

# MAIN STREET COCONUT CREEK, FL

## Traffic Impact Analysis VOLUME 1 – EXTERNAL ROADWAYS

Prepared for: GSR RE Partners, LLC

November 6, 2023  
Kimley-Horn Project #140924000

**Kimley»Horn**

# MAIN STREET COCONUT CREEK, FL

## Traffic Impact Analysis VOLUME 1 – EXTERNAL ROADWAYS

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## EXECUTIVE SUMMARY

Kimley-Horn and Associates has prepared a traffic study to evaluate the impact of development of the Main Street Coconut Creek site, located on several contiguous parcels within the area bounded on the north by Wiles Road, on the east by Lyons Road, on the south by Sample Road and on the west by SR 7/US 441. The site was previously approved for a Development of Regional Impact (DRI) that included a total of proposed plan would include a total of 3,750 residential units, 1,625,000 square feet of commercial uses and 525,000 square feet of office use. The currently proposed plan of development is for 605 multi-family low-rise residential units, 1,755 mid-rise residential units, and 225,000 square feet of commercial use.

A site-specific traffic analysis has been undertaken to evaluate impacts on the surrounding transportation network. For this analysis, the trip generation potential has been calculated for the proposed plan of development, and these project trips have been distributed on the surrounding transportation network in the vicinity of the site. An analysis was also conducted to review the signalized and unsignalized intersection operations at the following intersections in the vicinity of the site using *Synchro 11*. The study intersections are listed below:

### **Signalized Intersections**

- Wiles Road & SR 7 / US 441
- Wiles Road & Lyons Road
- Cullum Road & SR 7 / US 441
- Sample Road & SR 7 / US 441 Interchange
- Sample Road & NW 54<sup>th</sup> Avenue
- Sample Road & Lyons Road

### **Unsignalized Intersections**

- Wiles Road & Banks Road
- Cullum Road & Lyons Road
- NW 40<sup>th</sup> Street & SR 7 / US 441
- NW 40<sup>th</sup> Street & NW 54<sup>th</sup> Avenue
- NW 40<sup>th</sup> Street & Lyons Road
- Coral Tree Circle & Lyons Road
- Sample Road & Banks Road

In addition, Level of Service (LOS) has been evaluated for each of the study intersections. The analysis identifies existing LOS and delay, future background LOS and delay, and total future LOS and delay upon buildout of the project. The results of the evaluation are used to determine conditions of approval that will be implemented to mitigate traffic impacts generated by the project on the surrounding transportation network.

## INTRODUCTION

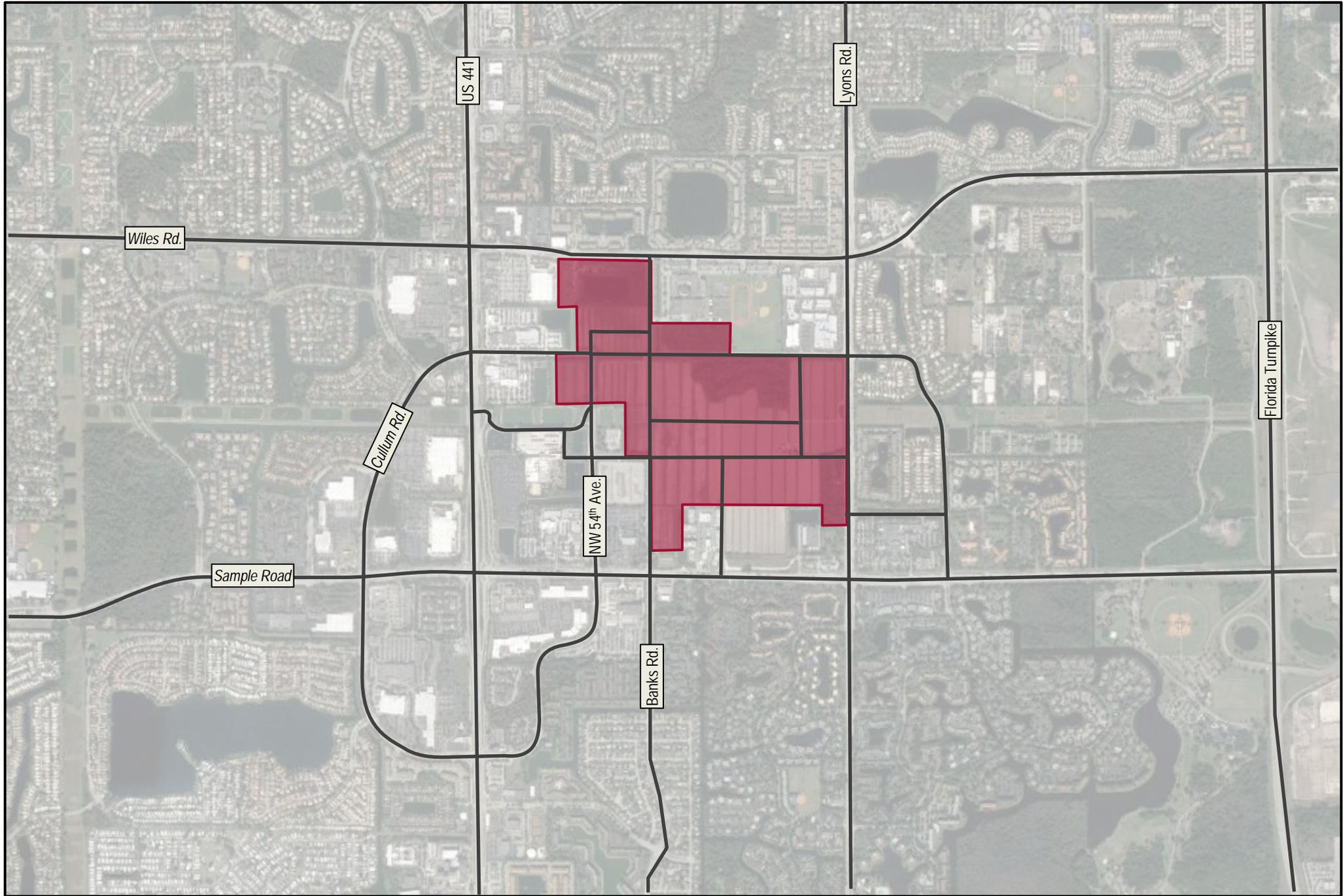
The Main Street Coconut Creek site is located on several contiguous parcels within the area bounded on the north by Wiles Road, on the east by Lyons Road, on the south by Sample Road and on the west by SR 7/US 441. *Figure 1* illustrates the location of the project site. This site was approved as a Development of Regional Impact (DRI) with a mix of residential, office and commercial uses on August 26, 2010, as adopted by City of Coconut Creek Ordinance #2010-006. No construction of that plan of development was subsequently undertaken. A new program of development is now proposed for the site, comprising a mix of residential and commercial uses, plus a charter school. *Table 1* provides a summary of the previously approved and currently proposed mix of uses for the site.

**Table 1: Comparison of Approved DRI and Proposed Development**

Use	Approved DRI	Proposed Plan
Multi-Family High-Rise	3,650 DU	--
Multi-Family Mid-Rise	--	1,755 DU
Multi-Family Low-Rise	100 DU	605 DU
Commercial Retail	1,625,000 SF	225,000 SF
Office	525,000 SF	--

Kimley-Horn and Associates, Inc. was retained to prepare a traffic impact analysis to evaluate the impacts resulting from the new proposed program of development. This document presents the methodology used and the findings of the traffic impact analysis. The analysis was conducted in accordance with the requirements of the City of Coconut Creek, Florida. A buildout date of 2030 was assumed in the analysis.

The site plan and study methodology can be found in *Appendix A*.



**LEGEND**  
 Site Location

**FIGURE 1**  
Main Street Coconut Creek  
KH #140924000  
Site Location

## INVENTORY AND PLANNING DATA

To evaluate the traffic conditions on the surrounding network, intersection turning movement counts were performed at the following intersections listed below.

### Intersection Volume Data

Turning movement, pedestrian and bicycle counts were collected during the AM peak (7:00 a.m. to 9:00 p.m.) and PM peak (4:00 p.m. to 6:00 p.m.) periods on October 13, 2021 at the following intersections:

#### **SIGNALIZED**

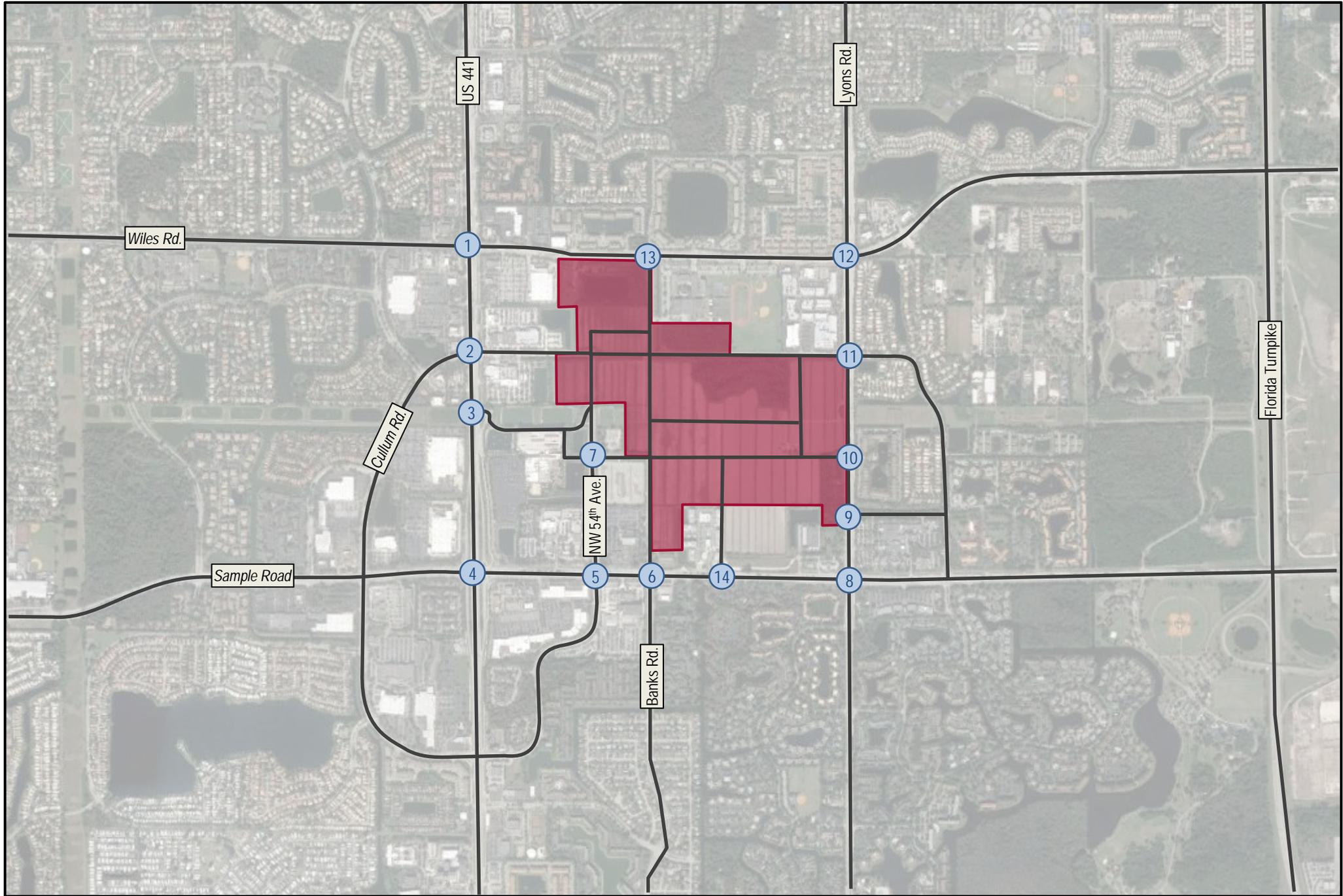
- Wiles Road & SR 7 / US 441
- Wiles Road & Lyons Road
- Cullum Road & SR 7 / US 441
- Sample Road & SR 7 / US 441 Interchange
- Sample Road & NW 54<sup>th</sup> Avenue
- Sample Road & Lyons Road

#### **UNSIGNALIZED**

- Wiles Road & Banks Road
- Cullum Road & Lyons Road
- NW 40<sup>th</sup> Street & SR 7 / US 441
- NW 40<sup>th</sup> Street & NW 54<sup>th</sup> Avenue
- NW 40<sup>th</sup> Street & Lyons Road
- Coral Tree Circle & Lyons Road
- Sample Road & Banks Road

*Figure 2* illustrates the intersections where data was collected.

The volumes were collected in 15-minute intervals and the peak hour was determined for each intersection. The turning movement counts are provided in *Appendix B*. Signal timing summaries are provided in *Appendix C*.



- LEGEND**
-  Site Location
  -  Study Intersection

**FIGURE 2**  
 Main Street Coconut Creek  
 KH #140924000  
 Intersection Data Collection

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## PROGRAMMED TRANSPORTATION SYSTEM IMPROVEMENTS

A review was conducted to identify transportation improvements that are programmed (i.e., included in a public agency's existing adopted 5-year Capital Improvement Program) or otherwise identified/underway that would affect the transportation system in the vicinity of this project. Following is a summary of the project that was identified:

**SR 7/US 441 Transit Corridor Improvements (FM #4295762):**

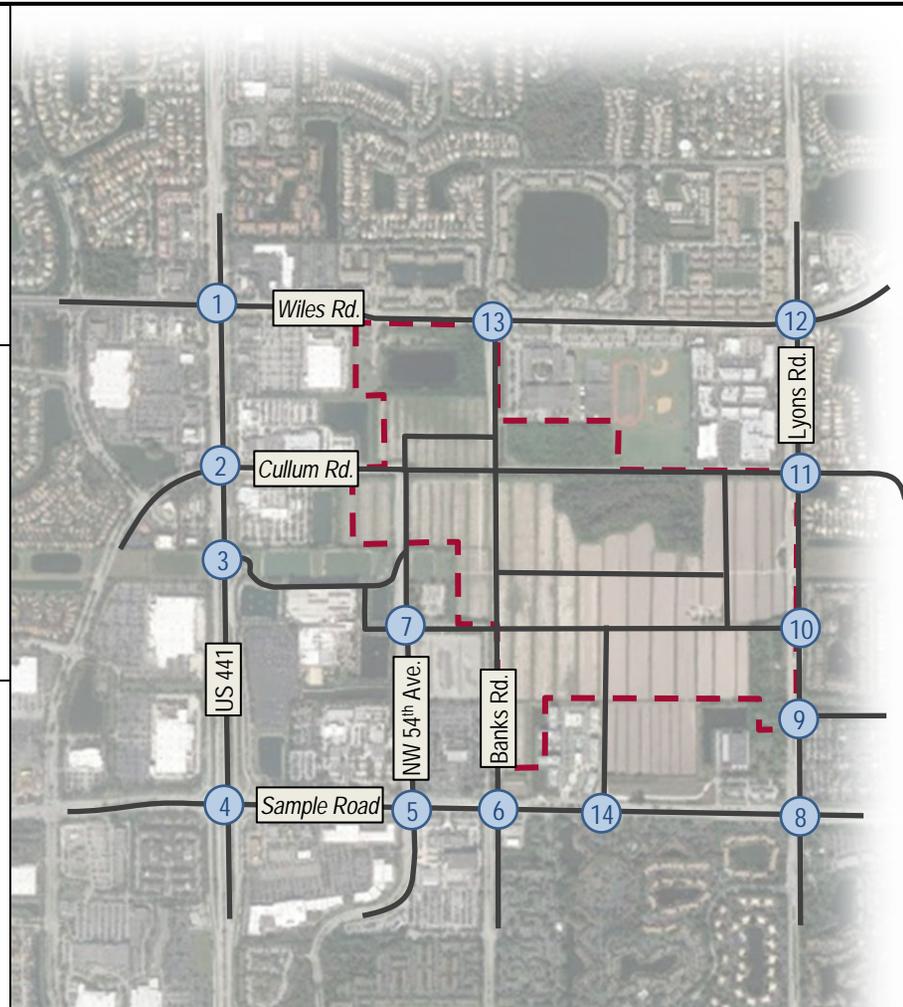
This project includes sidewalk and bicycle improvements throughout the SR 7/US 441 corridor from the Broward County/Miami-Dade County line to north of Sample Road. Construction is through Fiscal Year 2022.

## EXISTING (2021) TRAFFIC

Because the turning movement counts were collected outside of the period that is the “peak season” in South Florida (generally January through March), a peak season adjustment factor was applied to the existing turning movement volume counts. The peak season factor was taken from the Peak Season Conversion Factor report published by the Florida Department of Transportation for the Broward County (Central) area. A copy of the Peak Season Conversion Factor report is included in *Appendix D*.

The application of this factor to calculate Existing Peak Season traffic volumes is included in the volume development worksheets provided in *Appendix F*. *Figure 3* provides a summary of the existing peak season traffic volumes at the study intersections.

<p><b>1</b></p> <p>↔ 305 / <u>423</u> ↔ 1322 / <u>1327</u> ↔ 291 / <u>326</u> US 441</p> <p>↔ 291 / <u>141</u> ↔ 454 / <u>680</u> ↔ 219 / <u>370</u> Wiles Road</p> <p>↔ 641 / <u>639</u> ↔ 693 / <u>805</u> ↔ 490 / <u>182</u></p>	<p><b>2</b></p> <p>↔ 179 / <u>306</u> ↔ 1739 / <u>1452</u> ↔ 132 / <u>227</u> US 441</p> <p>↔ 67 / <u>147</u> ↔ 16 / <u>75</u> ↔ 6 / <u>42</u> Cullum Road</p> <p>↔ 251 / <u>336</u> ↔ 34 / <u>32</u> ↔ 15 / <u>61</u></p> <p>↔ 111 / <u>227</u> ↔ 1483 / <u>1650</u> ↔ 36 / <u>20</u></p>	<p><b>3</b></p> <p>↔ 1840 / <u>1649</u> US 441</p> <p>↔ 45 / <u>151</u> 40th Street</p> <p>↔ 1593 / <u>1758</u> ↔ 42 / <u>71</u></p>
<p><b>4</b></p> <p>↔ 101 / <u>233</u> ↔ 280 / <u>219</u> US 441</p> <p>↔ 226 / <u>286</u> ↔ 1205 / <u>1815</u> ↔ 132 / <u>151</u> Sample Road</p> <p>↔ 109 / <u>204</u> ↔ 1864 / <u>1570</u> ↔ 185 / <u>107</u></p> <p>↔ 171 / <u>158</u> ↔ 164 / <u>118</u></p>	<p><b>5</b></p> <p>↔ 40 / <u>85</u> ↔ 18 / <u>49</u> ↔ 98 / <u>215</u> 54th Avenue</p> <p>↔ 123 / <u>278</u> ↔ 1315 / <u>1821</u> ↔ 213 / <u>388</u> Sample Road</p> <p>↔ 60 / <u>161</u> ↔ 1998 / <u>1489</u> ↔ 55 / <u>56</u></p> <p>↔ 31 / <u>127</u> ↔ 19 / <u>43</u> ↔ 292 / <u>288</u></p>	<p><b>6</b></p> <p>↔ 4 / <u>10</u> Banks Road</p> <p>↔ 9 / <u>35</u> ↔ 1687 / <u>2568</u> ↔ 261 / <u>243</u> Sample Road</p> <p>↔ 19 / <u>4</u> ↔ 2342 / <u>1880</u> ↔ 95 / <u>107</u></p> <p>↔ 191 / <u>180</u></p>
<p><b>7</b></p> <p>↔ 5 / <u>5</u> ↔ 101 / <u>112</u> ↔ 14 / <u>8</u> 54th Avenue</p> <p>↔ 2 / <u>15</u> ↔ 1 / <u>18</u> ↔ 5 / <u>5</u> 40th Street</p> <p>↔ 8 / <u>16</u> ↔ 0 / <u>1</u> ↔ 38 / <u>106</u></p> <p>↔ 51 / <u>121</u> ↔ 77 / <u>151</u> ↔ 2 / <u>3</u></p>	<p><b>8</b></p> <p>↔ 421 / 548 ↔ 851 / <u>899</u> ↔ 354 / <u>285</u> Lyons Road</p> <p>↔ 236 / <u>338</u> ↔ 933 / 1771 ↔ 87 / <u>148</u> Sample Road</p> <p>↔ 413 / 362 ↔ 1751 / 1159 ↔ 382 / 362</p> <p>↔ 428 / <u>452</u> ↔ 904 / <u>969</u> ↔ 179 / <u>132</u></p>	<p><b>9</b></p> <p>↔ 1534 / <u>1693</u> ↔ 124 / <u>94</u> Lyons Road</p> <p>↔ 142 / <u>297</u> ↔ 15 / <u>21</u> Coral Tree Circle</p> <p>↔ 12 / <u>18</u> ↔ 1530 / <u>1580</u> ↔ 23 / <u>42</u></p>
<p><b>10</b></p> <p>↔ 1635 / <u>1812</u> ↔ 38 / <u>42</u> Lyons Road</p> <p>↔ 56 / <u>28</u> ↔ 47 / <u>27</u> 40th Street</p> <p>↔ 1627 / <u>1854</u> ↔ 15 / <u>52</u></p>	<p><b>11</b></p> <p>↔ 50 / <u>21</u> ↔ 1463 / <u>1714</u> ↔ 23 / <u>52</u> Lyons Road</p> <p>↔ 69 / <u>40</u> ↔ 2 / <u>1</u> ↔ 10 / <u>9</u> Cullum Road</p> <p>↔ 7 / <u>14</u> ↔ 2 / <u>0</u> ↔ 145 / <u>84</u></p> <p>↔ 149 / <u>78</u> ↔ 1537 / <u>1786</u> ↔ 15 / <u>19</u></p>	<p><b>12</b></p> <p>↔ 293 / <u>283</u> ↔ 936 / <u>1089</u> ↔ 285 / <u>197</u> Lyons Road</p> <p>↔ 226 / <u>252</u> ↔ 580 / <u>808</u> ↔ 332 / <u>430</u> Wiles Road</p> <p>↔ 289 / <u>393</u> ↔ 724 / <u>668</u> ↔ 295 / <u>333</u></p> <p>↔ 145 / <u>232</u> ↔ 879 / <u>1252</u> ↔ 520 / <u>304</u></p>
<p><b>13</b></p> <p>↔ 847 / <u>1279</u> ↔ 25 / <u>12</u> Wiles Road</p> <p>↔ 15 / <u>15</u> ↔ 1032 / <u>1346</u> ↔ 58 / <u>10</u> Banks Road</p> <p>↔ 60 / <u>18</u> ↔ 88 / <u>22</u></p>	<p><b>14</b></p> <p>↔ 1957 / <u>2846</u> Sample Road</p> <p>↔ 2533 / <u>2060</u></p>	



**LEGEND**

 Site Location

 Study Intersection

XX / XX AM / PM Trips

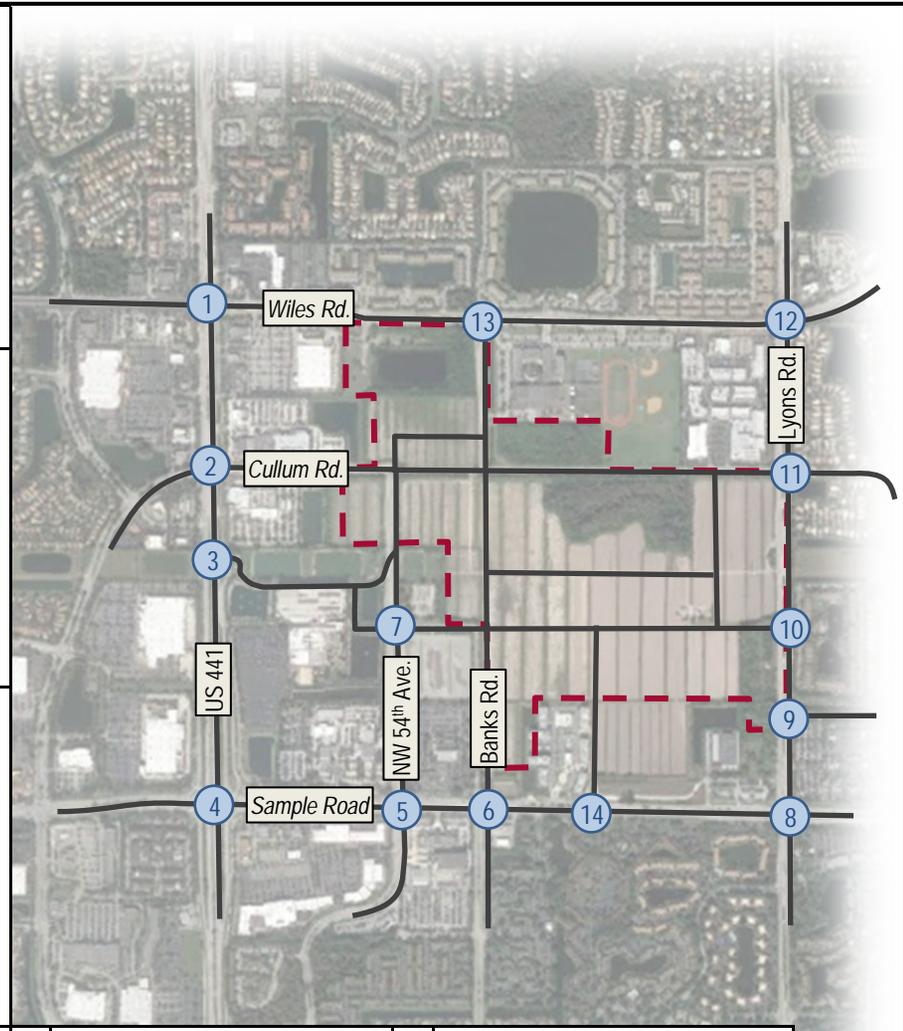
**FIGURE 3**  
Main Street Coconut Creek  
KH #140924000  
Existing (2021) Peak Season Traffic Volumes

## BACKGROUND TRAFFIC

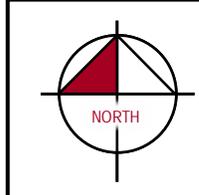
Background traffic is defined as the traffic expected to be on the roadways during the buildout year (2030) without traffic generated by the project. It includes traffic volumes based on existing counts, adjusted over a nine-year period using an annually-compounding growth rate. This yearly growth rate was determined by analyzing AADT data collected at several FDOT portable traffic monitoring sites on the roadways that surround the site and taking a weighted average of the growth on roadway links outside of the residential community. The AADT data worksheets and growth rate calculation can be found in *Appendix D*. As shown in those calculations, the three-year weighted average growth rate is negative; therefore, an annual growth rate of 0.5% was applied in these calculations.

The application of the growth rates to calculate Background Year 2030 traffic volumes is included in the volume development worksheets provided in *Appendix F*. *Figure 4* provides a summary of the future background traffic volumes at the study intersections.

<p><b>1</b></p> <p>↖ 319 / <b>442</b> ↔ 1383 / <b>1388</b> ↗ 304 / <b>341</b> US 441</p> <p>↖ 304 / <b>147</b> ↔ 475 / <b>711</b> ↗ 229 / <b>387</b> Wiles Road</p> <p>↖ 670 / <b>668</b> ↔ 725 / <b>842</b> ↗ 512 / <b>190</b></p> <p>↖ 270 / <b>440</b> ↔ 1273 / <b>1570</b> ↗ 201 / <b>321</b></p>	<p><b>2</b></p> <p>↖ 187 / <b>320</b> ↔ 1819 / <b>1519</b> ↗ 138 / <b>237</b> US 441</p> <p>↖ 70 / <b>154</b> ↔ 17 / <b>78</b> ↗ 6 / <b>44</b> Cullum Road</p> <p>↖ 263 / <b>351</b> ↔ 36 / <b>33</b> ↗ 16 / <b>64</b></p> <p>↖ 116 / <b>237</b> ↔ 1551 / <b>1726</b> ↗ 38 / <b>21</b></p>	<p><b>3</b></p> <p>↖ 1924 / <b>1725</b> US 441</p> <p>↖ 47 / <b>158</b> 40th Street</p> <p>↖ 1666 / <b>1839</b> ↔ 44 / <b>74</b></p>
<p><b>4</b></p> <p>↖ 106 / <b>244</b> ↔ 293 / <b>229</b> US 441</p> <p>↖ 236 / <b>299</b> ↔ 1260 / <b>1898</b> ↗ 138 / <b>158</b> Sample Road</p> <p>↖ 114 / <b>213</b> ↔ 1950 / <b>1642</b> ↗ 193 / <b>112</b></p> <p>↖ 179 / <b>165</b> ↔ 172 / <b>123</b></p>	<p><b>5</b></p> <p>↖ 42 / <b>89</b> ↔ 19 / <b>51</b> ↗ 102 / <b>225</b> 54th Avenue</p> <p>↖ 129 / <b>291</b> ↔ 1375 / <b>1905</b> ↗ 223 / <b>406</b> Sample Road</p> <p>↖ 63 / <b>168</b> ↔ 2090 / <b>1557</b> ↗ 58 / <b>59</b></p> <p>↖ 32 / <b>133</b> ↔ 20 / <b>45</b> ↗ 305 / <b>301</b></p>	<p><b>6</b></p> <p>↖ 4 / <b>10</b> Banks Road</p> <p>↖ 9 / <b>37</b> ↔ 1764 / <b>2686</b> ↗ 273 / <b>254</b> Sample Road</p> <p>↖ 20 / <b>4</b> ↔ 2450 / <b>1966</b> ↗ 99 / <b>112</b></p> <p>↖ 200 / <b>188</b></p>
<p><b>7</b></p> <p>↖ 5 / <b>5</b> ↔ 106 / <b>117</b> ↗ 15 / <b>8</b> 54th Avenue</p> <p>↖ 2 / <b>16</b> ↔ 1 / <b>19</b> ↗ 5 / <b>5</b> 40th Street</p> <p>↖ 8 / <b>17</b> ↔ 0 / <b>1</b> ↗ 40 / <b>111</b></p> <p>↖ 53 / <b>127</b> ↔ 81 / <b>158</b> ↗ 2 / <b>3</b></p>	<p><b>8</b></p> <p>↖ 440 / <b>573</b> ↔ 890 / <b>940</b> ↗ 370 / <b>298</b> Lyons Road</p> <p>↖ 247 / <b>354</b> ↔ 976 / <b>1852</b> ↗ 91 / <b>155</b> Sample Road</p> <p>↖ 432 / <b>379</b> ↔ 1831 / <b>1212</b> ↗ 400 / <b>379</b></p> <p>↖ 448 / <b>473</b> ↔ 946 / <b>1013</b> ↗ 187 / <b>138</b></p>	<p><b>9</b></p> <p>↖ 1604 / <b>1771</b> ↔ 130 / <b>98</b> Lyons Road</p> <p>↖ 149 / <b>311</b> ↔ 16 / <b>22</b> Coral Tree Circle</p> <p>↖ 13 / <b>19</b> ↔ 1600 / <b>1653</b> ↗ 24 / <b>44</b></p>
<p><b>10</b></p> <p>↖ 1710 / <b>1895</b> ↔ 40 / <b>44</b> Lyons Road</p> <p>↖ 59 / <b>29</b> ↔ 49 / <b>28</b> 40th Street</p> <p>↖ 1702 / <b>1939</b> ↔ 16 / <b>54</b></p>	<p><b>11</b></p> <p>↖ 52 / <b>22</b> ↔ 1530 / <b>1793</b> ↗ 24 / <b>54</b> Lyons Road</p> <p>↖ 72 / <b>42</b> ↔ 2 / <b>1</b> ↗ 10 / <b>9</b> Cullum Road</p> <p>↖ 7 / <b>15</b> ↔ 2 / <b>0</b> ↗ 152 / <b>88</b></p> <p>↖ 156 / <b>82</b> ↔ 1608 / <b>1868</b> ↗ 16 / <b>20</b></p>	<p><b>12</b></p> <p>↖ 306 / <b>296</b> ↔ 979 / <b>1139</b> ↗ 298 / <b>206</b> Lyons Road</p> <p>↖ 236 / <b>264</b> ↔ 607 / <b>845</b> ↗ 347 / <b>450</b> Wiles Road</p> <p>↖ 302 / <b>411</b> ↔ 757 / <b>699</b> ↗ 309 / <b>348</b></p> <p>↖ 152 / <b>243</b> ↔ 919 / <b>1309</b> ↗ 544 / <b>318</b></p>



<p><b>13</b></p> <p>↖ 886 / <b>1338</b> ↔ 26 / <b>13</b> Wiles Road</p> <p>↖ 16 / <b>16</b> ↔ 1079 / <b>1408</b> ↗ 61 / <b>10</b> Banks Road</p> <p>↖ 63 / <b>19</b> ↔ 92 / <b>23</b></p>	<p>↖ 2047 / <b>2977</b> Sample Road</p>
<p>↖ 2649 / <b>2,155</b> ↘</p>	



**LEGEND**

 Site Location

 Study Intersection

XX / XX AM / PM Trips

**FIGURE 4**  
Main Street Coconut Creek  
KH #140924000  
Background Year (2030) Traffic Volumes

## PROJECT TRAFFIC

Project traffic used in this analysis is defined as the vehicle trips expected to be generated by the project, and the distribution and assignment of that traffic over the study roadway network.

### Trip Generation

The trip generation potential of the development was calculated based upon the trip generation rates and equations published by the Institute of Transportation Engineers (ITE) in *Trip Generation Manual, 11<sup>th</sup> Edition*. The relevant excerpts from the ITE manual are included in *Appendix D* for reference. The trip generation potential for the proposed uses is calculated using rates and equations published for the following land uses:

- Multi-Family Low-Rise (Land Use 220)
- Multi-family Mid-Rise (Land Use 221)
- Shopping Center (Land Use 820)

As indicated in *Table 2*, the net new trip generation potential of the proposed site is 17,250 net external daily trips, 1,139 net new external AM peak hour trips (+332 in, +807 out) and 1,364 net new external PM peak hour trips (+767 in, +597 out).

### Traffic Distribution

Traffic distribution is the pairing of trip ends from the subject site with other land uses in the area. These trips were assigned to the surrounding roadways based upon a review of the roadway network proposed to be in place at the time of buildout and its travel time characteristics.

The general distribution according to cardinal directions is:

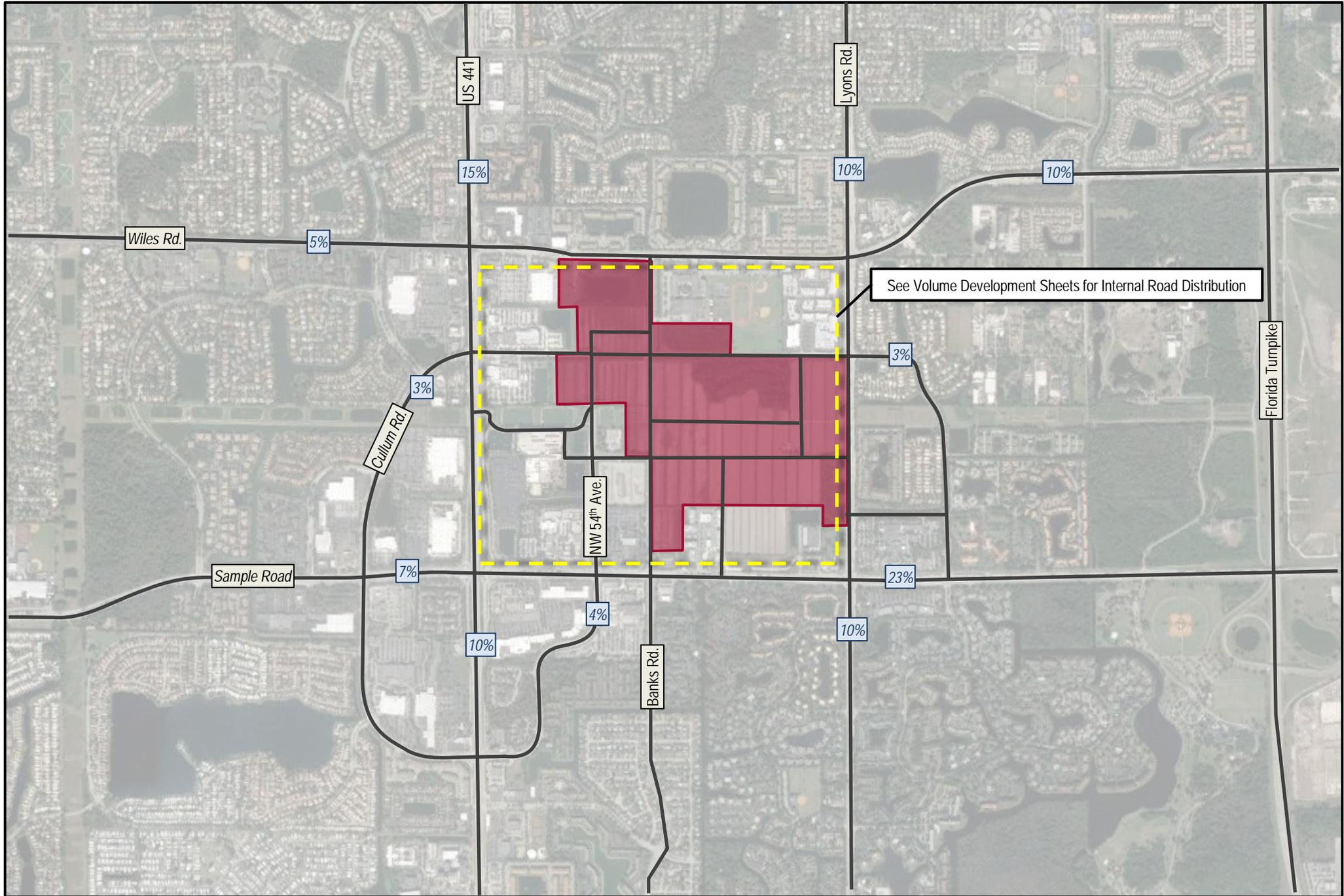
NORTH	-	25 percent
EAST	-	36 percent
SOUTH	-	24 percent
WEST	-	15 percent

*Figure 5* illustrates the overall project distribution on the surrounding roadways.

Project traffic associated with each specific superblock is illustrated in Appendix A, for reference.

**Table 2: Trip Generation**

Land Use	Intensity	Daily	AM Peak Hour			PM Peak Hour			
			Total	In	Out	Total	In	Out	
<b>Proposed Scenario</b>									
Multifamily Low-Rise	605 DU	3,953	210	50	160	281	177	104	
Multifamily Mid-Rise	1755 DU	8,325	761	175	586	685	418	267	
General Commercial	225,000 KSF	11,738	266	165	101	1,012	486	526	
		<i>Subtotal</i>	<i>24,016</i>	<i>1,237</i>	<i>390</i>	<i>1,978</i>	<i>1,081</i>	<i>897</i>	
<b>Internal Capture</b>									
Multifamily Low-Rise		633	3	1	2	56	41	15	
Multifamily Mid-Rise		1333	9	4	5	132	97	35	
General Commercial		1,966	12	7	5	186	49	137	
		<i>Subtotal</i>	<i>3,932</i>	<i>24</i>	<i>12</i>	<i>374</i>	<i>187</i>	<i>187</i>	
<b>Pass-By Capture</b>									
Multifamily Low-Rise	0.0%	0	0	0	0	0	0	0	
Multifamily Mid-Rise	0.0%	0	0	0	0	0	0	0	
General Commercial	29.0%	2,834	74	46	28	240	127	113	
		<i>Subtotal</i>	<i>2,834</i>	<i>74</i>	<i>46</i>	<i>240</i>	<i>127</i>	<i>113</i>	
<b>Driveway Volumes</b>			20,084	1,213	378	835	1,604	894	710
<b>Net New External Trips</b>			17,250	1,139	332	807	1,364	767	597
<b>Proposed Net External Trips-Existing Net New External Trips</b>			17,250	1,139	332	807	1,364	767	597
<b>Land Use</b>	<b>Daily</b>	<b>AM Peak Hour</b>			<b>PM Peak Hour</b>			<b>Pass By</b>	
Multifamily Low-Rise	$T = 6.41(X) + 75.31$	$T = .31(X) + 22.85$ (24% in, 76% out)			$T = .43(X) + 20.55$ (63% in, 37% out)			0.0%	
Multifamily Mid-Rise	$T = 4.77(X) - 46.46$	$T = .44(X) - 11.61$ (23% in, 77% out)			$T = .39(X) + .34$ (61% in, 39% out)			0.0%	
General Commercial	$T = 26.11(X) + 5,863.73$	$T = .59(X) + 133.55$ (62% in, 38% out)			$\ln(T) = 0.72 * \ln(X) + 3.02$ (48% in, 52% out)			29.0%	



**LEGEND**

-  Site Location
-  % Project Traffic

**FIGURE 5**  
 Main Street Coconut Creek  
 KH #140924000  
 Trip Distribution

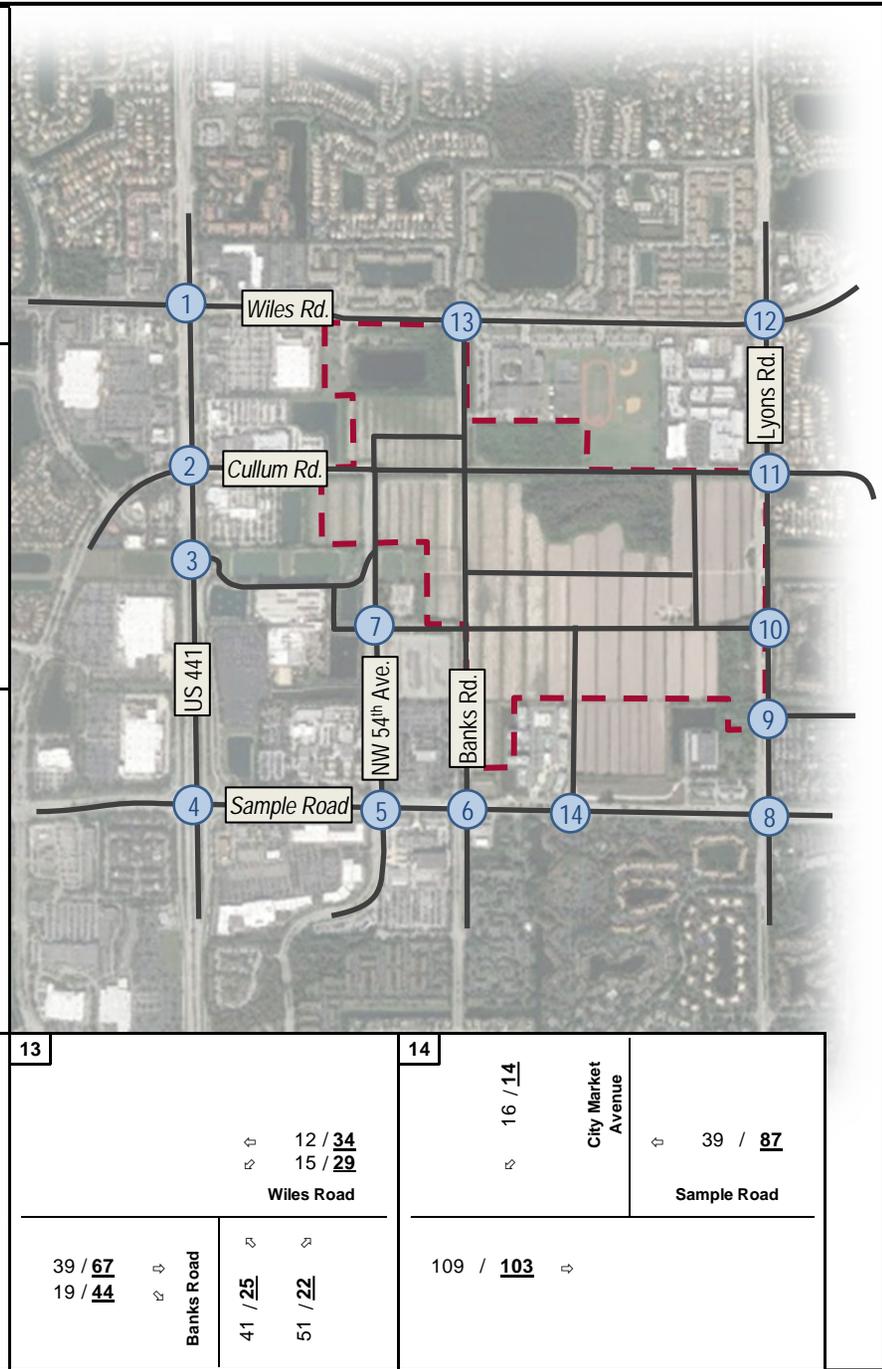
## Traffic Assignment

The overall project is designed with an urban grid form, consisting of several distinct blocks. Based upon the overall size of the project, six groupings of adjacent blocks (A-F) were created for the purposes of determining project traffic assignment. Traffic generated by each of these groupings was then assigned to the surrounding transportation network based upon the overall external traffic distribution and roadway network.

Worksheets illustrating the superbloc specific project distributions are included in *Appendix E*, for reference.

*Figure 6* illustrates the cumulative project traffic volumes at the study intersections.

