 | 0.0 | 2.6 | 46.3 | 8.9 | 17.4 | 0.0 | 0.0 |
| 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 | 311 | 589 | 586 | 231 | 557 | 882 | 441 | 1172 | 608 | 490 | 1852 | 966 |
| V/C Ratio(X) | 0.86 | 0.82 | 0.11 | 0.90 | 1.00 | 0.61 | 0.17 | 1.05 | 0.40 | 0.74 | 0.41 | 0.24 |
| Avail Cap(c_a), veh/h | 315 | 589 | 586 | 231 | 557 | 882 | 448 | 1172 | 608 | 490 | 1852 | 966 |
| 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 | 62.8 | 44.1 | 28.8 | 65.0 | 50.0 | 22.5 | 13.1 | 46.8 | 16.9 | 30.0 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 19.8 | 8.2 | 0.0 | 32.7 | 37.8 | 0.9 | 0.1 | 39.6 | 1.9 | 5.1 | 0.7 | 0.6 |
| 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 | 16.6 | 1.4 | 4.7 | 25.0 | 12.2 | 1.0 | 26.3 | 3.3 | 7.7 | 0.2 | 0.2 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 82.6 | 52.3 | 28.9 | 97.7 | 87.7 | 23.4 | 13.1 | 86.4 | 18.8 | 35.1 | 0.7 | 0.6 |
| LnGrp LOS | F | D | C | F | F | C | B | F | B | D | A | A |
| Approach Vol, veh/h | | 812 | | | 1301 | | | 1543 | | | 1357 | |
| Approach Delay, s/veh | | 60.5 | | | 62.8 | | | 72.3 | | | 9.8 | |
| Approach LOS | | E | | | E | | | E | | | A | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 39.6 | 51.3 | 14.0 | 49.2 | 12.4 | 78.5 | 18.2 | 45.0 |
| Change Period (Y+Rc), s | * 6 | * 6 | 5.4 | 5.5 | * 5.8 | * 6 | 5.5 | * 5.5 |
| Max Green Setting (Gmax), s | * 20 | * 45 | 8.6 | 43.3 | * 7.2 | * 58 | 12.9 | * 40 |
| Max Q Clear Time (g_c+I1), s | 19.4 | 48.3 | 10.0 | 35.3 | 4.6 | 2.0 | 12.7 | 41.9 |
| Green Ext Time (p_c), s | 0.0 | 0.0 | 0.0 | 0.7 | 0.0 | 3.9 | 0.0 | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 51.0 |
| HCM 6th LOS | D |

Notes

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

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 31 | 1805 | 23 | 0 | 1221 |
| Future Volume (vph) | 0 | 31 | 1805 | 23 | 0 | 1221 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Grade (%) | 0% | | -1% | | | 0% |
| Storage Length (ft) | 0 | 0 | | 100 | 0 | |
| Storage Lanes | 0 | 1 | | 1 | 0 | |
| Taper Length (ft) | 100 | | | | 100 | |
| Lane Util. Factor | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 |
| Frt | | 0.865 | | 0.850 | | |
| Flt Protected | | | | | | |
| Satd. Flow (prot) | 0 | 1611 | 3557 | 1591 | 0 | 3539 |
| Flt Permitted | | | | | | |
| Satd. Flow (perm) | 0 | 1611 | 3557 | 1591 | 0 | 3539 |
| Link Speed (mph) | 25 | | 40 | | | 40 |
| Link Distance (ft) | 303 | | 363 | | | 1151 |
| Travel Time (s) | 8.3 | | 6.2 | | | 19.6 |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Adj. Flow (vph) | 0 | 34 | 2006 | 26 | 0 | 1357 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 34 | 2006 | 26 | 0 | 1357 |
| Enter Blocked Intersection | No | No | No | No | No | No |
| Lane Alignment | Left | Right | Left | Right | Left | Left |
| Median Width(ft) | 0 | | 12 | | | 12 |
| Link Offset(ft) | 0 | | 0 | | | 0 |
| Crosswalk Width(ft) | 16 | | 16 | | | 16 |
| Two way Left Turn Lane | | | | | | |
| Headway Factor | 1.00 | 1.00 | 0.99 | 0.99 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | 9 | | 9 | 15 | |
| Sign Control | Stop | | Free | | | Free |

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 59.9% ICU Level of Service B
Analysis Period (min) 15

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

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | ↱ | ↑↑ | ↱ | | ↑↑ |
| Traffic Vol, veh/h | 0 | 31 | 1805 | 23 | 0 | 1221 |
| Future Vol, veh/h | 0 | 31 | 1805 | 23 | 0 | 1221 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | 0 | - | 100 | - | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | -1 | - | - | 0 |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 34 | 2006 | 26 | 0 | 1357 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | - | 1003 | 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 | 240 | - | - | 0 | - |
| Stage 1 | 0 | - | - | - | 0 | - |
| Stage 2 | 0 | - | - | - | 0 | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | - | 240 | - | - | - | - |
| Mov Cap-2 Maneuver | - | - | - | - | - | - |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 22.5 | 0 | 0 |
| HCM LOS | C | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBT |
|---|---|---|---|---|
| Capacity (veh/h) | - | - | 240 | - |
| HCM Lane V/C Ratio | - | - | 0.144 | - |
| HCM Control Delay (s) | - | - | 22.5 | - |
| HCM Lane LOS | - | - | C | - |
| HCM 95th %tile Q(veh) | - | - | 0.5 | - |

| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 50 | 927 | 1144 | 47 | 35 | 24 |
| Future Volume (vph) | 50 | 927 | 1144 | 47 | 35 | 24 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Grade (%) | | 0% | -2% | | 0% | |
| Storage Length (ft) | 100 | | | 150 | 0 | 100 |
| Storage Lanes | 1 | | | 1 | 1 | 1 |
| Taper Length (ft) | 100 | | | | 100 | |
| Lane Util. Factor | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | 1.00 |
| Frt | | | 0.994 | | | 0.850 |
| Flt Protected | 0.950 | | | | 0.950 | |
| Satd. Flow (prot) | 1770 | 1863 | 3553 | 0 | 1770 | 1583 |
| Flt Permitted | 0.950 | | | | 0.950 | |
| Satd. Flow (perm) | 1770 | 1863 | 3553 | 0 | 1770 | 1583 |
| Link Speed (mph) | | 35 | 35 | | 25 | |
| Link Distance (ft) | | 793 | 778 | | 374 | |
| Travel Time (s) | | 15.4 | 15.2 | | 10.2 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Adj. Flow (vph) | 56 | 1030 | 1271 | 52 | 39 | 27 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 56 | 1030 | 1323 | 0 | 39 | 27 |
| Enter Blocked Intersection | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Left | Right | Left | Right |
| Median Width(ft) | | 24 | 24 | | 12 | |
| Link Offset(ft) | | 0 | 0 | | 0 | |
| Crosswalk Width(ft) | | 16 | 16 | | 16 | |
| Two way Left Turn Lane | | | | | | |
| Headway Factor | 1.00 | 1.00 | 0.99 | 0.99 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | | 9 | 15 | 9 |
| Sign Control | | Free | Free | | Stop | |

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 58.8% ICU Level of Service B
Analysis Period (min) 15

Intersection

| | |
|---|---|
| Int Delay, s/veh | 9.1 |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 50 | 927 | 1144 | 47 | 35 | 24 |
| Future Vol, veh/h | 50 | 927 | 1144 | 47 | 35 | 24 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 100 | - | - | 150 | 0 | 100 |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | -2 | - | 0 | - |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 56 | 1030 | 1271 | 52 | 39 | 27 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 1323 | 0 | - | 0 | 2439 | 662 |
| Stage 1 | - | - | - | - | 1297 | - |
| Stage 2 | - | - | - | - | 1142 | - |
| Critical Hdwy | 4.13 | - | - | - | 6.63 | 6.93 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.83 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.43 | - |
| Follow-up Hdwy | 2.219 | - | - | - | 3.519 | 3.319 |
| Pot Cap-1 Maneuver | 520 | - | - | - | ~ 30 | 405 |
| Stage 1 | - | - | - | - | 221 | - |
| Stage 2 | - | - | - | - | 303 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | 520 | - | - | - | ~ 27 | 405 |
| Mov Cap-2 Maneuver | - | - | - | - | ~ 27 | - |
| Stage 1 | - | - | - | - | 197 | - |
| Stage 2 | - | - | - | - | 303 | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 0.7 | 0 | $ 330.7 |
| HCM LOS | | | F |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 | SBLn2 |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | 520 | - | - | - | 27 | 405 |
| HCM Lane V/C Ratio | 0.107 | - | - | - | 1.44 | 0.066 |
| HCM Control Delay (s) | 12.7 | - | - | - | $ 547.6 | 14.5 |
| HCM Lane LOS | B | - | - | - | F | B |
| HCM 95th %tile Q(veh) | 0.4 | - | - | - | 4.6 | 0.2 |

