



LSC TRANSPORTATION CONSULTANTS, INC.

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January 31, 2020

Ms. Alicia Rhymer  
United Properties  
1331 17<sup>th</sup> Street, Suite 604  
Denver, CO 80202

Re: Louisville Industrial Park  
Traffic Impact Analysis  
Louisville, CO  
LSC #180012

Dear Ms. Rhymer:

In response to your request, LSC Transportation Consultants, Inc. has prepared this traffic impact analysis for the proposed Louisville Industrial Park development. As shown on Figure 1, the site is located north of W. Dillon Road and east of S. 96<sup>th</sup> Street in Louisville, Colorado. This site was most recently studied in the April 16, 2018 *Ascent Church Traffic Impact Analysis* by LSC.

## REPORT CONTENTS

The report contains the following: the existing roadway and traffic conditions in the vicinity of the site including the lane geometries, traffic controls, posted speed limits, etc.; the existing weekday and Sunday peak-hour traffic volumes; the existing daily traffic volumes in the area; the typical weekday and Sunday site-generated traffic volume projections for the site; the assignment of the projected traffic volumes to the area roadways; the projected short-term and long-term background and resulting total traffic volumes on the area roadways; and recommendations to mitigate the impacts of the site.

## LAND USE AND ACCESS

The site is proposed to include a 20,000 square-foot church, a 600-student private school (K-8), about 347,400 square feet of light industrial use, a convenience market and gas station with 10 fueling pumps, a one-tunnel carwash, and about 5,000 square feet of retail space. Access is proposed from several locations as shown in the site plan in Figure 2.

## ROADWAY AND TRAFFIC CONDITIONS

### Area Roadways

The major roadways in the site's vicinity are shown on Figure 1 and are described below.

- **S. 96<sup>th</sup> Street** is a north-south, two-lane arterial roadway west of the site. The intersection with W. Dillon Road has four through lanes and is signalized with auxiliary turn lanes. The

posted speed limit in the vicinity of the site is 40 mph. It is planned to be a four-lane roadway adjacent to the site by 2040.

- **W. Dillon Road** is an east-west, two-lane arterial roadway south of the site. The intersection with S. 96<sup>th</sup> Street has four through lanes and is signalized with auxiliary turn lanes. The posted speed limit in the vicinity of the site is 45 mph. It is planned to be a four-lane roadway by 2040.

### Existing Traffic Conditions

Figures 3a and 3b show the existing weekday and Sunday traffic volumes, existing lane geometry, and the existing traffic controls in the vicinity of the site. The Sunday peak-hour and average daily traffic volumes are from the attached traffic counts conducted by Counter Measures in January, 2020. The weekday volumes are from August, 2019 and were included in the September, 2019 *Nawatny Ridge Traffic and Mobility Study* (Nawatny TIA) by Fox, Tuttle, Hernandez.

### 2024 and 2040 Background Traffic

Figures 4a and 4b shows the estimated 2024 weekday and Sunday background traffic and Figures 5a and 5b show the estimated 2040 weekday and Sunday background traffic. The weekday background traffic volumes are consistent with those in the September, 2019 *Nawatny Ridge Traffic and Mobility Study* (Nawatny TIA) by Fox, Tuttle, Hernandez. The growth rate assumed in the Sunday scenario is similar to the weekday scenario.

### Existing, 2024, and 2040 Background Levels of Service

Level of service (LOS) is a quantitative measure of the level of congestion or delay at an intersection. Level of service is indicated on a scale from “A” to “F.” LOS A is indicative of little congestion or delay and LOS F is indicative of a high level of congestion or delay. Attached are specific level of service definitions for signalized and unsignalized intersections.

The intersections in the study area were analyzed to determine the existing, 2024, and 2040 background levels of service using Synchro. Table 1 shows the level of service analysis results. The level of service reports are attached.

- **S. 96<sup>th</sup> Avenue/W. Dillon Road:** This signalized intersection currently operates at an overall LOS “C” during the weekday morning peak-hour, LOS “D” during the weekday afternoon peak-hour, and LOS “C” during the Sunday peak-hour and is expected to do so through 2040 with the recommended improvements.

### TRIP GENERATION

Table 2 shows the estimated average weekday, weekday morning peak-hour, weekday afternoon peak-hour, average Sunday and Sunday peak-hour trip generation potential for the proposed site based on the rates from *Trip Generation, 10<sup>th</sup> Edition, 2017* by the Institute of Transportation Engineers (ITE).

The site is projected to generate about 6,248 external vehicle-trips on the average weekday, with about half entering and half exiting during a 24-hour period. During the morning peak-hour, which generally occurs for one hour between 6:30 and 8:30 a.m., about 680 vehicles would

enter and about 438 vehicles would exit the site. During the afternoon peak-hour, which generally occurs for one hour between 4:00 and 6:00 p.m., about 286 vehicles would enter and about 464 vehicles would exit. These estimates assume a pass-by trip reduction of 56 percent for the gas station trips and 34 percent of the retail trips.

The site is projected to generate about 2,036 external vehicle-trips on the average Sunday, with about half entering and half exiting during a 24-hour period. During the Sunday peak-hour, which generally occurs for one hour between 10:30 and 11:30 a.m., about 235 vehicles would enter and about 244 vehicles would exit the site. These estimates assume a pass-by trip reduction of 56 percent for the gas station trips and 34 percent of the retail trips.

### **TRIP DISTRIBUTION**

Figure 6 shows the estimated directional distribution of the site-generated traffic volumes on the area roadways. The estimates were based on the location of the site with respect to the regional population, employment, and activity centers; and the site's proposed land use.

### **TRIP ASSIGNMENT**

Figure 7a shows the estimated weekday primary site-generated traffic volumes based on the directional distribution percentages (from Figure 6) and the weekday trip generation estimate (from Table 2).

Figure 7b shows the estimated weekday pass-by site-generated traffic volumes based on the passby trip generation estimate (from Table 2).

Figure 8a shows the estimated Sunday primary site-generated traffic volumes based on the directional distribution percentages (from Figure 6) and the Sunday trip generation estimate (from Table 2).

Figure 8b shows the estimated Sunday pass-by site-generated traffic volumes based on the passby trip generation estimate (from Table 2).

### **2024 AND 2040 TOTAL TRAFFIC**

Figure 9a shows the 2024 total weekday traffic which is the sum of the 2024 weekday background traffic volumes (from Figure 4a) and the weekday site-generated traffic volumes (from Figures 7a and 7b). Figure 9a also shows the recommended 2024 lane geometry and traffic control.

Figure 9b shows the 2024 total Sunday traffic which is the sum of the 2024 Sunday background traffic volumes (from Figure 4b) and the Sunday site-generated traffic volumes (from Figures 8a and 8b). Figure 9b also shows the recommended 2024 lane geometry and traffic control.

Figure 10a shows the 2040 total weekday traffic which is the sum of the 2040 weekday background traffic volumes (from Figure 5a) and the weekday site-generated traffic volumes (from Figures 7a and 7b). Figure 10a also shows the recommended 2040 lane geometry and traffic control.

Figure 10b shows the 2040 total Sunday traffic which is the sum of the 2040 Sunday background traffic volumes (from Figure 5b) and the Sunday site-generated traffic volumes (from Figures 8a and 8b). Figure 10b also shows the recommended 2024 lane geometry and traffic control.

## **PROJECTED LEVELS OF SERVICE**

The intersections in Figures 9a through 10b were analyzed to determine the 2024 and 2040 total traffic levels of service. Table 1 shows the level of service analysis results. The level of service reports are attached.

- **S. 96<sup>th</sup> Street/W. Dillon Road:** This signalized intersection is expected to operate at an overall LOS “D” during the weekday morning and afternoon peak-hours and LOS “C” during the Sunday peak-hour through 2040 with the recommended improvements.
- **S. 96<sup>th</sup> Street/South RIRO Site Access:** All movements at this unsignalized intersection are expected to operate at LOS “D” or better during all peak-hours through 2040.
- **S. 96<sup>th</sup> Street/North Three-Quarter Site Access:** All movements at this unsignalized intersection are expected to operate at LOS “C” or better during all peak-hours through 2040.
- **S. 96<sup>th</sup> Street/Middle Access:** This signalized intersection is expected to operate at LOS “C” or better during all peak-hours through 2040. A traffic signal warrant is likely to be met with development of the convenience market and gas station and about 100,000 square feet of light industrial space.
- **W. Dillon Road/East RIRO Site Access:** All movements at this unsignalized intersection are expected to operate at LOS “C” or better during all peak-hours through 2040.

## **CONCLUSIONS AND RECOMMENDATIONS**

### **Trip Generation**

1. The site is projected to generate about 6,248 external vehicle-trips on the average weekday, with about half entering and half exiting during a 24-hour period. During the morning peak-hour, about 680 vehicles would enter and about 438 vehicles would exit the site. During the afternoon peak-hour, about 286 vehicles would enter and about 464 vehicles would exit. These estimates assume a pass-by trip reduction of 56 percent for the gas station trips and 34 percent of the retail trips.
2. The site is projected to generate about 2,036 external vehicle-trips on the average Sunday, with about half entering and half exiting during a 24-hour period. During the Sunday - peak-hour, about 235 vehicles would enter and about 244 vehicles would exit the site. These estimates assume a pass-by trip reduction of 56 percent for the gas station trips and 34 percent of the retail trips.

### **Projected Levels of Service**

3. The signalized S. 96<sup>th</sup> Street/W. Dillon Road intersection is expected to operate at LOS “D” or better during all peak-hours through 2040 with the recommended improvements.

4. The signalized S. 96<sup>th</sup> Street/Middle Site Access intersection is expected to operate at LOS "C" or better during all peak-hours through 2040 with the recommended improvements. A traffic signal warrant is likely to be met with development of the convenience market and gas station and about 100,000 square feet of light industrial space.
5. All movements at the unsignalized intersections analyzed are expected to operate at LOS "D" or better during all peak-hours through 2040.

### Conclusions

6. The impact of the site can be accommodated by the existing and planned roadway improvements with the following recommended improvements

### Recommendations

7. A second left-turn lane on each approach to the S. 96<sup>th</sup> Street/W. Dillon intersection is expected to be completed by the time the site reaches buildout in 2024 per the 2022 background traffic recommendations of the *Nawatny TIA* by Fox, Tuttle, Hernandez.
8. The recommend turn lanes at the site access intersections are shown in Figure 9a.
9. The westbound approach of the Full Movement Site Access to S. 96<sup>th</sup> Street should have separate left- and right-turn lanes. The westbound left-turn lane should be about 175 feet long by the time the site reaches buildout to accommodate buildout weekday afternoon peak-hour conditions.

\* \* \* \* \*

We trust our findings will assist you in gaining approval of the proposed Louisville Industrial Park development. Please contact me if you have any questions or need further assistance.

Respectfully submitted,

LSC Transportation Consultants, Inc.

By:

Christopher S. McGranahan, P.E., PTOE

CSM/wc



1-31-20

Enclosure: Tables 1 and 2  
Figures 1 - 10b  
Existing Traffic Counts  
Level of Service Definitions  
Level of Service Printouts

**Table 1**  
**Intersection Levels of Service Analysis**  
**Louisville Industrial Park**  
**Louisville, CO**  
**LSC #180012; January, 2020**

| Intersection Location                 | Traffic Control | Existing Traffic    |                     |                         | 2024 Background Traffic |                     |                         | 2024 Total Traffic  |                     |                         | 2040 Background Traffic |                     |                         | 2040 Total Traffic  |                     |                         |
|---------------------------------------|-----------------|---------------------|---------------------|-------------------------|-------------------------|---------------------|-------------------------|---------------------|---------------------|-------------------------|-------------------------|---------------------|-------------------------|---------------------|---------------------|-------------------------|
|                                       |                 | Level of Service AM | Level of Service PM | Level of Service Sunday | Level of Service AM     | Level of Service PM | Level of Service Sunday | Level of Service AM | Level of Service PM | Level of Service Sunday | Level of Service AM     | Level of Service PM | Level of Service Sunday | Level of Service AM | Level of Service PM | Level of Service Sunday |
| <u>S. 96th Street/W. Dillon Road</u>  | Signalized      |                     |                     |                         |                         |                     |                         |                     |                     |                         |                         |                     |                         |                     |                     |                         |
| EB Left                               |                 | E                   | D                   | A                       | D                       | D                   | E                       | E                   | D                   | D                       | D                       | D                   | D                       | D                   | D                   | D                       |
| EB Through                            |                 | D                   | E                   | B                       | D                       | D                   | D                       | D                   | D                   | D                       | D                       | D                   | D                       | D                   | D                   | D                       |
| EB Right                              |                 | A                   | B                   | A                       | A                       | B                   | A                       | A                   | B                   | A                       | B                       | C                   | A                       | B                   | D                   | A                       |
| WB Left                               |                 | C                   | F                   | A                       | D                       | E                   | E                       | D                   | E                   | E                       | D                       | E                   | D                       | E                   | E                   | D                       |
| WB Through                            |                 | D                   | D                   | B                       | D                       | D                   | D                       | D                   | D                   | D                       | D                       | D                   | D                       | D                   | D                   | D                       |
| WB Right                              |                 | A                   | A                   | A                       | A                       | A                   | A                       | A                   | A                   | A                       | A                       | B                   | A                       | A                   | B                   | A                       |
| NB Left                               |                 | C                   | B                   | C                       | E                       | E                   | D                       | E                   | E                   | D                       | E                       | E                   | D                       | E                   | E                   | D                       |
| NB Through                            |                 | C                   | C                   | D                       | C                       | C                   | B                       | C                   | C                   | B                       | C                       | D                   | B                       | D                   | D                   | B                       |
| NB Right                              |                 | A                   | A                   | A                       | A                       | A                   | A                       | A                   | A                   | A                       | A                       | A                   | A                       | A                   | A                   | A                       |
| SB Left                               |                 | B                   | C                   | C                       | E                       | E                   | D                       | D                   | E                   | E                       | E                       | E                   | E                       | E                   | E                   | D                       |
| SB Through                            |                 | C                   | C                   | D                       | C                       | C                   | B                       | D                   | C                   | B                       | D                       | C                   | B                       | D                   | C                   | B                       |
| SB Right                              |                 | A                   | A                   | A                       | A                       | A                   | A                       | B                   | A                   | A                       | A                       | A                   | A                       | A                   | A                   | A                       |
| Entire Intersection Delay (sec./veh.) |                 | 28.4                | 40.7                | 24.1                    | 32.6                    | 35.5                | 30.2                    | 36.3                | 36.5                | 30.4                    | 34.9                    | 42.0                | 31.3                    | 39.6                | 45.1                | 31.6                    |
| Entire Intersection LOS               |                 | C                   | D                   | C                       | C                       | D                   | C                       | D                   | D                   | C                       | C                       | D                   | C                       | D                   | D                   | C                       |
| <u>S. 96th Street/South Access</u>    | TWSC            |                     |                     |                         |                         |                     |                         |                     |                     |                         |                         |                     |                         |                     |                     |                         |
| WB Right                              | RIRO            | --                  | --                  | --                      | --                      | --                  | --                      | C                   | C                   | B                       | --                      | --                  | --                      | C                   | D                   | B                       |
| Critical Movement Delay (sec/veh)     |                 | --                  | --                  | --                      | --                      | --                  | --                      | 15.4                | 18.9                | 10.5                    | --                      | --                  | --                      | 18.5                | 31.0                | 11.3                    |
| <u>S. 96th Street/North Access</u>    | TWSC            |                     |                     |                         |                         |                     |                         |                     |                     |                         |                         |                     |                         |                     |                     |                         |
| WB Right                              | Three-          | --                  | --                  | --                      | --                      | --                  | --                      | B                   | B                   | A                       | --                      | --                  | --                      | B                   | C                   | A                       |
| SB Left                               | Quarter         | --                  | --                  | --                      | --                      | --                  | --                      | A                   | B                   | A                       | --                      | --                  | --                      | B                   | B                   | A                       |
| Critical Movement Delay (sec/veh)     |                 | --                  | --                  | --                      | --                      | --                  | --                      | 11.0                | 13.3                | 9.3                     | --                      | --                  | --                      | 13.1                | 21.0                | 9.6                     |
| <u>S. 96th Street/Middle Access</u>   | Signalized      |                     |                     |                         |                         |                     |                         |                     |                     |                         |                         |                     |                         |                     |                     |                         |
| WB Left                               |                 | --                  | --                  | --                      | --                      | --                  | --                      | C                   | D                   | C                       | --                      | --                  | --                      | C                   | D                   | C                       |
| WB Right                              |                 | --                  | --                  | --                      | --                      | --                  | --                      | A                   | A                   | A                       | --                      | --                  | --                      | A                   | A                   | A                       |
| NB Through                            |                 | --                  | --                  | --                      | --                      | --                  | --                      | C                   | C                   | B                       | --                      | --                  | --                      | C                   | D                   | B                       |
| NB Right                              |                 | --                  | --                  | --                      | --                      | --                  | --                      | A                   | A                   | A                       | --                      | --                  | --                      | A                   | A                   | B                       |
| SB Left                               |                 | --                  | --                  | --                      | --                      | --                  | --                      | B                   | A                   | A                       | --                      | --                  | --                      | B                   | A                   | A                       |
| SB Through                            |                 | --                  | --                  | --                      | --                      | --                  | --                      | A                   | A                   | A                       | --                      | --                  | --                      | A                   | A                   | A                       |
| Entire Intersection Delay (sec./veh.) |                 | --                  | --                  | --                      | --                      | --                  | --                      | 14.9                | 19.7                | 9.3                     | --                      | --                  | --                      | 18.8                | 33.1                | 10.1                    |
| Entire Intersection LOS               |                 | --                  | --                  | --                      | --                      | --                  | --                      | B                   | B                   | A                       | --                      | --                  | --                      | B                   | C                   | B                       |
| <u>W. Dillon Road/East Access</u>     | TWSC            |                     |                     |                         |                         |                     |                         |                     |                     |                         |                         |                     |                         |                     |                     |                         |
| SB Right                              | RIRO            | --                  | --                  | --                      | --                      | --                  | --                      | B                   | B                   | B                       | --                      | --                  | --                      | B                   | C                   | B                       |
| Critical Movement Delay (sec/veh)     |                 | --                  | --                  | --                      | --                      | --                  | --                      | 12.6                | 14.1                | 10.1                    | --                      | --                  | --                      | 13.6                | 15.3                | 11.0                    |

**Table 2**  
**ESTIMATED TRAFFIC GENERATION**  
**Louisville Industrial Park**  
**Louisville, CO**  
**LSC #180012; January, 2020**

| Land Use                                            | Gross Floor Area         | Generation Rates per Unit <sup>(1)</sup> |                   |        |                   |        | Vehicle-Trips Generated |                   |            |                   |            |
|-----------------------------------------------------|--------------------------|------------------------------------------|-------------------|--------|-------------------|--------|-------------------------|-------------------|------------|-------------------|------------|
|                                                     |                          | Average Daily Traffic                    | Morning Peak-Hour |        | Evening Peak-Hour |        | Average Weekday Traffic | Morning Peak-Hour |            | Evening Peak-Hour |            |
|                                                     |                          |                                          | AM In             | AM Out | PM In             | PM Out |                         | AM In             | AM Out     | PM In             | PM Out     |
| Church - Weekday <sup>(2)</sup>                     | 20.00 KSF <sup>(3)</sup> | 6.95                                     | 0.198             | 0.132  | 0.221             | 0.270  | 139                     | 4                 | 3          | 4                 | 5          |
| School <sup>(4)</sup>                               | 600 students             | 4.11                                     | 0.501             | 0.410  | 0.120             | 0.140  | 2,466                   | 300               | 246        | 72                | 84         |
| Light Industrial <sup>(5)</sup>                     | 347.40 KSF               | 4.96 *                                   | 0.616             | 0.084  | 0.082             | 0.548  | 1,723                   | 214               | 29         | 28                | 190        |
| Super Convenience Market/Gas Station <sup>(6)</sup> | 10.00 VFP <sup>(7)</sup> | 230.52 *                                 | 14.040            | 14.040 | 11.480            | 11.480 | 2,305                   | 140               | 140        | 115               | 115        |
| Car Wash <sup>(8)</sup>                             | 1.00 Tunnel              | 387.5                                    | 19.375            | 19.375 | 38.750            | 38.750 | 388                     | 19                | 19         | 39                | 39         |
| Shopping Center <sup>(9)</sup>                      | 5.00 KSF                 | 156.80                                   | 0.583             | 0.357  | 5.684             | 6.157  | 784                     | 3                 | 2          | 28                | 31         |
| <b>Weekday Gross Trip Generation Potential =</b>    |                          |                                          |                   |        |                   |        | <b>7,805</b>            | <b>680</b>        | <b>438</b> | <b>286</b>        | <b>464</b> |
| <i>Passby Trip Reduction <sup>(10)</sup> =</i>      |                          |                                          |                   |        |                   |        | <i>1,557</i>            | <i>80</i>         | <i>80</i>  | <i>75</i>         | <i>75</i>  |
| <b>Weekday Net Trip Generation Potential =</b>      |                          |                                          |                   |        |                   |        | <b>6,248</b>            | <b>600</b>        | <b>358</b> | <b>211</b>        | <b>389</b> |

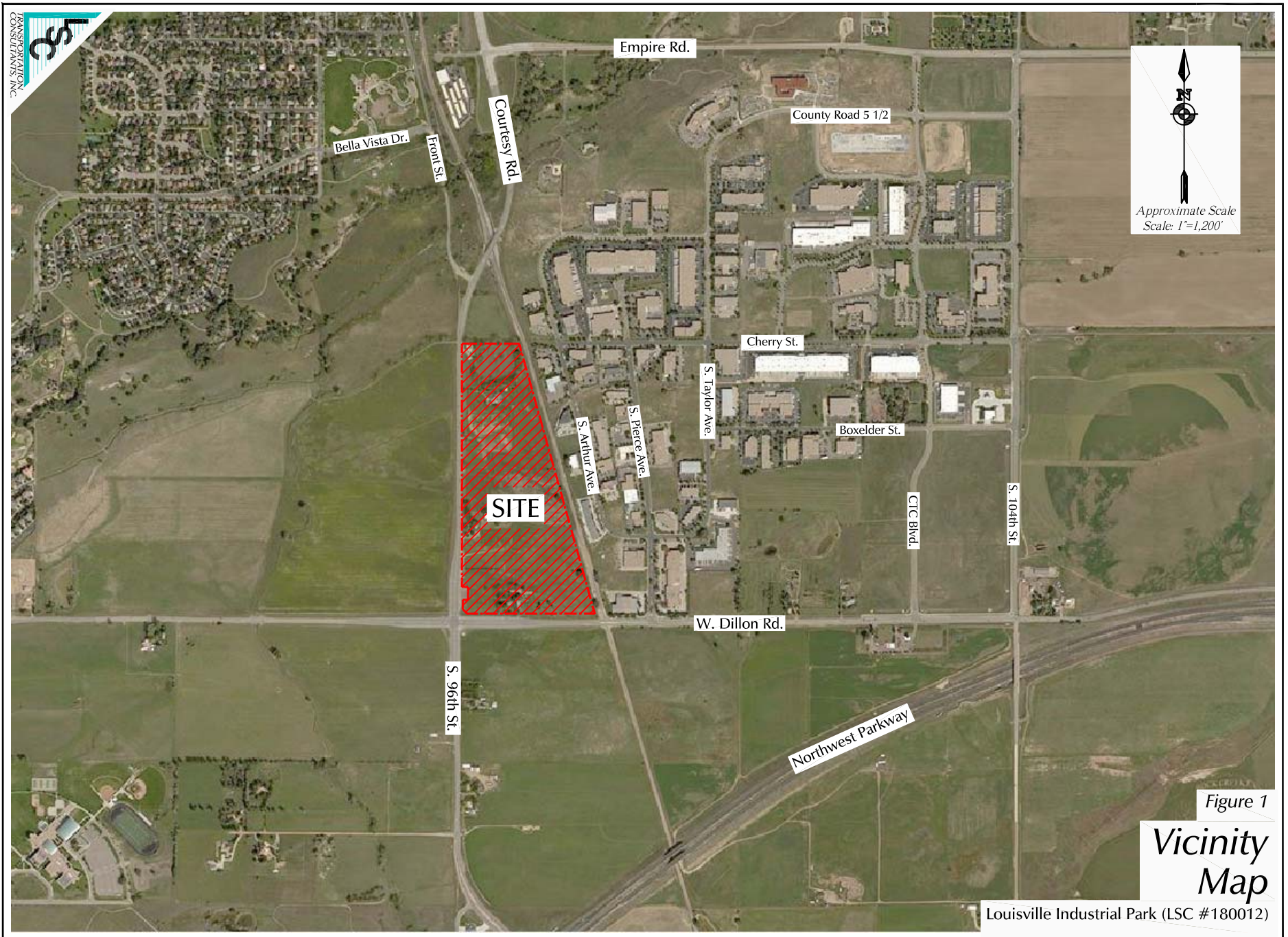
| Land Use                                            | Gross Floor Area         | Generation Rates per Unit <sup>(1)</sup> |                   |        | Vehicle-Trips Generated |                  |            |
|-----------------------------------------------------|--------------------------|------------------------------------------|-------------------|--------|-------------------------|------------------|------------|
|                                                     |                          | Average Sunday Traffic                   | Morning Peak-Hour |        | Average Sunday Traffic  | Sunday Peak-Hour |            |
|                                                     |                          |                                          | AM In             | AM Out |                         | AM In            | AM Out     |
| Church - Sunday <sup>(2)</sup>                      | 20.00 KSF <sup>(3)</sup> | 27.63                                    | 4.795             | 5.195  | 553                     | 96               | 104        |
| School <sup>(4)</sup>                               | 600 students             | 0                                        | 0.000             | 0.000  | 0                       | 0                | 0          |
| Light Industrial <sup>(5)</sup>                     | 347.40 KSF               | 0                                        | 0.000             | 0.000  | 0                       | 0                | 0          |
| Super Convenience Market/Gas Station <sup>(6)</sup> | 10.00 VFP <sup>(7)</sup> | 233.34                                   | 9.304             | 9.304  | 2,333                   | 93               | 93         |
| Car Wash <sup>(8)</sup>                             | 1.00 Tunnel              | 387.5                                    | 38.750            | 38.750 | 388                     | 39               | 39         |
| Shopping Center <sup>(9)</sup>                      | 5.00 KSF                 | 21.10                                    | 1.367             | 1.423  | 106                     | 7                | 7          |
| <b>Sunday Gross Trip Generation Potential =</b>     |                          |                                          |                   |        | <b>3,379</b>            | <b>235</b>       | <b>244</b> |
| <i>Passby Trip Reduction <sup>(10)</sup> =</i>      |                          |                                          |                   |        | <i>1,343</i>            | <i>55</i>        | <i>55</i>  |
| <b>Sunday Net Trip Generation Potential =</b>       |                          |                                          |                   |        | <b>2,036</b>            | <b>180</b>       | <b>189</b> |

**Notes:**

- (1) Source: *Trip Generation*, Institute of Transportation Engineers, 10th Edition, 2017.  
(2) ITE Land Use No. 560 - Church  
(3) KSF = 1,000 square feet  
(4) ITE Land Use No. 534 - Private School (K-8)  
(5) ITE Land Use No. 110 - General Light Industrial; average rates  
(6) ITE Land Use No. 960 - Super Convenience Market/Gas Station - no Sunday rates available so 80% of Saturday rates were used.

- (7) VFP = Vehicle Fueling Positions  
(8) ITE Land Use No. 948 - Automatic Car Wash; AM peak assumed 1/2 of the PM rate; Daily weekday rate = 5 x PM rate; Sunday rate = weekday daily and PM rates.  
(9) ITE Land Use No. 820 - Shopping Center  
(10) 56% of gas station trips and 34% of retail trips are expected to be passby trips per the ITE Trip Generation Handbook, 3rd Edition.









Approximate Scale  
Scale: NTS

Three-Quarter  
Movement Site Access

Full Movement  
Site Access  
(Future Traffic Signal)

RIRO Site Access

RIRO Site Access

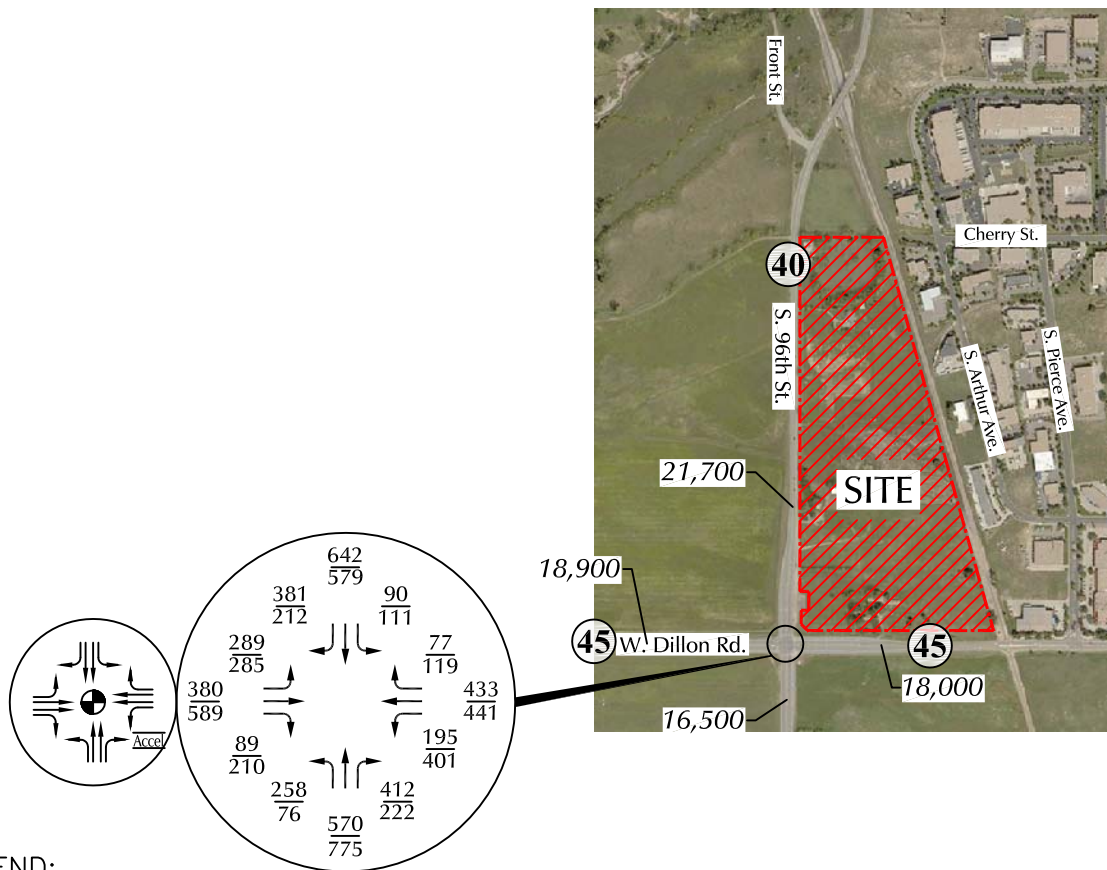
Figure 2

## Site Plan

Louisville Industrial Park (LSC #180012)



Approximate Scale  
Scale: 1"=1,200'



LEGEND:

- ⊥ = Stop Sign
- ⦿ = Traffic Signal
- ⓪ = Posted Speed Limit
- $\frac{26}{35}$  = Weekday AM Peak Hour Traffic / Weekday PM Peak Hour Traffic
- 500 = Weekday Daily Traffic

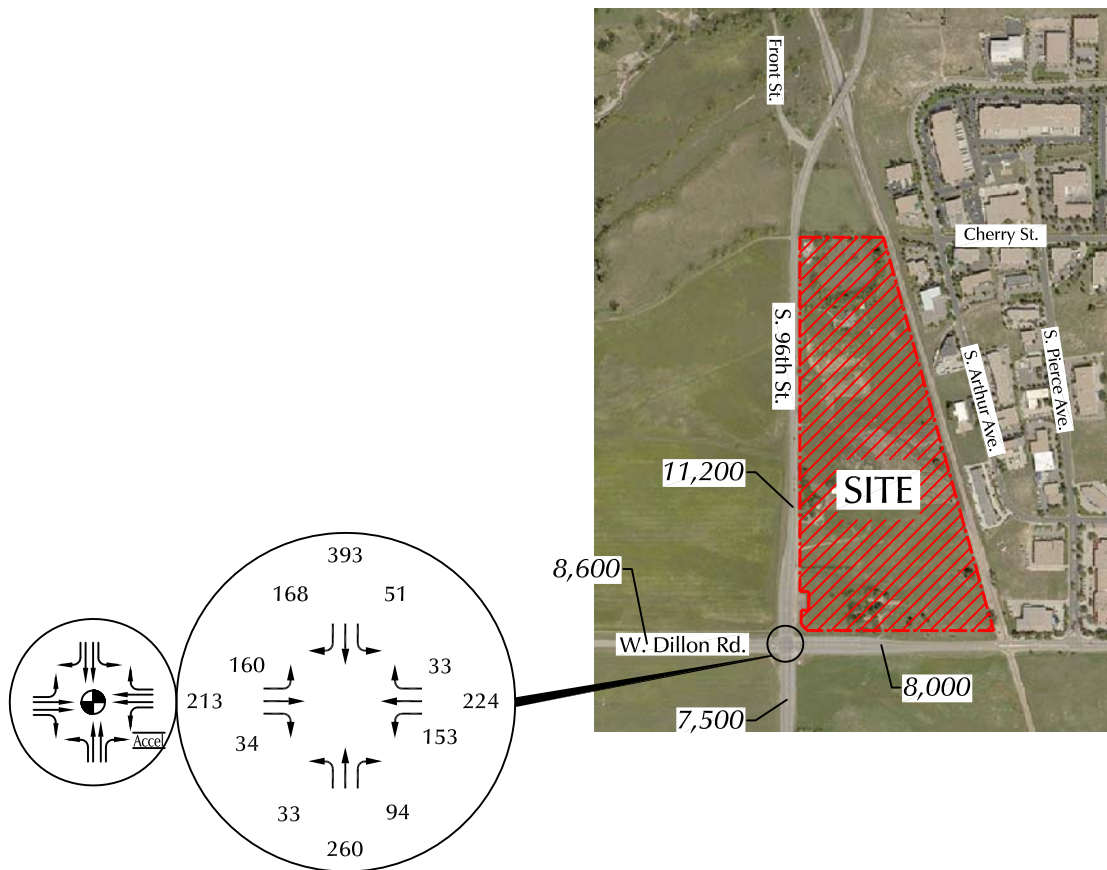
## Existing Weekday Traffic, Lane Geometry and Traffic Control

Louisville Industrial Park (LSC #180012)

Figure 3a



Approximate Scale  
Scale: 1"=1,200'



LEGEND:

- ⌄ = Stop Sign
- ⊕ = Traffic Signal
- 26 = Sunday AM Peak Hour Traffic
- 500 = Sunday Daily Traffic

## Existing Sunday Traffic, Lane Geometry and Traffic Control

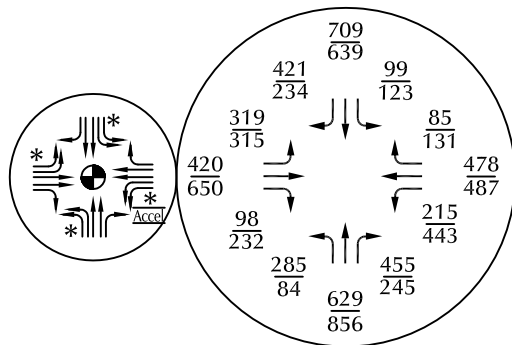
Louisville Industrial Park (LSC #180012)

Figure 3b



Approximate Scale  
Scale: 1"=1,200'

\* Recommendation for dual left-turn lanes on each approach was recommended in the 2022 and 2040 background traffic conditions from the September, 2019 Nawatny Ridge Traffic and Mobility Study by Fox, Tuttle Hernandez.



Note: Projections are consistent with those in the September, 2019 Nawatny Ridge Traffic and Mobility Study by Fox, Tuttle Hernandez.

#### LEGEND:

- ⊥ = Stop Sign
- ⊙ = Traffic Signal
- $\frac{26}{35}$  = Weekday AM Peak Hour Traffic / Weekday PM Peak Hour Traffic
- 500 = Weekday Daily Traffic

## Year 2024 Weekday Background Traffic, Lane Geometry and Traffic Control

Louisville Industrial Park (LSC #180012)

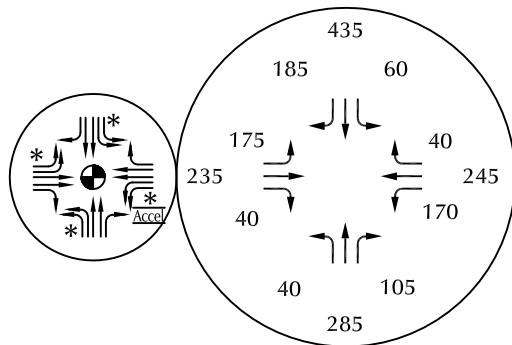
Figure 4a





Approximate Scale  
Scale: 1"=1,200'

\* Recommendation for dual left-turn lanes on each approach was recommended in the 2022 and 2040 background traffic conditions from the September, 2019 Nawatny Ridge Traffic and Mobility Study by Fox, Tuttle Henrandez.



Note: Growth rate assumed to be similar to the weekday scenario.

# LEGEND:

- T = Stop Sign
- ⊙ = Traffic Signal
- 26 = Sunday AM Peak Hour Traffic
- 500 = Sunday Daily Traffic

## Year 2024 Sunday Background Traffic, Lane Geometry and Traffic Control

Louisville Industrial Park (LSC #180012)

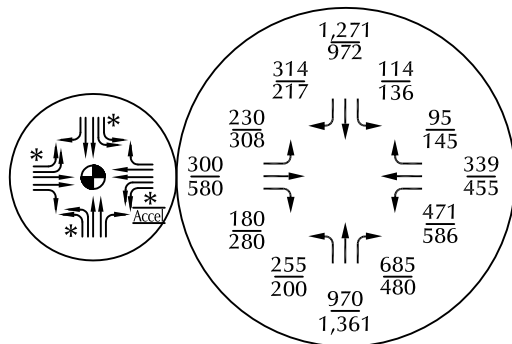
Figure 4b





Approximate Scale  
Scale: 1"=1,200'

\* Recommendation for dual left-turn lanes on each approach was recommended in the 2022 and 2040 background traffic conditions from the September, 2019 Nawatny Ridge Traffic and Mobility Study by Fox, Tuttle Hernandez.



Note: Projections are consistent with those in the September, 2019 Nawatny Ridge Traffic and Mobility Study by Fox Tuttle Hernandez.