<p><b>1</b></p> <p>22 / <u>47</u> 35 / <u>86</u> US 441</p> <p>50 / <u>46</u> 22 / <u>17</u></p> <p>Wiles Road</p>	<p><b>2</b></p> <p>29 / <u>61</u> US 441</p> <p>96 / <u>81</u> 25 / <u>22</u> 36 / <u>15</u></p> <p>Cullum Road</p>	<p><b>3</b></p> <p>36 / <u>15</u> US 441</p> <p>40th Street</p>
<p>12 / <u>31</u> 6 / <u>12</u></p> <p>21 / <u>19</u> 76 / <u>61</u> 2 / <u>4</u></p>	<p>12 / <u>26</u></p> <p>2 / <u>4</u> 8 / <u>18</u></p>	<p>11 / <u>22</u> 4 / <u>9</u></p>
<p><b>4</b></p> <p>11 / <u>5</u> US 441</p> <p>47 / <u>45</u> 60 / <u>60</u></p> <p>Sample Road</p>	<p><b>5</b></p> <p>28 / <u>33</u> 27 / <u>19</u> 65 / <u>28</u> 54th Avenue</p> <p>14 / <u>29</u> 77 / <u>73</u> 25 / <u>18</u></p> <p>Sample Road</p>	<p><b>6</b></p> <p>81 / <u>50</u> Banks Road</p> <p>21 / <u>42</u> 34 / <u>58</u></p> <p>Sample Road</p>
<p>3 / <u>7</u> 22 / <u>55</u></p> <p>27 / <u>65</u></p>	<p>15 / <u>34</u> 35 / <u>85</u></p> <p>10 / <u>24</u> 5 / <u>11</u></p>	<p>15 / <u>32</u> 109 / <u>103</u></p>
<p><b>7</b></p> <p>68 / <u>29</u> 54th Avenue</p> <p>56 / <u>53</u> 40th Street</p>	<p><b>8</b></p> <p>4 / <u>16</u> 59 / <u>60</u> 133 / <u>139</u> Lyons Road</p> <p>51 / <u>132</u> 35 / <u>73</u></p> <p>Sample Road</p>	<p><b>9</b></p> <p>8 / <u>22</u> 138 / <u>210</u> Lyons Road</p> <p>99 / <u>257</u> Coral Tree Circle</p>
<p>4 / <u>9</u></p> <p>30 / <u>60</u> 10 / <u>21</u></p>	<p>25 / <u>67</u> 59 / <u>24</u> 25 / <u>10</u></p> <p>16 / <u>31</u> 22 / <u>57</u></p>	<p>5 / <u>19</u></p>
<p><b>10</b></p> <p>50 / <u>130</u> 79 / <u>74</u> 1 / <u>4</u> Lyons Road</p> <p>40th Street</p>	<p><b>11</b></p> <p>16 / <u>35</u> 67 / <u>170</u> Lyons Road</p> <p>7 / <u>13</u> 5 / <u>13</u> Cullum Road</p>	<p><b>12</b></p> <p>6 / <u>12</u> 32 / <u>77</u> Lyons Road</p> <p>11 / <u>21</u> 27 / <u>68</u> Wiles Road</p>
<p>68 / <u>134</u> 120 / <u>130</u></p> <p>82 / <u>222</u> 17 / <u>36</u></p>	<p>45 / <u>21</u> 22 / <u>10</u> 62 / <u>34</u></p> <p>11 / <u>24</u> 66 / <u>125</u> 3 / <u>12</u></p>	<p>32 / <u>13</u> 34 / <u>14</u> 25 / <u>61</u></p> <p>10 / <u>30</u> 53 / <u>57</u> 50 / <u>56</u></p>



**LEGEND**

- Site Location
- Study Intersection
- XX / XX AM / PM Trips

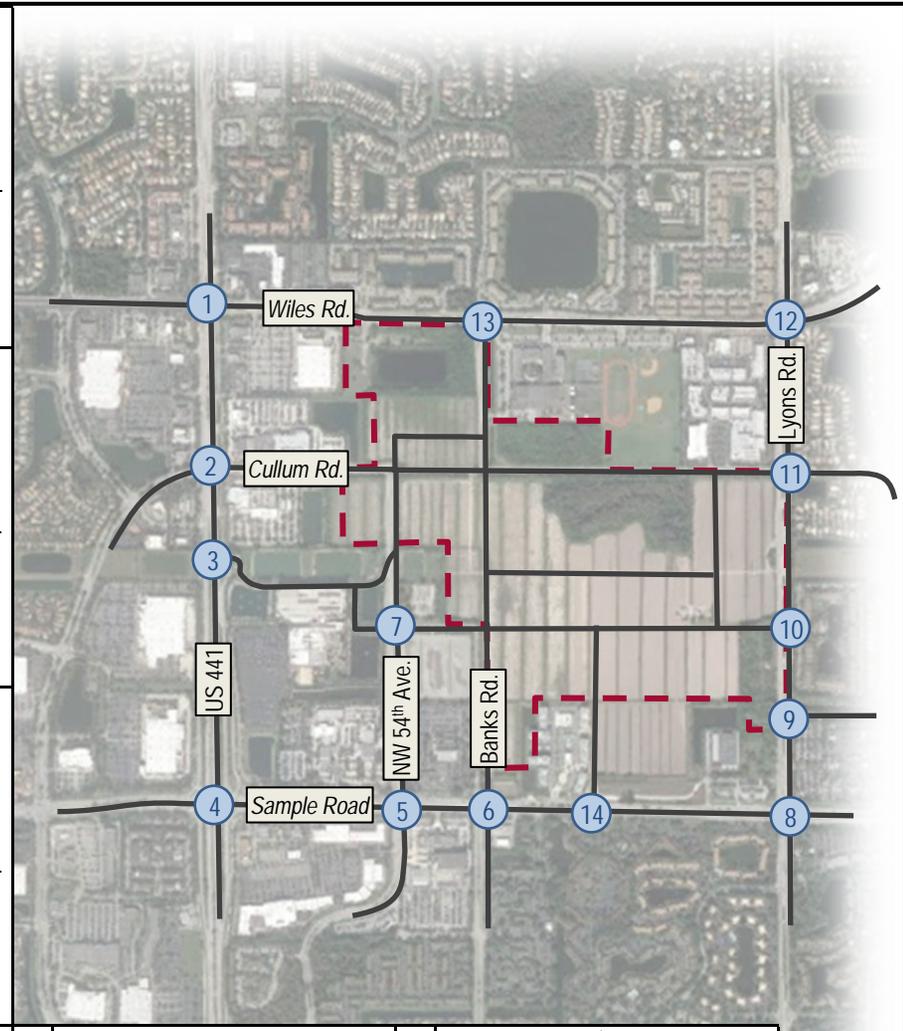
**FIGURE 6**  
Main Street Coconut Creek  
KH #140924000  
Project Traffic Volumes

## TOTAL FUTURE TRAFFIC

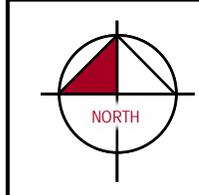
Total future traffic is defined as the traffic expected to be on the roadways during the buildout year (2030) including the project traffic generated by development of this site. It includes the future background traffic volumes as the baseline, with project traffic assigned at each of the study intersections.

The determination of the Future Year 2030 traffic volumes is included in the volume development worksheets provided in *Appendix F*. *Figure 7* provides a summary of the future background traffic volumes at the study intersections.

<p><b>1</b></p> <p>↻ 319 / <b>442</b> ↻ 1405 / <b>1435</b> ↻ 339 / <b>427</b> US 441</p> <p>↻ 354 / <b>193</b> ↻ 497 / <b>728</b> ↻ 179 / <b>337</b> Wiles Road</p>	<p><b>2</b></p> <p>↻ 137 / <b>270</b> ↻ 1819 / <b>1519</b> ↻ 167 / <b>298</b> US 441</p> <p>↻ 166 / <b>235</b> ↻ 92 / <b>150</b> ↻ 42 / <b>59</b> Cullum Road</p>	<p><b>3</b></p> <p>↻ 1960 / <b>1740</b> US 441</p> <p>↻ 47 / <b>158</b> 40th Street</p>
<p>670 / <b>668</b> ↻ 737 / <b>873</b> ↻ 518 / <b>202</b> ↻</p>	<p>213 / <b>301</b> ↻ 98 / <b>109</b> ↻ 16 / <b>64</b> ↻</p>	<p>116 / <b>237</b> ↻ 1553 / <b>1730</b> ↻ 46 / <b>39</b> ↻</p>
<p><b>4</b></p> <p>↻ 117 / <b>249</b> ↻ 293 / <b>229</b> US 441</p> <p>↻ 236 / <b>299</b> ↻ 1307 / <b>1943</b> ↻ 198 / <b>218</b> Sample Road</p>	<p><b>5</b></p> <p>↻ 70 / <b>122</b> ↻ 46 / <b>70</b> ↻ 167 / <b>253</b> 54th Avenue</p> <p>↻ 143 / <b>320</b> ↻ 1452 / <b>1978</b> ↻ 248 / <b>424</b> Sample Road</p>	<p><b>6</b></p> <p>↻ 85 / <b>60</b> Banks Road</p> <p>↻ 30 / <b>79</b> ↻ 1798 / <b>2744</b> ↻ 273 / <b>254</b> Sample Road</p>
<p>117 / <b>220</b> ↻ 1972 / <b>1697</b> ↻ 193 / <b>112</b> ↻</p>	<p>78 / <b>202</b> ↻ 2125 / <b>1642</b> ↻ 58 / <b>59</b> ↻</p>	<p>35 / <b>36</b> ↻ 2559 / <b>2069</b> ↻ 99 / <b>112</b> ↻</p>
<p><b>7</b></p> <p>↻ 5 / <b>5</b> ↻ 174 / <b>146</b> ↻ 15 / <b>8</b> 54th Avenue</p> <p>↻ 2 / <b>16</b> ↻ 1 / <b>19</b> ↻ 61 / <b>58</b> 40th Street</p>	<p><b>8</b></p> <p>↻ 444 / <b>589</b> ↻ 949 / <b>1000</b> ↻ 503 / <b>437</b> Lyons Road</p> <p>↻ 298 / <b>486</b> ↻ 1011 / <b>1925</b> ↻ 91 / <b>155</b> Sample Road</p>	<p><b>9</b></p> <p>↻ 8 / <b>22</b> ↻ 1742 / <b>1981</b> ↻ 130 / <b>98</b> Lyons Road</p> <p>↻ 149 / <b>311</b> ↻ 16 / <b>22</b> Coral Tree Circle</p>
<p>8 / <b>17</b> ↻ 4 / <b>10</b> ↻ 40 / <b>111</b> ↻</p>	<p>457 / <b>446</b> ↻ 1890 / <b>1236</b> ↻ 425 / <b>389</b> ↻</p>	<p>5 / 19 ↻</p>
<p><b>10</b></p> <p>↻ 50 / 130 ↻ 1789 / <b>1969</b> ↻ 41 / <b>48</b> Lyons Road</p> <p>↻ 59 / <b>29</b> ↻ 49 / <b>28</b> 40th Street</p>	<p><b>11</b></p> <p>↻ 118 / <b>107</b> ↻ 1597 / <b>1963</b> ↻ 24 / <b>54</b> Lyons Road</p> <p>↻ 72 / <b>42</b> ↻ 9 / <b>14</b> ↻ 15 / <b>22</b> Cullum Road</p>	<p><b>12</b></p> <p>↻ 312 / <b>308</b> ↻ 1011 / <b>1216</b> ↻ 298 / <b>206</b> Lyons Road</p> <p>↻ 236 / <b>264</b> ↻ 568 / <b>816</b> ↻ 424 / <b>568</b> Wiles Road</p>
<p>68 / 134 ↻ 120 / 130 ↻</p>	<p>102 / <b>86</b> ↻ 24 / <b>10</b> ↻ 214 / <b>122</b> ↻</p>	<p>309 / <b>399</b> ↻ 766 / <b>688</b> ↻ 334 / <b>409</b> ↻</p>
<p>82 / 222 ↻ 1719 / <b>1975</b> ↻ 16 / <b>54</b> ↻</p>	<p>167 / <b>106</b> ↻ 1674 / <b>1993</b> ↻ 19 / <b>32</b> ↻</p>	<p>162 / <b>273</b> ↻ 997 / <b>1391</b> ↻ 619 / <b>399</b> ↻</p>



<p><b>13</b></p> <p>↻ 848 / <b>1322</b> ↻ 41 / <b>42</b> Wiles Road</p>	<p><b>14</b></p> <p>↻ 16 / <b>14</b> City Market Avenue</p> <p>↻ 16 / <b>34</b> ↻ 2086 / <b>3064</b> Sample Road</p>
<p>16 / <b>16</b> ↻ 1068 / <b>1425</b> ↻ 80 / <b>54</b> ↻ Banks Road</p> <p>104 / <b>44</b> ↻ 143 / <b>45</b> ↻</p>	<p>2758 / <b>2,258</b> ↻</p>



**LEGEND**

 Site Location

 Study Intersection

XX / XX AM / PM Trips

**FIGURE 7**  
Main Street Coconut Creek  
KH #140924000  
Future Total (2030) Traffic Volumes



## INTERSECTION ANALYSIS

Operational analyses were conducted to determine total future level of service and delay at all the study intersections. The analyses were conducted for three conditions (Existing 2021, Background Year (2030), and Future Total (2030) during the weekday AM and PM peak hours at the following intersections:

### SIGNALIZED

- Wiles Road & SR 7 / US 441
- Wiles Road & Lyons Road
- Cullum Road & SR 7 / US 441
- Sample Road & SR 7 / US 441 Interchange
- Sample Road & NW 54<sup>th</sup> Avenue
- Sample Road & Lyons Road

### UNSIGNALIZED

- Wiles Road & Banks Road
- Cullum Road & Lyons Road
- NW 40<sup>th</sup> Street & SR 7 / US 441
- NW 40<sup>th</sup> Street & NW 54<sup>th</sup> Avenue
- NW 40<sup>th</sup> Street & Lyons Road
- Coral Tree Circle & Lyons Road
- Sample Road & Banks Road

The intersection analyses use the methodologies outlined in the *Highway Capacity Manual, 6th Edition* to determine the overall intersection level of service (LOS) and delay during the three analysis conditions (Existing, Background Year, Future Total) during AM and PM peak hours. Using Trafficware's *Synchro 11*, software models were developed to determine the LOS and delay at the major signalized and unsignalized intersections. The *Synchro* output worksheets are included in *Appendix G*.

Summary tables have been prepared to document the level of service and delay at the intersections for the Existing, Background Year, and Future Total conditions. Table 3 summarizes the results for the Existing (2021) AM and PM peak hour analyses, Table 4 summarizes the results for the Background Year (2030) AM and PM peak hour analyses, and Table 6 summarizes the results for the Future Total (2030) AM and PM peak hour analyses.

It should be noted that due *Synchro's* modelling limitations for stop controlled analyses the following changes were made to the model:

- 3 NBT lanes at the intersection of NW 40<sup>th</sup> Street & US 441
- 1 NBT and 1 SBT lanes at the intersection of NW 40<sup>th</sup> Street & NW 54<sup>th</sup> Avenue

The analysis utilized the same per lane volumes for the above mentioned changes.

## Existing (2021)

As illustrated in Table 3, none of the signalized intersections currently operate at LOS F.

The unsignalized intersection that operates with failing movements is listed below:

- Banks Road & Sample Road (AM & PM Peak Hour)

This intersection is expected to continue to operate at LOS F if no improvements are made, regardless of background growth or project traffic. The unsignalized intersections operate slightly differently and their overall delay is quantified as the delay for that of the largest delayed single movement. Therefore, this is an existing condition not created by future traffic growth from this proposed project or other developments in the vicinity of the site.

**Table 3: Existing (2021) Peak Hour Intersection LOS and Delay**

#	Intersection	Control Type	Movement	AM Peak Hour		PM Peak Hour	
				Delay (s)	LOS	Delay (s)	LOS
1	US 441 & Wiles Road	Signalized	EB	59.9	E	84.5	F
			WB	68.1	E	94.2	F
			NB	53.3	D	76.6	E
			SB	61.0	E	65.9	E
			Overall	59.7	E	78.2	E
2	US 441 & Cullum Road	Signalized	EB	78.7	E	76.2	E
			WB	82.8	F	79.8	E
			NB	20.6	C	36.5	D
			SB	5.1	A	9.4	A
			Overall	18.5	B	31.0	C
3	US 441 & 40th Sreet	TWSC	EB	-	-	-	-
			WB	16.8	C	27.9	D
			NB	-	-	-	-
			SB	-	-	-	-
			Overall	-	-	-	-
4	US 441 & Sample Road	Signalized	EB	35.2	D	36.3	D
			WB	29.4	C	47.9	D
			NB	33.6	C	38.7	D
			SB	43.7	D	28.7	C
			Overall	33.7	C	41.1	D
5	54th Avenue & Sample Road	Signalized	EB	26.9	C	34.5	C
			WB	21.0	C	32.4	C
			NB	300.4	F	249.2	F
			SB	41.3	D	41.5	D
			Overall	47.1	D	53.6	D
6	Banks Road & Sample Road	TWSC	EB	-	-	-	-
			WB	-	-	-	-
			NB	268.7	F	85.3	F
			SB	11.7	B	16.0	C
			Overall	-	-	-	-
7	54th Avenue & 40th Street	AWSC	EB	7.4	A	8.3	A
			WB	7.9	A	8.4	A
			NB	8.2	A	9.3	A
			SB	8.0	A	8.6	A
			Overall	-	-	-	-
8	Lyons Road & Sample Road	Signalized	EB	57.5	E	60.2	E
			WB	47.0	D	84.9	F
			NB	77.3	E	65.0	E
			SB	67.0	E	94.0	F
			Overall	62.1	E	76.6	E
9	Lyons Road & Coral Tree Circle	TWSC	EB	-	-	-	-
			WB	14.5	B	19.7	C
			NB	-	-	-	-
			SB	-	-	-	-
			Overall	-	-	-	-
10	Lyons Road & 40th Street	TWSC	EB	-	-	-	-
			WB	16.6	C	18.1	C
			NB	-	-	-	-
			SB	-	-	-	-
			Overall	-	-	-	-
11	Lyons Road & Cullum Road	TWSC	EB	13.8	B	14.4	B
			WB	14.3	B	14.9	B
			NB	-	-	-	-
			SB	-	-	-	-
			Overall	-	-	-	-
12	Lyons Road & Wiles Road	Signalized	EB	69.0	E	87.5	F
			WB	69.7	E	102.5	F
			NB	54.3	D	48.8	D
			SB	45.8	D	47.6	D
			Overall	58.6	E	69.9	E
13	Banks Road & Wiles Road	TWSC	EB	-	-	-	-
			WB	-	-	-	-
			NB	12.4	B	15.0	C
			SB	-	-	-	-
			Overall	-	-	-	-

## Background Year (2030)

As summarized in Table 4 the following signalized intersections are expected to operate at LOS F during future background (non-project) conditions:

- US 441 & Wiles Road (PM Peak Hour)
- Lyons Road & Sample Road (PM Peak Hour)

The unsignalized intersection that operates with failing movements is listed below:

- Banks Road & Sample Road (AM & PM Peak Hour)

This intersection is expected to continue to operate at LOS F if no improvements are made, regardless of background growth or project traffic. The unsignalized intersections operate slightly differently and their overall delay is quantified as the delay for that of the largest delayed single movement. Therefore, this is an existing condition not created by future traffic growth from this proposed project or other developments in the vicinity of the site.

The surrounding road network traffic growth and other projects in the area are anticipated to cause two additional intersections to be expected to operate at LOS F in the Background Year 2030 conditions in comparison to existing baseline conditions.

Future background 95<sup>th</sup> percentile queues are summarized in Table 5. This table utilizes an assumed queue storage length of 22 feet per vehicle.

**Table 4: Background Year (2030) Peak Hour Intersection LOS and Delay**

#	Intersection	Control Type	Movement	AM Peak Hour		PM Peak Hour	
				Delay (s)	LOS	Delay (s)	LOS
1	US 441 & Wiles Road	Signalized	EB	60.8	E	97.5	F
			WB	69.8	E	103.1	F
			NB	56.1	E	86.8	F
			SB	65.9	E	69.6	E
			Overall	62.5	E	87.0	F
2	US 441 & Cullum Road	Signalized	EB	79.3	E	76.6	E
			WB	82.6	F	80.4	F
			NB	21.6	C	38.7	D
			SB	5.1	A	9.3	A
			Overall	18.9	B	31.9	C
3	US 441 & 40th Sreet	TWSC	EB	-	-	-	-
			WB	17.5	C	31.5	F
			NB	-	-	-	-
			SB	-	-	-	-
			Overall	-	-	-	-
4	US 441 & Sample Road	Signalized	EB	37.1	D	37.5	D
			WB	30.2	C	53.2	D
			NB	33.5	C	38.8	D
			SB	43.5	D	28.7	C
			Overall	34.9	C	44.0	D
5	54th Avenue & Sample Road	Signalized	EB	28.7	C	36.4	D
			WB	21.4	C	34.4	C
			NB	345.1	F	297.0	F
			SB	42.4	D	43.9	D
			Overall	51.7	D	59.8	E
6	Banks Road & Sample Road	TWSC	EB	-	-	-	-
			WB	-	-	-	-
			NB	359.7	F	115.2	F
			SB	12.1	B	17.2	C
			Overall	-	-	-	-
7	54th Avenue & 40th Street	AWSC	EB	7.5	A	8.4	A
			WB	8.0	A	8.4	A
			NB	8.2	A	9.4	A
			SB	8.0	A	8.7	A
			Overall	-	-	-	-
8	Lyons Road & Sample Road	Signalized	EB	62.1	E	64.9	E
			WB	47.5	D	103.6	F
			NB	83.7	F	66.9	E
			SB	69.2	E	102.4	F
			Overall	65.8	E	85.8	F
9	Lyons Road & Coral Tree Circle	TWSC	EB	-	-	-	-
			WB	15.2	C	21.5	C
			NB	-	-	-	-
			SB	-	-	-	-
			Overall	-	-	-	-
10	Lyons Road & 40th Street	TWSC	EB	-	-	-	-
			WB	17.6	C	19.1	C
			NB	-	-	-	-
			SB	-	-	-	-
			Overall	-	-	-	-
11	Lyons Road & Cullum Road	TWSC	EB	14.2	B	15.0	C
			WB	14.9	B	15.6	C
			NB	-	-	-	-
			SB	-	-	-	-
			Overall	-	-	-	-
12	Lyons Road & Wiles Road	Signalized	EB	69.4	E	93.1	F
			WB	73.1	E	110.0	F
			NB	62.0	E	51.2	D
			SB	47.6	D	49.7	D
			Overall	62.1	E	74.2	E
13	Banks Road & Wiles Road	TWSC	EB	-	-	-	-
			WB	-	-	-	-
			NB	12.9	B	15.9	C
			SB	-	-	-	-
			Overall	-	-	-	-

**Table 5: Background Year (2030) 95<sup>th</sup> Percentile Queues Summary**

#	Intersection	Control Type	Movement	AM Peak Hour		PM Peak Hour	
				Queue Storage (ft)	Queue	Queue Storage (ft)	Queue
1	US 441 & Wiles Road	Signalized	EBL	620	397	620	488
			EBR	270	510	270	130
			WBL	360	124	360	219
			WBR	350	275	350	129
			NBL	290	220	290	360
			NBR	560	32	560	210
			SBL	320	254	320	242
			SBR	220	191	220	276
2	US 441 & Cullum Road	Signalized	EBL	240	173	240	221
			WBL	230	17	230	62
			WBR	320	4	320	82
			NBL	340	87	340	155
			SBL	260	87	260	143
			SBR	180	43	180	36
4	US 441 & Sample Road	Signalized	EBL	340	84	340	139
			WBL	340	96	340	104
5	54th Avenue & Sample Road	Signalized	EBL	200	47	200	114
			WBL	340	129	340	265
			WBR	460	23	460	49
			NBL	140	46	140	146
			NBR	140	86	140	101
			SBL	190	113	190	242
			SBR	190	0	190	30
6	Sample Road & Banks Road	TWSC	EBL	180	2	180	0
			WBL	300	711	300	548
7	NW 54th Avenue & NW 40th Street	AWSC	EBR	280	4	280	11
			WBL	190	0	190	0
			NBL	160	7	160	18
			NBR	160	0	160	0
			SBL	200	2	200	0
			SBR	150	0	150	0
8	Lyons Road & Sample Road	Signalized	EBL	250	343	250	317
			EBR	580	112	580	151
			WBL	280	73	280	110
			WBR	480	56	480	150
			NBL	300	352	300	336
			NBR	300	72	300	50
			SBL	330	261	330	179
SBR	330	414	330	620			
9	Lyons Road & Coral Tree Circle	TWSC	WBR	160	24	160	86
			NBL	210	4	210	11
			NBR	210	0	210	0
			SBL	200	15	200	11
10	Lyons Road & 40th Street	TWSC	EBR	200	0	200	0
			NBL	160	0	160	0
			NBR	210	0	210	0
			SBL	210	4	210	4
11	Lyons Road & Cullum Road	TWSC	EBL	200	2	200	4
			EBR	100	26	100	15
			NBL	200	20	200	11
			NBR	220	0	220	0
			SBL	200	2	200	7
			SBR	400	0	400	0
12	Lyons Road & Wiles Road	Signalized	EBL	340	182	340	274
			EBR	370	212	370	58
			WBL	210	275	210	390
			WBR	220	74	220	128
			NBL	290	92	290	154
			NBR	300	369	300	193
			SBL	290	220	290	141
			SBR	310	87	310	118
13	Banks Road & Wiles Road	TWSC	EBL	150	0	150	2
			EBR	160	0	160	0
			WBL	230	2	230	2
			NBR	250	11	250	2

## Future Total (2030)

As summarized in Table 6, the following signalized intersections are expected to operate at LOS F in the future 2030 conditions:

- US 441 & Wiles Road (PM Peak Hour)
- Lyons Road & Sample Road (PM Peak Hour)

There are several unsignalized intersections at which individual movements exceed LOS F thresholds. These intersections are listed below:

- Banks Road & Sample Road (AM & PM Peak Hour)
- Lyons Road & 40<sup>th</sup> Street (PM Peak Hour)

The intersection of Banks Road & Sample Road is expected to operate at LOS F without the addition of project traffic and therefore this is not a deficiency caused by the project traffic. In comparison to future background conditions, additionally, the intersection of Lyons Road & 40<sup>th</sup> Street is anticipated to experience LOS F conditions during total future conditions without any improvements being made.

Initially, the intersections of Lyons Road & 40<sup>th</sup> Street and Lyons Road & Cullum Road were analyzed as two-way stop controlled intersections in the future year analysis. Due to the failing LOS and delay summarized in Table 6, these two intersections were analyzed with an additional scenario as signalized. As part of the conditions of approval for this project, both intersections are proposed to be signalized, pending the satisfaction of signal warrant criteria. Table 7 summarizes the LOS and delay for the two previously-mentioned intersections with an assumed signal timing plan. As illustrated in this table, the signalization of these two intersections would improve the LOS and delay such that the intersections would operate acceptably per Broward County standards.

However, for these intersections to be signalized, they would need to meet signal warrant criteria as stated in the Manual of Uniform Traffic Control Devices (MUTCD). A preliminary peak hour signal warrant analysis has been conducted for the intersections of Lyons Road & 40<sup>th</sup> Street and Lyons Road & Cullum Road to see if these intersections would be expected to meet signal warrant criteria upon completion of the Main Street project.

Signal Warrant Analysis worksheets are included in Appendix H, for reference. As summarized in these worksheets, all of the applicable signal warrant criteria are expected to be met during the AM and PM peak hours for both intersections, and signals will likely be warranted at these locations. Therefore it is necessary to monitor these intersections while the Main Street project is constructed to determine when the applicable signal warrant criteria are met such that the appropriate signals may be installed as required.

**Table 6: Future Total (2030) Peak Hour Intersection LOS and Delay**

#	Intersection	Control Type	Movement	AM Peak Hour		PM Peak Hour	
				Delay (s)	LOS	Delay (s)	LOS
1	US 441 & Wiles Road	Signalized	EB	58.8	E	93.7	F
			WB	75.9	E	106.5	F
			NB	68.4	E	104.3	F
			SB	73.5	E	80.9	F
			Overall	68.4	E	95.2	F
2	US 441 & Cullum Road	Signalized	EB	72.0	E	71.3	E
			WB	70.9	E	101.5	F
			NB	27.5	C	41.1	D
			SB	6.4	A	19.5	B
			Overall	23.6	C	40.3	D
3	US 441 & 40th Sreet	TWSC	EB	-	-	-	-
			WB	17.7	C	32.9	D
			NB	-	-	-	-
			SB	-	-	-	-
			Overall	-	-	-	-
4	US 441 & Sample Road	Signalized	EB	40.9	D	41.6	D
			WB	32.4	C	58.5	E
			NB	31.2	C	31.6	C
			SB	42.4	D	28.4	C
			Overall	37.2	D	47.6	D
5	54th Avenue & Sample Road	Signalized	EB	35.3	D	40.6	D
			WB	24.5	C	39.0	D
			NB	397.0	F	347.4	F
			SB	43.3	D	47.8	D
			Overall	59.8	E	68.7	E
6	Banks Road & Sample Road	TWSC	EB	-	-	-	-
			WB	-	-	-	-
			NB	427.1	F	147.0	F
			SB	13.5	B	20.9	C
			Overall	-	-	-	-
7	54th Avenue & 40th Street	AWSC	EB	7.8	A	9.0	A
			WB	9.1	A	9.5	A
			NB	8.5	A	9.8	A
			SB	8.6	A	9.4	A
			Overall	-	-	-	-
8	Lyons Road & Sample Road	Signalized	EB	68.0	E	85.0	F
			WB	48.5	D	121.4	F
			NB	90.5	F	74.8	E
			SB	97.6	F	132.0	F
			Overall	76.5	E	105.4	F
9	Lyons Road & Coral Tree Circle	TWSC	EB	20.8	C	26.2	D
			WB	16.8	C	28.2	D
			NB	-	-	-	-
			SB	-	-	-	-
			Overall	-	-	-	-
10	Lyons Road & 40th Street	TWSC	EB	32.5	D	131.1	F
			WB	19.7	C	109.7	F
			NB	-	-	-	-
			SB	-	-	-	-
			Overall	-	-	-	-
11	Lyons Road & Cullum Road	TWSC	EB	28.8	D	35.0	E
			WB	21.3	C	29.7	D
			NB	-	-	-	-
			SB	-	-	-	-
			Overall	-	-	-	-
12	Lyons Road & Wiles Road	Signalized	EB	70.8	E	92.5	F
			WB	101.2	F	165.8	F
			NB	80.4	F	56.1	E
			SB	48.3	D	53.6	D
			Overall	73.8	E	89.4	F
13	Banks Road & Wiles Road	TWSC	EB	-	-	-	-
			WB	-	-	-	-
			NB	14.3	B	18.4	C
			SB	-	-	-	-
			Overall	-	-	-	-
14	City Market Avenue & Sample Road	TWSC	EB	-	-	-	-
			WB	-	-	-	-
			NB	-	-	-	-
			SB	27.5	D	61.6	F
			Overall	-	-	-	-

**Table 7: Future Total (2030) Peak Hour Signalized Summary**

#	Intersection	Control Type	Movement	AM Peak Hour		PM Peak Hour	
				Delay (s)	LOS	Delay (s)	LOS
10	Lyons Road & 40th Street	Signalized	EB	37.4	D	34.5	C
			WB	31.1	C	35.8	D
			NB	12.0	B	21.9	C
			SB	2.8	A	25.4	C
			Overall	9.4	A	24.4	C
11	Lyons Road & Cullum Road	Signalized	EB	41.0	D	37.2	D
			WB	31.9	C	36.6	D
			NB	4.9	A	11.6	B
			SB	19.9	B	11.5	B
			Overall	15.1	B	13.2	B

Furthermore, to evaluate the existing queue storages the background year and future total 95<sup>th</sup> percentile queues were evaluated to determine the project traffic impact on existing intersection operations and are summarized in Table 8. This table utilizes an assumed queue storage length of 22 feet per vehicle.

**Table 8: Future Total (2030) 95<sup>th</sup> Percentile Queues Summary**

#	Intersection	Control Type	Movement	AM Peak Hour		PM Peak Hour	
				Queue Storage (ft)	Queue	Queue Storage (ft)	Queue
1	US 441 & Wiles Road	Signalized	EBL	620	397	620	488
			EBR	270	502	270	142
			WBL	360	106	360	187
			WBR	350	329	350	180
			NBL	290	244	290	383
			NBR	560	14	560	168
			SBL	320	292	320	341
SBR	220	195	220	286			
2	US 441 & Cullum Road	Signalized	EBL	240	142	240	190
			WBL	230	63	230	74
			WBR	320	70	320	177
			NBL	340	87	340	187
			SBL	260	102	260	216
			SBR	180	21	180	22
4	US 441 & Sample Road	Signalized	EBL	340	88	340	150
			WBL	340	134	340	146
5	54th Avenue & Sample Road	Signalized	EBL	200	59	200	137
			WBL	340	149	340	294
			WBR	460	33	460	54
			NBL	140	46	140	146
			NBR	140	90	140	154
			SBL	190	179	190	272
SBR	190	11	190	54			
6	Sample Road & Banks Road	TWSC	EBL	180	5	180	77
			WBL	300	730	300	576
7	NW 54th Avenue & NW 40th Street	AWSC	EBR	280	4	280	13
			WBL	190	7	190	9
			NBL	160	7	160	18
			NBR	160	0	160	2
			SBL	200	2	200	0
			SBR	150	0	150	0
8	Lyons Road & Sample Road	Signalized	EBL	250	371	250	392
			EBR	580	140	580	163
			WBL	280	73	280	110
			WBR	480	61	480	327
			NBL	300	371	300	373
			NBR	300	72	300	50
			SBL	330	392	330	313
SBR	330	388	330	594			
9	Lyons Road & Coral Tree Circle	TWSC	WBR	160	26	160	110
			NBL	210	7	210	13
			NBR	210	0	210	0
			SBL	200	18	200	13
10	Lyons Road & 40th Street	TWSC	EBR	200	20	200	29
			NBL	160	11	160	44
			NBR	210	0	210	0
			SBL	210	4	210	7
11	Lyons Road & Cullum Road	TWSC	EBL	200	20	200	20
			EBR	100	68	100	33
			NBL	200	22	200	15
			NBR	220	0	220	0
			SBL	200	2	200	7
SBR	400	0	400	0			
12	Lyons Road & Wiles Road	Signalized	EBL	340	182	340	236
			EBR	370	267	370	76
			WBL	300	361	300	520
			WBR	220	76	220	122
			NBL	290	98	290	163
			NBR	300	513	300	243
			SBL	290	220	290	141
SBR	310	91	310	133			
13	Banks Road & Wiles Road	TWSC	EBL	150	0	150	2
			EBR	160	0	160	0
			WBL	230	2	230	4
			NBR	250	18	250	7

## FUTURE TOTAL (2030) LINK ANALYSIS

A peak hour bidirectional capacity analysis was conducted on links within the immediate vicinity of the project. Future background volumes were calculated for each of the analyzed intersections and extrapolated for the respective links. Broward County MPO data was used as reference for determining the LOS D service volume capacities. Project traffic was added to the future background traffic volumes to determine peak hour future total volumes for the AM and PM peak hours. Table 9 summarizes the AM peak hour capacity analysis, as illustrated in this table all of the surrounding links are expected to operate within their LOS D service volumes.

**Table 9: AM Peak Hour Link Capacity Analysis Summary**

Roadway	Existing		Count Year	Count Year AM Peak Hour Traffic Volume	5% Background Growth	AM Peak Hour Project Traffic	Total Traffic 2030	Meets Standard?		
									Lanes	Broward MPO Peak Hour Capacity
	From	To								
Wiles Road	Creekside Drive	US 441	6LD	5,121	2021	2,584	119	61	2,764	Yes
Wiles Road	US 441	Banks Road	4LD	3,401	2021	2,140	98	72	2,310	Yes
Wiles Road	Banks Road	Lyons Road	4LD	3,401	2021	1,992	91	117	2,200	Yes
Wiles Road	Lyons Road	NW 39th Avenue	4LD	3,401	2021	2,667	122	122	2,911	Yes
Sample Road	Cullum Road	US 441	6LD	5,390	2021	3,635	167	83	3,885	Yes
Sample Road	US 441	NW 54th Avenue	6LD	5,390	2021	3,871	178	156	4,205	Yes
Sample Road	NW 54th Avenue	Banks Road	6LD	5,390	2021	4,039	185	221	4,445	Yes
Sample Road	Banks Road	City Market Avenue	6LD	5,390	2021	4,490	206	148	4,844	Yes
Sample Road	City Market Avenue	Lyons Road	6LD	5,390	2021	4,328	199	164	4,691	Yes
Sample Road	Lyons Road	NW 42nd Avenue	6LD	5,390	2021	3,540	163	278	3,981	Yes
US 441*	NW 62nd Avenue	Sample Road	6LD	5,390	2020	4,703	241	78	5,022	Yes
US 441	Sample Road	NW 40th Street	6LD	5,390	2021	3,475	160	51	3,686	Yes
US 441	NW 40th Street	Cullum Road	6LD	5,390	2021	3,433	158	47	3,638	Yes
US 441	Cullum Road	Wiles Road	6LD	5,390	2021	3,851	177	127	4,155	Yes
US 441	Wiles Road	Creekside Drive	6LD	5,390	2021	4,067	187	183	4,437	Yes
Lyons Road	Copans Road	Sample Road	4LD	3,222	2021	2,831	130	122	3,083	Yes
Lyons Road	Sample Road	Coral Tree Circle	6LD	4,851	2021	3,114	143	242	3,499	Yes
Lyons Road	Coral Tree Circle	40th Street	6LD	4,851	2021	3,324	153	298	3,775	Yes
Lyons Road	40th Street	Cullum Road	6LD	4,851	2021	3,319	152	214	3,685	Yes
Lyons Road	Cullum Road	Wiles Road	6LD	4,851	2021	3,107	143	197	3,447	Yes
Lyons Road	Wiles Road	Winston Park Boulevard	6LD	4,851	2021	2,908	134	123	3,165	Yes

\*2020 Broward MPO data was used for US 441 traffic south of Sample Road.

Table 10 summarizes the PM peak hour capacity analysis, as illustrated in this table all of the surrounding links are expected to operate within their LOS D service volumes, except for Lyons Road between Copans Road and Sample Road. Lyons Road south of Sample Road is a four-lane divided roadway and north of Sample Road is a six-lane divided roadway. With the addition of project traffic it is expected that the future total volumes along this stretch of Lyons Road will exceed the 2020 Broward MPO LOS D service volume by 34 vehicles in the PM peak hour. However, it should be noted that the 2020 Broward MPO service volumes was published prior to the most recent FDOT QOS Handbook and are based on values that have since been updated. Lyons Road between Copans Road and Sample Road was considered as a suburban/residential 4-lane non-state signalized roadway with exclusive left and right turn lanes. The most recent 2023 FDOT QOS Handbook states that the peak hour two-way LOS D capacity for a roadway of this nature is 3,333 vehicles per hour. Therefore, utilizing the most recent resources for this analysis this roadway segment would not be considered over the acceptable LOS D capacity.

**Table 10: PM Peak Hour Link Capacity Analysis**

Roadway	From To		Existing		Count Year	Count Year PM Peak Hour Traffic Volume	% Background Growth	PM Peak Hour Project Traffic	Total Traffic 2030	Meets Standard?
			Lanes	Broward MPO Peak Hour Capacity						
Wiles Road	Creekside Drive	US 441	6LD	5,121	2021	2,730	125	79	2,934	Yes
Wiles Road	US 441	Banks Road	4LD	3,401	2021	2,629	121	93	2,843	Yes
Wiles Road	Banks Road	Lyons Road	4LD	3,401	2021	2,659	122	152	2,933	Yes
Wiles Road	Lyons Road	NW 39th Avenue	4LD	3,401	2021	2,659	122	159	2,940	Yes
Sample Road	Cullum Road	US 441	6LD	5,390	2021	4,087	188	112	4,387	Yes
Sample Road	US 441	NW 54th Avenue	6LD	5,390	2021	4,159	191	225	4,575	Yes
Sample Road	NW 54th Avenue	Banks Road	6LD	5,390	2021	4,479	206	244	4,929	Yes
Sample Road	Banks Road	City Market Avenue	6LD	5,390	2021	4,906	225	190	5,321	Yes
Sample Road	City Market Avenue	Lyons Road	6LD	5,390	2021	4,654	214	221	5,089	Yes
Sample Road	Lyons Road	NW 42nd Avenue	6LD	5,390	2021	3,833	176	368	4,377	Yes
US 441*	NW 62nd Avenue	Sample Road	6LD	5,390	2020	4,703	241	111	5,055	Yes
US 441	Sample Road	NW 40th Street	6LD	5,390	2021	3,478	160	46	3,684	Yes
US 441	NW 40th Street	Cullum Road	6LD	5,390	2021	3,407	156	37	3,600	Yes
US 441	Cullum Road	Wiles Road	6LD	5,390	2021	4,118	189	146	4,453	Yes
US 441	Wiles Road	Creekside Drive	6LD	5,390	2021	4,357	200	240	4,797	Yes
Lyons Road	Copans Road	Sample Road	4LD	3,222	2021	2,962	136	158	3,256	No
Lyons Road	Sample Road	Coral Tree Circle	6LD	4,851	2021	3,354	154	486	3,994	Yes
Lyons Road	Coral Tree Circle	40th Street	6LD	4,851	2021	3,745	172	462	4,379	Yes
Lyons Road	40th Street	Cullum Road	6LD	4,851	2021	3,690	169	378	4,237	Yes
Lyons Road	Cullum Road	Wiles Road	6LD	4,851	2021	3,640	167	349	4,156	Yes
Lyons Road	Wiles Road	Winston Park Boulevard	6LD	4,851	2021	3,466	159	159	3,784	Yes

\*2020 Broward MPO data was used for US 441 traffic south of Sample Road.

## MITIGATION

A number of improvement measures have been considered to offset the impacts of the proposed development plan on the external road network. There were a number of previously proposed mitigation measures as part of the previously approved Main Street Development of Regional Impact (DRI). The previous DRI was submitted with significantly greater proposed intensities and many of the previously-determined mitigation measures are no longer applicable as traffic generated by the new project intensities will no longer significantly impact these facilities.

The project is proposed to be built in phases. Therefore, the following improvements have been proposed to be implemented concurrently with each phase of development. Exhibit I (Master Phasing Plan) has been prepared and is included in the plan set for the PMDD. A copy of it is included in this report as **Figure 8**. Many of the improvements are related to the internal roadway network, and are described in further detail in the internal traffic study. Below is a summary of the proposed phasing of project-related improvements that affect Sample Road, Lyons Road and Wiles Road:

### Phase 1:

- Construction of southbound right-turn lanes on Lyons Road at:
  - Overflow parking lot (in FPL Easement/ROW)
  - NW 40<sup>th</sup> Street
  - North driveway for Block 3
  - South driveway for Block 3

### Phase 4:

- Construction of eastbound right-turn lane at Wiles Road & Banks Road

### Off-Site Improvements In Coordination With Others:

- Contribution towards roundabout at NW 40<sup>th</sup> Street & NE 54<sup>th</sup> Avenue
- Right-turn Lane at City Market Avenue & Sample Road & participation on construction of City Market Avenue, pending right-of-way acquisition and participation from other parties

### When Warranted:

- Signalization of Wiles Road & Banks Road
- Signalization of Lyons Road & Cullum Road
- Signalization of Lyons Road & NW 40<sup>th</sup> Street

*(Annual Signal Warrant studies will be prepared at these intersections by the Applicant)*



## MULTI-MODAL/MASS TRANSIT INFORMATION

Four separate Broward County Mass Transit routes provide service within one-quarter of a mile of the site boundary, as listed below:

- **BCT Route 19:** This route serves the north end of the SR 7/US 441 corridor in Broward County, with a northern route limit of Sandalfoot Boulevard in southern Palm Beach County and a southern route limit of the Lauderhill Transit Center at the Lauderhill Mall in Lauderhill.
- **BCT Breeze:** This limited-stop express service serves the SR 7/US 441 corridor, with a northern route limit just west of this site (Turtle Creek Drive) and a southern route limit at the Golden Glades Tri-Rail station in northern Miami-Dade County.
- **BCT Route 31:** This route runs along the Lyons Road corridor, connecting to downtown Fort Lauderdale. The northern route limit is Hillsboro Boulevard, and the southern route limit is the Broward Central Terminal in downtown Fort Lauderdale.
- **BCT Route 34:** This route runs along the Sample Road corridor, with a western route limit just east of the Sawgrass Expressway (NW 134<sup>th</sup> Ave) and the eastern route limit at US 1 in Lighthouse Point.

Additionally, two community shuttle services are provided in Coconut Creek, both of which provide service adjacent to or within of the site boundary:

- **North Route:** provides service along Lyons Road on the east side of the site and Wiles Road on the north side of the site, with a stop also at the Seminole Casino just west of the site.
- **South Route:** provides service along Sample Road south of the site and NW 54<sup>th</sup> Avenue along the west side of the site, with a stop at the Seminole Casino just west of the site.

## SUMMARY

Kimley-Horn and Associates has prepared a study to evaluate the impact of development of the proposed Main Street site in Coconut Creek.