Notes

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

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 24 | 7 | 27 | 107 | 1 | 34 | 14 | 1679 | 143 | 45 | 1087 | 18 |
| Future Volume (vph) | 24 | 7 | 27 | 107 | 1 | 34 | 14 | 1679 | 143 | 45 | 1087 | 18 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Grade (%) | | 0% | | | 4% | | | -1% | | | 0% | |
| Storage Length (ft) | 100 | | 0 | 375 | | 0 | 150 | | 0 | 225 | | 0 |
| Storage Lanes | 1 | | 0 | 2 | | 0 | 1 | | 0 | 1 | | 0 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 0.97 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | 0.95 | 0.95 |
| Frt | | 0.882 | | | 0.854 | | | 0.988 | | | 0.998 | |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1736 | 1643 | 0 | 3364 | 1488 | 0 | 1778 | 3514 | 0 | 1770 | 3532 | 0 |
| Flt Permitted | 0.950 | | | 0.950 | | | 0.205 | | | 0.067 | | |
| Satd. Flow (perm) | 1736 | 1643 | 0 | 3364 | 1488 | 0 | 384 | 3514 | 0 | 125 | 3532 | 0 |
| Right Turn on Red | | | No | | | No | | | No | | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (mph) | | 20 | | | 35 | | | 40 | | | 40 | |
| Link Distance (ft) | | 554 | | | 663 | | | 1151 | | | 2618 | |
| Travel Time (s) | | 18.9 | | | 12.9 | | | 19.6 | | | 44.6 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 4% | 2% | 2% | 2% | 2% | 7% | 2% | 2% | 2% | 2% | 2% | 2% |
| Adj. Flow (vph) | 27 | 8 | 30 | 119 | 1 | 38 | 16 | 1866 | 159 | 50 | 1208 | 20 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 27 | 38 | 0 | 119 | 39 | 0 | 16 | 2025 | 0 | 50 | 1228 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 24 | | | 24 | | | 12 | | | 12 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.03 | 1.03 | 1.03 | 0.99 | 0.99 | 0.99 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | 1 | 2 | | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | | Left | Thru | | Left | Thru | | Left | Thru | |
| Leading Detector (ft) | 20 | 100 | | 20 | 100 | | 20 | 100 | | 20 | 100 | |
| Trailing Detector (ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Position(ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Size(ft) | 20 | 6 | | 20 | 6 | | 20 | 6 | | 20 | 6 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | 6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | Split | NA | | Split | NA | | Perm | NA | | Perm | NA | |

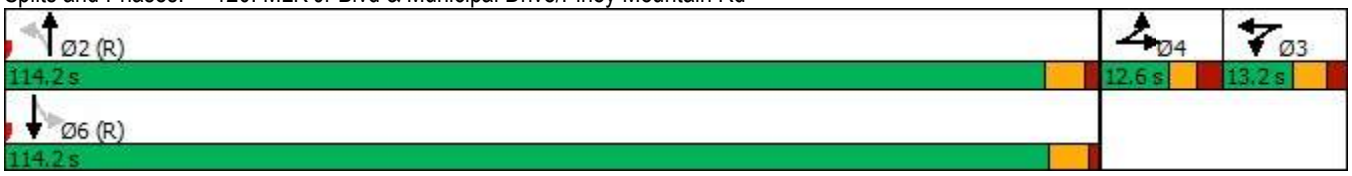
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Protected Phases | 4 | 4 | | 3 | 3 | | | 2 | | | 6 | |
| Permitted Phases | | | | | | | 2 | | | 6 | | |
| Detector Phase | 4 | 4 | | 3 | 3 | | 2 | 2 | | 6 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | | 7.0 | 7.0 | | 12.0 | 12.0 | | 12.0 | 12.0 | |
| Minimum Split (s) | 12.6 | 12.6 | | 12.9 | 12.9 | | 27.8 | 27.8 | | 17.5 | 17.5 | |
| Total Split (s) | 12.6 | 12.6 | | 13.2 | 13.2 | | 114.2 | 114.2 | | 114.2 | 114.2 | |
| Total Split (%) | 9.0% | 9.0% | | 9.4% | 9.4% | | 81.6% | 81.6% | | 81.6% | 81.6% | |
| Maximum Green (s) | 7.0 | 7.0 | | 7.3 | 7.3 | | 108.4 | 108.4 | | 108.7 | 108.7 | |
| Yellow Time (s) | 3.0 | 3.0 | | 3.6 | 3.6 | | 4.2 | 4.2 | | 4.2 | 4.2 | |
| All-Red Time (s) | 2.6 | 2.6 | | 2.3 | 2.3 | | 1.6 | 1.6 | | 1.3 | 1.3 | |
| Lost Time Adjust (s) | -0.6 | -0.6 | | -0.9 | -0.9 | | -0.8 | -0.8 | | -0.5 | -0.5 | |
| Total Lost Time (s) | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | |
| Lead/Lag | Lead | Lead | | Lag | Lag | | | | | | | |
| Lead-Lag Optimize? | Yes | Yes | | Yes | Yes | | | | | | | |
| Vehicle Extension (s) | 1.0 | 1.0 | | 1.0 | 1.0 | | 6.0 | 6.0 | | 6.0 | 6.0 | |
| Minimum Gap (s) | 1.0 | 1.0 | | 1.0 | 1.0 | | 6.0 | 6.0 | | 6.0 | 6.0 | |
| Time Before Reduce (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 15.0 | 15.0 | | 15.0 | 15.0 | |
| Time To Reduce (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 45.0 | 45.0 | | 45.0 | 45.0 | |
| Recall Mode | None | None | | None | None | | C-Min | C-Min | | C-Min | C-Min | |
| Walk Time (s) | | | | | | | 7.0 | 7.0 | | | | |
| Flash Dont Walk (s) | | | | | | | 15.0 | 15.0 | | | | |
| Pedestrian Calls (#/hr) | | | | | | | 0 | 0 | | | | |
| Act Effct Green (s) | 7.6 | 7.6 | | 8.1 | 8.1 | | 111.8 | 111.8 | | 111.8 | 111.8 | |
| Actuated g/C Ratio | 0.05 | 0.05 | | 0.06 | 0.06 | | 0.80 | 0.80 | | 0.80 | 0.80 | |
| v/c Ratio | 0.29 | 0.43 | | 0.61 | 0.45 | | 0.05 | 0.72 | | 0.51 | 0.44 | |
| Control Delay | 71.8 | 79.1 | | 78.2 | 80.9 | | 2.0 | 3.7 | | 38.8 | 10.3 | |
| Queue Delay | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Delay | 71.8 | 79.1 | | 78.2 | 80.9 | | 2.0 | 3.7 | | 38.8 | 10.3 | |
| LOS | E | E | | E | F | | A | A | | D | B | |
| Approach Delay | | 76.1 | | | 78.9 | | | 3.7 | | | 11.4 | |
| Approach LOS | | E | | | E | | | A | | | B | |
| Queue Length 50th (ft) | 24 | 34 | | 55 | 35 | | 1 | 80 | | 25 | 269 | |
| Queue Length 95th (ft) | 57 | 74 | | 90 | 76 | | m2 | m125 | | 71 | 479 | |
| Internal Link Dist (ft) | | 474 | | | 583 | | | 1071 | | | 2538 | |
| Turn Bay Length (ft) | 100 | | | 375 | | | 150 | | | 225 | | |
| Base Capacity (vph) | 94 | 89 | | 197 | 87 | | 306 | 2805 | | 99 | 2820 | |
| Starvation Cap Reductn | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Spillback Cap Reductn | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Storage Cap Reductn | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Reduced v/c Ratio | 0.29 | 0.43 | | 0.60 | 0.45 | | 0.05 | 0.72 | | 0.51 | 0.44 | |

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.72
Intersection Signal Delay: 11.1 Intersection LOS: B
Intersection Capacity Utilization 69.0% ICU Level of Service C
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 120: MLK Jr Blvd & Municipal Drive/Piney Mountain Rd



HCM 6th Edition methodology expects strict NEMA phasing.

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 207 | 0 | 192 | 2 | 2 | 1 | 265 | 1472 | 0 | 7 | 956 | 195 |
| Future Volume (vph) | 207 | 0 | 192 | 2 | 2 | 1 | 265 | 1472 | 0 | 7 | 956 | 195 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 125 | | 0 | 125 | | 0 | 525 | | 0 | 250 | | 375 |
| Storage Lanes | 1 | | 1 | 2 | | 1 | 2 | | 0 | 1 | | 1 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 0.95 | 0.95 | 1.00 | 0.95 | 0.95 | 1.00 | 0.97 | 0.95 | 0.95 | 1.00 | 0.95 | 1.00 |
| Frt | | | 0.850 | | | 0.850 | | | | | | 0.850 |
| Flt Protected | 0.950 | 0.950 | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1681 | 1681 | 1583 | 1681 | 1770 | 1583 | 3433 | 3539 | 0 | 1770 | 3539 | 1583 |
| Flt Permitted | 0.950 | 0.950 | | 0.950 | | | 0.950 | | | 0.100 | | |
| Satd. Flow (perm) | 1681 | 1681 | 1583 | 1681 | 1770 | 1583 | 3433 | 3539 | 0 | 186 | 3539 | 1583 |
| Right Turn on Red | | | No | | | No | | | No | | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (mph) | | 35 | | | 20 | | | 40 | | | 40 | |
| Link Distance (ft) | | 1248 | | | 314 | | | 1137 | | | 1345 | |
| Travel Time (s) | | 24.3 | | | 10.7 | | | 19.4 | | | 22.9 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Adj. Flow (vph) | 230 | 0 | 213 | 2 | 2 | 1 | 294 | 1636 | 0 | 8 | 1062 | 217 |
| Shared Lane Traffic (%) | 50% | | | 10% | | | | | | | | |
| Lane Group Flow (vph) | 115 | 115 | 213 | 2 | 2 | 1 | 294 | 1636 | 0 | 8 | 1062 | 217 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 12 | | | 12 | | | 24 | | | 24 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | Yes | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | 1 | 1 | 2 | 1 | 1 | 2 | | 1 | 2 | 1 |
| Detector Template | Left | Thru | Right | Left | Thru | Right | Left | Thru | | Left | Thru | Right |
| Leading Detector (ft) | 20 | 100 | 20 | 20 | 100 | 20 | 20 | 100 | | 20 | 100 | 20 |
| Trailing Detector (ft) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 |
| Detector 1 Position(ft) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 |
| Detector 1 Size(ft) | 20 | 6 | 20 | 20 | 6 | 20 | 20 | 6 | | 20 | 6 | 20 |
| Detector 1 Type | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Detector 1 Queue (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Detector 1 Delay (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | 6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | Split | NA | pm+ov | Split | NA | pm+ov | Prot | NA | | D.P+P | NA | pm+ov |
| Protected Phases | 4 | 4 | 5 | 3 | 3 | 1 | 5 | 2 | | 1 | 6 | 4 |
| Permitted Phases | | | 4 | | | 3 | | | | 2 | | 6 |