#### LEGEND:

- ⊥ = Stop Sign
- ⊙ = Traffic Signal
- $\frac{26}{35}$  = Weekday AM Peak Hour Traffic / Weekday PM Peak Hour Traffic
- 500 = Weekday Daily Traffic

## Year 2040 Weekday Background Traffic, Lane Geometry and Traffic Control

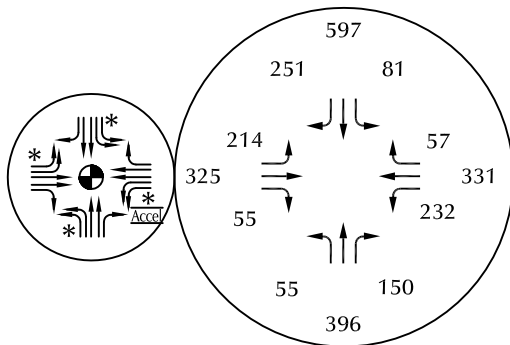
Louisville Industrial Park (LSC #180012)

Figure 5a



Approximate Scale  
Scale: 1"=1,200'

\* Recommendation for dual left-turn lanes on each approach was recommended in the 2022 and 2040 background traffic conditions from the September, 2019 Nawatny Ridge Traffic and Mobility Study by Fox, Tuttle Henandez.



Note: Growth rates are assumed to be similar to the weekday scenario.

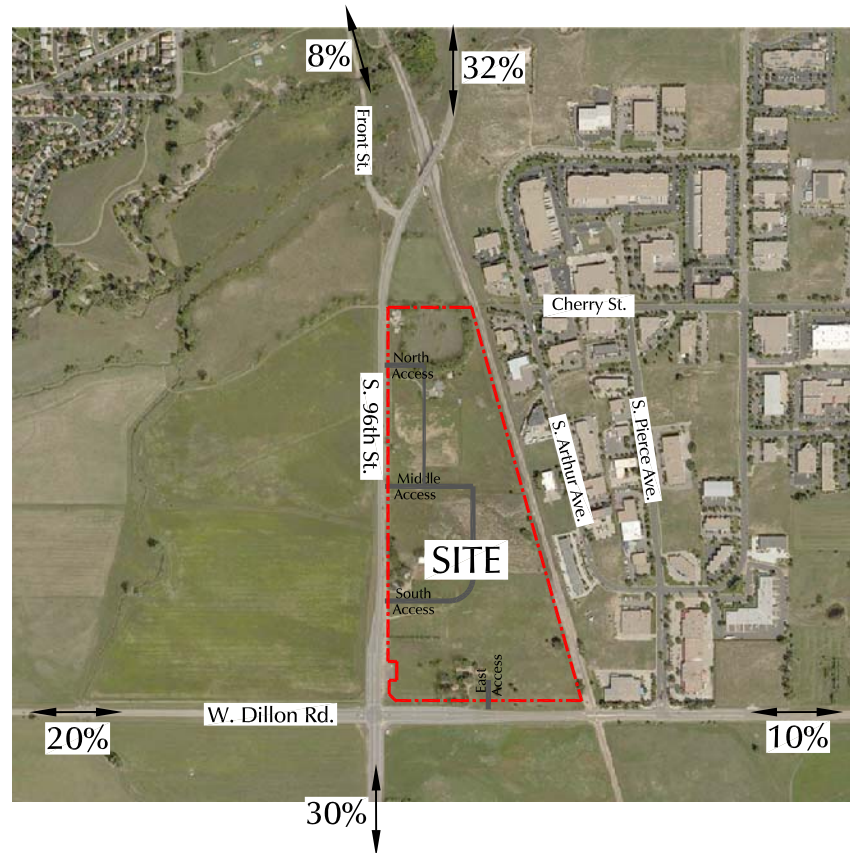
#### LEGEND:

- ⊥ = Stop Sign
- ⊙ = Traffic Signal
- 26 = Sunday AM Peak Hour Traffic
- 500 = Sunday Daily Traffic

## Year 2040 Sunday Background Traffic, Lane Geometry and Traffic Control

Louisville Industrial Park (LSC #180012)

Figure 5b



Approximate Scale  
Scale: 1"=1,200'

LEGEND:

20% = Percent Directional Distribution

Figure 6  
*Directional Distribution  
of Site-Generated Traffic*  
Louisville Industrial Park (LSC #180012)

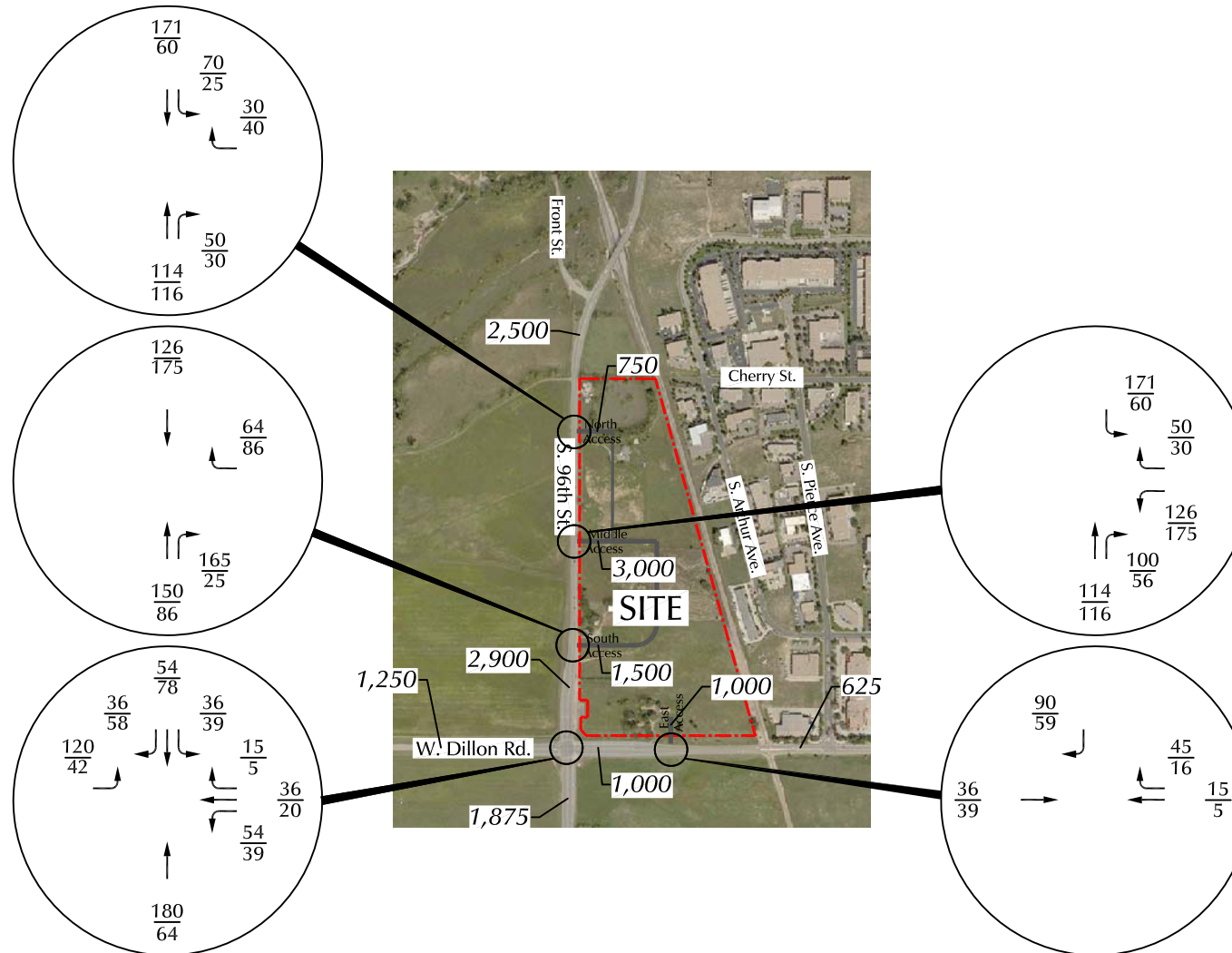


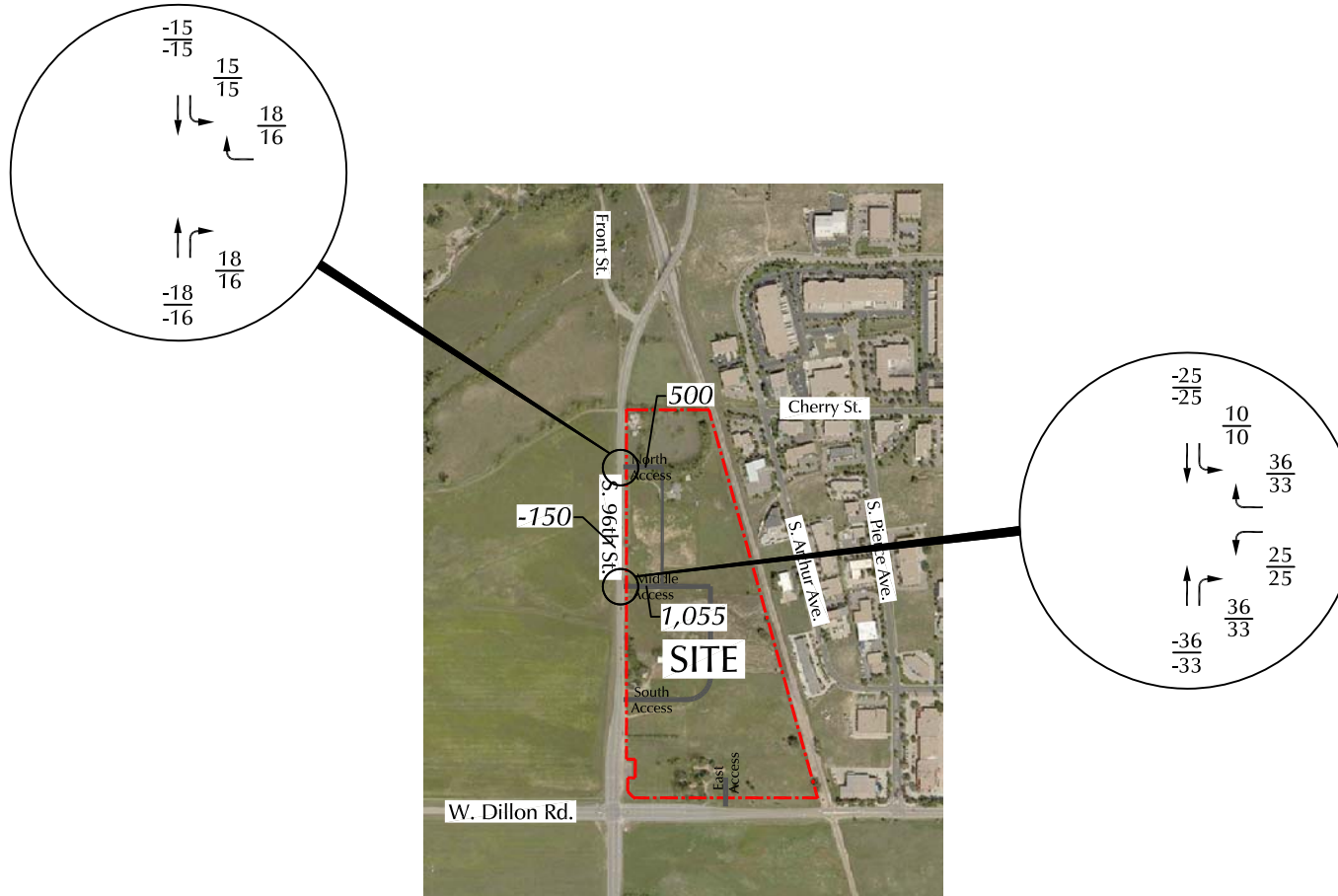
Figure 7a

## Assignment of Weekday Primary Site-Generated Traffic

Louisville Industrial Park (LSC #180012)

### LEGEND:

- 26 = Weekday AM Peak Hour Traffic
- 35 = Weekday PM Peak Hour Traffic
- 500 = Weekday Daily Traffic



LEGEND:

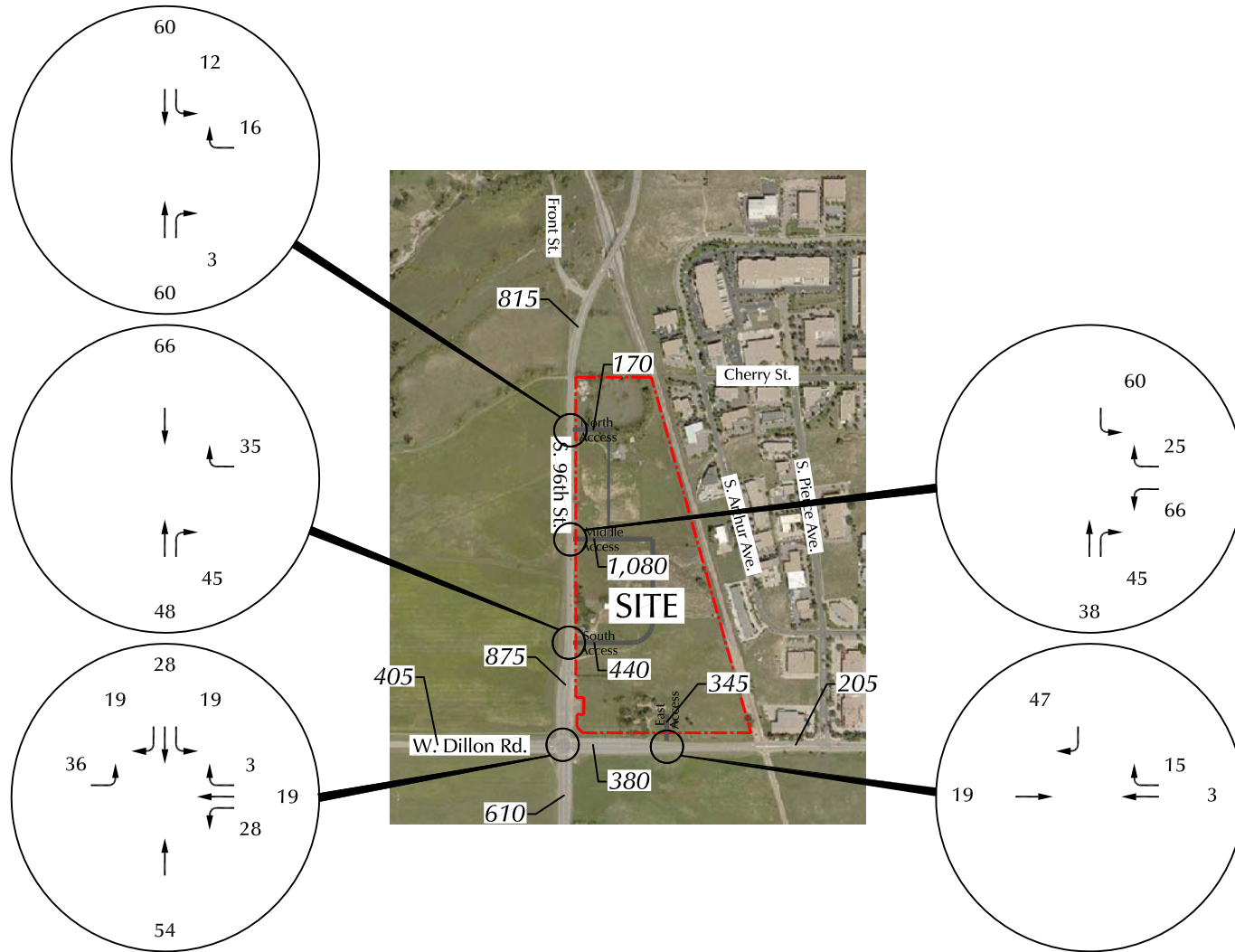
26 = Weekday AM Peak Hour Traffic  
 35 = Weekday PM Peak Hour Traffic  
 500 = Weekday Daily Traffic

Figure 7b

# *Assignment of Weekday Passby Site-Generated Traffic*

Louisville Industrial Park (LSC #180012)





LEGEND:

- 26 = Sunday AM Peak Hour Traffic
- 500 = Sunday Daily Traffic

Figure 8a

# *Assignment of Sunday Primary Site-Generated Traffic*

Louisville Industrial Park (LSC #180012)

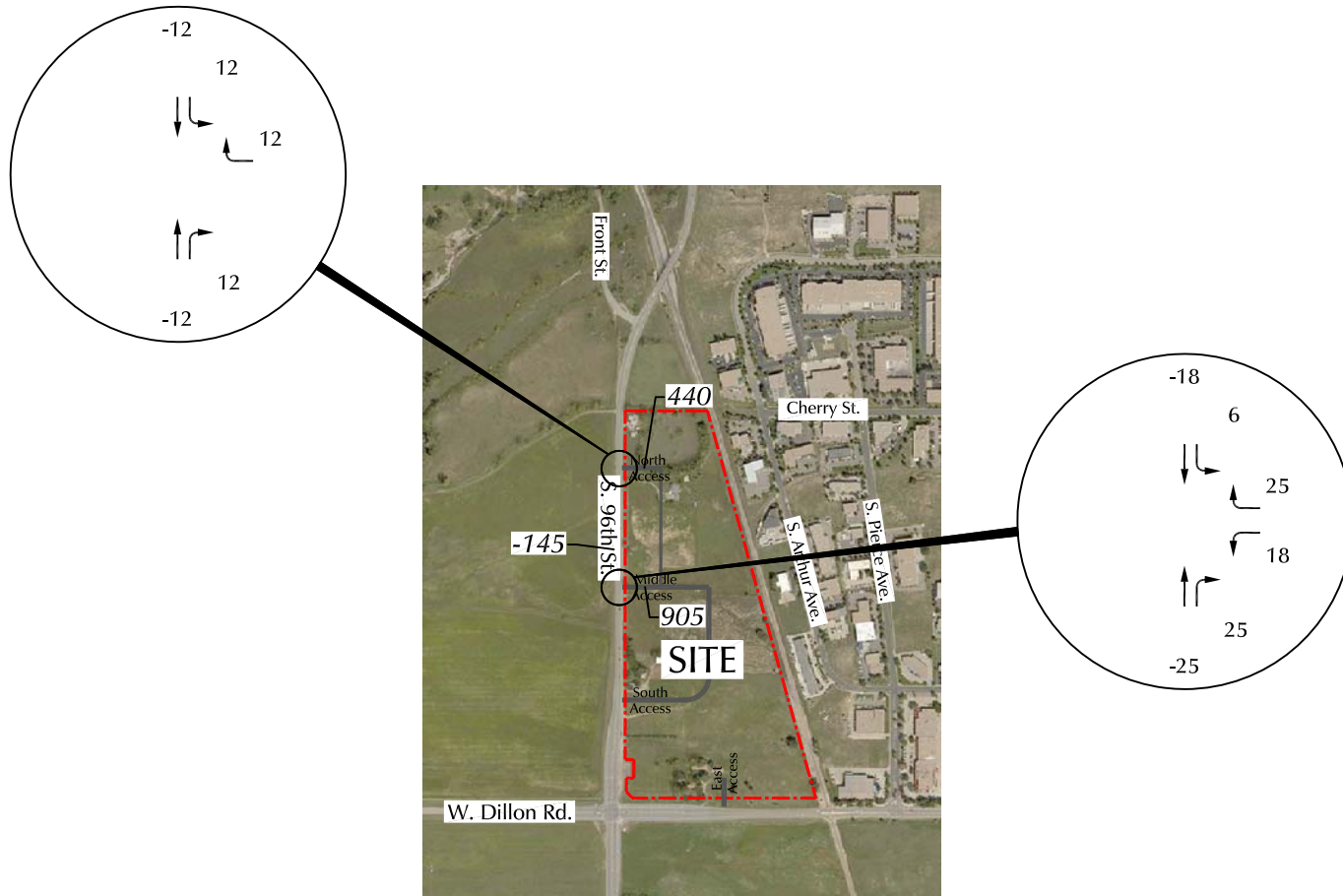


Figure 8b  
*Assignment of Sunday  
Passby Site-Generated Traffic*

Louisville Industrial Park (LSC #180012)

LEGEND:

26 = Sunday AM Peak Hour Traffic

500 = Sunday Daily Traffic

- ① SB LT = 225 feet + 145-foot transition taper and 30:1 redirect taper
- ② NB RT = 225 feet + 145-foot transition taper
- ③ SB LT = 225 feet + 145-foot transition taper
- ④ NB RT = 225 feet + 145-foot transition taper
- ⑤ WB LT = 175 feet
- ⑥ WB RT = 275 feet + 160-foot transition taper

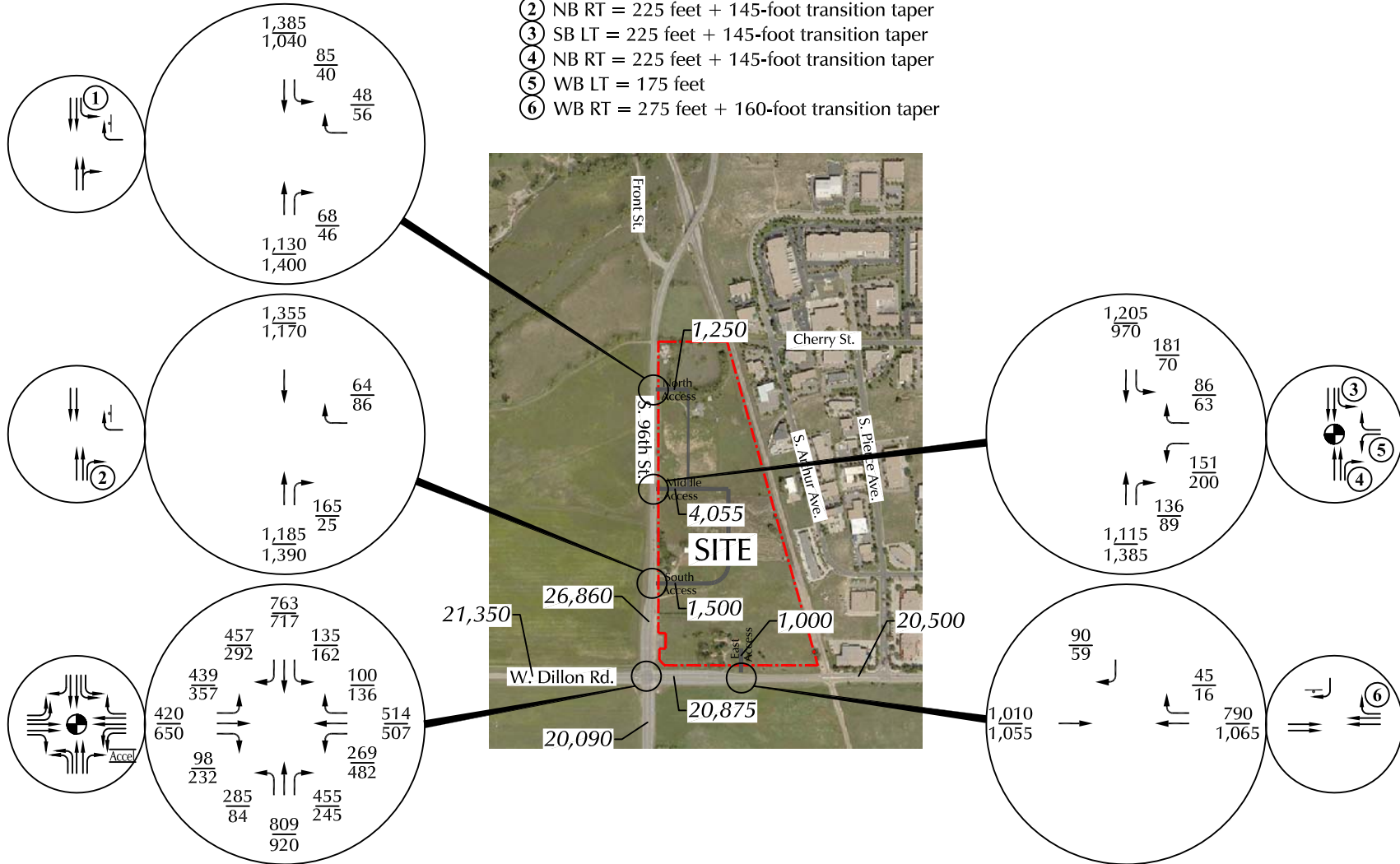


Figure 9a

## Year 2024 Weekday Total Traffic, Lane Geometry and Traffic Control

Louisville Industrial Park (LSC #180012)

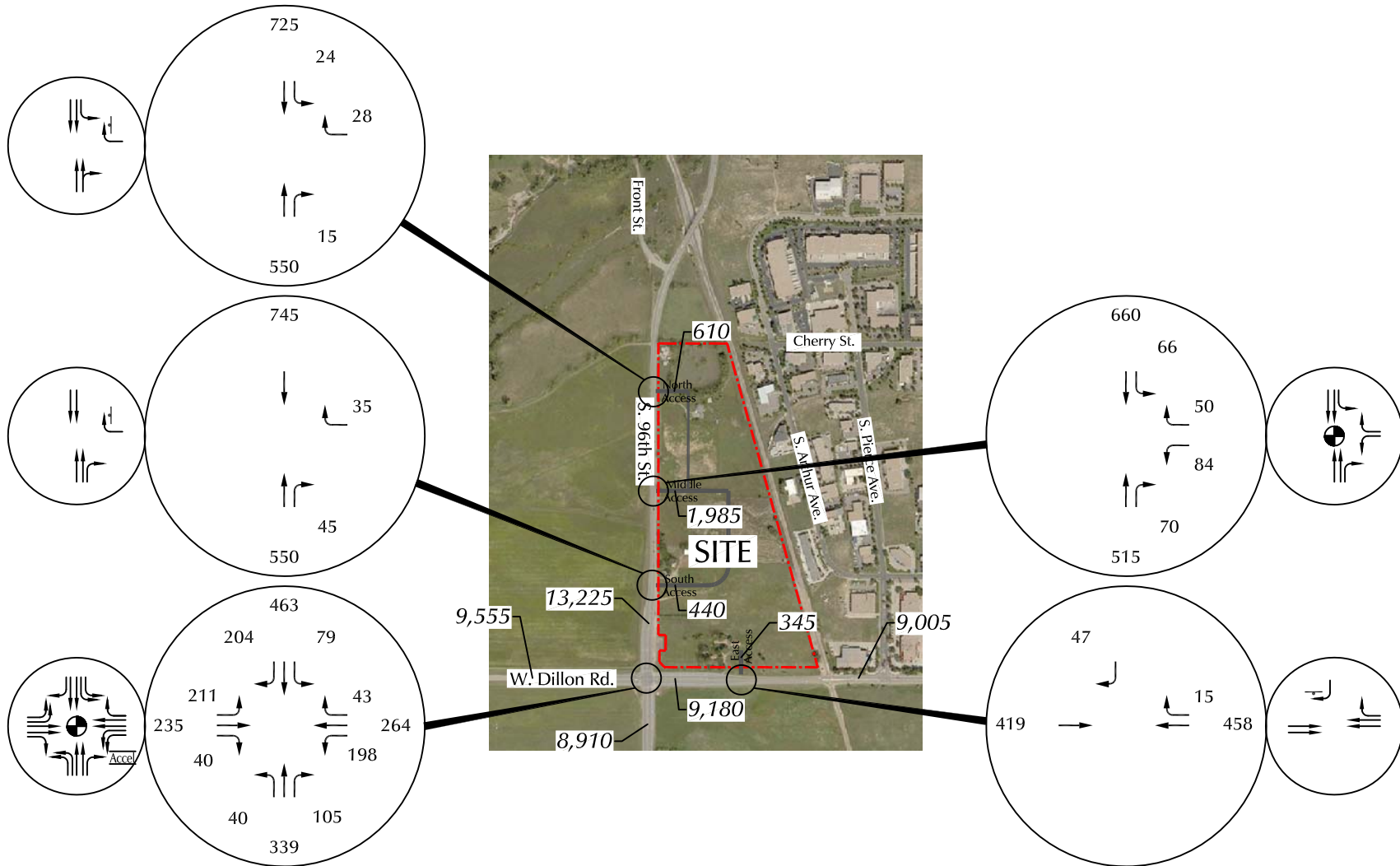
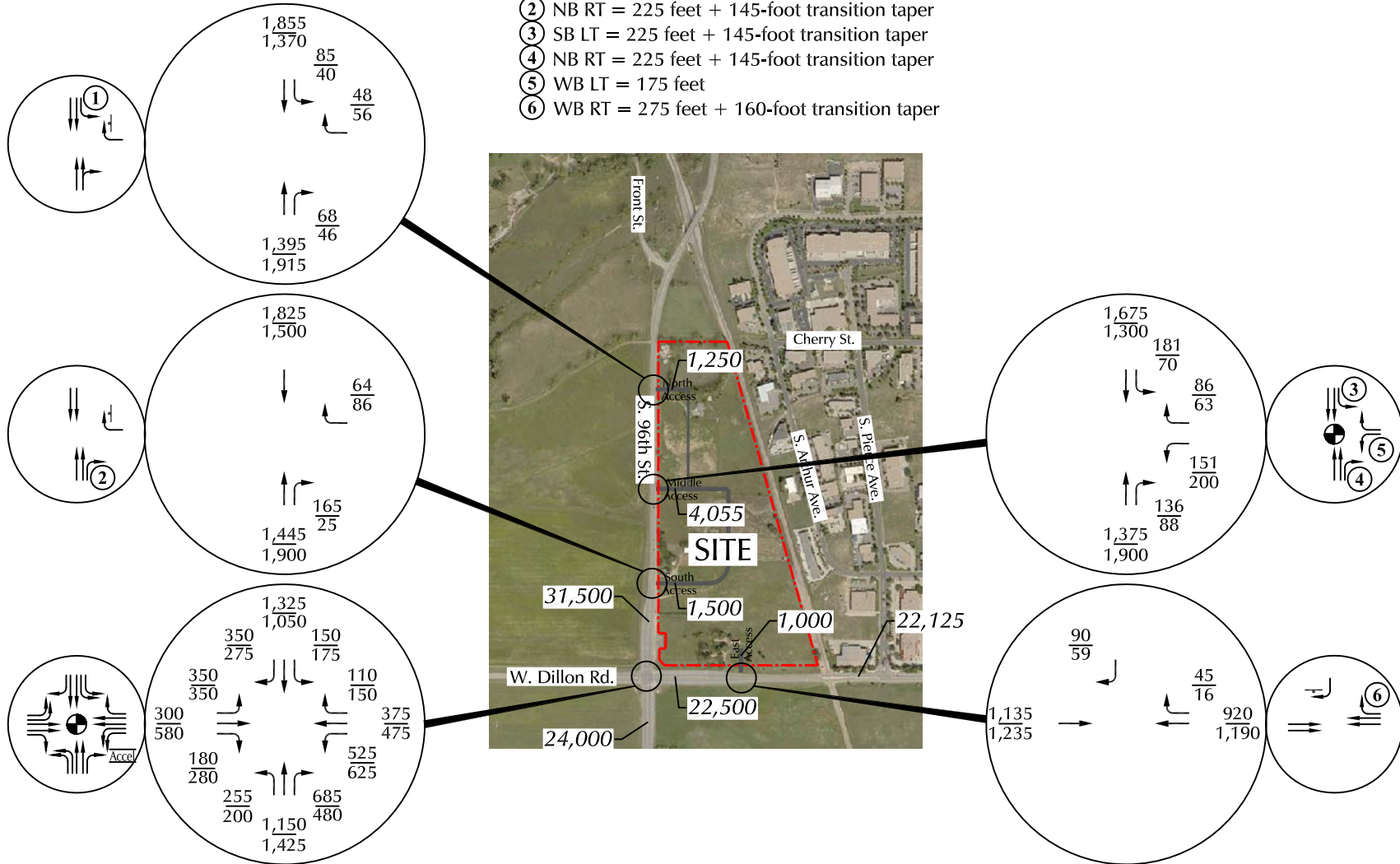


Figure 9b

## Year 2024 Sunday Total Traffic, Lane Geometry and Traffic Control

Louisville Industrial Park (LSC #180012)

- ① SB LT = 225 feet + 145-foot transition taper and 30:1 redirect taper
- ② NB RT = 225 feet + 145-foot transition taper
- ③ SB LT = 225 feet + 145-foot transition taper
- ④ NB RT = 225 feet + 145-foot transition taper
- ⑤ WB LT = 175 feet
- ⑥ WB RT = 275 feet + 160-foot transition taper



LEGEND:

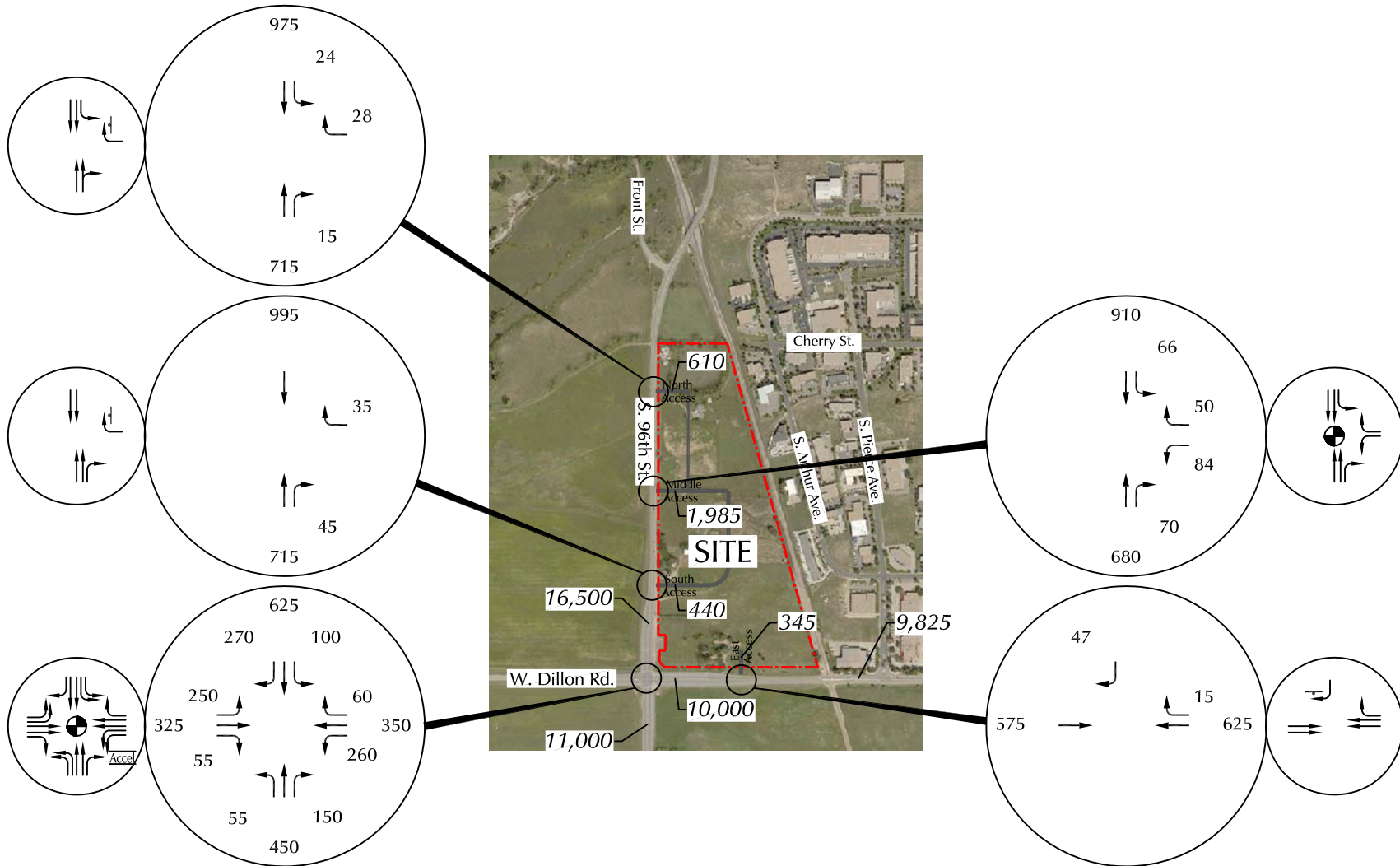
- ⊥ = Stop Sign
- ⊙ = Traffic Signal
- $\frac{26}{35}$  = Weekday AM Peak Hour Traffic / Weekday PM Peak Hour Traffic
- 500 = Weekday Daily Traffic

Figure 10a

## Year 2040 Weekday Total Traffic, Lane Geometry and Traffic Control

Louisville Industrial Park (LSC #180012)





LEGEND:

- ⊥ = Stop Sign
- ⊙ = Traffic Signal
- 26 = Sunday AM Peak Hour Traffic
- 500 = Sunday Daily Traffic

Figure 10b

# Year 2040 Sunday Total Traffic, Lane Geometry and Traffic Control

Louisville Industrial Park (LSC #180012)

# COUNTER MEASURES INC.

1889 YORK STREET  
DENVER.COLORADO  
303-333-7409

N/S STREET: 96TH ST  
E/W STREET: DILLON RD  
CITY: LOUISVILLE  
COUNTY: BOULDER

File Name : 96THDILL 1-12-20  
Site Code : 00000016  
Start Date : 1/12/2020  
Page No : 1