The overall site is located within the area bounded on the north by Wiles Road, on the east by Lyons Road, on the south by Sample Road and on the west by SR 7/US 441. The site was previously approved for a Development of Regional Impact (DRI) that included a total of proposed plan would include a total of 3,750 residential units, 1,625,000 square feet of commercial uses and 525,000 square feet of office use. The currently proposed plan of development is for 605 multi-family low-rise residential units, 1,755 mid-rise residential units and 225,000 square feet of commercial use.

A site-specific traffic analysis has been undertaken to evaluate impacts on the surrounding transportation network. Level of service has been evaluated on thirteen intersections adjacent to the site. The analysis identifies existing LOS and delay, future background LOS and delay, and total future LOS and delay upon buildout of the project. The results of the evaluation are used to determine conditions of approval that will be implemented to mitigate traffic impacts generated by the project on the surrounding transportation network. The following mitigation measures have been identified within public rights-of-way that are outside of the site boundaries:

### Phase 1:

- Construction of southbound right-turn lanes on Lyons Road at:
  - Overflow parking lot (in FPL Easement/ROW)
  - NW 40<sup>th</sup> Street
  - North driveway for Block 3
  - South driveway for Block 3

### Phase 4:

- Construction of eastbound right-turn lane at Wiles Road & Banks Road

### Off-Site Improvements In Coordination With Others:

- Contribution towards roundabout at NW 40<sup>th</sup> Street & NE 54<sup>th</sup> Avenue
- Right-turn Lane at City Market Avenue & Sample Road & participation on construction of City Market Avenue, pending right-of-way acquisition and participation from other parties

### When Warranted:

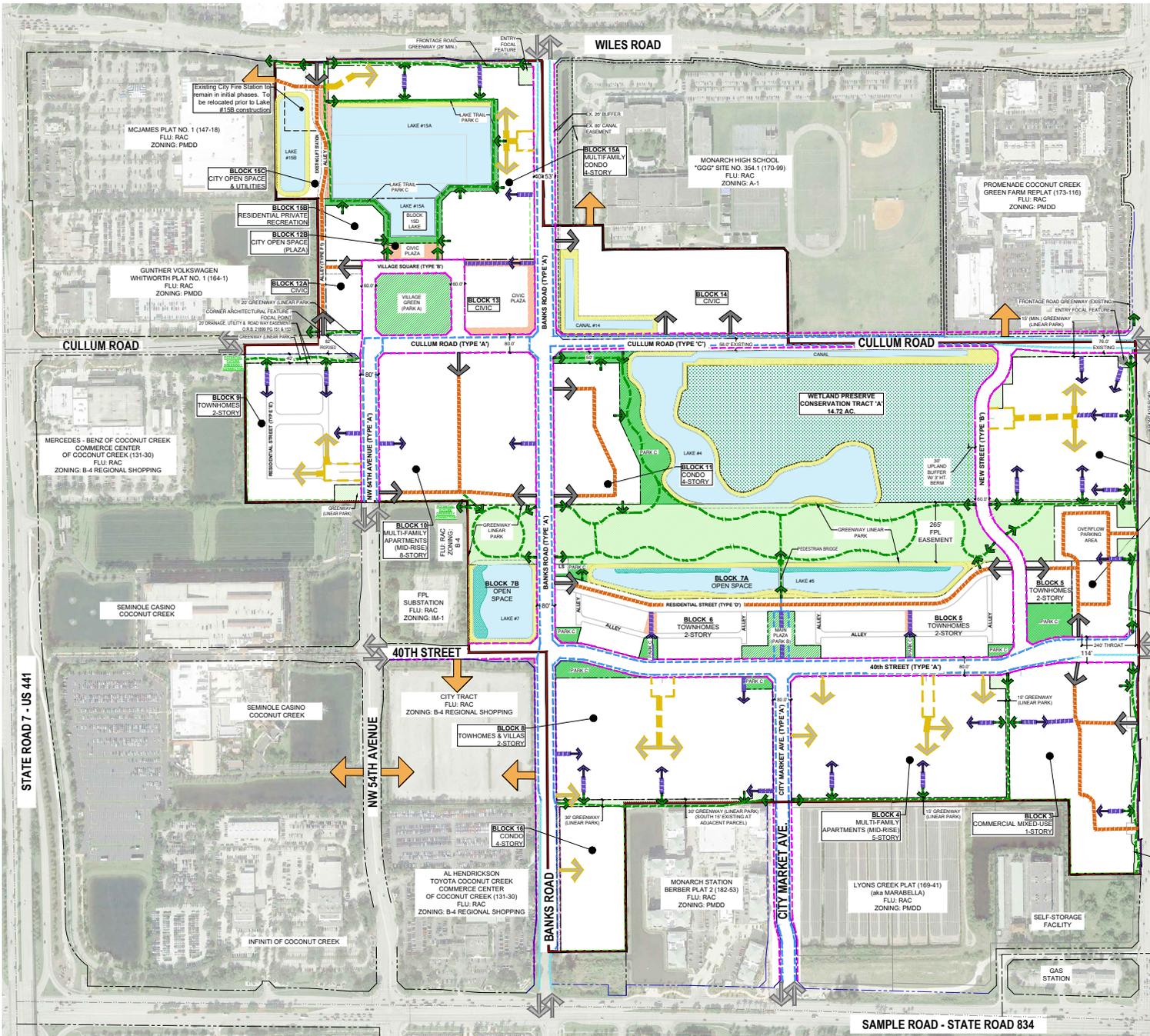
- Signalization of Wiles Road & Banks Road
- Signalization of Lyons Road & Cullum Road
- Signalization of Lyons Road & NW 40<sup>th</sup> Street

*(Annual Signal Warrant studies will be prepared at these intersections by the Applicant)*

The Applicant will continue with the City of Coconut Creek regarding the implementation of these mitigation measures.

## APPENDIX A: PROJECT INFORMATION

Conceptual Site Plan  
Traffic Study Methodology  
Superblock Project Distributions



### MAIN STREET AT COCONUT CREEK PMDD DEVELOPMENT PROGRAM

BLOCK ID	ACREAGE	USE	MAX. HEIGHT	MAX. DWELLING UNITS	MAX. COMMERCIAL INTENSITY
1	8.82	Village/ Townhomes	2 story	120	0
2	1.38	Commercial	1 story	0	15,000
3	9.73	Commercial	1 story	0	90,000
4	11.88	Multi-Family Apartments	5 story	500	0
5	7.46	Townhomes	2 story	90	0
6	5.51	Townhomes	2 story	70	0
8	11.82	Village/ Townhomes	2 story	160	0
9	7.11	Townhomes	2 story	100	0
10	10.73	Multi-Family Apartments	8 story	700	0
11	4.83	Condominium	4 story	150	0
15A	7.38	Condominium	4 story	230	0
15B	1.43	Private Recreation (Clubhouse / 25,000 SF)	2 story	0	0
16	4.30	Multi-Family Apartments	8 story	175	0
7A	5.73	Open Space (Lake)			
7B	2.44	Open Space (Lake)			
15D	0.83	Open Space (Lake)			
LAKC	8.23	Open Space (Lake/Canal)			
PARKING	1.68	Overflow Parking within FPL Easement			
UTILITY	0.10	Regional Wastewater Lift Station Easement			
<b>TOTAL</b>	<b>135.42</b>			<b>2,395</b>	<b>105,000</b>
		Maximum Density/Commercial Intensity		2,480	225,000
		Remaining Density/Commercial Intensity		385	120,000
PARK A	2.10	DRI SEC. 5-a (VILLAGE GREEN)			
PARK B	0.88	DRI SEC. 5-b (MAIN PLAZA)			
PARK C	5.08	DRI SEC. 5-c (PUBLIC PARKS/PLAZAS)			
CONSERVATION	14.72	WETLAND PRESERVE (CONSERVATION TRACT 'A')			
GREENWAY	5.85	FRONTAGE ROAD & PERIMETER GREENWAYS			
FPL	15.37	FPL EASEMENT (PASSIVE LINEAR PARK)			
ROW	21.56	PUBLIC STREET RIGHT-OF-WAY (approx.)			
<b>GROSS</b>	<b>200.98</b>	<b>GROSS LAND AREA</b>			

### MASTER ZONING PLAN LEGEND

**GREENSPACE**

- DRI LAND DEDICATIONS (REFER TO SHEET GSP-1 MASTER PUBLIC GREENSPACE PLAN)
- PUBLIC GREENSPACE AREAS A, B & C
- MSDS GREENSPACE (REFER TO SHEET GSP-2 MSDS GREENSPACE PLAN)
- CONSERVATION EASEMENT (WETLAND PRESERVE & BUFFER)
- GREENWAYS, LINEAR PARKS & BUFFERS
- LAKE BANKS
- PUBLIC PARKS / PLAZAS / GATHERING AREAS

**CONNECTIVITY**

- OPPORTUNITY FOR CROSS CONNECTIVITY TO ADJACENT PROJECTS WITHIN THE RAC (VEHICULAR &/OR PEDESTRIAN)
- COMMUNITY STREET NETWORK (STREET TYPE A, B, C)
- COMMUNITY STREET SIDEWALK GRID
- BIKE NETWORK:
  - 15' GREENWAY (LINEAR PARK)
  - 15' BUFFERED BIKE PATH
  - ON STREET BIKE LANE

**BLOCK CIRCULATION NETWORK**

- VEHICULAR & PEDESTRIAN ACCESS VEHICULAR DRIVEWAY WITH MIN. 6' SIDEWALK ALONG AT LEAST ONE SIDE
  - PUBLIC ACCESS
  - GATED ACCESS (RESIDENTIAL USES ONLY)
- ENHANCED PEDESTRIAN PASSAGE
  - RESIDENTIAL USE (MIN. 15' WIDE OPEN SPACE W/ MIN. 6' SIDEWALK); OR
  - NON-RESIDENTIAL USE (MIN. 8' WIDE SIDEWALK)
- GREENWAY TRAIL
  - MIN. 8'-12' WIDE PAVED WALKWAY
  - PEDESTRIAN CONNECTION TO GREENWAY

NOTE: THE GREENWAY TRAIL ALONG THE FOLLOWING ROADWAYS SHALL BE A MINIMUM 12' WIDE AND PAVED WITH COLORED CONCRETE (#415 VENETIAN RED):

- LYONS ROAD
- WILES ROAD

**urban design studio**

Urban Design  
Land Planning  
Landscape Architecture

610 Clematis Street, Suite C102  
West Palm Beach, FL 33401  
561.366.1100 FAX: 561.366.1111  
www.udsfirma.com  
#UA0001739

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**MAIN STREET at COCONUT CREEK PMDD**

GRS PARTNERS  
City of Coconut Creek, Florida  
MASTER ZONING PLAN

Scale: 1" = 200'-0"

North Arrow

Date: July 2021  
Project No.: 15-039.002  
Designed By: MLC  
Drawn By: MLC  
Checked By: MLC

**Revision Dates:**

2021.07.20	PMDD Initial Submittal
2021.08.19	PMDD Re-submittal #1
2022.02.24	PMDD RE-SUBMITTAL #2
2022.07.15	PMDD RE-SUBMITTAL #3
2022.12.21	PMDD RE-SUBMITTAL #4
2023.04.28	PMDD RE-SUBMITTAL #5

**MP Exhibit G**

H:\0308\John Property - Sample RA 15 - 15-039\GRS Partners LLC - 1502\Drawings\Main Plan\2023.04.28\_GRS\_MP\_PMDD Re-submittal#5.dwg, 1/3/2023 10:59 AM, Mccormac, DWG (T) 1502\Facilities\RA15\15-039\0308\Main Plan\11

## MEMORANDUM

To: Mike Righetti  
City of Coconut Creek

From: Christopher W. Heggen, P.E.  
Kimley-Horn and Associates, Inc.

Date: September 22, 2021  
Revised February 8, 2022

**Subject: Main Street Coconut Creek  
Study Methodology – External Traffic Impact Analysis  
Kimley-Horn #140924000**

---

The Main Street Coconut Creek DRI is a previously-approved DRI generally located within an area bounded by Wiles Road on the north, Lyons Road on the east, Sample road on the south, and US 441/SR 7 on the west in the City of Coconut Creek, Florida. The original approved DRI included a mix of commercial, office and residential uses. The site location map is attached as **Figure E-1**. The proposed modified plan of development includes a mix of commercial and residential and charter school uses that is reduced significantly from the original approval.

Kimley-Horn and Associates has been retained to undertake a traffic analysis for the currently-proposed program of development. Following is a summary of the methodology that will be used to undertake this traffic analysis.

- 1. Trip generation:** The trip generation potential for the previously-approved and proposed uses will be calculated using rates and equations published by the Institute of Transportation Engineers (ITE) in the *Trip Generation Manual, Eleventh Edition*. The calculations will include calculation of internal capture between uses and pass-by capture based upon methodologies and data published in ITE's *Trip Generation Handbook, Third Edition*.
- 2. Trip distribution/assignment:** Overall trip distribution percentages will be determined based on a review of the complementary land uses and roadway network proposed to be in place at the time of buildout. This assignment will be carried out through the study intersections.
- 3. Buildout Year:** A buildout year of 2027 has been used for the purposes of this analysis.

4. **Data collection:** AM (7:00 AM – 9:00 AM) and PM (4:00 PM – 6:00 PM) peak period turning movement counts will be collected on one (1) weekday at the following locations:
  1. Wiles Road & SR 7 / US 441
  2. Wiles Road & Banks Road
  3. Wiles Road & Lyons Road
  4. Cullum Road & SR 7 / US 441
  5. Cullum Road & Lyons Road
  6. NW 40<sup>th</sup> Street & SR 7 / US 441
  7. NW 40<sup>th</sup> Street & NW 54<sup>th</sup> Avenue
  8. Future Access Road & Lyons Road
  9. Sample Road & SR 7 / US 441 Interchange
  10. Sample Road & NW 54<sup>th</sup> Avenue
  11. Sample Road & Banks Road
  12. Sample Road & Lyons Road

From this count data, peak hour traffic volumes will be determined. Count data used in the analysis will be no more than 12 months old. For any counts conducted outside of the peak season (January – March), the Peak Season Conversion Factor (PSCF) published by FDOT will be applied. The study intersections are illustrated in **Figure E-2**.

5. **Future Background (Non-Project) Volumes:** Future background volumes will be determined by adding compounded annual growth rate determined using historical AADT data for roadway links within the vicinity of the project site. At a minimum, the growth rate applied will be no less than 0.5%. Additionally, project traffic generated by relevant approved projects as identified by the City and its consultant will be assigned to the project study intersections.
6. **Total Future Volumes:** Total future volumes will be determined by adding future background volumes and project traffic volumes at each of the study intersections.
7. **Intersection LOS Analysis:** Intersection LOS analyses will be conducted for Existing Peak Season, Future Background Peak Season and Future Total Peak Season Conditions using Synchro or HCS software. Summary tables will be prepared to report the Highway Capacity Manual (HCM)-based LOS and delay for each approach and the overall intersection (if available; no overall intersection LOS will be reported for two-way stop-controlled unsignalized intersections).
8. **Transit/Multi-Modal Options:** The location and frequency of transit service on nearby corridors will be quantified, and any modifications to that service identified in Broward County's 5-Year Improvement Program will be reported.
9. **Mitigation:** Following a determination of project impacts, the Applicant will review potential mitigation measures with City staff and the City consultant, if needed, to evaluate feasibility and appropriateness of these measures. Included in this evaluation will be a determination of the need for turn lanes at adjacent and surrounding intersections.

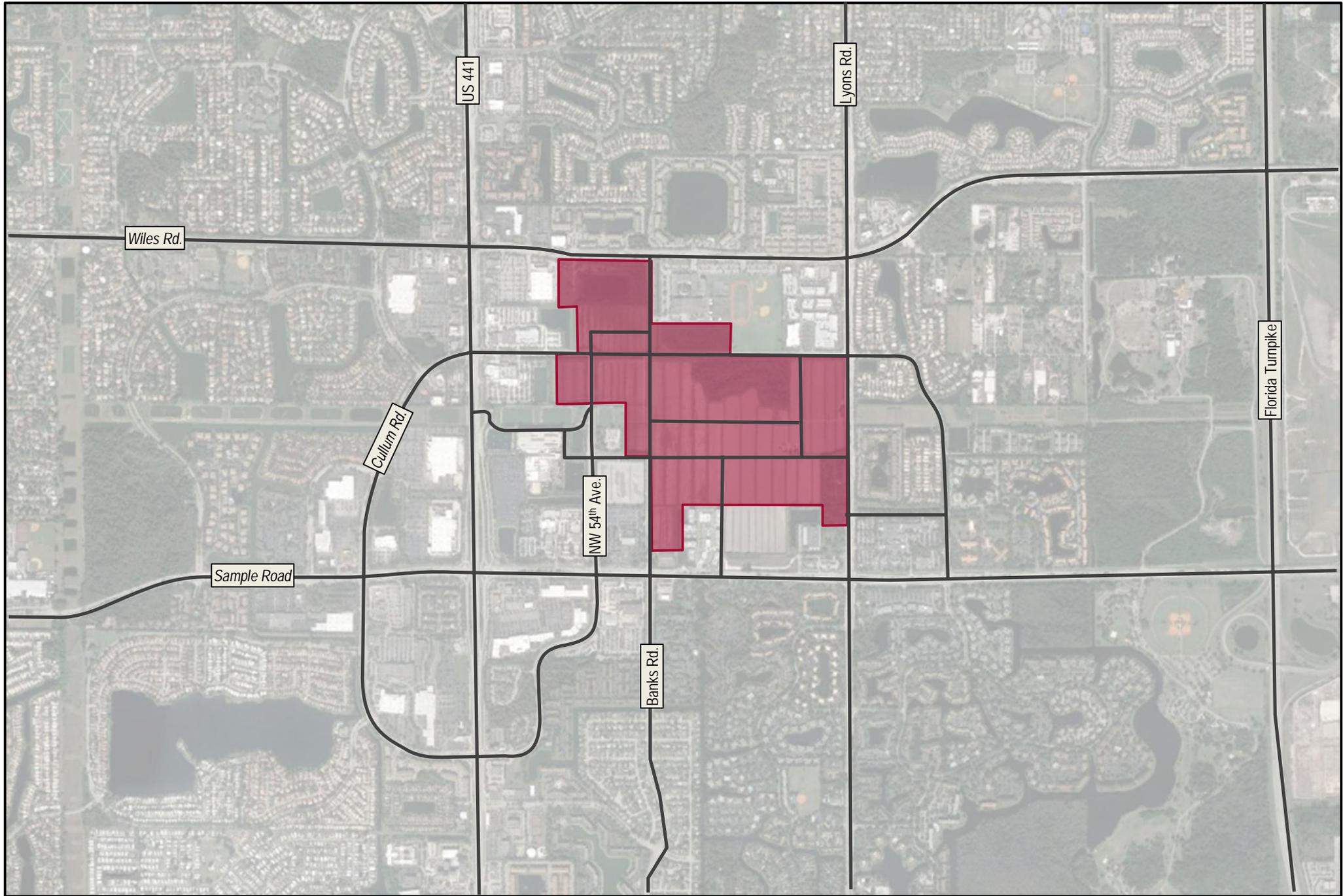
The data collection, calculations, analyses and results will be summarized in a written report for City review. Relevant tables, charts, figures, worksheets, and a current copy of the site plan will be included in the summary report.

Please review the methodology for this analysis as outlined above and indicate your concurrence by signing in the space below. Should you have questions or comments regarding the proposed methodology, please call me via phone at (561) 840-0248 or via e-mail at [chris.heggen@kimley-horn.com](mailto:chris.heggen@kimley-horn.com).

Concur by: \_\_\_\_\_ Date: \_\_\_\_\_

## Attachments

*K:\WPB\_TPTO\1409\140924000 - Main Street Coconut Creek\Methodology\2022-02-08 Main Street CC External Traffic Methodology.docx*

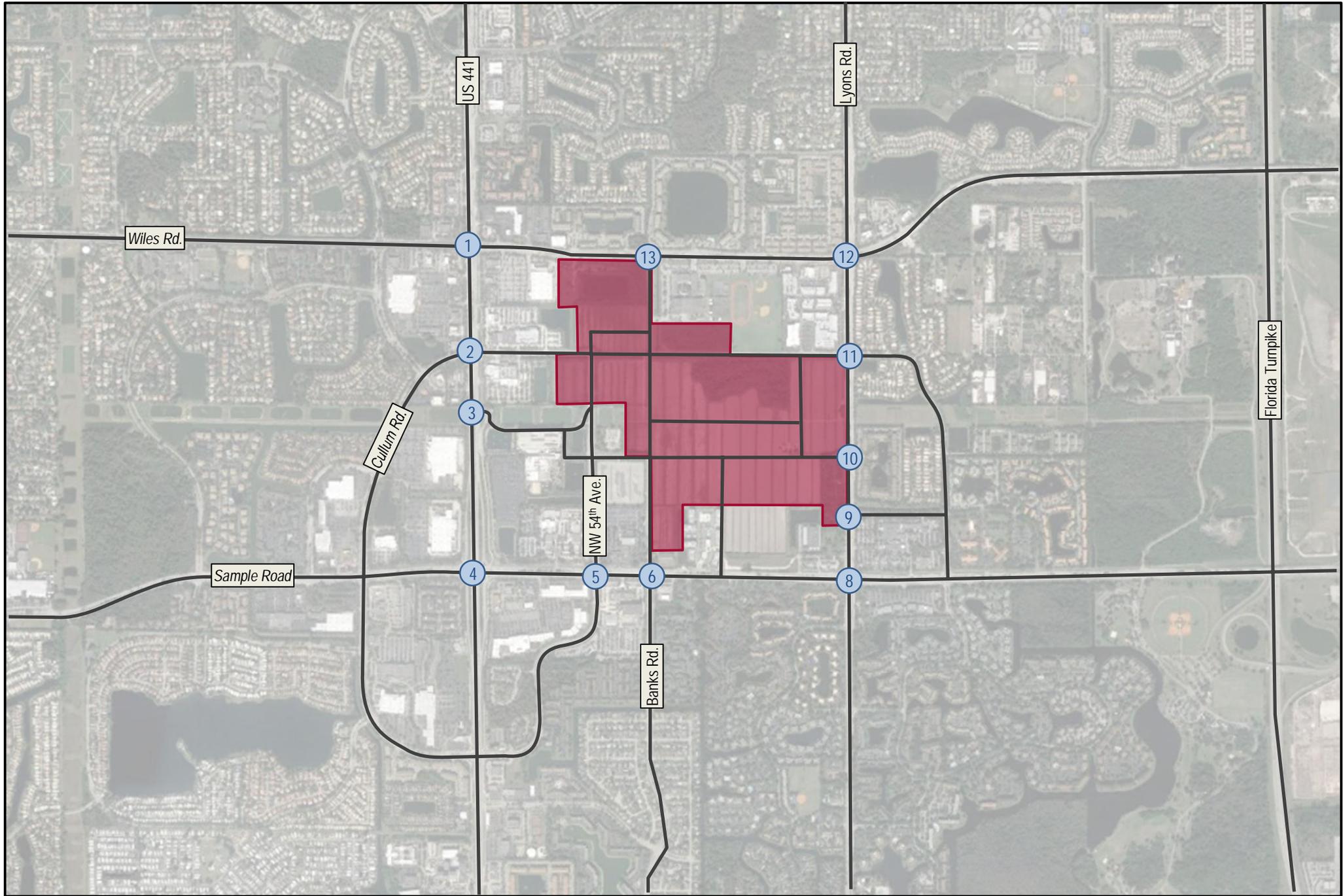


**LEGEND**



Site Location

**FIGURE E-1**  
Main Street Coconut Creek  
KH #140924000  
Site Location



- LEGEND**
-  Site Location
  -  Study Intersection

**FIGURE E-2**  
 Main Street Coconut Creek  
 KH #140924000  
 Intersection Data Collection

## APPENDIX B: TRAFFIC VOLUME DATA

Intersection Turning Movement Count Data

## Traffic Survey Specialists, Inc.

85 SE 4th Avenue, Unit 109, Delray Beach, Florida 33483  
Phone (561) 272-3255

WILES ROAD & LYONS ROAD  
COCONUT CREEK, FLORIDA  
VIDEO COUNT  
SIGNALIZED

File Name : WILES & LYONS  
Site Code : 210121  
Start Date : 10/13/2021  
Page No : 1

### Groups Printed- LIGHT VEHICLES - HEAVY VEHICLES

Start Time	LYONS ROAD From North				WILES ROAD From East				LYONS ROAD From South				WILES ROAD From West				Int. Total
	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	
07:00 AM	1	44	154	47	0	53	84	34	0	28	166	94	0	47	109	48	909
07:15 AM	0	53	228	110	0	73	135	41	0	39	207	109	0	88	155	69	1307
07:30 AM	1	63	207	72	1	82	134	77	1	33	209	157	1	93	184	88	1403
07:45 AM	0	90	278	45	0	79	149	57	0	32	224	148	0	55	168	64	1389
<b>Total</b>	<b>2</b>	<b>250</b>	<b>867</b>	<b>274</b>	<b>1</b>	<b>287</b>	<b>502</b>	<b>209</b>	<b>1</b>	<b>132</b>	<b>806</b>	<b>508</b>	<b>1</b>	<b>283</b>	<b>616</b>	<b>269</b>	<b>5008</b>
08:00 AM	0	67	187	55	0	84	140	42	1	33	205	86	0	41	189	63	1193
08:15 AM	0	40	257	60	0	46	91	38	1	45	267	110	0	50	187	74	1266
08:30 AM	0	48	227	52	0	47	94	41	1	45	262	105	0	41	197	50	1210
08:45 AM	0	36	198	35	0	53	129	50	1	45	214	89	1	44	153	68	1116
<b>Total</b>	<b>0</b>	<b>191</b>	<b>869</b>	<b>202</b>	<b>0</b>	<b>230</b>	<b>454</b>	<b>171</b>	<b>4</b>	<b>168</b>	<b>948</b>	<b>390</b>	<b>1</b>	<b>176</b>	<b>726</b>	<b>255</b>	<b>4785</b>
04:00 PM	1	45	224	65	1	69	127	53	0	49	238	63	1	59	108	64	1167
04:15 PM	0	53	231	63	0	91	152	44	0	49	209	58	2	65	169	77	1263
04:30 PM	3	45	232	71	1	88	158	64	0	57	262	58	1	78	142	66	1326
04:45 PM	0	42	245	82	0	80	188	55	0	76	286	77	0	81	158	80	1450
<b>Total</b>	<b>4</b>	<b>185</b>	<b>932</b>	<b>281</b>	<b>2</b>	<b>328</b>	<b>625</b>	<b>216</b>	<b>0</b>	<b>231</b>	<b>995</b>	<b>256</b>	<b>4</b>	<b>283</b>	<b>577</b>	<b>287</b>	<b>5206</b>
05:00 PM	2	53	250	67	0	112	205	55	1	60	254	79	0	94	154	78	1464
05:15 PM	1	44	273	76	0	106	177	66	0	56	358	76	0	93	145	73	1544
05:30 PM	0	50	270	53	0	90	222	54	1	57	296	66	0	91	176	85	1511
05:45 PM	0	39	254	76	0	105	173	67	0	48	296	71	1	99	167	84	1480
<b>Total</b>	<b>3</b>	<b>186</b>	<b>1047</b>	<b>272</b>	<b>0</b>	<b>413</b>	<b>777</b>	<b>242</b>	<b>2</b>	<b>221</b>	<b>1204</b>	<b>292</b>	<b>1</b>	<b>377</b>	<b>642</b>	<b>320</b>	<b>5999</b>
<b>Grand Total</b>	<b>9</b>	<b>812</b>	<b>3715</b>	<b>1029</b>	<b>3</b>	<b>1258</b>	<b>2358</b>	<b>838</b>	<b>7</b>	<b>752</b>	<b>3953</b>	<b>1446</b>	<b>7</b>	<b>1119</b>	<b>2561</b>	<b>1131</b>	<b>20998</b>
Apprch %	0.2	14.6	66.8	18.5	0.1	28.2	52.9	18.8	0.1	12.2	64.2	23.5	0.1	23.2	53.2	23.5	
Total %	0	3.9	17.7	4.9	0	6	11.2	4	0	3.6	18.8	6.9	0	5.3	12.2	5.4	
LIGHT VEHICLES	9	764	3652	1015	3	1230	2303	770	7	736	3887	1398	7	1098	2509	1096	20484
% LIGHT VEHICLES	100	94.1	98.3	98.6	100	97.8	97.7	91.9	100	97.9	98.3	96.7	100	98.1	98	96.9	97.6
HEAVY VEHICLES	0	48	63	14	0	28	55	68	0	16	66	48	0	21	52	35	514
% HEAVY VEHICLES	0	5.9	1.7	1.4	0	2.2	2.3	8.1	0	2.1	1.7	3.3	0	1.9	2	3.1	2.4

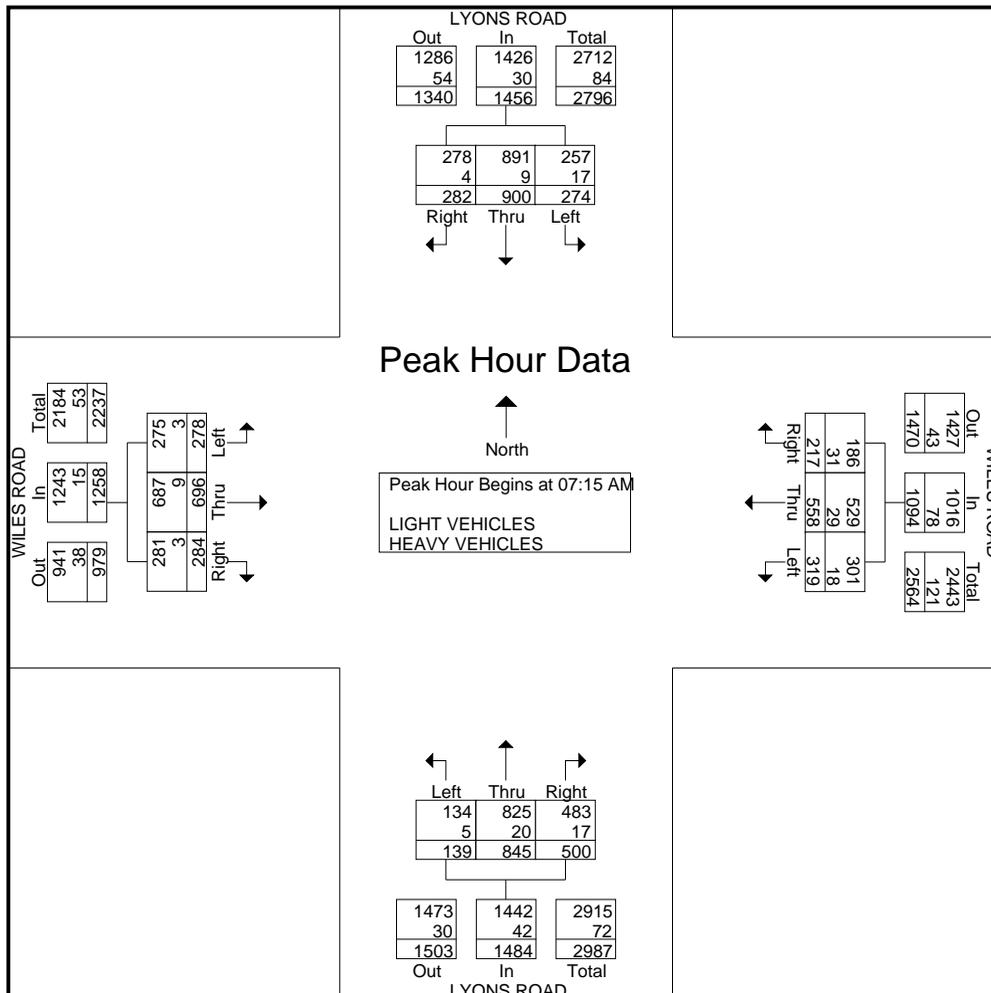
# Traffic Survey Specialists, Inc.

85 SE 4th Avenue, Unit 109, Delray Beach, Florida 33483  
Phone (561) 272-3255

WILES ROAD & LYONS ROAD  
COCONUT CREEK, FLORIDA  
VIDEO COUNT  
SIGNALIZED

File Name : WILES & LYONS  
Site Code : 210121  
Start Date : 10/13/2021  
Page No : 2

Start Time	LYONS ROAD From North					WILES ROAD From East					LYONS ROAD From South					WILES ROAD From West					Int. Total
	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	0	53	228	110	391	0	73	135	41	249	0	39	207	109	355	0	88	155	69	312	1307
07:30 AM	1	63	207	72	343	1	82	134	77	294	1	33	209	157	400	1	93	184	88	366	1403
07:45 AM	0	90	278	45	413	0	79	149	57	285	0	32	224	148	404	0	55	168	64	287	1389
08:00 AM	0	67	187	55	309	0	84	140	42	266	1	33	205	86	325	0	41	189	63	293	1193
Total Volume	1	273	900	282	1456	1	318	558	217	1094	2	137	845	500	1484	1	277	696	284	1258	5292
% App. Total	0.1	18.8	61.8	19.4		0.1	29.1	51	19.8		0.1	9.2	56.9	33.7		0.1	22	55.3	22.6		
PHF	.250	.758	.809	.641	.881	.250	.946	.936	.705	.930	.500	.878	.943	.796	.918	.250	.745	.921	.807	.859	.943
LIGHT VEHICLES																					
% LIGHT VEHICLES	100	93.8	99.0	98.6	97.9	100	94.3	94.8	85.7	92.9	100	96.4	97.6	96.6	97.2	100	98.9	98.7	98.9	98.8	96.9
HEAVY VEHICLES																					
% HEAVY VEHICLES	0	6.2	1.0	1.4	2.1	0	5.7	5.2	14.3	7.1	0	3.6	2.4	3.4	2.8	0	1.1	1.3	1.1	1.2	3.1



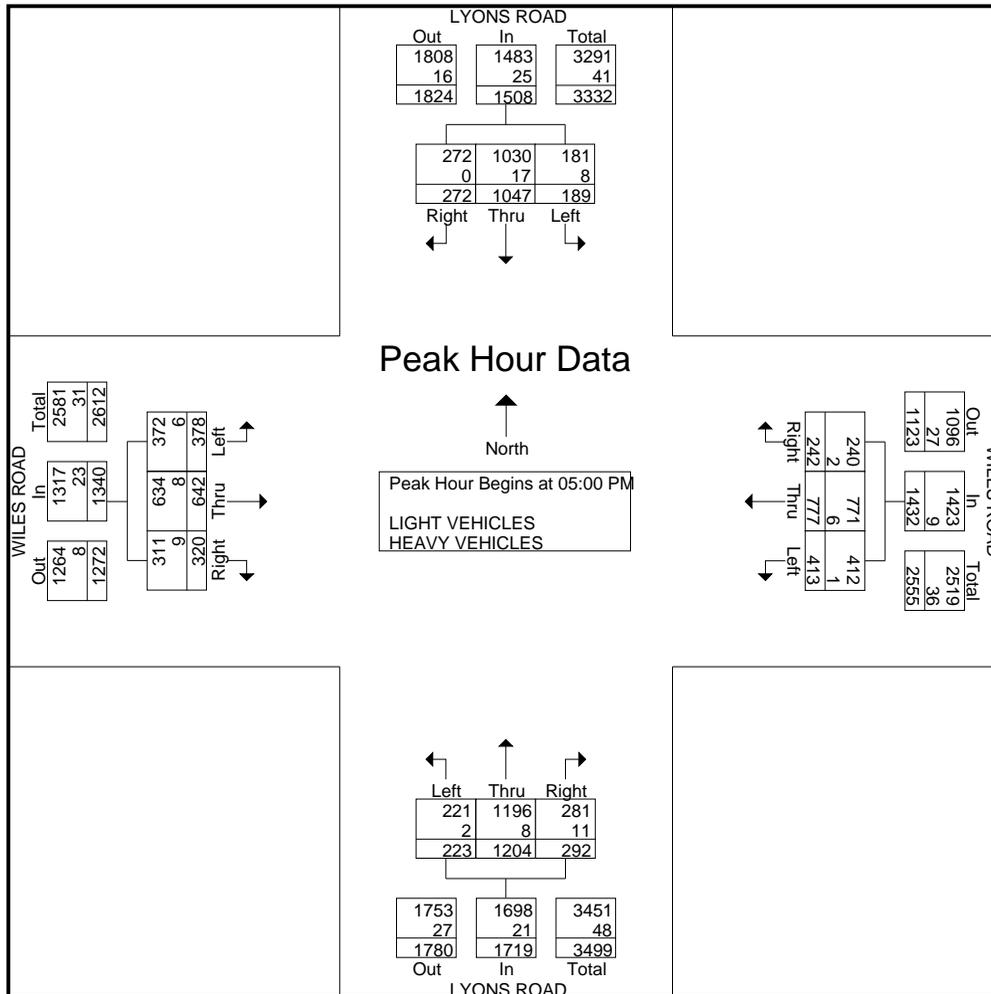
# Traffic Survey Specialists, Inc.

85 SE 4th Avenue, Unit 109, Delray Beach, Florida 33483  
Phone (561) 272-3255

WILES ROAD & LYONS ROAD  
COCONUT CREEK, FLORIDA  
VIDEO COUNT  
SIGNALIZED

File Name : WILES & LYONS  
Site Code : 210121  
Start Date : 10/13/2021  
Page No : 3

Start Time	LYONS ROAD From North					WILES ROAD From East					LYONS ROAD From South					WILES ROAD From West					Int. Total
	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	2	53	250	67	372	0	112	205	55	372	1	60	254	79	394	0	94	154	78	326	1464
05:15 PM	1	44	273	76	394	0	106	177	66	349	0	56	358	76	490	0	93	145	73	311	1544
05:30 PM	0	50	270	53	373	0	90	222	54	366	1	57	296	66	420	0	91	176	85	352	1511
05:45 PM	0	39	254	76	369	0	105	173	67	345	0	48	296	71	415	1	99	167	84	351	1480
Total Volume	3	186	1047	272	1508	0	413	777	242	1432	2	221	1204	292	1719	1	377	642	320	1340	5999
% App. Total	0.2	12.3	69.4	18		0	28.8	54.3	16.9		0.1	12.9	70	17		0.1	28.1	47.9	23.9		
PHF	.375	.877	.959	.895	.957	.000	.922	.875	.903	.962	.500	.921	.841	.924	.877	.250	.952	.912	.941	.952	.971
LIGHT VEHICLES	1030					1196															
% LIGHT VEHICLES	100	95.7	98.4	100	98.3	0	99.8	99.2	99.2	99.4	100	99.1	99.3	96.2	98.8	100	98.4	98.8	97.2	98.3	98.7
HEAVY VEHICLES																					
% HEAVY VEHICLES	0	4.3	1.6	0	1.7	0	0.2	0.8	0.8	0.6	0	0.9	0.7	3.8	1.2	0	1.6	1.2	2.8	1.7	1.3



**Traffic Survey Specialists, Inc.**

85 SE 4th Avenue, Unit 109, Delray Beach, Florida 33483  
Phone (561) 272-3255

WILES ROAD & LYONS ROAD  
COCONUT CREEK, FLORIDA  
VIDEO COUNT  
SIGNALIZED

File Name : WILES & LYONS  
Site Code : 210121  
Start Date : 10/13/2021  
Page No : 1

**Groups Printed- BICYCLES ON THE ROAD**

Start Time	LYONS ROAD From North				WILES ROAD From East				LYONS ROAD From South				WILES ROAD From West				Int. Total
	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	
07:45 AM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
Total	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
Total	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
Total	0	0	0	0	0	0	0	0	0	0	0	2	0	0	1	0	3
05:45 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
Total	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
Grand Total	0	0	0	0	0	0	2	0	0	0	0	3	0	0	1	0	6
Apprch %	0	0	0	0	0	0	100	0	0	0	0	100	0	0	100	0	
Total %	0	0	0	0	0	0	33.3	0	0	0	0	50	0	0	16.7	0	

## Traffic Survey Specialists, Inc.

85 SE 4th Avenue, Unit 109, Delray Beach, Florida 33483  
Phone (561) 272-3255

WILES ROAD & LYONS ROAD  
COCONUT CREEK, FLORIDA  
VIDEO COUNT  
SIGNALIZED

File Name : WILES & LYONS  
Site Code : 210121  
Start Date : 10/13/2021  
Page No : 1

### Groups Printed- PEDESTRIANS & BIKES

Start Time	LYONS ROAD From North				WILES ROAD From East				LYONS ROAD From South				WILES ROAD From West				Int. Total
	Peds	Left	BIKES	Right	Peds	Left	BIKES	Right	Peds	Left	BIKES	Right	Peds	Left	BIKES	Right	
07:00 AM	0	0	0	0	1	0	1	0	2	0	3	0	0	0	1	0	8
07:15 AM	0	0	2	0	0	0	1	0	2	0	1	0	2	0	2	0	10
07:30 AM	6	0	2	0	2	0	0	0	1	0	2	0	0	0	2	0	15
07:45 AM	0	0	1	0	1	0	0	0	1	0	1	0	0	0	0	0	4
Total	6	0	5	0	4	0	2	0	6	0	7	0	2	0	5	0	37
08:00 AM	1	0	1	0	0	0	0	0	0	0	0	0	2	0	1	0	5
08:15 AM	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	2
08:30 AM	0	0	0	0	1	0	0	0	1	0	0	0	2	0	0	0	4
Total	1	0	1	0	2	0	0	0	1	0	0	0	5	0	1	0	11
04:00 PM	2	0	1	0	0	0	0	0	2	0	2	0	5	0	0	0	12
04:15 PM	1	0	0	0	0	0	1	0	0	0	1	0	2	0	1	0	6
04:30 PM	1	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	3
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
Total	4	0	1	0	0	0	1	0	2	0	3	0	10	0	1	0	22
05:00 PM	2	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	4
05:15 PM	1	0	0	0	0	0	0	0	1	0	0	0	2	0	0	0	4
05:30 PM	0	0	0	0	1	0	0	0	0	0	1	0	3	0	1	0	6
05:45 PM	0	0	0	0	0	0	0	0	4	0	0	0	1	0	0	0	5
Total	3	0	0	0	1	0	0	0	5	0	2	0	6	0	2	0	19
Grand Total	14	0	7	0	7	0	3	0	14	0	12	0	23	0	9	0	89
Apprch %	66.7	0	33.3	0	70	0	30	0	53.8	0	46.2	0	71.9	0	28.1	0	
Total %	15.7	0	7.9	0	7.9	0	3.4	0	15.7	0	13.5	0	25.8	0	10.1	0	

## Traffic Survey Specialists, Inc.

85 SE 4th Avenue, Unit 109, Delray Beach, Florida 33483  
Phone (561) 272-3255

WILES ROAD & BANKS ROAD  
COCONUT CREEK, FLORIDA  
VIDEO COUNT  
NOT SIGNALIZED

File Name : wiles & banks  
Site Code : 210121  
Start Date : 10/13/2021  
Page No : 1

### Groups Printed- LIGHT VEHICLES - HEAVY VEHICLES

Start Time	----- From North				WILES ROAD From East				BANKS ROAD From South				WILES ROAD From West				Int. Total
	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	
07:00 AM	0	0	0	0	0	2	132	0	1	9	0	21	0	0	185	29	379
07:15 AM	0	0	0	0	8	4	157	0	14	13	0	40	8	0	240	26	510
07:30 AM	0	0	0	0	3	6	198	0	7	19	0	40	4	0	221	18	516
07:45 AM	0	0	0	0	0	1	235	0	0	1	0	4	2	0	244	10	497
Total	0	0	0	0	11	13	722	0	22	42	0	105	14	0	890	83	1902
08:00 AM	0	0	0	0	1	1	224	0	0	4	0	1	0	0	287	2	520
08:15 AM	0	0	0	0	0	1	190	0	0	5	0	0	1	0	300	4	501
08:30 AM	0	0	0	0	0	0	199	0	0	1	0	1	2	0	289	2	494
08:45 AM	0	0	0	0	1	0	204	0	0	2	0	1	1	0	245	1	455
Total	0	0	0	0	2	2	817	0	0	12	0	3	4	0	1121	9	1970
04:00 PM	0	0	0	0	0	1	270	0	0	5	0	4	4	0	268	6	558
04:15 PM	0	0	0	0	0	0	243	0	0	5	0	0	2	0	303	2	555
04:30 PM	0	0	0	0	1	0	253	0	0	5	0	1	2	0	302	4	568
04:45 PM	0	0	0	0	1	1	344	0	0	7	0	2	3	0	325	3	686
Total	0	0	0	0	2	2	1110	0	0	22	0	7	11	0	1198	15	2367
05:00 PM	0	0	0	0	0	4	260	0	1	4	0	3	4	0	315	3	594
05:15 PM	0	0	0	0	0	5	316	0	0	1	0	9	3	0	310	0	644
05:30 PM	0	0	0	0	1	0	310	0	0	4	0	7	4	0	344	4	674
05:45 PM	0	0	0	0	2	5	245	0	0	6	0	3	5	0	336	0	602
Total	0	0	0	0	3	14	1131	0	1	15	0	22	16	0	1305	7	2514
Grand Total	0	0	0	0	18	31	3780	0	23	91	0	137	45	0	4514	114	8753
Apprch %	0	0	0	0	0.5	0.8	98.7	0	9.2	36.3	0	54.6	1	0	96.6	2.4	
Total %	0	0	0	0	0.2	0.4	43.2	0	0.3	1	0	1.6	0.5	0	51.6	1.3	
LIGHT VEHICLES	0	0	0	0	18	29	3698	0	23	89	0	128	45	0	4413	113	8556
% LIGHT VEHICLES	0	0	0	0	100	93.5	97.8	0	100	97.8	0	93.4	100	0	97.8	99.1	97.7
HEAVY VEHICLES	0	0	0	0	0	2	82	0	0	2	0	9	0	0	101	1	197
% HEAVY VEHICLES	0	0	0	0	0	6.5	2.2	0	0	2.2	0	6.6	0	0	2.2	0.9	2.3

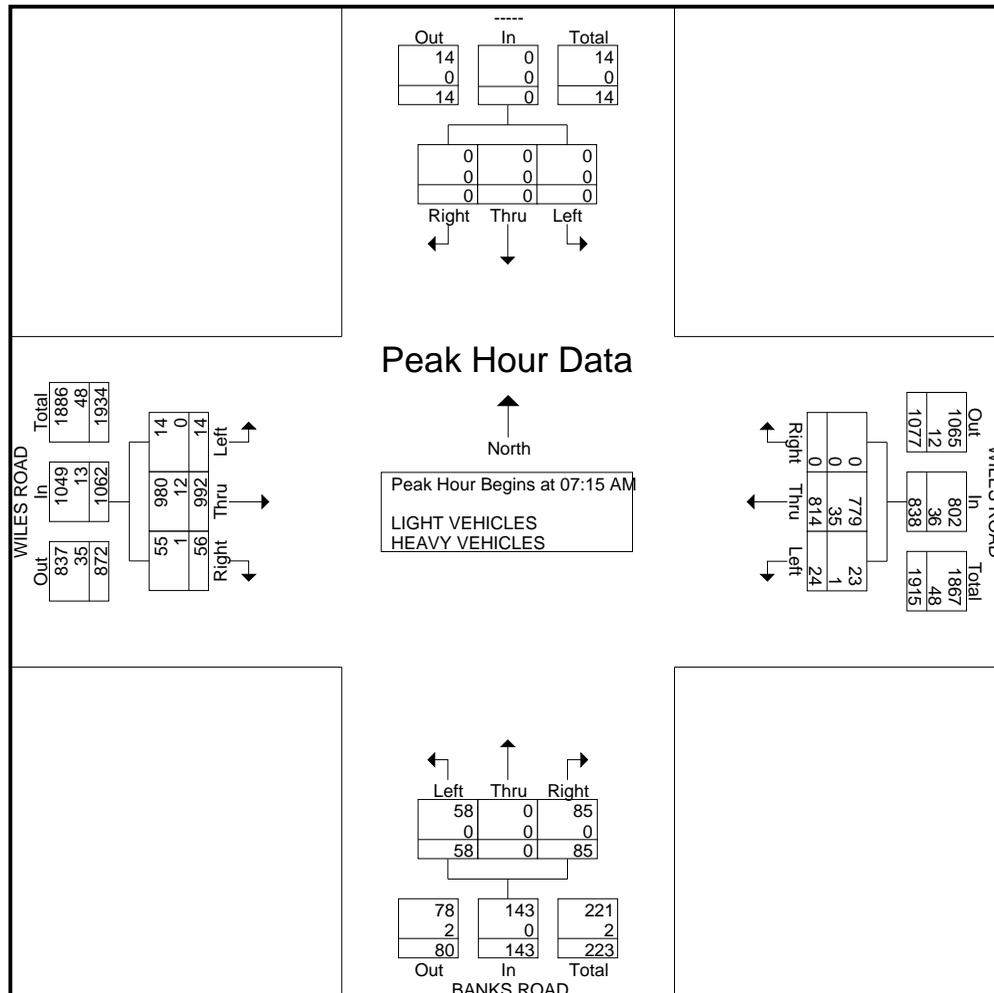
# Traffic Survey Specialists, Inc.