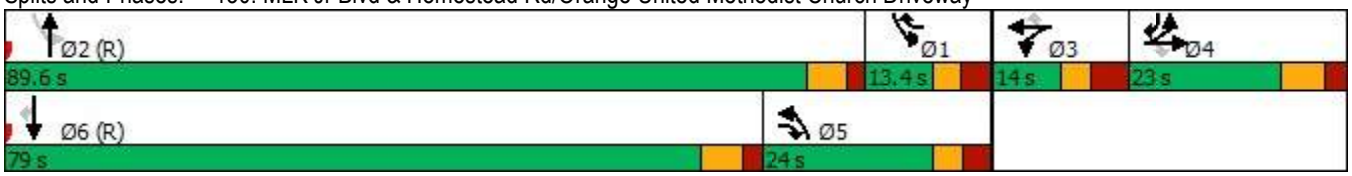
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Detector Phase | 4 | 4 | 5 | 3 | 3 | 1 | 5 | 2 | | 1 | 6 | 4 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 12.0 | | 7.0 | 12.0 | 7.0 |
| Minimum Split (s) | 14.1 | 14.1 | 13.3 | 13.9 | 13.9 | 13.4 | 13.3 | 28.0 | | 13.4 | 45.4 | 14.1 |
| Total Split (s) | 23.0 | 23.0 | 24.0 | 14.0 | 14.0 | 13.4 | 24.0 | 89.6 | | 13.4 | 79.0 | 23.0 |
| Total Split (%) | 16.4% | 16.4% | 17.1% | 10.0% | 10.0% | 9.6% | 17.1% | 64.0% | | 9.6% | 56.4% | 16.4% |
| Maximum Green (s) | 15.9 | 15.9 | 17.7 | 7.1 | 7.1 | 7.0 | 17.7 | 83.6 | | 7.0 | 72.6 | 15.9 |
| Yellow Time (s) | 4.5 | 4.5 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 4.2 | | 3.0 | 4.2 | 4.5 |
| All-Red Time (s) | 2.6 | 2.6 | 3.3 | 3.9 | 3.9 | 3.4 | 3.3 | 1.8 | | 3.4 | 2.2 | 2.6 |
| Lost Time Adjust (s) | -2.1 | -2.1 | -1.3 | -1.9 | -1.9 | -1.4 | -1.3 | -1.0 | | -1.4 | -1.4 | -2.1 |
| Total Lost Time (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | | 5.0 | 5.0 | 5.0 |
| Lead/Lag | Lag | Lag | Lag | Lead | Lead | Lag | Lag | Lead | | Lag | Lead | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | | Yes | Yes | Yes |
| Vehicle Extension (s) | 1.0 | 1.0 | 1.0 | 2.0 | 2.0 | 2.0 | 1.0 | 6.0 | | 2.0 | 6.0 | 1.0 |
| Minimum Gap (s) | 1.0 | 1.0 | 1.0 | 2.0 | 2.0 | 2.0 | 1.0 | 6.0 | | 2.0 | 6.0 | 1.0 |
| Time Before Reduce (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 15.0 | | 0.0 | 15.0 | 0.0 |
| Time To Reduce (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 45.0 | | 0.0 | 45.0 | 0.0 |
| Recall Mode | None | None | None | None | None | None | None | C-Min | | None | C-Min | None |
| Walk Time (s) | | | | | | | | 7.0 | | | 7.0 | |
| Flash Dont Walk (s) | | | | | | | | 15.0 | | | 32.0 | |
| Pedestrian Calls (#/hr) | | | | | | | | 0 | | | 0 | |
| Act Effct Green (s) | 14.5 | 14.5 | 41.6 | 8.9 | 8.9 | 11.2 | 23.1 | 107.3 | | 115.7 | 84.6 | 104.2 |
| Actuated g/C Ratio | 0.10 | 0.10 | 0.30 | 0.06 | 0.06 | 0.08 | 0.16 | 0.77 | | 0.83 | 0.60 | 0.74 |
| v/c Ratio | 0.66 | 0.66 | 0.45 | 0.02 | 0.02 | 0.01 | 0.52 | 0.60 | | 0.03 | 0.50 | 0.18 |
| Control Delay | 77.8 | 77.8 | 38.7 | 62.0 | 62.0 | 54.0 | 42.8 | 5.2 | | 5.1 | 18.5 | 6.8 |
| 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 | 77.8 | 77.8 | 38.7 | 62.0 | 62.0 | 54.0 | 42.8 | 5.2 | | 5.1 | 18.5 | 6.8 |
| LOS | E | E | D | E | E | D | D | A | | A | B | A |
| Approach Delay | | 59.0 | | | 60.4 | | | 10.9 | | | 16.4 | |
| Approach LOS | | E | | | E | | | B | | | B | |
| Queue Length 50th (ft) | 107 | 107 | 143 | 2 | 2 | 1 | 109 | 126 | | 1 | 301 | 60 |
| Queue Length 95th (ft) | 174 | 174 | 200 | 11 | 11 | 6 | 188 | 233 | | 7 | 404 | 99 |
| Internal Link Dist (ft) | | 1168 | | | 234 | | | 1057 | | | 1265 | |
| Turn Bay Length (ft) | 125 | | | 125 | | | 525 | | | 250 | | 375 |
| Base Capacity (vph) | 216 | 216 | 470 | 108 | 113 | 126 | 599 | 2713 | | 248 | 2142 | 1162 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.53 | 0.53 | 0.45 | 0.02 | 0.02 | 0.01 | 0.49 | 0.60 | | 0.03 | 0.50 | 0.19 |

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 61 (44%), Referenced to phase 2:NBSB and 6:SBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.66
Intersection Signal Delay: 18.7 Intersection LOS: B

Intersection Capacity Utilization 71.4%
ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 130: MLK Jr Blvd & Homestead Rd/Orange United Methodist Church Driveway



HCM 6th Edition methodology expects strict NEMA phasing.

| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 15 | 946 | 1175 | 25 | 23 | 16 |
| Future Volume (vph) | 15 | 946 | 1175 | 25 | 23 | 16 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 100 | | | 0 | 0 | 0 |
| Storage Lanes | 1 | | | 0 | 1 | 0 |
| Taper Length (ft) | 100 | | | | 100 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | | 0.997 | | 0.945 | |
| Flt Protected | 0.950 | | | | 0.971 | |
| Satd. Flow (prot) | 1770 | 1863 | 1857 | 0 | 1709 | 0 |
| Flt Permitted | 0.950 | | | | 0.971 | |
| Satd. Flow (perm) | 1770 | 1863 | 1857 | 0 | 1709 | 0 |
| Link Speed (mph) | | 35 | 35 | | 30 | |
| Link Distance (ft) | | 778 | 840 | | 813 | |
| Travel Time (s) | | 15.2 | 16.4 | | 18.5 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Adj. Flow (vph) | 17 | 1051 | 1306 | 28 | 26 | 18 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 17 | 1051 | 1334 | 0 | 44 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Left | Right | Left | Right |
| Median Width(ft) | | 12 | 12 | | 12 | |
| Link Offset(ft) | | 0 | 0 | | 0 | |
| Crosswalk Width(ft) | | 16 | 16 | | 16 | |
| Two way Left Turn Lane | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | | 9 | 15 | 9 |
| Sign Control | | Free | Free | | Stop | |

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 73.4% ICU Level of Service D
Analysis Period (min) 15