## Groups Printed- VEHICLES

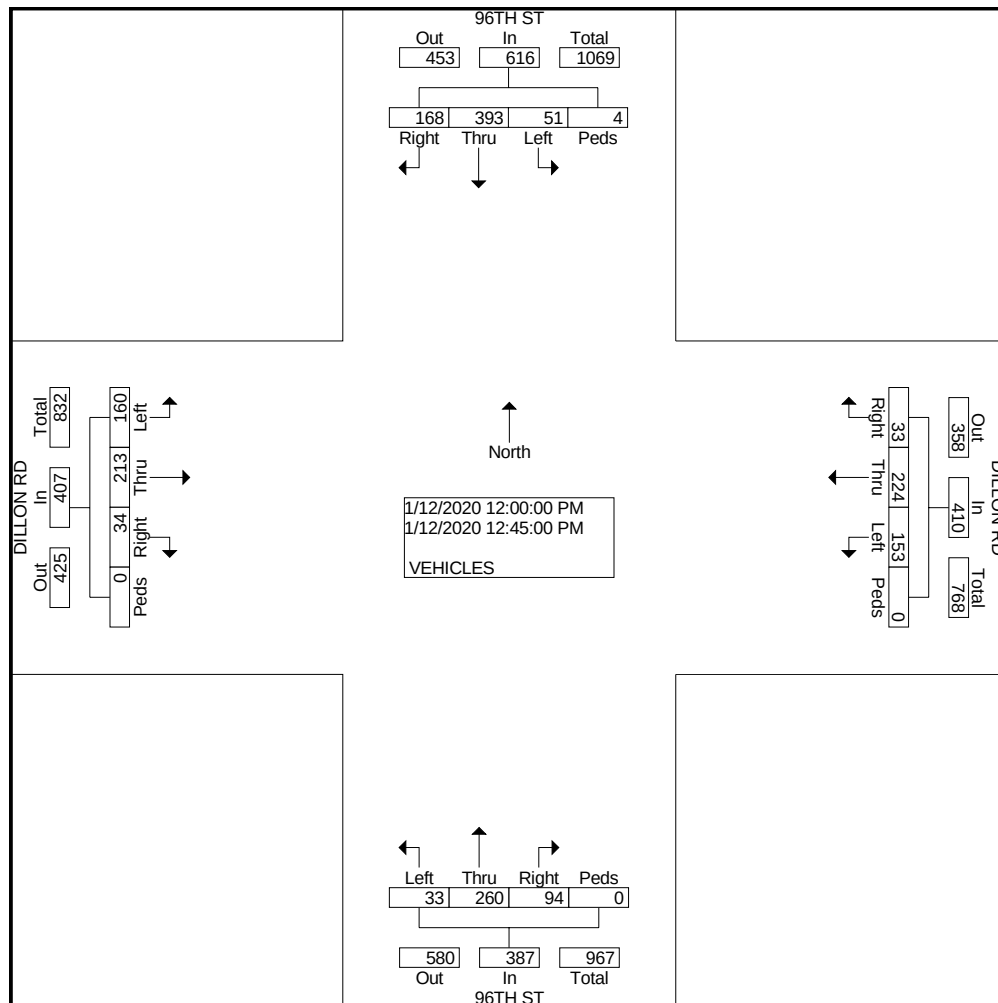
|             | 96TH ST<br>Southbound |      |       |      | DILLON RD<br>Westbound |      |       |      | 96TH ST<br>Northbound |      |       |      | DILLON RD<br>Eastbound |      |       |      | Int.<br>Total |
|-------------|-----------------------|------|-------|------|------------------------|------|-------|------|-----------------------|------|-------|------|------------------------|------|-------|------|---------------|
| Start Time  | Left                  | Thru | Right | Peds | Left                   | Thru | Right | Peds | Left                  | Thru | Right | Peds | Left                   | Thru | Right | Peds |               |
| Factor      | 1.0                   | 1.0  | 1.0   | 1.0  | 1.0                    | 1.0  | 1.0   | 1.0  | 1.0                   | 1.0  | 1.0   | 1.0  | 1.0                    | 1.0  | 1.0   | 1.0  |               |
| 10:00 AM    | 8                     | 71   | 42    | 0    | 17                     | 40   | 5     | 0    | 11                    | 61   | 19    | 0    | 27                     | 28   | 7     | 0    | 336           |
| 10:15 AM    | 7                     | 77   | 45    | 0    | 28                     | 68   | 3     | 0    | 10                    | 38   | 14    | 0    | 26                     | 41   | 8     | 0    | 365           |
| 10:30 AM    | 13                    | 81   | 42    | 0    | 28                     | 54   | 2     | 0    | 6                     | 61   | 8     | 2    | 48                     | 49   | 6     | 0    | 400           |
| 10:45 AM    | 11                    | 78   | 43    | 1    | 25                     | 51   | 10    | 0    | 10                    | 67   | 19    | 0    | 53                     | 27   | 10    | 0    | 405           |
| Total       | 39                    | 307  | 172   | 1    | 98                     | 213  | 20    | 0    | 37                    | 227  | 60    | 2    | 154                    | 145  | 31    | 0    | 1506          |
| 11:00 AM    | 9                     | 98   | 45    | 0    | 25                     | 33   | 10    | 0    | 10                    | 61   | 13    | 0    | 52                     | 36   | 6     | 0    | 398           |
| 11:15 AM    | 13                    | 76   | 41    | 3    | 37                     | 48   | 3     | 3    | 10                    | 55   | 19    | 0    | 50                     | 34   | 8     | 0    | 400           |
| 11:30 AM    | 13                    | 75   | 34    | 0    | 42                     | 46   | 5     | 0    | 4                     | 57   | 14    | 0    | 41                     | 47   | 15    | 0    | 393           |
| 11:45 AM    | 12                    | 103  | 35    | 0    | 31                     | 59   | 7     | 0    | 9                     | 67   | 17    | 0    | 42                     | 36   | 13    | 0    | 431           |
| Total       | 47                    | 352  | 155   | 3    | 135                    | 186  | 25    | 3    | 33                    | 240  | 63    | 0    | 185                    | 153  | 42    | 0    | 1622          |
| 12:00 PM    | 13                    | 86   | 41    | 2    | 42                     | 57   | 10    | 0    | 8                     | 58   | 25    | 0    | 42                     | 52   | 8     | 0    | 444           |
| 12:15 PM    | 10                    | 112  | 64    | 1    | 44                     | 68   | 8     | 0    | 8                     | 62   | 24    | 0    | 46                     | 48   | 9     | 0    | 504           |
| 12:30 PM    | 20                    | 109  | 36    | 1    | 28                     | 38   | 2     | 0    | 11                    | 67   | 23    | 0    | 23                     | 42   | 10    | 0    | 410           |
| 12:45 PM    | 8                     | 86   | 27    | 0    | 39                     | 61   | 13    | 0    | 6                     | 73   | 22    | 0    | 49                     | 71   | 7     | 0    | 462           |
| Total       | 51                    | 393  | 168   | 4    | 153                    | 224  | 33    | 0    | 33                    | 260  | 94    | 0    | 160                    | 213  | 34    | 0    | 1820          |
| Grand Total | 137                   | 1052 | 495   | 8    | 386                    | 623  | 78    | 3    | 103                   | 727  | 217   | 2    | 499                    | 511  | 107   | 0    | 4948          |
| Apprch %    | 8.1                   | 62.2 | 29.3  | 0.5  | 35.4                   | 57.2 | 7.2   | 0.3  | 9.8                   | 69.3 | 20.7  | 0.2  | 44.7                   | 45.7 | 9.6   | 0.0  |               |
| Total %     | 2.8                   | 21.3 | 10.0  | 0.2  | 7.8                    | 12.6 | 1.6   | 0.1  | 2.1                   | 14.7 | 4.4   | 0.0  | 10.1                   | 10.3 | 2.2   | 0.0  |               |

1889 YORK STREET  
DENVER.COLORADO  
303-333-7409

N/S STREET: 96TH ST  
E/W STREET: DILLON RD  
CITY: LOUISVILLE  
COUNTY: BOULDER

File Name : 96THDILL 1-12-20  
Site Code : 00000016  
Start Date : 1/12/2020  
Page No : 2

|                                                   | 96TH ST<br>Southbound |          |           |          |               | DILLON RD<br>Westbound |          |           |          |               | 96TH ST<br>Northbound |          |           |          |               | DILLON RD<br>Eastbound |          |           |          |               |               |
|---------------------------------------------------|-----------------------|----------|-----------|----------|---------------|------------------------|----------|-----------|----------|---------------|-----------------------|----------|-----------|----------|---------------|------------------------|----------|-----------|----------|---------------|---------------|
| Start<br>Time                                     | Left                  | Thr<br>u | Rig<br>ht | Ped<br>s | App.<br>Total | Left                   | Thr<br>u | Rig<br>ht | Ped<br>s | App.<br>Total | Left                  | Thr<br>u | Rig<br>ht | Ped<br>s | App.<br>Total | Left                   | Thr<br>u | Rig<br>ht | Ped<br>s | App.<br>Total | Int.<br>Total |
| Peak Hour From 10:00 AM to 12:45 PM - Peak 1 of 1 |                       |          |           |          |               |                        |          |           |          |               |                       |          |           |          |               |                        |          |           |          |               |               |
| Intersection                                      | 12:00 PM              |          |           |          |               |                        |          |           |          |               |                       |          |           |          |               |                        |          |           |          |               |               |
| Volume                                            | 51                    | 393      | 168       | 4        | 616           | 153                    | 224      | 33        | 0        | 410           | 33                    | 260      | 94        | 0        | 387           | 160                    | 213      | 34        | 0        | 407           | 1820          |
| Percent                                           | 8.3                   | 63.8     | 27.3      | 0.6      |               | 37.3                   | 54.6     | 8.0       | 0.0      |               | 8.5                   | 67.2     | 24.3      | 0.0      |               | 39.3                   | 52.3     | 8.4       | 0.0      |               |               |
| 12:15<br>Volume                                   | 10                    | 112      | 64        | 1        | 187           | 44                     | 68       | 8         | 0        | 120           | 8                     | 62       | 24        | 0        | 94            | 46                     | 48       | 9         | 0        | 103           | 504           |
| Peak<br>Factor                                    |                       |          |           |          |               |                        |          |           |          |               |                       |          |           |          |               |                        |          |           |          |               | 0.903         |
| High Int.                                         | 12:15 PM              |          |           |          |               | 12:15 PM               |          |           |          |               | 12:30 PM              |          |           |          |               | 12:45 PM               |          |           |          |               |               |
| Volume                                            | 10                    | 112      | 64        | 1        | 187           | 44                     | 68       | 8         | 0        | 120           | 11                    | 67       | 23        | 0        | 101           | 49                     | 71       | 7         | 0        | 127           |               |
| Peak<br>Factor                                    |                       |          |           |          |               |                        |          |           |          |               |                       |          |           |          |               |                        |          |           |          |               | 0.801         |



## LEVEL OF SERVICE DEFINITIONS

From *Highway Capacity Manual*, Transportation Research Board, 2016, 6th Edition

### SIGNALIZED INTERSECTION LEVEL OF SERVICE (LOS)

| <b><u>LOS</u></b> | <b><u>Average<br/>Vehicle Delay</u><br/>sec/vehicle</b> | <b><u>Operational Characteristics</u></b>                                                                                                                                                                                                                                                                                                                                                                                                                              |
|-------------------|---------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>A</b>          | <10 seconds                                             | Describes operations with low control delay, up to 10 sec/veh. This LOS occurs when progression is extremely favorable and most vehicles arrive during the green phase. Many vehicles do not stop at all. Short cycle lengths may tend to contribute to low delay values.                                                                                                                                                                                              |
| <b>B</b>          | 10 to 20 seconds                                        | Describes operations with control delay greater than 10 seconds and up to 20 sec/veh. This level generally occurs with good progression, short cycle lengths, or both. More vehicles stop than with LOS A, causing higher levels of delay.                                                                                                                                                                                                                             |
| <b>C</b>          | 20 to 35 seconds                                        | Describes operations with control delay greater than 20 and up to 35 sec/veh. These higher delays may result from only fair progression, longer cycle length, or both. Individual cycle failures may begin to appear at this level. Cycle failure occurs when a given green phase does not serve queued vehicles, and overflows occur. The number of vehicles stopping is significant at this level, though many still pass through the intersection without stopping. |
| <b>D</b>          | 35 to 55 seconds                                        | Describes operations with control delay greater than 35 and up to 55 sec/veh. At LOS D, the influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, and high v/c ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.                                                                                   |
| <b>E</b>          | 55 to 80 seconds                                        | Describes operations with control delay greater than 55 and up to 80 sec/veh. These high delay values generally indicate poor progression, long cycle lengths, and high v/c ratios. Individual cycle failures are frequent.                                                                                                                                                                                                                                            |
| <b>F</b>          | >80 seconds                                             | Describes operations with control delay in excess of 80 sec/veh. This level, considered unacceptable to most drivers, often occurs with over-saturation, that is, when arrival flow rates exceed the capacity of lane groups. It may also occur at high v/c ratios with many individual cycle failures. Poor progression and long cycle lengths may also contribute significantly to high delay levels.                                                                |

## LEVEL OF SERVICE DEFINITIONS

From *Highway Capacity Manual*, Transportation Research Board, 2016, 6th Edition

### UNSIGNALIZED INTERSECTION LEVEL OF SERVICE (LOS)

Applicable to Two-Way Stop Control, All-Way Stop Control, and Roundabouts

| LOS | Average Vehicle Control Delay | Operational Characteristics                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|-----|-------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| A   | <10 seconds                   | Normally, vehicles on the stop-controlled approach only have to wait up to 10 seconds before being able to clear the intersection. Left-turning vehicles on the uncontrolled street do not have to wait to make their turn.                                                                                                                                                                                                                                                                                                                     |
| B   | 10 to 15 seconds              | Vehicles on the stop-controlled approach will experience delays before being able to clear the intersection. <u>The delay could be up to 15 seconds.</u> Left-turning vehicles on the uncontrolled street may have to wait to make their turn.                                                                                                                                                                                                                                                                                                  |
| C   | 15 to 25 seconds              | Vehicles on the stop-controlled approach can expect delays in the range of 15 to 25 seconds before clearing the intersection. Motorists may begin to take chances due to the long delays, thereby posing a safety risk to through traffic. <u>Left-turning vehicles on the uncontrolled street will now be required to wait to make their turn causing a queue to be created in the turn lane.</u>                                                                                                                                              |
| D   | 25 to 35 seconds              | <u>This is the point at which a traffic signal may be warranted for this intersection.</u> The delays for the stop-controlled intersection are not considered to be excessive. The length of the queue may begin to block other public and private access points.                                                                                                                                                                                                                                                                               |
| E   | 35 to 50 seconds              | The delays for all critical traffic movements are considered to be unacceptable. The length of the queues for the stop-controlled approaches as well as the left-turn movements are extremely long. <u>There is a high probability that this intersection will meet traffic signal warrants.</u> The ability to install a traffic signal is affected by the location of other existing traffic signals. Consideration may be given to restricting the accesses by eliminating the left-turn movements from and to the stop-controlled approach. |
| F   | >50 seconds                   | The delay for the critical traffic movements are probably in excess of 100 seconds. The length of the queues are extremely long. Motorists are selecting alternative routes due to the long delays. <u>The only remedy for these long delays is installing a traffic signal or restricting the accesses.</u> The potential for accidents at this intersection are extremely high due to motorist taking more risky chances. If the median permits, motorists begin making two-stage left-turns.                                                 |



# Timings 3: S. 96th Street & W. Dillon Road

Existing  
AM Peak

|                      |  |  |  |  |  |  |  |  |  |  |  |  |
|----------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group           | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations  |  |  |  |  |  |  |  |  |  |  |  |  |
| Traffic Volume (vph) | 289                                                                               | 380                                                                               | 89                                                                                | 195                                                                               | 433                                                                               | 77                                                                                | 258                                                                                 | 570                                                                                 | 412                                                                                 | 90                                                                                  | 642                                                                                 | 381                                                                                 |
| Future Volume (vph)  | 289                                                                               | 380                                                                               | 89                                                                                | 195                                                                               | 433                                                                               | 77                                                                                | 258                                                                                 | 570                                                                                 | 412                                                                                 | 90                                                                                  | 642                                                                                 | 381                                                                                 |
| Turn Type            | pm+pt                                                                             | NA                                                                                | Perm                                                                              | pm+pt                                                                             | NA                                                                                | Perm                                                                              | pm+pt                                                                               | NA                                                                                  | Free                                                                                | pm+pt                                                                               | NA                                                                                  | Perm                                                                                |
| Protected Phases     | 7                                                                                 | 4                                                                                 |                                                                                   | 3                                                                                 | 8                                                                                 |                                                                                   | 5                                                                                   | 2                                                                                   |                                                                                     | 1                                                                                   | 6                                                                                   |                                                                                     |
| Permitted Phases     | 4                                                                                 |                                                                                   | 4                                                                                 | 8                                                                                 |                                                                                   | 8                                                                                 | 2                                                                                   |                                                                                     | Free                                                                                | 6                                                                                   |                                                                                     | 6                                                                                   |
| Detector Phase       | 7                                                                                 | 4                                                                                 | 4                                                                                 | 3                                                                                 | 8                                                                                 | 8                                                                                 | 5                                                                                   | 2                                                                                   |                                                                                     | 1                                                                                   | 6                                                                                   | 6                                                                                   |
| Switch Phase         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Minimum Initial (s)  | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               | 5.0                                                                                 | 5.0                                                                                 |                                                                                     | 5.0                                                                                 | 5.0                                                                                 | 5.0                                                                                 |
| Minimum Split (s)    | 10.5                                                                              | 21.0                                                                              | 21.0                                                                              | 17.0                                                                              | 21.0                                                                              | 21.0                                                                              | 10.5                                                                                | 21.0                                                                                |                                                                                     | 10.5                                                                                | 21.0                                                                                | 21.0                                                                                |
| Total Split (s)      | 20.0                                                                              | 35.0                                                                              | 35.0                                                                              | 20.0                                                                              | 35.0                                                                              | 35.0                                                                              | 15.0                                                                                | 43.0                                                                                |                                                                                     | 15.0                                                                                | 43.0                                                                                | 43.0                                                                                |
| Total Split (%)      | 17.7%                                                                             | 31.0%                                                                             | 31.0%                                                                             | 17.7%                                                                             | 31.0%                                                                             | 31.0%                                                                             | 13.3%                                                                               | 38.1%                                                                               |                                                                                     | 13.3%                                                                               | 38.1%                                                                               | 38.1%                                                                               |
| Yellow Time (s)      | 3.5                                                                               | 3.5                                                                               | 3.5                                                                               | 3.5                                                                               | 3.5                                                                               | 3.5                                                                               | 3.5                                                                                 | 3.5                                                                                 |                                                                                     | 3.5                                                                                 | 3.5                                                                                 | 3.5                                                                                 |
| All-Red Time (s)     | 1.5                                                                               | 1.5                                                                               | 1.5                                                                               | 1.5                                                                               | 1.5                                                                               | 1.5                                                                               | 1.5                                                                                 | 1.5                                                                                 |                                                                                     | 1.5                                                                                 | 1.5                                                                                 | 1.5                                                                                 |
| Lost Time Adjust (s) | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                 | 0.0                                                                                 |                                                                                     | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Total Lost Time (s)  | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               | 5.0                                                                                 | 5.0                                                                                 |                                                                                     | 5.0                                                                                 | 5.0                                                                                 | 5.0                                                                                 |
| Lead/Lag             | Lead                                                                              | Lag                                                                               | Lag                                                                               | Lead                                                                              | Lag                                                                               | Lag                                                                               | Lead                                                                                | Lag                                                                                 |                                                                                     | Lead                                                                                | Lag                                                                                 | Lag                                                                                 |
| Lead-Lag Optimize?   | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                                 | Yes                                                                                 |                                                                                     | Yes                                                                                 | Yes                                                                                 | Yes                                                                                 |
| Recall Mode          | None                                                                              | None                                                                              | None                                                                              | None                                                                              | None                                                                              | None                                                                              | None                                                                                | C-Max                                                                               |                                                                                     | None                                                                                | C-Max                                                                               | C-Max                                                                               |
| Act Effect Green (s) | 36.7                                                                              | 21.7                                                                              | 21.7                                                                              | 34.2                                                                              | 20.5                                                                              | 20.5                                                                              | 62.0                                                                                | 49.0                                                                                | 113.0                                                                               | 51.2                                                                                | 42.7                                                                                | 42.7                                                                                |
| Actuated g/C Ratio   | 0.32                                                                              | 0.19                                                                              | 0.19                                                                              | 0.30                                                                              | 0.18                                                                              | 0.18                                                                              | 0.55                                                                                | 0.43                                                                                | 1.00                                                                                | 0.45                                                                                | 0.38                                                                                | 0.38                                                                                |
| v/c Ratio            | 0.95                                                                              | 0.59                                                                              | 0.24                                                                              | 0.61                                                                              | 0.72                                                                              | 0.22                                                                              | 0.64                                                                                | 0.39                                                                                | 0.28                                                                                | 0.23                                                                                | 0.51                                                                                | 0.48                                                                                |
| Control Delay        | 69.2                                                                              | 45.2                                                                              | 5.6                                                                               | 34.1                                                                              | 49.9                                                                              | 3.9                                                                               | 22.7                                                                                | 23.9                                                                                | 0.4                                                                                 | 15.1                                                                                | 29.7                                                                                | 5.7                                                                                 |
| 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          | 69.2                                                                              | 45.2                                                                              | 5.6                                                                               | 34.1                                                                              | 49.9                                                                              | 3.9                                                                               | 22.7                                                                                | 23.9                                                                                | 0.4                                                                                 | 15.1                                                                                | 29.7                                                                                | 5.7                                                                                 |
| LOS                  | E                                                                                 | D                                                                                 | A                                                                                 | C                                                                                 | D                                                                                 | A                                                                                 | C                                                                                   | C                                                                                   | A                                                                                   | B                                                                                   | C                                                                                   | A                                                                                   |
| Approach Delay       |                                                                                   | 49.7                                                                              |                                                                                   |                                                                                   | 40.5                                                                              |                                                                                   |                                                                                     | 15.9                                                                                |                                                                                     |                                                                                     | 20.3                                                                                |                                                                                     |
| Approach LOS         |                                                                                   | D                                                                                 |                                                                                   |                                                                                   | D                                                                                 |                                                                                   |                                                                                     | B                                                                                   |                                                                                     |                                                                                     | C                                                                                   |                                                                                     |

## Intersection Summary

Cycle Length: 113

Actuated Cycle Length: 113

Offset: 7 (6%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 75

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.95

Intersection Signal Delay: 28.4

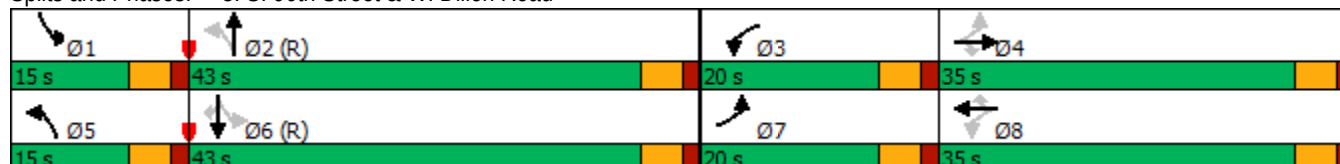
Intersection LOS: C

Intersection Capacity Utilization 76.7%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 3: S. 96th Street & W. Dillon Road



# Timings 3: S. 96th Street & W. Dillon Road

Existing  
PM Peak

|                      |  |  |  |  |  |  |  |  |  |  |  |  |
|----------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group           | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations  |  |  |  |  |  |  |  |  |  |  |  |  |
| Traffic Volume (vph) | 285                                                                               | 589                                                                               | 210                                                                               | 401                                                                               | 441                                                                               | 119                                                                               | 76                                                                                 | 775                                                                                 | 222                                                                                 | 111                                                                                 | 579                                                                                 | 212                                                                                 |
| Future Volume (vph)  | 285                                                                               | 589                                                                               | 210                                                                               | 401                                                                               | 441                                                                               | 119                                                                               | 76                                                                                 | 775                                                                                 | 222                                                                                 | 111                                                                                 | 579                                                                                 | 212                                                                                 |
| Turn Type            | pm+pt                                                                             | NA                                                                                | Perm                                                                              | pm+pt                                                                             | NA                                                                                | Perm                                                                              | pm+pt                                                                              | NA                                                                                  | Free                                                                                | pm+pt                                                                               | NA                                                                                  | Perm                                                                                |
| Protected Phases     | 7                                                                                 | 4                                                                                 |                                                                                   | 3                                                                                 | 8                                                                                 |                                                                                   | 5                                                                                  | 2                                                                                   |                                                                                     | 1                                                                                   | 6                                                                                   |                                                                                     |
| Permitted Phases     | 4                                                                                 |                                                                                   | 4                                                                                 | 8                                                                                 |                                                                                   | 8                                                                                 | 2                                                                                  |                                                                                     | Free                                                                                | 6                                                                                   |                                                                                     | 6                                                                                   |
| Detector Phase       | 7                                                                                 | 4                                                                                 | 4                                                                                 | 3                                                                                 | 8                                                                                 | 8                                                                                 | 5                                                                                  | 2                                                                                   |                                                                                     | 1                                                                                   | 6                                                                                   | 6                                                                                   |
| Switch Phase         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Minimum Initial (s)  | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               | 5.0                                                                                | 5.0                                                                                 |                                                                                     | 5.0                                                                                 | 5.0                                                                                 | 5.0                                                                                 |
| Minimum Split (s)    | 10.5                                                                              | 21.0                                                                              | 21.0                                                                              | 17.0                                                                              | 21.0                                                                              | 21.0                                                                              | 10.5                                                                               | 21.0                                                                                |                                                                                     | 10.5                                                                                | 21.0                                                                                | 21.0                                                                                |
| Total Split (s)      | 20.0                                                                              | 30.0                                                                              | 30.0                                                                              | 25.0                                                                              | 35.0                                                                              | 35.0                                                                              | 12.0                                                                               | 46.0                                                                                |                                                                                     | 12.0                                                                                | 46.0                                                                                | 46.0                                                                                |
| Total Split (%)      | 17.7%                                                                             | 26.5%                                                                             | 26.5%                                                                             | 22.1%                                                                             | 31.0%                                                                             | 31.0%                                                                             | 10.6%                                                                              | 40.7%                                                                               |                                                                                     | 10.6%                                                                               | 40.7%                                                                               | 40.7%                                                                               |
| Yellow Time (s)      | 3.5                                                                               | 3.5                                                                               | 3.5                                                                               | 3.5                                                                               | 3.5                                                                               | 3.5                                                                               | 3.5                                                                                | 3.5                                                                                 |                                                                                     | 3.5                                                                                 | 3.5                                                                                 | 3.5                                                                                 |
| All-Red Time (s)     | 1.5                                                                               | 1.5                                                                               | 1.5                                                                               | 1.5                                                                               | 1.5                                                                               | 1.5                                                                               | 1.5                                                                                | 1.5                                                                                 |                                                                                     | 1.5                                                                                 | 1.5                                                                                 | 1.5                                                                                 |
| Lost Time Adjust (s) | 0.0                                                                               | 1.0                                                                               | 0.0                                                                               | 0.0                                                                               | 1.0                                                                               | 0.0                                                                               | 0.0                                                                                | 1.0                                                                                 |                                                                                     | 0.0                                                                                 | 1.0                                                                                 | 0.0                                                                                 |
| Total Lost Time (s)  | 5.0                                                                               | 6.0                                                                               | 5.0                                                                               | 5.0                                                                               | 6.0                                                                               | 5.0                                                                               | 5.0                                                                                | 6.0                                                                                 |                                                                                     | 5.0                                                                                 | 6.0                                                                                 | 5.0                                                                                 |
| Lead/Lag             | Lead                                                                              | Lag                                                                               | Lag                                                                               | Lead                                                                              | Lag                                                                               | Lag                                                                               | Lead                                                                               | Lag                                                                                 |                                                                                     | Lead                                                                                | Lag                                                                                 | Lag                                                                                 |
| Lead-Lag Optimize?   | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                                | Yes                                                                                 |                                                                                     | Yes                                                                                 | Yes                                                                                 | Yes                                                                                 |
| Recall Mode          | None                                                                              | None                                                                              | None                                                                              | None                                                                              | None                                                                              | None                                                                              | None                                                                               | C-Max                                                                               |                                                                                     | None                                                                                | C-Max                                                                               | C-Max                                                                               |
| Act Effect Green (s) | 38.9                                                                              | 23.1                                                                              | 24.1                                                                              | 49.1                                                                              | 28.4                                                                              | 29.4                                                                              | 48.7                                                                               | 40.8                                                                                | 113.0                                                                               | 49.9                                                                                | 43.2                                                                                | 44.2                                                                                |
| Actuated g/C Ratio   | 0.34                                                                              | 0.20                                                                              | 0.21                                                                              | 0.43                                                                              | 0.25                                                                              | 0.26                                                                              | 0.43                                                                               | 0.36                                                                                | 1.00                                                                                | 0.44                                                                                | 0.38                                                                                | 0.39                                                                                |
| v/c Ratio            | 0.77                                                                              | 0.88                                                                              | 0.46                                                                              | 1.15                                                                              | 0.54                                                                              | 0.25                                                                              | 0.25                                                                               | 0.66                                                                                | 0.15                                                                                | 0.50                                                                                | 0.47                                                                                | 0.30                                                                                |
| Control Delay        | 37.9                                                                              | 58.6                                                                              | 10.1                                                                              | 125.4                                                                             | 39.1                                                                              | 6.9                                                                               | 18.7                                                                               | 33.5                                                                                | 0.2                                                                                 | 24.8                                                                                | 28.6                                                                                | 4.3                                                                                 |
| Queue Delay          | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Total Delay          | 37.9                                                                              | 58.6                                                                              | 10.1                                                                              | 125.4                                                                             | 39.1                                                                              | 6.9                                                                               | 18.7                                                                               | 33.5                                                                                | 0.2                                                                                 | 24.8                                                                                | 28.6                                                                                | 4.3                                                                                 |
| LOS                  | D                                                                                 | E                                                                                 | B                                                                                 | F                                                                                 | D                                                                                 | A                                                                                 | B                                                                                  | C                                                                                   | A                                                                                   | C                                                                                   | C                                                                                   | A                                                                                   |
| Approach Delay       |                                                                                   | 43.8                                                                              |                                                                                   |                                                                                   | 71.1                                                                              |                                                                                   |                                                                                    | 25.6                                                                                |                                                                                     |                                                                                     | 22.4                                                                                |                                                                                     |
| Approach LOS         |                                                                                   | D                                                                                 |                                                                                   |                                                                                   | E                                                                                 |                                                                                   |                                                                                    | C                                                                                   |                                                                                     |                                                                                     | C                                                                                   |                                                                                     |

## Intersection Summary

Cycle Length: 113

Actuated Cycle Length: 113

Offset: 7 (6%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.15

Intersection Signal Delay: 40.7

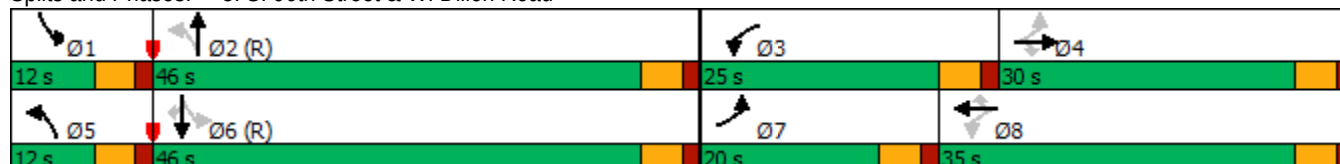
Intersection LOS: D

Intersection Capacity Utilization 84.4%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 3: S. 96th Street & W. Dillon Road



# Timings 3: S. 96th Street & W. Dillon Road

Existing  
Sunday Peak

|                      |  |  |  |  |  |  |  |  |  |  |  |  |
|----------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group           | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations  |  |  |  |  |  |  |  |  |  |  |  |  |
| Traffic Volume (vph) | 160                                                                               | 213                                                                               | 34                                                                                | 153                                                                               | 224                                                                               | 33                                                                                | 33                                                                                 | 260                                                                                 | 94                                                                                  | 51                                                                                  | 393                                                                                 | 168                                                                                 |
| Future Volume (vph)  | 160                                                                               | 213                                                                               | 34                                                                                | 153                                                                               | 224                                                                               | 33                                                                                | 33                                                                                 | 260                                                                                 | 94                                                                                  | 51                                                                                  | 393                                                                                 | 168                                                                                 |
| Turn Type            | pm+pt                                                                             | NA                                                                                | Perm                                                                              | pm+pt                                                                             | NA                                                                                | Perm                                                                              | pm+pt                                                                              | NA                                                                                  | Free                                                                                | pm+pt                                                                               | NA                                                                                  | Perm                                                                                |
| Protected Phases     | 7                                                                                 | 4                                                                                 |                                                                                   | 3                                                                                 | 8                                                                                 |                                                                                   | 5                                                                                  | 2                                                                                   |                                                                                     | 1                                                                                   | 6                                                                                   |                                                                                     |
| Permitted Phases     | 4                                                                                 |                                                                                   | 4                                                                                 | 8                                                                                 |                                                                                   | 8                                                                                 | 2                                                                                  |                                                                                     | Free                                                                                | 6                                                                                   |                                                                                     | 6                                                                                   |
| Detector Phase       | 7                                                                                 | 4                                                                                 | 4                                                                                 | 3                                                                                 | 8                                                                                 | 8                                                                                 | 5                                                                                  | 2                                                                                   |                                                                                     | 1                                                                                   | 6                                                                                   | 6                                                                                   |
| Switch Phase         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Minimum Initial (s)  | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               | 5.0                                                                                | 5.0                                                                                 |                                                                                     | 5.0                                                                                 | 5.0                                                                                 | 5.0                                                                                 |
| Minimum Split (s)    | 10.5                                                                              | 21.0                                                                              | 21.0                                                                              | 10.5                                                                              | 21.0                                                                              | 21.0                                                                              | 10.5                                                                               | 21.0                                                                                |                                                                                     | 10.5                                                                                | 21.0                                                                                | 21.0                                                                                |
| Total Split (s)      | 15.0                                                                              | 30.0                                                                              | 30.0                                                                              | 15.0                                                                              | 30.0                                                                              | 30.0                                                                              | 12.0                                                                               | 56.0                                                                                |                                                                                     | 12.0                                                                                | 56.0                                                                                | 56.0                                                                                |
| Total Split (%)      | 13.3%                                                                             | 26.5%                                                                             | 26.5%                                                                             | 13.3%                                                                             | 26.5%                                                                             | 26.5%                                                                             | 10.6%                                                                              | 49.6%                                                                               |                                                                                     | 10.6%                                                                               | 49.6%                                                                               | 49.6%                                                                               |
| Yellow Time (s)      | 3.5                                                                               | 3.5                                                                               | 3.5                                                                               | 3.5                                                                               | 3.5                                                                               | 3.5                                                                               | 3.5                                                                                | 3.5                                                                                 |                                                                                     | 3.5                                                                                 | 3.5                                                                                 | 3.5                                                                                 |
| All-Red Time (s)     | 1.5                                                                               | 1.5                                                                               | 1.5                                                                               | 1.5                                                                               | 1.5                                                                               | 1.5                                                                               | 1.5                                                                                | 1.5                                                                                 |                                                                                     | 1.5                                                                                 | 1.5                                                                                 | 1.5                                                                                 |
| Lost Time Adjust (s) | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                 |                                                                                     | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Total Lost Time (s)  | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               | 5.0                                                                                | 5.0                                                                                 |                                                                                     | 5.0                                                                                 | 5.0                                                                                 | 5.0                                                                                 |
| Lead/Lag             | Lead                                                                              | Lag                                                                               | Lag                                                                               | Lead                                                                              | Lag                                                                               | Lag                                                                               | Lead                                                                               | Lag                                                                                 |                                                                                     | Lead                                                                                | Lag                                                                                 | Lag                                                                                 |
| Lead-Lag Optimize?   | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                                | Yes                                                                                 |                                                                                     | Yes                                                                                 | Yes                                                                                 | Yes                                                                                 |
| Recall Mode          | None                                                                              | C-Max                                                                             | C-Max                                                                             | None                                                                              | C-Max                                                                             | C-Max                                                                             | None                                                                               | Min                                                                                 |                                                                                     | None                                                                                | Min                                                                                 | Min                                                                                 |
| Act Effect Green (s) | 69.5                                                                              | 59.4                                                                              | 59.4                                                                              | 69.0                                                                              | 59.1                                                                              | 59.1                                                                              | 24.6                                                                               | 19.1                                                                                | 113.0                                                                               | 25.7                                                                                | 21.5                                                                                | 21.5                                                                                |
| Actuated g/C Ratio   | 0.62                                                                              | 0.53                                                                              | 0.53                                                                              | 0.61                                                                              | 0.52                                                                              | 0.52                                                                              | 0.22                                                                               | 0.17                                                                                | 1.00                                                                                | 0.23                                                                                | 0.19                                                                                | 0.19                                                                                |
| v/c Ratio            | 0.23                                                                              | 0.12                                                                              | 0.04                                                                              | 0.22                                                                              | 0.13                                                                              | 0.04                                                                              | 0.18                                                                               | 0.47                                                                                | 0.06                                                                                | 0.22                                                                                | 0.63                                                                                | 0.41                                                                                |
| Control Delay        | 9.9                                                                               | 16.2                                                                              | 0.1                                                                               | 9.8                                                                               | 16.4                                                                              | 0.1                                                                               | 30.2                                                                               | 44.2                                                                                | 0.1                                                                                 | 31.0                                                                                | 46.2                                                                                | 8.2                                                                                 |
| Queue Delay          | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Total Delay          | 9.9                                                                               | 16.2                                                                              | 0.1                                                                               | 9.8                                                                               | 16.4                                                                              | 0.1                                                                               | 30.2                                                                               | 44.2                                                                                | 0.1                                                                                 | 31.0                                                                                | 46.2                                                                                | 8.2                                                                                 |
| LOS                  | A                                                                                 | B                                                                                 | A                                                                                 | A                                                                                 | B                                                                                 | A                                                                                 | C                                                                                  | D                                                                                   | A                                                                                   | C                                                                                   | D                                                                                   | A                                                                                   |
| Approach Delay       |                                                                                   | 12.4                                                                              |                                                                                   |                                                                                   | 12.6                                                                              |                                                                                   |                                                                                    | 32.3                                                                                |                                                                                     |                                                                                     | 34.5                                                                                |                                                                                     |
| Approach LOS         |                                                                                   | B                                                                                 |                                                                                   |                                                                                   | B                                                                                 |                                                                                   |                                                                                    | C                                                                                   |                                                                                     |                                                                                     | C                                                                                   |                                                                                     |

## Intersection Summary

Cycle Length: 113

Actuated Cycle Length: 113

Offset: 62 (55%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green

Natural Cycle: 65

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.63

Intersection Signal Delay: 24.1

Intersection LOS: C

Intersection Capacity Utilization 46.8%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 3: S. 96th Street & W. Dillon Road