85 SE 4th Avenue, Unit 109, Delray Beach, Florida 33483  
Phone (561) 272-3255

WILES ROAD & BANKS ROAD  
COCONUT CREEK, FLORIDA  
VIDEO COUNT  
NOT SIGNALIZED

File Name : wiles & banks  
Site Code : 210121  
Start Date : 10/13/2021  
Page No : 2

Start Time	----- From North					WILES ROAD From East					BANKS ROAD From South					WILES ROAD From West					Int. Total
	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	0	0	0	0	0	8	4	157	0	169	14	13	0	40	67	8	0	240	26	274	510
07:30 AM	0	0	0	0	0	3	6	198	0	207	7	19	0	40	66	4	0	221	18	243	516
07:45 AM	0	0	0	0	0	0	1	235	0	236	0	1	0	4	5	2	0	244	10	256	497
08:00 AM	0	0	0	0	0	1	1	224	0	226	0	4	0	1	5	0	0	287	2	289	520
Total Volume	0	0	0	0	0	12	12	814	0	838	21	37	0	85	143	14	0	992	56	1062	2043
% App. Total	0	0	0	0	0	1.4	1.4	97.1	0	14.7	25.9	0	59.4	1.3	0	93.4	5.3				
PHF	.000	.000	.000	.000	.000	.375	.500	.866	.000	.888	.375	.487	.000	.531	.534	.438	.000	.864	.538	.919	.982
LIGHT VEHICLES																					
% LIGHT VEHICLES	0	0	0	0	0	100	91.7	95.7	0	95.7	100	100	0	100	100	100	0	98.8	98.2	98.8	97.6
HEAVY VEHICLES																					
% HEAVY VEHICLES	0	0	0	0	0	0	8.3	4.3	0	4.3	0	0	0	0	0	0	0	1.2	1.8	1.2	2.4



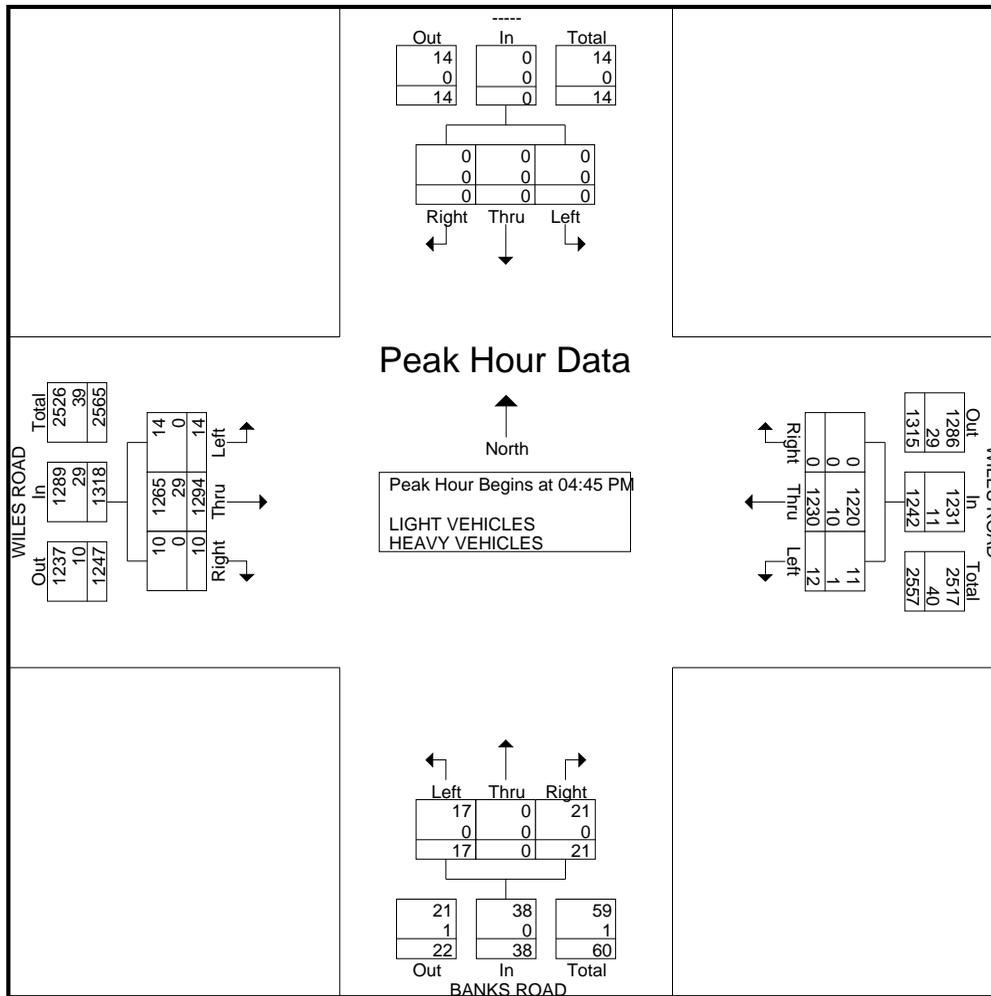
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WILES ROAD & BANKS ROAD  
COCONUT CREEK, FLORIDA  
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File Name : wiles & banks  
Site Code : 210121  
Start Date : 10/13/2021  
Page No : 3

Start Time	----- From North					WILES ROAD From East					BANKS ROAD From South					WILES ROAD From West					Int. Total
	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	0	0	0	0	0	1	1	344	0	346	0	7	0	2	9	3	0	325	3	331	686
05:00 PM	0	0	0	0	0	0	4	260	0	264	1	4	0	3	8	4	0	315	3	322	594
05:15 PM	0	0	0	0	0	0	5	316	0	321	0	1	0	9	10	3	0	310	0	313	644
05:30 PM	0	0	0	0	0	1	0	310	0	311	0	4	0	7	11	4	0	344	4	352	674
Total Volume	0	0	0	0	0	2	10	1230	0	1242	1	16	0	21	38	14	0	1294	10	1318	2598
% App. Total	0	0	0	0	0	0.2	0.8	99	0		2.6	42.1	0	55.3		1.1	0	98.2	0.8		
PHF	.000	.000	.000	.000	.000	.500	.500	.894	.000	.897	.250	.571	.000	.583	.864	.875	.000	.940	.625	.936	.947
LIGHT VEHICLES						1220										1265					
% LIGHT VEHICLES	0	0	0	0	0	100	90.0	99.2	0	99.1	100	100	0	100	100	100	0	97.8	100	97.8	98.5
HEAVY VEHICLES																					
% HEAVY VEHICLES	0	0	0	0	0	0	10.0	0.8	0	0.9	0	0	0	0	0	0	0	2.2	0	2.2	1.5



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VIDEO COUNT  
NOT SIGNALIZED

File Name : wiles & banks  
Site Code : 210121  
Start Date : 10/13/2021  
Page No : 1

**Groups Printed- BICYCLES ON THE ROAD**

Start Time	----- From North				WILES ROAD From East				BANKS ROAD From South				WILES ROAD From West				Int. Total
	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	
07:30 AM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	2
07:45 AM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
Total	0	0	0	0	0	0	2	0	0	0	0	0	0	0	1	0	3
08:15 AM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
08:45 AM	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	2
Total	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	3
04:15 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Total	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	2
Grand Total	0	0	0	0	0	0	6	0	0	0	0	0	0	0	2	0	8
Apprch %	0	0	0	0	0	0	100	0	0	0	0	0	0	0	100	0	
Total %	0	0	0	0	0	0	75	0	0	0	0	0	0	0	25	0	

**Traffic Survey Specialists, Inc.**

85 SE 4th Avenue, Unit 109, Delray Beach, Florida 33483  
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WILES ROAD & BANKS ROAD  
COCONUT CREEK, FLORIDA  
VIDEO COUNT  
NOT SIGNALIZED

File Name : wiles & banks  
Site Code : 210121  
Start Date : 10/13/2021  
Page No : 1

**Groups Printed- PEDESTRIANS & BIKES**

Start Time	----- From North				WILES ROAD From East				BANKS ROAD From South				WILES ROAD From West				Int. Total
	Peds	Left	BIKES	Right	Peds	Left	BIKES	Right	Peds	Left	BIKES	Right	Peds	Left	BIKES	Right	
07:00 AM	2	0	0	0	0	0	0	0	1	0	3	0	0	0	0	0	6
07:15 AM	2	0	0	0	0	0	0	0	17	0	1	0	0	0	0	0	20
07:30 AM	6	0	0	0	2	0	0	0	12	0	2	0	1	0	0	0	23
07:45 AM	2	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	4
Total	12	0	0	0	2	0	0	0	32	0	6	0	1	0	0	0	53
08:00 AM	3	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	4
08:15 AM	4	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	5
08:30 AM	3	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	4
08:45 AM	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Total	12	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	15
04:00 PM	1	0	1	0	0	0	0	0	0	0	3	0	0	0	0	0	5
04:15 PM	0	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	3
04:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
04:45 PM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	2	0	2	0	0	0	0	0	1	0	5	0	0	0	0	0	10
05:00 PM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
05:15 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
05:30 PM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
05:45 PM	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	3
Total	2	0	0	0	0	0	0	0	3	0	1	0	0	0	0	0	6
Grand Total	28	0	2	0	2	0	0	0	39	0	12	0	1	0	0	0	84
Apprch %	93.3	0	6.7	0	100	0	0	0	76.5	0	23.5	0	100	0	0	0	
Total %	33.3	0	2.4	0	2.4	0	0	0	46.4	0	14.3	0	1.2	0	0	0	

## Traffic Survey Specialists, Inc.

85 SE 4th Avenue, Unit 109, Delray Beach, Florida 33483  
Phone (561) 272-3255

WILES ROAD & SR 7  
COCONUT CREEK, FLORIDA  
VIDEO COUNT  
SIGNALIZED

File Name : WILES & 7  
Site Code : 210121  
Start Date : 10/13/2021  
Page No : 1

### Groups Printed- LIGHT VEHICLES - HEAVY VEHICLES

Start Time	SR 7 From North				WILES ROAD From East				SR 7 From South				WILES ROAD From West				Int. Total
	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	
07:00 AM	11	47	255	77	0	33	70	40	4	44	256	41	4	131	137	81	1231
07:15 AM	13	82	326	77	0	36	88	76	7	57	344	44	3	148	150	125	1576
07:30 AM	16	48	296	65	0	71	107	99	2	52	312	37	7	178	175	136	1601
07:45 AM	9	48	333	70	1	55	110	60	10	48	232	45	5	168	139	140	1473
Total	49	225	1210	289	1	195	375	275	23	201	1144	167	19	625	601	482	5881
08:00 AM	14	50	316	81	0	48	132	45	7	65	282	59	1	106	202	70	1478
08:15 AM	18	52	303	84	1	44	110	50	14	46	313	59	2	140	205	51	1492
08:30 AM	10	62	314	58	0	45	102	38	8	42	332	53	7	103	162	61	1397
08:45 AM	18	54	305	71	0	60	122	49	7	51	255	58	7	107	149	56	1369
Total	60	218	1238	294	1	197	466	182	36	204	1182	229	17	456	718	238	5736
04:00 PM	19	52	285	84	0	73	136	32	9	59	320	53	6	142	155	51	1476
04:15 PM	20	65	280	86	0	72	173	40	16	88	305	66	8	146	207	50	1622
04:30 PM	24	55	318	95	0	99	141	47	15	80	372	71	5	159	157	59	1697
04:45 PM	20	61	312	82	0	86	148	51	14	110	359	76	10	139	171	42	1681
Total	83	233	1195	347	0	330	598	170	54	337	1356	266	29	586	690	202	6476
05:00 PM	26	54	288	101	1	75	179	37	20	77	335	72	7	146	200	43	1661
05:15 PM	18	43	317	102	0	81	155	26	19	77	392	64	6	128	173	33	1634
05:30 PM	11	55	320	91	0	99	183	26	16	72	337	86	11	167	223	47	1744
05:45 PM	32	74	351	113	0	100	137	47	18	106	379	73	7	142	178	52	1809
Total	87	226	1276	407	1	355	654	136	73	332	1443	295	31	583	774	175	6848
Grand Total	279	902	4919	1337	3	1077	2093	763	186	1074	5125	957	96	2250	2783	1097	24941
Apprch %	3.8	12.1	66.1	18	0.1	27.4	53.2	19.4	2.5	14.6	69.8	13	1.5	36.1	44.7	17.6	
Total %	1.1	3.6	19.7	5.4	0	4.3	8.4	3.1	0.7	4.3	20.5	3.8	0.4	9	11.2	4.4	
LIGHT VEHICLES	279	882	4836	1320	3	1063	2054	730	185	1058	5035	945	95	2210	2711	1083	24489
% LIGHT VEHICLES	100	97.8	98.3	98.7	100	98.7	98.1	95.7	99.5	98.5	98.2	98.7	99	98.2	97.4	98.7	98.2
HEAVY VEHICLES	0	20	83	17	0	14	39	33	1	16	90	12	1	40	72	14	452
% HEAVY VEHICLES	0	2.2	1.7	1.3	0	1.3	1.9	4.3	0.5	1.5	1.8	1.3	1	1.8	2.6	1.3	1.8

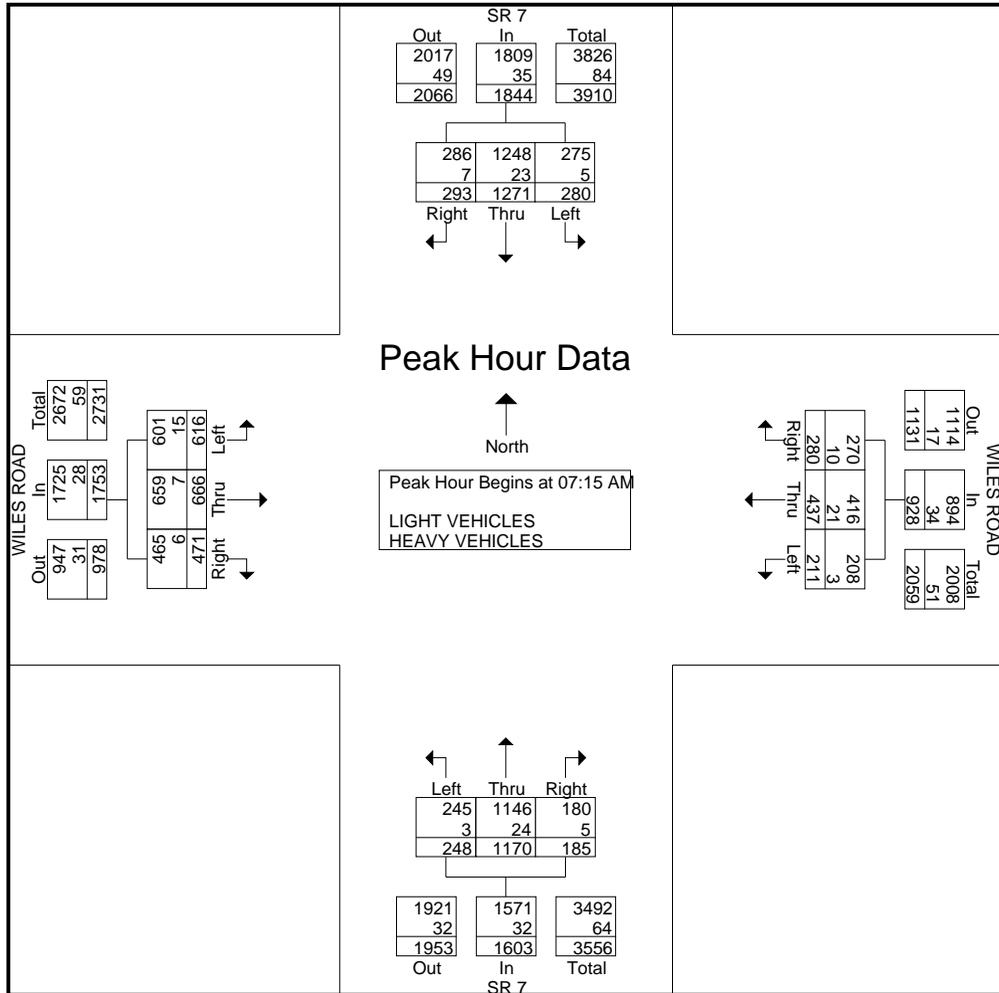
# Traffic Survey Specialists, Inc.

85 SE 4th Avenue, Unit 109, Delray Beach, Florida 33483  
Phone (561) 272-3255

WILES ROAD & SR 7  
COCONUT CREEK, FLORIDA  
VIDEO COUNT  
SIGNALIZED

File Name : WILES & 7  
Site Code : 210121  
Start Date : 10/13/2021  
Page No : 2

Start Time	SR 7 From North					WILES ROAD From East					SR 7 From South					WILES ROAD From West					Int. Total
	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	13	82	326	77	498	0	36	88	76	200	7	57	344	44	452	3	148	150	125	426	1576
07:30 AM	16	48	296	65	425	0	71	107	99	277	2	52	312	37	403	7	178	175	136	496	1601
07:45 AM	9	48	333	70	460	1	55	110	60	226	10	48	232	45	335	5	168	139	140	452	1473
08:00 AM	14	50	316	81	461	0	48	132	45	225	7	65	282	59	413	1	106	202	70	379	1478
Total Volume	52	228	1271	293	1844	1	210	437	280	928	26	222	1170	185	1603	16	600	666	471	1753	6128
% App. Total	2.8	12.4	68.9	15.9	0.1	22.6	47.1	30.2		1.6	13.8	73	11.5	0.9	34.2	38	26.9				
PHF	.813	.695	.954	.904	.926	.250	.739	.828	.707	.838	.650	.854	.850	.784	.887	.571	.843	.824	.841	.884	.957
LIGHT VEHICLES	1248										1146										
% LIGHT VEHICLES	100	97.8	98.2	97.6	98.1	100	98.6	95.2	96.4	96.3	100	98.6	97.9	97.3	98.0	93.8	97.7	98.9	98.7	98.4	97.9
HEAVY VEHICLES																					
% HEAVY VEHICLES	0	2.2	1.8	2.4	1.9	0	1.4	4.8	3.6	3.7	0	1.4	2.1	2.7	2.0	6.3	2.3	1.1	1.3	1.6	2.1



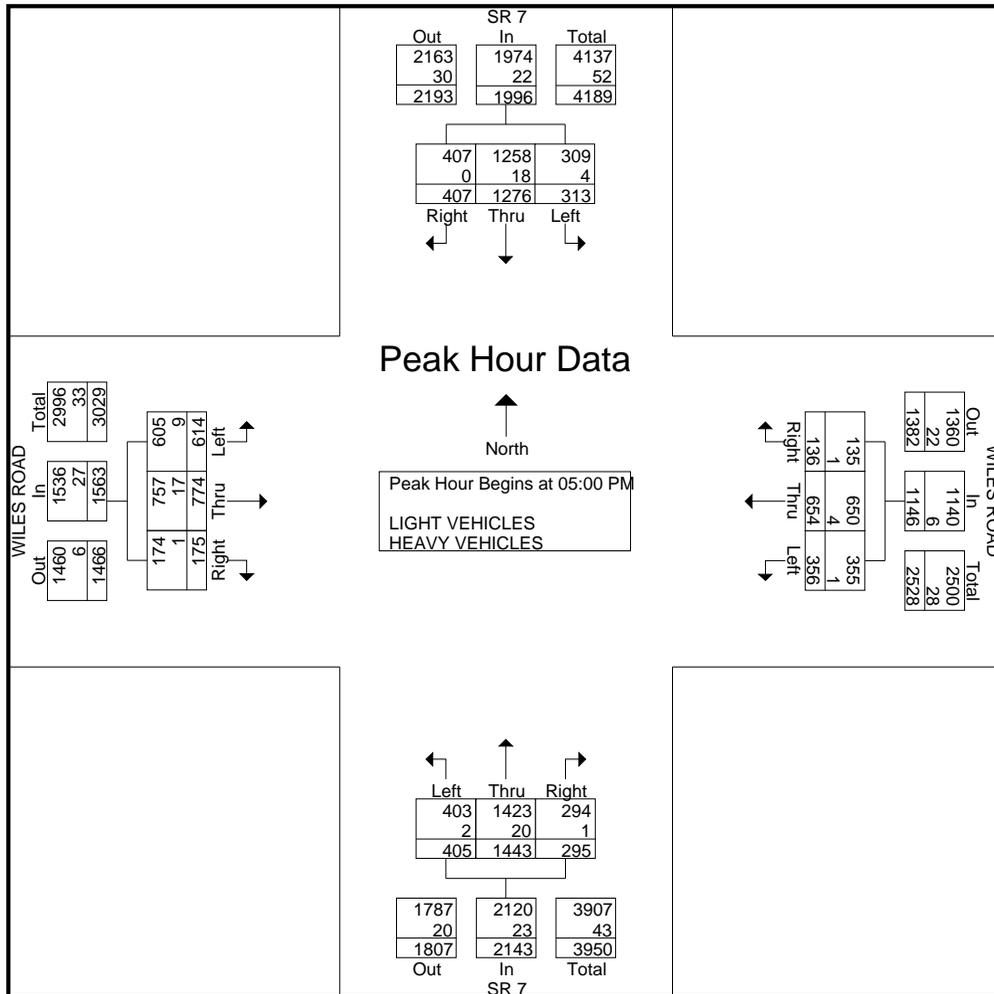
# Traffic Survey Specialists, Inc.

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WILES ROAD & SR 7  
COCONUT CREEK, FLORIDA  
VIDEO COUNT  
SIGNALIZED

File Name : WILES & 7  
Site Code : 210121  
Start Date : 10/13/2021  
Page No : 3

Start Time	SR 7 From North					WILES ROAD From East					SR 7 From South					WILES ROAD From West					Int. Total
	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	26	54	288	101	469	1	75	179	37	292	20	77	335	72	504	7	146	200	43	396	1661
05:15 PM	18	43	317	102	480	0	81	155	26	262	19	77	392	64	552	6	128	173	33	340	1634
05:30 PM	11	55	320	91	477	0	99	183	26	308	16	72	337	86	511	11	167	223	47	448	1744
05:45 PM	32	74	351	113	570	0	100	137	47	284	18	106	379	73	576	7	142	178	52	379	1809
Total Volume	87	226	1276	407	1996	1	355	654	136	1146	73	332	1443	295	2143	31	583	774	175	1563	6848
% App. Total	4.4	11.3	63.9	20.4	0.1	31	57.1	11.9	3.4	15.5	67.3	13.8	2	37.3	49.5	11.2					
PHF	.680	.764	.909	.900	.875	.250	.888	.893	.723	.930	.913	.783	.920	.858	.930	.705	.873	.868	.841	.872	.946
LIGHT VEHICLES	1258					1423															
% LIGHT VEHICLES	100	98.2	98.6	100	98.9	100	99.7	99.4	99.3	99.5	100	99.4	98.6	99.7	98.9	100	98.5	97.8	99.4	98.3	98.9
HEAVY VEHICLES																					
% HEAVY VEHICLES	0	1.8	1.4	0	1.1	0	0.3	0.6	0.7	0.5	0	0.6	1.4	0.3	1.1	0	1.5	2.2	0.6	1.7	1.1



**Traffic Survey Specialists, Inc.**

85 SE 4th Avenue, Unit 109, Delray Beach, Florida 33483  
Phone (561) 272-3255

WILES ROAD & SR 7  
COCONUT CREEK, FLORIDA  
VIDEO COUNT  
SIGNALIZED

File Name : WILES & 7  
Site Code : 210121  
Start Date : 10/13/2021  
Page No : 1

**Groups Printed- BICYCLES ON THE ROAD**

Start Time	SR 7 From North				WILES ROAD From East				SR 7 From South				WILES ROAD From West				Int. Total
	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	
07:30 AM	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	2
07:45 AM	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	2
Total	0	0	0	2	0	0	1	0	0	0	0	0	0	1	0	0	4
08:00 AM	0	0	0	2	0	0	1	0	0	0	0	0	0	0	0	0	3
08:15 AM	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	2
08:30 AM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	0	1	3	0	0	2	0	0	0	0	0	0	0	0	0	6
04:15 PM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Total	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	2
05:30 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Grand Total	0	0	2	6	0	0	3	0	0	0	0	0	0	1	1	0	13
Apprch %	0	0	25	75	0	0	100	0	0	0	0	0	0	50	50	0	
Total %	0	0	15.4	46.2	0	0	23.1	0	0	0	0	0	0	7.7	7.7	0	

## Traffic Survey Specialists, Inc.

85 SE 4th Avenue, Unit 109, Delray Beach, Florida 33483  
Phone (561) 272-3255

WILES ROAD & SR 7  
COCONUT CREEK, FLORIDA  
VIDEO COUNT  
SIGNALIZED

File Name : WILES & 7  
Site Code : 210121  
Start Date : 10/13/2021  
Page No : 1

### Groups Printed- PEDESTRIANS & BIKES

Start Time	SR 7 From North				WILES ROAD From East				SR 7 From South				WILES ROAD From West				Int. Total
	Peds	Left	BIKES	Right	Peds	Left	BIKES	Right	Peds	Left	BIKES	Right	Peds	Left	BIKES	Right	
07:00 AM	0	0	0	0	1	0	1	0	0	0	1	0	0	0	0	0	3
07:15 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
07:30 AM	0	0	0	0	0	0	1	0	0	0	2	0	1	0	1	0	5
07:45 AM	1	0	0	0	0	0	3	0	0	0	0	0	1	0	0	0	5
<b>Total</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>14</b>
08:15 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
08:30 AM	0	0	0	0	1	0	0	0	1	0	0	0	2	0	1	0	5
08:45 AM	0	0	2	0	1	0	1	0	1	0	0	0	0	0	0	0	5
<b>Total</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>11</b>
04:00 PM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2
04:15 PM	1	0	2	0	0	0	0	0	1	0	0	0	1	0	0	0	5
04:30 PM	1	0	0	0	2	0	0	0	2	0	0	0	0	0	0	0	5
04:45 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
<b>Total</b>	<b>2</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>13</b>
05:00 PM	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	2
05:15 PM	0	0	0	0	1	0	0	0	2	0	1	0	0	0	0	0	4
05:30 PM	0	0	2	0	0	0	1	0	0	0	0	0	1	0	0	0	4
05:45 PM	0	0	0	0	1	0	1	0	1	0	1	0	1	0	0	0	5
<b>Total</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>15</b>
<b>Grand Total</b>	<b>3</b>	<b>0</b>	<b>7</b>	<b>0</b>	<b>8</b>	<b>0</b>	<b>9</b>	<b>0</b>	<b>9</b>	<b>0</b>	<b>8</b>	<b>0</b>	<b>7</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>53</b>
Apprch %	30	0	70	0	47.1	0	52.9	0	52.9	0	47.1	0	77.8	0	22.2	0	
Total %	5.7	0	13.2	0	15.1	0	17	0	17	0	15.1	0	13.2	0	3.8	0	

## Traffic Survey Specialists, Inc.

85 SE 4th Avenue, Unit 109, Delray Beach, Florida 33483  
Phone (561) 272-3255

CULLUM ROAD/TURTLE CREEK DRIVE & SR7  
COCONUT CREEK, FLORIDA  
VIDEO COUNT  
SIGNALIZED

File Name : CULLUM & SR7  
Site Code : 210121  
Start Date : 10/13/2021  
Page No : 1

### Groups Printed- LIGHT VEHICLES - HEAVY VEHICLES

Start Time	SR 7 From North				CULLUM ROAD From East				SR 7 From South				TURTLE CREEK DRIVE From West				Int. Total
	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	
07:00 AM	0	16	305	35	0	0	3	15	2	9	300	4	0	37	4	1	731
07:15 AM	2	21	390	34	0	3	4	18	4	24	407	7	2	42	5	4	967
07:30 AM	6	27	452	51	0	0	4	17	3	21	341	7	0	52	10	3	994
07:45 AM	2	35	500	48	0	0	3	16	2	21	306	12	0	49	10	2	1006
<b>Total</b>	<b>10</b>	<b>99</b>	<b>1647</b>	<b>168</b>	<b>0</b>	<b>3</b>	<b>14</b>	<b>66</b>	<b>11</b>	<b>75</b>	<b>1354</b>	<b>30</b>	<b>2</b>	<b>180</b>	<b>29</b>	<b>10</b>	<b>3698</b>
08:00 AM	2	32	330	39	0	3	4	13	6	26	372	9	2	94	8	5	945
08:15 AM	2	44	332	35	0	1	2	12	2	11	312	3	3	65	5	6	835
08:30 AM	5	26	329	39	0	4	1	10	4	34	390	4	0	46	3	7	902
08:45 AM	3	36	381	46	0	4	10	18	4	40	321	6	4	48	1	5	927
<b>Total</b>	<b>12</b>	<b>138</b>	<b>1372</b>	<b>159</b>	<b>0</b>	<b>12</b>	<b>17</b>	<b>53</b>	<b>16</b>	<b>111</b>	<b>1395</b>	<b>22</b>	<b>9</b>	<b>253</b>	<b>17</b>	<b>23</b>	<b>3609</b>
04:00 PM	7	17	314	59	0	4	10	32	11	51	370	5	4	62	5	21	972
04:15 PM	10	26	339	76	0	8	9	29	5	34	357	3	3	61	6	19	985
04:30 PM	10	36	353	83	0	5	9	35	13	56	390	5	5	68	5	16	1089
04:45 PM	12	17	347	71	0	4	16	33	9	61	394	5	4	72	2	9	1056
<b>Total</b>	<b>39</b>	<b>96</b>	<b>1353</b>	<b>289</b>	<b>0</b>	<b>21</b>	<b>44</b>	<b>129</b>	<b>38</b>	<b>202</b>	<b>1511</b>	<b>18</b>	<b>16</b>	<b>263</b>	<b>18</b>	<b>65</b>	<b>4102</b>
05:00 PM	12	35	339	68	0	14	19	37	7	37	376	7	7	85	3	16	1062
05:15 PM	5	27	310	71	0	14	18	29	12	52	437	3	7	68	9	15	1077
05:30 PM	15	65	356	78	0	6	13	37	4	51	361	4	3	69	11	14	1087
05:45 PM	15	44	391	77	0	6	22	38	1	54	413	5	5	79	8	14	1172
<b>Total</b>	<b>47</b>	<b>171</b>	<b>1396</b>	<b>294</b>	<b>0</b>	<b>40</b>	<b>72</b>	<b>141</b>	<b>24</b>	<b>194</b>	<b>1587</b>	<b>19</b>	<b>22</b>	<b>301</b>	<b>31</b>	<b>59</b>	<b>4398</b>
<b>Grand Total</b>	<b>108</b>	<b>504</b>	<b>5768</b>	<b>910</b>	<b>0</b>	<b>76</b>	<b>147</b>	<b>389</b>	<b>89</b>	<b>582</b>	<b>5847</b>	<b>89</b>	<b>49</b>	<b>997</b>	<b>95</b>	<b>157</b>	<b>15807</b>
Apprch %	1.5	6.9	79.1	12.5	0	12.4	24	63.6	1.3	8.8	88.5	1.3	3.8	76.8	7.3	12.1	
Total %	0.7	3.2	36.5	5.8	0	0.5	0.9	2.5	0.6	3.7	37	0.6	0.3	6.3	0.6	1	
LIGHT VEHICLES	108	489	5677	899	0	74	142	382	89	576	5764	86	49	966	94	146	15541
% LIGHT VEHICLES	100	97	98.4	98.8	0	97.4	96.6	98.2	100	99	98.6	96.6	100	96.9	98.9	93	98.3
HEAVY VEHICLES	0	15	91	11	0	2	5	7	0	6	83	3	0	31	1	11	266
% HEAVY VEHICLES	0	3	1.6	1.2	0	2.6	3.4	1.8	0	1	1.4	3.4	0	3.1	1.1	7	1.7

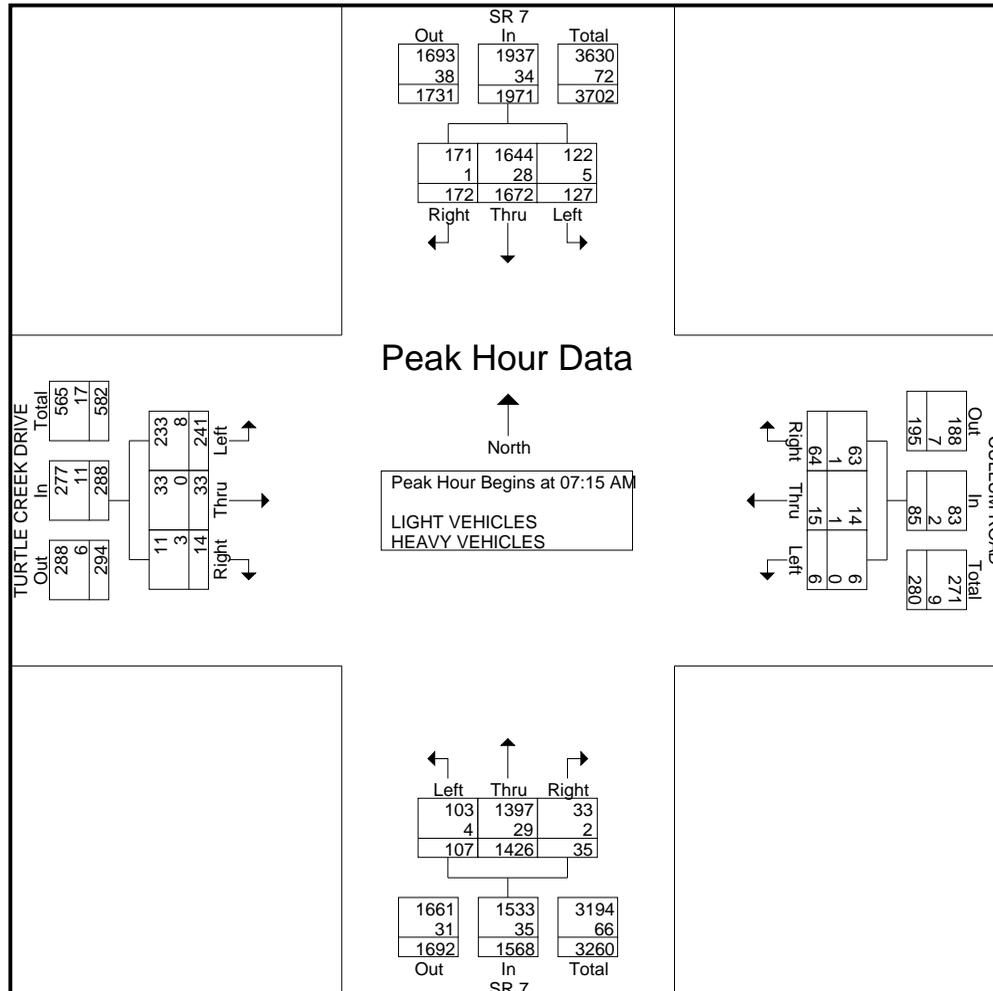
# Traffic Survey Specialists, Inc.

85 SE 4th Avenue, Unit 109, Delray Beach, Florida 33483  
Phone (561) 272-3255

CULLUM ROAD/TURTLE CREEK DRIVE & SR7  
COCONUT CREEK, FLORIDA  
VIDEO COUNT  
SIGNALIZED

File Name : CULLUM & SR7  
Site Code : 210121  
Start Date : 10/13/2021  
Page No : 2

Start Time	SR 7 From North					CULLUM ROAD From East					SR 7 From South				TURTLE CREEK DRIVE From West					Int. Total	
	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru	Right		App. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	2	21	390	34	447	0	3	4	18	25	4	24	407	7	442	2	42	5	4	53	967
07:30 AM	6	27	452	51	536	0	0	4	17	21	3	21	341	7	372	0	52	10	3	65	994
07:45 AM	2	35	500	48	585	0	0	3	16	19	2	21	306	12	341	0	49	10	2	61	1006
08:00 AM	2	32	330	39	403	0	3	4	13	20	6	26	372	9	413	2	94	8	5	109	945
Total Volume	12	115	1672	172	1971	0	6	15	64	85	15	92	1426	35	1568	4	237	33	14	288	3912
% App. Total	0.6	5.8	84.8	8.7		0	7.1	17.6	75.3		1	5.9	90.9	2.2		1.4	82.3	11.5	4.9		
PHF	.500	.821	.836	.843	.842	.000	.500	.938	.889	.850	.625	.885	.876	.729	.887	.500	.630	.825	.700	.661	.972
LIGHT VEHICLES	1644					1397					1397										
% LIGHT VEHICLES	100	95.7	98.3	99.4	98.3	0	100	93.3	98.4	97.6	100	95.7	98.0	94.3	97.8	100	96.6	100	78.6	96.2	97.9
HEAVY VEHICLES	0					0					0										
% HEAVY VEHICLES	0	4.3	1.7	0.6	1.7	0	0	6.7	1.6	2.4	0	4.3	2.0	5.7	2.2	0	3.4	0	21.4	3.8	2.1



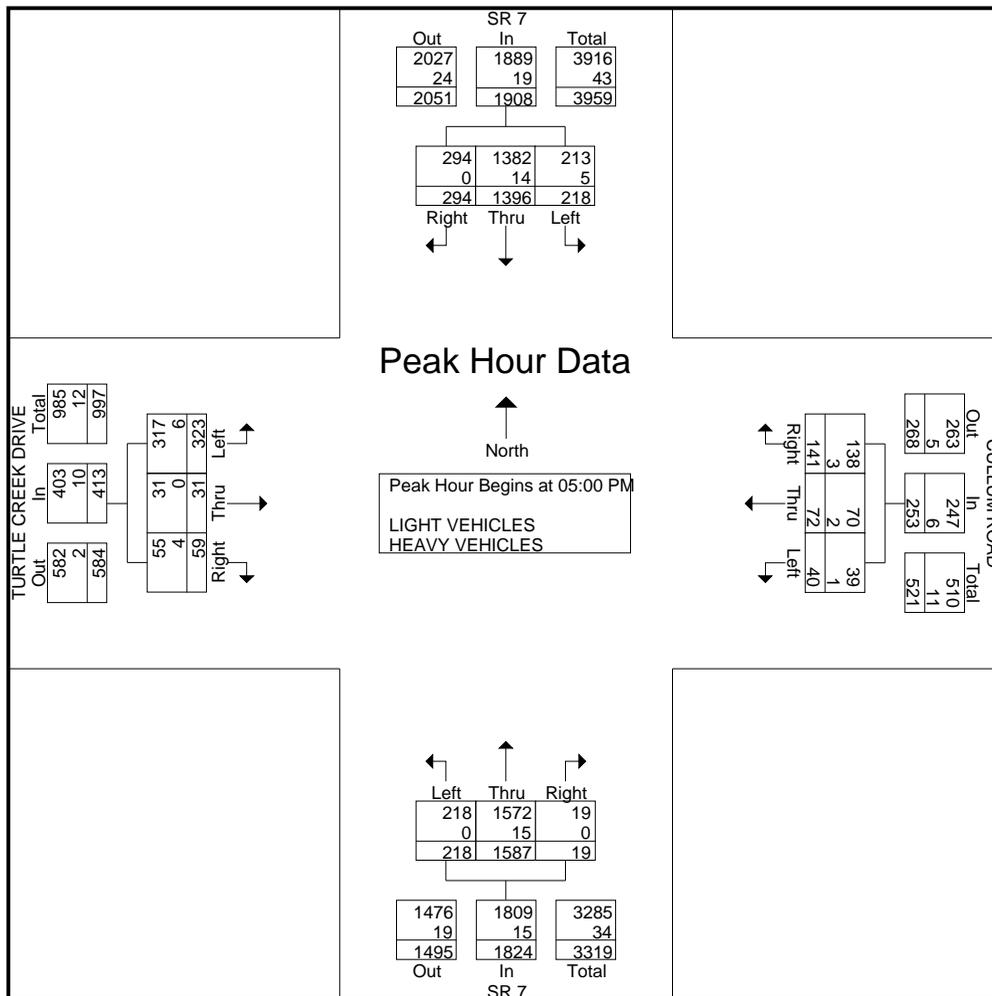
# Traffic Survey Specialists, Inc.