| Intersection | |
|---|---|
| Int Delay, s/veh | 3.5 |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 15 | 946 | 1175 | 25 | 23 | 16 |
| Future Vol, veh/h | 15 | 946 | 1175 | 25 | 23 | 16 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 100 | - | - | - | 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 | 17 | 1051 | 1306 | 28 | 26 | 18 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 1334 | 0 | - | 0 | 2405 | 1320 |
| Stage 1 | - | - | - | - | 1320 | - |
| Stage 2 | - | - | - | - | 1085 | - |
| 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 | 517 | - | - | - | 36 | 192 |
| Stage 1 | - | - | - | - | 250 | - |
| Stage 2 | - | - | - | - | 324 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | 517 | - | - | - | 35 | 192 |
| Mov Cap-2 Maneuver | - | - | - | - | 35 | - |
| Stage 1 | - | - | - | - | 242 | - |
| Stage 2 | - | - | - | - | 324 | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 0.2 | 0 | 195.2 |
| HCM LOS | | | F |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|
| Capacity (veh/h) | 517 | - | - | - | 53 |
| HCM Lane V/C Ratio | 0.032 | - | - | - | 0.818 |
| HCM Control Delay (s) | 12.2 | - | - | - | 195.2 |
| HCM Lane LOS | B | - | - | - | F |
| HCM 95th %tile Q(veh) | 0.1 | - | - | - | 3.5 |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 118 | 843 | 8 | 2 | 1026 | 50 | 3 | 3 | 1 | 36 | 3 | 171 |
| Future Volume (vph) | 118 | 843 | 8 | 2 | 1026 | 50 | 3 | 3 | 1 | 36 | 3 | 171 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Grade (%) | | -2% | | | 0% | | | 7% | | | -5% | |
| Storage Length (ft) | 250 | | 0 | 125 | | 0 | 0 | | 0 | 100 | | 0 |
| Storage Lanes | 1 | | 0 | 1 | | 0 | 0 | | 0 | 1 | | 0 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | 0.999 | | | 0.993 | | | 0.981 | | | 0.852 | |
| Flt Protected | 0.950 | | | 0.950 | | | | 0.979 | | 0.950 | | |
| Satd. Flow (prot) | 1787 | 1879 | 0 | 1770 | 1850 | 0 | 0 | 1726 | 0 | 1814 | 1627 | 0 |
| Flt Permitted | 0.049 | | | 0.239 | | | | 0.886 | | 0.753 | | |
| Satd. Flow (perm) | 92 | 1879 | 0 | 445 | 1850 | 0 | 0 | 1562 | 0 | 1438 | 1627 | 0 |
| Right Turn on Red | | | No | | | No | | | No | | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (mph) | | 35 | | | 35 | | | 25 | | | 25 | |
| Link Distance (ft) | | 961 | | | 940 | | | 384 | | | 262 | |
| Travel Time (s) | | 18.7 | | | 18.3 | | | 10.5 | | | 7.1 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Adj. Flow (vph) | 131 | 937 | 9 | 2 | 1140 | 56 | 3 | 3 | 1 | 40 | 3 | 190 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 131 | 946 | 0 | 2 | 1196 | 0 | 0 | 7 | 0 | 40 | 193 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 12 | | | 12 | | | 12 | | | 12 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 0.99 | 0.99 | 0.99 | 1.00 | 1.00 | 1.00 | 1.05 | 1.05 | 1.05 | 0.97 | 0.97 | 0.97 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | 1 | 2 | | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | | Left | Thru | | Left | Thru | | Left | Thru | |
| Leading Detector (ft) | 20 | 100 | | 20 | 100 | | 20 | 100 | | 20 | 100 | |
| Trailing Detector (ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Position(ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Size(ft) | 20 | 6 | | 20 | 6 | | 20 | 6 | | 20 | 6 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | 6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | D.P+P | NA | | D.Pm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | 5 | 2 | | | 6 | | | 8 | | | 4 | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Permitted Phases | 6 | | | 2 | | | 8 | | | 4 | | |
| Detector Phase | 5 | 2 | | 2 | 6 | | 8 | 8 | | 4 | 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 10.0 | | 10.0 | 10.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | |
| Minimum Split (s) | 12.6 | 21.6 | | 21.6 | 21.6 | | 11.9 | 11.9 | | 20.4 | 20.4 | |
| Total Split (s) | 12.6 | 99.0 | | 99.0 | 86.4 | | 21.0 | 21.0 | | 21.0 | 21.0 | |
| Total Split (%) | 10.5% | 82.5% | | 82.5% | 72.0% | | 17.5% | 17.5% | | 17.5% | 17.5% | |
| Maximum Green (s) | 7.0 | 93.4 | | 93.4 | 80.8 | | 16.1 | 16.1 | | 15.6 | 15.6 | |
| Yellow Time (s) | 3.0 | 4.0 | | 4.0 | 3.8 | | 3.0 | 3.0 | | 3.5 | 3.5 | |
| All-Red Time (s) | 2.6 | 1.6 | | 1.6 | 1.8 | | 1.9 | 1.9 | | 1.9 | 1.9 | |
| Lost Time Adjust (s) | -0.6 | -0.6 | | -0.6 | -0.6 | | | 0.1 | | -0.4 | -0.4 | |
| Total Lost Time (s) | 5.0 | 5.0 | | 5.0 | 5.0 | | | 5.0 | | 5.0 | 5.0 | |
| Lead/Lag | Lead | | | | Lag | | | | | | | |
| Lead-Lag Optimize? | Yes | | | | Yes | | | | | | | |
| Vehicle Extension (s) | 1.0 | 2.0 | | 2.0 | 2.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | |
| Recall Mode | None | C-Min | | C-Min | C-Min | | None | None | | None | None | |
| Walk Time (s) | | 7.0 | | 7.0 | 7.0 | | | | | 7.0 | 7.0 | |
| Flash Dont Walk (s) | | 9.0 | | 9.0 | 9.0 | | | | | 8.0 | 8.0 | |
| Pedestrian Calls (#/hr) | | 0 | | 0 | 0 | | | | | 0 | 0 | |
| Act Effct Green (s) | 89.5 | 94.5 | | 94.5 | 81.9 | | | 8.7 | | 15.5 | 15.5 | |
| Actuated g/C Ratio | 0.75 | 0.79 | | 0.79 | 0.68 | | | 0.07 | | 0.13 | 0.13 | |
| v/c Ratio | 0.75 | 0.64 | | 0.01 | 0.95 | | | 0.06 | | 0.22 | 0.92 | |
| Control Delay | 49.9 | 8.0 | | 1.5 | 22.5 | | | 50.5 | | 49.7 | 97.1 | |
| Queue Delay | 0.0 | 0.0 | | 0.0 | 0.0 | | | 0.0 | | 0.0 | 0.0 | |
| Total Delay | 49.9 | 8.0 | | 1.5 | 22.5 | | | 50.5 | | 49.7 | 97.1 | |
| LOS | D | A | | A | C | | | D | | D | F | |
| Approach Delay | | 13.1 | | | 22.5 | | | 50.5 | | | 88.9 | |
| Approach LOS | | B | | | C | | | D | | | F | |
| Queue Length 50th (ft) | 48 | 265 | | 0 | 474 | | | 5 | | 28 | 149 | |
| Queue Length 95th (ft) | #148 | 370 | | m0 | m#1052 | | | 19 | | 63 | #286 | |
| Internal Link Dist (ft) | | 881 | | | 860 | | | 304 | | | 182 | |
| Turn Bay Length (ft) | 250 | | | 125 | | | | | | 100 | | |
| Base Capacity (vph) | 175 | 1479 | | 350 | 1262 | | | 208 | | 191 | 216 | |
| Starvation Cap Reductn | 0 | 0 | | 0 | 0 | | | 0 | | 0 | 0 | |
| Spillback Cap Reductn | 0 | 0 | | 0 | 0 | | | 0 | | 0 | 0 | |
| Storage Cap Reductn | 0 | 0 | | 0 | 0 | | | 0 | | 0 | 0 | |
| Reduced v/c Ratio | 0.75 | 0.64 | | 0.01 | 0.95 | | | 0.03 | | 0.21 | 0.89 | |

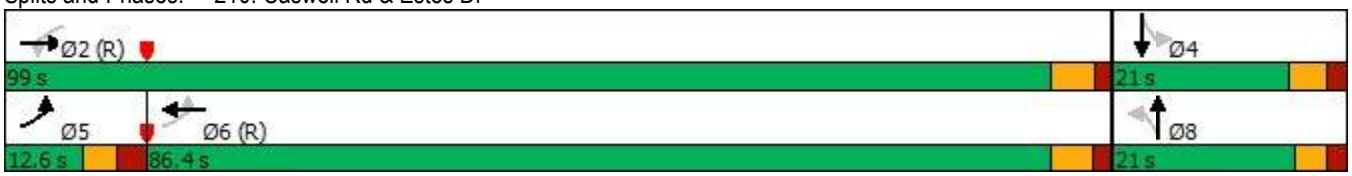
Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 67 (56%), Referenced to phase 2:EBWB and 6:EBWB, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.95
Intersection Signal Delay: 24.7 Intersection LOS: C
Intersection Capacity Utilization 86.8% ICU Level of Service E
Analysis Period (min) 15

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

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

Splits and Phases: 210: Caswell Rd & Estes Dr



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 118 | 843 | 8 | 2 | 1026 | 50 | 3 | 3 | 1 | 36 | 3 | 171 |
| Future Volume (veh/h) | 118 | 843 | 8 | 2 | 1026 | 50 | 3 | 3 | 1 | 36 | 3 | 171 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1949 | 1949 | 1949 | 1870 | 1870 | 1870 | 1582 | 1582 | 1582 | 2067 | 2067 | 2067 |
| Adj Flow Rate, veh/h | 131 | 937 | 9 | 2 | 1140 | 56 | 3 | 3 | 1 | 40 | 3 | 190 |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 176 | 1269 | 12 | 217 | 1210 | 59 | 52 | 38 | 8 | 201 | 3 | 221 |
| Arrive On Green | 0.06 | 0.66 | 0.65 | 0.09 | 0.68 | 0.68 | 0.12 | 0.12 | 0.12 | 0.13 | 0.13 | 0.12 |
| Sat Flow, veh/h | 1856 | 1927 | 19 | 1781 | 1768 | 87 | 73 | 304 | 63 | 1561 | 27 | 1728 |
| Grp Volume(v), veh/h | 131 | 0 | 946 | 2 | 0 | 1196 | 7 | 0 | 0 | 40 | 0 | 193 |
| Grp Sat Flow(s),veh/h/ln | 1856 | 0 | 1945 | 1781 | 0 | 1855 | 440 | 0 | 0 | 1561 | 0 | 1756 |
| Q Serve(g_s), s | 4.4 | 0.0 | 38.8 | 0.1 | 0.0 | 68.8 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 12.9 |
| Cycle Q Clear(g_c), s | 4.4 | 0.0 | 38.8 | 0.1 | 0.0 | 68.8 | 13.0 | 0.0 | 0.0 | 4.3 | 0.0 | 12.9 |
| Prop In Lane | 1.00 | | 0.01 | 1.00 | | 0.05 | 0.43 | | 0.14 | 1.00 | | 0.98 |
| Lane Grp Cap(c), veh/h | 176 | 0 | 1281 | 0 | 0 | 1269 | 98 | 0 | 0 | 201 | 0 | 225 |
| V/C Ratio(X) | 0.74 | 0.00 | 0.74 | 0.00 | 0.00 | 0.94 | 0.07 | 0.00 | 0.00 | 0.20 | 0.00 | 0.86 |
| Avail Cap(c_a), veh/h | 178 | 0 | 1524 | 0 | 0 | 1269 | 109 | 0 | 0 | 210 | 0 | 234 |
| 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 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 45.3 | 0.0 | 13.6 | 0.0 | 0.0 | 16.8 | 46.7 | 0.0 | 0.0 | 47.5 | 0.0 | 51.4 |
| Incr Delay (d2), s/veh | 13.7 | 0.0 | 3.8 | 0.0 | 0.0 | 14.8 | 0.1 | 0.0 | 0.0 | 0.2 | 0.0 | 23.9 |
| 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 | 0.0 | 16.6 | 0.0 | 0.0 | 30.2 | 0.2 | 0.0 | 0.0 | 1.1 | 0.0 | 7.2 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 59.0 | 0.0 | 17.5 | 0.0 | 0.0 | 31.6 | 46.8 | 0.0 | 0.0 | 47.7 | 0.0 | 75.4 |
| LnGrp LOS | E | A | B | A | A | C | D | A | A | D | A | E |
| Approach Vol, veh/h | | 1077 | | | 1198 | | | 7 | | | 233 | |
| Approach Delay, s/veh | | 22.5 | | | 31.5 | | | 46.8 | | | 70.6 | |
| Approach LOS | | C | | | C | | | D | | | E | |