# Timings 3: S. 96th Street & W. Dillon Road

2024 Background  
AM Peak

|                      |  |  |  |  |  |  |  |  |  |  |  |  |
|----------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group           | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations  |  |  |  |  |  |  |  |  |  |  |  |  |
| Traffic Volume (vph) | 319                                                                               | 420                                                                               | 98                                                                                | 215                                                                               | 478                                                                               | 85                                                                                | 285                                                                                | 629                                                                                 | 455                                                                                 | 99                                                                                  | 709                                                                                 | 421                                                                                 |
| Future Volume (vph)  | 319                                                                               | 420                                                                               | 98                                                                                | 215                                                                               | 478                                                                               | 85                                                                                | 285                                                                                | 629                                                                                 | 455                                                                                 | 99                                                                                  | 709                                                                                 | 421                                                                                 |
| Turn Type            | Prot                                                                              | NA                                                                                | Perm                                                                              | Prot                                                                              | NA                                                                                | Perm                                                                              | Prot                                                                               | NA                                                                                  | Free                                                                                | Prot                                                                                | NA                                                                                  | Perm                                                                                |
| Protected Phases     | 7                                                                                 | 4                                                                                 |                                                                                   | 3                                                                                 | 8                                                                                 |                                                                                   | 5                                                                                  | 2                                                                                   |                                                                                     | 1                                                                                   | 6                                                                                   |                                                                                     |
| Permitted Phases     |                                                                                   |                                                                                   | 4                                                                                 |                                                                                   |                                                                                   | 8                                                                                 |                                                                                    |                                                                                     | Free                                                                                |                                                                                     |                                                                                     | 6                                                                                   |
| Detector Phase       | 7                                                                                 | 4                                                                                 | 4                                                                                 | 3                                                                                 | 8                                                                                 | 8                                                                                 | 5                                                                                  | 2                                                                                   |                                                                                     | 1                                                                                   | 6                                                                                   | 6                                                                                   |
| Switch Phase         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Minimum Initial (s)  | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               | 5.0                                                                                | 5.0                                                                                 |                                                                                     | 5.0                                                                                 | 5.0                                                                                 | 5.0                                                                                 |
| Minimum Split (s)    | 10.0                                                                              | 20.0                                                                              | 20.0                                                                              | 10.0                                                                              | 20.0                                                                              | 20.0                                                                              | 10.0                                                                               | 20.0                                                                                |                                                                                     | 10.0                                                                                | 20.0                                                                                | 20.0                                                                                |
| Total Split (s)      | 25.0                                                                              | 29.0                                                                              | 29.0                                                                              | 25.0                                                                              | 29.0                                                                              | 29.0                                                                              | 17.0                                                                               | 51.0                                                                                |                                                                                     | 15.0                                                                                | 49.0                                                                                | 49.0                                                                                |
| Total Split (%)      | 20.8%                                                                             | 24.2%                                                                             | 24.2%                                                                             | 20.8%                                                                             | 24.2%                                                                             | 24.2%                                                                             | 14.2%                                                                              | 42.5%                                                                               |                                                                                     | 12.5%                                                                               | 40.8%                                                                               | 40.8%                                                                               |
| Yellow Time (s)      | 3.5                                                                               | 3.5                                                                               | 3.5                                                                               | 3.5                                                                               | 3.5                                                                               | 3.5                                                                               | 3.5                                                                                | 3.5                                                                                 |                                                                                     | 3.5                                                                                 | 3.5                                                                                 | 3.5                                                                                 |
| All-Red Time (s)     | 1.5                                                                               | 1.5                                                                               | 1.5                                                                               | 1.5                                                                               | 1.5                                                                               | 1.5                                                                               | 1.5                                                                                | 1.5                                                                                 |                                                                                     | 1.5                                                                                 | 1.5                                                                                 | 1.5                                                                                 |
| Lost Time Adjust (s) | -1.0                                                                              | -1.0                                                                              | -1.0                                                                              | -1.0                                                                              | -1.0                                                                              | -1.0                                                                              | -1.0                                                                               | -1.0                                                                                |                                                                                     | -1.0                                                                                | -1.0                                                                                | -1.0                                                                                |
| Total Lost Time (s)  | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0                                                                                | 4.0                                                                                 |                                                                                     | 4.0                                                                                 | 4.0                                                                                 | 4.0                                                                                 |
| Lead/Lag             | Lead                                                                              | Lag                                                                               | Lag                                                                               | Lead                                                                              | Lag                                                                               | Lag                                                                               | Lead                                                                               | Lag                                                                                 |                                                                                     | Lead                                                                                | Lag                                                                                 | Lag                                                                                 |
| Lead-Lag Optimize?   | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                                | Yes                                                                                 |                                                                                     | Yes                                                                                 | Yes                                                                                 | Yes                                                                                 |
| Recall Mode          | None                                                                              | None                                                                              | None                                                                              | None                                                                              | None                                                                              | None                                                                              | None                                                                               | C-Max                                                                               |                                                                                     | None                                                                                | C-Max                                                                               | C-Max                                                                               |
| Act Effect Green (s) | 17.7                                                                              | 26.4                                                                              | 26.4                                                                              | 14.3                                                                              | 22.9                                                                              | 22.9                                                                              | 14.3                                                                               | 53.6                                                                                | 120.0                                                                               | 9.7                                                                                 | 49.1                                                                                | 49.1                                                                                |
| Actuated g/C Ratio   | 0.15                                                                              | 0.22                                                                              | 0.22                                                                              | 0.12                                                                              | 0.19                                                                              | 0.19                                                                              | 0.12                                                                               | 0.45                                                                                | 1.00                                                                                | 0.08                                                                                | 0.41                                                                                | 0.41                                                                                |
| v/c Ratio            | 0.67                                                                              | 0.58                                                                              | 0.24                                                                              | 0.56                                                                              | 0.75                                                                              | 0.23                                                                              | 0.74                                                                               | 0.42                                                                                | 0.31                                                                                | 0.38                                                                                | 0.52                                                                                | 0.50                                                                                |
| Control Delay        | 54.9                                                                              | 44.7                                                                              | 7.6                                                                               | 54.9                                                                              | 53.3                                                                              | 6.2                                                                               | 63.1                                                                               | 24.9                                                                                | 0.5                                                                                 | 56.0                                                                                | 29.2                                                                                | 5.2                                                                                 |
| Queue Delay          | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Total Delay          | 54.9                                                                              | 44.7                                                                              | 7.6                                                                               | 54.9                                                                              | 53.3                                                                              | 6.2                                                                               | 63.1                                                                               | 24.9                                                                                | 0.5                                                                                 | 56.0                                                                                | 29.2                                                                                | 5.2                                                                                 |
| LOS                  | D                                                                                 | D                                                                                 | A                                                                                 | D                                                                                 | D                                                                                 | A                                                                                 | E                                                                                  | C                                                                                   | A                                                                                   | E                                                                                   | C                                                                                   | A                                                                                   |
| Approach Delay       |                                                                                   | 44.3                                                                              |                                                                                   |                                                                                   | 48.6                                                                              |                                                                                   |                                                                                    | 24.7                                                                                |                                                                                     |                                                                                     | 23.1                                                                                |                                                                                     |
| Approach LOS         |                                                                                   | D                                                                                 |                                                                                   |                                                                                   | D                                                                                 |                                                                                   |                                                                                    | C                                                                                   |                                                                                     |                                                                                     | C                                                                                   |                                                                                     |

## Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 19 (16%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.75

Intersection Signal Delay: 32.6

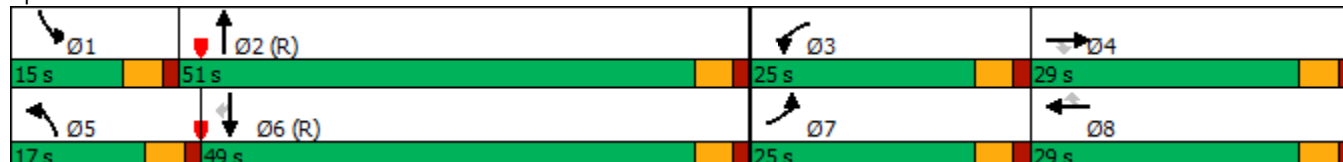
Intersection LOS: C

Intersection Capacity Utilization 63.4%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 3: S. 96th Street & W. Dillon Road



# Timings 3: S. 96th Street & W. Dillon Road

2024 Background  
PM Peak

|                      |  |  |  |  |  |  |  |  |  |  |  |  |
|----------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group           | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations  |  |  |  |  |  |  |  |  |  |  |  |  |
| Traffic Volume (vph) | 315                                                                               | 650                                                                               | 232                                                                               | 443                                                                               | 487                                                                               | 131                                                                               | 84                                                                                 | 856                                                                                 | 245                                                                                 | 123                                                                                 | 639                                                                                 | 234                                                                                 |
| Future Volume (vph)  | 315                                                                               | 650                                                                               | 232                                                                               | 443                                                                               | 487                                                                               | 131                                                                               | 84                                                                                 | 856                                                                                 | 245                                                                                 | 123                                                                                 | 639                                                                                 | 234                                                                                 |
| Turn Type            | Prot                                                                              | NA                                                                                | Perm                                                                              | Prot                                                                              | NA                                                                                | Perm                                                                              | Prot                                                                               | NA                                                                                  | Free                                                                                | Prot                                                                                | NA                                                                                  | Perm                                                                                |
| Protected Phases     | 7                                                                                 | 4                                                                                 |                                                                                   | 3                                                                                 | 8                                                                                 |                                                                                   | 5                                                                                  | 2                                                                                   |                                                                                     | 1                                                                                   | 6                                                                                   |                                                                                     |
| Permitted Phases     |                                                                                   |                                                                                   | 4                                                                                 |                                                                                   |                                                                                   | 8                                                                                 |                                                                                    |                                                                                     | Free                                                                                |                                                                                     |                                                                                     | 6                                                                                   |
| Detector Phase       | 7                                                                                 | 4                                                                                 | 4                                                                                 | 3                                                                                 | 8                                                                                 | 8                                                                                 | 5                                                                                  | 2                                                                                   |                                                                                     | 1                                                                                   | 6                                                                                   | 6                                                                                   |
| Switch Phase         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Minimum Initial (s)  | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               | 5.0                                                                                | 5.0                                                                                 |                                                                                     | 5.0                                                                                 | 5.0                                                                                 | 5.0                                                                                 |
| Minimum Split (s)    | 10.0                                                                              | 20.0                                                                              | 20.0                                                                              | 10.0                                                                              | 20.0                                                                              | 20.0                                                                              | 10.0                                                                               | 20.0                                                                                |                                                                                     | 10.0                                                                                | 20.0                                                                                | 20.0                                                                                |
| Total Split (s)      | 25.0                                                                              | 32.0                                                                              | 32.0                                                                              | 23.0                                                                              | 30.0                                                                              | 30.0                                                                              | 11.0                                                                               | 54.0                                                                                |                                                                                     | 11.0                                                                                | 54.0                                                                                | 54.0                                                                                |
| Total Split (%)      | 20.8%                                                                             | 26.7%                                                                             | 26.7%                                                                             | 19.2%                                                                             | 25.0%                                                                             | 25.0%                                                                             | 9.2%                                                                               | 45.0%                                                                               |                                                                                     | 9.2%                                                                                | 45.0%                                                                               | 45.0%                                                                               |
| Yellow Time (s)      | 3.5                                                                               | 3.5                                                                               | 3.5                                                                               | 3.5                                                                               | 3.5                                                                               | 3.5                                                                               | 3.5                                                                                | 3.5                                                                                 |                                                                                     | 3.5                                                                                 | 3.5                                                                                 | 3.5                                                                                 |
| All-Red Time (s)     | 1.5                                                                               | 1.5                                                                               | 1.5                                                                               | 1.5                                                                               | 1.5                                                                               | 1.5                                                                               | 1.5                                                                                | 1.5                                                                                 |                                                                                     | 1.5                                                                                 | 1.5                                                                                 | 1.5                                                                                 |
| Lost Time Adjust (s) | -2.0                                                                              | -2.0                                                                              | -2.0                                                                              | -2.0                                                                              | -2.0                                                                              | -2.0                                                                              | -2.0                                                                               | -2.0                                                                                |                                                                                     | -2.0                                                                                | -2.0                                                                                | -2.0                                                                                |
| Total Lost Time (s)  | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                                | 3.0                                                                                 |                                                                                     | 3.0                                                                                 | 3.0                                                                                 | 3.0                                                                                 |
| Lead/Lag             | Lead                                                                              | Lag                                                                               | Lag                                                                               | Lead                                                                              | Lag                                                                               | Lag                                                                               | Lead                                                                               | Lag                                                                                 |                                                                                     | Lead                                                                                | Lag                                                                                 | Lag                                                                                 |
| Lead-Lag Optimize?   | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                                | Yes                                                                                 |                                                                                     | Yes                                                                                 | Yes                                                                                 | Yes                                                                                 |
| Recall Mode          | None                                                                              | None                                                                              | None                                                                              | None                                                                              | None                                                                              | None                                                                              | None                                                                               | C-Max                                                                               |                                                                                     | None                                                                                | C-Max                                                                               | C-Max                                                                               |
| Act Effect Green (s) | 18.6                                                                              | 28.2                                                                              | 28.2                                                                              | 19.7                                                                              | 29.4                                                                              | 29.4                                                                              | 8.0                                                                                | 51.8                                                                                | 120.0                                                                               | 8.2                                                                                 | 52.0                                                                                | 52.0                                                                                |
| Actuated g/C Ratio   | 0.16                                                                              | 0.24                                                                              | 0.24                                                                              | 0.16                                                                              | 0.24                                                                              | 0.24                                                                              | 0.07                                                                               | 0.43                                                                                | 1.00                                                                                | 0.07                                                                                | 0.43                                                                                | 0.43                                                                                |
| v/c Ratio            | 0.63                                                                              | 0.82                                                                              | 0.47                                                                              | 0.83                                                                              | 0.59                                                                              | 0.28                                                                              | 0.38                                                                               | 0.59                                                                                | 0.16                                                                                | 0.55                                                                                | 0.44                                                                                | 0.30                                                                                |
| Control Delay        | 52.6                                                                              | 52.7                                                                              | 13.7                                                                              | 61.8                                                                              | 43.6                                                                              | 7.7                                                                               | 58.8                                                                               | 28.1                                                                                | 0.2                                                                                 | 63.6                                                                                | 25.2                                                                                | 3.6                                                                                 |
| Queue Delay          | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Total Delay          | 52.6                                                                              | 52.7                                                                              | 13.7                                                                              | 61.8                                                                              | 43.6                                                                              | 7.7                                                                               | 58.8                                                                               | 28.1                                                                                | 0.2                                                                                 | 63.6                                                                                | 25.2                                                                                | 3.6                                                                                 |
| LOS                  | D                                                                                 | D                                                                                 | B                                                                                 | E                                                                                 | D                                                                                 | A                                                                                 | E                                                                                  | C                                                                                   | A                                                                                   | E                                                                                   | C                                                                                   | A                                                                                   |
| Approach Delay       |                                                                                   | 45.1                                                                              |                                                                                   |                                                                                   | 46.8                                                                              |                                                                                   |                                                                                    | 24.5                                                                                |                                                                                     |                                                                                     | 24.8                                                                                |                                                                                     |
| Approach LOS         |                                                                                   | D                                                                                 |                                                                                   |                                                                                   | D                                                                                 |                                                                                   |                                                                                    | C                                                                                   |                                                                                     |                                                                                     | C                                                                                   |                                                                                     |

## Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 19 (16%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.83

Intersection Signal Delay: 35.5

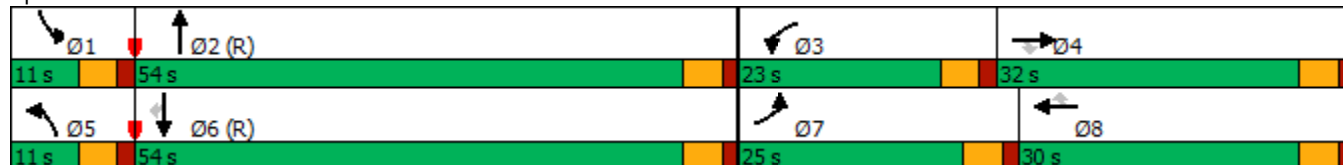
Intersection LOS: D

Intersection Capacity Utilization 71.8%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 3: S. 96th Street & W. Dillon Road





# Timings 3: S. 96th Street & W. Dillon Road

2024 Background  
Sunday Peak

|                      |  |  |  |  |  |  |  |  |  |  |  |  |
|----------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group           | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations  |  |  |  |  |  |  |  |  |  |  |  |  |
| Traffic Volume (vph) | 175                                                                               | 235                                                                               | 40                                                                                | 170                                                                               | 245                                                                               | 40                                                                                | 40                                                                                 | 285                                                                                 | 105                                                                                 | 60                                                                                  | 435                                                                                 | 185                                                                                 |
| Future Volume (vph)  | 175                                                                               | 235                                                                               | 40                                                                                | 170                                                                               | 245                                                                               | 40                                                                                | 40                                                                                 | 285                                                                                 | 105                                                                                 | 60                                                                                  | 435                                                                                 | 185                                                                                 |
| Turn Type            | Prot                                                                              | NA                                                                                | Perm                                                                              | Prot                                                                              | NA                                                                                | Perm                                                                              | Prot                                                                               | NA                                                                                  | Free                                                                                | Prot                                                                                | NA                                                                                  | Perm                                                                                |
| Protected Phases     | 7                                                                                 | 4                                                                                 |                                                                                   | 3                                                                                 | 8                                                                                 |                                                                                   | 5                                                                                  | 2                                                                                   |                                                                                     | 1                                                                                   | 6                                                                                   |                                                                                     |
| Permitted Phases     |                                                                                   |                                                                                   | 4                                                                                 |                                                                                   |                                                                                   | 8                                                                                 |                                                                                    |                                                                                     | Free                                                                                |                                                                                     |                                                                                     | 6                                                                                   |
| Detector Phase       | 7                                                                                 | 4                                                                                 | 4                                                                                 | 3                                                                                 | 8                                                                                 | 8                                                                                 | 5                                                                                  | 2                                                                                   |                                                                                     | 1                                                                                   | 6                                                                                   | 6                                                                                   |
| Switch Phase         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Minimum Initial (s)  | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               | 5.0                                                                                | 5.0                                                                                 |                                                                                     | 5.0                                                                                 | 5.0                                                                                 | 5.0                                                                                 |
| Minimum Split (s)    | 10.0                                                                              | 20.0                                                                              | 20.0                                                                              | 10.0                                                                              | 20.0                                                                              | 20.0                                                                              | 10.0                                                                               | 20.0                                                                                |                                                                                     | 10.0                                                                                | 20.0                                                                                | 20.0                                                                                |
| Total Split (s)      | 25.0                                                                              | 30.0                                                                              | 30.0                                                                              | 25.0                                                                              | 30.0                                                                              | 30.0                                                                              | 12.0                                                                               | 53.0                                                                                |                                                                                     | 12.0                                                                                | 53.0                                                                                | 53.0                                                                                |
| Total Split (%)      | 20.8%                                                                             | 25.0%                                                                             | 25.0%                                                                             | 20.8%                                                                             | 25.0%                                                                             | 25.0%                                                                             | 10.0%                                                                              | 44.2%                                                                               |                                                                                     | 10.0%                                                                               | 44.2%                                                                               | 44.2%                                                                               |
| Yellow Time (s)      | 3.5                                                                               | 3.5                                                                               | 3.5                                                                               | 3.5                                                                               | 3.5                                                                               | 3.5                                                                               | 3.5                                                                                | 3.5                                                                                 |                                                                                     | 3.5                                                                                 | 3.5                                                                                 | 3.5                                                                                 |
| All-Red Time (s)     | 1.5                                                                               | 1.5                                                                               | 1.5                                                                               | 1.5                                                                               | 1.5                                                                               | 1.5                                                                               | 1.5                                                                                | 1.5                                                                                 |                                                                                     | 1.5                                                                                 | 1.5                                                                                 | 1.5                                                                                 |
| Lost Time Adjust (s) | -1.0                                                                              | -1.0                                                                              | -1.0                                                                              | -1.0                                                                              | -1.0                                                                              | -1.0                                                                              | -1.0                                                                               | -1.0                                                                                |                                                                                     | -1.0                                                                                | -1.0                                                                                | -1.0                                                                                |
| Total Lost Time (s)  | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0                                                                                | 4.0                                                                                 |                                                                                     | 4.0                                                                                 | 4.0                                                                                 | 4.0                                                                                 |
| Lead/Lag             | Lead                                                                              | Lag                                                                               | Lag                                                                               | Lead                                                                              | Lag                                                                               | Lag                                                                               | Lead                                                                               | Lag                                                                                 |                                                                                     | Lead                                                                                | Lag                                                                                 | Lag                                                                                 |
| Lead-Lag Optimize?   | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                                | Yes                                                                                 |                                                                                     | Yes                                                                                 | Yes                                                                                 | Yes                                                                                 |
| Recall Mode          | None                                                                              | None                                                                              | None                                                                              | None                                                                              | None                                                                              | None                                                                              | None                                                                               | C-Max                                                                               |                                                                                     | None                                                                                | C-Max                                                                               | C-Max                                                                               |
| Act Effect Green (s) | 13.0                                                                              | 15.5                                                                              | 15.5                                                                              | 12.8                                                                              | 15.3                                                                              | 15.3                                                                              | 8.0                                                                                | 69.2                                                                                | 120.0                                                                               | 8.7                                                                                 | 69.9                                                                                | 69.9                                                                                |
| Actuated g/C Ratio   | 0.11                                                                              | 0.13                                                                              | 0.13                                                                              | 0.11                                                                              | 0.13                                                                              | 0.13                                                                              | 0.07                                                                               | 0.58                                                                                | 1.00                                                                                | 0.07                                                                                | 0.58                                                                                | 0.58                                                                                |
| v/c Ratio            | 0.51                                                                              | 0.56                                                                              | 0.14                                                                              | 0.51                                                                              | 0.59                                                                              | 0.14                                                                              | 0.19                                                                               | 0.15                                                                                | 0.07                                                                                | 0.26                                                                                | 0.23                                                                                | 0.20                                                                                |
| Control Delay        | 55.1                                                                              | 53.5                                                                              | 1.0                                                                               | 55.2                                                                              | 54.5                                                                              | 1.0                                                                               | 54.5                                                                               | 13.7                                                                                | 0.1                                                                                 | 54.8                                                                                | 13.9                                                                                | 2.7                                                                                 |
| Queue Delay          | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Total Delay          | 55.1                                                                              | 53.5                                                                              | 1.0                                                                               | 55.2                                                                              | 54.5                                                                              | 1.0                                                                               | 54.5                                                                               | 13.7                                                                                | 0.1                                                                                 | 54.8                                                                                | 13.9                                                                                | 2.7                                                                                 |
| LOS                  | E                                                                                 | D                                                                                 | A                                                                                 | E                                                                                 | D                                                                                 | A                                                                                 | D                                                                                  | B                                                                                   | A                                                                                   | D                                                                                   | B                                                                                   | A                                                                                   |
| Approach Delay       |                                                                                   | 49.5                                                                              |                                                                                   |                                                                                   | 50.1                                                                              |                                                                                   |                                                                                    | 14.1                                                                                |                                                                                     |                                                                                     | 14.5                                                                                |                                                                                     |
| Approach LOS         |                                                                                   | D                                                                                 |                                                                                   |                                                                                   | D                                                                                 |                                                                                   |                                                                                    | B                                                                                   |                                                                                     |                                                                                     | B                                                                                   |                                                                                     |

## Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 19 (16%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.59

Intersection Signal Delay: 30.2

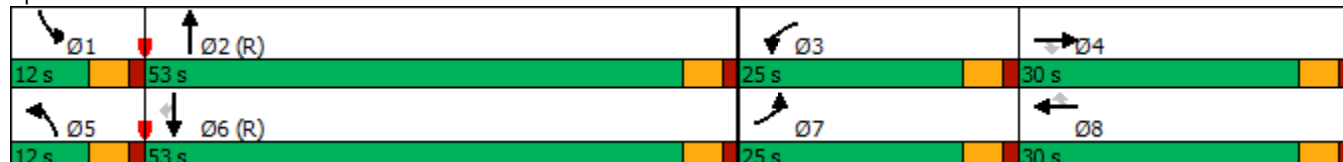
Intersection LOS: C

Intersection Capacity Utilization 41.3%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 3: S. 96th Street & W. Dillon Road



# Timings 3: S. 96th Street & W. Dillon Road

2024 Total  
AM Peak

|                      |  |  |  |  |  |  |  |  |  |  |  |  |
|----------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group           | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations  |  |  |  |  |  |  |  |  |  |  |  |  |
| Traffic Volume (vph) | 439                                                                               | 420                                                                               | 98                                                                                | 269                                                                               | 514                                                                               | 100                                                                               | 285                                                                                | 809                                                                                 | 455                                                                                 | 135                                                                                 | 763                                                                                 | 457                                                                                 |
| Future Volume (vph)  | 439                                                                               | 420                                                                               | 98                                                                                | 269                                                                               | 514                                                                               | 100                                                                               | 285                                                                                | 809                                                                                 | 455                                                                                 | 135                                                                                 | 763                                                                                 | 457                                                                                 |
| Turn Type            | Prot                                                                              | NA                                                                                | Perm                                                                              | Prot                                                                              | NA                                                                                | Perm                                                                              | Prot                                                                               | NA                                                                                  | Free                                                                                | Prot                                                                                | NA                                                                                  | Perm                                                                                |
| Protected Phases     | 7                                                                                 | 4                                                                                 |                                                                                   | 3                                                                                 | 8                                                                                 |                                                                                   | 5                                                                                  | 2                                                                                   |                                                                                     | 1                                                                                   | 6                                                                                   |                                                                                     |
| Permitted Phases     |                                                                                   |                                                                                   | 4                                                                                 |                                                                                   |                                                                                   | 8                                                                                 |                                                                                    |                                                                                     | Free                                                                                |                                                                                     |                                                                                     | 6                                                                                   |
| Detector Phase       | 7                                                                                 | 4                                                                                 | 4                                                                                 | 3                                                                                 | 8                                                                                 | 8                                                                                 | 5                                                                                  | 2                                                                                   |                                                                                     | 1                                                                                   | 6                                                                                   | 6                                                                                   |
| Switch Phase         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Minimum Initial (s)  | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               | 5.0                                                                                | 5.0                                                                                 |                                                                                     | 5.0                                                                                 | 5.0                                                                                 | 5.0                                                                                 |
| Minimum Split (s)    | 10.0                                                                              | 20.0                                                                              | 20.0                                                                              | 10.0                                                                              | 20.0                                                                              | 20.0                                                                              | 10.0                                                                               | 20.0                                                                                |                                                                                     | 10.0                                                                                | 20.0                                                                                | 20.0                                                                                |
| Total Split (s)      | 25.0                                                                              | 29.0                                                                              | 29.0                                                                              | 25.0                                                                              | 29.0                                                                              | 29.0                                                                              | 17.0                                                                               | 51.0                                                                                |                                                                                     | 15.0                                                                                | 49.0                                                                                | 49.0                                                                                |
| Total Split (%)      | 20.8%                                                                             | 24.2%                                                                             | 24.2%                                                                             | 20.8%                                                                             | 24.2%                                                                             | 24.2%                                                                             | 14.2%                                                                              | 42.5%                                                                               |                                                                                     | 12.5%                                                                               | 40.8%                                                                               | 40.8%                                                                               |
| Yellow Time (s)      | 3.5                                                                               | 3.5                                                                               | 3.5                                                                               | 3.5                                                                               | 3.5                                                                               | 3.5                                                                               | 3.5                                                                                | 3.5                                                                                 |                                                                                     | 3.5                                                                                 | 3.5                                                                                 | 3.5                                                                                 |
| All-Red Time (s)     | 1.5                                                                               | 1.5                                                                               | 1.5                                                                               | 1.5                                                                               | 1.5                                                                               | 1.5                                                                               | 1.5                                                                                | 1.5                                                                                 |                                                                                     | 1.5                                                                                 | 1.5                                                                                 | 1.5                                                                                 |
| Lost Time Adjust (s) | -1.0                                                                              | -1.0                                                                              | -1.0                                                                              | -1.0                                                                              | -1.0                                                                              | -1.0                                                                              | -1.0                                                                               | -1.0                                                                                |                                                                                     | -1.0                                                                                | -1.0                                                                                | -1.0                                                                                |
| Total Lost Time (s)  | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0                                                                                | 4.0                                                                                 |                                                                                     | 4.0                                                                                 | 4.0                                                                                 | 4.0                                                                                 |
| Lead/Lag             | Lead                                                                              | Lag                                                                               | Lag                                                                               | Lead                                                                              | Lag                                                                               | Lag                                                                               | Lead                                                                               | Lag                                                                                 |                                                                                     | Lead                                                                                | Lag                                                                                 | Lag                                                                                 |
| Lead-Lag Optimize?   | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                                | Yes                                                                                 |                                                                                     | Yes                                                                                 | Yes                                                                                 | Yes                                                                                 |
| Recall Mode          | None                                                                              | None                                                                              | None                                                                              | None                                                                              | None                                                                              | None                                                                              | None                                                                               | C-Max                                                                               |                                                                                     | None                                                                                | C-Max                                                                               | C-Max                                                                               |
| Act Effect Green (s) | 20.2                                                                              | 27.4                                                                              | 27.4                                                                              | 16.2                                                                              | 23.5                                                                              | 23.5                                                                              | 13.5                                                                               | 50.0                                                                                | 120.0                                                                               | 10.3                                                                                | 46.9                                                                                | 46.9                                                                                |
| Actuated g/C Ratio   | 0.17                                                                              | 0.23                                                                              | 0.23                                                                              | 0.14                                                                              | 0.20                                                                              | 0.20                                                                              | 0.11                                                                               | 0.42                                                                                | 1.00                                                                                | 0.09                                                                                | 0.39                                                                                | 0.39                                                                                |
| v/c Ratio            | 0.81                                                                              | 0.55                                                                              | 0.23                                                                              | 0.62                                                                              | 0.79                                                                              | 0.27                                                                              | 0.79                                                                               | 0.58                                                                                | 0.31                                                                                | 0.49                                                                                | 0.59                                                                                | 0.56                                                                                |
| Control Delay        | 60.0                                                                              | 43.9                                                                              | 7.9                                                                               | 54.6                                                                              | 54.8                                                                              | 8.7                                                                               | 67.2                                                                               | 29.7                                                                                | 0.5                                                                                 | 54.0                                                                                | 35.8                                                                                | 11.2                                                                                |
| Queue Delay          | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Total Delay          | 60.0                                                                              | 43.9                                                                              | 7.9                                                                               | 54.6                                                                              | 54.8                                                                              | 8.7                                                                               | 67.2                                                                               | 29.7                                                                                | 0.5                                                                                 | 54.0                                                                                | 35.8                                                                                | 11.2                                                                                |
| LOS                  | E                                                                                 | D                                                                                 | A                                                                                 | D                                                                                 | D                                                                                 | A                                                                                 | E                                                                                  | C                                                                                   | A                                                                                   | D                                                                                   | D                                                                                   | B                                                                                   |
| Approach Delay       |                                                                                   | 47.6                                                                              |                                                                                   |                                                                                   | 49.5                                                                              |                                                                                   |                                                                                    | 28.0                                                                                |                                                                                     |                                                                                     | 29.3                                                                                |                                                                                     |
| Approach LOS         |                                                                                   | D                                                                                 |                                                                                   |                                                                                   | D                                                                                 |                                                                                   |                                                                                    | C                                                                                   |                                                                                     |                                                                                     | C                                                                                   |                                                                                     |

## Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 19 (16%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 65

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.81

Intersection Signal Delay: 36.3

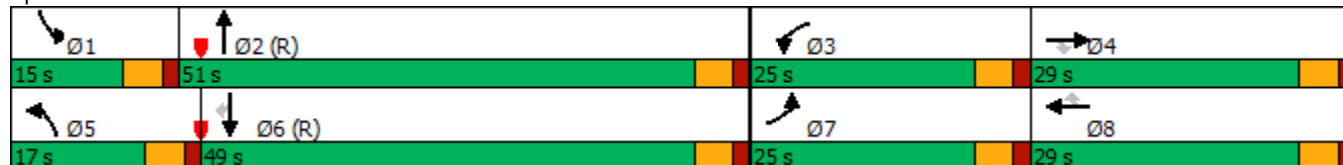
Intersection LOS: D

Intersection Capacity Utilization 69.3%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 3: S. 96th Street & W. Dillon Road



HCM 6th TWSC  
6: S. 96th Street & South Access

2024 Total  
AM Peak

| Intersection             |        |          |      |        |      |      |
|--------------------------|--------|----------|------|--------|------|------|
| Int Delay, s/veh         | 0.4    |          |      |        |      |      |
| Movement                 | WBL    | WBR      | NBT  | NBR    | SBL  | SBT  |
| Lane Configurations      |        | ↗        | ↗↗   | ↗      |      | ↗↗   |
| Traffic Vol, veh/h       | 0      | 64       | 1185 | 165    | 0    | 1355 |
| Future Vol, veh/h        | 0      | 64       | 1185 | 165    | 0    | 1355 |
| Conflicting Peds, #/hr   | 0      | 0        | 0    | 0      | 0    | 0    |
| Sign Control             | Stop   | Stop     | Free | Free   | Free | Free |
| RT Channelized           | -      | None     | -    | None   | -    | None |
| Storage Length           | -      | 0        | -    | 0      | -    | -    |
| Veh in Median Storage, # | 0      | -        | 0    | -      | -    | 0    |
| Grade, %                 | 0      | -        | 0    | -      | -    | 0    |
| Peak Hour Factor         | 92     | 92       | 92   | 92     | 92   | 92   |
| Heavy Vehicles, %        | 2      | 2        | 2    | 2      | 2    | 2    |
| Mvmt Flow                | 0      | 70       | 1288 | 179    | 0    | 1473 |
| Major/Minor              | Minor1 | Major1   |      | Major2 |      |      |
| Conflicting Flow All     | -      | 644      | 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      | 416      | -    | -      | 0    | -    |
| Stage 1                  | 0      | -        | -    | -      | 0    | -    |
| Stage 2                  | 0      | -        | -    | -      | 0    | -    |
| Platoon blocked, %       |        |          | -    | -      |      | -    |
| Mov Cap-1 Maneuver       | -      | 416      | -    | -      | -    | -    |
| Mov Cap-2 Maneuver       | -      | -        | -    | -      | -    | -    |
| Stage 1                  | -      | -        | -    | -      | -    | -    |
| Stage 2                  | -      | -        | -    | -      | -    | -    |
| Approach                 | WB     | NB       |      | SB     |      |      |
| HCM Control Delay, s     | 15.4   | 0        |      | 0      |      |      |
| HCM LOS                  | C      |          |      |        |      |      |
| Minor Lane/Major Mvmt    | NBT    | NBRWBLn1 |      | SBT    |      |      |
| Capacity (veh/h)         | -      | - 416    |      | -      |      |      |
| HCM Lane V/C Ratio       | -      | - 0.167  |      | -      |      |      |
| HCM Control Delay (s)    | -      | - 15.4   |      | -      |      |      |
| HCM Lane LOS             | -      | - C      |      | -      |      |      |
| HCM 95th %tile Q(veh)    | -      | - 0.6    |      | -      |      |      |

HCM 6th TWSC  
8: S. 96th Street & North Access

2024 Total  
AM Peak

| Intersection               |        |                                                                                   |                                                                                   |                            |                                                                                   |                                                                                   |
|----------------------------|--------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|----------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Int Delay, s/veh           | 0.5    |                                                                                   |                                                                                   |                            |                                                                                   |                                                                                   |
| Movement                   | WBL    | WBR                                                                               | NBT                                                                               | NBR                        | SBL                                                                               | SBT                                                                               |
| Lane Configurations        |        |  |  |                            |  |  |
| Traffic Vol, veh/h         | 0      | 48                                                                                | 1130                                                                              | 68                         | 85                                                                                | 1385                                                                              |
| Future Vol, veh/h          | 0      | 48                                                                                | 1130                                                                              | 68                         | 85                                                                                | 1385                                                                              |
| Conflicting Peds, #/hr     | 0      | 0                                                                                 | 0                                                                                 | 0                          | 0                                                                                 | 0                                                                                 |
| Sign Control               | Stop   | Stop                                                                              | Free                                                                              | Free                       | Free                                                                              | Free                                                                              |
| RT Channelized             | -      | None                                                                              | -                                                                                 | None                       | -                                                                                 | None                                                                              |
| Storage Length             | -      | 0                                                                                 | -                                                                                 | -                          | 0                                                                                 | -                                                                                 |
| Veh in Median Storage, #   | 0      | -                                                                                 | 0                                                                                 | -                          | -                                                                                 | 0                                                                                 |
| Grade, %                   | 0      | -                                                                                 | 0                                                                                 | -                          | -                                                                                 | 0                                                                                 |
| Peak Hour Factor           | 92     | 92                                                                                | 92                                                                                | 92                         | 92                                                                                | 92                                                                                |
| Heavy Vehicles, %          | 2      | 2                                                                                 | 2                                                                                 | 2                          | 2                                                                                 | 2                                                                                 |
| Mvmt Flow                  | 0      | 52                                                                                | 1228                                                                              | 74                         | 92                                                                                | 1505                                                                              |
|                            |        |                                                                                   |                                                                                   |                            |                                                                                   |                                                                                   |
| Major/Minor                | Minor1 | Major1                                                                            |                                                                                   | Major2                     |                                                                                   |                                                                                   |
| Conflicting Flow All       | -      | 651                                                                               | 0                                                                                 | 0                          | 1302                                                                              | 0                                                                                 |
| Stage 1                    | -      | -                                                                                 | -                                                                                 | -                          | -                                                                                 | -                                                                                 |
| Stage 2                    | -      | -                                                                                 | -                                                                                 | -                          | -                                                                                 | -                                                                                 |
| Critical Hdwy              | -      | 6.94                                                                              | -                                                                                 | -                          | 4.14                                                                              | -                                                                                 |
| Critical Hdwy Stg 1        | -      | -                                                                                 | -                                                                                 | -                          | -                                                                                 | -                                                                                 |
| Critical Hdwy Stg 2        | -      | -                                                                                 | -                                                                                 | -                          | -                                                                                 | -                                                                                 |
| Follow-up Hdwy             | -      | 3.32                                                                              | -                                                                                 | -                          | 2.22                                                                              | -                                                                                 |
| Pot Cap-1 Maneuver         | 0      | *651                                                                              | -                                                                                 | -                          | 841                                                                               | -                                                                                 |
| Stage 1                    | 0      | -                                                                                 | -                                                                                 | -                          | -                                                                                 | -                                                                                 |
| Stage 2                    | 0      | -                                                                                 | -                                                                                 | -                          | -                                                                                 | -                                                                                 |
| Platoon blocked, %         |        | 1                                                                                 | -                                                                                 | -                          | 1                                                                                 | -                                                                                 |
| Mov Cap-1 Maneuver         | -      | *651                                                                              | -                                                                                 | -                          | 841                                                                               | -                                                                                 |
| Mov Cap-2 Maneuver         | -      | -                                                                                 | -                                                                                 | -                          | -                                                                                 | -                                                                                 |
| Stage 1                    | -      | -                                                                                 | -                                                                                 | -                          | -                                                                                 | -                                                                                 |
| Stage 2                    | -      | -                                                                                 | -                                                                                 | -                          | -                                                                                 | -                                                                                 |
|                            |        |                                                                                   |                                                                                   |                            |                                                                                   |                                                                                   |
|                            |        |                                                                                   |                                                                                   |                            |                                                                                   |                                                                                   |
| Approach                   | WB     | NB                                                                                |                                                                                   | SB                         |                                                                                   |                                                                                   |
| HCM Control Delay, s       | 11     | 0                                                                                 |                                                                                   | 0.6                        |                                                                                   |                                                                                   |
| HCM LOS                    | B      |                                                                                   |                                                                                   |                            |                                                                                   |                                                                                   |
|                            |        |                                                                                   |                                                                                   |                            |                                                                                   |                                                                                   |
| Minor Lane/Major Mvmt      | NBT    | NBRWBLn1                                                                          |                                                                                   | SBL                        | SBT                                                                               |                                                                                   |
| Capacity (veh/h)           | -      | -                                                                                 | 651                                                                               | 841                        | -                                                                                 |                                                                                   |
| HCM Lane V/C Ratio         | -      | -                                                                                 | 0.08                                                                              | 0.11                       | -                                                                                 |                                                                                   |
| HCM Control Delay (s)      | -      | -                                                                                 | 11                                                                                | 9.8                        | -                                                                                 |                                                                                   |
| HCM Lane LOS               | -      | -                                                                                 | B                                                                                 | A                          | -                                                                                 |                                                                                   |
| HCM 95th %tile Q(veh)      | -      | -                                                                                 | 0.3                                                                               | 0.4                        | -                                                                                 |                                                                                   |
| Notes                      |        |                                                                                   |                                                                                   |                            |                                                                                   |                                                                                   |
| ~: Volume exceeds capacity |        | \$: Delay exceeds 300s                                                            |                                                                                   | +: Computation Not Defined |                                                                                   | *: All major volume in platoon                                                    |