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CULLUM ROAD/TURTLE CREEK DRIVE & SR7  
COCONUT CREEK, FLORIDA  
VIDEO COUNT  
SIGNALIZED

File Name : CULLUM & SR7  
Site Code : 210121  
Start Date : 10/13/2021  
Page No : 3

Start Time	SR 7 From North					CULLUM ROAD From East					SR 7 From South					TURTLE CREEK DRIVE From West					Int. Total
	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	12	35	339	68	454	0	14	19	37	70	7	37	376	7	427	7	85	3	16	111	1062
05:15 PM	5	27	310	71	413	0	14	18	29	61	12	52	437	3	504	7	68	9	15	99	1077
05:30 PM	15	65	356	78	514	0	6	13	37	56	4	51	361	4	420	3	69	11	14	97	1087
05:45 PM	15	44	391	77	527	0	6	22	38	66	1	54	413	5	473	5	79	8	14	106	1172
Total Volume	47	171	1396	294	1908	0	40	72	141	253	24	194	1587	19	1824	22	301	31	59	413	4398
% App. Total	2.5	9	73.2	15.4		0	15.8	28.5	55.7		1.3	10.6	87	1		5.3	72.9	7.5	14.3		
PHF	.783	.658	.893	.942	.905	.000	.714	.818	.928	.904	.500	.898	.908	.679	.905	.786	.885	.705	.922	.930	.938
LIGHT VEHICLES	1382					1572															
% LIGHT VEHICLES	100	97.1	99.0	100	99.0	0	97.5	97.2	97.9	97.6	100	100	99.1	100	99.2	100	98.0	100	93.2	97.6	98.9
HEAVY VEHICLES																					
% HEAVY VEHICLES	0	2.9	1.0	0	1.0	0	2.5	2.8	2.1	2.4	0	0	0.9	0	0.8	0	2.0	0	6.8	2.4	1.1





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CULLUM ROAD/TURTLE CREEK DRIVE & SR7  
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SIGNALIZED

File Name : CULLUM & SR7  
Site Code : 210121  
Start Date : 10/13/2021  
Page No : 1

**Groups Printed- PEDESTRIANS & BIKES**

Start Time	SR 7 From North				CULLUM ROAD From East				SR 7 From South				TURTLE CREEK DRIVE From West				Int. Total
	Peds	Left	BIKES	Right	Peds	Left	BIKES	Right	Peds	Left	BIKES	Right	Peds	Left	BIKES	Right	
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
07:15 AM	1	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	4
07:30 AM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
07:45 AM	4	0	0	0	0	0	2	0	0	0	0	0	3	0	0	0	9
Total	6	0	0	0	0	0	2	0	0	0	0	0	7	0	0	0	15
08:00 AM	3	0	0	0	2	0	0	0	1	0	0	0	2	0	1	0	9
08:15 AM	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2
08:30 AM	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2
08:45 AM	2	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	4
Total	7	0	0	0	3	0	0	0	1	0	1	0	4	0	1	0	17
04:00 PM	0	0	1	0	1	0	0	0	0	0	0	0	0	0	1	0	3
04:15 PM	0	0	0	0	0	0	1	0	0	0	1	0	1	0	0	0	3
04:30 PM	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	4
04:45 PM	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Total	3	0	2	0	1	0	1	0	0	0	1	0	1	0	3	0	12
05:00 PM	1	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	3
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	2	0	1	0	3
05:30 PM	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2
Total	2	0	0	0	0	0	0	0	0	0	0	0	7	0	1	0	10
Grand Total	18	0	2	0	4	0	3	0	1	0	2	0	19	0	5	0	54
Apprch %	90	0	10	0	57.1	0	42.9	0	33.3	0	66.7	0	79.2	0	20.8	0	
Total %	33.3	0	3.7	0	7.4	0	5.6	0	1.9	0	3.7	0	35.2	0	9.3	0	

## Traffic Survey Specialists, Inc.

85 SE 4th Avenue, Unit 109, Delray Beach, Florida 33483  
Phone (561) 272-3255

CULLUM ROAD & LYONS ROAD  
COCONUT CREEK, FLORIDA  
VIDEO COUNT  
NOT SIGNALIZED

File Name : cullum & lyons  
Site Code : 210121  
Start Date : 10/13/2021  
Page No : 1

### Groups Printed- LIGHT VEHICLES - HEAVY VEHICLES

Start Time	LYONS ROAD From North				NW 42ND AVENUE From East				LYONS ROAD From South				CULLUM ROAD From West				Int. Total
	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	
07:00 AM	1	1	227	10	0	1	1	12	0	33	287	0	0	0	0	18	591
07:15 AM	0	2	316	33	0	0	2	17	0	82	375	1	0	1	0	51	880
07:30 AM	0	5	377	14	0	1	0	21	1	40	393	2	0	5	2	55	916
07:45 AM	1	5	383	1	0	3	0	13	0	12	383	7	0	1	0	22	831
<b>Total</b>	<b>2</b>	<b>13</b>	<b>1303</b>	<b>58</b>	<b>0</b>	<b>5</b>	<b>3</b>	<b>63</b>	<b>1</b>	<b>167</b>	<b>1438</b>	<b>10</b>	<b>0</b>	<b>7</b>	<b>2</b>	<b>146</b>	<b>3218</b>
08:00 AM	0	9	331	0	0	6	0	15	0	8	327	4	0	0	0	11	711
08:15 AM	0	7	358	3	1	4	0	15	1	10	428	3	0	1	0	9	840
08:30 AM	0	4	311	0	1	3	0	13	0	8	396	5	0	0	0	5	746
08:45 AM	2	9	314	2	2	0	0	14	1	11	342	6	0	0	0	6	709
<b>Total</b>	<b>2</b>	<b>29</b>	<b>1314</b>	<b>5</b>	<b>4</b>	<b>13</b>	<b>0</b>	<b>57</b>	<b>2</b>	<b>37</b>	<b>1493</b>	<b>18</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>31</b>	<b>3006</b>
04:00 PM	3	6	327	0	0	0	0	7	0	17	330	5	0	3	0	23	721
04:15 PM	1	12	374	1	0	2	0	6	0	13	319	6	0	7	0	20	761
04:30 PM	1	4	370	2	0	1	0	3	0	13	382	1	0	1	0	14	792
04:45 PM	3	11	360	3	0	0	0	9	0	15	409	5	0	0	0	16	831
<b>Total</b>	<b>8</b>	<b>33</b>	<b>1431</b>	<b>6</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>25</b>	<b>0</b>	<b>58</b>	<b>1440</b>	<b>17</b>	<b>0</b>	<b>11</b>	<b>0</b>	<b>73</b>	<b>3105</b>
05:00 PM	3	10	421	3	0	1	0	4	0	15	424	5	0	2	0	13	901
05:15 PM	1	11	412	3	0	4	0	15	0	19	478	7	0	4	0	17	971
05:30 PM	1	8	405	4	0	1	1	10	1	20	398	3	0	2	0	29	883
05:45 PM	2	14	410	10	0	3	0	9	0	20	417	3	0	5	0	22	915
<b>Total</b>	<b>7</b>	<b>43</b>	<b>1648</b>	<b>20</b>	<b>0</b>	<b>9</b>	<b>1</b>	<b>38</b>	<b>1</b>	<b>74</b>	<b>1717</b>	<b>18</b>	<b>0</b>	<b>13</b>	<b>0</b>	<b>81</b>	<b>3670</b>
<b>Grand Total</b>	<b>19</b>	<b>118</b>	<b>5696</b>	<b>89</b>	<b>4</b>	<b>30</b>	<b>4</b>	<b>183</b>	<b>4</b>	<b>336</b>	<b>6088</b>	<b>63</b>	<b>0</b>	<b>32</b>	<b>2</b>	<b>331</b>	<b>12999</b>
Apprch %	0.3	2	96.2	1.5	1.8	13.6	1.8	82.8	0.1	5.2	93.8	1	0	8.8	0.5	90.7	
Total %	0.1	0.9	43.8	0.7	0	0.2	0	1.4	0	2.6	46.8	0.5	0	0.2	0	2.5	
LIGHT VEHICLES	18	118	5579	86	4	30	4	183	4	336	5958	61	0	32	2	324	12739
% LIGHT VEHICLES	94.7	100	97.9	96.6	100	100	100	100	100	100	97.9	96.8	0	100	100	97.9	98
HEAVY VEHICLES	1	0	117	3	0	0	0	0	0	0	130	2	0	0	0	7	260
% HEAVY VEHICLES	5.3	0	2.1	3.4	0	0	0	0	0	0	2.1	3.2	0	0	0	2.1	2

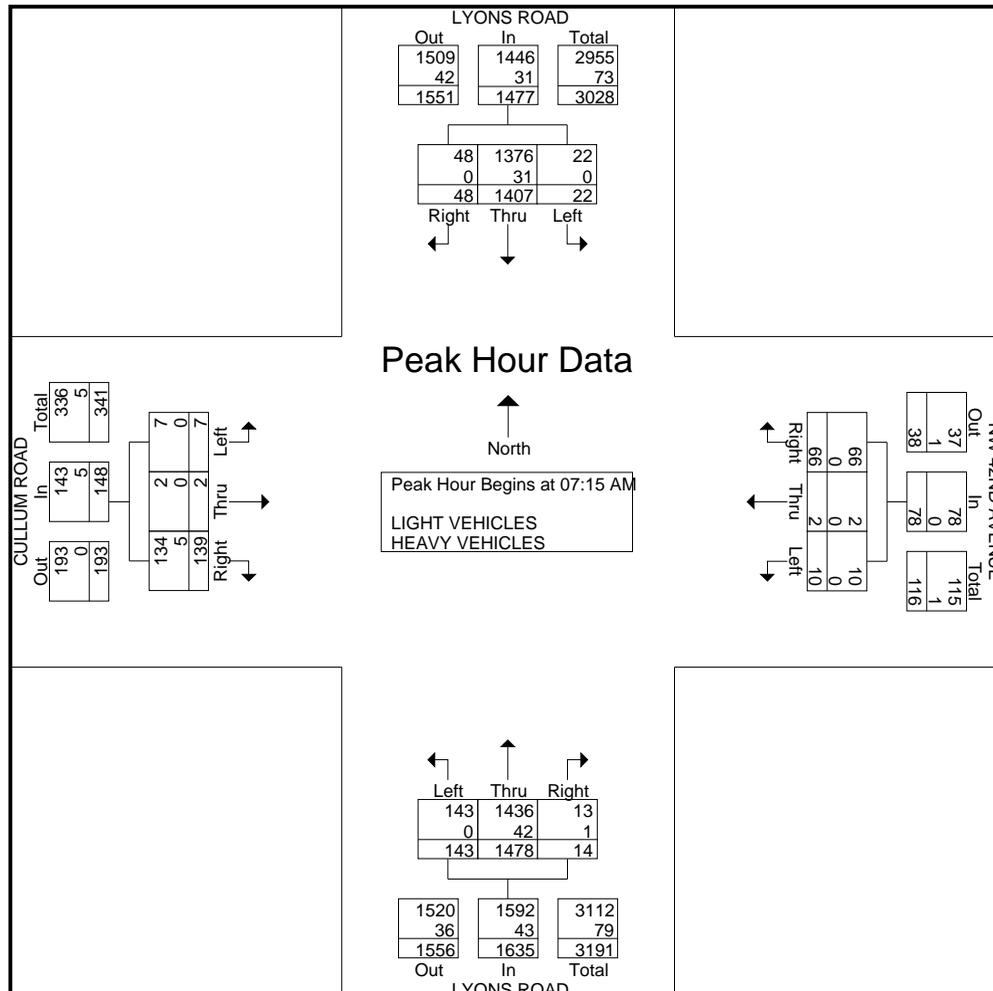
# Traffic Survey Specialists, Inc.

85 SE 4th Avenue, Unit 109, Delray Beach, Florida 33483  
Phone (561) 272-3255

CULLUM ROAD & LYONS ROAD  
COCONUT CREEK, FLORIDA  
VIDEO COUNT  
NOT SIGNALIZED

File Name : cullum & lyons  
Site Code : 210121  
Start Date : 10/13/2021  
Page No : 2

Start Time	LYONS ROAD From North					NW 42ND AVENUE From East					LYONS ROAD From South					CULLUM ROAD From West					Int. Total
	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	0	2	316	33	351	0	0	2	17	19	0	82	375	1	458	0	1	0	51	52	880
07:30 AM	0	5	377	14	396	0	1	0	21	22	1	40	393	2	436	0	5	2	55	62	916
07:45 AM	1	5	383	1	390	0	3	0	13	16	0	12	383	7	402	0	1	0	22	23	831
08:00 AM	0	9	331	0	340	0	6	0	15	21	0	8	327	4	339	0	0	0	11	11	711
Total Volume	1	21	1407	48	1477	0	10	2	66	78	1	142	1478	14	1635	0	7	2	139	148	3338
% App. Total	0.1	1.4	95.3	3.2		0	12.8	2.6	84.6		0.1	8.7	90.4	0.9		0	4.7	1.4	93.9		
PHF	.250	.583	.918	.364	.932	.000	.417	.250	.786	.886	.250	.433	.940	.500	.892	.000	.350	.250	.632	.597	.911
LIGHT VEHICLES	1376										1436										
% LIGHT VEHICLES	100	100	97.8	100	97.9	0	100	100	100	100	100	100	97.2	92.9	97.4	0	100	100	96.4	96.6	97.6
HEAVY VEHICLES	2.1					0					2.6					3.4					2.4
% HEAVY VEHICLES	0	0	2.2	0	2.1	0	0	0	0	0	0	0	2.8	7.1	2.6	0	0	0	3.6	3.4	2.4



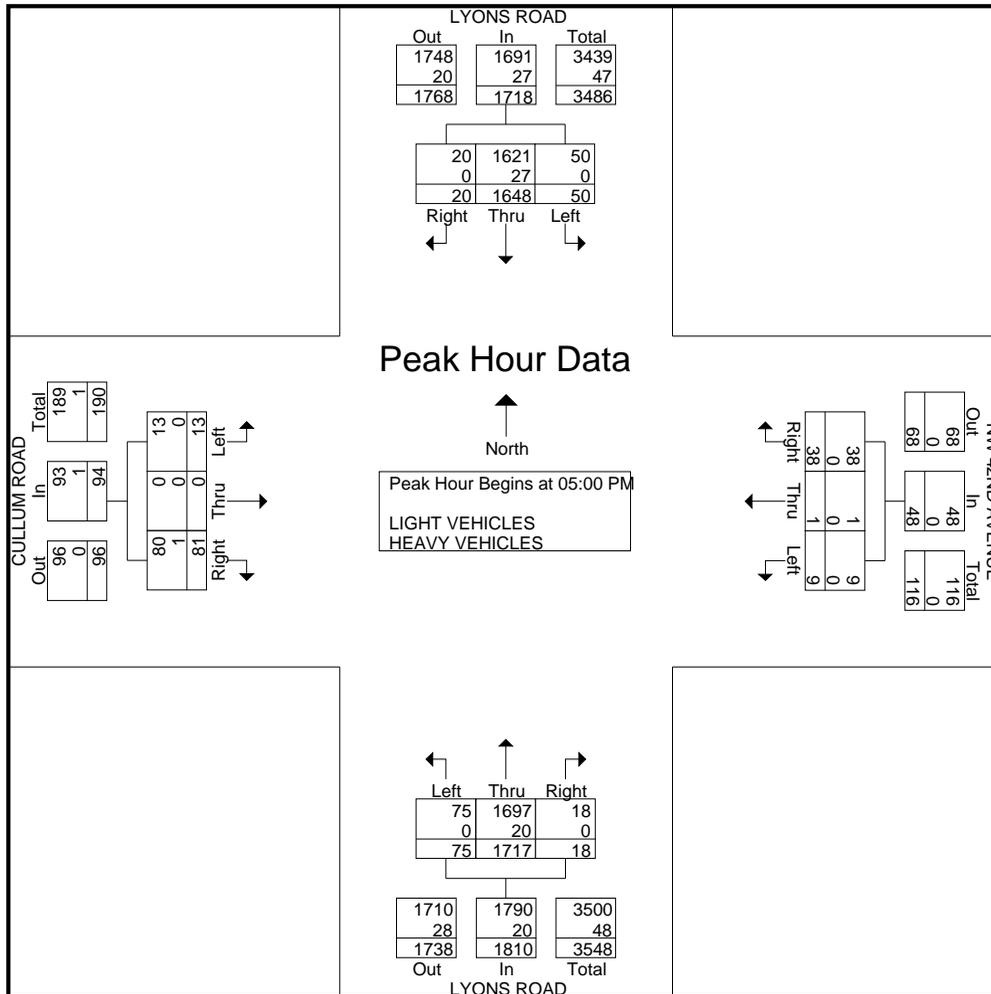
# Traffic Survey Specialists, Inc.

85 SE 4th Avenue, Unit 109, Delray Beach, Florida 33483  
Phone (561) 272-3255

**CULLUM ROAD & LYONS ROAD  
COCONUT CREEK, FLORIDA  
VIDEO COUNT  
NOT SIGNALIZED**

File Name : cullum & lyons  
Site Code : 210121  
Start Date : 10/13/2021  
Page No : 3

Start Time	LYONS ROAD From North					NW 42ND AVENUE From East					LYONS ROAD From South					CULLUM ROAD From West					Int. Total
	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	3	10	421	3	437	0	1	0	4	5	0	15	424	5	444	0	2	0	13	15	901
05:15 PM	1	11	412	3	427	0	4	0	15	19	0	19	478	7	504	0	4	0	17	21	971
05:30 PM	1	8	405	4	418	0	1	1	10	12	1	20	398	3	422	0	2	0	29	31	883
05:45 PM	2	14	410	10	436	0	3	0	9	12	0	20	417	3	440	0	5	0	22	27	915
Total Volume	7	43	1648	20	1718	0	9	1	38	48	1	74	1717	18	1810	0	13	0	81	94	3670
% App. Total	0.4	2.5	95.9	1.2		0	18.8	2.1	79.2		0.1	4.1	94.9	1		0	13.8	0	86.2		
PHF	.583	.768	.979	.500	.983	.000	.563	.250	.633	.632	.250	.925	.898	.643	.898	.000	.650	.000	.698	.758	.945
LIGHT VEHICLES	1621					1697					1697										
% LIGHT VEHICLES	100	100	98.4	100	98.4	0	100	100	100	100	100	100	98.8	100	98.9	0	100	0	98.8	98.9	98.7
HEAVY VEHICLES	0					0					0										
% HEAVY VEHICLES	0	0	1.6	0	1.6	0	0	0	0	0	0	0	1.2	0	1.1	0	0	0	1.2	1.1	1.3



**Traffic Survey Specialists, Inc.**

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CULLUM ROAD & LYONS ROAD  
COCONUT CREEK, FLORIDA  
VIDEO COUNT  
NOT SIGNALIZED

File Name : cullum & lyons  
Site Code : 210121  
Start Date : 10/13/2021  
Page No : 1

**Groups Printed- BICYCLES ON THE ROAD**

Start Time	LYONS ROAD From North				NW 42ND AVENUE From East				LYONS ROAD From South				CULLUM ROAD From West				Int. Total
	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	
07:00 AM	0	0	2	0	0	0	0	0	0	0	2	0	0	0	0	0	4
07:15 AM	0	0	0	0	0	0	0	2	0	0	1	0	0	0	0	0	3
Total	0	0	2	0	0	0	0	2	0	0	3	0	0	0	0	0	7
08:00 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
08:15 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	2
04:15 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
04:45 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
Total	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2
05:45 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
Total	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
Grand Total	0	0	3	0	0	0	0	2	0	0	7	0	0	0	0	0	12
Apprch %	0	0	100	0	0	0	0	100	0	0	100	0	0	0	0	0	
Total %	0	0	25	0	0	0	0	16.7	0	0	58.3	0	0	0	0	0	

## Traffic Survey Specialists, Inc.

85 SE 4th Avenue, Unit 109, Delray Beach, Florida 33483  
Phone (561) 272-3255

CULLUM ROAD & LYONS ROAD  
COCONUT CREEK, FLORIDA  
VIDEO COUNT  
NOT SIGNALIZED

File Name : cullum & lyons  
Site Code : 210121  
Start Date : 10/13/2021  
Page No : 1

### Groups Printed- PEDESTRIANS & BIKES

Start Time	LYONS ROAD From North				NW 42ND AVENUE From East				LYONS ROAD From South				CULLUM ROAD From West				Int. Total
	Peds	Left	BIKES	Right	Peds	Left	BIKES	Right	Peds	Left	BIKES	Right	Peds	Left	BIKES	Right	
07:00 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	2
07:15 AM	4	0	2	0	2	0	0	0	0	0	0	0	2	0	3	0	13
07:30 AM	0	0	0	0	1	0	1	0	0	0	0	0	7	0	1	0	10
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	2
Total	4	0	2	0	4	0	1	0	0	0	0	0	10	0	6	0	27
08:15 AM	0	0	0	0	3	0	0	0	0	0	0	0	0	0	1	0	4
08:30 AM	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	4
08:45 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
Total	2	0	0	0	6	0	0	0	0	0	0	0	0	0	1	0	9
04:00 PM	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	2
04:15 PM	2	0	0	0	0	0	1	0	0	0	0	0	2	0	2	0	7
04:30 PM	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	2
04:45 PM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	3	0	1	0	0	0	3	0	0	0	0	0	3	0	2	0	12
05:15 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
05:30 PM	0	0	0	0	1	0	0	0	0	0	0	0	1	0	1	0	3
05:45 PM	0	0	0	0	1	0	0	0	0	0	0	0	2	0	0	0	3
Total	0	0	0	0	3	0	0	0	0	0	0	0	3	0	1	0	7
Grand Total	9	0	3	0	13	0	4	0	0	0	0	0	16	0	10	0	55
Apprch %	75	0	25	0	76.5	0	23.5	0	0	0	0	0	61.5	0	38.5	0	
Total %	16.4	0	5.5	0	23.6	0	7.3	0	0	0	0	0	29.1	0	18.2	0	

## Traffic Survey Specialists, Inc.

85 SE 4th Avenue, Unit 109, Delray Beach, Florida 33483  
Phone (561) 272-3255

NW 40TH STREET & SR 7  
COCONUT CREEK, FLORIDA  
VIDEO COUNT  
NOT SIGNALIZED

File Name : 40th & sr7  
Site Code : 210121  
Start Date : 10/13/2021  
Page No : 1

### Groups Printed- LIGHT VEHICLES - HEAVY VEHICLES

Start Time	SR 7 From North				NW 40TH STREET From East				SR 7 From South				----- From West				Int. Total
	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	
07:00 AM	0	0	335	0	0	0	0	14	0	0	305	2	0	0	0	0	656
07:15 AM	0	0	408	0	0	0	0	5	0	0	431	8	0	0	0	0	852
07:30 AM	0	0	483	0	0	0	0	6	0	0	370	12	0	0	0	0	871
07:45 AM	0	0	521	0	0	0	0	17	0	0	325	10	0	0	0	0	873
<b>Total</b>	0	0	1747	0	0	0	0	42	0	0	1431	32	0	0	0	0	3252
08:00 AM	0	0	357	0	0	0	0	15	0	0	406	10	0	0	0	0	788
08:15 AM	0	0	352	0	0	0	0	10	0	0	337	7	0	0	0	0	706
08:30 AM	0	0	354	0	0	0	0	12	0	0	404	9	0	0	0	0	779
08:45 AM	0	0	392	0	0	0	0	7	0	0	355	12	0	0	0	0	766
<b>Total</b>	0	0	1455	0	0	0	0	44	0	0	1502	38	0	0	0	0	3039
04:00 PM	0	0	347	0	0	0	0	33	0	0	404	13	0	0	0	0	797
04:15 PM	0	0	380	0	0	0	0	36	0	0	379	14	0	0	0	0	809
04:30 PM	0	0	387	0	0	0	0	44	0	0	405	17	0	0	0	0	853
04:45 PM	0	0	377	0	0	0	0	25	0	0	440	8	0	0	0	0	850
<b>Total</b>	0	0	1491	0	0	0	0	138	0	0	1628	52	0	0	0	0	3309
05:00 PM	0	0	404	0	0	0	0	28	0	0	396	15	0	0	0	0	843
05:15 PM	0	0	350	0	0	0	0	47	0	0	473	16	0	0	0	0	886
05:30 PM	0	0	409	0	0	0	0	31	0	0	405	18	0	0	0	0	863
05:45 PM	0	0	423	0	0	0	0	39	0	0	416	19	0	0	0	0	897
<b>Total</b>	0	0	1586	0	0	0	0	145	0	0	1690	68	0	0	0	0	3489
<b>Grand Total</b>	0	0	6279	0	0	0	0	369	0	0	6251	190	0	0	0	0	13089
Apprch %	0	0	100	0	0	0	0	100	0	0	97.1	2.9	0	0	0	0	
Total %	0	0	48	0	0	0	0	2.8	0	0	47.8	1.5	0	0	0	0	
LIGHT VEHICLES	0	0	6168	0	0	0	0	366	0	0	6160	190	0	0	0	0	12884
% LIGHT VEHICLES	0	0	98.2	0	0	0	0	99.2	0	0	98.5	100	0	0	0	0	98.4
HEAVY VEHICLES	0	0	111	0	0	0	0	3	0	0	91	0	0	0	0	0	205
% HEAVY VEHICLES	0	0	1.8	0	0	0	0	0.8	0	0	1.5	0	0	0	0	0	1.6

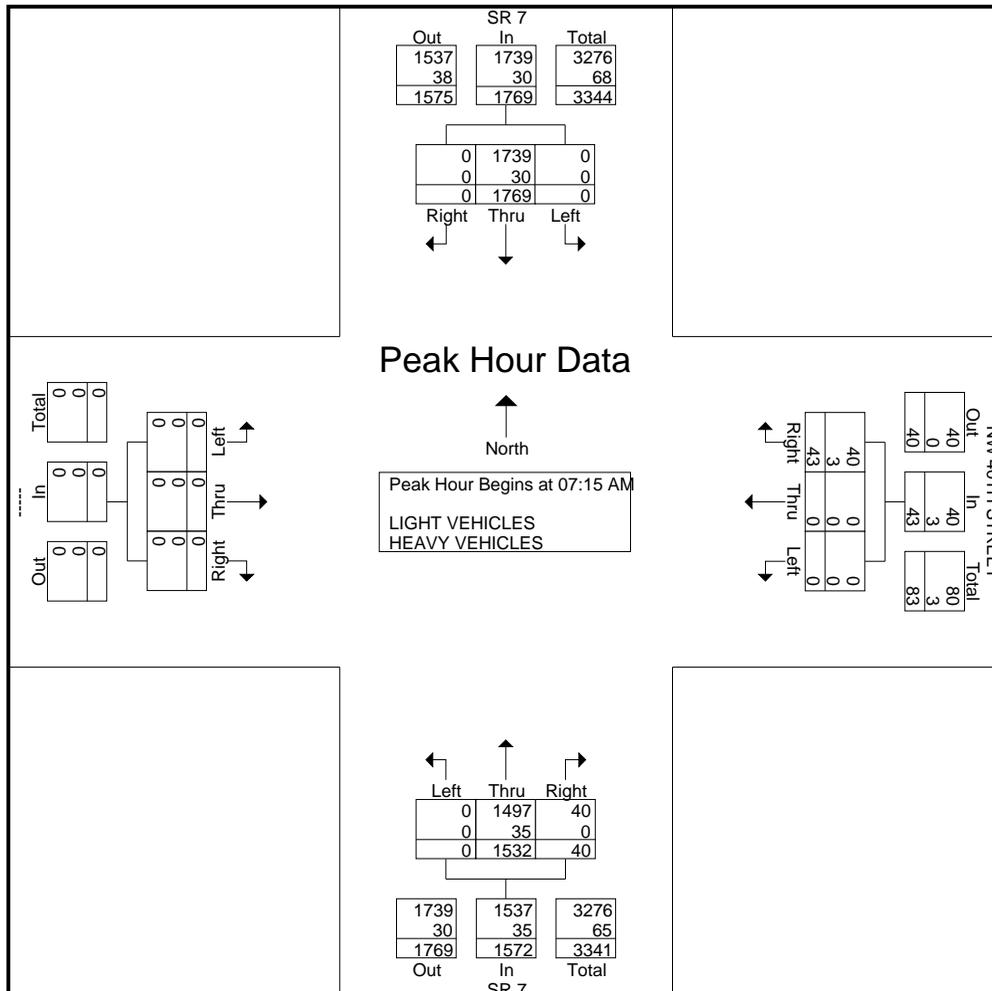
# Traffic Survey Specialists, Inc.

85 SE 4th Avenue, Unit 109, Delray Beach, Florida 33483  
Phone (561) 272-3255

NW 40TH STREET & SR 7  
COCONUT CREEK, FLORIDA  
VIDEO COUNT  
NOT SIGNALIZED

File Name : 40th & sr7  
Site Code : 210121  
Start Date : 10/13/2021  
Page No : 2

Start Time	SR 7 From North					NW 40TH STREET From East					SR 7 From South				----- From West				Int. Total		
	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru		Right	App. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	0	0	408	0	408	0	0	0	5	5	0	0	431	8	439	0	0	0	0	0	852
07:30 AM	0	0	483	0	483	0	0	0	6	6	0	0	370	12	382	0	0	0	0	0	871
07:45 AM	0	0	521	0	521	0	0	0	17	17	0	0	325	10	335	0	0	0	0	0	873
08:00 AM	0	0	357	0	357	0	0	0	15	15	0	0	406	10	416	0	0	0	0	0	788
Total Volume	0	0	1769	0	1769	0	0	0	43	43	0	0	1532	40	1572	0	0	0	0	0	3384
% App. Total	0	0	100	0	100	0	0	0	100	100	0	0	97.5	2.5	97.5	0	0	0	0	0	
PHF	.000	.000	.849	.000	.849	.000	.000	.000	.632	.632	.000	.000	.889	.833	.895	.000	.000	.000	.000	.000	.969
LIGHT VEHICLES	1739					1497					1497										
% LIGHT VEHICLES	0	0	98.3	0	98.3	0	0	0	93.0	93.0	0	0	97.7	100	97.8	0	0	0	0	0	98.0
HEAVY VEHICLES	1.7					2.2					2.2										
% HEAVY VEHICLES	0	0	1.7	0	1.7	0	0	0	7.0	7.0	0	0	2.3	0	2.2	0	0	0	0	0	2.0



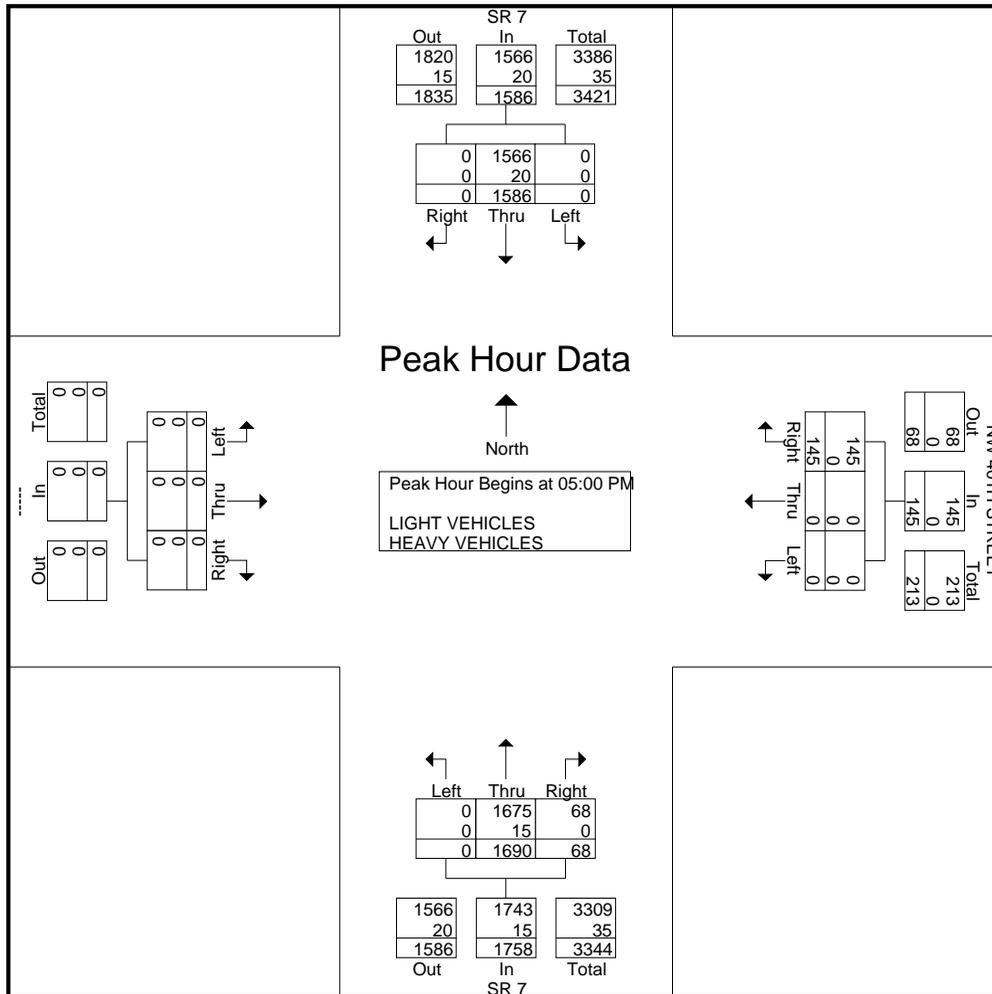
# Traffic Survey Specialists, Inc.

85 SE 4th Avenue, Unit 109, Delray Beach, Florida 33483  
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NW 40TH STREET & SR 7  
COCONUT CREEK, FLORIDA  
VIDEO COUNT  
NOT SIGNALIZED

File Name : 40th & sr7  
Site Code : 210121  
Start Date : 10/13/2021  
Page No : 3

Start Time	SR 7 From North					NW 40TH STREET From East					SR 7 From South					----- From West					Int. Total
	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	0	0	404	0	404	0	0	0	28	28	0	0	396	15	411	0	0	0	0	0	843
05:15 PM	0	0	350	0	350	0	0	0	47	47	0	0	473	16	489	0	0	0	0	0	886
05:30 PM	0	0	409	0	409	0	0	0	31	31	0	0	405	18	423	0	0	0	0	0	863
05:45 PM	0	0	423	0	423	0	0	0	39	39	0	0	416	19	435	0	0	0	0	0	897
Total Volume	0	0	1586	0	1586	0	0	0	145	145	0	0	1690	68	1758	0	0	0	0	0	3489
% App. Total	0	0	100	0		0	0	0	100		0	0	96.1	3.9		0	0	0	0		
PHF	.000	.000	.937	.000	.937	.000	.000	.000	.771	.771	.000	.000	.893	.895	.899	.000	.000	.000	.000	.000	.972
LIGHT VEHICLES	1566					1675															
% LIGHT VEHICLES	0	0	98.7	0	98.7	0	0	0	100	100	0	0	99.1	100	99.1	0	0	0	0	0	99.0
HEAVY VEHICLES																					
% HEAVY VEHICLES	0	0	1.3	0	1.3	0	0	0	0	0	0	0	0.9	0	0.9	0	0	0	0	0	1.0





**Traffic Survey Specialists, Inc.**

85 SE 4th Avenue, Unit 109, Delray Beach, Florida 33483  
Phone (561) 272-3255

NW 40TH STREET & SR 7  
COCONUT CREEK, FLORIDA  
VIDEO COUNT  
NOT SIGNALIZED

File Name : 40th & sr7  
Site Code : 210121  
Start Date : 10/13/2021  
Page No : 1

**Groups Printed- PEDESTRIANS & BIKES**

Start Time	SR 7 From North				NW 40TH STREET From East				SR 7 From South				----- From West				Int. Total	
	Peds	Left	BIKES	Right	Peds	Left	BIKES	Right	Peds	Left	BIKES	Right	Peds	Left	BIKES	Right		
07:00 AM	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	2
07:15 AM	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	2
07:45 AM	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2
Total	2	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	6
08:45 AM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Total	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
04:00 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
04:15 PM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
04:45 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	1	0	0	0	2	0	0	0	0	0	0	0	1	0	0	0	0	4
05:45 PM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Grand Total	4	0	0	0	4	0	3	0	0	0	0	0	1	0	0	0	0	12
Apprch %	100	0	0	0	57.1	0	42.9	0	0	0	0	0	100	0	0	0	0	
Total %	33.3	0	0	0	33.3	0	25	0	0	0	0	0	8.3	0	0	0	0	

## Traffic Survey Specialists, Inc.

85 SE 4th Avenue, Unit 109, Delray Beach, Florida 33483  
Phone (561) 272-3255

NW 40TH STREET & NW 54TH AVENUE  
COCONUT CREEK, FLORIDA  
VIDEO COUNT  
NOT SIGNALIZED

File Name : 40TH & 54TH  
Site Code : 210121  
Start Date : 10/13/2021  
Page No : 1

### Groups Printed- LIGHT VEHICLES - HEAVY VEHICLES

Start Time	NW 54TH AVENUE From North				NW 40TH STREET From East				NW 54TH AVENUE From South				NW 40TH STREET From West				Int. Total
	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	
07:00 AM	0	0	13	1	0	1	1	0	0	6	20	0	0	1	0	8	51
07:15 AM	0	1	10	1	0	2	0	0	0	12	14	0	0	2	0	16	58
07:30 AM	0	1	18	2	0	0	0	1	0	13	21	0	0	3	0	10	69
07:45 AM	0	0	25	3	0	0	1	0	0	16	21	0	0	4	0	12	82
<b>Total</b>	0	2	66	7	0	3	2	1	0	47	76	0	0	10	0	46	260
08:00 AM	0	4	29	0	0	3	0	0	0	5	19	1	0	3	0	12	76
08:15 AM	0	3	23	2	0	1	0	2	0	12	15	1	0	0	0	6	65
08:30 AM	2	4	20	0	0	1	0	0	0	16	19	0	0	1	0	7	70
08:45 AM	0	1	17	1	0	3	2	2	0	19	22	2	0	3	0	5	77
<b>Total</b>	2	12	89	3	0	8	2	4	0	52	75	4	0	7	0	30	288
04:00 PM	0	3	24	2	0	0	2	3	1	22	43	0	0	4	0	30	134
04:15 PM	0	1	21	3	0	0	1	3	0	15	24	0	0	4	0	20	92
04:30 PM	1	4	25	3	0	0	1	7	0	17	30	0	0	2	0	41	131
04:45 PM	1	0	15	1	0	1	1	3	0	29	39	0	0	4	0	28	122
<b>Total</b>	2	8	85	9	0	1	5	16	1	83	136	0	0	14	0	119	479
05:00 PM	2	0	28	2	0	2	2	5	1	16	33	0	0	7	0	22	120
05:15 PM	1	2	29	0	0	0	3	3	0	37	39	1	0	1	1	30	147
05:30 PM	1	1	27	1	0	3	7	4	0	26	34	2	0	0	0	26	132
05:45 PM	0	1	24	2	0	0	5	2	0	36	39	0	0	7	0	24	140
<b>Total</b>	4	4	108	5	0	5	17	14	1	115	145	3	0	15	1	102	539
<b>Grand Total</b>	8	26	348	24	0	17	26	35	2	297	432	7	0	46	1	297	1566
Apprch %	2	6.4	85.7	5.9	0	21.8	33.3	44.9	0.3	40.2	58.5	0.9	0	13.4	0.3	86.3	
Total %	0.5	1.7	22.2	1.5	0	1.1	1.7	2.2	0.1	19	27.6	0.4	0	2.9	0.1	19	
LIGHT VEHICLES	8	26	338	23	0	14	26	34	2	293	429	7	0	38	0	295	1533
% LIGHT VEHICLES	100	100	97.1	95.8	0	82.4	100	97.1	100	98.7	99.3	100	0	82.6	0	99.3	97.9
HEAVY VEHICLES	0	0	10	1	0	3	0	1	0	4	3	0	0	8	1	2	33
% HEAVY VEHICLES	0	0	2.9	4.2	0	17.6	0	2.9	0	1.3	0.7	0	0	17.4	100	0.7	2.1

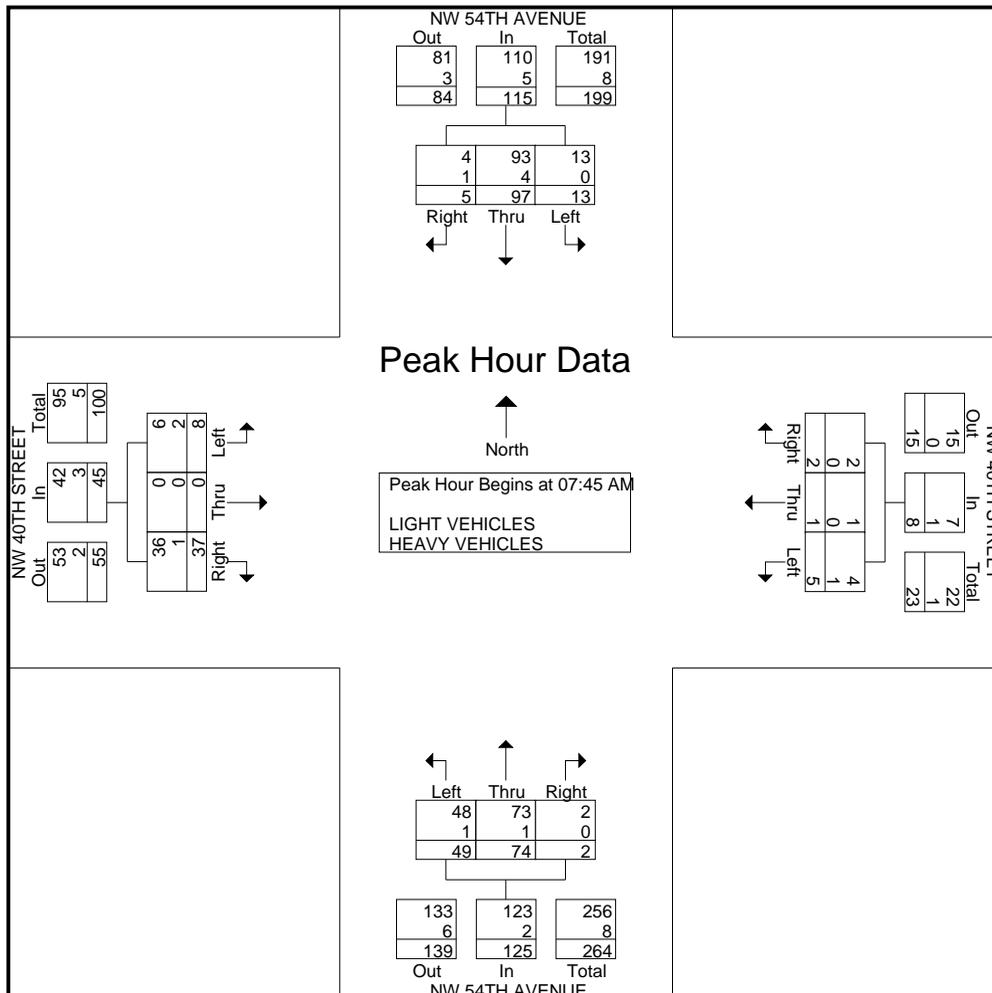
# Traffic Survey Specialists, Inc.

85 SE 4th Avenue, Unit 109, Delray Beach, Florida 33483  
Phone (561) 272-3255

NW 40TH STREET & NW 54TH AVENUE  
COCONUT CREEK, FLORIDA  
VIDEO COUNT  
NOT SIGNALIZED

File Name : 40TH & 54TH  
Site Code : 210121  
Start Date : 10/13/2021  
Page No : 2

Start Time	NW 54TH AVENUE From North					NW 40TH STREET From East					NW 54TH AVENUE From South					NW 40TH STREET From West					Int. Total
	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45 AM																					
07:45 AM	0	0	25	3	28	0	0	1	0	1	0	16	21	0	37	0	4	0	12	16	82
08:00 AM	0	4	29	0	33	0	3	0	0	3	0	5	19	1	25	0	3	0	12	15	76
08:15 AM	0	3	23	2	28	0	1	0	2	3	0	12	15	1	28	0	0	0	6	6	65
08:30 AM	2	4	20	0	26	0	1	0	0	1	0	16	19	0	35	0	1	0	7	8	70
Total Volume	2	11	97	5	115	0	5	1	2	8	0	49	74	2	125	0	8	0	37	45	293
% App. Total	1.7	9.6	84.3	4.3		0	62.5	12.5	25		0	39.2	59.2	1.6		0	17.8	0	82.2		
PHF	.250	.688	.836	.417	.871	.000	.417	.250	.250	.667	.000	.766	.881	.500	.845	.000	.500	.000	.771	.703	.893
LIGHT VEHICLES																					
% LIGHT VEHICLES	100	100	95.9	80.0	95.7	0	80.0	100	100	87.5	0	98.0	98.6	100	98.4	0	75.0	0	97.3	93.3	96.2
HEAVY VEHICLES																					
% HEAVY VEHICLES	0	0	4.1	20.0	4.3	0	20.0	0	0	12.5	0	2.0	1.4	0	1.6	0	25.0	0	2.7	6.7	3.8



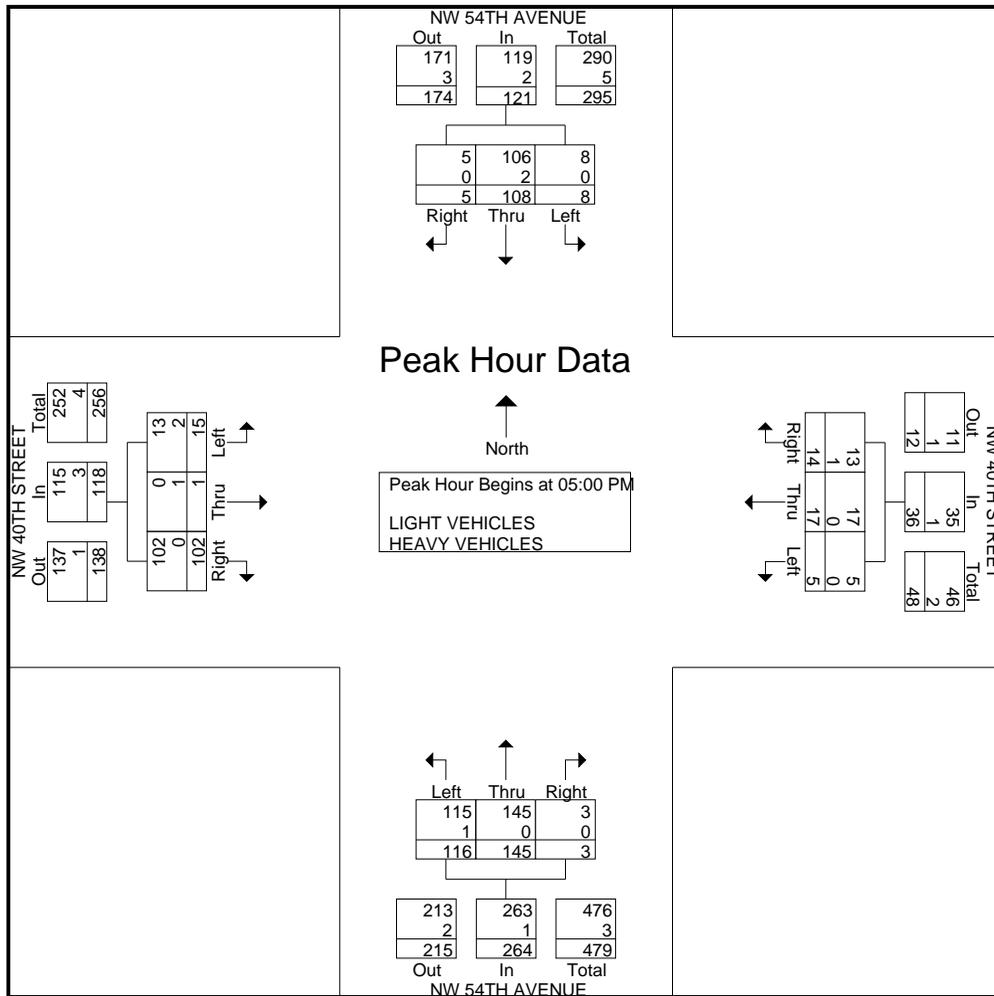
# Traffic Survey Specialists, Inc.