| Timer - Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 15.6 | 84.0 | | 20.4 | 12.5 | 87.1 | | 20.4 |
| Change Period (Y+Rc), s | * 5.6 | * 5.6 | | * 5.4 | 5.6 | 5.6 | | * 5.4 |
| Max Green Setting (Gmax), s | * 93 | * 93 | | * 16 | 7.0 | 80.8 | | * 16 |
| Max Q Clear Time (g_c+I1), s | 2.1 | 40.8 | | 14.9 | 6.4 | 70.8 | | 15.0 |
| Green Ext Time (p_c), s | 0.0 | 5.4 | | 0.0 | 0.0 | 5.0 | | 0.0 |

| Intersection Summary | | |
|---|---|---|
| HCM 6th Ctrl Delay | | 31.3 |
| HCM 6th LOS | | C |

Notes

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

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 311 | 506 | 64 | 266 | 554 | 281 | 69 | 751 | 251 | 146 | 564 | 455 |
| Future Volume (vph) | 311 | 506 | 64 | 266 | 554 | 281 | 69 | 751 | 251 | 146 | 564 | 455 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Grade (%) | | -1% | | | 3% | | | -1% | | | 5% | |
| Storage Length (ft) | 300 | | 400 | 150 | | 0 | 150 | | 150 | 300 | | 350 |
| Storage Lanes | 2 | | 1 | 1 | | 1 | 1 | | 1 | 1 | | 1 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 0.97 | 0.95 | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 |
| Frt | | 0.983 | | | | 0.850 | | | 0.850 | | | 0.850 |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 3450 | 3496 | 0 | 1743 | 1835 | 1560 | 1778 | 3557 | 1591 | 1725 | 3451 | 1544 |
| Flt Permitted | 0.950 | | | 0.260 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (perm) | 3450 | 3496 | 0 | 477 | 1835 | 1560 | 1778 | 3557 | 1591 | 1725 | 3451 | 1544 |
| Right Turn on Red | | | No | | | No | | | No | | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (mph) | | 35 | | | 35 | | | 35 | | | 35 | |
| Link Distance (ft) | | 2406 | | | 987 | | | 1748 | | | 1202 | |
| Travel Time (s) | | 46.9 | | | 19.2 | | | 34.1 | | | 23.4 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Adj. Flow (vph) | 346 | 562 | 71 | 296 | 616 | 312 | 77 | 834 | 279 | 162 | 627 | 506 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 346 | 633 | 0 | 296 | 616 | 312 | 77 | 834 | 279 | 162 | 627 | 506 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 24 | | | 24 | | | 12 | | | 12 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | Yes | | | Yes | | | Yes | |
| Headway Factor | 0.99 | 0.99 | 0.99 | 1.02 | 1.02 | 1.02 | 0.99 | 0.99 | 0.99 | 1.03 | 1.03 | 1.03 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | 1 | 2 | 1 | 1 | 2 | 1 | 1 | 2 | 1 |
| Detector Template | Left | Thru | | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Leading Detector (ft) | 20 | 100 | | 20 | 100 | 20 | 20 | 100 | 20 | 20 | 100 | 20 |
| Trailing Detector (ft) | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Detector 1 Position(ft) | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Detector 1 Size(ft) | 20 | 6 | | 20 | 6 | 20 | 20 | 6 | 20 | 20 | 6 | 20 |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | 6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | Prot | NA | | D.P+P | NA | pm+ov | Prot | NA | pm+ov | Prot | NA | pm+ov |
| Protected Phases | 7 | 4 | | 3 | 8 | 1 | 5 | 2 | 3 | 1 | 6 | 7 |

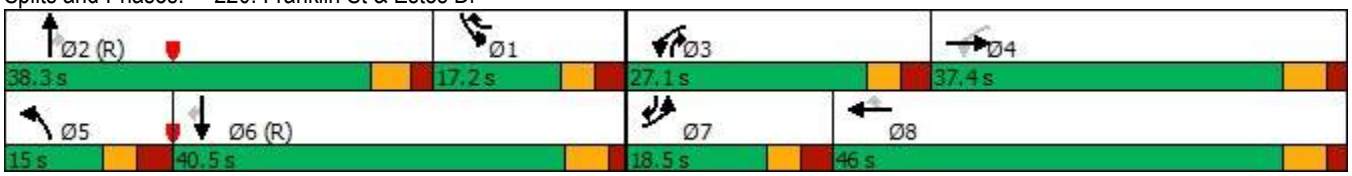
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Permitted Phases | | | | 4 | | 8 | | | 2 | | | 6 |
| Detector Phase | 7 | 4 | | 3 | 8 | 1 | 5 | 2 | 3 | 1 | 6 | 7 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | | 7.0 | 7.0 | 7.0 | 7.0 | 10.0 | 7.0 | 7.0 | 10.0 | 7.0 |
| Minimum Split (s) | 12.9 | 33.9 | | 12.6 | 30.9 | 12.9 | 13.2 | 35.7 | 12.6 | 12.9 | 21.5 | 12.9 |
| Total Split (s) | 18.5 | 37.4 | | 27.1 | 46.0 | 17.2 | 15.0 | 38.3 | 27.1 | 17.2 | 40.5 | 18.5 |
| Total Split (%) | 15.4% | 31.2% | | 22.6% | 38.3% | 14.3% | 12.5% | 31.9% | 22.6% | 14.3% | 33.8% | 15.4% |
| Maximum Green (s) | 12.6 | 31.5 | | 21.5 | 40.1 | 11.3 | 8.8 | 32.6 | 21.5 | 11.3 | 35.0 | 12.6 |
| Yellow Time (s) | 3.0 | 3.9 | | 3.0 | 3.9 | 3.0 | 3.0 | 3.7 | 3.0 | 3.0 | 3.9 | 3.0 |
| All-Red Time (s) | 2.9 | 2.0 | | 2.6 | 2.0 | 2.9 | 3.2 | 2.0 | 2.6 | 2.9 | 1.6 | 2.9 |
| Lost Time Adjust (s) | -0.9 | -0.9 | | -0.6 | -0.9 | -0.9 | -1.2 | -0.7 | 0.0 | -0.9 | -0.5 | 0.0 |
| Total Lost Time (s) | 5.0 | 5.0 | | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.6 | 5.0 | 5.0 | 5.9 |
| Lead/Lag | Lead | Lag | | Lead | Lag | Lag | Lead | Lead | Lead | Lag | Lag | Lead |
| Lead-Lag Optimize? | Yes | Yes | | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Vehicle Extension (s) | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 1.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Recall Mode | None | None | | None | None | None | None | C-Min | None | None | C-Min | None |
| Walk Time (s) | | 7.0 | | | 7.0 | | | 7.0 | | | 7.0 | |
| Flash Dont Walk (s) | | 21.0 | | | 18.0 | | | 23.0 | | | 9.0 | |
| Pedestrian Calls (#/hr) | | 0 | | | 0 | | | 0 | | | 0 | |
| Act Effct Green (s) | 13.6 | 37.5 | | 54.9 | 41.3 | 54.1 | 9.2 | 32.3 | 48.4 | 12.8 | 38.5 | 56.2 |
| Actuated g/C Ratio | 0.11 | 0.31 | | 0.46 | 0.34 | 0.45 | 0.08 | 0.27 | 0.40 | 0.11 | 0.32 | 0.47 |
| v/c Ratio | 0.89 | 0.58 | | 0.74 | 0.98 | 0.44 | 0.56 | 0.87 | 0.43 | 0.88 | 0.57 | 0.70 |
| Control Delay | 68.3 | 34.3 | | 30.7 | 70.2 | 15.8 | 69.5 | 52.8 | 16.2 | 94.7 | 37.1 | 32.8 |
| 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 | 68.3 | 34.3 | | 30.7 | 70.2 | 15.8 | 69.5 | 52.8 | 16.2 | 94.7 | 37.1 | 32.8 |
| LOS | E | C | | C | E | B | E | D | B | F | D | C |
| Approach Delay | | 46.3 | | | 46.8 | | | 45.3 | | | 42.6 | |
| Approach LOS | | D | | | D | | | D | | | D | |
| Queue Length 50th (ft) | 139 | 220 | | 135 | 470 | 101 | 58 | 321 | 98 | 126 | 219 | 318 |
| Queue Length 95th (ft) | #221 | 299 | | 200 | #713 | 151 | 110 | 402 | 131 | #260 | 283 | 460 |
| Internal Link Dist (ft) | | 2326 | | | 907 | | | 1668 | | | 1122 | |
| Turn Bay Length (ft) | 300 | | | 150 | | | 150 | | 150 | 300 | | 350 |
| Base Capacity (vph) | 390 | 1093 | | 464 | 630 | 703 | 148 | 987 | 705 | 184 | 1108 | 723 |
| Starvation Cap Reductn | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.89 | 0.58 | | 0.64 | 0.98 | 0.44 | 0.52 | 0.84 | 0.40 | 0.88 | 0.57 | 0.70 |