Timings  
12: S. 96th Street & Middle Access

2024 Total  
AM Peak

|                      |  |  |  |  |  |  |
|----------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Lane Group           | WBL                                                                               | WBR                                                                               | NBT                                                                               | NBR                                                                               | SBL                                                                               | SBT                                                                               |
| Lane Configurations  |  |  |  |  |  |  |
| Traffic Volume (vph) | 151                                                                               | 86                                                                                | 1115                                                                              | 136                                                                               | 181                                                                               | 1205                                                                              |
| Future Volume (vph)  | 151                                                                               | 86                                                                                | 1115                                                                              | 136                                                                               | 181                                                                               | 1205                                                                              |
| Turn Type            | Prot                                                                              | Prot                                                                              | NA                                                                                | Perm                                                                              | pm+pt                                                                             | NA                                                                                |
| Protected Phases     | 7                                                                                 | 7                                                                                 | 2                                                                                 |                                                                                   | 1                                                                                 | 6                                                                                 |
| Permitted Phases     |                                                                                   |                                                                                   |                                                                                   | 2                                                                                 | 6                                                                                 |                                                                                   |
| Detector Phase       | 7                                                                                 | 7                                                                                 | 2                                                                                 | 2                                                                                 | 1                                                                                 | 6                                                                                 |
| Switch Phase         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Minimum Initial (s)  | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               |
| Minimum Split (s)    | 23.0                                                                              | 23.0                                                                              | 23.0                                                                              | 23.0                                                                              | 10.0                                                                              | 23.0                                                                              |
| Total Split (s)      | 15.0                                                                              | 15.0                                                                              | 33.0                                                                              | 33.0                                                                              | 12.0                                                                              | 45.0                                                                              |
| Total Split (%)      | 25.0%                                                                             | 25.0%                                                                             | 55.0%                                                                             | 55.0%                                                                             | 20.0%                                                                             | 75.0%                                                                             |
| Yellow Time (s)      | 3.5                                                                               | 3.5                                                                               | 3.5                                                                               | 3.5                                                                               | 3.5                                                                               | 3.5                                                                               |
| All-Red Time (s)     | 1.5                                                                               | 1.5                                                                               | 1.5                                                                               | 1.5                                                                               | 1.5                                                                               | 1.5                                                                               |
| Lost Time Adjust (s) | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |
| Total Lost Time (s)  | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               |
| Lead/Lag             |                                                                                   |                                                                                   | Lag                                                                               | Lag                                                                               | Lead                                                                              |                                                                                   |
| Lead-Lag Optimize?   |                                                                                   |                                                                                   | Yes                                                                               | Yes                                                                               | Yes                                                                               |                                                                                   |
| Recall Mode          | None                                                                              | None                                                                              | C-Max                                                                             | C-Max                                                                             | None                                                                              | C-Max                                                                             |
| Act Effect Green (s) | 9.1                                                                               | 9.1                                                                               | 31.4                                                                              | 31.4                                                                              | 43.2                                                                              | 44.2                                                                              |
| Actuated g/C Ratio   | 0.15                                                                              | 0.15                                                                              | 0.52                                                                              | 0.52                                                                              | 0.72                                                                              | 0.74                                                                              |
| v/c Ratio            | 0.61                                                                              | 0.29                                                                              | 0.65                                                                              | 0.16                                                                              | 0.58                                                                              | 0.50                                                                              |
| Control Delay        | 33.8                                                                              | 8.6                                                                               | 24.1                                                                              | 7.4                                                                               | 13.6                                                                              | 5.4                                                                               |
| Queue Delay          | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |
| Total Delay          | 33.8                                                                              | 8.6                                                                               | 24.1                                                                              | 7.4                                                                               | 13.6                                                                              | 5.4                                                                               |
| LOS                  | C                                                                                 | A                                                                                 | C                                                                                 | A                                                                                 | B                                                                                 | A                                                                                 |
| Approach Delay       | 24.7                                                                              |                                                                                   | 22.3                                                                              |                                                                                   |                                                                                   | 6.5                                                                               |
| Approach LOS         | C                                                                                 |                                                                                   | C                                                                                 |                                                                                   |                                                                                   | A                                                                                 |

Intersection Summary

|                                                                      |
|----------------------------------------------------------------------|
| Cycle Length: 60                                                     |
| Actuated Cycle Length: 60                                            |
| Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green |
| Natural Cycle: 60                                                    |
| Control Type: Actuated-Coordinated                                   |
| Maximum v/c Ratio: 0.65                                              |
| Intersection Signal Delay: 14.9                                      |
| Intersection Capacity Utilization 61.7%                              |
| Analysis Period (min) 15                                             |
| Intersection LOS: B                                                  |
| ICU Level of Service B                                               |

Splits and Phases: 12: S. 96th Street & Middle Access



HCM 6th TWSC  
14: W. Dillon Road & East Access

2024 Total  
AM Peak

| Intersection             |        |        |      |        |      |      |
|--------------------------|--------|--------|------|--------|------|------|
| Int Delay, s/veh         | 0.6    |        |      |        |      |      |
| Movement                 | EBL    | EBT    | WBT  | WBR    | SBL  | SBR  |
| Lane Configurations      |        | ↑↑     | ↑↑   | ↗      |      | ↗    |
| Traffic Vol, veh/h       | 0      | 1010   | 790  | 45     | 0    | 90   |
| Future Vol, veh/h        | 0      | 1010   | 790  | 45     | 0    | 90   |
| Conflicting Peds, #/hr   | 0      | 0      | 0    | 0      | 0    | 0    |
| Sign Control             | Free   | Free   | Free | Free   | Stop | Stop |
| RT Channelized           | -      | None   | -    | None   | -    | None |
| Storage Length           | -      | -      | -    | 0      | -    | 0    |
| Veh in Median Storage, # | -      | 0      | 0    | -      | 0    | -    |
| Grade, %                 | -      | 0      | 0    | -      | 0    | -    |
| Peak Hour Factor         | 92     | 92     | 92   | 92     | 92   | 92   |
| Heavy Vehicles, %        | 2      | 2      | 2    | 2      | 2    | 2    |
| Mvmt Flow                | 0      | 1098   | 859  | 49     | 0    | 98   |
|                          |        |        |      |        |      |      |
| Major/Minor              | Major1 | Major2 |      | Minor2 |      |      |
| Conflicting Flow All     | -      | 0      | -    | 0      | -    | 430  |
| 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      | -      | -    | -      | 0    | 573  |
| Stage 1                  | 0      | -      | -    | -      | 0    | -    |
| Stage 2                  | 0      | -      | -    | -      | 0    | -    |
| Platoon blocked, %       |        | -      | -    | -      |      |      |
| Mov Cap-1 Maneuver       | -      | -      | -    | -      | -    | 573  |
| Mov Cap-2 Maneuver       | -      | -      | -    | -      | -    | -    |
| Stage 1                  | -      | -      | -    | -      | -    | -    |
| Stage 2                  | -      | -      | -    | -      | -    | -    |
|                          |        |        |      |        |      |      |
|                          |        |        |      |        |      |      |
| Approach                 | EB     | WB     |      | SB     |      |      |
| HCM Control Delay, s     | 0      | 0      |      | 12.6   |      |      |
| HCM LOS                  | B      |        |      |        |      |      |
|                          |        |        |      |        |      |      |
| Minor Lane/Major Mvmt    | EBT    | WBT    | WBR  | SBLn1  |      |      |
| Capacity (veh/h)         | -      | -      | -    | 573    |      |      |
| HCM Lane V/C Ratio       | -      | -      | -    | 0.171  |      |      |
| HCM Control Delay (s)    | -      | -      | -    | 12.6   |      |      |
| HCM Lane LOS             | -      | -      | -    | B      |      |      |
| HCM 95th %tile O(veh)    | -      | -      | -    | 0.6    |      |      |



# Timings 3: S. 96th Street & W. Dillon Road

2024 Total  
PM Peak

|                      |  |  |  |  |  |  |  |  |  |  |  |  |
|----------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group           | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations  |  |  |  |  |  |  |  |  |  |  |  |  |
| Traffic Volume (vph) | 357                                                                               | 650                                                                               | 232                                                                               | 482                                                                               | 507                                                                               | 136                                                                               | 84                                                                                 | 920                                                                                 | 245                                                                                 | 162                                                                                 | 717                                                                                 | 292                                                                                 |
| Future Volume (vph)  | 357                                                                               | 650                                                                               | 232                                                                               | 482                                                                               | 507                                                                               | 136                                                                               | 84                                                                                 | 920                                                                                 | 245                                                                                 | 162                                                                                 | 717                                                                                 | 292                                                                                 |
| Turn Type            | Prot                                                                              | NA                                                                                | Perm                                                                              | Prot                                                                              | NA                                                                                | Perm                                                                              | Prot                                                                               | NA                                                                                  | Free                                                                                | Prot                                                                                | NA                                                                                  | Perm                                                                                |
| Protected Phases     | 7                                                                                 | 4                                                                                 |                                                                                   | 3                                                                                 | 8                                                                                 |                                                                                   | 5                                                                                  | 2                                                                                   |                                                                                     | 1                                                                                   | 6                                                                                   |                                                                                     |
| Permitted Phases     |                                                                                   |                                                                                   | 4                                                                                 |                                                                                   |                                                                                   | 8                                                                                 |                                                                                    |                                                                                     | Free                                                                                |                                                                                     |                                                                                     | 6                                                                                   |
| Detector Phase       | 7                                                                                 | 4                                                                                 | 4                                                                                 | 3                                                                                 | 8                                                                                 | 8                                                                                 | 5                                                                                  | 2                                                                                   |                                                                                     | 1                                                                                   | 6                                                                                   | 6                                                                                   |
| Switch Phase         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Minimum Initial (s)  | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               | 5.0                                                                                | 5.0                                                                                 |                                                                                     | 5.0                                                                                 | 5.0                                                                                 | 5.0                                                                                 |
| Minimum Split (s)    | 10.0                                                                              | 20.0                                                                              | 20.0                                                                              | 10.0                                                                              | 20.0                                                                              | 20.0                                                                              | 10.0                                                                               | 20.0                                                                                |                                                                                     | 10.0                                                                                | 20.0                                                                                | 20.0                                                                                |
| Total Split (s)      | 25.0                                                                              | 32.0                                                                              | 32.0                                                                              | 23.0                                                                              | 30.0                                                                              | 30.0                                                                              | 11.0                                                                               | 54.0                                                                                |                                                                                     | 11.0                                                                                | 54.0                                                                                | 54.0                                                                                |
| Total Split (%)      | 20.8%                                                                             | 26.7%                                                                             | 26.7%                                                                             | 19.2%                                                                             | 25.0%                                                                             | 25.0%                                                                             | 9.2%                                                                               | 45.0%                                                                               |                                                                                     | 9.2%                                                                                | 45.0%                                                                               | 45.0%                                                                               |
| Yellow Time (s)      | 3.5                                                                               | 3.5                                                                               | 3.5                                                                               | 3.5                                                                               | 3.5                                                                               | 3.5                                                                               | 3.5                                                                                | 3.5                                                                                 |                                                                                     | 3.5                                                                                 | 3.5                                                                                 | 3.5                                                                                 |
| All-Red Time (s)     | 1.5                                                                               | 1.5                                                                               | 1.5                                                                               | 1.5                                                                               | 1.5                                                                               | 1.5                                                                               | 1.5                                                                                | 1.5                                                                                 |                                                                                     | 1.5                                                                                 | 1.5                                                                                 | 1.5                                                                                 |
| Lost Time Adjust (s) | -2.0                                                                              | -2.0                                                                              | -2.0                                                                              | -2.0                                                                              | -2.0                                                                              | -2.0                                                                              | -2.0                                                                               | -2.0                                                                                |                                                                                     | -2.0                                                                                | -2.0                                                                                | -2.0                                                                                |
| Total Lost Time (s)  | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                                | 3.0                                                                                 |                                                                                     | 3.0                                                                                 | 3.0                                                                                 | 3.0                                                                                 |
| Lead/Lag             | Lead                                                                              | Lag                                                                               | Lag                                                                               | Lead                                                                              | Lag                                                                               | Lag                                                                               | Lead                                                                               | Lag                                                                                 |                                                                                     | Lead                                                                                | Lag                                                                                 | Lag                                                                                 |
| Lead-Lag Optimize?   | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                                | Yes                                                                                 |                                                                                     | Yes                                                                                 | Yes                                                                                 | Yes                                                                                 |
| Recall Mode          | None                                                                              | None                                                                              | None                                                                              | None                                                                              | None                                                                              | None                                                                              | None                                                                               | C-Max                                                                               |                                                                                     | None                                                                                | C-Max                                                                               | C-Max                                                                               |
| Act Effect Green (s) | 19.7                                                                              | 28.2                                                                              | 28.2                                                                              | 20.0                                                                              | 28.5                                                                              | 28.5                                                                              | 8.0                                                                                | 51.3                                                                                | 120.0                                                                               | 8.5                                                                                 | 51.7                                                                                | 51.7                                                                                |
| Actuated g/C Ratio   | 0.16                                                                              | 0.24                                                                              | 0.24                                                                              | 0.17                                                                              | 0.24                                                                              | 0.24                                                                              | 0.07                                                                               | 0.43                                                                                | 1.00                                                                                | 0.07                                                                                | 0.43                                                                                | 0.43                                                                                |
| v/c Ratio            | 0.67                                                                              | 0.82                                                                              | 0.49                                                                              | 0.89                                                                              | 0.63                                                                              | 0.30                                                                              | 0.38                                                                               | 0.64                                                                                | 0.16                                                                                | 0.71                                                                                | 0.49                                                                                | 0.36                                                                                |
| Control Delay        | 53.1                                                                              | 52.7                                                                              | 17.1                                                                              | 67.4                                                                              | 45.3                                                                              | 8.0                                                                               | 58.8                                                                               | 29.5                                                                                | 0.2                                                                                 | 65.1                                                                                | 24.0                                                                                | 4.1                                                                                 |
| 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          | 53.1                                                                              | 52.7                                                                              | 17.1                                                                              | 67.4                                                                              | 45.3                                                                              | 8.0                                                                               | 58.8                                                                               | 29.5                                                                                | 0.2                                                                                 | 65.1                                                                                | 24.0                                                                                | 4.1                                                                                 |
| LOS                  | D                                                                                 | D                                                                                 | B                                                                                 | E                                                                                 | D                                                                                 | A                                                                                 | E                                                                                  | C                                                                                   | A                                                                                   | E                                                                                   | C                                                                                   | A                                                                                   |
| Approach Delay       |                                                                                   | 46.1                                                                              |                                                                                   |                                                                                   | 50.2                                                                              |                                                                                   |                                                                                    | 25.7                                                                                |                                                                                     |                                                                                     | 24.7                                                                                |                                                                                     |
| Approach LOS         |                                                                                   | D                                                                                 |                                                                                   |                                                                                   | D                                                                                 |                                                                                   |                                                                                    | C                                                                                   |                                                                                     |                                                                                     | C                                                                                   |                                                                                     |

## Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 19 (16%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 65

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.89

Intersection Signal Delay: 36.5

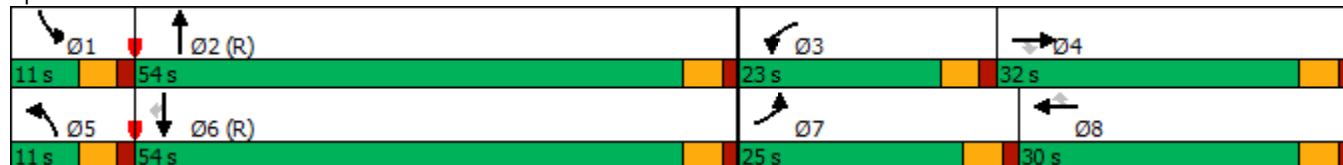
Intersection LOS: D

Intersection Capacity Utilization 75.1%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 3: S. 96th Street & W. Dillon Road



HCM 6th TWSC  
6: S. 96th Street & South Access

2024 Total  
PM Peak

| Intersection             |        |          |      |        |      |      |
|--------------------------|--------|----------|------|--------|------|------|
| Int Delay, s/veh         | 0.6    |          |      |        |      |      |
| Movement                 | WBL    | WBR      | NBT  | NBR    | SBL  | SBT  |
| Lane Configurations      |        | ↗        | ↗↗   | ↗      |      | ↗↗   |
| Traffic Vol, veh/h       | 0      | 86       | 1390 | 25     | 0    | 1170 |
| Future Vol, veh/h        | 0      | 86       | 1390 | 25     | 0    | 1170 |
| Conflicting Peds, #/hr   | 0      | 0        | 0    | 0      | 0    | 0    |
| Sign Control             | Stop   | Stop     | Free | Free   | Free | Free |
| RT Channelized           | -      | None     | -    | None   | -    | None |
| Storage Length           | -      | 0        | -    | 0      | -    | -    |
| Veh in Median Storage, # | 0      | -        | 0    | -      | -    | 0    |
| Grade, %                 | 0      | -        | 0    | -      | -    | 0    |
| Peak Hour Factor         | 92     | 92       | 92   | 92     | 92   | 92   |
| Heavy Vehicles, %        | 2      | 2        | 2    | 2      | 2    | 2    |
| Mvmt Flow                | 0      | 93       | 1511 | 27     | 0    | 1272 |
| Major/Minor              | Minor1 | Major1   |      | Major2 |      |      |
| Conflicting Flow All     | -      | 756      | 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      | 351      | -    | -      | 0    | -    |
| Stage 1                  | 0      | -        | -    | -      | 0    | -    |
| Stage 2                  | 0      | -        | -    | -      | 0    | -    |
| Platoon blocked, %       |        |          | -    | -      |      | -    |
| Mov Cap-1 Maneuver       | -      | 351      | -    | -      | -    | -    |
| Mov Cap-2 Maneuver       | -      | -        | -    | -      | -    | -    |
| Stage 1                  | -      | -        | -    | -      | -    | -    |
| Stage 2                  | -      | -        | -    | -      | -    | -    |
| Approach                 | WB     | NB       |      | SB     |      |      |
| HCM Control Delay, s     | 18.9   | 0        |      | 0      |      |      |
| HCM LOS                  | C      |          |      |        |      |      |
| Minor Lane/Major Mvmt    | NBT    | NBRWBLn1 |      | SBT    |      |      |
| Capacity (veh/h)         | -      | - 351    |      | -      |      |      |
| HCM Lane V/C Ratio       | -      | - 0.266  |      | -      |      |      |
| HCM Control Delay (s)    | -      | - 18.9   |      | -      |      |      |
| HCM Lane LOS             | -      | - C      |      | -      |      |      |
| HCM 95th %tile Q(veh)    | -      | - 1.1    |      | -      |      |      |

HCM 6th TWSC  
8: S. 96th Street & North Access

2024 Total  
PM Peak

| Intersection               |        |                        |       |                            |      |                                |
|----------------------------|--------|------------------------|-------|----------------------------|------|--------------------------------|
| Int Delay, s/veh           | 0.5    |                        |       |                            |      |                                |
| Movement                   | WBL    | WBR                    | NBT   | NBR                        | SBL  | SBT                            |
| Lane Configurations        |        | ↗                      | ↗↗    |                            | ↘    | ↗↗                             |
| Traffic Vol, veh/h         | 0      | 56                     | 1400  | 46                         | 40   | 1040                           |
| Future Vol, veh/h          | 0      | 56                     | 1400  | 46                         | 40   | 1040                           |
| Conflicting Peds, #/hr     | 0      | 0                      | 0     | 0                          | 0    | 0                              |
| Sign Control               | Stop   | Stop                   | Free  | Free                       | Free | Free                           |
| RT Channelized             | -      | None                   | -     | None                       | -    | None                           |
| Storage Length             | -      | 0                      | -     | -                          | 0    | -                              |
| Veh in Median Storage, #   | 0      | -                      | 0     | -                          | -    | 0                              |
| Grade, %                   | 0      | -                      | 0     | -                          | -    | 0                              |
| Peak Hour Factor           | 92     | 92                     | 92    | 92                         | 92   | 92                             |
| Heavy Vehicles, %          | 2      | 2                      | 2     | 2                          | 2    | 2                              |
| Mvmt Flow                  | 0      | 61                     | 1522  | 50                         | 43   | 1130                           |
|                            |        |                        |       |                            |      |                                |
| Major/Minor                | Minor1 | Major1                 |       | Major2                     |      |                                |
| Conflicting Flow All       | -      | 786                    | 0     | 0                          | 1572 | 0                              |
| Stage 1                    | -      | -                      | -     | -                          | -    | -                              |
| Stage 2                    | -      | -                      | -     | -                          | -    | -                              |
| Critical Hdwy              | -      | 6.94                   | -     | -                          | 4.14 | -                              |
| Critical Hdwy Stg 1        | -      | -                      | -     | -                          | -    | -                              |
| Critical Hdwy Stg 2        | -      | -                      | -     | -                          | -    | -                              |
| Follow-up Hdwy             | -      | 3.32                   | -     | -                          | 2.22 | -                              |
| Pot Cap-1 Maneuver         | 0      | *495                   | -     | -                          | *740 | -                              |
| Stage 1                    | 0      | -                      | -     | -                          | -    | -                              |
| Stage 2                    | 0      | -                      | -     | -                          | -    | -                              |
| Platoon blocked, %         |        | 1                      | -     | -                          | 1    | -                              |
| Mov Cap-1 Maneuver         | -      | *495                   | -     | -                          | *740 | -                              |
| Mov Cap-2 Maneuver         | -      | -                      | -     | -                          | -    | -                              |
| Stage 1                    | -      | -                      | -     | -                          | -    | -                              |
| Stage 2                    | -      | -                      | -     | -                          | -    | -                              |
|                            |        |                        |       |                            |      |                                |
|                            |        |                        |       |                            |      |                                |
| Approach                   | WB     | NB                     |       | SB                         |      |                                |
| HCM Control Delay, s       | 13.3   | 0                      |       | 0.4                        |      |                                |
| HCM LOS                    | B      |                        |       |                            |      |                                |
|                            |        |                        |       |                            |      |                                |
| Minor Lane/Major Mvmt      | NBT    | NBRWBLn1               | SBL   | SBT                        |      |                                |
| Capacity (veh/h)           | -      | -                      | 495   | * 740                      | -    |                                |
| HCM Lane V/C Ratio         | -      | -                      | 0.123 | 0.059                      | -    |                                |
| HCM Control Delay (s)      | -      | -                      | 13.3  | 10.2                       | -    |                                |
| HCM Lane LOS               | -      | -                      | B     | B                          | -    |                                |
| HCM 95th %tile Q(veh)      | -      | -                      | 0.4   | 0.2                        | -    |                                |
| Notes                      |        |                        |       |                            |      |                                |
| ~: Volume exceeds capacity |        | \$: Delay exceeds 300s |       | +: Computation Not Defined |      | *: All major volume in platoon |

Timings  
12: S. 96th Street & Middle Access

2024 Total  
PM Peak

|                      |  |  |  |  |  |                                                                                   |
|----------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Lane Group           | WBL                                                                               | WBR                                                                               | NBT                                                                               | NBR                                                                               | SBL                                                                               | SBT                                                                               |
| Lane Configurations  |  |  |  |  |  |  |
| Traffic Volume (vph) | 200                                                                               | 63                                                                                | 1385                                                                              | 89                                                                                | 70                                                                                | 970                                                                               |
| Future Volume (vph)  | 200                                                                               | 63                                                                                | 1385                                                                              | 89                                                                                | 70                                                                                | 970                                                                               |
| Turn Type            | Prot                                                                              | Prot                                                                              | NA                                                                                | Perm                                                                              | pm+pt                                                                             | NA                                                                                |
| Protected Phases     | 7                                                                                 | 7                                                                                 | 2                                                                                 |                                                                                   | 1                                                                                 | 6                                                                                 |
| Permitted Phases     |                                                                                   |                                                                                   |                                                                                   | 2                                                                                 | 6                                                                                 |                                                                                   |
| Detector Phase       | 7                                                                                 | 7                                                                                 | 2                                                                                 | 2                                                                                 | 1                                                                                 | 6                                                                                 |
| Switch Phase         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Minimum Initial (s)  | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               |
| Minimum Split (s)    | 23.0                                                                              | 23.0                                                                              | 23.0                                                                              | 23.0                                                                              | 10.0                                                                              | 23.0                                                                              |
| Total Split (s)      | 15.0                                                                              | 15.0                                                                              | 34.0                                                                              | 34.0                                                                              | 11.0                                                                              | 45.0                                                                              |
| Total Split (%)      | 25.0%                                                                             | 25.0%                                                                             | 56.7%                                                                             | 56.7%                                                                             | 18.3%                                                                             | 75.0%                                                                             |
| Yellow Time (s)      | 3.5                                                                               | 3.5                                                                               | 3.5                                                                               | 3.5                                                                               | 3.5                                                                               | 3.5                                                                               |
| All-Red Time (s)     | 1.5                                                                               | 1.5                                                                               | 1.5                                                                               | 1.5                                                                               | 1.5                                                                               | 1.5                                                                               |
| Lost Time Adjust (s) | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |
| Total Lost Time (s)  | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               |
| Lead/Lag             |                                                                                   |                                                                                   | Lag                                                                               | Lag                                                                               | Lead                                                                              |                                                                                   |
| Lead-Lag Optimize?   |                                                                                   |                                                                                   | Yes                                                                               | Yes                                                                               | Yes                                                                               |                                                                                   |
| Recall Mode          | None                                                                              | None                                                                              | C-Max                                                                             | C-Max                                                                             | None                                                                              | C-Max                                                                             |
| Act Effect Green (s) | 9.7                                                                               | 9.7                                                                               | 33.7                                                                              | 33.7                                                                              | 40.3                                                                              | 40.3                                                                              |
| Actuated g/C Ratio   | 0.16                                                                              | 0.16                                                                              | 0.56                                                                              | 0.56                                                                              | 0.67                                                                              | 0.67                                                                              |
| v/c Ratio            | 0.76                                                                              | 0.22                                                                              | 0.76                                                                              | 0.10                                                                              | 0.26                                                                              | 0.44                                                                              |
| Control Delay        | 43.8                                                                              | 8.7                                                                               | 28.2                                                                              | 6.3                                                                               | 5.8                                                                               | 5.4                                                                               |
| Queue Delay          | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |
| Total Delay          | 43.8                                                                              | 8.7                                                                               | 28.2                                                                              | 6.3                                                                               | 5.8                                                                               | 5.4                                                                               |
| LOS                  | D                                                                                 | A                                                                                 | C                                                                                 | A                                                                                 | A                                                                                 | A                                                                                 |
| Approach Delay       | 35.5                                                                              |                                                                                   | 26.9                                                                              |                                                                                   |                                                                                   | 5.4                                                                               |
| Approach LOS         | D                                                                                 |                                                                                   | C                                                                                 |                                                                                   |                                                                                   | A                                                                                 |

Intersection Summary

Cycle Length: 60

Actuated Cycle Length: 60

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green

Natural Cycle: 70

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.76

Intersection Signal Delay: 19.7

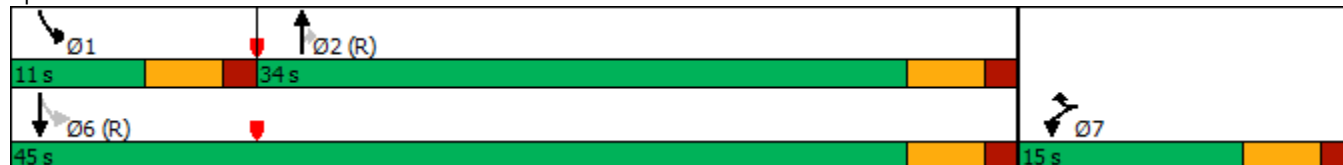
Intersection LOS: B

Intersection Capacity Utilization 66.0%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 12: S. 96th Street & Middle Access



HCM 6th TWSC  
14: W. Dillon Road & East Access

2024 Total  
PM Peak

| Intersection             |        |        |      |        |      |      |
|--------------------------|--------|--------|------|--------|------|------|
| Int Delay, s/veh         | 0.4    |        |      |        |      |      |
| Movement                 | EBL    | EBT    | WBT  | WBR    | SBL  | SBR  |
| Lane Configurations      |        | ↑↑     | ↑↑   | ↗      |      | ↗    |
| Traffic Vol, veh/h       | 0      | 1055   | 1065 | 16     | 0    | 59   |
| Future Vol, veh/h        | 0      | 1055   | 1065 | 16     | 0    | 59   |
| Conflicting Peds, #/hr   | 0      | 0      | 0    | 0      | 0    | 0    |
| Sign Control             | Free   | Free   | Free | Free   | Stop | Stop |
| RT Channelized           | -      | None   | -    | None   | -    | None |
| Storage Length           | -      | -      | -    | 0      | -    | 0    |
| Veh in Median Storage, # | -      | 0      | 0    | -      | 0    | -    |
| Grade, %                 | -      | 0      | 0    | -      | 0    | -    |
| Peak Hour Factor         | 92     | 92     | 92   | 92     | 92   | 92   |
| Heavy Vehicles, %        | 2      | 2      | 2    | 2      | 2    | 2    |
| Mvmt Flow                | 0      | 1147   | 1158 | 17     | 0    | 64   |
|                          |        |        |      |        |      |      |
| Major/Minor              | Major1 | Major2 |      | Minor2 |      |      |
| Conflicting Flow All     | -      | 0      | -    | 0      | -    | 579  |
| 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      | -      | -    | -      | 0    | 458  |
| Stage 1                  | 0      | -      | -    | -      | 0    | -    |
| Stage 2                  | 0      | -      | -    | -      | 0    | -    |
| Platoon blocked, %       |        | -      | -    | -      |      |      |
| Mov Cap-1 Maneuver       | -      | -      | -    | -      | -    | 458  |
| Mov Cap-2 Maneuver       | -      | -      | -    | -      | -    | -    |
| Stage 1                  | -      | -      | -    | -      | -    | -    |
| Stage 2                  | -      | -      | -    | -      | -    | -    |
|                          |        |        |      |        |      |      |
|                          |        |        |      |        |      |      |
| Approach                 | EB     | WB     |      | SB     |      |      |
| HCM Control Delay, s     | 0      | 0      |      | 14.1   |      |      |
| HCM LOS                  | B      |        |      |        |      |      |
|                          |        |        |      |        |      |      |
|                          |        |        |      |        |      |      |
| Minor Lane/Major Mvmt    | EBT    | WBT    | WBR  | SBLn1  |      |      |
| Capacity (veh/h)         | -      | -      | -    | 458    |      |      |
| HCM Lane V/C Ratio       | -      | -      | -    | 0.14   |      |      |
| HCM Control Delay (s)    | -      | -      | -    | 14.1   |      |      |
| HCM Lane LOS             | -      | -      | -    | B      |      |      |
| HCM 95th %tile Q(veh)    | -      | -      | -    | 0.5    |      |      |

# Timings 3: S. 96th Street & W. Dillon Road

2024 Total  
Sunday Peak

|                      |  |  |  |  |  |  |  |  |  |  |  |  |
|----------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group           | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations  |  |  |  |  |  |  |  |  |  |  |  |  |
| Traffic Volume (vph) | 211                                                                               | 235                                                                               | 40                                                                                | 198                                                                               | 264                                                                               | 43                                                                                | 40                                                                                 | 339                                                                                 | 105                                                                                 | 79                                                                                  | 463                                                                                 | 204                                                                                 |
| Future Volume (vph)  | 211                                                                               | 235                                                                               | 40                                                                                | 198                                                                               | 264                                                                               | 43                                                                                | 40                                                                                 | 339                                                                                 | 105                                                                                 | 79                                                                                  | 463                                                                                 | 204                                                                                 |
| Turn Type            | Prot                                                                              | NA                                                                                | Perm                                                                              | Prot                                                                              | NA                                                                                | Perm                                                                              | Prot                                                                               | NA                                                                                  | Free                                                                                | Prot                                                                                | NA                                                                                  | Perm                                                                                |
| Protected Phases     | 7                                                                                 | 4                                                                                 |                                                                                   | 3                                                                                 | 8                                                                                 |                                                                                   | 5                                                                                  | 2                                                                                   |                                                                                     | 1                                                                                   | 6                                                                                   |                                                                                     |
| Permitted Phases     |                                                                                   |                                                                                   | 4                                                                                 |                                                                                   |                                                                                   | 8                                                                                 |                                                                                    |                                                                                     | Free                                                                                |                                                                                     |                                                                                     | 6                                                                                   |
| Detector Phase       | 7                                                                                 | 4                                                                                 | 4                                                                                 | 3                                                                                 | 8                                                                                 | 8                                                                                 | 5                                                                                  | 2                                                                                   |                                                                                     | 1                                                                                   | 6                                                                                   | 6                                                                                   |
| Switch Phase         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Minimum Initial (s)  | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               | 5.0                                                                                | 5.0                                                                                 |                                                                                     | 5.0                                                                                 | 5.0                                                                                 | 5.0                                                                                 |
| Minimum Split (s)    | 10.0                                                                              | 20.0                                                                              | 20.0                                                                              | 10.0                                                                              | 20.0                                                                              | 20.0                                                                              | 10.0                                                                               | 20.0                                                                                |                                                                                     | 10.0                                                                                | 20.0                                                                                | 20.0                                                                                |
| Total Split (s)      | 25.0                                                                              | 30.0                                                                              | 30.0                                                                              | 25.0                                                                              | 30.0                                                                              | 30.0                                                                              | 12.0                                                                               | 53.0                                                                                |                                                                                     | 12.0                                                                                | 53.0                                                                                | 53.0                                                                                |
| Total Split (%)      | 20.8%                                                                             | 25.0%                                                                             | 25.0%                                                                             | 20.8%                                                                             | 25.0%                                                                             | 25.0%                                                                             | 10.0%                                                                              | 44.2%                                                                               |                                                                                     | 10.0%                                                                               | 44.2%                                                                               | 44.2%                                                                               |
| Yellow Time (s)      | 3.5                                                                               | 3.5                                                                               | 3.5                                                                               | 3.5                                                                               | 3.5                                                                               | 3.5                                                                               | 3.5                                                                                | 3.5                                                                                 |                                                                                     | 3.5                                                                                 | 3.5                                                                                 | 3.5                                                                                 |
| All-Red Time (s)     | 1.5                                                                               | 1.5                                                                               | 1.5                                                                               | 1.5                                                                               | 1.5                                                                               | 1.5                                                                               | 1.5                                                                                | 1.5                                                                                 |                                                                                     | 1.5                                                                                 | 1.5                                                                                 | 1.5                                                                                 |
| Lost Time Adjust (s) | -1.0                                                                              | -1.0                                                                              | -1.0                                                                              | -1.0                                                                              | -1.0                                                                              | -1.0                                                                              | -1.0                                                                               | -1.0                                                                                |                                                                                     | -1.0                                                                                | -1.0                                                                                | -1.0                                                                                |
| Total Lost Time (s)  | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0                                                                                | 4.0                                                                                 |                                                                                     | 4.0                                                                                 | 4.0                                                                                 | 4.0                                                                                 |
| Lead/Lag             | Lead                                                                              | Lag                                                                               | Lag                                                                               | Lead                                                                              | Lag                                                                               | Lag                                                                               | Lead                                                                               | Lag                                                                                 |                                                                                     | Lead                                                                                | Lag                                                                                 | Lag                                                                                 |
| Lead-Lag Optimize?   | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                                | Yes                                                                                 |                                                                                     | Yes                                                                                 | Yes                                                                                 | Yes                                                                                 |
| Recall Mode          | None                                                                              | None                                                                              | None                                                                              | None                                                                              | None                                                                              | None                                                                              | None                                                                               | C-Max                                                                               |                                                                                     | None                                                                                | C-Max                                                                               | C-Max                                                                               |
| Act Effect Green (s) | 14.3                                                                              | 16.5                                                                              | 16.5                                                                              | 13.8                                                                              | 16.0                                                                              | 16.0                                                                              | 8.0                                                                                | 66.5                                                                                | 120.0                                                                               | 9.4                                                                                 | 67.8                                                                                | 67.8                                                                                |
| Actuated g/C Ratio   | 0.12                                                                              | 0.14                                                                              | 0.14                                                                              | 0.12                                                                              | 0.13                                                                              | 0.13                                                                              | 0.07                                                                               | 0.55                                                                                | 1.00                                                                                | 0.08                                                                                | 0.56                                                                                | 0.56                                                                                |
| v/c Ratio            | 0.56                                                                              | 0.52                                                                              | 0.14                                                                              | 0.54                                                                              | 0.61                                                                              | 0.15                                                                              | 0.19                                                                               | 0.19                                                                                | 0.07                                                                                | 0.32                                                                                | 0.25                                                                                | 0.22                                                                                |
| Control Delay        | 54.9                                                                              | 51.7                                                                              | 0.9                                                                               | 55.0                                                                              | 54.4                                                                              | 1.1                                                                               | 54.5                                                                               | 15.4                                                                                | 0.1                                                                                 | 56.1                                                                                | 13.3                                                                                | 1.8                                                                                 |
| Queue Delay          | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Total Delay          | 54.9                                                                              | 51.7                                                                              | 0.9                                                                               | 55.0                                                                              | 54.4                                                                              | 1.1                                                                               | 54.5                                                                               | 15.4                                                                                | 0.1                                                                                 | 56.1                                                                                | 13.3                                                                                | 1.8                                                                                 |
| LOS                  | D                                                                                 | D                                                                                 | A                                                                                 | E                                                                                 | D                                                                                 | A                                                                                 | D                                                                                  | B                                                                                   | A                                                                                   | E                                                                                   | B                                                                                   | A                                                                                   |
| Approach Delay       |                                                                                   | 48.9                                                                              |                                                                                   |                                                                                   | 50.1                                                                              |                                                                                   |                                                                                    | 15.3                                                                                |                                                                                     |                                                                                     | 14.7                                                                                |                                                                                     |
| Approach LOS         |                                                                                   | D                                                                                 |                                                                                   |                                                                                   | D                                                                                 |                                                                                   |                                                                                    | B                                                                                   |                                                                                     |                                                                                     | B                                                                                   |                                                                                     |

## Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 19 (16%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.61

Intersection Signal Delay: 30.4

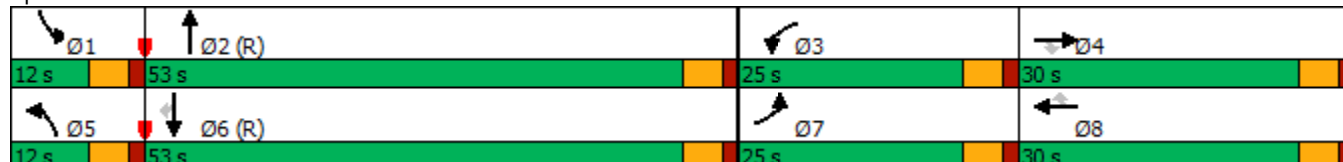
Intersection LOS: C

Intersection Capacity Utilization 43.6%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 3: S. 96th Street & W. Dillon Road





HCM 6th TWSC  
6: S. 96th Street & South Access

2024 Total  
Sunday Peak

| Intersection             |        |          |      |        |      |      |
|--------------------------|--------|----------|------|--------|------|------|
| Int Delay, s/veh         | 0.3    |          |      |        |      |      |
| Movement                 | WBL    | WBR      | NBT  | NBR    | SBL  | SBT  |
| Lane Configurations      |        | ↗        | ↗↗   | ↗      |      | ↗↗   |
| Traffic Vol, veh/h       | 0      | 35       | 550  | 45     | 0    | 745  |
| Future Vol, veh/h        | 0      | 35       | 550  | 45     | 0    | 745  |
| Conflicting Peds, #/hr   | 0      | 0        | 0    | 0      | 0    | 0    |
| Sign Control             | Stop   | Stop     | Free | Free   | Free | Free |
| RT Channelized           | -      | None     | -    | None   | -    | None |
| Storage Length           | -      | 0        | -    | 0      | -    | -    |
| Veh in Median Storage, # | 0      | -        | 0    | -      | -    | 0    |
| Grade, %                 | 0      | -        | 0    | -      | -    | 0    |
| Peak Hour Factor         | 92     | 92       | 92   | 92     | 92   | 92   |
| Heavy Vehicles, %        | 2      | 2        | 2    | 2      | 2    | 2    |
| Mvmt Flow                | 0      | 38       | 598  | 49     | 0    | 810  |
| Major/Minor              | Minor1 | Major1   |      | Major2 |      |      |
| Conflicting Flow All     | -      | 299      | 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      | 697      | -    | -      | 0    | -    |
| Stage 1                  | 0      | -        | -    | -      | 0    | -    |
| Stage 2                  | 0      | -        | -    | -      | 0    | -    |
| Platoon blocked, %       |        |          | -    | -      |      | -    |
| Mov Cap-1 Maneuver       | -      | 697      | -    | -      | -    | -    |
| Mov Cap-2 Maneuver       | -      | -        | -    | -      | -    | -    |
| Stage 1                  | -      | -        | -    | -      | -    | -    |
| Stage 2                  | -      | -        | -    | -      | -    | -    |
| Approach                 | WB     | NB       |      | SB     |      |      |
| HCM Control Delay, s     | 10.5   | 0        |      | 0      |      |      |
| HCM LOS                  | B      |          |      |        |      |      |
| Minor Lane/Major Mvmt    | NBT    | NBRWBLn1 |      | SBT    |      |      |
| Capacity (veh/h)         | -      | 697      |      | -      |      |      |
| HCM Lane V/C Ratio       | -      | 0.055    |      | -      |      |      |
| HCM Control Delay (s)    | -      | 10.5     |      | -      |      |      |
| HCM Lane LOS             | -      | B        |      | -      |      |      |
| HCM 95th %tile Q(veh)    | -      | 0.2      |      | -      |      |      |

HCM 6th TWSC  
8: S. 96th Street & North Access

2024 Total  
Sunday Peak

| Intersection               |        |                        |       |                            |       |                                |
|----------------------------|--------|------------------------|-------|----------------------------|-------|--------------------------------|
| Int Delay, s/veh           | 0.4    |                        |       |                            |       |                                |
| Movement                   | WBL    | WBR                    | NBT   | NBR                        | SBL   | SBT                            |
| Lane Configurations        |        | ↗                      | ↗↘    |                            | ↗     | ↗↗                             |
| Traffic Vol, veh/h         | 0      | 28                     | 550   | 15                         | 24    | 725                            |
| Future Vol, veh/h          | 0      | 28                     | 550   | 15                         | 24    | 725                            |
| Conflicting Peds, #/hr     | 0      | 0                      | 0     | 0                          | 0     | 0                              |
| Sign Control               | Stop   | Stop                   | Free  | Free                       | Free  | Free                           |
| RT Channelized             | -      | None                   | -     | None                       | -     | None                           |
| Storage Length             | -      | 0                      | -     | -                          | 0     | -                              |
| Veh in Median Storage, #   | 0      | -                      | 0     | -                          | -     | 0                              |
| Grade, %                   | 0      | -                      | 0     | -                          | -     | 0                              |
| Peak Hour Factor           | 92     | 92                     | 92    | 92                         | 92    | 92                             |
| Heavy Vehicles, %          | 2      | 2                      | 2     | 2                          | 2     | 2                              |
| Mvmt Flow                  | 0      | 30                     | 598   | 16                         | 26    | 788                            |
|                            |        |                        |       |                            |       |                                |
| Major/Minor                | Minor1 | Major1                 |       | Major2                     |       |                                |
| Conflicting Flow All       | -      | 307                    | 0     | 0                          | 614   | 0                              |
| Stage 1                    | -      | -                      | -     | -                          | -     | -                              |
| Stage 2                    | -      | -                      | -     | -                          | -     | -                              |
| Critical Hdwy              | -      | 6.94                   | -     | -                          | 4.14  | -                              |
| Critical Hdwy Stg 1        | -      | -                      | -     | -                          | -     | -                              |
| Critical Hdwy Stg 2        | -      | -                      | -     | -                          | -     | -                              |
| Follow-up Hdwy             | -      | 3.32                   | -     | -                          | 2.22  | -                              |
| Pot Cap-1 Maneuver         | 0      | *860                   | -     | -                          | *1286 | -                              |
| Stage 1                    | 0      | -                      | -     | -                          | -     | -                              |
| Stage 2                    | 0      | -                      | -     | -                          | -     | -                              |
| Platoon blocked, %         |        | 1                      | -     | -                          | 1     | -                              |
| Mov Cap-1 Maneuver         | -      | *860                   | -     | -                          | *1286 | -                              |
| Mov Cap-2 Maneuver         | -      | -                      | -     | -                          | -     | -                              |
| Stage 1                    | -      | -                      | -     | -                          | -     | -                              |
| Stage 2                    | -      | -                      | -     | -                          | -     | -                              |
|                            |        |                        |       |                            |       |                                |
| Approach                   | WB     | NB                     |       | SB                         |       |                                |
| HCM Control Delay, s       | 9.3    | 0                      |       | 0.3                        |       |                                |
| HCM LOS                    | A      |                        |       |                            |       |                                |
|                            |        |                        |       |                            |       |                                |
| Minor Lane/Major Mvmt      | NBT    | NBRWBLn1               | SBL   | SBT                        |       |                                |
| Capacity (veh/h)           | -      | -                      | 860   | * 1286                     | -     |                                |
| HCM Lane V/C Ratio         | -      | -                      | 0.035 | 0.02                       | -     |                                |
| HCM Control Delay (s)      | -      | -                      | 9.3   | 7.9                        | -     |                                |
| HCM Lane LOS               | -      | -                      | A     | A                          | -     |                                |
| HCM 95th %tile Q(veh)      | -      | -                      | 0.1   | 0.1                        | -     |                                |
| Notes                      |        |                        |       |                            |       |                                |
| ~: Volume exceeds capacity |        | \$: Delay exceeds 300s |       | +: Computation Not Defined |       | *: All major volume in platoon |

Timings  
12: S. 96th Street & Middle Access

2024 Total  
Sunday Peak

|                      |  |  |  |  |  |  |
|----------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Lane Group           | WBL                                                                               | WBR                                                                               | NBT                                                                               | NBR                                                                               | SBL                                                                               | SBT                                                                               |
| Lane Configurations  |  |  |  |  |  |  |
| Traffic Volume (vph) | 84                                                                                | 50                                                                                | 515                                                                               | 70                                                                                | 66                                                                                | 660                                                                               |
| Future Volume (vph)  | 84                                                                                | 50                                                                                | 515                                                                               | 70                                                                                | 66                                                                                | 660                                                                               |
| Turn Type            | Prot                                                                              | Prot                                                                              | NA                                                                                | Perm                                                                              | pm+pt                                                                             | NA                                                                                |
| Protected Phases     | 7                                                                                 | 7                                                                                 | 2                                                                                 |                                                                                   | 1                                                                                 | 6                                                                                 |
| Permitted Phases     |                                                                                   |                                                                                   |                                                                                   | 2                                                                                 | 6                                                                                 |                                                                                   |
| Detector Phase       | 7                                                                                 | 7                                                                                 | 2                                                                                 | 2                                                                                 | 1                                                                                 | 6                                                                                 |
| Switch Phase         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Minimum Initial (s)  | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               |
| Minimum Split (s)    | 23.0                                                                              | 23.0                                                                              | 23.0                                                                              | 23.0                                                                              | 10.0                                                                              | 23.0                                                                              |
| Total Split (s)      | 15.0                                                                              | 15.0                                                                              | 33.0                                                                              | 33.0                                                                              | 12.0                                                                              | 45.0                                                                              |
| Total Split (%)      | 25.0%                                                                             | 25.0%                                                                             | 55.0%                                                                             | 55.0%                                                                             | 20.0%                                                                             | 75.0%                                                                             |
| Yellow Time (s)      | 3.5                                                                               | 3.5                                                                               | 3.5                                                                               | 3.5                                                                               | 3.5                                                                               | 3.5                                                                               |
| All-Red Time (s)     | 1.5                                                                               | 1.5                                                                               | 1.5                                                                               | 1.5                                                                               | 1.5                                                                               | 1.5                                                                               |
| Lost Time Adjust (s) | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |
| Total Lost Time (s)  | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               |
| Lead/Lag             |                                                                                   |                                                                                   | Lag                                                                               | Lag                                                                               | Lead                                                                              |                                                                                   |
| Lead-Lag Optimize?   |                                                                                   |                                                                                   | Yes                                                                               | Yes                                                                               | Yes                                                                               |                                                                                   |
| Recall Mode          | None                                                                              | None                                                                              | C-Max                                                                             | C-Max                                                                             | None                                                                              | C-Max                                                                             |
| Act Effect Green (s) | 8.1                                                                               | 8.1                                                                               | 38.0                                                                              | 38.0                                                                              | 44.0                                                                              | 45.0                                                                              |
| Actuated g/C Ratio   | 0.14                                                                              | 0.14                                                                              | 0.63                                                                              | 0.63                                                                              | 0.73                                                                              | 0.75                                                                              |
| v/c Ratio            | 0.38                                                                              | 0.21                                                                              | 0.25                                                                              | 0.07                                                                              | 0.11                                                                              | 0.27                                                                              |
| Control Delay        | 27.8                                                                              | 9.6                                                                               | 14.3                                                                              | 9.8                                                                               | 3.7                                                                               | 3.7                                                                               |
| Queue Delay          | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |
| Total Delay          | 27.8                                                                              | 9.6                                                                               | 14.3                                                                              | 9.8                                                                               | 3.7                                                                               | 3.7                                                                               |
| LOS                  | C                                                                                 | A                                                                                 | B                                                                                 | A                                                                                 | A                                                                                 | A                                                                                 |
| Approach Delay       | 21.0                                                                              |                                                                                   | 13.7                                                                              |                                                                                   |                                                                                   | 3.7                                                                               |
| Approach LOS         | C                                                                                 |                                                                                   | B                                                                                 |                                                                                   |                                                                                   | A                                                                                 |

Intersection Summary

Cycle Length: 60

Actuated Cycle Length: 60

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.38

Intersection Signal Delay: 9.3

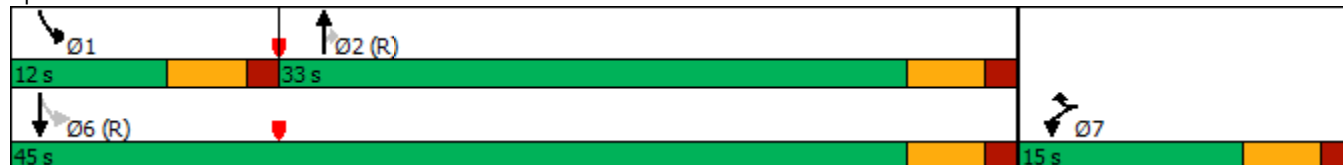
Intersection LOS: A

Intersection Capacity Utilization 35.6%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 12: S. 96th Street & Middle Access



HCM 6th TWSC  
14: W. Dillon Road & East Access

2024 Total  
Sunday Peak

| Intersection             |        |        |      |        |      |      |
|--------------------------|--------|--------|------|--------|------|------|
| Int Delay, s/veh         | 0.5    |        |      |        |      |      |
| Movement                 | EBL    | EBT    | WBT  | WBR    | SBL  | SBR  |
| Lane Configurations      |        | ↑↑     | ↑↑   | ↗      |      | ↗    |
| Traffic Vol, veh/h       | 0      | 419    | 458  | 15     | 0    | 47   |
| Future Vol, veh/h        | 0      | 419    | 458  | 15     | 0    | 47   |
| Conflicting Peds, #/hr   | 0      | 0      | 0    | 0      | 0    | 0    |
| Sign Control             | Free   | Free   | Free | Free   | Stop | Stop |
| RT Channelized           | -      | None   | -    | None   | -    | None |
| Storage Length           | -      | -      | -    | 0      | -    | 0    |
| Veh in Median Storage, # | -      | 0      | 0    | -      | 0    | -    |
| Grade, %                 | -      | 0      | 0    | -      | 0    | -    |
| Peak Hour Factor         | 92     | 92     | 92   | 92     | 92   | 92   |
| Heavy Vehicles, %        | 2      | 2      | 2    | 2      | 2    | 2    |
| Mvmt Flow                | 0      | 455    | 498  | 16     | 0    | 51   |
|                          |        |        |      |        |      |      |
| Major/Minor              | Major1 | Major2 |      | Minor2 |      |      |
| Conflicting Flow All     | -      | 0      | -    | 0      | -    | 249  |
| 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      | -      | -    | -      | 0    | 751  |
| Stage 1                  | 0      | -      | -    | -      | 0    | -    |
| Stage 2                  | 0      | -      | -    | -      | 0    | -    |
| Platoon blocked, %       |        | -      | -    | -      |      |      |
| Mov Cap-1 Maneuver       | -      | -      | -    | -      | -    | 751  |
| Mov Cap-2 Maneuver       | -      | -      | -    | -      | -    | -    |
| Stage 1                  | -      | -      | -    | -      | -    | -    |
| Stage 2                  | -      | -      | -    | -      | -    | -    |
|                          |        |        |      |        |      |      |
|                          |        |        |      |        |      |      |
| Approach                 | EB     | WB     |      | SB     |      |      |
| HCM Control Delay, s     | 0      | 0      |      | 10.1   |      |      |
| HCM LOS                  |        |        |      | B      |      |      |
|                          |        |        |      |        |      |      |
|                          |        |        |      |        |      |      |
| Minor Lane/Major Mvmt    | EBT    | WBT    | WBR  | SBLn1  |      |      |
| Capacity (veh/h)         | -      | -      | -    | 751    |      |      |
| HCM Lane V/C Ratio       | -      | -      | -    | 0.068  |      |      |
| HCM Control Delay (s)    | -      | -      | -    | 10.1   |      |      |
| HCM Lane LOS             | -      | -      | -    | B      |      |      |
| HCM 95th %tile Q(veh)    | -      | -      | -    | 0.2    |      |      |

Timings  
3: S. 96th Street & W. Dillon Road

2040 Background  
AM Peak

|                      |  |  |  |  |  |  |  |  |  |  |  |  |
|----------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group           | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations  |  |  |  |  |  |  |  |  |  |  |  |  |
| Traffic Volume (vph) | 230                                                                               | 300                                                                               | 180                                                                               | 471                                                                               | 339                                                                               | 95                                                                                | 255                                                                                | 970                                                                                 | 685                                                                                 | 114                                                                                 | 1271                                                                                | 314                                                                                 |
| Future Volume (vph)  | 230                                                                               | 300                                                                               | 180                                                                               | 471                                                                               | 339                                                                               | 95                                                                                | 255                                                                                | 970                                                                                 | 685                                                                                 | 114                                                                                 | 1271                                                                                | 314                                                                                 |
| Turn Type            | Prot                                                                              | NA                                                                                | Perm                                                                              | Prot                                                                              | NA                                                                                | Perm                                                                              | Prot                                                                               | NA                                                                                  | Free                                                                                | Prot                                                                                | NA                                                                                  | Perm                                                                                |
| Protected Phases     | 7                                                                                 | 4                                                                                 |                                                                                   | 3                                                                                 | 8                                                                                 |                                                                                   | 5                                                                                  | 2                                                                                   |                                                                                     | 1                                                                                   | 6                                                                                   |                                                                                     |
| Permitted Phases     |                                                                                   |                                                                                   | 4                                                                                 |                                                                                   |                                                                                   | 8                                                                                 |                                                                                    |                                                                                     | Free                                                                                |                                                                                     |                                                                                     | 6                                                                                   |
| Detector Phase       | 7                                                                                 | 4                                                                                 | 4                                                                                 | 3                                                                                 | 8                                                                                 | 8                                                                                 | 5                                                                                  | 2                                                                                   |                                                                                     | 1                                                                                   | 6                                                                                   | 6                                                                                   |
| Switch Phase         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Minimum Initial (s)  | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               | 5.0                                                                                | 5.0                                                                                 |                                                                                     | 5.0                                                                                 | 5.0                                                                                 | 5.0                                                                                 |
| Minimum Split (s)    | 10.0                                                                              | 20.0                                                                              | 20.0                                                                              | 10.0                                                                              | 20.0                                                                              | 20.0                                                                              | 10.0                                                                               | 20.0                                                                                |                                                                                     | 10.0                                                                                | 20.0                                                                                | 20.0                                                                                |
| Total Split (s)      | 30.0                                                                              | 25.0                                                                              | 25.0                                                                              | 30.0                                                                              | 25.0                                                                              | 25.0                                                                              | 15.0                                                                               | 50.0                                                                                |                                                                                     | 15.0                                                                                | 50.0                                                                                | 50.0                                                                                |
| Total Split (%)      | 25.0%                                                                             | 20.8%                                                                             | 20.8%                                                                             | 25.0%                                                                             | 20.8%                                                                             | 20.8%                                                                             | 12.5%                                                                              | 41.7%                                                                               |                                                                                     | 12.5%                                                                               | 41.7%                                                                               | 41.7%                                                                               |
| Yellow Time (s)      | 3.5                                                                               | 3.5                                                                               | 3.5                                                                               | 3.5                                                                               | 3.5                                                                               | 3.5                                                                               | 3.5                                                                                | 3.5                                                                                 |                                                                                     | 3.5                                                                                 | 3.5                                                                                 | 3.5                                                                                 |
| All-Red Time (s)     | 1.5                                                                               | 1.5                                                                               | 1.5                                                                               | 1.5                                                                               | 1.5                                                                               | 1.5                                                                               | 1.5                                                                                | 1.5                                                                                 |                                                                                     | 1.5                                                                                 | 1.5                                                                                 | 1.5                                                                                 |
| Lost Time Adjust (s) | -1.0                                                                              | -1.0                                                                              | -1.0                                                                              | -1.0                                                                              | -1.0                                                                              | -1.0                                                                              | -1.0                                                                               | -1.0                                                                                |                                                                                     | -1.0                                                                                | -1.0                                                                                | -1.0                                                                                |
| Total Lost Time (s)  | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0                                                                                | 4.0                                                                                 |                                                                                     | 4.0                                                                                 | 4.0                                                                                 | 4.0                                                                                 |
| Lead/Lag             | Lead                                                                              | Lag                                                                               | Lag                                                                               | Lead                                                                              | Lag                                                                               | Lag                                                                               | Lead                                                                               | Lag                                                                                 |                                                                                     | Lead                                                                                | Lag                                                                                 | Lag                                                                                 |
| Lead-Lag Optimize?   | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                                | Yes                                                                                 |                                                                                     | Yes                                                                                 | Yes                                                                                 | Yes                                                                                 |
| Recall Mode          | None                                                                              | None                                                                              | None                                                                              | None                                                                              | None                                                                              | None                                                                              | None                                                                               | C-Max                                                                               |                                                                                     | None                                                                                | C-Max                                                                               | C-Max                                                                               |
| Act Effect Green (s) | 14.9                                                                              | 17.4                                                                              | 17.4                                                                              | 23.0                                                                              | 25.5                                                                              | 25.5                                                                              | 13.6                                                                               | 53.5                                                                                | 120.0                                                                               | 10.2                                                                                | 50.1                                                                                | 50.1                                                                                |
| Actuated g/C Ratio   | 0.12                                                                              | 0.14                                                                              | 0.14                                                                              | 0.19                                                                              | 0.21                                                                              | 0.21                                                                              | 0.11                                                                               | 0.45                                                                                | 1.00                                                                                | 0.08                                                                                | 0.42                                                                                | 0.42                                                                                |
| v/c Ratio            | 0.58                                                                              | 0.62                                                                              | 0.53                                                                              | 0.76                                                                              | 0.48                                                                              | 0.24                                                                              | 0.70                                                                               | 0.65                                                                                | 0.46                                                                                | 0.42                                                                                | 0.92                                                                                | 0.39                                                                                |
| Control Delay        | 54.8                                                                              | 53.5                                                                              | 16.7                                                                              | 53.8                                                                              | 43.3                                                                              | 7.4                                                                               | 61.9                                                                               | 29.9                                                                                | 1.0                                                                                 | 56.3                                                                                | 44.7                                                                                | 4.7                                                                                 |
| 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          | 54.8                                                                              | 53.5                                                                              | 16.7                                                                              | 53.8                                                                              | 43.3                                                                              | 7.4                                                                               | 61.9                                                                               | 29.9                                                                                | 1.0                                                                                 | 56.3                                                                                | 44.7                                                                                | 4.7                                                                                 |
| LOS                  | D                                                                                 | D                                                                                 | B                                                                                 | D                                                                                 | D                                                                                 | A                                                                                 | E                                                                                  | C                                                                                   | A                                                                                   | E                                                                                   | D                                                                                   | A                                                                                   |
| Approach Delay       |                                                                                   | 44.6                                                                              |                                                                                   |                                                                                   | 45.0                                                                              |                                                                                   |                                                                                    | 23.8                                                                                |                                                                                     |                                                                                     | 38.1                                                                                |                                                                                     |
| Approach LOS         |                                                                                   | D                                                                                 |                                                                                   |                                                                                   | D                                                                                 |                                                                                   |                                                                                    | C                                                                                   |                                                                                     |                                                                                     | D                                                                                   |                                                                                     |

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 19 (16%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.92

Intersection Signal Delay: 34.9

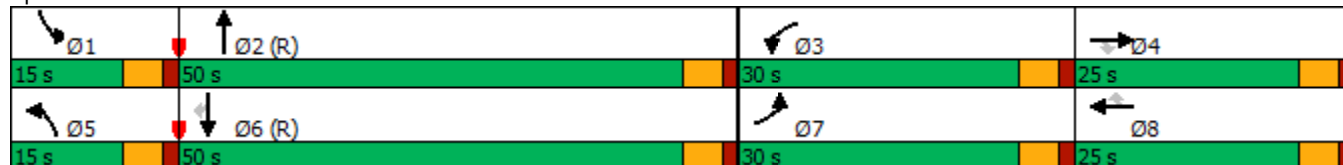
Intersection LOS: C

Intersection Capacity Utilization 77.5%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 3: S. 96th Street & W. Dillon Road



# Timings 3: S. 96th Street & W. Dillon Road

2040 Background  
PM Peak

|                      |  |  |  |  |  |  |  |  |  |  |  |  |
|----------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group           | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations  |  |  |  |  |  |  |  |  |  |  |  |  |
| Traffic Volume (vph) | 308                                                                               | 580                                                                               | 280                                                                               | 586                                                                               | 455                                                                               | 145                                                                               | 200                                                                                | 1361                                                                                | 480                                                                                 | 136                                                                                 | 972                                                                                 | 217                                                                                 |
| Future Volume (vph)  | 308                                                                               | 580                                                                               | 280                                                                               | 586                                                                               | 455                                                                               | 145                                                                               | 200                                                                                | 1361                                                                                | 480                                                                                 | 136                                                                                 | 972                                                                                 | 217                                                                                 |
| Turn Type            | Prot                                                                              | NA                                                                                | Perm                                                                              | Prot                                                                              | NA                                                                                | Perm                                                                              | Prot                                                                               | NA                                                                                  | Free                                                                                | Prot                                                                                | NA                                                                                  | Perm                                                                                |
| Protected Phases     | 7                                                                                 | 4                                                                                 |                                                                                   | 3                                                                                 | 8                                                                                 |                                                                                   | 5                                                                                  | 2                                                                                   |                                                                                     | 1                                                                                   | 6                                                                                   |                                                                                     |
| Permitted Phases     |                                                                                   |                                                                                   | 4                                                                                 |                                                                                   |                                                                                   | 8                                                                                 |                                                                                    |                                                                                     | Free                                                                                |                                                                                     |                                                                                     | 6                                                                                   |
| Detector Phase       | 7                                                                                 | 4                                                                                 | 4                                                                                 | 3                                                                                 | 8                                                                                 | 8                                                                                 | 5                                                                                  | 2                                                                                   |                                                                                     | 1                                                                                   | 6                                                                                   | 6                                                                                   |
| Switch Phase         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Minimum Initial (s)  | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               | 5.0                                                                                | 5.0                                                                                 |                                                                                     | 5.0                                                                                 | 5.0                                                                                 | 5.0                                                                                 |
| Minimum Split (s)    | 10.0                                                                              | 20.0                                                                              | 20.0                                                                              | 10.0                                                                              | 20.0                                                                              | 20.0                                                                              | 10.0                                                                               | 20.0                                                                                |                                                                                     | 10.0                                                                                | 20.0                                                                                | 20.0                                                                                |
| Total Split (s)      | 25.0                                                                              | 29.0                                                                              | 29.0                                                                              | 26.0                                                                              | 30.0                                                                              | 30.0                                                                              | 12.0                                                                               | 54.0                                                                                |                                                                                     | 11.0                                                                                | 53.0                                                                                | 53.0                                                                                |
| Total Split (%)      | 20.8%                                                                             | 24.2%                                                                             | 24.2%                                                                             | 21.7%                                                                             | 25.0%                                                                             | 25.0%                                                                             | 10.0%                                                                              | 45.0%                                                                               |                                                                                     | 9.2%                                                                                | 44.2%                                                                               | 44.2%                                                                               |
| Yellow Time (s)      | 3.5                                                                               | 3.5                                                                               | 3.5                                                                               | 3.5                                                                               | 3.5                                                                               | 3.5                                                                               | 3.5                                                                                | 3.5                                                                                 |                                                                                     | 3.5                                                                                 | 3.5                                                                                 | 3.5                                                                                 |
| All-Red Time (s)     | 1.5                                                                               | 1.5                                                                               | 1.5                                                                               | 1.5                                                                               | 1.5                                                                               | 1.5                                                                               | 1.5                                                                                | 1.5                                                                                 |                                                                                     | 1.5                                                                                 | 1.5                                                                                 | 1.5                                                                                 |
| Lost Time Adjust (s) | -2.0                                                                              | -2.0                                                                              | -2.0                                                                              | -2.0                                                                              | -2.0                                                                              | -2.0                                                                              | -2.0                                                                               | -2.0                                                                                |                                                                                     | -2.0                                                                                | -2.0                                                                                | -2.0                                                                                |
| Total Lost Time (s)  | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                                | 3.0                                                                                 |                                                                                     | 3.0                                                                                 | 3.0                                                                                 | 3.0                                                                                 |
| Lead/Lag             | Lead                                                                              | Lag                                                                               | Lag                                                                               | Lead                                                                              | Lag                                                                               | Lag                                                                               | Lead                                                                               | Lag                                                                                 |                                                                                     | Lead                                                                                | Lag                                                                                 | Lag                                                                                 |
| Lead-Lag Optimize?   | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                                | Yes                                                                                 |                                                                                     | Yes                                                                                 | Yes                                                                                 | Yes                                                                                 |
| Recall Mode          | None                                                                              | None                                                                              | None                                                                              | None                                                                              | None                                                                              | None                                                                              | None                                                                               | C-Max                                                                               |                                                                                     | None                                                                                | C-Max                                                                               | C-Max                                                                               |
| Act Effect Green (s) | 18.4                                                                              | 25.4                                                                              | 25.4                                                                              | 23.0                                                                              | 30.0                                                                              | 30.0                                                                              | 9.6                                                                                | 51.3                                                                                | 120.0                                                                               | 8.3                                                                                 | 50.0                                                                                | 50.0                                                                                |
| Actuated g/C Ratio   | 0.15                                                                              | 0.21                                                                              | 0.21                                                                              | 0.19                                                                              | 0.25                                                                              | 0.25                                                                              | 0.08                                                                               | 0.43                                                                                | 1.00                                                                                | 0.07                                                                                | 0.42                                                                                | 0.42                                                                                |
| v/c Ratio            | 0.62                                                                              | 0.82                                                                              | 0.69                                                                              | 0.94                                                                              | 0.54                                                                              | 0.31                                                                              | 0.77                                                                               | 0.95                                                                                | 0.32                                                                                | 0.60                                                                                | 0.69                                                                                | 0.29                                                                                |
| Control Delay        | 52.5                                                                              | 54.9                                                                              | 34.9                                                                              | 71.1                                                                              | 42.1                                                                              | 12.0                                                                              | 73.7                                                                               | 47.1                                                                                | 0.5                                                                                 | 65.7                                                                                | 31.8                                                                                | 3.8                                                                                 |
| Queue Delay          | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Total Delay          | 52.5                                                                              | 54.9                                                                              | 34.9                                                                              | 71.1                                                                              | 42.1                                                                              | 12.0                                                                              | 73.7                                                                               | 47.1                                                                                | 0.5                                                                                 | 65.7                                                                                | 31.8                                                                                | 3.8                                                                                 |
| LOS                  | D                                                                                 | D                                                                                 | C                                                                                 | E                                                                                 | D                                                                                 | B                                                                                 | E                                                                                  | D                                                                                   | A                                                                                   | E                                                                                   | C                                                                                   | A                                                                                   |
| Approach Delay       |                                                                                   | 49.5                                                                              |                                                                                   |                                                                                   | 52.7                                                                              |                                                                                   |                                                                                    | 38.8                                                                                |                                                                                     |                                                                                     | 30.7                                                                                |                                                                                     |
| Approach LOS         |                                                                                   | D                                                                                 |                                                                                   |                                                                                   | D                                                                                 |                                                                                   |                                                                                    | D                                                                                   |                                                                                     |                                                                                     | C                                                                                   |                                                                                     |

## Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 19 (16%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.95

Intersection Signal Delay: 42.0

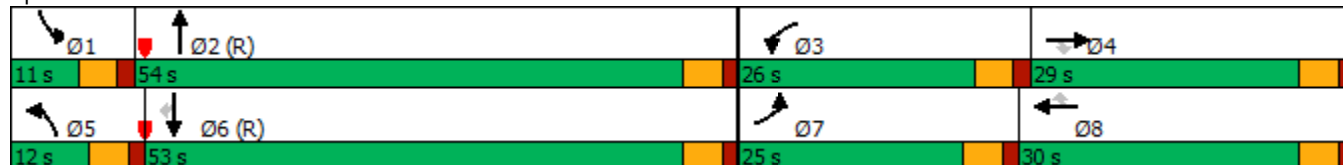
Intersection LOS: D

Intersection Capacity Utilization 87.9%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 3: S. 96th Street & W. Dillon Road



# Timings 3: S. 96th Street & W. Dillon Road

2040 Background  
Sunday Peak

|                      |  |  |  |  |  |  |  |  |  |  |  |  |
|----------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group           | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations  |  |  |  |  |  |  |  |  |  |  |  |  |
| Traffic Volume (vph) | 214                                                                               | 325                                                                               | 55                                                                                | 232                                                                               | 331                                                                               | 57                                                                                | 55                                                                                  | 396                                                                                 | 150                                                                                 | 81                                                                                  | 597                                                                                 | 251                                                                                 |
| Future Volume (vph)  | 214                                                                               | 325                                                                               | 55                                                                                | 232                                                                               | 331                                                                               | 57                                                                                | 55                                                                                  | 396                                                                                 | 150                                                                                 | 81                                                                                  | 597                                                                                 | 251                                                                                 |
| Turn Type            | Prot                                                                              | NA                                                                                | Perm                                                                              | Prot                                                                              | NA                                                                                | Perm                                                                              | Prot                                                                                | NA                                                                                  | Free                                                                                | Prot                                                                                | NA                                                                                  | Perm                                                                                |
| Protected Phases     | 7                                                                                 | 4                                                                                 |                                                                                   | 3                                                                                 | 8                                                                                 |                                                                                   | 5                                                                                   | 2                                                                                   |                                                                                     | 1                                                                                   | 6                                                                                   |                                                                                     |
| Permitted Phases     |                                                                                   |                                                                                   | 4                                                                                 |                                                                                   |                                                                                   | 8                                                                                 |                                                                                     |                                                                                     | Free                                                                                |                                                                                     |                                                                                     | 6                                                                                   |
| Detector Phase       | 7                                                                                 | 4                                                                                 | 4                                                                                 | 3                                                                                 | 8                                                                                 | 8                                                                                 | 5                                                                                   | 2                                                                                   |                                                                                     | 1                                                                                   | 6                                                                                   | 6                                                                                   |
| Switch Phase         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Minimum Initial (s)  | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               | 5.0                                                                                 | 5.0                                                                                 |                                                                                     | 5.0                                                                                 | 5.0                                                                                 | 5.0                                                                                 |
| Minimum Split (s)    | 10.0                                                                              | 20.0                                                                              | 20.0                                                                              | 10.0                                                                              | 20.0                                                                              | 20.0                                                                              | 10.0                                                                                | 20.0                                                                                |                                                                                     | 10.0                                                                                | 20.0                                                                                | 20.0                                                                                |
| Total Split (s)      | 25.0                                                                              | 25.0                                                                              | 25.0                                                                              | 25.0                                                                              | 25.0                                                                              | 25.0                                                                              | 15.0                                                                                | 55.0                                                                                |                                                                                     | 15.0                                                                                | 55.0                                                                                | 55.0                                                                                |
| Total Split (%)      | 20.8%                                                                             | 20.8%                                                                             | 20.8%                                                                             | 20.8%                                                                             | 20.8%                                                                             | 20.8%                                                                             | 12.5%                                                                               | 45.8%                                                                               |                                                                                     | 12.5%                                                                               | 45.8%                                                                               | 45.8%                                                                               |
| Yellow Time (s)      | 3.5                                                                               | 3.5                                                                               | 3.5                                                                               | 3.5                                                                               | 3.5                                                                               | 3.5                                                                               | 3.5                                                                                 | 3.5                                                                                 |                                                                                     | 3.5                                                                                 | 3.5                                                                                 | 3.5                                                                                 |
| All-Red Time (s)     | 1.5                                                                               | 1.5                                                                               | 1.5                                                                               | 1.5                                                                               | 1.5                                                                               | 1.5                                                                               | 1.5                                                                                 | 1.5                                                                                 |                                                                                     | 1.5                                                                                 | 1.5                                                                                 | 1.5                                                                                 |
| Lost Time Adjust (s) | -1.0                                                                              | -1.0                                                                              | -1.0                                                                              | -1.0                                                                              | -1.0                                                                              | -1.0                                                                              | -1.0                                                                                | -1.0                                                                                |                                                                                     | -1.0                                                                                | -1.0                                                                                | -1.0                                                                                |
| Total Lost Time (s)  | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0                                                                                 | 4.0                                                                                 |                                                                                     | 4.0                                                                                 | 4.0                                                                                 | 4.0                                                                                 |
| Lead/Lag             | Lead                                                                              | Lag                                                                               | Lag                                                                               | Lead                                                                              | Lag                                                                               | Lag                                                                               | Lead                                                                                | Lag                                                                                 |                                                                                     | Lead                                                                                | Lag                                                                                 | Lag                                                                                 |
| Lead-Lag Optimize?   | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                                 | Yes                                                                                 |                                                                                     | Yes                                                                                 | Yes                                                                                 | Yes                                                                                 |
| Recall Mode          | None                                                                              | None                                                                              | None                                                                              | None                                                                              | None                                                                              | None                                                                              | None                                                                                | C-Max                                                                               |                                                                                     | None                                                                                | C-Max                                                                               | C-Max                                                                               |
| Act Effect Green (s) | 14.4                                                                              | 18.3                                                                              | 18.3                                                                              | 15.1                                                                              | 18.9                                                                              | 18.9                                                                              | 8.5                                                                                 | 61.3                                                                                | 120.0                                                                               | 9.3                                                                                 | 64.3                                                                                | 64.3                                                                                |
| Actuated g/C Ratio   | 0.12                                                                              | 0.15                                                                              | 0.15                                                                              | 0.13                                                                              | 0.16                                                                              | 0.16                                                                              | 0.07                                                                                | 0.51                                                                                | 1.00                                                                                | 0.08                                                                                | 0.54                                                                                | 0.54                                                                                |
| v/c Ratio            | 0.57                                                                              | 0.66                                                                              | 0.18                                                                              | 0.58                                                                              | 0.65                                                                              | 0.18                                                                              | 0.25                                                                                | 0.24                                                                                | 0.10                                                                                | 0.33                                                                                | 0.34                                                                                | 0.28                                                                                |
| Control Delay        | 55.0                                                                              | 53.6                                                                              | 1.8                                                                               | 54.8                                                                              | 52.6                                                                              | 2.2                                                                               | 54.8                                                                                | 18.1                                                                                | 0.1                                                                                 | 55.4                                                                                | 18.3                                                                                | 3.1                                                                                 |
| 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          | 55.0                                                                              | 53.6                                                                              | 1.8                                                                               | 54.8                                                                              | 52.6                                                                              | 2.2                                                                               | 54.8                                                                                | 18.1                                                                                | 0.1                                                                                 | 55.4                                                                                | 18.3                                                                                | 3.1                                                                                 |
| LOS                  | D                                                                                 | D                                                                                 | A                                                                                 | D                                                                                 | D                                                                                 | A                                                                                 | D                                                                                   | B                                                                                   | A                                                                                   | E                                                                                   | B                                                                                   | A                                                                                   |
| Approach Delay       |                                                                                   | 49.3                                                                              |                                                                                   |                                                                                   | 48.8                                                                              |                                                                                   |                                                                                     | 17.0                                                                                |                                                                                     |                                                                                     | 17.4                                                                                |                                                                                     |
| Approach LOS         |                                                                                   | D                                                                                 |                                                                                   |                                                                                   | D                                                                                 |                                                                                   |                                                                                     | B                                                                                   |                                                                                     |                                                                                     | B                                                                                   |                                                                                     |

## Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 19 (16%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.66

Intersection Signal Delay: 31.3

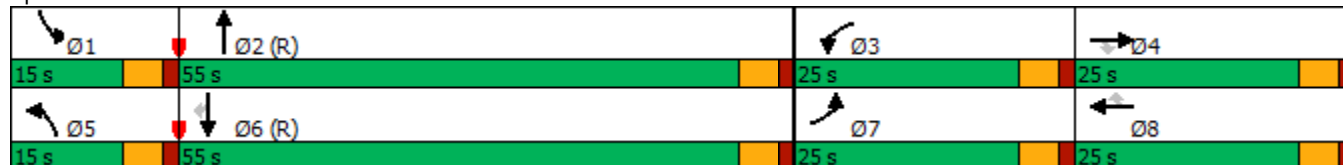
Intersection LOS: C

Intersection Capacity Utilization 49.6%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 3: S. 96th Street & W. Dillon Road





Timings  
3: S. 96th Street & W. Dillon Road

2040 Total  
AM Peak

|                      |  |  |  |  |  |  |  |  |  |  |  |  |
|----------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group           | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations  |  |  |  |  |  |  |  |  |  |  |  |  |
| Traffic Volume (vph) | 350                                                                               | 300                                                                               | 180                                                                               | 525                                                                               | 375                                                                               | 110                                                                               | 255                                                                                | 1150                                                                                | 685                                                                                 | 150                                                                                 | 1325                                                                                | 350                                                                                 |
| Future Volume (vph)  | 350                                                                               | 300                                                                               | 180                                                                               | 525                                                                               | 375                                                                               | 110                                                                               | 255                                                                                | 1150                                                                                | 685                                                                                 | 150                                                                                 | 1325                                                                                | 350                                                                                 |
| Turn Type            | Prot                                                                              | NA                                                                                | Perm                                                                              | Prot                                                                              | NA                                                                                | Perm                                                                              | Prot                                                                               | NA                                                                                  | Free                                                                                | Prot                                                                                | NA                                                                                  | Perm                                                                                |
| Protected Phases     | 7                                                                                 | 4                                                                                 |                                                                                   | 3                                                                                 | 8                                                                                 |                                                                                   | 5                                                                                  | 2                                                                                   |                                                                                     | 1                                                                                   | 6                                                                                   |                                                                                     |
| Permitted Phases     |                                                                                   |                                                                                   | 4                                                                                 |                                                                                   |                                                                                   | 8                                                                                 |                                                                                    |                                                                                     | Free                                                                                |                                                                                     |                                                                                     | 6                                                                                   |
| Detector Phase       | 7                                                                                 | 4                                                                                 | 4                                                                                 | 3                                                                                 | 8                                                                                 | 8                                                                                 | 5                                                                                  | 2                                                                                   |                                                                                     | 1                                                                                   | 6                                                                                   | 6                                                                                   |
| Switch Phase         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Minimum Initial (s)  | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               | 5.0                                                                                | 5.0                                                                                 |                                                                                     | 5.0                                                                                 | 5.0                                                                                 | 5.0                                                                                 |
| Minimum Split (s)    | 10.0                                                                              | 20.0                                                                              | 20.0                                                                              | 10.0                                                                              | 20.0                                                                              | 20.0                                                                              | 10.0                                                                               | 20.0                                                                                |                                                                                     | 10.0                                                                                | 20.0                                                                                | 20.0                                                                                |
| Total Split (s)      | 30.0                                                                              | 25.0                                                                              | 25.0                                                                              | 30.0                                                                              | 25.0                                                                              | 25.0                                                                              | 15.0                                                                               | 50.0                                                                                |                                                                                     | 15.0                                                                                | 50.0                                                                                | 50.0                                                                                |
| Total Split (%)      | 25.0%                                                                             | 20.8%                                                                             | 20.8%                                                                             | 25.0%                                                                             | 20.8%                                                                             | 20.8%                                                                             | 12.5%                                                                              | 41.7%                                                                               |                                                                                     | 12.5%                                                                               | 41.7%                                                                               | 41.7%                                                                               |
| Yellow Time (s)      | 3.5                                                                               | 3.5                                                                               | 3.5                                                                               | 3.5                                                                               | 3.5                                                                               | 3.5                                                                               | 3.5                                                                                | 3.5                                                                                 |                                                                                     | 3.5                                                                                 | 3.5                                                                                 | 3.5                                                                                 |
| All-Red Time (s)     | 1.5                                                                               | 1.5                                                                               | 1.5                                                                               | 1.5                                                                               | 1.5                                                                               | 1.5                                                                               | 1.5                                                                                | 1.5                                                                                 |                                                                                     | 1.5                                                                                 | 1.5                                                                                 | 1.5                                                                                 |
| Lost Time Adjust (s) | -1.0                                                                              | -1.0                                                                              | -1.0                                                                              | -1.0                                                                              | -1.0                                                                              | -1.0                                                                              | -1.0                                                                               | -1.0                                                                                |                                                                                     | -1.0                                                                                | -1.0                                                                                | -1.0                                                                                |
| Total Lost Time (s)  | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0                                                                                | 4.0                                                                                 |                                                                                     | 4.0                                                                                 | 4.0                                                                                 | 4.0                                                                                 |
| Lead/Lag             | Lead                                                                              | Lag                                                                               | Lag                                                                               | Lead                                                                              | Lag                                                                               | Lag                                                                               | Lead                                                                               | Lag                                                                                 |                                                                                     | Lead                                                                                | Lag                                                                                 | Lag                                                                                 |
| Lead-Lag Optimize?   | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                                | Yes                                                                                 |                                                                                     | Yes                                                                                 | Yes                                                                                 | Yes                                                                                 |
| Recall Mode          | None                                                                              | None                                                                              | None                                                                              | None                                                                              | None                                                                              | None                                                                              | None                                                                               | C-Max                                                                               |                                                                                     | None                                                                                | C-Max                                                                               | C-Max                                                                               |
| Act Effect Green (s) | 19.2                                                                              | 17.2                                                                              | 17.2                                                                              | 24.1                                                                              | 22.1                                                                              | 22.1                                                                              | 13.3                                                                               | 51.7                                                                                | 120.0                                                                               | 11.0                                                                                | 49.4                                                                                | 49.4                                                                                |
| Actuated g/C Ratio   | 0.16                                                                              | 0.14                                                                              | 0.14                                                                              | 0.20                                                                              | 0.18                                                                              | 0.18                                                                              | 0.11                                                                               | 0.43                                                                                | 1.00                                                                                | 0.09                                                                                | 0.41                                                                                | 0.41                                                                                |
| v/c Ratio            | 0.68                                                                              | 0.63                                                                              | 0.54                                                                              | 0.81                                                                              | 0.61                                                                              | 0.30                                                                              | 0.71                                                                               | 0.80                                                                                | 0.46                                                                                | 0.51                                                                                | 0.97                                                                                | 0.44                                                                                |
| Control Delay        | 53.7                                                                              | 53.9                                                                              | 17.8                                                                              | 55.7                                                                              | 49.2                                                                              | 9.4                                                                               | 62.9                                                                               | 35.9                                                                                | 1.0                                                                                 | 57.8                                                                                | 54.0                                                                                | 8.7                                                                                 |
| 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          | 53.7                                                                              | 53.9                                                                              | 17.8                                                                              | 55.7                                                                              | 49.2                                                                              | 9.4                                                                               | 62.9                                                                               | 35.9                                                                                | 1.0                                                                                 | 57.8                                                                                | 54.0                                                                                | 8.7                                                                                 |
| LOS                  | D                                                                                 | D                                                                                 | B                                                                                 | E                                                                                 | D                                                                                 | A                                                                                 | E                                                                                  | D                                                                                   | A                                                                                   | E                                                                                   | D                                                                                   | A                                                                                   |
| Approach Delay       |                                                                                   | 46.0                                                                              |                                                                                   |                                                                                   | 48.2                                                                              |                                                                                   |                                                                                    | 27.7                                                                                |                                                                                     |                                                                                     | 45.6                                                                                |                                                                                     |
| Approach LOS         |                                                                                   | D                                                                                 |                                                                                   |                                                                                   | D                                                                                 |                                                                                   |                                                                                    | C                                                                                   |                                                                                     |                                                                                     | D                                                                                   |                                                                                     |

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 19 (16%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.97

Intersection Signal Delay: 39.6

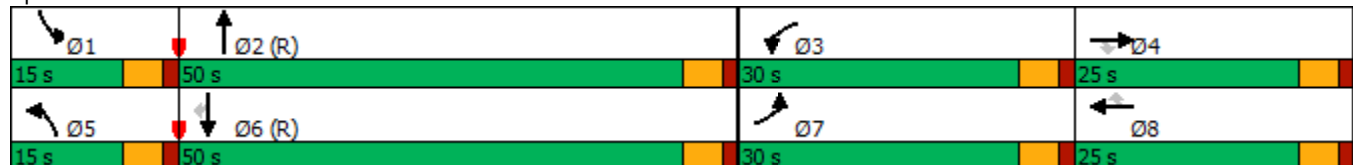
Intersection LOS: D

Intersection Capacity Utilization 80.5%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 3: S. 96th Street & W. Dillon Road



HCM 6th TWSC  
6: S. 96th Street & South Access

2040 Total  
AM Peak

| Intersection             |        |          |      |        |      |      |
|--------------------------|--------|----------|------|--------|------|------|
| Int Delay, s/veh         | 0.3    |          |      |        |      |      |
| Movement                 | WBL    | WBR      | NBT  | NBR    | SBL  | SBT  |
| Lane Configurations      |        | ↗        | ↗↗   | ↗      |      | ↗↗   |
| Traffic Vol, veh/h       | 0      | 64       | 1445 | 165    | 0    | 1825 |
| Future Vol, veh/h        | 0      | 64       | 1445 | 165    | 0    | 1825 |
| Conflicting Peds, #/hr   | 0      | 0        | 0    | 0      | 0    | 0    |
| Sign Control             | Stop   | Stop     | Free | Free   | Free | Free |
| RT Channelized           | -      | None     | -    | None   | -    | None |
| Storage Length           | -      | 0        | -    | 0      | -    | -    |
| Veh in Median Storage, # | 0      | -        | 0    | -      | -    | 0    |
| Grade, %                 | 0      | -        | 0    | -      | -    | 0    |
| Peak Hour Factor         | 92     | 92       | 92   | 92     | 92   | 92   |
| Heavy Vehicles, %        | 2      | 2        | 2    | 2      | 2    | 2    |
| Mvmt Flow                | 0      | 70       | 1571 | 179    | 0    | 1984 |
| Major/Minor              | Minor1 | Major1   |      | Major2 |      |      |
| Conflicting Flow All     | -      | 786      | 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      | 335      | -    | -      | 0    | -    |
| Stage 1                  | 0      | -        | -    | -      | 0    | -    |
| Stage 2                  | 0      | -        | -    | -      | 0    | -    |
| Platoon blocked, %       |        |          | -    | -      |      | -    |
| Mov Cap-1 Maneuver       | -      | 335      | -    | -      | -    | -    |
| Mov Cap-2 Maneuver       | -      | -        | -    | -      | -    | -    |
| Stage 1                  | -      | -        | -    | -      | -    | -    |
| Stage 2                  | -      | -        | -    | -      | -    | -    |
| Approach                 | WB     | NB       |      | SB     |      |      |
| HCM Control Delay, s     | 18.5   | 0        |      | 0      |      |      |
| HCM LOS                  | C      |          |      |        |      |      |
| Minor Lane/Major Mvmt    | NBT    | NBRWBLn1 |      | SBT    |      |      |
| Capacity (veh/h)         | -      | - 335    |      | -      |      |      |
| HCM Lane V/C Ratio       | -      | - 0.208  |      | -      |      |      |
| HCM Control Delay (s)    | -      | - 18.5   |      | -      |      |      |
| HCM Lane LOS             | -      | - C      |      | -      |      |      |
| HCM 95th %tile Q(veh)    | -      | - 0.8    |      | -      |      |      |

HCM 6th TWSC  
8: S. 96th Street & North Access

2040 Total  
AM Peak

| Intersection               |        |                                                                                   |                                                                                   |                            |                                                                                   |                                                                                   |
|----------------------------|--------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|----------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Int Delay, s/veh           | 0.5    |                                                                                   |                                                                                   |                            |                                                                                   |                                                                                   |
| Movement                   | WBL    | WBR                                                                               | NBT                                                                               | NBR                        | SBL                                                                               | SBT                                                                               |
| Lane Configurations        |        |  |  |                            |  |  |
| Traffic Vol, veh/h         | 0      | 48                                                                                | 1395                                                                              | 68                         | 85                                                                                | 1855                                                                              |
| Future Vol, veh/h          | 0      | 48                                                                                | 1395                                                                              | 68                         | 85                                                                                | 1855                                                                              |
| Conflicting Peds, #/hr     | 0      | 0                                                                                 | 0                                                                                 | 0                          | 0                                                                                 | 0                                                                                 |
| Sign Control               | Stop   | Stop                                                                              | Free                                                                              | Free                       | Free                                                                              | Free                                                                              |
| RT Channelized             | -      | None                                                                              | -                                                                                 | None                       | -                                                                                 | None                                                                              |
| Storage Length             | -      | 0                                                                                 | -                                                                                 | -                          | 0                                                                                 | -                                                                                 |
| Veh in Median Storage, #   | 0      | -                                                                                 | 0                                                                                 | -                          | -                                                                                 | 0                                                                                 |
| Grade, %                   | 0      | -                                                                                 | 0                                                                                 | -                          | -                                                                                 | 0                                                                                 |
| Peak Hour Factor           | 92     | 92                                                                                | 92                                                                                | 92                         | 92                                                                                | 92                                                                                |
| Heavy Vehicles, %          | 2      | 2                                                                                 | 2                                                                                 | 2                          | 2                                                                                 | 2                                                                                 |
| Mvmt Flow                  | 0      | 52                                                                                | 1516                                                                              | 74                         | 92                                                                                | 2016                                                                              |
|                            |        |                                                                                   |                                                                                   |                            |                                                                                   |                                                                                   |
| Major/Minor                | Minor1 | Major1                                                                            |                                                                                   | Major2                     |                                                                                   |                                                                                   |
| Conflicting Flow All       | -      | 795                                                                               | 0                                                                                 | 0                          | 1590                                                                              | 0                                                                                 |
| Stage 1                    | -      | -                                                                                 | -                                                                                 | -                          | -                                                                                 | -                                                                                 |
| Stage 2                    | -      | -                                                                                 | -                                                                                 | -                          | -                                                                                 | -                                                                                 |
| Critical Hdwy              | -      | 6.94                                                                              | -                                                                                 | -                          | 4.14                                                                              | -                                                                                 |
| Critical Hdwy Stg 1        | -      | -                                                                                 | -                                                                                 | -                          | -                                                                                 | -                                                                                 |
| Critical Hdwy Stg 2        | -      | -                                                                                 | -                                                                                 | -                          | -                                                                                 | -                                                                                 |
| Follow-up Hdwy             | -      | 3.32                                                                              | -                                                                                 | -                          | 2.22                                                                              | -                                                                                 |
| Pot Cap-1 Maneuver         | 0      | *495                                                                              | -                                                                                 | -                          | *740                                                                              | -                                                                                 |
| Stage 1                    | 0      | -                                                                                 | -                                                                                 | -                          | -                                                                                 | -                                                                                 |
| Stage 2                    | 0      | -                                                                                 | -                                                                                 | -                          | -                                                                                 | -                                                                                 |
| Platoon blocked, %         |        | 1                                                                                 | -                                                                                 | -                          | 1                                                                                 | -                                                                                 |
| Mov Cap-1 Maneuver         | -      | *495                                                                              | -                                                                                 | -                          | *740                                                                              | -                                                                                 |
| Mov Cap-2 Maneuver         | -      | -                                                                                 | -                                                                                 | -                          | -                                                                                 | -                                                                                 |
| Stage 1                    | -      | -                                                                                 | -                                                                                 | -                          | -                                                                                 | -                                                                                 |
| Stage 2                    | -      | -                                                                                 | -                                                                                 | -                          | -                                                                                 | -                                                                                 |
|                            |        |                                                                                   |                                                                                   |                            |                                                                                   |                                                                                   |
| Approach                   | WB     | NB                                                                                |                                                                                   | SB                         |                                                                                   |                                                                                   |
| HCM Control Delay, s       | 13.1   | 0                                                                                 |                                                                                   | 0.5                        |                                                                                   |                                                                                   |
| HCM LOS                    | B      |                                                                                   |                                                                                   |                            |                                                                                   |                                                                                   |
|                            |        |                                                                                   |                                                                                   |                            |                                                                                   |                                                                                   |
| Minor Lane/Major Mvmt      | NBT    | NBRWBLn1                                                                          | SBL                                                                               | SBT                        |                                                                                   |                                                                                   |
| Capacity (veh/h)           | -      | -                                                                                 | 495                                                                               | * 740                      | -                                                                                 |                                                                                   |
| HCM Lane V/C Ratio         | -      | -                                                                                 | 0.105                                                                             | 0.125                      | -                                                                                 |                                                                                   |
| HCM Control Delay (s)      | -      | -                                                                                 | 13.1                                                                              | 10.6                       | -                                                                                 |                                                                                   |
| HCM Lane LOS               | -      | -                                                                                 | B                                                                                 | B                          | -                                                                                 |                                                                                   |
| HCM 95th %tile Q(veh)      | -      | -                                                                                 | 0.4                                                                               | 0.4                        | -                                                                                 |                                                                                   |
| Notes                      |        |                                                                                   |                                                                                   |                            |                                                                                   |                                                                                   |
| ~: Volume exceeds capacity |        | \$: Delay exceeds 300s                                                            |                                                                                   | +: Computation Not Defined |                                                                                   | *: All major volume in platoon                                                    |

Timings  
12: S. 96th Street & Middle Access

2040 Total  
AM Peak

|                      |  |  |  |  |  |  |
|----------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Lane Group           | WBL                                                                               | WBR                                                                               | NBT                                                                               | NBR                                                                               | SBL                                                                               | SBT                                                                               |
| Lane Configurations  |  |  |  |  |  |  |
| Traffic Volume (vph) | 151                                                                               | 86                                                                                | 1375                                                                              | 136                                                                               | 181                                                                               | 1675                                                                              |
| Future Volume (vph)  | 151                                                                               | 86                                                                                | 1375                                                                              | 136                                                                               | 181                                                                               | 1675                                                                              |
| Turn Type            | Prot                                                                              | Prot                                                                              | NA                                                                                | Perm                                                                              | pm+pt                                                                             | NA                                                                                |
| Protected Phases     | 7                                                                                 | 7                                                                                 | 2                                                                                 |                                                                                   | 1                                                                                 | 6                                                                                 |
| Permitted Phases     |                                                                                   |                                                                                   |                                                                                   | 2                                                                                 | 6                                                                                 |                                                                                   |
| Detector Phase       | 7                                                                                 | 7                                                                                 | 2                                                                                 | 2                                                                                 | 1                                                                                 | 6                                                                                 |
| Switch Phase         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Minimum Initial (s)  | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               |
| Minimum Split (s)    | 23.0                                                                              | 23.0                                                                              | 23.0                                                                              | 23.0                                                                              | 10.0                                                                              | 23.0                                                                              |
| Total Split (s)      | 15.0                                                                              | 15.0                                                                              | 33.0                                                                              | 33.0                                                                              | 12.0                                                                              | 45.0                                                                              |
| Total Split (%)      | 25.0%                                                                             | 25.0%                                                                             | 55.0%                                                                             | 55.0%                                                                             | 20.0%                                                                             | 75.0%                                                                             |
| Yellow Time (s)      | 3.5                                                                               | 3.5                                                                               | 3.5                                                                               | 3.5                                                                               | 3.5                                                                               | 3.5                                                                               |
| All-Red Time (s)     | 1.5                                                                               | 1.5                                                                               | 1.5                                                                               | 1.5                                                                               | 1.5                                                                               | 1.5                                                                               |
| Lost Time Adjust (s) | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |
| Total Lost Time (s)  | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               |
| Lead/Lag             |                                                                                   |                                                                                   | Lag                                                                               | Lag                                                                               | Lead                                                                              |                                                                                   |
| Lead-Lag Optimize?   |                                                                                   |                                                                                   | Yes                                                                               | Yes                                                                               | Yes                                                                               |                                                                                   |
| Recall Mode          | None                                                                              | None                                                                              | C-Max                                                                             | C-Max                                                                             | None                                                                              | C-Max                                                                             |
| Act Effect Green (s) | 9.1                                                                               | 9.1                                                                               | 31.4                                                                              | 31.4                                                                              | 43.2                                                                              | 44.2                                                                              |
| Actuated g/C Ratio   | 0.15                                                                              | 0.15                                                                              | 0.52                                                                              | 0.52                                                                              | 0.72                                                                              | 0.74                                                                              |
| v/c Ratio            | 0.61                                                                              | 0.29                                                                              | 0.81                                                                              | 0.16                                                                              | 0.60                                                                              | 0.70                                                                              |
| Control Delay        | 33.8                                                                              | 8.6                                                                               | 32.9                                                                              | 5.1                                                                               | 16.1                                                                              | 7.9                                                                               |
| Queue Delay          | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |
| Total Delay          | 33.8                                                                              | 8.6                                                                               | 32.9                                                                              | 5.1                                                                               | 16.1                                                                              | 7.9                                                                               |
| LOS                  | C                                                                                 | A                                                                                 | C                                                                                 | A                                                                                 | B                                                                                 | A                                                                                 |
| Approach Delay       | 24.7                                                                              |                                                                                   | 30.4                                                                              |                                                                                   |                                                                                   | 8.7                                                                               |
| Approach LOS         | C                                                                                 |                                                                                   | C                                                                                 |                                                                                   |                                                                                   | A                                                                                 |

Intersection Summary

Cycle Length: 60

Actuated Cycle Length: 60

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green

Natural Cycle: 70

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.81

Intersection Signal Delay: 18.8

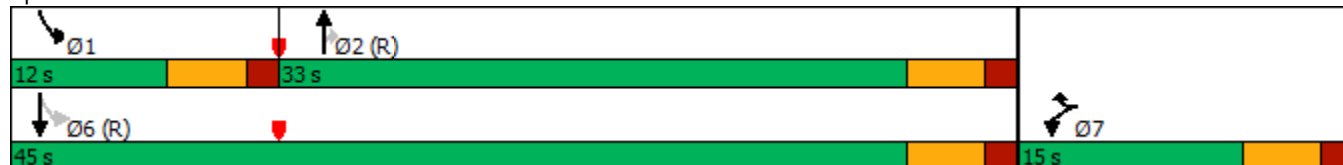
Intersection LOS: B

Intersection Capacity Utilization 68.9%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 12: S. 96th Street & Middle Access



HCM 6th TWSC  
14: W. Dillon Road & East Access

2040 Total  
AM Peak

| Intersection             |        |        |      |        |      |      |
|--------------------------|--------|--------|------|--------|------|------|
| Int Delay, s/veh         | 0.6    |        |      |        |      |      |
| Movement                 | EBL    | EBT    | WBT  | WBR    | SBL  | SBR  |
| Lane Configurations      |        | ↑↑     | ↑↑   | ↗      |      | ↗    |
| Traffic Vol, veh/h       | 0      | 1135   | 920  | 45     | 0    | 90   |
| Future Vol, veh/h        | 0      | 1135   | 920  | 45     | 0    | 90   |
| Conflicting Peds, #/hr   | 0      | 0      | 0    | 0      | 0    | 0    |
| Sign Control             | Free   | Free   | Free | Free   | Stop | Stop |
| RT Channelized           | -      | None   | -    | None   | -    | None |
| Storage Length           | -      | -      | -    | 0      | -    | 0    |
| Veh in Median Storage, # | -      | 0      | 0    | -      | 0    | -    |
| Grade, %                 | -      | 0      | 0    | -      | 0    | -    |
| Peak Hour Factor         | 92     | 92     | 92   | 92     | 92   | 92   |
| Heavy Vehicles, %        | 2      | 2      | 2    | 2      | 2    | 2    |
| Mvmt Flow                | 0      | 1234   | 1000 | 49     | 0    | 98   |
|                          |        |        |      |        |      |      |
| Major/Minor              | Major1 | Major2 |      | Minor2 |      |      |
| Conflicting Flow All     | -      | 0      | -    | 0      | -    | 500  |
| 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      | -      | -    | -      | 0    | 516  |
| Stage 1                  | 0      | -      | -    | -      | 0    | -    |
| Stage 2                  | 0      | -      | -    | -      | 0    | -    |
| Platoon blocked, %       |        | -      | -    | -      |      |      |
| Mov Cap-1 Maneuver       | -      | -      | -    | -      | -    | 516  |
| Mov Cap-2 Maneuver       | -      | -      | -    | -      | -    | -    |
| Stage 1                  | -      | -      | -    | -      | -    | -    |
| Stage 2                  | -      | -      | -    | -      | -    | -    |
|                          |        |        |      |        |      |      |
|                          |        |        |      |        |      |      |
| Approach                 | EB     | WB     |      | SB     |      |      |
| HCM Control Delay, s     | 0      | 0      |      | 13.6   |      |      |
| HCM LOS                  | B      |        |      |        |      |      |
|                          |        |        |      |        |      |      |
|                          |        |        |      |        |      |      |
| Minor Lane/Major Mvmt    | EBT    | WBT    | WBR  | SBLn1  |      |      |
| Capacity (veh/h)         | -      | -      | -    | 516    |      |      |
| HCM Lane V/C Ratio       | -      | -      | -    | 0.19   |      |      |
| HCM Control Delay (s)    | -      | -      | -    | 13.6   |      |      |
| HCM Lane LOS             | -      | -      | -    | B      |      |      |
| HCM 95th %tile Q(veh)    | -      | -      | -    | 0.7    |      |      |

# Timings 3: S. 96th Street & W. Dillon Road

2040 Total  
PM Peak

|                      |  |  |  |  |  |  |  |  |  |  |  |  |
|----------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group           | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations  |  |  |  |  |  |  |  |  |  |  |  |  |
| Traffic Volume (vph) | 350                                                                               | 580                                                                               | 280                                                                               | 625                                                                               | 475                                                                               | 150                                                                               | 200                                                                                | 1425                                                                                | 480                                                                                 | 175                                                                                 | 1050                                                                                | 275                                                                                 |
| Future Volume (vph)  | 350                                                                               | 580                                                                               | 280                                                                               | 625                                                                               | 475                                                                               | 150                                                                               | 200                                                                                | 1425                                                                                | 480                                                                                 | 175                                                                                 | 1050                                                                                | 275                                                                                 |
| Turn Type            | Prot                                                                              | NA                                                                                | Perm                                                                              | Prot                                                                              | NA                                                                                | Perm                                                                              | Prot                                                                               | NA                                                                                  | Free                                                                                | Prot                                                                                | NA                                                                                  | Perm                                                                                |
| Protected Phases     | 7                                                                                 | 4                                                                                 |                                                                                   | 3                                                                                 | 8                                                                                 |                                                                                   | 5                                                                                  | 2                                                                                   |                                                                                     | 1                                                                                   | 6                                                                                   |                                                                                     |
| Permitted Phases     |                                                                                   |                                                                                   | 4                                                                                 |                                                                                   |                                                                                   | 8                                                                                 |                                                                                    |                                                                                     | Free                                                                                |                                                                                     |                                                                                     | 6                                                                                   |
| Detector Phase       | 7                                                                                 | 4                                                                                 | 4                                                                                 | 3                                                                                 | 8                                                                                 | 8                                                                                 | 5                                                                                  | 2                                                                                   |                                                                                     | 1                                                                                   | 6                                                                                   | 6                                                                                   |
| Switch Phase         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Minimum Initial (s)  | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               | 5.0                                                                                | 5.0                                                                                 |                                                                                     | 5.0                                                                                 | 5.0                                                                                 | 5.0                                                                                 |
| Minimum Split (s)    | 10.0                                                                              | 20.0                                                                              | 20.0                                                                              | 10.0                                                                              | 20.0                                                                              | 20.0                                                                              | 10.0                                                                               | 20.0                                                                                |                                                                                     | 10.0                                                                                | 20.0                                                                                | 20.0                                                                                |
| Total Split (s)      | 25.0                                                                              | 28.8                                                                              | 28.8                                                                              | 26.2                                                                              | 30.0                                                                              | 30.0                                                                              | 12.0                                                                               | 54.0                                                                                |                                                                                     | 11.0                                                                                | 53.0                                                                                | 53.0                                                                                |
| Total Split (%)      | 20.8%                                                                             | 24.0%                                                                             | 24.0%                                                                             | 21.8%                                                                             | 25.0%                                                                             | 25.0%                                                                             | 10.0%                                                                              | 45.0%                                                                               |                                                                                     | 9.2%                                                                                | 44.2%                                                                               | 44.2%                                                                               |
| Yellow Time (s)      | 3.5                                                                               | 3.5                                                                               | 3.5                                                                               | 3.5                                                                               | 3.5                                                                               | 3.5                                                                               | 3.5                                                                                | 3.5                                                                                 |                                                                                     | 3.5                                                                                 | 3.5                                                                                 | 3.5                                                                                 |
| All-Red Time (s)     | 1.5                                                                               | 1.5                                                                               | 1.5                                                                               | 1.5                                                                               | 1.5                                                                               | 1.5                                                                               | 1.5                                                                                | 1.5                                                                                 |                                                                                     | 1.5                                                                                 | 1.5                                                                                 | 1.5                                                                                 |
| Lost Time Adjust (s) | -2.0                                                                              | -2.0                                                                              | -2.0                                                                              | -2.0                                                                              | -2.0                                                                              | -2.0                                                                              | -2.0                                                                               | -2.0                                                                                |                                                                                     | -2.0                                                                                | -2.0                                                                                | -2.0                                                                                |
| Total Lost Time (s)  | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                                | 3.0                                                                                 |                                                                                     | 3.0                                                                                 | 3.0                                                                                 | 3.0                                                                                 |
| Lead/Lag             | Lead                                                                              | Lag                                                                               | Lag                                                                               | Lead                                                                              | Lag                                                                               | Lag                                                                               | Lead                                                                               | Lag                                                                                 |                                                                                     | Lead                                                                                | Lag                                                                                 | Lag                                                                                 |
| Lead-Lag Optimize?   | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                                | Yes                                                                                 |                                                                                     | Yes                                                                                 | Yes                                                                                 | Yes                                                                                 |
| Recall Mode          | None                                                                              | None                                                                              | None                                                                              | None                                                                              | None                                                                              | None                                                                              | None                                                                               | C-Max                                                                               |                                                                                     | None                                                                                | C-Max                                                                               | C-Max                                                                               |
| Act Effect Green (s) | 19.4                                                                              | 25.2                                                                              | 25.2                                                                              | 23.2                                                                              | 29.0                                                                              | 29.0                                                                              | 9.5                                                                                | 51.0                                                                                | 120.0                                                                               | 8.6                                                                                 | 50.1                                                                                | 50.1                                                                                |
| Actuated g/C Ratio   | 0.16                                                                              | 0.21                                                                              | 0.21                                                                              | 0.19                                                                              | 0.24                                                                              | 0.24                                                                              | 0.08                                                                               | 0.42                                                                                | 1.00                                                                                | 0.07                                                                                | 0.42                                                                                | 0.42                                                                                |
| v/c Ratio            | 0.66                                                                              | 0.81                                                                              | 0.69                                                                              | 0.98                                                                              | 0.58                                                                              | 0.33                                                                              | 0.76                                                                               | 0.99                                                                                | 0.32                                                                                | 0.74                                                                                | 0.74                                                                                | 0.35                                                                                |
| Control Delay        | 52.9                                                                              | 54.9                                                                              | 36.0                                                                              | 79.2                                                                              | 43.7                                                                              | 14.2                                                                              | 73.1                                                                               | 54.6                                                                                | 0.5                                                                                 | 66.7                                                                                | 33.4                                                                                | 5.3                                                                                 |
| Queue Delay          | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Total Delay          | 52.9                                                                              | 54.9                                                                              | 36.0                                                                              | 79.2                                                                              | 43.7                                                                              | 14.2                                                                              | 73.1                                                                               | 54.6                                                                                | 0.5                                                                                 | 66.7                                                                                | 33.4                                                                                | 5.3                                                                                 |
| LOS                  | D                                                                                 | D                                                                                 | D                                                                                 | E                                                                                 | D                                                                                 | B                                                                                 | E                                                                                  | D                                                                                   | A                                                                                   | E                                                                                   | C                                                                                   | A                                                                                   |
| Approach Delay       |                                                                                   | 49.9                                                                              |                                                                                   |                                                                                   | 57.9                                                                              |                                                                                   |                                                                                    | 44.1                                                                                |                                                                                     |                                                                                     | 32.1                                                                                |                                                                                     |
| Approach LOS         |                                                                                   | D                                                                                 |                                                                                   |                                                                                   | E                                                                                 |                                                                                   |                                                                                    | D                                                                                   |                                                                                     |                                                                                     | C                                                                                   |                                                                                     |

## Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 19 (16%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.99

Intersection Signal Delay: 45.1

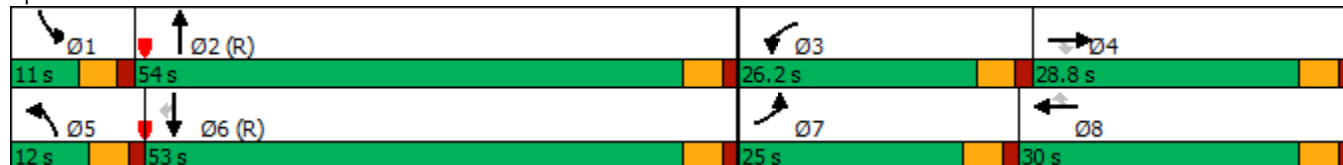
Intersection LOS: D

Intersection Capacity Utilization 91.6%

ICU Level of Service F

Analysis Period (min) 15

Splits and Phases: 3: S. 96th Street & W. Dillon Road



HCM 6th TWSC  
6: S. 96th Street & South Access

2040 Total  
PM Peak

| Intersection             |        |                                                                                   |                                                                                   |                                                                                   |      |                                                                                   |
|--------------------------|--------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|-----------------------------------------------------------------------------------|
| Int Delay, s/veh         | 0.8    |                                                                                   |                                                                                   |                                                                                   |      |                                                                                   |
| Movement                 | WBL    | WBR                                                                               | NBT                                                                               | NBR                                                                               | SBL  | SBT                                                                               |
| Lane Configurations      |        |  |  |  |      |  |
| Traffic Vol, veh/h       | 0      | 86                                                                                | 1900                                                                              | 25                                                                                | 0    | 1500                                                                              |
| Future Vol, veh/h        | 0      | 86                                                                                | 1900                                                                              | 25                                                                                | 0    | 1500                                                                              |
| Conflicting Peds, #/hr   | 0      | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0    | 0                                                                                 |
| Sign Control             | Stop   | Stop                                                                              | Free                                                                              | Free                                                                              | Free | Free                                                                              |
| RT Channelized           | -      | None                                                                              | -                                                                                 | None                                                                              | -    | None                                                                              |
| Storage Length           | -      | 0                                                                                 | -                                                                                 | 0                                                                                 | -    | -                                                                                 |
| Veh in Median Storage, # | 0      | -                                                                                 | 0                                                                                 | -                                                                                 | -    | 0                                                                                 |
| Grade, %                 | 0      | -                                                                                 | 0                                                                                 | -                                                                                 | -    | 0                                                                                 |
| Peak Hour Factor         | 92     | 92                                                                                | 92                                                                                | 92                                                                                | 92   | 92                                                                                |
| Heavy Vehicles, %        | 2      | 2                                                                                 | 2                                                                                 | 2                                                                                 | 2    | 2                                                                                 |
| Mvmt Flow                | 0      | 93                                                                                | 2065                                                                              | 27                                                                                | 0    | 1630                                                                              |
| Major/Minor              | Minor1 | Major1                                                                            |                                                                                   | Major2                                                                            |      |                                                                                   |
| Conflicting Flow All     | -      | 1033                                                                              | 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      | 230                                                                               | -                                                                                 | -                                                                                 | 0    | -                                                                                 |
| Stage 1                  | 0      | -                                                                                 | -                                                                                 | -                                                                                 | 0    | -                                                                                 |
| Stage 2                  | 0      | -                                                                                 | -                                                                                 | -                                                                                 | 0    | -                                                                                 |
| Platoon blocked, %       |        |                                                                                   | -                                                                                 | -                                                                                 |      | -                                                                                 |
| Mov Cap-1 Maneuver       | -      | 230                                                                               | -                                                                                 | -                                                                                 | -    | -                                                                                 |
| Mov Cap-2 Maneuver       | -      | -                                                                                 | -                                                                                 | -                                                                                 | -    | -                                                                                 |
| Stage 1                  | -      | -                                                                                 | -                                                                                 | -                                                                                 | -    | -                                                                                 |
| Stage 2                  | -      | -                                                                                 | -                                                                                 | -                                                                                 | -    | -                                                                                 |
| Approach                 | WB     | NB                                                                                |                                                                                   | SB                                                                                |      |                                                                                   |
| HCM Control Delay, s     | 31     | 0                                                                                 |                                                                                   | 0                                                                                 |      |                                                                                   |
| HCM LOS                  | D      |                                                                                   |                                                                                   |                                                                                   |      |                                                                                   |
| Minor Lane/Major Mvmt    | NBT    | NBRWBLn1                                                                          |                                                                                   | SBT                                                                               |      |                                                                                   |
| Capacity (veh/h)         | -      | - 230                                                                             |                                                                                   | -                                                                                 |      |                                                                                   |
| HCM Lane V/C Ratio       | -      | - 0.406                                                                           |                                                                                   | -                                                                                 |      |                                                                                   |
| HCM Control Delay (s)    | -      | - 31                                                                              |                                                                                   | -                                                                                 |      |                                                                                   |
| HCM Lane LOS             | -      | - D                                                                               |                                                                                   | -                                                                                 |      |                                                                                   |
| HCM 95th %tile Q(veh)    | -      | - 1.9                                                                             |                                                                                   | -                                                                                 |      |                                                                                   |