85 SE 4th Avenue, Unit 109, Delray Beach, Florida 33483  
Phone (561) 272-3255

NW 40TH STREET & NW 54TH AVENUE  
COCONUT CREEK, FLORIDA  
VIDEO COUNT  
NOT SIGNALIZED

File Name : 40TH & 54TH  
Site Code : 210121  
Start Date : 10/13/2021  
Page No : 3

Start Time	NW 54TH AVENUE From North					NW 40TH STREET From East					NW 54TH AVENUE From South					NW 40TH STREET From West					Int. Total
	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	2	0	28	2	32	0	2	2	5	9	1	16	33	0	50	0	7	0	22	29	120
05:15 PM	1	2	29	0	32	0	0	3	3	6	0	37	39	1	77	0	1	1	30	32	147
05:30 PM	1	1	27	1	30	0	3	7	4	14	0	26	34	2	62	0	0	0	26	26	132
05:45 PM	0	1	24	2	27	0	0	5	2	7	0	36	39	0	75	0	7	0	24	31	140
Total Volume	4	4	108	5	121	0	5	17	14	36	1	115	145	3	264	0	15	1	102	118	539
% App. Total	3.3	3.3	89.3	4.1		0	13.9	47.2	38.9		0.4	43.6	54.9	1.1		0	12.7	0.8	86.4		
PHF	.500	.500	.931	.625	.945	.000	.417	.607	.700	.643	.250	.777	.929	.375	.857	.000	.536	.250	.850	.922	.917
LIGHT VEHICLES																					
% LIGHT VEHICLES	100	100	98.1	100	98.3	0	100	100	92.9	97.2	100	99.1	100	100	99.6	0	86.7	0	100	97.5	98.7
HEAVY VEHICLES																					
% HEAVY VEHICLES	0	0	1.9	0	1.7	0	0	0	7.1	2.8	0	0.9	0	0	0.4	0	13.3	100	0	2.5	1.3



**Traffic Survey Specialists, Inc.**

85 SE 4th Avenue, Unit 109, Delray Beach, Florida 33483  
 Phone (561) 272-3255

NW 40TH STREET & NW 54TH AVENUE  
 COCONUT CREEK, FLORIDA  
 VIDEO COUNT  
 NOT SIGNALIZED

File Name : 40TH & 54TH  
 Site Code : 210121  
 Start Date : 10/13/2021  
 Page No : 1

**Groups Printed- BICYCLES ON THE ROAD**

Start Time	NW 54TH AVENUE From North				NW 40TH STREET From East				NW 54TH AVENUE From South				NW 40TH STREET From West				Int. Total	
	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right		
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
Total	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
08:45 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
05:00 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Grand Total	0	0	2	0	0	0	0	0	0	0	0	1	0	0	0	0	0	3
Apprch %	0	0	100	0	0	0	0	0	0	0	0	100	0	0	0	0	0	
Total %	0	0	66.7	0	0	0	0	0	0	0	0	33.3	0	0	0	0	0	

## Traffic Survey Specialists, Inc.

85 SE 4th Avenue, Unit 109, Delray Beach, Florida 33483  
Phone (561) 272-3255

NW 40TH STREET & NW 54TH AVENUE  
COCONUT CREEK, FLORIDA  
VIDEO COUNT  
NOT SIGNALIZED

File Name : 40TH & 54TH  
Site Code : 210121  
Start Date : 10/13/2021  
Page No : 1

### Groups Printed- PEDESTRIANS & BIKES

Start Time	NW 54TH AVENUE From North				NW 40TH STREET From East				NW 54TH AVENUE From South				NW 40TH STREET From West				Int. Total
	Peds	Left	BIKES	Right	Peds	Left	BIKES	Right	Peds	Left	BIKES	Right	Peds	Left	BIKES	Right	
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2
Total	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2
08:30 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
04:45 PM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
Total	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
05:00 PM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
05:15 PM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
05:30 PM	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2
05:45 PM	2	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	3
Total	2	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	7
Grand Total	2	0	0	0	1	0	0	0	6	0	0	0	2	0	0	0	11
Apprch %	100	0	0	0	100	0	0	0	100	0	0	0	100	0	0	0	
Total %	18.2	0	0	0	9.1	0	0	0	54.5	0	0	0	18.2	0	0	0	

## Traffic Survey Specialists, Inc.

85 SE 4th Avenue, Unit 109, Delray Beach, Florida 33483  
Phone (561) 272-3255

RIVIERA PALMS NEIGHBORHOOD & LYONS ROAD  
COCONUT CREEK, FLORIDA  
VIDEO COUNT  
NOT SIGNALIZED

File Name : RIVIERA & LYONS  
Site Code : 210121  
Start Date : 10/13/2021  
Page No : 1

### Groups Printed- LIGHT VEHICLES - HEAVY VEHICLES

Start Time	LYONS ROAD From North				RIVIERA PALMS NEIGHBORHOOD From East				LYONS ROAD From South				----- From West				Int. Total
	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	
07:00 AM	0	1	241	0	0	4	0	13	0	0	300	1	0	0	0	0	560
07:15 AM	0	5	363	0	0	9	0	5	0	0	452	2	0	0	0	0	836
07:30 AM	0	10	425	0	0	11	0	20	0	0	387	3	0	0	0	0	856
07:45 AM	0	8	414	0	0	18	0	16	0	0	387	2	0	0	0	0	845
Total	0	24	1443	0	0	42	0	54	0	0	1526	8	0	0	0	0	3097
08:00 AM	1	13	370	0	0	7	0	13	0	0	338	7	0	0	0	0	749
08:15 AM	0	6	361	0	0	12	0	17	0	0	395	9	0	0	0	0	800
08:30 AM	0	3	302	0	1	20	0	12	0	0	409	4	0	0	0	0	751
08:45 AM	0	3	350	0	0	7	0	14	0	0	338	4	0	0	0	0	716
Total	1	25	1383	0	1	46	0	56	0	0	1480	24	0	0	0	0	3016
04:00 PM	0	5	352	0	0	3	0	3	0	0	352	10	0	0	0	0	725
04:15 PM	0	7	413	0	0	2	0	7	0	0	343	11	0	0	0	0	783
04:30 PM	0	8	370	0	0	5	0	12	0	0	376	7	0	0	0	0	778
04:45 PM	0	9	364	0	0	4	0	13	0	0	427	5	0	0	0	0	822
Total	0	29	1499	0	0	14	0	35	0	0	1498	33	0	0	0	0	3108
05:00 PM	1	5	442	0	0	10	0	5	0	0	443	9	0	0	0	0	915
05:15 PM	0	10	423	0	0	6	0	2	0	0	498	10	0	0	0	0	949
05:30 PM	0	11	433	0	0	4	0	11	0	0	417	16	0	0	0	0	892
05:45 PM	0	13	444	0	1	5	0	9	0	0	425	15	0	0	0	0	912
Total	1	39	1742	0	1	25	0	27	0	0	1783	50	0	0	0	0	3668
Grand Total	2	117	6067	0	2	127	0	172	0	0	6287	115	0	0	0	0	12889
Apprch %	0	1.9	98.1	0	0.7	42.2	0	57.1	0	0	98.2	1.8	0	0	0	0	
Total %	0	0.9	47.1	0	0	1	0	1.3	0	0	48.8	0.9	0	0	0	0	
LIGHT VEHICLES	2	113	5947	0	2	127	0	169	0	0	6157	115	0	0	0	0	12632
% LIGHT VEHICLES	100	96.6	98	0	100	100	0	98.3	0	0	97.9	100	0	0	0	0	98
HEAVY VEHICLES	0	4	120	0	0	0	0	3	0	0	130	0	0	0	0	0	257
% HEAVY VEHICLES	0	3.4	2	0	0	0	0	1.7	0	0	2.1	0	0	0	0	0	2

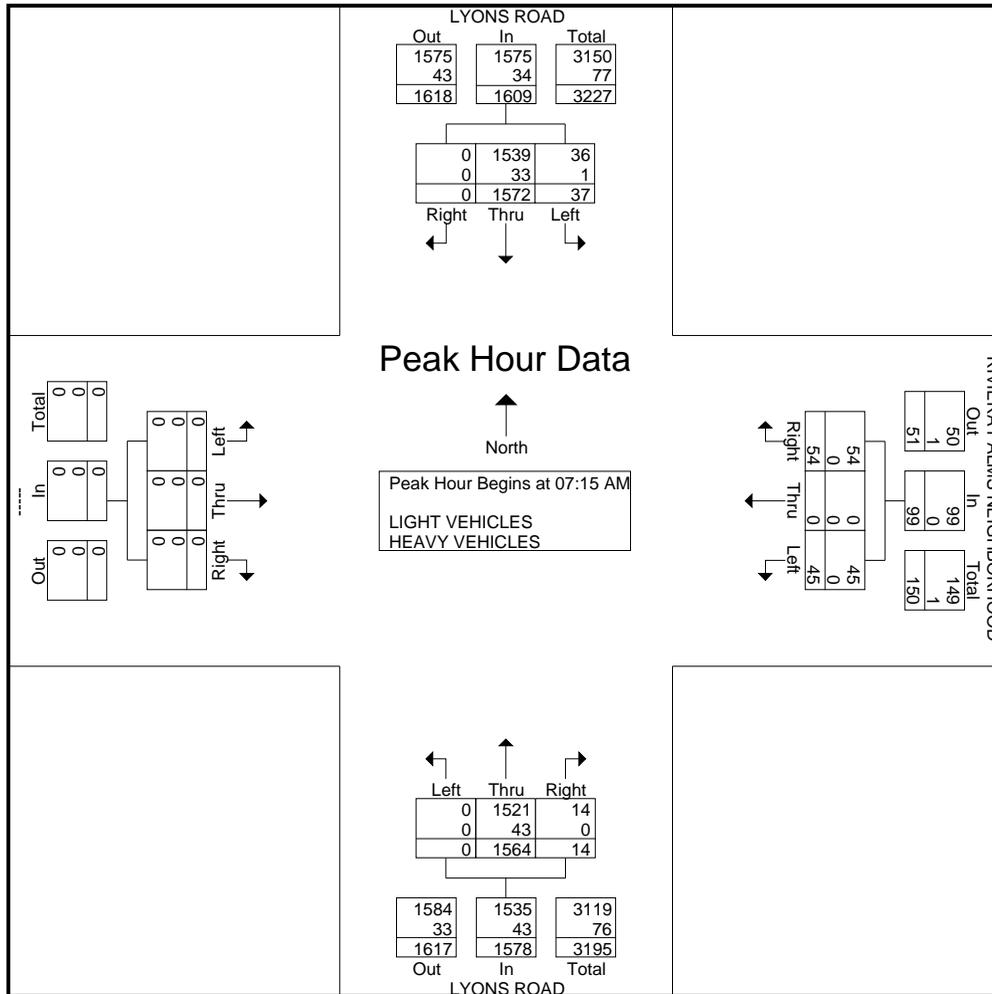
# Traffic Survey Specialists, Inc.

85 SE 4th Avenue, Unit 109, Delray Beach, Florida 33483  
Phone (561) 272-3255

RIVIERA PALMS NEIGHBORHOOD & LYONS ROAD  
COCONUT CREEK, FLORIDA  
VIDEO COUNT  
NOT SIGNALIZED

File Name : RIVIERA & LYONS  
Site Code : 210121  
Start Date : 10/13/2021  
Page No : 2

Start Time	LYONS ROAD From North					RIVIERA PALMS NEIGHBORHOOD From East					LYONS ROAD From South					----- From West					Int. Total
	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	0	5	363	0	368	0	9	0	5	14	0	0	452	2	454	0	0	0	0	0	836
07:30 AM	0	10	425	0	435	0	11	0	20	31	0	0	387	3	390	0	0	0	0	0	856
07:45 AM	0	8	414	0	422	0	18	0	16	34	0	0	387	2	389	0	0	0	0	0	845
08:00 AM	1	13	370	0	384	0	7	0	13	20	0	0	338	7	345	0	0	0	0	0	749
Total Volume	1	36	1572	0	1609	0	45	0	54	99	0	0	1564	14	1578	0	0	0	0	0	3286
% App. Total	0.1	2.2	97.7	0		0	45.5	0	54.5		0	0	99.1	0.9		0	0	0	0		
PHF	.250	.692	.925	.000	.925	.000	.625	.000	.675	.728	.000	.000	.865	.500	.869	.000	.000	.000	.000	.000	.960
LIGHT VEHICLES	1539					1521															
% LIGHT VEHICLES	100	97.2	97.9	0	97.9	0	100	0	100	100	0	0	97.3	100	97.3	0	0	0	0	0	97.7
HEAVY VEHICLES																					
% HEAVY VEHICLES	0	2.8	2.1	0	2.1	0	0	0	0	0	0	0	2.7	0	2.7	0	0	0	0	0	2.3



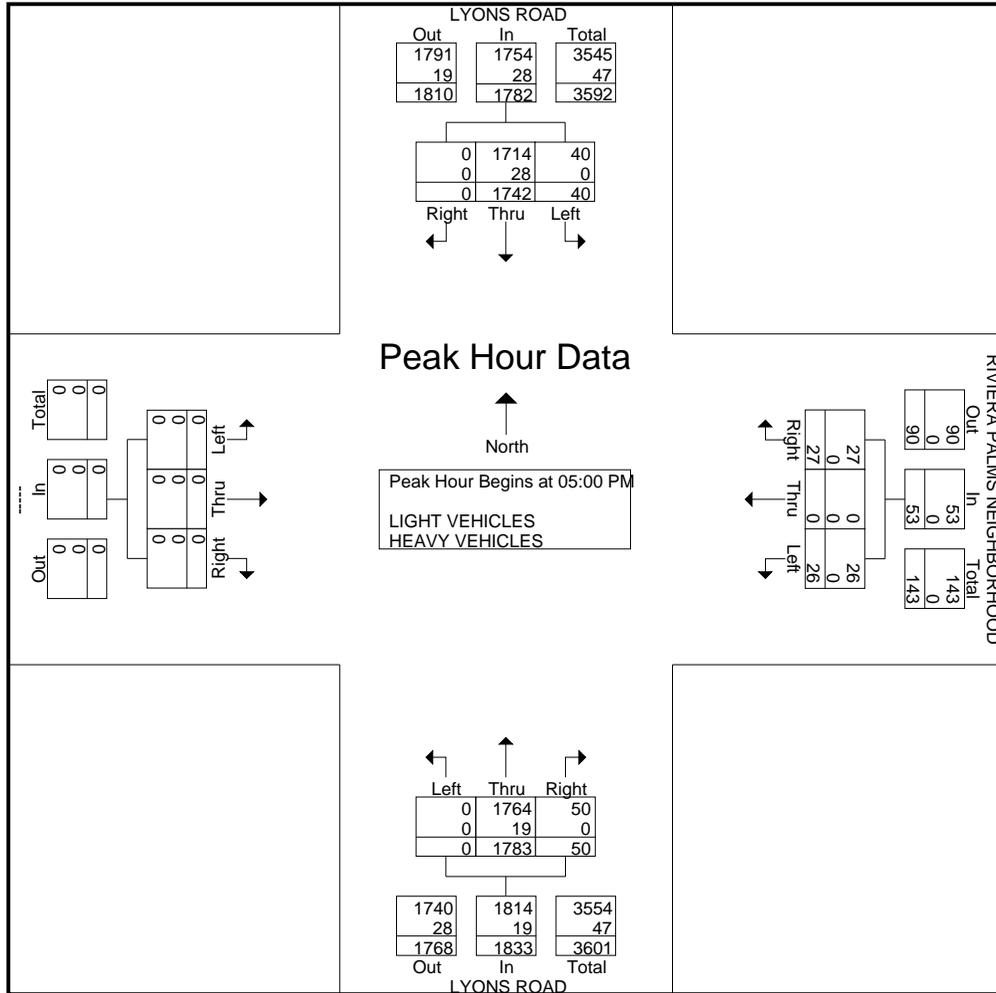
# Traffic Survey Specialists, Inc.

85 SE 4th Avenue, Unit 109, Delray Beach, Florida 33483  
Phone (561) 272-3255

RIVIERA PALMS NEIGHBORHOOD & LYONS ROAD  
COCONUT CREEK, FLORIDA  
VIDEO COUNT  
NOT SIGNALIZED

File Name : RIVIERA & LYONS  
Site Code : 210121  
Start Date : 10/13/2021  
Page No : 3

Start Time	LYONS ROAD From North					RIVIERA PALMS NEIGHBORHOOD From East					LYONS ROAD From South					----- From West					Int. Total
	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	1	5	442	0	448	0	10	0	5	15	0	0	443	9	452	0	0	0	0	0	915
05:15 PM	0	10	423	0	433	0	6	0	2	8	0	0	498	10	508	0	0	0	0	0	949
05:30 PM	0	11	433	0	444	0	4	0	11	15	0	0	417	16	433	0	0	0	0	0	892
05:45 PM	0	13	444	0	457	1	5	0	9	15	0	0	425	15	440	0	0	0	0	0	912
Total Volume	1	39	1742	0	1782	1	25	0	27	53	0	0	1783	50	1833	0	0	0	0	0	3668
% App. Total	0.1	2.2	97.8	0		1.9	47.2	0	50.9		0	0	97.3	2.7		0	0	0	0		
PHF	.250	.750	.981	.000	.975	.250	.625	.000	.614	.883	.000	.000	.895	.781	.902	.000	.000	.000	.000	.000	.966
LIGHT VEHICLES	1714					1764															
% LIGHT VEHICLES	100	100	98.4	0	98.4	100	100	0	100	100	0	0	98.9	100	99.0	0	0	0	0	0	98.7
HEAVY VEHICLES	1.6					0					1.1										
% HEAVY VEHICLES	0	0	1.6	0	1.6	0	0	0	0	0	0	0	1.1	0	1.0	0	0	0	0	0	1.3



**Traffic Survey Specialists, Inc.**

85 SE 4th Avenue, Unit 109, Delray Beach, Florida 33483  
Phone (561) 272-3255

RIVIERA PALMS NEIGHBORHOOD & LYONS ROAD  
COCONUT CREEK, FLORIDA  
VIDEO COUNT  
NOT SIGNALIZED

File Name : RIVIERA & LYONS  
Site Code : 210121  
Start Date : 10/13/2021  
Page No : 1

**Groups Printed- BICYCLES ON THE ROAD**

Start Time	LYONS ROAD From North				RIVIERA PALMS NEIGHBORHOOD From East				LYONS ROAD From South				----- From West				Int. Total	
	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right		
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
Total	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	3
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
08:15 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
08:45 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	0	2	0	0	0	0	0	0	0	0	1	0	0	0	0	0	3
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
Total	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2
05:30 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
Total	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2
Grand Total	0	0	3	0	0	0	0	0	0	0	0	7	0	0	0	0	0	10
Apprch %	0	0	100	0	0	0	0	0	0	0	0	100	0	0	0	0	0	
Total %	0	0	30	0	0	0	0	0	0	0	0	70	0	0	0	0	0	

## Traffic Survey Specialists, Inc.

85 SE 4th Avenue, Unit 109, Delray Beach, Florida 33483  
Phone (561) 272-3255

RIVIERA PALMS NEIGHBORHOOD & LYONS ROAD  
COCONUT CREEK, FLORIDA  
VIDEO COUNT  
NOT SIGNALIZED

File Name : RIVIERA & LYONS  
Site Code : 210121  
Start Date : 10/13/2021  
Page No : 1

### Groups Printed- PEDESTRIANS & BIKES

Start Time	LYONS ROAD From North				RIVIERA PALMS NEIGHBORHOOD From East				LYONS ROAD From South				----- From West				Int. Total
	Peds	Left	BIKES	Right	Peds	Left	BIKES	Right	Peds	Left	BIKES	Right	Peds	Left	BIKES	Right	
07:00 AM	0	0	0	0	1	0	0	0	0	0	0	0	2	0	1	0	4
07:15 AM	0	0	0	0	3	0	0	0	0	0	0	0	1	0	2	0	6
07:30 AM	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	2
07:45 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	0	0	0	6	0	0	0	0	0	0	0	4	0	3	0	13
08:00 AM	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2
08:15 AM	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2
08:30 AM	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2
08:45 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
Total	1	0	0	0	5	0	0	0	0	0	0	0	1	0	0	0	7
04:00 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
04:15 PM	0	0	0	0	0	0	1	0	0	0	0	0	4	0	2	0	7
04:30 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
Total	0	0	0	0	0	0	3	0	0	0	0	0	5	0	2	0	10
05:30 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
Grand Total	1	0	0	0	12	0	3	0	0	0	0	0	10	0	5	0	31
Apprch %	100	0	0	0	80	0	20	0	0	0	0	0	66.7	0	33.3	0	
Total %	3.2	0	0	0	38.7	0	9.7	0	0	0	0	0	32.3	0	16.1	0	

## Traffic Survey Specialists, Inc.

85 SE 4th Avenue, Unit 109, Delray Beach, Florida 33483  
Phone (561) 272-3255

SAMPLE ROAD & RAMPS TO/FROM NB SR7  
COCONUT CREEK, FLORIDA  
VIDEO COUNT  
SIGNALIZED

File Name : SAMPLE & 7 EAST  
Site Code : 210121  
Start Date : 10/13/2021  
Page No : 1

### Groups Printed- LIGHT VEHICLES - HEAVY VEHICLES

Start Time	RAMP TO NB SR7 From North				SAMPLE ROAD From East				RAMP FROM NB SR 7 From South				SAMPLE ROAD From West				Int. Total
	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	
07:00 AM	0	0	0	0	0	0	219	53	0	24	0	48	0	15	355	0	714
07:15 AM	0	0	0	0	0	0	315	57	0	49	0	44	0	19	483	0	967
07:30 AM	0	0	0	0	3	0	290	50	0	57	0	43	0	25	428	0	896
07:45 AM	0	0	0	0	0	0	283	51	0	40	0	32	0	19	559	0	984
Total	0	0	0	0	3	0	1107	211	0	170	0	167	0	78	1825	0	3561
08:00 AM	0	0	0	0	3	0	271	59	0	18	0	39	0	38	514	0	942
08:15 AM	0	0	0	0	3	0	240	46	0	34	0	43	0	34	397	0	797
08:30 AM	0	0	0	0	3	0	218	41	0	25	0	36	0	37	436	0	796
08:45 AM	0	0	0	0	3	0	275	52	0	33	0	32	0	22	341	0	758
Total	0	0	0	0	12	0	1004	198	0	110	0	150	0	131	1688	0	3293
04:00 PM	0	0	0	0	2	0	367	79	0	20	0	30	0	28	335	0	861
04:15 PM	0	0	0	0	7	0	374	51	0	34	0	40	0	47	325	0	878
04:30 PM	0	0	0	0	3	0	406	69	0	35	0	37	0	37	335	0	922
04:45 PM	0	0	0	0	6	0	412	78	0	29	0	38	0	37	346	0	946
Total	0	0	0	0	18	0	1559	277	0	118	0	145	0	149	1341	0	3607
05:00 PM	0	0	0	0	6	0	396	64	0	44	0	27	0	33	350	0	920
05:15 PM	0	0	0	0	1	0	486	75	0	40	0	37	0	53	416	0	1108
05:30 PM	0	0	0	0	2	0	418	68	0	30	0	29	0	45	404	0	996
05:45 PM	0	0	0	0	2	0	445	68	0	38	0	20	0	55	386	0	1014
Total	0	0	0	0	11	0	1745	275	0	152	0	113	0	186	1556	0	4038
Grand Total	0	0	0	0	44	0	5415	961	0	550	0	575	0	544	6410	0	14499
Apprch %	0	0	0	0	0.7	0	84.3	15	0	48.9	0	51.1	0	7.8	92.2	0	
Total %	0	0	0	0	0.3	0	37.3	6.6	0	3.8	0	4	0	3.8	44.2	0	
LIGHT VEHICLES	0	0	0	0	44	0	5316	935	0	539	0	553	0	535	6292	0	14214
% LIGHT VEHICLES	0	0	0	0	100	0	98.2	97.3	0	98	0	96.2	0	98.3	98.2	0	98
HEAVY VEHICLES	0	0	0	0	0	0	99	26	0	11	0	22	0	9	118	0	285
% HEAVY VEHICLES	0	0	0	0	0	0	1.8	2.7	0	2	0	3.8	0	1.7	1.8	0	2

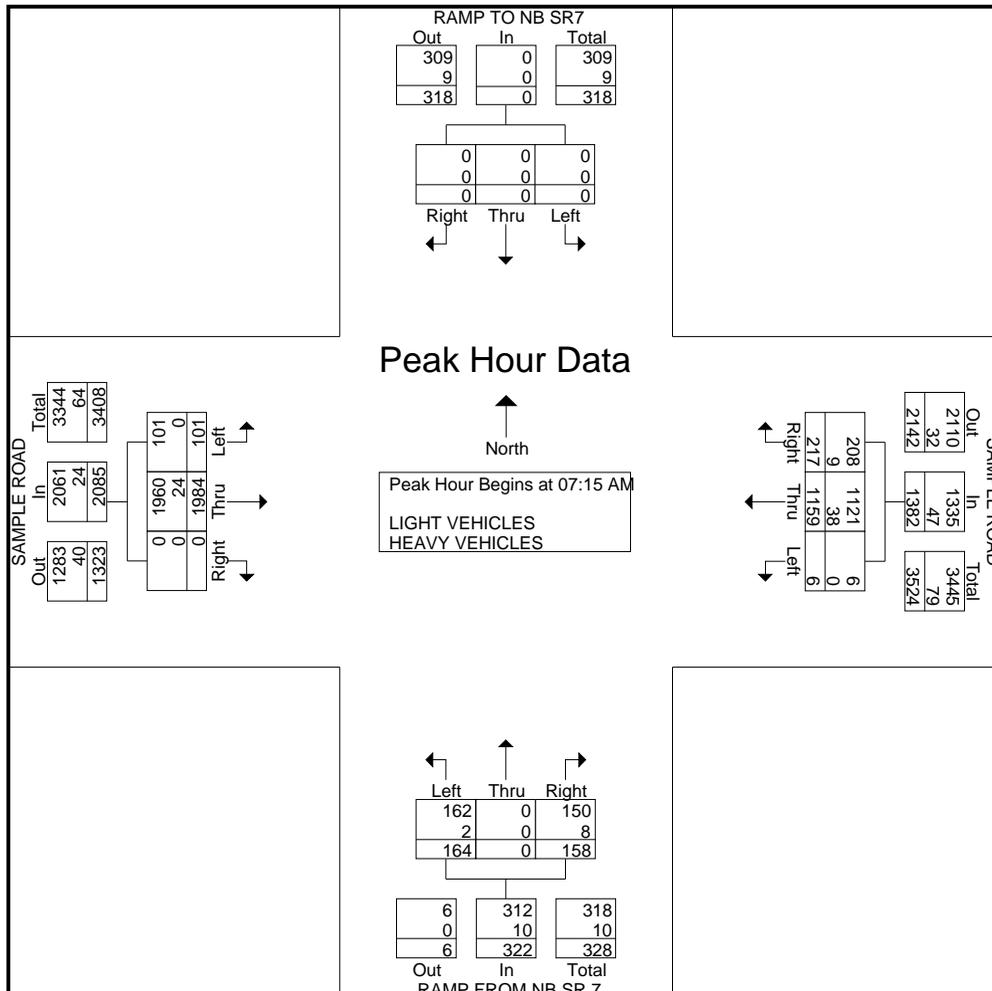
# Traffic Survey Specialists, Inc.

85 SE 4th Avenue, Unit 109, Delray Beach, Florida 33483  
Phone (561) 272-3255

SAMPLE ROAD & RAMPS TO/FROM NB SR7  
COCONUT CREEK, FLORIDA  
VIDEO COUNT  
SIGNALIZED

File Name : SAMPLE & 7 EAST  
Site Code : 210121  
Start Date : 10/13/2021  
Page No : 2

Start Time	RAMP TO NB SR7 From North					SAMPLE ROAD From East					RAMP FROM NB SR 7 From South					SAMPLE ROAD From West					Int. Total
	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	0	0	0	0	0	0	0	315	57	372	0	49	0	44	93	0	19	483	0	502	967
07:30 AM	0	0	0	0	0	3	0	290	50	343	0	57	0	43	100	0	25	428	0	453	896
07:45 AM	0	0	0	0	0	0	0	283	51	334	0	40	0	32	72	0	19	559	0	578	984
08:00 AM	0	0	0	0	0	3	0	271	59	333	0	18	0	39	57	0	38	514	0	552	942
Total Volume	0	0	0	0	0	6	0	1159	217	1382	0	164	0	158	322	0	101	1984	0	2085	3789
% App. Total	0	0	0	0	0	0.4	0	83.9	15.7		0	50.9	0	49.1		0	4.8	95.2	0		
PHF	.000	.000	.000	.000	.000	.500	.000	.920	.919	.929	.000	.719	.000	.898	.805	.000	.664	.887	.000	.902	.963
LIGHT VEHICLES											1121										1960
% LIGHT VEHICLES	0	0	0	0	0	100	0	96.7	95.9	96.6	0	98.8	0	94.9	96.9	0	100	98.8	0	98.8	97.9
HEAVY VEHICLES											3.4										1.2
% HEAVY VEHICLES	0	0	0	0	0	0	0	3.3	4.1	3.4	0	1.2	0	5.1	3.1	0	0	1.2	0	1.2	2.1



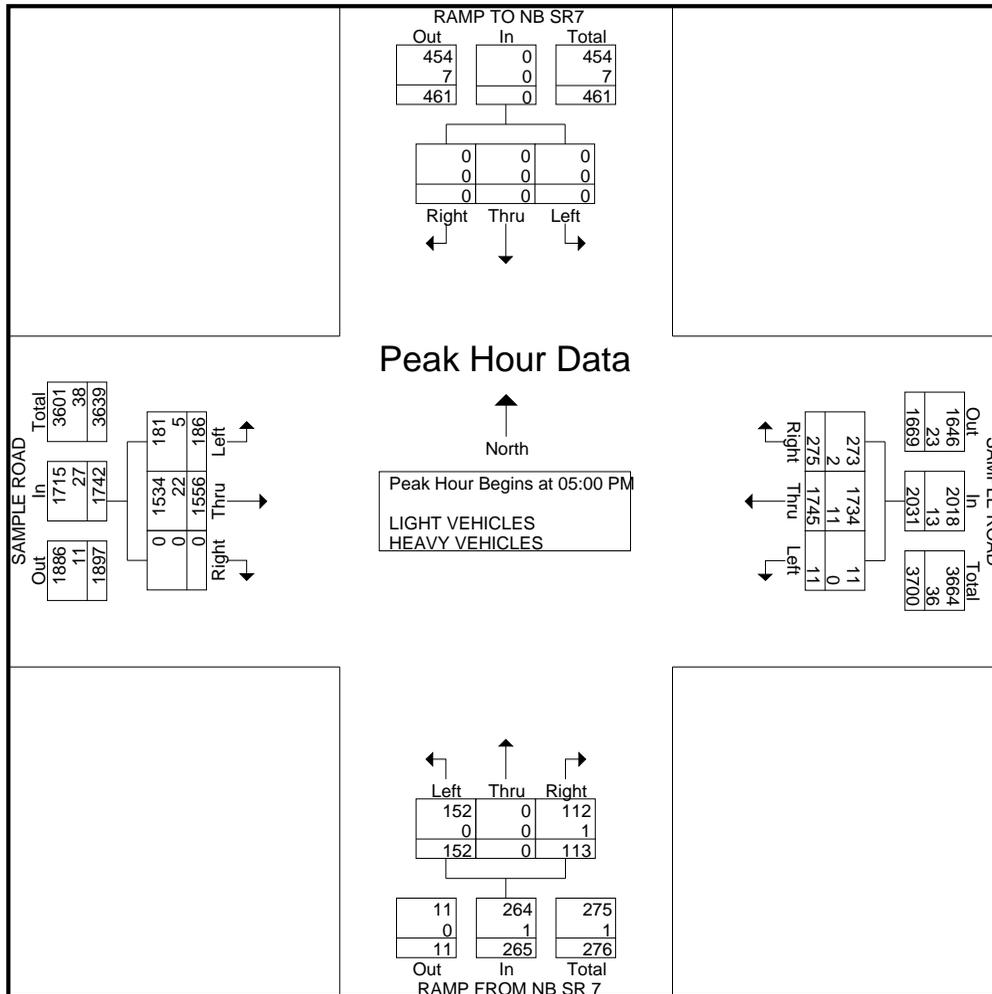
# Traffic Survey Specialists, Inc.

85 SE 4th Avenue, Unit 109, Delray Beach, Florida 33483  
Phone (561) 272-3255

SAMPLE ROAD & RAMPS TO/FROM NB SR7  
COCONUT CREEK, FLORIDA  
VIDEO COUNT  
SIGNALIZED

File Name : SAMPLE & 7 EAST  
Site Code : 210121  
Start Date : 10/13/2021  
Page No : 3

Start Time	RAMP TO NB SR7 From North					SAMPLE ROAD From East					RAMP FROM NB SR 7 From South					SAMPLE ROAD From West					Int. Total
	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	0	0	0	0	0	6	0	396	64	466	0	44	0	27	71	0	33	350	0	383	920
05:15 PM	0	0	0	0	0	1	0	486	75	562	0	40	0	37	77	0	53	416	0	469	1108
05:30 PM	0	0	0	0	0	2	0	418	68	488	0	30	0	29	59	0	45	404	0	449	996
05:45 PM	0	0	0	0	0	2	0	445	68	515	0	38	0	20	58	0	55	386	0	441	1014
Total Volume	0	0	0	0	0	11	0	1745	275	2031	0	152	0	113	265	0	186	1556	0	1742	4038
% App. Total	0	0	0	0	0	0.5	0	85.9	13.5		0	57.4	0	42.6		0	10.7	89.3	0		
PHF	.000	.000	.000	.000	.000	.458	.000	.898	.917	.903	.000	.864	.000	.764	.860	.000	.845	.935	.000	.929	.911
LIGHT VEHICLES						1734										1534					
% LIGHT VEHICLES	0	0	0	0	0	100	0	99.4	99.3	99.4	0	100	0	99.1	99.6	0	97.3	98.6	0	98.5	99.0
HEAVY VEHICLES																					
% HEAVY VEHICLES	0	0	0	0	0	0	0	0.6	0.7	0.6	0	0	0	0.9	0.4	0	2.7	1.4	0	1.5	1.0



**Traffic Survey Specialists, Inc.**

85 SE 4th Avenue, Unit 109, Delray Beach, Florida 33483  
Phone (561) 272-3255

SAMPLE ROAD & RAMPS TO/FROM NB SR7  
COCONUT CREEK, FLORIDA  
VIDEO COUNT  
SIGNALIZED

File Name : SAMPLE & 7 EAST  
Site Code : 210121  
Start Date : 10/13/2021  
Page No : 1

**Groups Printed- BICYCLES ON THE ROAD**

Start Time	RAMP TO NB SR7 From North				SAMPLE ROAD From East				RAMP FROM NB SR 7 From South				SAMPLE ROAD From West				Int. Total	
	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right		
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
08:00 AM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Total	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Grand Total	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	2	0	3
Apprch %	0	0	0	0	0	0	100	0	0	0	0	0	0	0	0	100	0	
Total %	0	0	0	0	0	0	33.3	0	0	0	0	0	0	0	0	66.7	0	

**Traffic Survey Specialists, Inc.**

85 SE 4th Avenue, Unit 109, Delray Beach, Florida 33483  
Phone (561) 272-3255

SAMPLE ROAD & RAMPS TO/FROM NB SR7  
COCONUT CREEK, FLORIDA  
VIDEO COUNT  
SIGNALIZED

File Name : SAMPLE & 7 EAST  
Site Code : 210121  
Start Date : 10/13/2021  
Page No : 1

**Groups Printed- PEDESTRIANS & BIKES**

Start Time	RAMP TO NB SR7 From North				SAMPLE ROAD From East				RAMP FROM NB SR 7 From South				SAMPLE ROAD From West				Int. Total
	Peds	Left	BIKES	Right	Peds	Left	BIKES	Right	Peds	Left	BIKES	Right	Peds	Left	BIKES	Right	
07:00 AM	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	2
07:15 AM	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	2
07:30 AM	0	0	0	0	0	0	0	0	1	0	2	0	0	0	0	0	3
Total	1	0	0	0	1	0	0	0	2	0	3	0	0	0	0	0	7
08:45 AM	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	2
Total	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	2
04:00 PM	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2
04:15 PM	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2
04:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
04:45 PM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	2	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	6
05:00 PM	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	2
05:15 PM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
Total	0	0	0	0	1	0	0	0	2	0	0	0	0	0	0	0	3
Grand Total	4	0	0	0	2	0	1	0	6	0	5	0	0	0	0	0	18
Apprch %	100	0	0	0	66.7	0	33.3	0	54.5	0	45.5	0	0	0	0	0	
Total %	22.2	0	0	0	11.1	0	5.6	0	33.3	0	27.8	0	0	0	0	0	

## Traffic Survey Specialists, Inc.

85 SE 4th Avenue, Unit 109, Delray Beach, Florida 33483  
Phone (561) 272-3255

SAMPLE ROAD & RAMPS TO/FROM SB SR7  
COCONUT CREEK, FLORIDA  
VIDEO COUNT  
SIGNALIZED

File Name : SAMPLE & 7 WEST  
Site Code : 210121  
Start Date : 10/13/2021  
Page No : 1

### Groups Printed- LIGHT VEHICLES - HEAVY VEHICLES

Start Time	RAMP FROM SB SR 7 From North				SAMPLE ROAD From East				RAMP TO SB SR 7 From South				SAMPLE ROAD From West				Int. Total
	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	
07:00 AM	0	52	0	14	0	22	222	0	0	0	0	0	0	0	312	14	636
07:15 AM	0	74	0	17	0	30	336	0	0	0	0	0	1	0	421	32	911
07:30 AM	0	54	0	27	0	24	326	0	0	0	0	0	1	0	392	63	887
07:45 AM	0	99	0	22	0	30	293	0	0	0	0	0	2	0	471	51	968
Total	0	279	0	80	0	106	1177	0	0	0	0	0	4	0	1596	160	3402
08:00 AM	0	42	0	31	0	37	256	0	0	0	0	0	0	0	508	32	906
08:15 AM	0	66	0	31	0	33	247	0	0	0	0	0	0	0	366	27	770
08:30 AM	0	38	0	31	0	18	231	0	0	0	0	0	0	0	429	35	782
08:45 AM	0	57	0	38	0	35	272	0	0	0	0	0	2	0	297	29	730
Total	0	203	0	131	0	123	1006	0	0	0	0	0	2	0	1600	123	3188
04:00 PM	0	33	0	48	0	23	372	0	0	0	0	0	1	0	324	19	820
04:15 PM	0	46	0	58	0	31	377	0	0	0	0	0	3	0	318	16	849
04:30 PM	0	48	0	35	0	19	430	0	0	0	0	0	1	0	326	27	886
04:45 PM	0	40	0	46	0	32	415	0	0	0	0	0	0	0	338	14	885
Total	0	167	0	187	0	105	1594	0	0	0	0	0	5	0	1306	76	3440
05:00 PM	0	52	0	63	0	47	410	0	0	0	0	0	3	0	327	27	929
05:15 PM	0	41	0	42	0	24	492	0	0	0	0	0	2	0	423	31	1055
05:30 PM	0	68	0	55	0	34	418	0	0	0	0	0	3	0	384	19	981
05:45 PM	0	50	0	64	0	29	475	0	0	0	0	0	2	0	376	26	1022
Total	0	211	0	224	0	134	1795	0	0	0	0	0	10	0	1510	103	3987
Grand Total	0	860	0	622	0	468	5572	0	0	0	0	0	21	0	6012	462	14017
Apprch %	0	58	0	42	0	7.7	92.3	0	0	0	0	0	0.3	0	92.6	7.1	
Total %	0	6.1	0	4.4	0	3.3	39.8	0	0	0	0	0	0.1	0	42.9	3.3	
LIGHT VEHICLES	0	846	0	582	0	455	5476	0	0	0	0	0	21	0	5898	450	13728
% LIGHT VEHICLES	0	98.4	0	93.6	0	97.2	98.3	0	0	0	0	0	100	0	98.1	97.4	97.9
HEAVY VEHICLES	0	14	0	40	0	13	96	0	0	0	0	0	0	0	114	12	289
% HEAVY VEHICLES	0	1.6	0	6.4	0	2.8	1.7	0	0	0	0	0	0	0	1.9	2.6	2.1

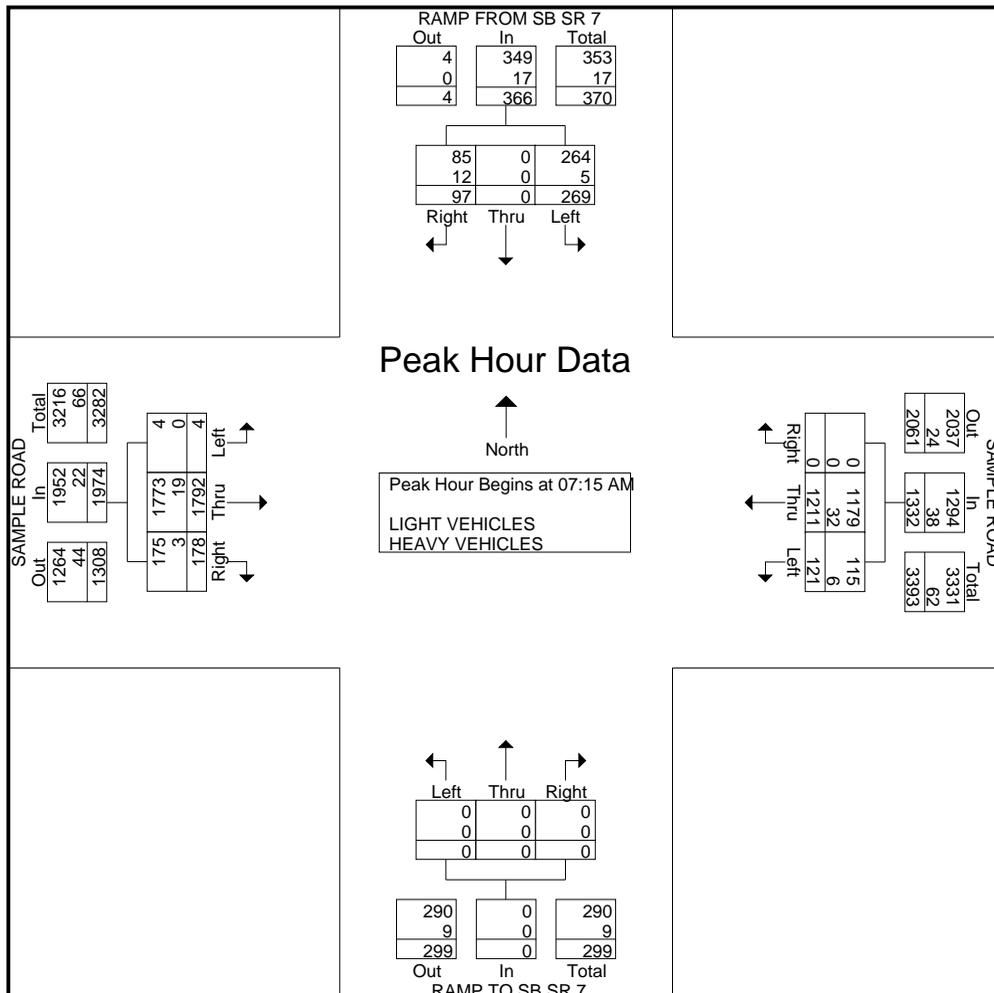
# Traffic Survey Specialists, Inc.