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 104 (87%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 110
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.98
Intersection Signal Delay: 45.1 Intersection LOS: D
Intersection Capacity Utilization 83.5% ICU Level of Service E
Analysis Period (min) 15

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

Splits and Phases: 220: Franklin St & Estes Dr



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 311 | 506 | 64 | 266 | 554 | 281 | 69 | 751 | 251 | 146 | 564 | 455 |
| Future Volume (veh/h) | 311 | 506 | 64 | 266 | 554 | 281 | 69 | 751 | 251 | 146 | 564 | 455 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1909 | 1909 | 1909 | 1817 | 1817 | 1817 | 1909 | 1909 | 1909 | 1723 | 1723 | 1723 |
| Adj Flow Rate, veh/h | 346 | 562 | 71 | 296 | 616 | 312 | 77 | 834 | 279 | 162 | 627 | 506 |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 397 | 1029 | 130 | 429 | 621 | 712 | 116 | 939 | 623 | 198 | 1021 | 603 |
| Arrive On Green | 0.11 | 0.32 | 0.31 | 0.14 | 0.34 | 0.34 | 0.06 | 0.26 | 0.25 | 0.12 | 0.31 | 0.31 |
| Sat Flow, veh/h | 3528 | 3241 | 408 | 1731 | 1817 | 1540 | 1818 | 3628 | 1618 | 1641 | 3274 | 1460 |
| Grp Volume(v), veh/h | 346 | 314 | 319 | 296 | 616 | 312 | 77 | 834 | 279 | 162 | 627 | 506 |
| Grp Sat Flow(s),veh/h/ln | 1764 | 1814 | 1836 | 1731 | 1817 | 1540 | 1818 | 1814 | 1618 | 1641 | 1637 | 1460 |
| Q Serve(g_s), s | 11.6 | 17.1 | 17.3 | 13.6 | 40.5 | 4.5 | 5.0 | 26.6 | 9.0 | 11.6 | 19.6 | 36.9 |
| Cycle Q Clear(g_c), s | 11.6 | 17.1 | 17.3 | 13.6 | 40.5 | 4.5 | 5.0 | 26.6 | 9.0 | 11.6 | 19.6 | 36.9 |
| Prop In Lane | 1.00 | | 0.22 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 397 | 576 | 583 | 429 | 621 | 712 | 116 | 939 | 623 | 198 | 1021 | 603 |
| V/C Ratio(X) | 0.87 | 0.55 | 0.55 | 0.69 | 0.99 | 0.44 | 0.66 | 0.89 | 0.45 | 0.82 | 0.61 | 0.84 |
| Avail Cap(c_a), veh/h | 397 | 576 | 583 | 511 | 621 | 712 | 152 | 1007 | 653 | 198 | 1021 | 603 |
| 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 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 52.4 | 33.8 | 33.9 | 23.8 | 39.3 | 8.1 | 54.9 | 42.8 | 11.3 | 51.5 | 35.1 | 31.7 |
| Incr Delay (d2), s/veh | 18.0 | 0.6 | 0.6 | 2.1 | 34.0 | 0.2 | 2.8 | 12.3 | 2.3 | 21.9 | 2.8 | 13.2 |
| 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 | 6.1 | 7.6 | 7.7 | 5.7 | 23.4 | 2.6 | 2.4 | 13.3 | 3.4 | 5.9 | 8.1 | 15.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 70.4 | 34.4 | 34.6 | 25.9 | 73.3 | 8.2 | 57.8 | 55.1 | 13.6 | 73.4 | 37.9 | 44.9 |
| LnGrp LOS | E | C | C | C | E | A | E | E | B | E | D | D |
| Approach Vol, veh/h | | 979 | | | 1224 | | | 1190 | | | 1295 | |
| Approach Delay, s/veh | | 47.2 | | | 45.2 | | | 45.5 | | | 45.0 | |
| Approach LOS | | D | | | D | | | D | | | D | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 19.4 | 36.1 | 21.4 | 43.1 | 12.7 | 42.8 | 18.5 | 46.0 |
| Change Period (Y+Rc), s | * 5.9 | 5.7 | 5.6 | 5.9 | * 6.2 | * 5.9 | 5.9 | 5.9 |
| Max Green Setting (Gmax), s | * 11 | 32.6 | 21.5 | 31.5 | * 8.8 | * 35 | 12.6 | 40.1 |
| Max Q Clear Time (g_c+I1), s | 13.6 | 28.6 | 15.6 | 19.3 | 7.0 | 38.9 | 13.6 | 42.5 |
| Green Ext Time (p_c), s | 0.0 | 1.8 | 0.2 | 2.0 | 0.0 | 0.0 | 0.0 | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 45.7 |
| HCM 6th LOS | D |

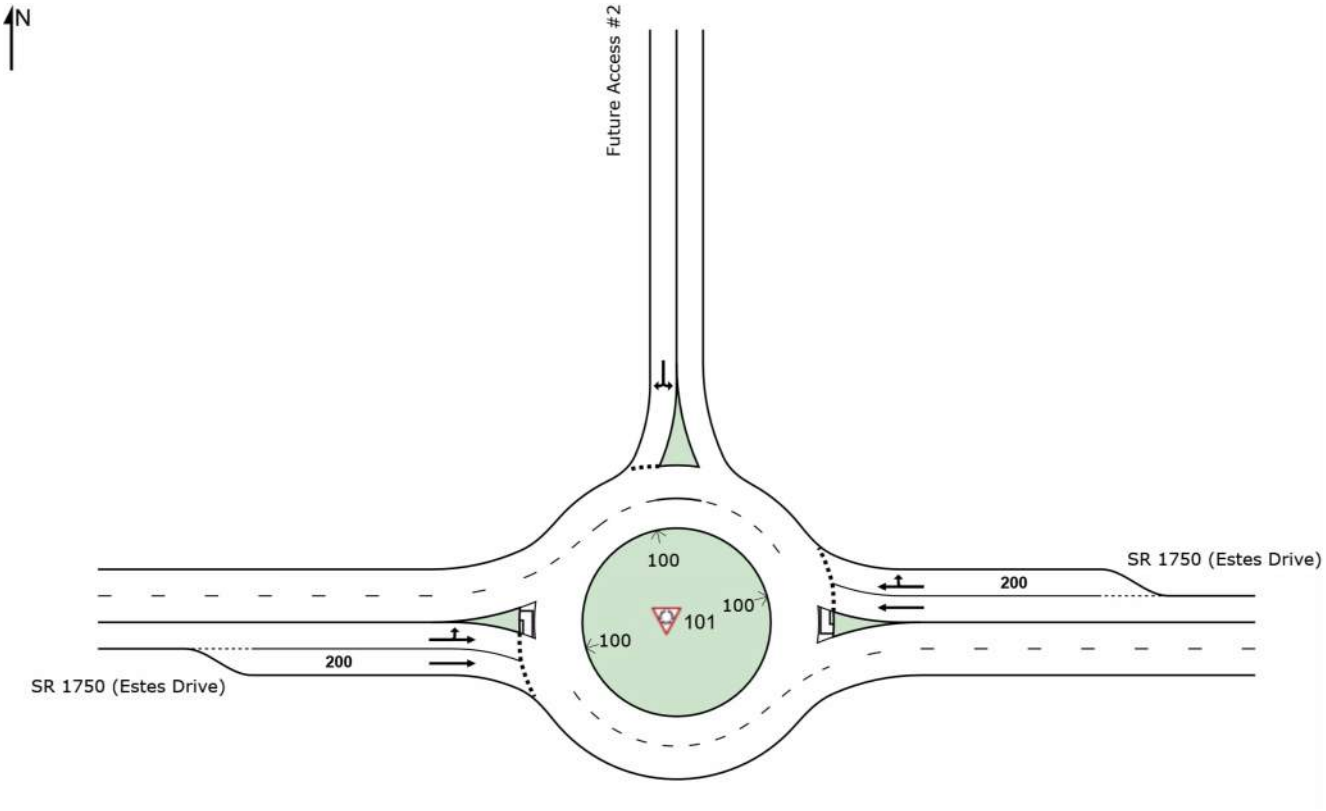
Notes

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

# SITE LAYOUT

## Site: 101 [SR 1750 (Estes Drive) & Future Access #2 - AM Peak]

SR 1750 (Estes Drive) & Future Access #2
AM Peak
Site Category: (None)
Roundabout



# MOVEMENT SUMMARY

## Site: 101 [SR 1750 (Estes Drive) & Future Access #2 - AM Peak]

SR 1750 (Estes Drive) & Future Access #2
AM Peak
Site Category: (None)
Roundabout