HCM 6th TWSC  
8: S. 96th Street & North Access

2040 Total  
PM Peak

| Intersection               |        |                                                                                   |                                                                                   |                            |                                                                                   |                                                                                   |
|----------------------------|--------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|----------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Int Delay, s/veh           | 0.5    |                                                                                   |                                                                                   |                            |                                                                                   |                                                                                   |
| Movement                   | WBL    | WBR                                                                               | NBT                                                                               | NBR                        | SBL                                                                               | SBT                                                                               |
| Lane Configurations        |        |  |  |                            |  |  |
| Traffic Vol, veh/h         | 0      | 56                                                                                | 1915                                                                              | 46                         | 40                                                                                | 1370                                                                              |
| Future Vol, veh/h          | 0      | 56                                                                                | 1915                                                                              | 46                         | 40                                                                                | 1370                                                                              |
| Conflicting Peds, #/hr     | 0      | 0                                                                                 | 0                                                                                 | 0                          | 0                                                                                 | 0                                                                                 |
| Sign Control               | Stop   | Stop                                                                              | Free                                                                              | Free                       | Free                                                                              | Free                                                                              |
| RT Channelized             | -      | None                                                                              | -                                                                                 | None                       | -                                                                                 | None                                                                              |
| Storage Length             | -      | 0                                                                                 | -                                                                                 | -                          | 0                                                                                 | -                                                                                 |
| Veh in Median Storage, #   | 0      | -                                                                                 | 0                                                                                 | -                          | -                                                                                 | 0                                                                                 |
| Grade, %                   | 0      | -                                                                                 | 0                                                                                 | -                          | -                                                                                 | 0                                                                                 |
| Peak Hour Factor           | 92     | 92                                                                                | 92                                                                                | 92                         | 92                                                                                | 92                                                                                |
| Heavy Vehicles, %          | 2      | 2                                                                                 | 2                                                                                 | 2                          | 2                                                                                 | 2                                                                                 |
| Mvmt Flow                  | 0      | 61                                                                                | 2082                                                                              | 50                         | 43                                                                                | 1489                                                                              |
|                            |        |                                                                                   |                                                                                   |                            |                                                                                   |                                                                                   |
| Major/Minor                | Minor1 |                                                                                   | Major1                                                                            |                            | Major2                                                                            |                                                                                   |
| Conflicting Flow All       | -      | 1066                                                                              | 0                                                                                 | 0                          | 2132                                                                              | 0                                                                                 |
| Stage 1                    | -      | -                                                                                 | -                                                                                 | -                          | -                                                                                 | -                                                                                 |
| Stage 2                    | -      | -                                                                                 | -                                                                                 | -                          | -                                                                                 | -                                                                                 |
| Critical Hdwy              | -      | 6.94                                                                              | -                                                                                 | -                          | 4.14                                                                              | -                                                                                 |
| Critical Hdwy Stg 1        | -      | -                                                                                 | -                                                                                 | -                          | -                                                                                 | -                                                                                 |
| Critical Hdwy Stg 2        | -      | -                                                                                 | -                                                                                 | -                          | -                                                                                 | -                                                                                 |
| Follow-up Hdwy             | -      | 3.32                                                                              | -                                                                                 | -                          | 2.22                                                                              | -                                                                                 |
| Pot Cap-1 Maneuver         | 0      | *286                                                                              | -                                                                                 | -                          | *428                                                                              | -                                                                                 |
| Stage 1                    | 0      | -                                                                                 | -                                                                                 | -                          | -                                                                                 | -                                                                                 |
| Stage 2                    | 0      | -                                                                                 | -                                                                                 | -                          | -                                                                                 | -                                                                                 |
| Platoon blocked, %         |        | 1                                                                                 | -                                                                                 | -                          | 1                                                                                 | -                                                                                 |
| Mov Cap-1 Maneuver         | -      | *286                                                                              | -                                                                                 | -                          | *428                                                                              | -                                                                                 |
| Mov Cap-2 Maneuver         | -      | -                                                                                 | -                                                                                 | -                          | -                                                                                 | -                                                                                 |
| Stage 1                    | -      | -                                                                                 | -                                                                                 | -                          | -                                                                                 | -                                                                                 |
| Stage 2                    | -      | -                                                                                 | -                                                                                 | -                          | -                                                                                 | -                                                                                 |
|                            |        |                                                                                   |                                                                                   |                            |                                                                                   |                                                                                   |
|                            |        |                                                                                   |                                                                                   |                            |                                                                                   |                                                                                   |
| Approach                   | WB     |                                                                                   | NB                                                                                |                            | SB                                                                                |                                                                                   |
| HCM Control Delay, s       | 21     |                                                                                   | 0                                                                                 |                            | 0.4                                                                               |                                                                                   |
| HCM LOS                    | C      |                                                                                   |                                                                                   |                            |                                                                                   |                                                                                   |
|                            |        |                                                                                   |                                                                                   |                            |                                                                                   |                                                                                   |
| Minor Lane/Major Mvmt      | NBT    |                                                                                   | NBRWBLn1                                                                          |                            | SBL                                                                               | SBT                                                                               |
| Capacity (veh/h)           | -      |                                                                                   | -                                                                                 |                            | 286                                                                               | * 428                                                                             |
| HCM Lane V/C Ratio         | -      |                                                                                   | -                                                                                 |                            | 0.213                                                                             | 0.102                                                                             |
| HCM Control Delay (s)      | -      |                                                                                   | -                                                                                 |                            | 21                                                                                | 14.4                                                                              |
| HCM Lane LOS               | -      |                                                                                   | -                                                                                 |                            | C                                                                                 | B                                                                                 |
| HCM 95th %tile Q(veh)      | -      |                                                                                   | -                                                                                 |                            | 0.8                                                                               | 0.3                                                                               |
|                            |        |                                                                                   |                                                                                   |                            |                                                                                   |                                                                                   |
| Notes                      |        |                                                                                   |                                                                                   |                            |                                                                                   |                                                                                   |
| ~: Volume exceeds capacity |        | \$: Delay exceeds 300s                                                            |                                                                                   | +: Computation Not Defined |                                                                                   | *: All major volume in platoon                                                    |

Timings  
12: S. 96th Street & Middle Access

2040 Total  
PM Peak

|                      |  |  |  |  |  |                                                                                   |
|----------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Lane Group           | WBL                                                                               | WBR                                                                               | NBT                                                                               | NBR                                                                               | SBL                                                                               | SBT                                                                               |
| Lane Configurations  |  |  |  |  |  |  |
| Traffic Volume (vph) | 200                                                                               | 63                                                                                | 1900                                                                              | 88                                                                                | 70                                                                                | 1300                                                                              |
| Future Volume (vph)  | 200                                                                               | 63                                                                                | 1900                                                                              | 88                                                                                | 70                                                                                | 1300                                                                              |
| Turn Type            | Prot                                                                              | Prot                                                                              | NA                                                                                | Perm                                                                              | pm+pt                                                                             | NA                                                                                |
| Protected Phases     | 7                                                                                 | 7                                                                                 | 2                                                                                 |                                                                                   | 1                                                                                 | 6                                                                                 |
| Permitted Phases     |                                                                                   |                                                                                   |                                                                                   | 2                                                                                 | 6                                                                                 |                                                                                   |
| Detector Phase       | 7                                                                                 | 7                                                                                 | 2                                                                                 | 2                                                                                 | 1                                                                                 | 6                                                                                 |
| Switch Phase         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Minimum Initial (s)  | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               |
| Minimum Split (s)    | 23.0                                                                              | 23.0                                                                              | 23.0                                                                              | 23.0                                                                              | 10.0                                                                              | 23.0                                                                              |
| Total Split (s)      | 14.0                                                                              | 14.0                                                                              | 35.0                                                                              | 35.0                                                                              | 11.0                                                                              | 46.0                                                                              |
| Total Split (%)      | 23.3%                                                                             | 23.3%                                                                             | 58.3%                                                                             | 58.3%                                                                             | 18.3%                                                                             | 76.7%                                                                             |
| Yellow Time (s)      | 3.5                                                                               | 3.5                                                                               | 3.5                                                                               | 3.5                                                                               | 3.5                                                                               | 3.5                                                                               |
| All-Red Time (s)     | 1.5                                                                               | 1.5                                                                               | 1.5                                                                               | 1.5                                                                               | 1.5                                                                               | 1.5                                                                               |
| Lost Time Adjust (s) | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |
| Total Lost Time (s)  | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               |
| Lead/Lag             |                                                                                   |                                                                                   | Lag                                                                               | Lag                                                                               | Lead                                                                              |                                                                                   |
| Lead-Lag Optimize?   |                                                                                   |                                                                                   | Yes                                                                               | Yes                                                                               | Yes                                                                               |                                                                                   |
| Recall Mode          | None                                                                              | None                                                                              | C-Max                                                                             | C-Max                                                                             | None                                                                              | C-Max                                                                             |
| Act Effect Green (s) | 9.0                                                                               | 9.0                                                                               | 34.4                                                                              | 34.4                                                                              | 41.0                                                                              | 41.0                                                                              |
| Actuated g/C Ratio   | 0.15                                                                              | 0.15                                                                              | 0.57                                                                              | 0.57                                                                              | 0.68                                                                              | 0.68                                                                              |
| v/c Ratio            | 0.82                                                                              | 0.23                                                                              | 1.02                                                                              | 0.10                                                                              | 0.26                                                                              | 0.58                                                                              |
| Control Delay        | 52.1                                                                              | 9.3                                                                               | 52.7                                                                              | 3.8                                                                               | 5.4                                                                               | 6.2                                                                               |
| Queue Delay          | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |
| Total Delay          | 52.1                                                                              | 9.3                                                                               | 52.7                                                                              | 3.8                                                                               | 5.4                                                                               | 6.2                                                                               |
| LOS                  | D                                                                                 | A                                                                                 | D                                                                                 | A                                                                                 | A                                                                                 | A                                                                                 |
| Approach Delay       | 41.9                                                                              |                                                                                   | 50.6                                                                              |                                                                                   |                                                                                   | 6.2                                                                               |
| Approach LOS         | D                                                                                 |                                                                                   | D                                                                                 |                                                                                   |                                                                                   | A                                                                                 |

Intersection Summary

Cycle Length: 60

Actuated Cycle Length: 60

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.02

Intersection Signal Delay: 33.1

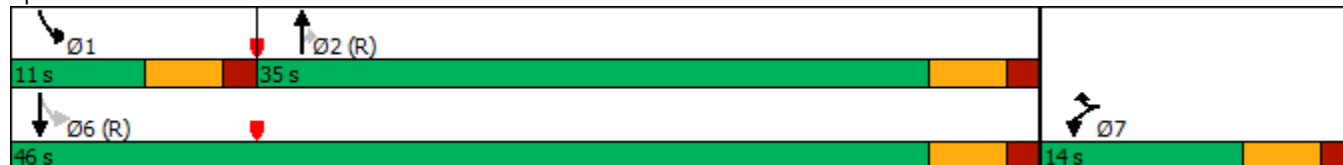
Intersection LOS: C

Intersection Capacity Utilization 77.6%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 12: S. 96th Street & Middle Access



HCM 6th TWSC  
14: W. Dillon Road & East Access

2040 Total  
PM Peak

| Intersection             |        |        |      |        |      |      |
|--------------------------|--------|--------|------|--------|------|------|
| Int Delay, s/veh         | 0.4    |        |      |        |      |      |
| Movement                 | EBL    | EBT    | WBT  | WBR    | SBL  | SBR  |
| Lane Configurations      |        | ↑↑     | ↑↑   | ↗      |      | ↗    |
| Traffic Vol, veh/h       | 0      | 1235   | 1190 | 16     | 0    | 59   |
| Future Vol, veh/h        | 0      | 1235   | 1190 | 16     | 0    | 59   |
| Conflicting Peds, #/hr   | 0      | 0      | 0    | 0      | 0    | 0    |
| Sign Control             | Free   | Free   | Free | Free   | Stop | Stop |
| RT Channelized           | -      | None   | -    | None   | -    | None |
| Storage Length           | -      | -      | -    | 0      | -    | 0    |
| Veh in Median Storage, # | -      | 0      | 0    | -      | 0    | -    |
| Grade, %                 | -      | 0      | 0    | -      | 0    | -    |
| Peak Hour Factor         | 92     | 92     | 92   | 92     | 92   | 92   |
| Heavy Vehicles, %        | 2      | 2      | 2    | 2      | 2    | 2    |
| Mvmt Flow                | 0      | 1342   | 1293 | 17     | 0    | 64   |
|                          |        |        |      |        |      |      |
| Major/Minor              | Major1 | Major2 |      | Minor2 |      |      |
| Conflicting Flow All     | -      | 0      | -    | 0      | -    | 647  |
| 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      | -      | -    | -      | 0    | 414  |
| Stage 1                  | 0      | -      | -    | -      | 0    | -    |
| Stage 2                  | 0      | -      | -    | -      | 0    | -    |
| Platoon blocked, %       |        | -      | -    | -      |      |      |
| Mov Cap-1 Maneuver       | -      | -      | -    | -      | -    | 414  |
| Mov Cap-2 Maneuver       | -      | -      | -    | -      | -    | -    |
| Stage 1                  | -      | -      | -    | -      | -    | -    |
| Stage 2                  | -      | -      | -    | -      | -    | -    |
|                          |        |        |      |        |      |      |
|                          |        |        |      |        |      |      |
| Approach                 | EB     | WB     |      | SB     |      |      |
| HCM Control Delay, s     | 0      | 0      |      | 15.3   |      |      |
| HCM LOS                  |        |        |      | C      |      |      |
|                          |        |        |      |        |      |      |
|                          |        |        |      |        |      |      |
| Minor Lane/Major Mvmt    | EBT    | WBT    | WBR  | SBLn1  |      |      |
| Capacity (veh/h)         | -      | -      | -    | 414    |      |      |
| HCM Lane V/C Ratio       | -      | -      | -    | 0.155  |      |      |
| HCM Control Delay (s)    | -      | -      | -    | 15.3   |      |      |
| HCM Lane LOS             | -      | -      | -    | C      |      |      |
| HCM 95th %tile Q(veh)    | -      | -      | -    | 0.5    |      |      |

Timings  
3: S. 96th Street & W. Dillon Road

2040 Total  
Sunday Peak

|                      |  |  |  |  |  |  |  |  |  |  |  |  |
|----------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group           | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations  |  |  |  |  |  |  |  |  |  |  |  |  |
| Traffic Volume (vph) | 250                                                                               | 325                                                                               | 55                                                                                | 260                                                                               | 350                                                                               | 60                                                                                | 55                                                                                 | 450                                                                                 | 150                                                                                 | 100                                                                                 | 625                                                                                 | 270                                                                                 |
| Future Volume (vph)  | 250                                                                               | 325                                                                               | 55                                                                                | 260                                                                               | 350                                                                               | 60                                                                                | 55                                                                                 | 450                                                                                 | 150                                                                                 | 100                                                                                 | 625                                                                                 | 270                                                                                 |
| Turn Type            | Prot                                                                              | NA                                                                                | Perm                                                                              | Prot                                                                              | NA                                                                                | Perm                                                                              | Prot                                                                               | NA                                                                                  | Free                                                                                | Prot                                                                                | NA                                                                                  | Perm                                                                                |
| Protected Phases     | 7                                                                                 | 4                                                                                 |                                                                                   | 3                                                                                 | 8                                                                                 |                                                                                   | 5                                                                                  | 2                                                                                   |                                                                                     | 1                                                                                   | 6                                                                                   |                                                                                     |
| Permitted Phases     |                                                                                   |                                                                                   | 4                                                                                 |                                                                                   |                                                                                   | 8                                                                                 |                                                                                    |                                                                                     | Free                                                                                |                                                                                     |                                                                                     | 6                                                                                   |
| Detector Phase       | 7                                                                                 | 4                                                                                 | 4                                                                                 | 3                                                                                 | 8                                                                                 | 8                                                                                 | 5                                                                                  | 2                                                                                   |                                                                                     | 1                                                                                   | 6                                                                                   | 6                                                                                   |
| Switch Phase         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Minimum Initial (s)  | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               | 5.0                                                                                | 5.0                                                                                 |                                                                                     | 5.0                                                                                 | 5.0                                                                                 | 5.0                                                                                 |
| Minimum Split (s)    | 10.0                                                                              | 20.0                                                                              | 20.0                                                                              | 10.0                                                                              | 20.0                                                                              | 20.0                                                                              | 10.0                                                                               | 20.0                                                                                |                                                                                     | 10.0                                                                                | 20.0                                                                                | 20.0                                                                                |
| Total Split (s)      | 25.0                                                                              | 25.0                                                                              | 25.0                                                                              | 25.0                                                                              | 25.0                                                                              | 25.0                                                                              | 15.0                                                                               | 55.0                                                                                |                                                                                     | 15.0                                                                                | 55.0                                                                                | 55.0                                                                                |
| Total Split (%)      | 20.8%                                                                             | 20.8%                                                                             | 20.8%                                                                             | 20.8%                                                                             | 20.8%                                                                             | 20.8%                                                                             | 12.5%                                                                              | 45.8%                                                                               |                                                                                     | 12.5%                                                                               | 45.8%                                                                               | 45.8%                                                                               |
| Yellow Time (s)      | 3.5                                                                               | 3.5                                                                               | 3.5                                                                               | 3.5                                                                               | 3.5                                                                               | 3.5                                                                               | 3.5                                                                                | 3.5                                                                                 |                                                                                     | 3.5                                                                                 | 3.5                                                                                 | 3.5                                                                                 |
| All-Red Time (s)     | 1.5                                                                               | 1.5                                                                               | 1.5                                                                               | 1.5                                                                               | 1.5                                                                               | 1.5                                                                               | 1.5                                                                                | 1.5                                                                                 |                                                                                     | 1.5                                                                                 | 1.5                                                                                 | 1.5                                                                                 |
| Lost Time Adjust (s) | -1.0                                                                              | -1.0                                                                              | -1.0                                                                              | -1.0                                                                              | -1.0                                                                              | -1.0                                                                              | -1.0                                                                               | -1.0                                                                                |                                                                                     | -1.0                                                                                | -1.0                                                                                | -1.0                                                                                |
| Total Lost Time (s)  | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0                                                                                | 4.0                                                                                 |                                                                                     | 4.0                                                                                 | 4.0                                                                                 | 4.0                                                                                 |
| Lead/Lag             | Lead                                                                              | Lag                                                                               | Lag                                                                               | Lead                                                                              | Lag                                                                               | Lag                                                                               | Lead                                                                               | Lag                                                                                 |                                                                                     | Lead                                                                                | Lag                                                                                 | Lag                                                                                 |
| Lead-Lag Optimize?   | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                                | Yes                                                                                 |                                                                                     | Yes                                                                                 | Yes                                                                                 | Yes                                                                                 |
| Recall Mode          | None                                                                              | None                                                                              | None                                                                              | None                                                                              | None                                                                              | None                                                                              | None                                                                               | C-Max                                                                               |                                                                                     | None                                                                                | C-Max                                                                               | C-Max                                                                               |
| Act Effect Green (s) | 15.8                                                                              | 18.4                                                                              | 18.4                                                                              | 16.1                                                                              | 18.8                                                                              | 18.8                                                                              | 8.5                                                                                | 59.6                                                                                | 120.0                                                                               | 9.8                                                                                 | 63.1                                                                                | 63.1                                                                                |
| Actuated g/C Ratio   | 0.13                                                                              | 0.15                                                                              | 0.15                                                                              | 0.13                                                                              | 0.16                                                                              | 0.16                                                                              | 0.07                                                                               | 0.50                                                                                | 1.00                                                                                | 0.08                                                                                | 0.53                                                                                | 0.53                                                                                |
| v/c Ratio            | 0.60                                                                              | 0.65                                                                              | 0.18                                                                              | 0.61                                                                              | 0.69                                                                              | 0.19                                                                              | 0.25                                                                               | 0.28                                                                                | 0.10                                                                                | 0.39                                                                                | 0.36                                                                                | 0.30                                                                                |
| Control Delay        | 54.6                                                                              | 53.3                                                                              | 1.8                                                                               | 54.6                                                                              | 54.3                                                                              | 2.9                                                                               | 54.8                                                                               | 19.4                                                                                | 0.1                                                                                 | 51.8                                                                                | 17.6                                                                                | 3.1                                                                                 |
| 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          | 54.6                                                                              | 53.3                                                                              | 1.8                                                                               | 54.6                                                                              | 54.3                                                                              | 2.9                                                                               | 54.8                                                                               | 19.4                                                                                | 0.1                                                                                 | 51.8                                                                                | 17.6                                                                                | 3.1                                                                                 |
| LOS                  | D                                                                                 | D                                                                                 | A                                                                                 | D                                                                                 | D                                                                                 | A                                                                                 | D                                                                                  | B                                                                                   | A                                                                                   | D                                                                                   | B                                                                                   | A                                                                                   |
| Approach Delay       |                                                                                   | 49.3                                                                              |                                                                                   |                                                                                   | 49.8                                                                              |                                                                                   |                                                                                    | 17.9                                                                                |                                                                                     |                                                                                     | 17.1                                                                                |                                                                                     |
| Approach LOS         |                                                                                   | D                                                                                 |                                                                                   |                                                                                   | D                                                                                 |                                                                                   |                                                                                    | B                                                                                   |                                                                                     |                                                                                     | B                                                                                   |                                                                                     |

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 19 (16%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.69

Intersection Signal Delay: 31.6

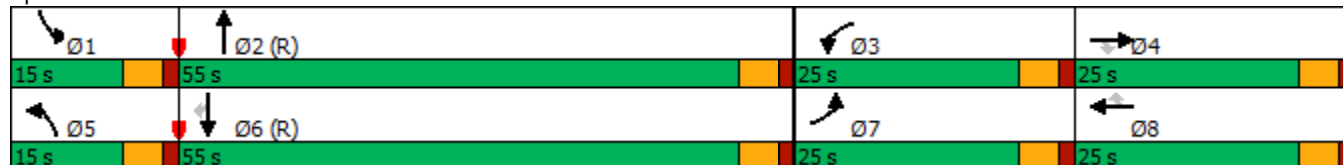
Intersection LOS: C

Intersection Capacity Utilization 51.6%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 3: S. 96th Street & W. Dillon Road



HCM 6th TWSC  
6: S. 96th Street & South Access

2040 Total  
Sunday Peak

| Intersection             |        |          |      |        |      |      |
|--------------------------|--------|----------|------|--------|------|------|
| Int Delay, s/veh         | 0.2    |          |      |        |      |      |
| Movement                 | WBL    | WBR      | NBT  | NBR    | SBL  | SBT  |
| Lane Configurations      |        | ↗        | ↗↗   | ↗      |      | ↗↗   |
| Traffic Vol, veh/h       | 0      | 35       | 715  | 45     | 0    | 995  |
| Future Vol, veh/h        | 0      | 35       | 715  | 45     | 0    | 995  |
| Conflicting Peds, #/hr   | 0      | 0        | 0    | 0      | 0    | 0    |
| Sign Control             | Stop   | Stop     | Free | Free   | Free | Free |
| RT Channelized           | -      | None     | -    | None   | -    | None |
| Storage Length           | -      | 0        | -    | 0      | -    | -    |
| Veh in Median Storage, # | 0      | -        | 0    | -      | -    | 0    |
| Grade, %                 | 0      | -        | 0    | -      | -    | 0    |
| Peak Hour Factor         | 92     | 92       | 92   | 92     | 92   | 92   |
| Heavy Vehicles, %        | 2      | 2        | 2    | 2      | 2    | 2    |
| Mvmt Flow                | 0      | 38       | 777  | 49     | 0    | 1082 |
| Major/Minor              | Minor1 | Major1   |      | Major2 |      |      |
| Conflicting Flow All     | -      | 389      | 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      | 610      | -    | -      | 0    | -    |
| Stage 1                  | 0      | -        | -    | -      | 0    | -    |
| Stage 2                  | 0      | -        | -    | -      | 0    | -    |
| Platoon blocked, %       |        |          | -    | -      |      | -    |
| Mov Cap-1 Maneuver       | -      | 610      | -    | -      | -    | -    |
| Mov Cap-2 Maneuver       | -      | -        | -    | -      | -    | -    |
| Stage 1                  | -      | -        | -    | -      | -    | -    |
| Stage 2                  | -      | -        | -    | -      | -    | -    |
| Approach                 | WB     | NB       |      | SB     |      |      |
| HCM Control Delay, s     | 11.3   | 0        |      | 0      |      |      |
| HCM LOS                  | B      |          |      |        |      |      |
| Minor Lane/Major Mvmt    | NBT    | NBRWBLn1 |      | SBT    |      |      |
| Capacity (veh/h)         | -      | 610      |      | -      |      |      |
| HCM Lane V/C Ratio       | -      | 0.062    |      | -      |      |      |
| HCM Control Delay (s)    | -      | 11.3     |      | -      |      |      |
| HCM Lane LOS             | -      | B        |      | -      |      |      |
| HCM 95th %tile Q(veh)    | -      | 0.2      |      | -      |      |      |

HCM 6th TWSC  
8: S. 96th Street & North Access

2040 Total  
Sunday Peak

| Intersection               |        |                                                                                   |                                                                                   |                            |                                                                                   |                                                                                   |
|----------------------------|--------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|----------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Int Delay, s/veh           | 0.3    |                                                                                   |                                                                                   |                            |                                                                                   |                                                                                   |
| Movement                   | WBL    | WBR                                                                               | NBT                                                                               | NBR                        | SBL                                                                               | SBT                                                                               |
| Lane Configurations        |        |  |  |                            |  |  |
| Traffic Vol, veh/h         | 0      | 28                                                                                | 715                                                                               | 15                         | 24                                                                                | 975                                                                               |
| Future Vol, veh/h          | 0      | 28                                                                                | 715                                                                               | 15                         | 24                                                                                | 975                                                                               |
| Conflicting Peds, #/hr     | 0      | 0                                                                                 | 0                                                                                 | 0                          | 0                                                                                 | 0                                                                                 |
| Sign Control               | Stop   | Stop                                                                              | Free                                                                              | Free                       | Free                                                                              | Free                                                                              |
| RT Channelized             | -      | None                                                                              | -                                                                                 | None                       | -                                                                                 | None                                                                              |
| Storage Length             | -      | 0                                                                                 | -                                                                                 | -                          | 0                                                                                 | -                                                                                 |
| Veh in Median Storage, #   | 0      | -                                                                                 | 0                                                                                 | -                          | -                                                                                 | 0                                                                                 |
| Grade, %                   | 0      | -                                                                                 | 0                                                                                 | -                          | -                                                                                 | 0                                                                                 |
| Peak Hour Factor           | 92     | 92                                                                                | 92                                                                                | 92                         | 92                                                                                | 92                                                                                |
| Heavy Vehicles, %          | 2      | 2                                                                                 | 2                                                                                 | 2                          | 2                                                                                 | 2                                                                                 |
| Mvmt Flow                  | 0      | 30                                                                                | 777                                                                               | 16                         | 26                                                                                | 1060                                                                              |
|                            |        |                                                                                   |                                                                                   |                            |                                                                                   |                                                                                   |
| Major/Minor                | Minor1 | Major1                                                                            |                                                                                   | Major2                     |                                                                                   |                                                                                   |
| Conflicting Flow All       | -      | 397                                                                               | 0                                                                                 | 0                          | 793                                                                               | 0                                                                                 |
| Stage 1                    | -      | -                                                                                 | -                                                                                 | -                          | -                                                                                 | -                                                                                 |
| Stage 2                    | -      | -                                                                                 | -                                                                                 | -                          | -                                                                                 | -                                                                                 |
| Critical Hdwy              | -      | 6.94                                                                              | -                                                                                 | -                          | 4.14                                                                              | -                                                                                 |
| Critical Hdwy Stg 1        | -      | -                                                                                 | -                                                                                 | -                          | -                                                                                 | -                                                                                 |
| Critical Hdwy Stg 2        | -      | -                                                                                 | -                                                                                 | -                          | -                                                                                 | -                                                                                 |
| Follow-up Hdwy             | -      | 3.32                                                                              | -                                                                                 | -                          | 2.22                                                                              | -                                                                                 |
| Pot Cap-1 Maneuver         | 0      | *807                                                                              | -                                                                                 | -                          | 1169                                                                              | -                                                                                 |
| Stage 1                    | 0      | -                                                                                 | -                                                                                 | -                          | -                                                                                 | -                                                                                 |
| Stage 2                    | 0      | -                                                                                 | -                                                                                 | -                          | -                                                                                 | -                                                                                 |
| Platoon blocked, %         |        | 1                                                                                 | -                                                                                 | -                          | 1                                                                                 | -                                                                                 |
| Mov Cap-1 Maneuver         | -      | *807                                                                              | -                                                                                 | -                          | 1169                                                                              | -                                                                                 |
| Mov Cap-2 Maneuver         | -      | -                                                                                 | -                                                                                 | -                          | -                                                                                 | -                                                                                 |
| Stage 1                    | -      | -                                                                                 | -                                                                                 | -                          | -                                                                                 | -                                                                                 |
| Stage 2                    | -      | -                                                                                 | -                                                                                 | -                          | -                                                                                 | -                                                                                 |
|                            |        |                                                                                   |                                                                                   |                            |                                                                                   |                                                                                   |
| Approach                   | WB     | NB                                                                                |                                                                                   | SB                         |                                                                                   |                                                                                   |
| HCM Control Delay, s       | 9.6    | 0                                                                                 |                                                                                   | 0.2                        |                                                                                   |                                                                                   |
| HCM LOS                    | A      |                                                                                   |                                                                                   |                            |                                                                                   |                                                                                   |
|                            |        |                                                                                   |                                                                                   |                            |                                                                                   |                                                                                   |
| Minor Lane/Major Mvmt      | NBT    | NBRWBLn1                                                                          | SBL                                                                               | SBT                        |                                                                                   |                                                                                   |
| Capacity (veh/h)           | -      | -                                                                                 | 807                                                                               | 1169                       | -                                                                                 |                                                                                   |
| HCM Lane V/C Ratio         | -      | -                                                                                 | 0.038                                                                             | 0.022                      | -                                                                                 |                                                                                   |
| HCM Control Delay (s)      | -      | -                                                                                 | 9.6                                                                               | 8.2                        | -                                                                                 |                                                                                   |
| HCM Lane LOS               | -      | -                                                                                 | A                                                                                 | A                          | -                                                                                 |                                                                                   |
| HCM 95th %tile Q(veh)      | -      | -                                                                                 | 0.1                                                                               | 0.1                        | -                                                                                 |                                                                                   |
| Notes                      |        |                                                                                   |                                                                                   |                            |                                                                                   |                                                                                   |
| ~: Volume exceeds capacity |        | \$: Delay exceeds 300s                                                            |                                                                                   | +: Computation Not Defined |                                                                                   | *: All major volume in platoon                                                    |

Timings  
12: S. 96th Street & Middle Access

2040 Total  
Sunday Peak

|                      |  |  |  |  |  |  |
|----------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Lane Group           | WBL                                                                               | WBR                                                                               | NBT                                                                               | NBR                                                                               | SBL                                                                               | SBT                                                                               |
| Lane Configurations  |  |  |  |  |  |  |
| Traffic Volume (vph) | 84                                                                                | 50                                                                                | 680                                                                               | 70                                                                                | 66                                                                                | 910                                                                               |
| Future Volume (vph)  | 84                                                                                | 50                                                                                | 680                                                                               | 70                                                                                | 66                                                                                | 910                                                                               |
| Turn Type            | Prot                                                                              | Prot                                                                              | NA                                                                                | Perm                                                                              | pm+pt                                                                             | NA                                                                                |
| Protected Phases     | 7                                                                                 | 7                                                                                 | 2                                                                                 |                                                                                   | 1                                                                                 | 6                                                                                 |
| Permitted Phases     |                                                                                   |                                                                                   |                                                                                   | 2                                                                                 | 6                                                                                 |                                                                                   |
| Detector Phase       | 7                                                                                 | 7                                                                                 | 2                                                                                 | 2                                                                                 | 1                                                                                 | 6                                                                                 |
| Switch Phase         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Minimum Initial (s)  | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               |
| Minimum Split (s)    | 23.0                                                                              | 23.0                                                                              | 23.0                                                                              | 23.0                                                                              | 10.0                                                                              | 23.0                                                                              |
| Total Split (s)      | 15.0                                                                              | 15.0                                                                              | 33.0                                                                              | 33.0                                                                              | 12.0                                                                              | 45.0                                                                              |
| Total Split (%)      | 25.0%                                                                             | 25.0%                                                                             | 55.0%                                                                             | 55.0%                                                                             | 20.0%                                                                             | 75.0%                                                                             |
| Yellow Time (s)      | 3.5                                                                               | 3.5                                                                               | 3.5                                                                               | 3.5                                                                               | 3.5                                                                               | 3.5                                                                               |
| All-Red Time (s)     | 1.5                                                                               | 1.5                                                                               | 1.5                                                                               | 1.5                                                                               | 1.5                                                                               | 1.5                                                                               |
| Lost Time Adjust (s) | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |
| Total Lost Time (s)  | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               |
| Lead/Lag             |                                                                                   |                                                                                   | Lag                                                                               | Lag                                                                               | Lead                                                                              |                                                                                   |
| Lead-Lag Optimize?   |                                                                                   |                                                                                   | Yes                                                                               | Yes                                                                               | Yes                                                                               |                                                                                   |
| Recall Mode          | None                                                                              | None                                                                              | C-Max                                                                             | C-Max                                                                             | None                                                                              | C-Max                                                                             |
| Act Effect Green (s) | 8.1                                                                               | 8.1                                                                               | 38.0                                                                              | 38.0                                                                              | 44.0                                                                              | 45.0                                                                              |
| Actuated g/C Ratio   | 0.14                                                                              | 0.14                                                                              | 0.63                                                                              | 0.63                                                                              | 0.73                                                                              | 0.75                                                                              |
| v/c Ratio            | 0.38                                                                              | 0.21                                                                              | 0.33                                                                              | 0.07                                                                              | 0.13                                                                              | 0.37                                                                              |
| Control Delay        | 27.8                                                                              | 9.6                                                                               | 16.5                                                                              | 10.5                                                                              | 3.8                                                                               | 4.2                                                                               |
| Queue Delay          | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |
| Total Delay          | 27.8                                                                              | 9.6                                                                               | 16.5                                                                              | 10.5                                                                              | 3.8                                                                               | 4.2                                                                               |
| LOS                  | C                                                                                 | A                                                                                 | B                                                                                 | B                                                                                 | A                                                                                 | A                                                                                 |
| Approach Delay       | 21.0                                                                              |                                                                                   | 15.9                                                                              |                                                                                   |                                                                                   | 4.2                                                                               |
| Approach LOS         | C                                                                                 |                                                                                   | B                                                                                 |                                                                                   |                                                                                   | A                                                                                 |

Intersection Summary

Cycle Length: 60

Actuated Cycle Length: 60

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.38

Intersection Signal Delay: 10.1

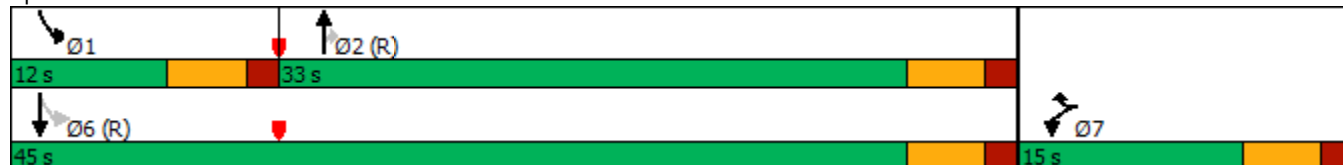
Intersection LOS: B

Intersection Capacity Utilization 40.1%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 12: S. 96th Street & Middle Access





HCM 6th TWSC  
14: W. Dillon Road & East Access

2040 Total  
Sunday Peak

| Intersection             |        |        |      |        |      |      |
|--------------------------|--------|--------|------|--------|------|------|
| Int Delay, s/veh         | 0.4    |        |      |        |      |      |
| Movement                 | EBL    | EBT    | WBT  | WBR    | SBL  | SBR  |
| Lane Configurations      |        | ↑↑     | ↑↑   | ↗      |      | ↗    |
| Traffic Vol, veh/h       | 0      | 575    | 625  | 15     | 0    | 47   |
| Future Vol, veh/h        | 0      | 575    | 625  | 15     | 0    | 47   |
| Conflicting Peds, #/hr   | 0      | 0      | 0    | 0      | 0    | 0    |
| Sign Control             | Free   | Free   | Free | Free   | Stop | Stop |
| RT Channelized           | -      | None   | -    | None   | -    | None |
| Storage Length           | -      | -      | -    | 0      | -    | 0    |
| Veh in Median Storage, # | -      | 0      | 0    | -      | 0    | -    |
| Grade, %                 | -      | 0      | 0    | -      | 0    | -    |
| Peak Hour Factor         | 92     | 92     | 92   | 92     | 92   | 92   |
| Heavy Vehicles, %        | 2      | 2      | 2    | 2      | 2    | 2    |
| Mvmt Flow                | 0      | 625    | 679  | 16     | 0    | 51   |
|                          |        |        |      |        |      |      |
| Major/Minor              | Major1 | Major2 |      | Minor2 |      |      |
| Conflicting Flow All     | -      | 0      | -    | 0      | -    | 340  |
| 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      | -      | -    | -      | 0    | 656  |
| Stage 1                  | 0      | -      | -    | -      | 0    | -    |
| Stage 2                  | 0      | -      | -    | -      | 0    | -    |
| Platoon blocked, %       |        | -      | -    | -      |      |      |
| Mov Cap-1 Maneuver       | -      | -      | -    | -      | -    | 656  |
| Mov Cap-2 Maneuver       | -      | -      | -    | -      | -    | -    |
| Stage 1                  | -      | -      | -    | -      | -    | -    |
| Stage 2                  | -      | -      | -    | -      | -    | -    |
|                          |        |        |      |        |      |      |
|                          |        |        |      |        |      |      |
| Approach                 | EB     | WB     |      | SB     |      |      |
| HCM Control Delay, s     | 0      | 0      |      | 11     |      |      |
| HCM LOS                  |        |        |      | B      |      |      |
|                          |        |        |      |        |      |      |
|                          |        |        |      |        |      |      |
| Minor Lane/Major Mvmt    | EBT    | WBT    | WBR  | SBLn1  |      |      |
| Capacity (veh/h)         | -      | -      | -    | 656    |      |      |
| HCM Lane V/C Ratio       | -      | -      | -    | 0.078  |      |      |
| HCM Control Delay (s)    | -      | -      | -    | 11     |      |      |
| HCM Lane LOS             | -      | -      | -    | B      |      |      |
| HCM 95th %tile Q(veh)    | -      | -      | -    | 0.3    |      |      |