85 SE 4th Avenue, Unit 109, Delray Beach, Florida 33483  
Phone (561) 272-3255

SAMPLE ROAD & RAMPS TO/FROM SB SR 7  
COCONUT CREEK, FLORIDA  
VIDEO COUNT  
SIGNALIZED

File Name : SAMPLE & 7 WEST  
Site Code : 210121  
Start Date : 10/13/2021  
Page No : 2

Start Time	RAMP FROM SB SR 7 From North					SAMPLE ROAD From East					RAMP TO SB SR 7 From South					SAMPLE ROAD From West					Int. Total									
	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru	Right	App. Total										
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																														
Peak Hour for Entire Intersection Begins at 07:15 AM																														
07:15 AM	0	74	0	17	91	0	30	336	0	366	0	0	0	0	0	1	0	421	32	454	911									
07:30 AM	0	54	0	27	81	0	24	326	0	350	0	0	0	0	0	1	0	392	63	456	887									
07:45 AM	0	99	0	22	121	0	30	293	0	323	0	0	0	0	0	2	0	471	51	524	968									
08:00 AM	0	42	0	31	73	0	37	256	0	293	0	0	0	0	0	0	0	508	32	540	906									
Total Volume	0	269	0	97	366	0	121	1211	0	1332	0	0	0	0	0	4	0	1792	178	1974	3672									
% App. Total	0	73.5	0	26.5		0	9.1	90.9	0		0	0	0	0	0	0.2	0	90.8	9											
PHF	.000	.679	.000	.782	.756	.000	.818	.901	.000	.910	.000	.000	.000	.000	.000	.500	.000	.882	.706	.914	.948									
LIGHT VEHICLES											1179										1773									
% LIGHT VEHICLES	0	98.1	0	87.6	95.4	0	95.0	97.4	0	97.1	0	0	0	0	0	100	0	98.9	98.3	98.9	97.9									
HEAVY VEHICLES											2.6										1.7									
% HEAVY VEHICLES	0	1.9	0	12.4	4.6	0	5.0	2.6	0	2.9	0	0	0	0	0	0	0	1.1	1.7	1.1	2.1									



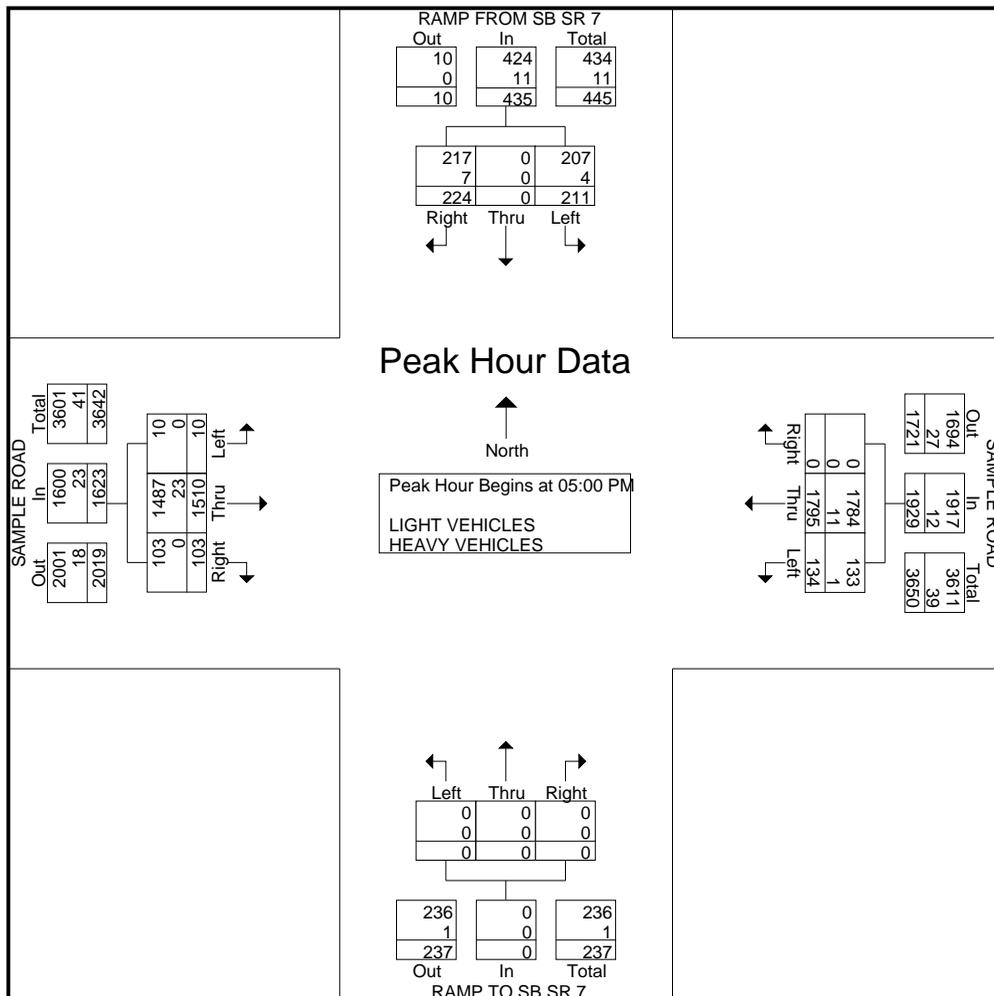
# Traffic Survey Specialists, Inc.

85 SE 4th Avenue, Unit 109, Delray Beach, Florida 33483  
Phone (561) 272-3255

SAMPLE ROAD & RAMPS TO/FROM SB SR7  
COCONUT CREEK, FLORIDA  
VIDEO COUNT  
SIGNALIZED

File Name : SAMPLE & 7 WEST  
Site Code : 210121  
Start Date : 10/13/2021  
Page No : 3

Start Time	RAMP FROM SB SR 7 From North					SAMPLE ROAD From East					RAMP TO SB SR 7 From South					SAMPLE ROAD From West					Int. Total
	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	0	52	0	63	115	0	47	410	0	457	0	0	0	0	0	3	0	327	27	357	929
05:15 PM	0	41	0	42	83	0	24	492	0	516	0	0	0	0	0	2	0	423	31	456	1055
05:30 PM	0	68	0	55	123	0	34	418	0	452	0	0	0	0	0	3	0	384	19	406	981
05:45 PM	0	50	0	64	114	0	29	475	0	504	0	0	0	0	0	2	0	376	26	404	1022
Total Volume	0	211	0	224	435	0	134	1795	0	1929	0	0	0	0	0	10	0	1510	103	1623	3987
% App. Total	0	48.5	0	51.5		0	6.9	93.1	0		0	0	0	0		0.6	0	93	6.3		
PHF	.000	.776	.000	.875	.884	.000	.713	.912	.000	.935	.000	.000	.000	.000	.000	.833	.000	.892	.831	.890	.945
LIGHT VEHICLES	1784										1487										
% LIGHT VEHICLES	0	98.1	0	96.9	97.5	0	99.3	99.4	0	99.4	0	0	0	0	0	100	0	98.5	100	98.6	98.8
HEAVY VEHICLES																					
% HEAVY VEHICLES	0	1.9	0	3.1	2.5	0	0.7	0.6	0	0.6	0	0	0	0	0	0	0	1.5	0	1.4	1.2





## Traffic Survey Specialists, Inc.

85 SE 4th Avenue, Unit 109, Delray Beach, Florida 33483  
Phone (561) 272-3255

SAMPLE ROAD & RAMPS TO/FROM SB SR7  
COCONUT CREEK, FLORIDA  
VIDEO COUNT  
SIGNALIZED

File Name : SAMPLE & 7 WEST  
Site Code : 210121  
Start Date : 10/13/2021  
Page No : 1

### Groups Printed- PEDESTRIANS & BIKES

Start Time	RAMP FROM SB SR 7 From North				SAMPLE ROAD From East				RAMP TO SB SR 7 From South				SAMPLE ROAD From West				Int. Total
	Peds	Left	BIKES	Right	Peds	Left	BIKES	Right	Peds	Left	BIKES	Right	Peds	Left	BIKES	Right	
07:00 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
07:15 AM	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	2
07:30 AM	0	0	0	0	0	0	0	0	1	0	2	0	1	0	0	0	4
07:45 AM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
Total	1	0	0	0	0	0	0	0	3	0	3	0	1	0	0	0	8
08:00 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
08:45 AM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	1	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	3
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
04:15 PM	0	0	1	0	0	0	0	0	2	0	0	0	0	0	0	0	3
04:30 PM	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2
Total	1	0	1	0	0	0	0	0	2	0	1	0	1	0	0	0	6
05:00 PM	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	2
05:15 PM	0	0	0	0	0	0	0	0	2	0	0	0	0	0	1	0	3
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
Total	0	0	0	0	0	0	0	0	3	0	0	0	2	0	1	0	6
Grand Total	3	0	2	0	0	0	0	0	8	0	4	0	5	0	1	0	23
Apprch %	60	0	40	0	0	0	0	0	66.7	0	33.3	0	83.3	0	16.7	0	
Total %	13	0	8.7	0	0	0	0	0	34.8	0	17.4	0	21.7	0	4.3	0	

## Traffic Survey Specialists, Inc.

85 SE 4th Avenue, Unit 109, Delray Beach, Florida 33483  
Phone (561) 272-3255

SAMPLE ROAD & NW 54TH AVENUE  
COCONUT CREEK, FLORIDA  
VIDEO COUNT  
SIGNALIZED

File Name : SAMPLE & 54TH  
Site Code : 210121  
Start Date : 10/13/2021  
Page No : 1

### Groups Printed- LIGHT VEHICLES - HEAVY VEHICLES

Start Time	NW 54TH AVENUE From North				SAMPLE ROAD From East				NW 54TH AVENUE From South				SAMPLE ROAD From West				Int. Total
	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	
07:00 AM	0	14	4	6	3	25	248	25	0	8	6	46	7	9	423	5	829
07:15 AM	0	24	5	7	1	35	332	24	0	7	4	65	4	13	451	10	982
07:30 AM	0	22	5	11	2	54	335	32	0	5	3	79	2	11	467	8	1036
07:45 AM	0	27	3	12	2	63	285	35	0	11	7	66	10	7	465	17	1010
<b>Total</b>	0	87	17	36	8	177	1200	116	0	31	20	256	23	40	1806	40	3857
08:00 AM	0	21	4	8	5	43	312	27	1	6	4	71	8	3	538	18	1069
08:15 AM	0	28	12	7	6	46	266	31	0	9	5	52	16	16	438	15	947
08:30 AM	1	21	6	8	4	41	218	33	0	13	13	71	8	15	412	11	875
08:45 AM	0	16	3	7	2	53	290	35	0	8	6	54	10	21	365	13	883
<b>Total</b>	1	86	25	30	17	183	1086	126	1	36	28	248	42	55	1753	57	3774
04:00 PM	0	50	9	27	2	44	385	61	0	22	11	62	16	15	335	10	1049
04:15 PM	0	52	14	10	5	84	351	39	0	28	11	63	25	12	334	10	1038
04:30 PM	0	59	6	21	2	70	379	53	0	35	10	67	12	8	321	6	1049
04:45 PM	0	57	4	17	3	74	423	64	0	19	11	71	14	20	363	14	1154
<b>Total</b>	0	218	33	75	12	272	1538	217	0	104	43	263	67	55	1353	40	4290
05:00 PM	0	56	11	21	1	110	405	51	0	32	8	68	21	16	293	18	1111
05:15 PM	0	65	7	12	0	63	449	69	0	37	12	62	18	17	411	15	1237
05:30 PM	1	46	19	25	1	101	456	61	0	21	11	67	17	25	391	10	1252
05:45 PM	0	39	10	24	1	96	441	86	0	32	10	80	20	21	337	11	1208
<b>Total</b>	1	206	47	82	3	370	1751	267	0	122	41	277	76	79	1432	54	4808
<b>Grand Total</b>	2	597	122	223	40	1002	5575	726	1	293	132	1044	208	229	6344	191	16729
<b>Apprch %</b>	0.2	63.2	12.9	23.6	0.5	13.6	75.9	9.9	0.1	19.9	9	71	3	3.3	91	2.7	
<b>Total %</b>	0	3.6	0.7	1.3	0.2	6	33.3	4.3	0	1.8	0.8	6.2	1.2	1.4	37.9	1.1	
LIGHT VEHICLES	2	582	122	223	37	987	5445	715	1	293	132	1022	207	227	6213	185	16393
% LIGHT VEHICLES	100	97.5	100	100	92.5	98.5	97.7	98.5	100	100	100	97.9	99.5	99.1	97.9	96.9	98
HEAVY VEHICLES	0	15	0	0	3	15	130	11	0	0	0	22	1	2	131	6	336
% HEAVY VEHICLES	0	2.5	0	0	7.5	1.5	2.3	1.5	0	0	0	2.1	0.5	0.9	2.1	3.1	2

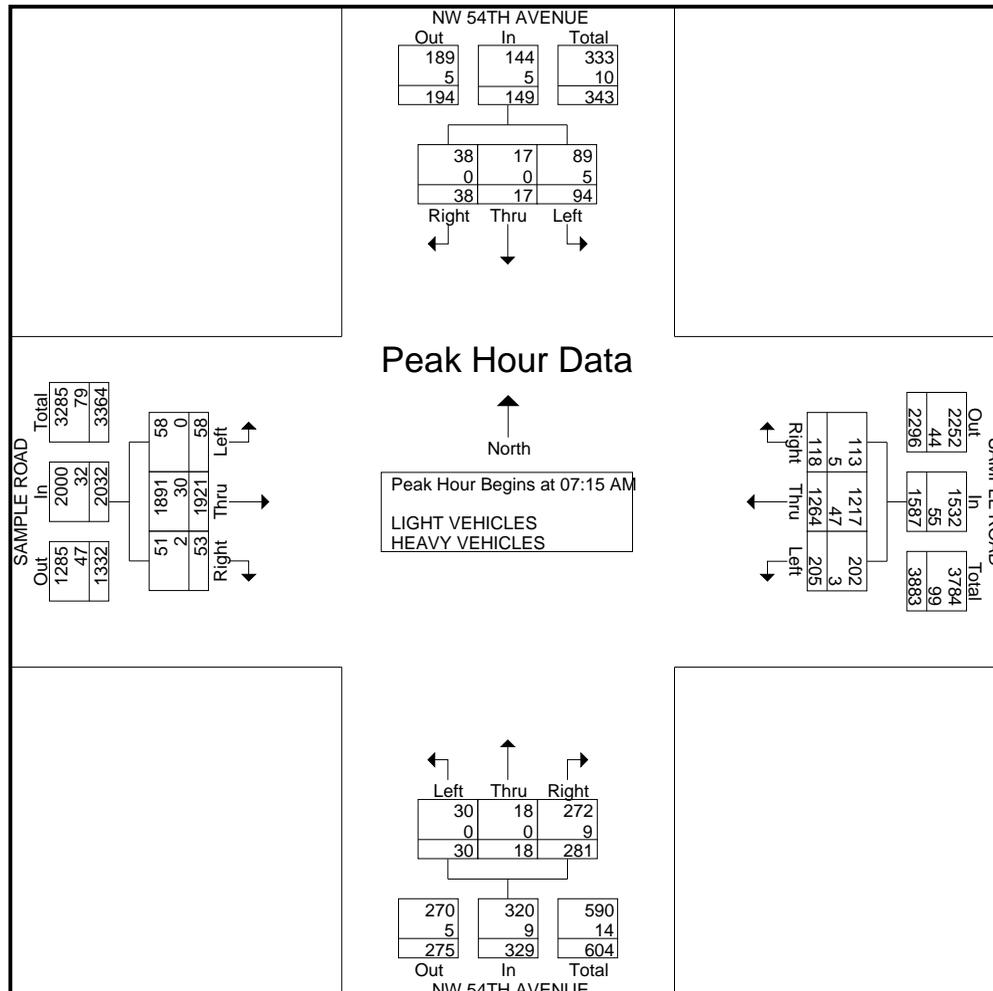
# Traffic Survey Specialists, Inc.

85 SE 4th Avenue, Unit 109, Delray Beach, Florida 33483  
Phone (561) 272-3255

SAMPLE ROAD & NW 54TH AVENUE  
COCONUT CREEK, FLORIDA  
VIDEO COUNT  
SIGNALIZED

File Name : SAMPLE & 54TH  
Site Code : 210121  
Start Date : 10/13/2021  
Page No : 2

Start Time	NW 54TH AVENUE From North					SAMPLE ROAD From East					NW 54TH AVENUE From South					SAMPLE ROAD From West					Int. Total
	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	0	24	5	7	36	1	35	332	24	392	0	7	4	65	76	4	13	451	10	478	982
07:30 AM	0	22	5	11	38	2	54	335	32	423	0	5	3	79	87	2	11	467	8	488	1036
07:45 AM	0	27	3	12	42	2	63	285	35	385	0	11	7	66	84	10	7	465	17	499	1010
08:00 AM	0	21	4	8	33	5	43	312	27	387	1	6	4	71	82	8	3	538	18	567	1069
Total Volume	0	94	17	38	149	10	195	1264	118	1587	1	29	18	281	329	24	34	1921	53	2032	4097
% App. Total	0	63.1	11.4	25.5		0.6	12.3	79.6	7.4		0.3	8.8	5.5	85.4		1.2	1.7	94.5	2.6		
PHF	.000	.870	.850	.792	.887	.500	.774	.943	.843	.938	.250	.659	.643	.889	.945	.600	.654	.893	.736	.896	.958
LIGHT VEHICLES											1217										1891
% LIGHT VEHICLES	0	94.7	100	100	96.6	100	98.5	96.3	95.8	96.5	100	100	100	96.8	97.3	100	100	98.4	96.2	98.4	97.5
HEAVY VEHICLES											3.4										1.6
% HEAVY VEHICLES	0	5.3	0	0	3.4	0	1.5	3.7	4.2	3.5	0	0	0	3.2	2.7	0	0	1.6	3.8	1.6	2.5



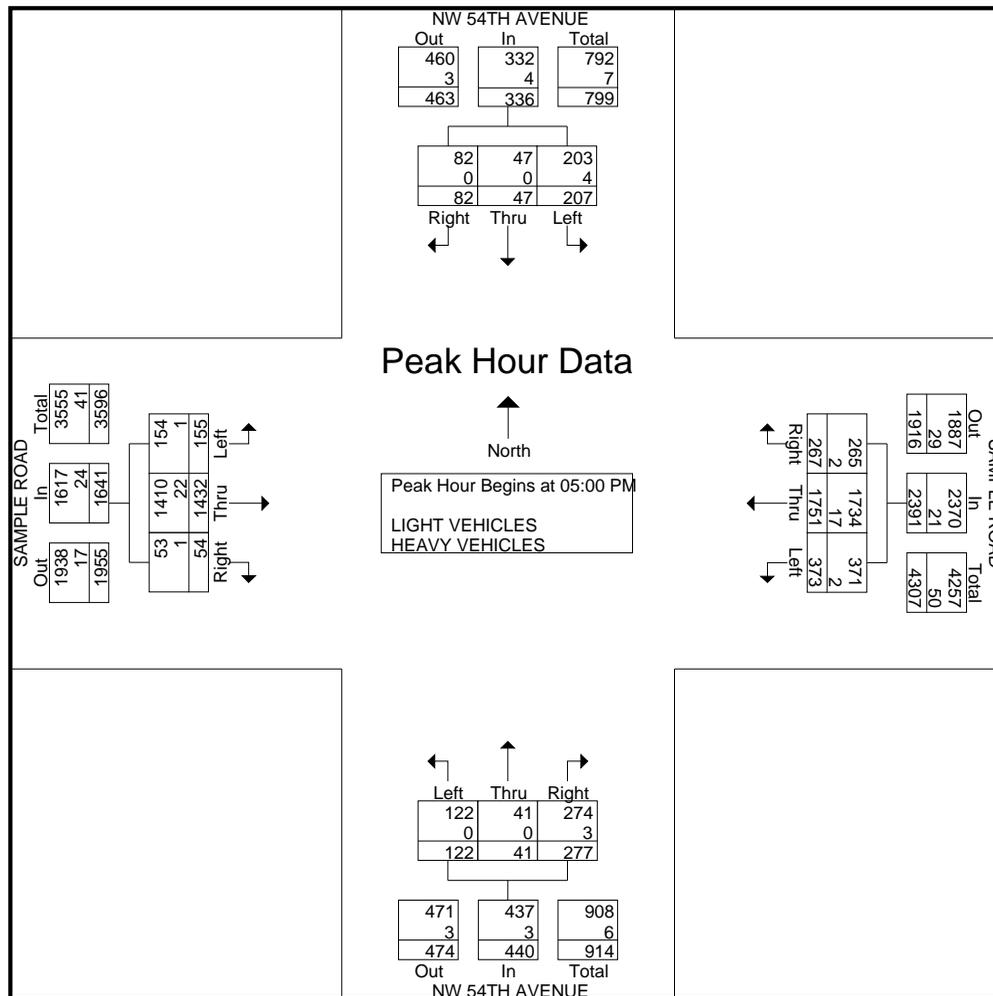
# Traffic Survey Specialists, Inc.

85 SE 4th Avenue, Unit 109, Delray Beach, Florida 33483  
Phone (561) 272-3255

SAMPLE ROAD & NW 54TH AVENUE  
COCONUT CREEK, FLORIDA  
VIDEO COUNT  
SIGNALIZED

File Name : SAMPLE & 54TH  
Site Code : 210121  
Start Date : 10/13/2021  
Page No : 3

Start Time	NW 54TH AVENUE From North					SAMPLE ROAD From East					NW 54TH AVENUE From South					SAMPLE ROAD From West					Int. Total
	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	0	56	11	21	88	1	110	405	51	567	0	32	8	68	108	21	16	293	18	348	1111
05:15 PM	0	65	7	12	84	0	63	449	69	581	0	37	12	62	111	18	17	411	15	461	1237
05:30 PM	1	46	19	25	91	1	101	456	61	619	0	21	11	67	99	17	25	391	10	443	1252
05:45 PM	0	39	10	24	73	1	96	441	86	624	0	32	10	80	122	20	21	337	11	389	1208
Total Volume	1	206	47	82	336	3	370	1751	267	2391	0	122	41	277	440	76	79	1432	54	1641	4808
% App. Total	0.3	61.3	14	24.4		0.1	15.5	73.2	11.2		0	27.7	9.3	63		4.6	4.8	87.3	3.3		
PHF	.250	.792	.618	.820	.923	.750	.841	.960	.776	.958	.000	.824	.854	.866	.902	.905	.790	.871	.750	.890	.960
LIGHT VEHICLES											1734										
% LIGHT VEHICLES	100	98.1	100	100	98.8	100	99.5	99.0	99.3	99.1	0	100	100	98.9	99.3	98.7	100	98.5	98.1	98.5	98.9
HEAVY VEHICLES											1410										
% HEAVY VEHICLES	0	1.9	0	0	1.2	0	0.5	1.0	0.7	0.9	0	0	0	1.1	0.7	1.3	0	1.5	1.9	1.5	1.1



**Traffic Survey Specialists, Inc.**

85 SE 4th Avenue, Unit 109, Delray Beach, Florida 33483  
 Phone (561) 272-3255

SAMPLE ROAD & NW 54TH AVENUE  
 COCONUT CREEK, FLORIDA  
 VIDEO COUNT  
 SIGNALIZED

File Name : SAMPLE & 54TH  
 Site Code : 210121  
 Start Date : 10/13/2021  
 Page No : 1

**Groups Printed- BICYCLES ON THE ROAD**

Start Time	NW 54TH AVENUE From North				SAMPLE ROAD From East				NW 54TH AVENUE From South				SAMPLE ROAD From West				Int. Total
	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
Total	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	2
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Grand Total	0	0	0	0	0	0	0	0	0	0	0	1	0	0	2	0	3
Apprch %	0	0	0	0	0	0	0	0	0	0	0	100	0	0	100	0	
Total %	0	0	0	0	0	0	0	0	0	0	0	33.3	0	0	66.7	0	

## Traffic Survey Specialists, Inc.

85 SE 4th Avenue, Unit 109, Delray Beach, Florida 33483  
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SAMPLE ROAD & NW 54TH AVENUE  
COCONUT CREEK, FLORIDA  
VIDEO COUNT  
SIGNALIZED

File Name : SAMPLE & 54TH  
Site Code : 210121  
Start Date : 10/13/2021  
Page No : 1

### Groups Printed- PEDESTRIANS & BIKES

Start Time	NW 54TH AVENUE From North				SAMPLE ROAD From East				NW 54TH AVENUE From South				SAMPLE ROAD From West				Int. Total
	Peds	Left	BIKES	Right	Peds	Left	BIKES	Right	Peds	Left	BIKES	Right	Peds	Left	BIKES	Right	
07:00 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
07:15 AM	0	0	0	0	1	0	0	0	2	0	0	0	0	0	0	0	3
07:30 AM	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	4
07:45 AM	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	2
Total	0	0	0	0	1	0	0	0	5	0	4	0	0	0	0	0	10
08:00 AM	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0	0	3
08:30 AM	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	2
08:45 AM	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	3
Total	1	0	1	0	2	0	1	0	1	0	2	0	0	0	0	0	8
04:00 PM	1	0	0	0	0	0	0	0	0	0	1	0	2	0	0	0	4
04:15 PM	0	0	1	0	1	0	0	0	1	0	0	0	0	0	0	0	3
04:30 PM	0	0	0	0	1	0	0	0	0	0	0	0	2	0	0	0	3
04:45 PM	0	0	0	0	0	0	0	0	2	0	1	0	2	0	0	0	5
Total	1	0	1	0	2	0	0	0	3	0	2	0	6	0	0	0	15
05:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
05:15 PM	0	0	1	0	1	0	0	0	0	0	1	0	0	0	0	0	3
05:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
Total	0	0	1	0	1	0	0	0	0	0	3	0	0	0	0	0	5
Grand Total	2	0	3	0	6	0	1	0	9	0	11	0	6	0	0	0	38
Apprch %	40	0	60	0	85.7	0	14.3	0	45	0	55	0	100	0	0	0	
Total %	5.3	0	7.9	0	15.8	0	2.6	0	23.7	0	28.9	0	15.8	0	0	0	

## Traffic Survey Specialists, Inc.

85 SE 4th Avenue, Unit 109, Delray Beach, Florida 33483  
Phone (561) 272-3255

SAMPLE ROAD & BANKS ROAD  
COCONUT CREEK, FLORIDA  
VIDEO COUNT  
NOT SIGNALIZED

File Name : SAMPLE & bBANKS  
Site Code : 210121  
Start Date : 10/13/2021  
Page No : 1

### Groups Printed- LIGHT VEHICLES - HEAVY VEHICLES

Start Time	BANKS ROAD From North				SAMPLE ROAD From East				BANKS ROAD From South				SAMPLE ROAD From West				Int. Total
	UTurn	Left	Thru	Right													
07:00 AM	0	0	0	0	15	24	328	4	1	0	0	51	1	2	468	8	902
07:15 AM	0	0	0	1	15	37	409	4	0	0	0	37	3	2	539	16	1063
07:30 AM	0	0	0	0	17	46	423	1	0	0	0	51	0	3	550	20	1111
07:45 AM	0	0	0	1	11	56	418	3	2	0	0	49	2	2	561	24	1129
Total	0	0	0	2	58	163	1578	12	3	0	0	188	6	9	2118	68	4205
08:00 AM	0	0	0	2	10	59	372	1	2	0	0	47	4	2	602	31	1132
08:15 AM	0	0	0	0	12	48	366	3	2	0	0	61	1	2	509	25	1029
08:30 AM	0	0	0	1	9	37	316	2	1	0	0	64	1	1	488	10	930
08:45 AM	0	0	0	3	12	40	456	5	0	0	0	29	3	2	419	14	983
Total	0	0	0	6	43	184	1510	11	5	0	0	201	9	7	2018	80	4074
04:00 PM	0	0	0	7	7	29	483	4	0	0	0	38	3	3	407	24	1005
04:15 PM	0	0	0	3	7	42	508	5	0	0	0	30	0	1	414	25	1035
04:30 PM	0	0	0	0	10	50	528	5	1	0	0	40	1	0	442	19	1096
04:45 PM	0	0	0	3	6	34	574	4	1	0	0	35	2	1	478	20	1158
Total	0	0	0	13	30	155	2093	18	2	0	0	143	6	5	1741	88	4294
05:00 PM	0	0	0	3	9	43	629	8	1	0	0	46	2	0	392	24	1157
05:15 PM	0	0	0	1	6	56	597	6	2	0	0	50	0	0	516	25	1259
05:30 PM	0	0	0	1	6	52	605	12	1	0	0	43	0	1	483	13	1217
05:45 PM	0	0	0	5	10	52	638	8	0	0	0	34	0	1	417	41	1206
Total	0	0	0	10	31	203	2469	34	4	0	0	173	2	2	1808	103	4839
Grand Total	0	0	0	31	162	705	7650	75	14	0	0	705	23	23	7685	339	17412
Apprch %	0	0	0	100	1.9	8.2	89	0.9	1.9	0	0	98.1	0.3	0.3	95.2	4.2	
Total %	0	0	0	0.2	0.9	4	43.9	0.4	0.1	0	0	4	0.1	0.1	44.1	1.9	
LIGHT VEHICLES	0	0	0	28	160	702	7492	70	14	0	0	692	22	23	7516	333	17052
% LIGHT VEHICLES	0	0	0	90.3	98.8	99.6	97.9	93.3	100	0	0	98.2	95.7	100	97.8	98.2	97.9
HEAVY VEHICLES	0	0	0	3	2	3	158	5	0	0	0	13	1	0	169	6	360
% HEAVY VEHICLES	0	0	0	9.7	1.2	0.4	2.1	6.7	0	0	0	1.8	4.3	0	2.2	1.8	2.1

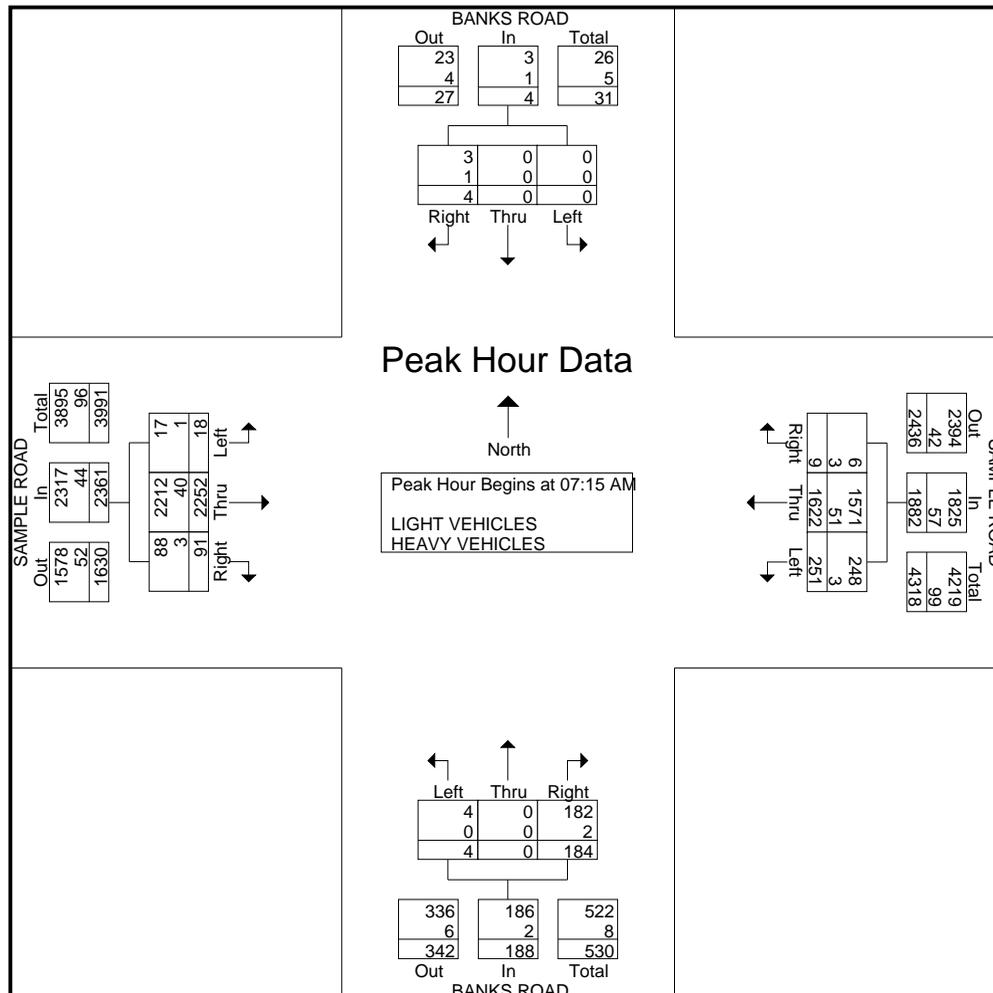
# Traffic Survey Specialists, Inc.

85 SE 4th Avenue, Unit 109, Delray Beach, Florida 33483  
Phone (561) 272-3255

SAMPLE ROAD & BANKS ROAD  
COCONUT CREEK, FLORIDA  
VIDEO COUNT  
NOT SIGNALIZED

File Name : SAMPLE & bANKS  
Site Code : 210121  
Start Date : 10/13/2021  
Page No : 2

Start Time	BANKS ROAD From North					SAMPLE ROAD From East					BANKS ROAD From South					SAMPLE ROAD From West					Int. Total									
	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru	Right	App. Total										
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																														
Peak Hour for Entire Intersection Begins at 07:15 AM																														
07:15 AM	0	0	0	1	1	15	37	409	4	465	0	0	0	37	37	3	2	539	16	560	1063									
07:30 AM	0	0	0	0	0	17	46	423	1	487	0	0	0	51	51	0	3	550	20	573	1111									
07:45 AM	0	0	0	1	1	11	56	418	3	488	2	0	0	49	51	2	2	561	24	589	1129									
08:00 AM	0	0	0	2	2	10	59	372	1	442	2	0	0	47	49	4	2	602	31	639	1132									
Total Volume	0	0	0	4	4	53	198	1622	9	1882	4	0	0	184	188	9	9	2252	91	2361	4435									
% App. Total	0	0	0	100		2.8	10.5	86.2	0.5		2.1	0	0	97.9		0.4	0.4	95.4	3.9											
PHF	.000	.000	.000	.500	.500	.779	.839	.959	.563	.964	.500	.000	.000	.902	.922	.563	.750	.935	.734	.924	.979									
LIGHT VEHICLES											1571										2212									
% LIGHT VEHICLES	0	0	0	75.0	75.0	98.1	99.0	96.9	66.7	97.0	100	0	0	98.9	98.9	88.9	100	98.2	96.7	98.1	97.7									
HEAVY VEHICLES											1.9										1.9									
% HEAVY VEHICLES	0	0	0	25.0	25.0	1.9	1.0	3.1	33.3	3.0	0	0	0	1.1	1.1	11.1	0	1.8	3.3	1.9	2.3									



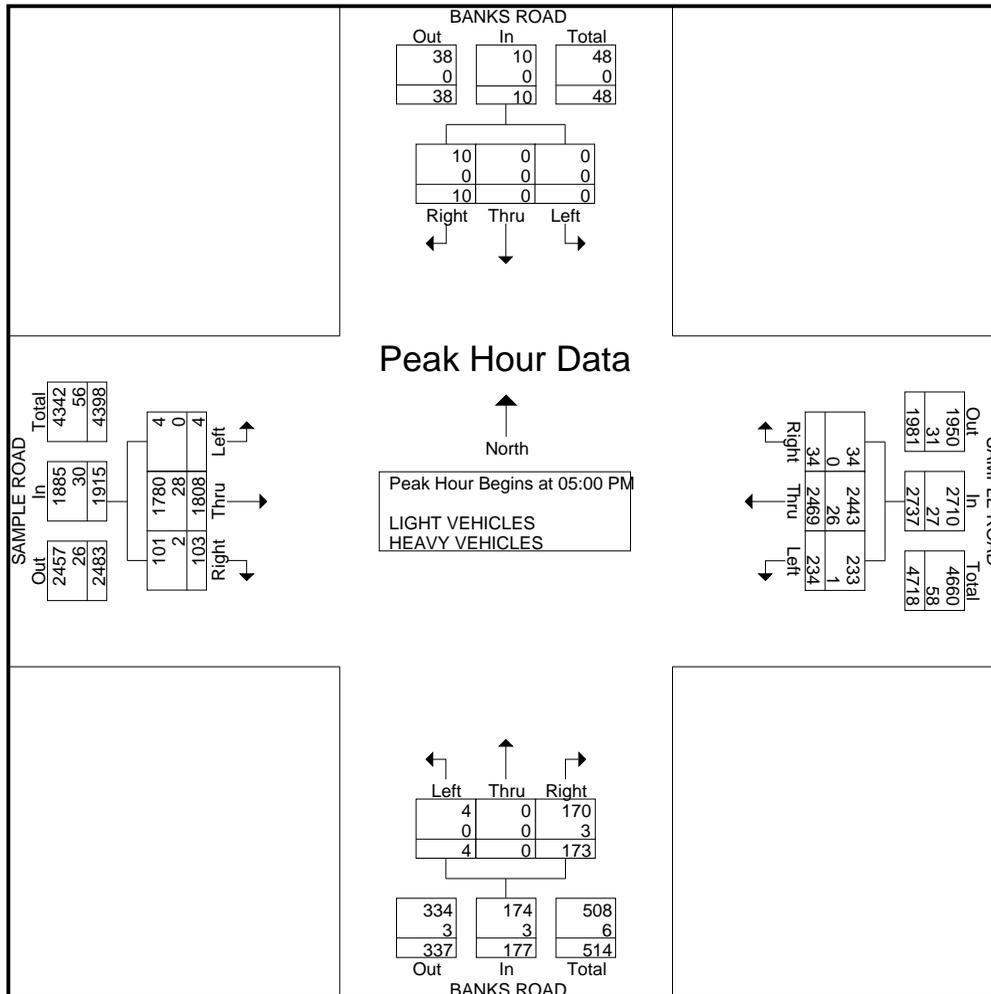
# Traffic Survey Specialists, Inc.

85 SE 4th Avenue, Unit 109, Delray Beach, Florida 33483  
Phone (561) 272-3255

SAMPLE ROAD & BANKS ROAD  
COCONUT CREEK, FLORIDA  
VIDEO COUNT  
NOT SIGNALIZED

File Name : SAMPLE & bANKS  
Site Code : 210121  
Start Date : 10/13/2021  
Page No : 3

Start Time	BANKS ROAD From North					SAMPLE ROAD From East					BANKS ROAD From South					SAMPLE ROAD From West					Int. Total
	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	0	0	0	3	3	9	43	629	8	689	1	0	0	46	47	2	0	392	24	418	1157
05:15 PM	0	0	0	1	1	6	56	597	6	665	2	0	0	50	52	0	0	516	25	541	1259
05:30 PM	0	0	0	1	1	6	52	605	12	675	1	0	0	43	44	0	1	483	13	497	1217
05:45 PM	0	0	0	5	5	10	52	638	8	708	0	0	0	34	34	0	1	417	41	459	1206
Total Volume	0	0	0	10	10	31	203	2469	34	2737	4	0	0	173	177	2	2	1808	103	1915	4839
% App. Total	0	0	0	100	100	1.1	7.4	90.2	1.2	99.0	2.3	0	0	97.7	98.3	0.1	0.1	94.4	5.4	98.4	98.8
PHF	.000	.000	.000	.500	.500	.775	.906	.967	.708	.966	.500	.000	.000	.865	.851	.250	.500	.876	.628	.885	.961
LIGHT VEHICLES											2443					1780					
% LIGHT VEHICLES	0	0	0	100	100	96.8	100	98.9	100	99.0	100	0	0	98.3	98.3	100	100	98.5	98.1	98.4	98.8
HEAVY VEHICLES											1					1					
% HEAVY VEHICLES	0	0	0	0	0	3.2	0	1.1	0	1.0	0	0	0	1.7	1.7	0	0	1.5	1.9	1.6	1.2



**Traffic Survey Specialists, Inc.**

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 VIDEO COUNT  
 NOT SIGNALIZED

File Name : SAMPLE & bBANKS  
 Site Code : 210121  
 Start Date : 10/13/2021  
 Page No : 1

**Groups Printed- BICYCLES ON THE ROAD**

Start Time	BANKS ROAD From North				SAMPLE ROAD From East				BANKS ROAD From South				SAMPLE ROAD From West				Int. Total
	UTurn	Left	Thru	Right													
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3
05:00 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Total	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2
Grand Total	0	1	0	0	0	0	0	0	0	0	0	0	0	0	5	0	6
Apprch %	0	100	0	0	0	0	0	0	0	0	0	0	0	0	100	0	
Total %	0	16.7	0	0	0	0	0	0	0	0	0	0	0	0	83.3	0	

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COCONUT CREEK, FLORIDA  
VIDEO COUNT  
NOT SIGNALIZED

File Name : SAMPLE & bANKS  
Site Code : 210121  
Start Date : 10/13/2021  
Page No : 1

### Groups Printed- PEDESTRIANS & BIKES

Start Time	BANKS ROAD From North				SAMPLE ROAD From East				BANKS ROAD From South				SAMPLE ROAD From West				Int. Total
	Peds	Left	BIKES	Right													
07:15 AM	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	2
07:30 AM	0	0	0	0	0	0	0	0	1	0	3	0	0	0	0	0	4
07:45 AM	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2
Total	1	0	0	0	0	0	0	0	2	0	5	0	0	0	0	0	8
08:00 AM	1	0	0	0	0	0	0	0	1	0	2	0	0	0	0	0	4
08:15 AM	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2
08:30 AM	1	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	3
Total	3	0	0	0	1	0	0	0	3	0	2	0	0	0	0	0	9
04:00 PM	1	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	3
04:15 PM	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	2
04:30 PM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
04:45 PM	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2
Total	2	0	1	0	0	0	0	0	2	0	3	0	0	0	0	0	8
05:00 PM	0	0	0	0	0	0	0	0	2	0	1	0	0	0	0	0	3
05:15 PM	1	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	3
05:30 PM	0	0	0	0	0	0	0	0	4	0	2	0	0	0	0	0	6
05:45 PM	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Total	4	0	0	0	0	0	0	0	8	0	3	0	0	0	0	0	15
Grand Total	10	0	1	0	1	0	0	0	15	0	13	0	0	0	0	0	40
Apprch %	90.9	0	9.1	0	100	0	0	0	53.6	0	46.4	0	0	0	0	0	
Total %	25	0	2.5	0	2.5	0	0	0	37.5	0	32.5	0	0	0	0	0	

## Traffic Survey Specialists, Inc.

85 SE 4th Avenue, Unit 109, Delray Beach, Florida 33483  
Phone (561) 272-3255

SAMPLE ROAD & LYONS ROAD  
COCONUT CREEK, FLORIDA  
VIDEO COUNT  
SIGNALIZED

File Name : sample & lyons  
Site Code : 210121  
Start Date : 10/13/2021  
Page No : 1

### Groups Printed- LIGHT VEHICLES - HEAVY VEHICLES

Start Time	LYONS ROAD From North				SAMPLE ROAD From East				LYONS ROAD From South				SAMPLE ROAD From West				Int. Total
	UTurn	Left	Thru	Right													
07:00 AM	3	62	108	55	0	19	208	43	0	82	186	32	0	94	377	58	1327
07:15 AM	2	79	176	86	0	20	216	67	0	108	245	52	0	98	414	53	1616
07:30 AM	0	107	226	123	0	17	247	37	0	124	207	46	0	102	410	94	1740
07:45 AM	3	69	191	101	1	24	270	64	0	92	211	41	2	106	471	125	1771
Total	8	317	701	365	1	80	941	211	0	406	849	171	2	400	1672	330	6454
08:00 AM	2	78	225	95	1	21	164	59	1	87	206	33	0	89	389	95	1545
08:15 AM	0	74	179	69	1	17	236	52	0	92	172	36	0	110	376	98	1512
08:30 AM	3	57	183	66	0	25	229	56	1	68	249	35	0	106	345	71	1494
08:45 AM	1	81	161	67	1	21	221	80	1	86	199	29	0	79	321	59	1407
Total	6	290	748	297	3	84	850	247	3	333	826	133	0	384	1431	323	5958
04:00 PM	1	67	208	102	3	34	361	87	1	88	214	28	0	88	297	98	1677
04:15 PM	0	81	276	112	2	34	355	94	0	123	222	33	0	66	229	94	1721
04:30 PM	1	68	203	107	1	34	411	98	0	113	163	34	0	82	342	94	1751
04:45 PM	1	61	224	109	2	36	335	90	1	78	208	31	1	84	281	87	1629
Total	3	277	911	430	8	138	1462	369	2	402	807	126	1	320	1149	373	6778
05:00 PM	3	66	224	109	1	37	414	75	1	90	217	37	0	95	240	76	1685
05:15 PM	5	67	175	120	1	26	503	86	1	120	184	26	0	87	332	92	1825
05:30 PM	1	57	274	156	1	42	348	75	0	117	332	38	0	90	269	88	1888
05:45 PM	0	75	191	142	0	34	438	89	0	106	199	26	0	76	273	92	1741
Total	9	265	864	527	3	139	1703	325	2	433	932	127	0	348	1114	348	7139
Grand Total	26	1149	3224	1619	15	441	4956	1152	7	1574	3414	557	3	1452	5366	1374	26329
Apprch %	0.4	19.1	53.6	26.9	0.2	6.7	75.5	17.6	0.1	28.4	61.5	10	0	17.7	65.5	16.8	
Total %	0.1	4.4	12.2	6.1	0.1	1.7	18.8	4.4	0	6	13	2.1	0	5.5	20.4	5.2	
LIGHT VEHICLES	26	1114	3153	1589	15	428	4834	1100	7	1552	3349	547	3	1422	5260	1352	25751
% LIGHT VEHICLES	100	97	97.8	98.1	100	97.1	97.5	95.5	100	98.6	98.1	98.2	100	97.9	98	98.4	97.8
HEAVY VEHICLES	0	35	71	30	0	13	122	52	0	22	65	10	0	30	106	22	578
% HEAVY VEHICLES	0	3	2.2	1.9	0	2.9	2.5	4.5	0	1.4	1.9	1.8	0	2.1	2	1.6	2.2

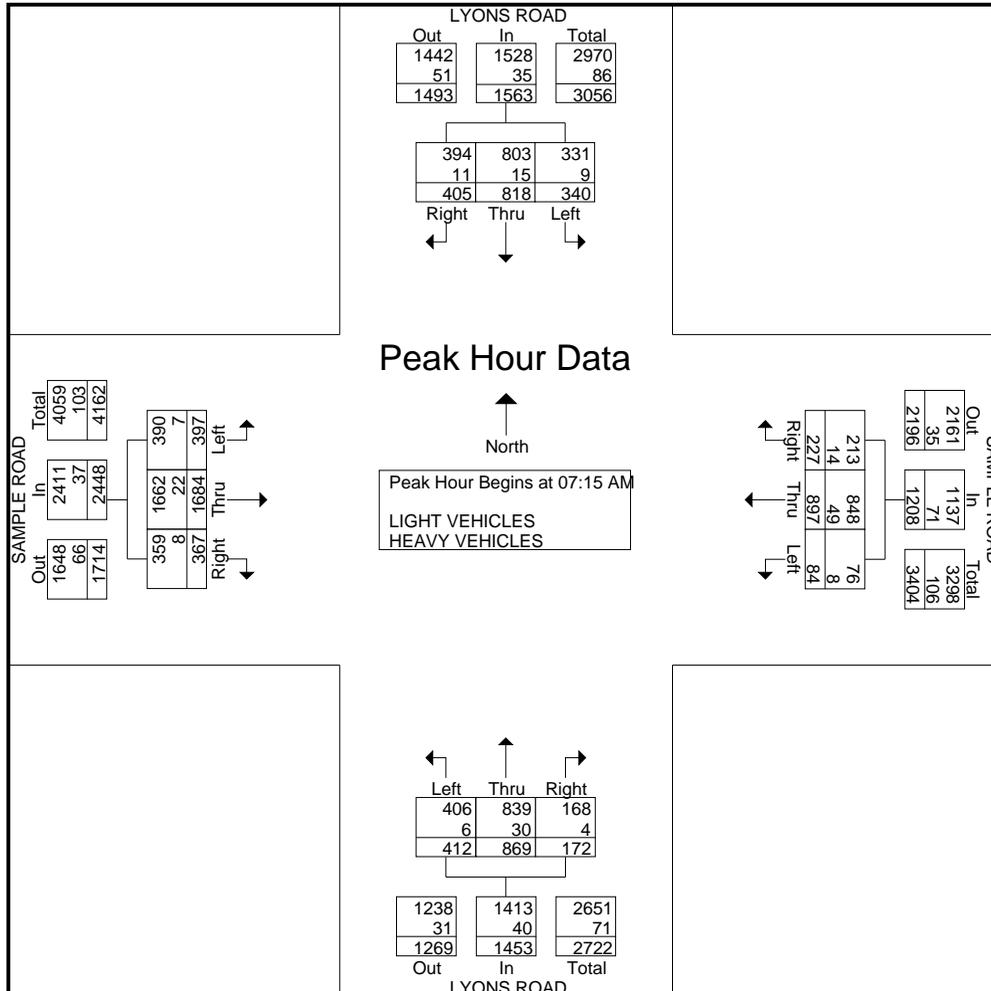
# Traffic Survey Specialists, Inc.