**Movement Performance - Vehicles**

| Mov ID | Turn | Demand Flows Total veh/h | HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Queue Vehicles veh | Distance ft | Prop. Queued | Effective Stop Rate | Aver. No. Cycles | Average Speed mph |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| East: SR 1750 (Estes Drive) | | | | | | | | | | | | |
| 6 | T1 | 741 | 3.0 | 0.310 | 0.4 | LOS A | 2.0 | 52.4 | 0.25 | 0.11 | 0.25 | 37.2 |
| 16 | R2 | 56 | 3.0 | 0.310 | 0.4 | LOS A | 2.0 | 52.4 | 0.25 | 0.11 | 0.25 | 35.9 |
| Approach | | 797 | 3.0 | 0.310 | 0.4 | LOS A | 2.0 | 52.4 | 0.25 | 0.11 | 0.25 | 37.1 |
| North: Future Access #2 | | | | | | | | | | | | |
| 7 | L2 | 67 | 3.0 | 0.178 | 3.8 | LOS A | 0.7 | 17.3 | 0.58 | 0.58 | 0.58 | 34.1 |
| 14 | R2 | 41 | 3.0 | 0.178 | 3.8 | LOS A | 0.7 | 17.3 | 0.58 | 0.58 | 0.58 | 33.1 |
| Approach | | 108 | 3.0 | 0.178 | 3.8 | LOS A | 0.7 | 17.3 | 0.58 | 0.58 | 0.58 | 33.7 |
| West: SR 1750 (Estes Drive) | | | | | | | | | | | | |
| 5 | L2 | 58 | 3.0 | 0.424 | 0.5 | LOS A | 3.4 | 87.2 | 0.33 | 0.15 | 0.33 | 36.7 |
| 2 | T1 | 1016 | 3.0 | 0.424 | 0.5 | LOS A | 3.4 | 87.5 | 0.33 | 0.15 | 0.33 | 36.8 |
| Approach | | 1073 | 3.0 | 0.424 | 0.5 | LOS A | 3.4 | 87.5 | 0.33 | 0.15 | 0.33 | 36.8 |
| All Vehicles | | 1978 | 3.0 | 0.424 | 0.7 | LOS A | 3.4 | 87.5 | 0.31 | 0.16 | 0.31 | 36.7 |

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option is selected.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

# MOVEMENT SUMMARY

## Site: 101 [SR 1750 (Estes Drive) & Future Access #2 - Noon Peak]

SR 1750 (Estes Drive) & Future Access #2
Noon Peak
Site Category: (None)
Roundabout

**Movement Performance - Vehicles**

| Mov ID | Turn | Demand Flows Total veh/h | HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Queue Vehicles veh | Distance ft | Prop. Queued | Effective Stop Rate | Aver. No. Cycles | Average Speed mph |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| East: SR 1750 (Estes Drive) | | | | | | | | | | | | |
| 6 | T1 | 734 | 3.0 | 0.296 | 0.3 | LOS A | 1.9 | 48.0 | 0.20 | 0.08 | 0.20 | 37.4 |
| 16 | R2 | 40 | 3.0 | 0.296 | 0.3 | LOS A | 1.9 | 48.0 | 0.20 | 0.07 | 0.20 | 36.1 |
| Approach | | 774 | 3.0 | 0.296 | 0.3 | LOS A | 1.9 | 48.0 | 0.20 | 0.08 | 0.20 | 37.3 |
| North: Future Access #2 | | | | | | | | | | | | |
| 7 | L2 | 40 | 3.0 | 0.106 | 3.5 | LOS A | 0.4 | 9.9 | 0.55 | 0.53 | 0.55 | 34.3 |
| 14 | R2 | 26 | 3.0 | 0.106 | 3.5 | LOS A | 0.4 | 9.9 | 0.55 | 0.53 | 0.55 | 33.3 |
| Approach | | 66 | 3.0 | 0.106 | 3.5 | LOS A | 0.4 | 9.9 | 0.55 | 0.53 | 0.55 | 33.9 |
| West: SR 1750 (Estes Drive) | | | | | | | | | | | | |
| 5 | L2 | 42 | 3.0 | 0.307 | 0.3 | LOS A | 2.2 | 55.3 | 0.22 | 0.08 | 0.22 | 37.1 |
| 2 | T1 | 759 | 3.0 | 0.307 | 0.3 | LOS A | 2.2 | 55.4 | 0.22 | 0.08 | 0.22 | 37.2 |
| Approach | | 801 | 3.0 | 0.307 | 0.3 | LOS A | 2.2 | 55.4 | 0.22 | 0.08 | 0.22 | 37.2 |
| All Vehicles | | 1641 | 3.0 | 0.307 | 0.4 | LOS A | 2.2 | 55.4 | 0.22 | 0.10 | 0.22 | 37.1 |

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option is selected.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

# MOVEMENT SUMMARY

## Site: 101 [SR 1750 (Estes Drive) & Future Access #2 - PM Peak]

SR 1750 (Estes Drive) & Future Access #2
PM Peak
Site Category: (None)
Roundabout

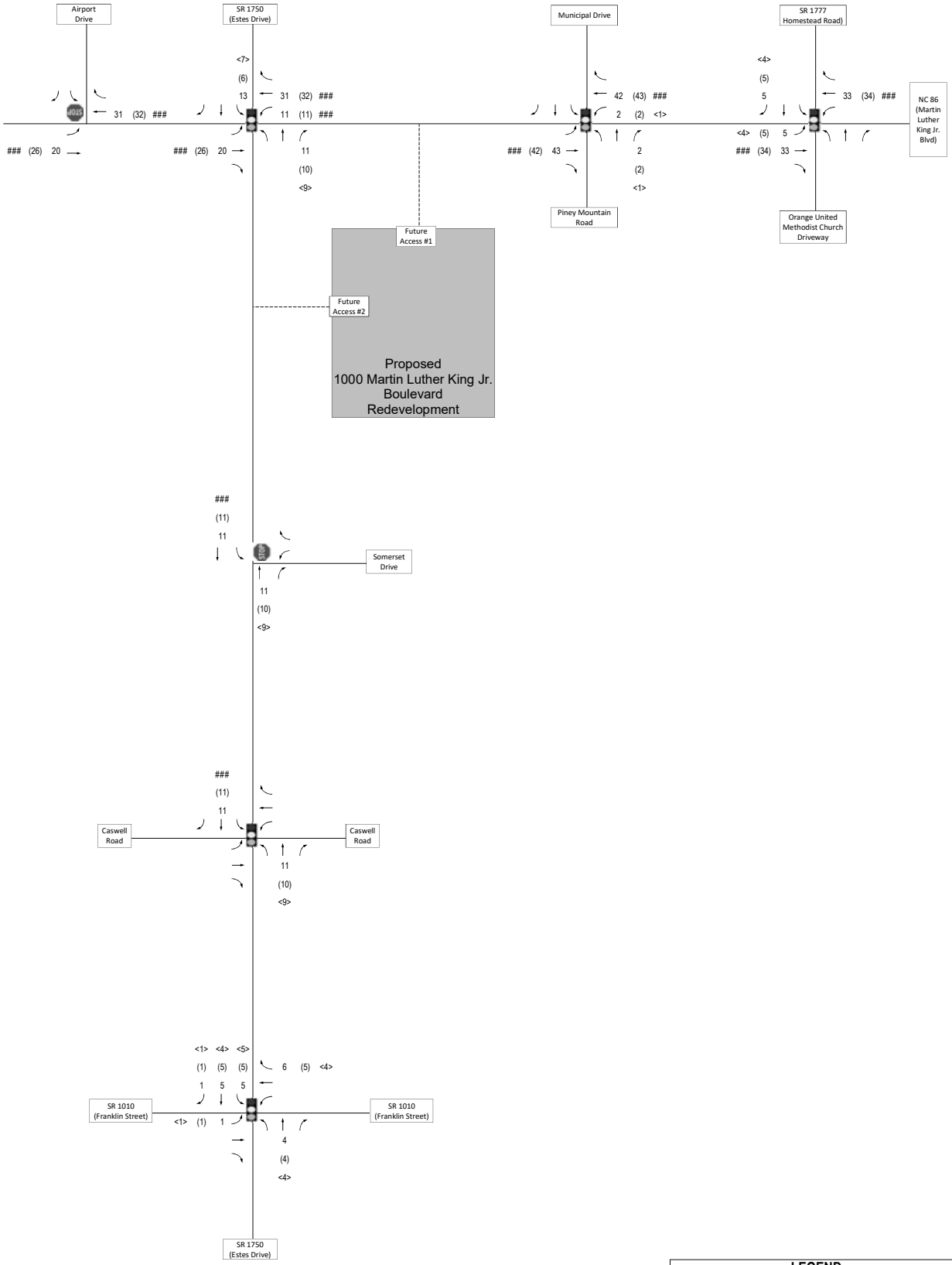
**Movement Performance - Vehicles**

| Mov ID | Turn | Demand Flows Total veh/h | HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Queue Vehicles veh | Distance ft | Prop. Queued | Effective Stop Rate | Aver. No. Cycles | Average Speed mph |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| East: SR 1750 (Estes Drive) | | | | | | | | | | | | |
| 6 | T1 | 1271 | 3.0 | 0.513 | 0.5 | LOS A | 4.4 | 112.1 | 0.31 | 0.14 | 0.31 | 37.0 |
| 16 | R2 | 52 | 3.0 | 0.513 | 0.5 | LOS A | 4.4 | 112.1 | 0.31 | 0.14 | 0.31 | 35.7 |
| Approach | | 1323 | 3.0 | 0.513 | 0.5 | LOS A | 4.4 | 112.1 | 0.31 | 0.14 | 0.31 | 36.9 |
| North: Future Access #2 | | | | | | | | | | | | |
| 7 | L2 | 39 | 3.0 | 0.145 | 5.8 | LOS A | 0.5 | 13.9 | 0.67 | 0.67 | 0.67 | 33.2 |
| 14 | R2 | 27 | 3.0 | 0.145 | 5.8 | LOS A | 0.5 | 13.9 | 0.67 | 0.67 | 0.67 | 32.3 |
| Approach | | 66 | 3.0 | 0.145 | 5.8 | LOS A | 0.5 | 13.9 | 0.67 | 0.67 | 0.67 | 32.8 |
| West: SR 1750 (Estes Drive) | | | | | | | | | | | | |
| 5 | L2 | 56 | 3.0 | 0.416 | 0.3 | LOS A | 3.5 | 89.0 | 0.25 | 0.10 | 0.25 | 37.0 |
| 2 | T1 | 1030 | 3.0 | 0.416 | 0.3 | LOS A | 3.5 | 89.3 | 0.25 | 0.10 | 0.25 | 37.1 |
| Approach | | 1086 | 3.0 | 0.416 | 0.3 | LOS A | 3.5 | 89.3 | 0.25 | 0.10 | 0.25 | 37.1 |
| All Vehicles | | 2474 | 3.0 | 0.513 | 0.6 | LOS A | 4.4 | 112.1 | 0.30 | 0.13 | 0.30 | 36.9 |

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option is selected.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

# Appendix E:

# Approved Developments

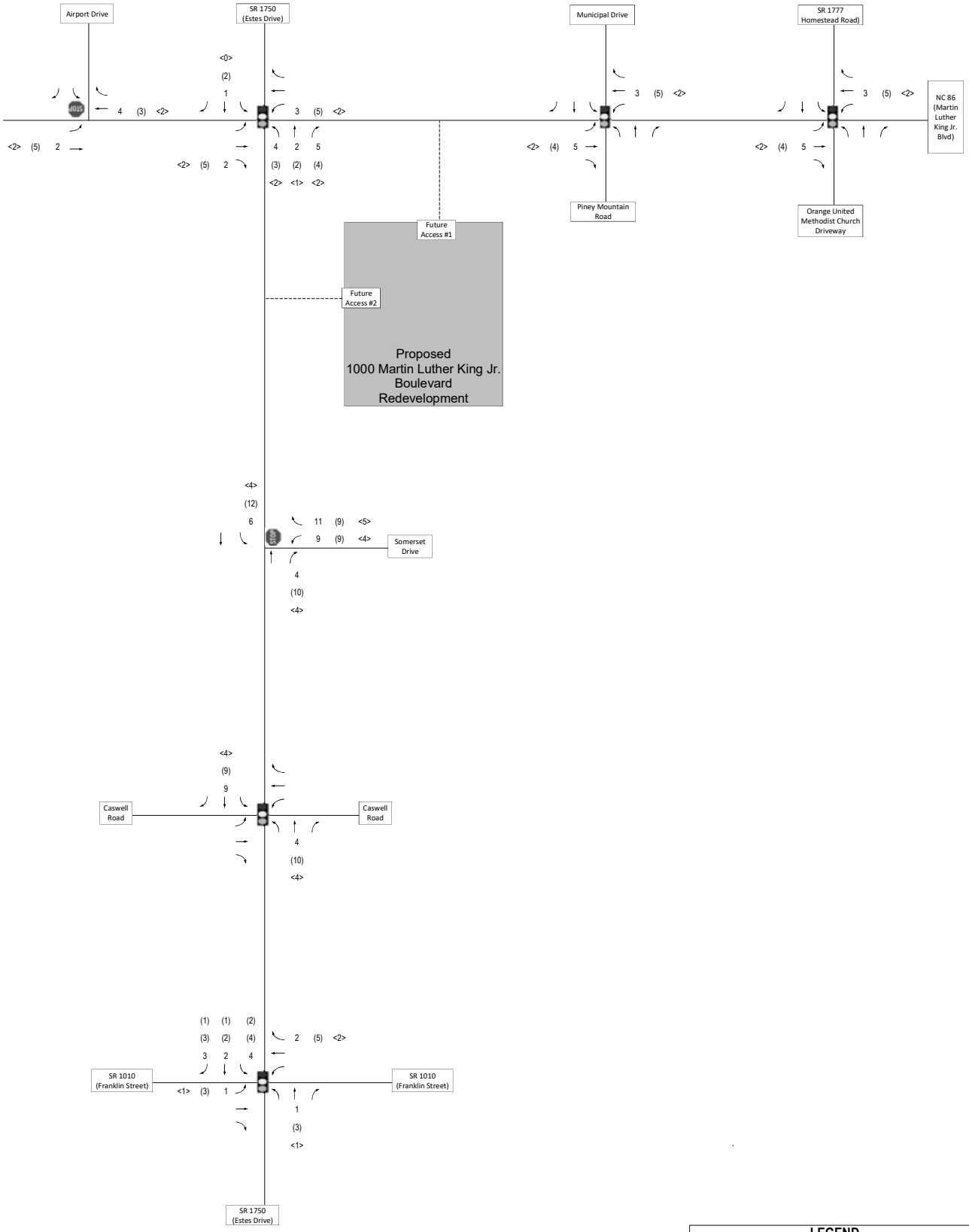



| LEGEND | |
|---|---|
| ——— | Existing Roadway |
| - - - - - | Future Roadway |
| STOP | Existing Stop Controlled Approach |
| | Existing Signalized Intersection |
| ——→ | Turning Movement |
| XX | AM Peak Hour Turning Movement Volume |
| (XX) | PM Peak Hour Turning Movement Volume |
| <XX> | Noon Peak Hour Turning Movement Volume |

not to scale

**Figure E-1**
**1200 MLK Redevelopment TIA Peak Hour Site Trips**

**1000 Martin Luther King Jr Boulevard**
**Traffic Impact Analysis**
**Chapel Hill, NC**

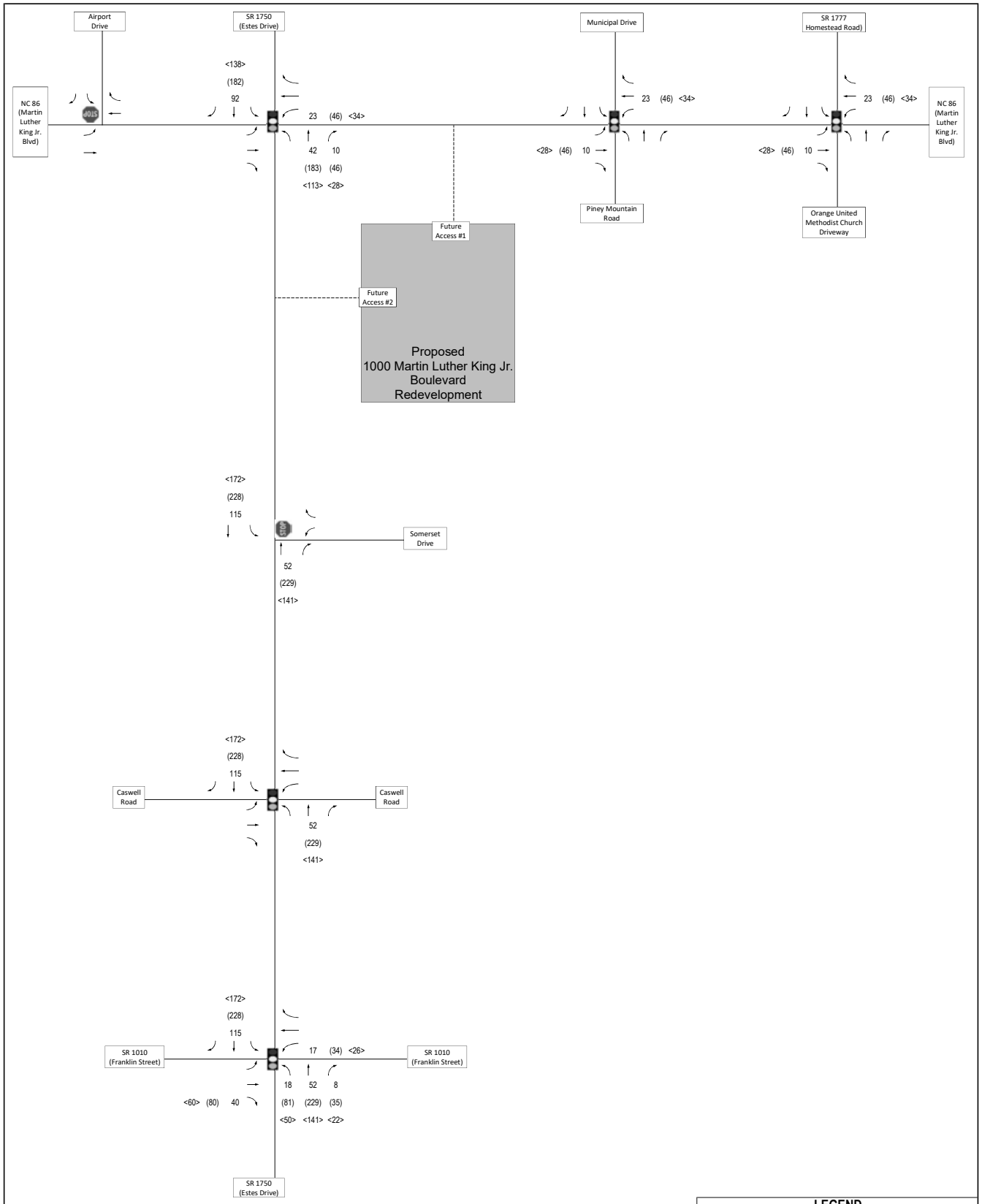



| LEGEND | |
|---|---|
| ——— | Existing Roadway |
| - - - - - | Future Roadway |
| STOP | Existing Stop Controlled Approach |
| | Existing Signalized Intersection |
| ——→ | Turning Movement |
| XX | AM Peak Hour Turning Movement Volume |
| (XX) | PM Peak Hour Turning Movement Volume |
| <XX> | Noon Peak Hour Turning Movement Volume |

not to scale

**Figure E-2:**
**Retirement Residence at Somerset Drive Peak Hour Site Trips**

**1000 Martin Luther King Jr Boulevard**
**Traffic Impact Analysis**
**Chapel Hill, NC**




| LEGEND | |
|---|---|
| ——— | Existing Roadway |
| - - - - - | Future Roadway |
| STOP | Existing Stop Controlled Approach |
| | Existing Signalized Intersection |
| ——→ | Turning Movement |
| XX | AM Peak Hour Turning Movement Volume |
| (XX) | PM Peak Hour Turning Movement Volume |
| <XX> | Noon Peak Hour Turning Movement Volume |

not to scale

**Figure E-3:**
**University Place TIA Peak Hour Site Trips**

**1000 Martin Luther King Jr Boulevard**
**Traffic Impact Analysis**
**Chapel Hill, NC**