85 SE 4th Avenue, Unit 109, Delray Beach, Florida 33483  
Phone (561) 272-3255

SAMPLE ROAD & LYONS ROAD  
COCONUT CREEK, FLORIDA  
VIDEO COUNT  
SIGNALIZED

File Name : sample & lyons  
Site Code : 210121  
Start Date : 10/13/2021  
Page No : 2

Start Time	LYONS ROAD From North					SAMPLE ROAD From East					LYONS ROAD From South					SAMPLE ROAD From West					Int. Total
	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	2	79	176	86	343	0	20	216	67	303	0	108	245	52	405	0	98	414	53	565	1616
07:30 AM	0	107	226	123	456	0	17	247	37	301	0	124	207	46	377	0	102	410	94	606	1740
07:45 AM	3	69	191	101	364	1	24	270	64	359	0	92	211	41	344	2	106	471	125	704	1771
08:00 AM	2	78	225	95	400	1	21	164	59	245	1	87	206	33	327	0	89	389	95	573	1545
Total Volume	7	333	818	405	1563	2	82	897	227	1208	1	411	869	172	1453	2	395	1684	367	2448	6672
% App. Total	0.4	21.3	52.3	25.9	0.2	6.8	74.3	18.8		0.1	28.3	59.8	11.8		0.1	16.1	68.8	15			
PHF	.583	.778	.905	.823	.857	.500	.854	.831	.847	.841	.250	.829	.887	.827	.897	.250	.932	.894	.734	.869	.942
LIGHT VEHICLES	1662																				
% LIGHT VEHICLES	100	97.3	98.2	97.3	97.8	100	90.2	94.5	93.8	94.1	100	98.5	96.5	97.7	97.2	100	98.2	98.7	97.8	98.5	97.3
HEAVY VEHICLES																					
% HEAVY VEHICLES	0	2.7	1.8	2.7	2.2	0	9.8	5.5	6.2	5.9	0	1.5	3.5	2.3	2.8	0	1.8	1.3	2.2	1.5	2.7



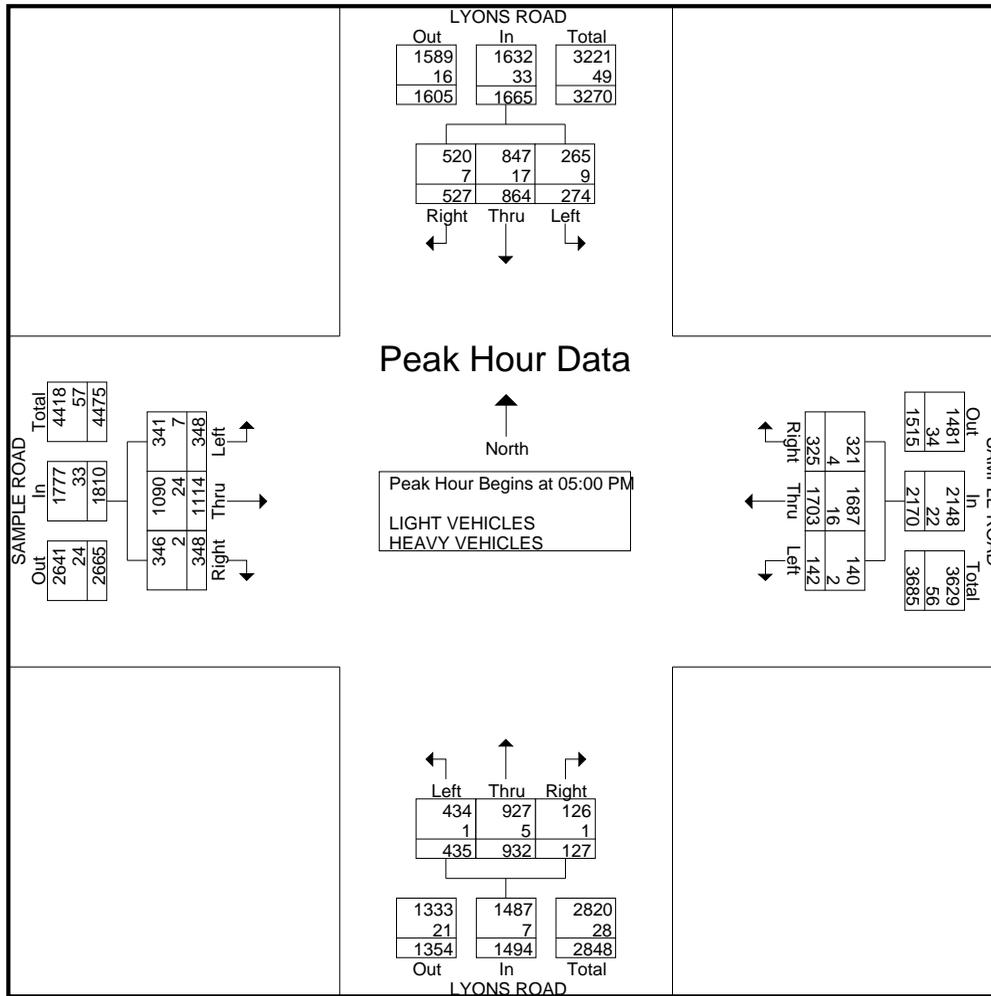
# Traffic Survey Specialists, Inc.

85 SE 4th Avenue, Unit 109, Delray Beach, Florida 33483  
Phone (561) 272-3255

SAMPLE ROAD & LYONS ROAD  
COCONUT CREEK, FLORIDA  
VIDEO COUNT  
SIGNALIZED

File Name : sample & lyons  
Site Code : 210121  
Start Date : 10/13/2021  
Page No : 3

Start Time	LYONS ROAD From North					SAMPLE ROAD From East					LYONS ROAD From South					SAMPLE ROAD From West					Int. Total
	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	3	66	224	109	402	1	37	414	75	527	1	90	217	37	345	0	95	240	76	411	1685
05:15 PM	5	67	175	120	367	1	26	503	86	616	1	120	184	26	331	0	87	332	92	511	1825
05:30 PM	1	57	274	156	488	1	42	348	75	466	0	117	332	38	487	0	90	269	88	447	1888
05:45 PM	0	75	191	142	408	0	34	438	89	561	0	106	199	26	331	0	76	273	92	441	1741
Total Volume	9	265	864	527	1665	3	139	1703	325	2170	2	433	932	127	1494	0	348	1114	348	1810	7139
% App. Total	0.5	15.9	51.9	31.7		0.1	6.4	78.5	15		0.1	29	62.4	8.5		0	19.2	61.5	19.2		
PHF	.450	.883	.788	.845	.853	.750	.827	.846	.913	.881	.500	.902	.702	.836	.767	.000	.916	.839	.946	.886	.945
LIGHT VEHICLES											1687										
% LIGHT VEHICLES	100	96.6	98.0	98.7	98.0	100	98.6	99.1	98.8	99.0	100	99.8	99.5	99.2	99.5	0	98.0	97.8	99.4	98.2	98.7
HEAVY VEHICLES											1090										
% HEAVY VEHICLES	0	3.4	2.0	1.3	2.0	0	1.4	0.9	1.2	1.0	0	0.2	0.5	0.8	0.5	0	2.0	2.2	0.6	1.8	1.3



**Traffic Survey Specialists, Inc.**

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SAMPLE ROAD & LYONS ROAD  
COCONUT CREEK, FLORIDA  
VIDEO COUNT  
SIGNALIZED

File Name : sample & lyons  
Site Code : 210121  
Start Date : 10/13/2021  
Page No : 1

**Groups Printed- BICYCLES ON THE ROAD**

Start Time	LYONS ROAD From North				SAMPLE ROAD From East				LYONS ROAD From South				SAMPLE ROAD From West				Int. Total	
	UTurn	Left	Thru	Right														
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	2
Total	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	3
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
05:30 PM	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	2
Total	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	2
Grand Total	0	0	1	0	0	0	0	0	0	0	0	0	2	0	0	1	3	7
Apprch %	0	0	100	0	0	0	0	0	0	0	0	0	100	0	0	25	75	
Total %	0	0	14.3	0	0	0	0	0	0	0	0	0	28.6	0	0	14.3	42.9	

## Traffic Survey Specialists, Inc.

85 SE 4th Avenue, Unit 109, Delray Beach, Florida 33483  
Phone (561) 272-3255

SAMPLE ROAD & LYONS ROAD  
COCONUT CREEK, FLORIDA  
VIDEO COUNT  
SIGNALIZED

File Name : sample & lyons  
Site Code : 210121  
Start Date : 10/13/2021  
Page No : 1

### Groups Printed- PEDESTRIANS & BIKES

Start Time	LYONS ROAD From North				SAMPLE ROAD From East				LYONS ROAD From South				SAMPLE ROAD From West				Int. Total
	Peds	Left	BIKES	Right													
07:00 AM	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	2
07:15 AM	0	0	0	0	0	0	0	0	0	0	1	0	3	0	0	0	4
07:30 AM	1	0	0	0	0	0	0	0	3	0	2	0	2	0	1	0	9
07:45 AM	0	0	1	0	0	0	0	0	0	0	1	0	4	0	0	0	6
Total	1	0	1	0	0	0	0	0	3	0	5	0	10	0	1	0	21
08:00 AM	0	0	0	0	0	0	0	0	4	0	0	0	2	0	0	0	6
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
08:30 AM	0	0	0	0	1	0	0	0	2	0	0	0	0	0	0	0	3
Total	0	0	0	0	1	0	0	0	6	0	0	0	3	0	0	0	10
04:00 PM	0	0	0	0	1	0	1	0	1	0	0	0	3	0	0	0	6
04:15 PM	2	0	0	0	1	0	0	0	1	0	1	0	3	0	0	0	8
04:30 PM	1	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	3
04:45 PM	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2
Total	4	0	0	0	2	0	2	0	2	0	3	0	6	0	0	0	19
05:00 PM	0	0	0	0	0	0	0	0	1	0	2	0	1	0	0	0	4
05:15 PM	1	0	0	0	0	0	0	0	2	0	2	0	1	0	0	0	6
05:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
05:45 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	2
Total	1	0	0	0	0	0	0	0	3	0	6	0	2	0	1	0	13
Grand Total	6	0	1	0	3	0	2	0	14	0	14	0	21	0	2	0	63
Apprch %	85.7	0	14.3	0	60	0	40	0	50	0	50	0	91.3	0	8.7	0	
Total %	9.5	0	1.6	0	4.8	0	3.2	0	22.2	0	22.2	0	33.3	0	3.2	0	

## Traffic Survey Specialists, Inc.

85 SE 4th Avenue, Unit 109, Delray Beach, Florida 33483  
Phone (561) 272-3255

CORAL TREE CIRCLE & LYONS ROAD  
COCONUT CREEK, FLORIDA  
VIDEO COUNT  
NOT SIGNALIZED

File Name : coral tree & lyons  
Site Code : 210121  
Start Date : 10/13/2021  
Page No : 1

### Groups Printed- LIGHT VEHICLES - HEAVY VEHICLES

Start Time	LYONS ROAD From North				CORAL TREE CIRCLE From East				LYONS ROAD From South				----- From West				Int. Total
	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	
07:00 AM	0	14	228	0	0	6	0	26	9	0	270	1	0	0	0	0	554
07:15 AM	0	29	341	0	0	4	0	40	4	0	428	6	0	0	0	0	852
07:30 AM	0	27	395	0	0	4	0	47	1	0	340	3	0	0	0	0	817
07:45 AM	0	41	384	0	0	3	0	26	4	0	370	7	0	0	0	0	835
<b>Total</b>	<b>0</b>	<b>111</b>	<b>1348</b>	<b>0</b>	<b>0</b>	<b>17</b>	<b>0</b>	<b>139</b>	<b>18</b>	<b>0</b>	<b>1408</b>	<b>17</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3058</b>
08:00 AM	1	21	355	0	0	3	0	24	3	0	333	6	0	0	0	0	746
08:15 AM	0	35	319	0	0	4	0	28	4	0	374	3	0	0	0	0	767
08:30 AM	0	21	300	0	0	2	0	26	5	0	391	7	0	0	0	0	752
08:45 AM	1	16	333	0	0	3	0	17	2	0	333	6	0	0	0	0	711
<b>Total</b>	<b>2</b>	<b>93</b>	<b>1307</b>	<b>0</b>	<b>0</b>	<b>12</b>	<b>0</b>	<b>95</b>	<b>14</b>	<b>0</b>	<b>1431</b>	<b>22</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2976</b>
04:00 PM	0	21	317	0	0	3	0	33	3	0	328	6	0	0	0	0	711
04:15 PM	0	23	411	0	0	3	0	24	2	0	330	10	0	0	0	0	803
04:30 PM	0	23	358	0	0	4	0	40	0	0	344	12	0	0	0	0	781
04:45 PM	0	8	356	0	0	3	0	33	6	0	412	6	0	0	0	0	824
<b>Total</b>	<b>0</b>	<b>75</b>	<b>1442</b>	<b>0</b>	<b>0</b>	<b>13</b>	<b>0</b>	<b>130</b>	<b>11</b>	<b>0</b>	<b>1414</b>	<b>34</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3119</b>
05:00 PM	0	25	422	0	0	4	0	55	2	0	387	4	0	0	0	0	899
05:15 PM	0	19	395	0	0	6	0	90	3	0	406	14	0	0	0	0	933
05:30 PM	0	21	422	0	0	5	0	71	6	0	360	5	0	0	0	0	890
05:45 PM	0	25	389	0	0	5	0	70	6	0	366	17	0	0	0	0	878
<b>Total</b>	<b>0</b>	<b>90</b>	<b>1628</b>	<b>0</b>	<b>0</b>	<b>20</b>	<b>0</b>	<b>286</b>	<b>17</b>	<b>0</b>	<b>1519</b>	<b>40</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3600</b>
<b>Grand Total</b>	<b>2</b>	<b>369</b>	<b>5725</b>	<b>0</b>	<b>0</b>	<b>62</b>	<b>0</b>	<b>650</b>	<b>60</b>	<b>0</b>	<b>5772</b>	<b>113</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>12753</b>
Apprch %	0	6.1	93.9	0	0	8.7	0	91.3	1	0	97.1	1.9	0	0	0	0	
Total %	0	2.9	44.9	0	0	0.5	0	5.1	0.5	0	45.3	0.9	0	0	0	0	
LIGHT VEHICLES	0	358	5613	0	0	58	0	643	59	0	5652	109	0	0	0	0	12492
% LIGHT VEHICLES	0	97	98	0	0	93.5	0	98.9	98.3	0	97.9	96.5	0	0	0	0	98
HEAVY VEHICLES	2	11	112	0	0	4	0	7	1	0	120	4	0	0	0	0	261
% HEAVY VEHICLES	100	3	2	0	0	6.5	0	1.1	1.7	0	2.1	3.5	0	0	0	0	2

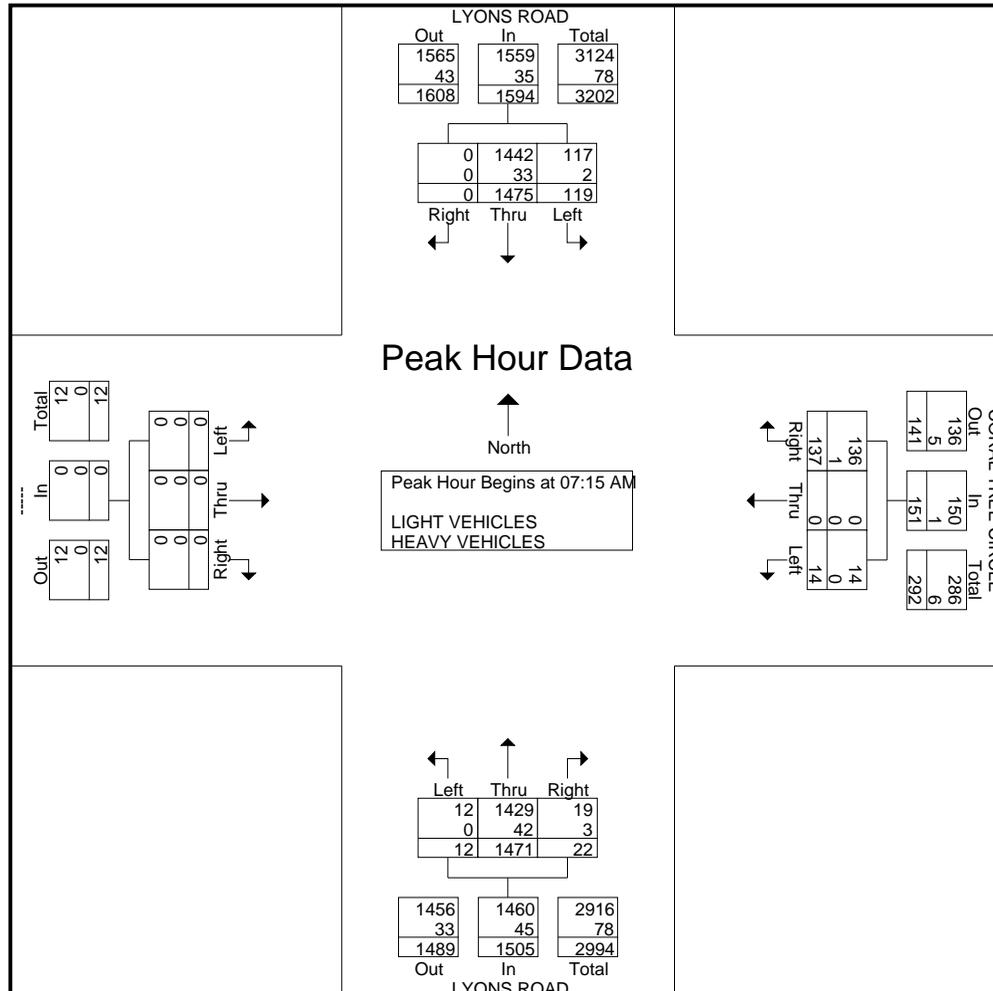
# Traffic Survey Specialists, Inc.

85 SE 4th Avenue, Unit 109, Delray Beach, Florida 33483  
Phone (561) 272-3255

CORAL TREE CIRCLE & LYONS ROAD  
COCONUT CREEK, FLORIDA  
VIDEO COUNT  
NOT SIGNALIZED

File Name : coral tree & lyons  
Site Code : 210121  
Start Date : 10/13/2021  
Page No : 2

Start Time	LYONS ROAD From North					CORAL TREE CIRCLE From East					LYONS ROAD From South				----- From West				Int. Total		
	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru		Right	App. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	0	29	341	0	370	0	4	0	40	44	4	0	428	6	438	0	0	0	0	0	852
07:30 AM	0	27	395	0	422	0	4	0	47	51	1	0	340	3	344	0	0	0	0	0	817
07:45 AM	0	41	384	0	425	0	3	0	26	29	4	0	370	7	381	0	0	0	0	0	835
08:00 AM	1	21	355	0	377	0	3	0	24	27	3	0	333	6	342	0	0	0	0	0	746
Total Volume	1	118	1475	0	1594	0	14	0	137	151	12	0	1471	22	1505	0	0	0	0	0	3250
% App. Total	0.1	7.4	92.5	0		0	9.3	0	90.7		0.8	0	97.7	1.5		0	0	0	0	0	
PHF	.250	.720	.934	.000	.938	.000	.875	.000	.729	.740	.750	.000	.859	.786	.859	.000	.000	.000	.000	.000	.954
LIGHT VEHICLES	1442					1429															
% LIGHT VEHICLES	0	99.2	97.8	0	97.8	0	100	0	99.3	99.3	100	0	97.1	86.4	97.0	0	0	0	0	0	97.5
HEAVY VEHICLES																					
% HEAVY VEHICLES	100	0.8	2.2	0	2.2	0	0	0	0.7	0.7	0	0	2.9	13.6	3.0	0	0	0	0	0	2.5



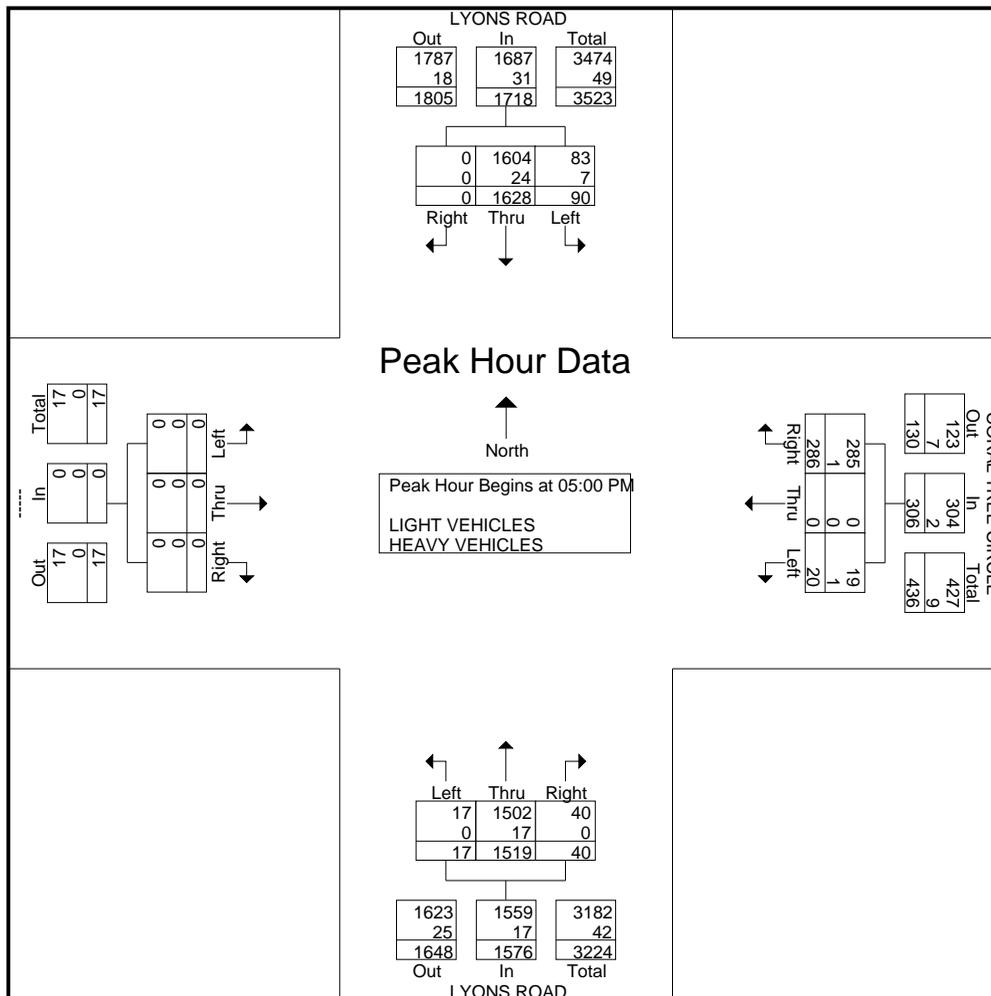
# Traffic Survey Specialists, Inc.

85 SE 4th Avenue, Unit 109, Delray Beach, Florida 33483  
Phone (561) 272-3255

**CORAL TREE CIRCLE & LYONS ROAD**  
**COCONUT CREEK, FLORIDA**  
**VIDEO COUNT**  
**NOT SIGNALIZED**

File Name : coral tree & lyons  
Site Code : 210121  
Start Date : 10/13/2021  
Page No : 3

Start Time	LYONS ROAD From North					CORAL TREE CIRCLE From East					LYONS ROAD From South					----- From West					Int. Total
	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	0	25	422	0	447	0	4	0	55	59	2	0	387	4	393	0	0	0	0	0	899
05:15 PM	0	19	395	0	414	0	6	0	90	96	3	0	406	14	423	0	0	0	0	0	933
05:30 PM	0	21	422	0	443	0	5	0	71	76	6	0	360	5	371	0	0	0	0	0	890
05:45 PM	0	25	389	0	414	0	5	0	70	75	6	0	366	17	389	0	0	0	0	0	878
Total Volume	0	90	1628	0	1718	0	20	0	286	306	17	0	1519	40	1576	0	0	0	0	0	3600
% App. Total	0	5.2	94.8	0		0	6.5	0	93.5		1.1	0	96.4	2.5		0	0	0	0		
PHF	.000	.900	.964	.000	.961	.000	.833	.000	.794	.797	.708	.000	.935	.588	.931	.000	.000	.000	.000	.000	.965
LIGHT VEHICLES	1604					1502															
% LIGHT VEHICLES	0	92.2	98.5	0	98.2	0	95.0	0	99.7	99.3	100	0	98.9	100	98.9	0	0	0	0	0	98.6
HEAVY VEHICLES	1.8					0.7					1.1										
% HEAVY VEHICLES	0	7.8	1.5	0	1.8	0	5.0	0	0.3	0.7	0	0	1.1	0	1.1	0	0	0	0	0	1.4



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VIDEO COUNT  
NOT SIGNALIZED

File Name : coral tree & lyons  
Site Code : 210121  
Start Date : 10/13/2021  
Page No : 1

**Groups Printed- BICYCLES ON THE ROAD**

Start Time	LYONS ROAD From North				CORAL TREE CIRCLE From East				LYONS ROAD From South				----- From West				Int. Total
	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	
07:00 AM	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	2
07:15 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
Total	0	0	0	0	0	0	0	2	0	0	1	0	0	0	0	0	3
08:00 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
08:15 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	2
04:15 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
04:45 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
Total	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2
05:45 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
Total	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
Grand Total	0	0	1	0	0	0	0	2	0	0	5	0	0	0	0	0	8
Apprch %	0	0	100	0	0	0	0	100	0	0	100	0	0	0	0	0	
Total %	0	0	12.5	0	0	0	0	25	0	0	62.5	0	0	0	0	0	

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CORAL TREE CIRCLE & LYONS ROAD  
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NOT SIGNALIZED

File Name : coral tree & lyons  
Site Code : 210121  
Start Date : 10/13/2021  
Page No : 1

**Groups Printed- PEDESTRIANS & BIKES**

Start Time	LYONS ROAD From North				CORAL TREE CIRCLE From East				LYONS ROAD From South				----- From West				Int. Total
	Peds	Left	BIKES	Right	Peds	Left	BIKES	Right	Peds	Left	BIKES	Right	Peds	Left	BIKES	Right	
07:00 AM	0	0	0	0	1	0	0	0	0	0	0	0	3	0	0	0	4
07:15 AM	0	0	0	0	1	0	0	0	0	0	0	0	1	0	3	0	5
07:30 AM	0	0	0	0	1	0	0	0	0	0	0	0	1	0	1	0	3
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Total	0	0	0	0	3	0	0	0	0	0	0	0	5	0	5	0	13
08:00 AM	0	0	0	0	2	0	0	0	0	0	0	0	2	0	0	0	4
08:15 AM	1	0	0	0	2	0	0	0	0	0	0	0	2	0	1	0	6
08:30 AM	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	3
Total	1	0	0	0	7	0	0	0	0	0	0	0	4	0	1	0	13
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	2
04:15 PM	0	0	0	0	0	0	1	0	0	0	0	0	5	0	0	0	6
04:30 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2
Total	0	0	0	0	0	0	2	0	0	0	0	0	8	0	1	0	11
05:30 PM	0	0	0	0	1	0	0	0	0	0	0	0	1	0	1	0	3
Total	0	0	0	0	1	0	0	0	0	0	0	0	1	0	1	0	3
Grand Total	1	0	0	0	11	0	2	0	0	0	0	0	18	0	8	0	40
Apprch %	100	0	0	0	84.6	0	15.4	0	0	0	0	0	69.2	0	30.8	0	
Total %	2.5	0	0	0	27.5	0	5	0	0	0	0	0	45	0	20	0	

## Traffic Survey Specialists, Inc. Daily Vehicle Volume Report

Study Date: Wednesday, 10/13/2021

Unit ID: Massachusetts

Location: NW 54th Avenue South of Cullum Road

Comments: Coconut Creek, Florida

	Northbound Volume	Southbound Volume	Total Volume
00:00 - 00:14	5	8	13
00:15 - 00:29	3	5	8
00:30 - 00:44	4	3	7
00:45 - 00:59	0	5	5
01:00 - 01:14	1	5	6
01:15 - 01:29	0	3	3
01:30 - 01:44	1	6	7
01:45 - 01:59	0	1	1
02:00 - 02:14	2	2	4
02:15 - 02:29	2	1	3
02:30 - 02:44	1	2	3
02:45 - 02:59	1	3	4
03:00 - 03:14	1	3	4
03:15 - 03:29	2	5	7
03:30 - 03:44	0	4	4
03:45 - 03:59	5	5	10
04:00 - 04:14	0	1	1
04:15 - 04:29	4	2	6
04:30 - 04:44	4	6	10
04:45 - 04:59	2	3	5
05:00 - 05:14	4	3	7
05:15 - 05:29	6	5	11
05:30 - 05:44	4	4	8
05:45 - 05:59	6	8	14
06:00 - 06:14	6	3	9
06:15 - 06:29	8	9	17
06:30 - 06:44	6	17	23
06:45 - 06:59	15	14	29
07:00 - 07:14	22	18	40
07:15 - 07:29	16	23	39
07:30 - 07:44	24	26	50
07:45 - 07:59	24	42	66
08:00 - 08:14	22	37	59
08:15 - 08:29	17	46	63
08:30 - 08:44	19	33	52
08:45 - 08:59	29	38	67
09:00 - 09:14	22	29	51
09:15 - 09:29	23	40	63
09:30 - 09:44	22	42	64
09:45 - 09:59	20	51	71
10:00 - 10:14	25	35	60
10:15 - 10:29	23	43	66
10:30 - 10:44	25	31	56
10:45 - 10:59	25	36	61
11:00 - 11:14	21	45	66
11:15 - 11:29	27	45	72
11:30 - 11:44	31	53	84
11:45 - 11:59	26	44	70
12:00 - 12:14	45	62	107
12:15 - 12:29	33	44	77
12:30 - 12:44	42	41	83
12:45 - 12:59	34	51	85

## Traffic Survey Specialists, Inc. Daily Vehicle Volume Report

Study Date: Wednesday, 10/13/2021

Unit ID: Massachusetts

Location: NW 54th Avenue South of Cullum Road

Comments: Coconut Creek, Florida

	Northbound Volume	Southbound Volume	Total Volume
13:00 - 13:14	29	47	76
13:15 - 13:29	49	50	99
13:30 - 13:44	46	44	90
13:45 - 13:59	49	52	101
14:00 - 14:14	42	54	96
14:15 - 14:29	31	47	78
14:30 - 14:44	43	50	93
14:45 - 14:59	34	56	90
15:00 - 15:14	37	35	72
15:15 - 15:29	33	31	64
15:30 - 15:44	45	53	98
15:45 - 15:59	27	43	70
16:00 - 16:14	46	31	77
16:15 - 16:29	31	28	59
16:30 - 16:44	38	45	83
16:45 - 16:59	49	24	73
17:00 - 17:14	47	43	90
17:15 - 17:29	43	43	86
17:30 - 17:44	38	66	104
17:45 - 17:59	45	50	95
18:00 - 18:14	51	60	111
18:15 - 18:29	32	37	69
18:30 - 18:44	35	42	77
18:45 - 18:59	39	36	75
19:00 - 19:14	44	37	81
19:15 - 19:29	27	40	67
19:30 - 19:44	22	41	63
19:45 - 19:59	17	21	38
20:00 - 20:14	28	36	64
20:15 - 20:29	13	30	43
20:30 - 20:44	19	32	51
20:45 - 20:59	9	17	26
21:00 - 21:14	11	26	37
21:15 - 21:29	10	16	26
21:30 - 21:44	8	16	24
21:45 - 21:59	7	19	26
22:00 - 22:14	12	21	33
22:15 - 22:29	6	22	28
22:30 - 22:44	12	17	29
22:45 - 22:59	5	14	19
23:00 - 23:14	5	4	9
23:15 - 23:29	4	7	11
23:30 - 23:44	3	19	22
23:45 - 23:59	4	6	10
<b>Totals</b>	<b>1935</b>	<b>2599</b>	<b>4534</b>
<b>AM Peak Time</b>	<b>10:54 - 11:53</b>	<b>10:59 - 11:58</b>	<b>10:59 - 11:58</b>
<b>AM Peak Volume</b>	<b>106</b>	<b>190</b>	<b>295</b>
<b>PM Peak Time</b>	<b>13:06 - 14:05</b>	<b>17:17 - 18:16</b>	<b>17:17 - 18:16</b>
<b>PM Peak Volume</b>	<b>187</b>	<b>220</b>	<b>398</b>

## **Traffic Survey Specialists, Inc.**

### **Daily Vehicle Volume Report**

Study Date: Wednesday, 10/13/2021

Unit ID: Massachusetts

Location: NW 54th Avenue South of Cullum Road

Comments: Coconut Creek, Florida

## Traffic Survey Specialists, Inc. Daily Vehicle Volume Report

Study Date: Thursday, 10/14/2021

Unit ID: Massachusetts

Location: NW 54th Avenue South of Cullum Road

Comments: Coconut Creek, Florida

	Northbound Volume	Southbound Volume	Total Volume
00:00 - 00:14	6	8	14
00:15 - 00:29	5	3	8
00:30 - 00:44	4	4	8
00:45 - 00:59	2	2	4
01:00 - 01:14	3	2	5
01:15 - 01:29	2	3	5
01:30 - 01:44	4	3	7
01:45 - 01:59	4	5	9
02:00 - 02:14	7	6	13
02:15 - 02:29	2	4	6
02:30 - 02:44	2	5	7
02:45 - 02:59	2	7	9
03:00 - 03:14	2	4	6
03:15 - 03:29	1	4	5
03:30 - 03:44	1	4	5
03:45 - 03:59	5	4	9
04:00 - 04:14	3	1	4
04:15 - 04:29	7	3	10
04:30 - 04:44	4	7	11
04:45 - 04:59	3	1	4
05:00 - 05:14	2	4	6
05:15 - 05:29	4	4	8
05:30 - 05:44	2	6	8
05:45 - 05:59	9	8	17
06:00 - 06:14	3	4	7
06:15 - 06:29	1	12	13
06:30 - 06:44	10	10	20
06:45 - 06:59	13	15	28
07:00 - 07:14	15	15	30
07:15 - 07:29	22	12	34
07:30 - 07:44	23	26	49
07:45 - 07:59	11	30	41
08:00 - 08:14	16	37	53
08:15 - 08:29	20	27	47
08:30 - 08:44	21	27	48
08:45 - 08:59	25	35	60
09:00 - 09:14	20	38	58
09:15 - 09:29	17	40	57
09:30 - 09:44	13	35	48
09:45 - 09:59	21	52	73
10:00 - 10:14	27	45	72
10:15 - 10:29	31	34	65
10:30 - 10:44	23	40	63
10:45 - 10:59	22	33	55
11:00 - 11:14	29	34	63
11:15 - 11:29	24	52	76
11:30 - 11:44	22	49	71
11:45 - 11:59	29	52	81
12:00 - 12:14	29	41	70
12:15 - 12:29	28	42	70
12:30 - 12:44	31	48	79
12:45 - 12:59	25	42	67

## Traffic Survey Specialists, Inc. Daily Vehicle Volume Report

Study Date: Thursday, 10/14/2021

Unit ID: Massachusetts

Location: NW 54th Avenue South of Cullum Road

Comments: Coconut Creek, Florida

	Northbound Volume	Southbound Volume	Total Volume
13:00 - 13:14	27	34	61
13:15 - 13:29	40	55	95
13:30 - 13:44	28	54	82
13:45 - 13:59	39	39	78
14:00 - 14:14	41	48	89
14:15 - 14:29	42	49	91
14:30 - 14:44	38	54	92
14:45 - 14:59	32	46	78
15:00 - 15:14	29	37	66
15:15 - 15:29	48	49	97
15:30 - 15:44	37	49	86
15:45 - 15:59	35	42	77
16:00 - 16:14	34	45	79
16:15 - 16:29	40	54	94
16:30 - 16:44	41	53	94
16:45 - 16:59	51	45	96
17:00 - 17:14	46	53	99
17:15 - 17:29	46	40	86
17:30 - 17:44	33	45	78
17:45 - 17:59	45	52	97
18:00 - 18:14	41	58	99
18:15 - 18:29	27	42	69
18:30 - 18:44	38	43	81
18:45 - 18:59	24	43	67
19:00 - 19:14	28	49	77
19:15 - 19:29	23	42	65
19:30 - 19:44	19	40	59
19:45 - 19:59	13	17	30
20:00 - 20:14	20	30	50
20:15 - 20:29	17	28	45
20:30 - 20:44	13	40	53
20:45 - 20:59	8	13	21
21:00 - 21:14	13	23	36
21:15 - 21:29	15	18	33
21:30 - 21:44	10	21	31
21:45 - 21:59	14	14	28
22:00 - 22:14	15	23	38
22:15 - 22:29	11	13	24
22:30 - 22:44	3	9	12
22:45 - 22:59	4	13	17
23:00 - 23:14	10	8	18
23:15 - 23:29	6	12	18
23:30 - 23:44	5	6	11
23:45 - 23:59	8	9	17
<b>Totals</b>	<b>1814</b>	<b>2586</b>	<b>4400</b>
<b>AM Peak Time</b>	<b>10:26 - 11:25</b>	<b>10:59 - 11:58</b>	<b>10:59 - 11:58</b>
<b>AM Peak Volume</b>	<b>107</b>	<b>192</b>	<b>296</b>
<b>PM Peak Time</b>	<b>16:33 - 17:32</b>	<b>16:18 - 17:17</b>	<b>16:34 - 17:33</b>
<b>PM Peak Volume</b>	<b>190</b>	<b>211</b>	<b>399</b>

## **Traffic Survey Specialists, Inc.**

### **Daily Vehicle Volume Report**

Study Date: Thursday, 10/14/2021

Unit ID: Massachusetts

Location: NW 54th Avenue South of Cullum Road

Comments: Coconut Creek, Florida

## Traffic Survey Specialists, Inc. Daily Vehicle Volume Report

Study Date: Friday, 10/15/2021

Unit ID: Massachusetts

Location: NW 54th Avenue South of Cullum Road

Comments: Coconut Creek, Florida

	Northbound Volume	Southbound Volume	Total Volume
00:00 - 00:14	9	8	17
00:15 - 00:29	4	3	7
00:30 - 00:44	4	5	9
00:45 - 00:59	3	4	7
01:00 - 01:14	1	4	5
01:15 - 01:29	3	3	6
01:30 - 01:44	0	6	6
01:45 - 01:59	2	2	4
02:00 - 02:14	2	2	4
02:15 - 02:29	2	6	8
02:30 - 02:44	1	3	4
02:45 - 02:59	5	3	8
03:00 - 03:14	0	4	4
03:15 - 03:29	1	3	4
03:30 - 03:44	0	7	7
03:45 - 03:59	0	6	6
04:00 - 04:14	3	2	5
04:15 - 04:29	4	3	7
04:30 - 04:44	2	3	5
04:45 - 04:59	4	6	10
05:00 - 05:14	0	4	4
05:15 - 05:29	2	6	8
05:30 - 05:44	5	4	9
05:45 - 05:59	8	7	15
06:00 - 06:14	9	5	14
06:15 - 06:29	4	4	8
06:30 - 06:44	7	16	23
06:45 - 06:59	14	15	29
07:00 - 07:14	13	15	28
07:15 - 07:29	14	23	37
07:30 - 07:44	28	36	64
07:45 - 07:59	18	32	50
08:00 - 08:14	29	22	51
08:15 - 08:29	24	30	54
08:30 - 08:44	14	26	40
08:45 - 08:59	26	29	55
09:00 - 09:14	15	27	42
09:15 - 09:29	25	38	63
09:30 - 09:44	21	42	63
09:45 - 09:59	20	43	63
10:00 - 10:14	16	62	78
10:15 - 10:29	27	48	75
10:30 - 10:44	17	42	59
10:45 - 10:59	31	55	86
11:00 - 11:14	24	48	72
11:15 - 11:29	37	68	105
11:30 - 11:44	33	59	92
11:45 - 11:59	34	57	91
12:00 - 12:14	36	52	88
12:15 - 12:29	28	67	95
12:30 - 12:44	31	77	108
12:45 - 12:59	54	57	111

## Traffic Survey Specialists, Inc. Daily Vehicle Volume Report

Study Date: Friday, 10/15/2021

Unit ID: Massachusetts

Location: NW 54th Avenue South of Cullum Road

Comments: Coconut Creek, Florida

	Northbound Volume	Southbound Volume	Total Volume
13:00 - 13:14	31	45	76
13:15 - 13:29	35	62	97
13:30 - 13:44	46	54	100
13:45 - 13:59	50	55	105
14:00 - 14:14	41	69	110
14:15 - 14:29	28	54	82
14:30 - 14:44	31	50	81
14:45 - 14:59	47	75	122
15:00 - 15:14	39	47	86
15:15 - 15:29	33	57	90
15:30 - 15:44	42	51	93
15:45 - 15:59	37	64	101
16:00 - 16:14	39	54	93
16:15 - 16:29	45	51	96
16:30 - 16:44	35	60	95
16:45 - 16:59	43	52	95
17:00 - 17:14	46	67	113
17:15 - 17:29	41	61	102
17:30 - 17:44	54	60	114
17:45 - 17:59	38	54	92
18:00 - 18:14	42	60	102
18:15 - 18:29	39	62	101
18:30 - 18:44	38	56	94
18:45 - 18:59	46	75	121
19:00 - 19:14	34	67	101
19:15 - 19:29	23	63	86
19:30 - 19:44	18	65	83
19:45 - 19:59	21	69	90
20:00 - 20:14	22	73	95
20:15 - 20:29	25	47	72
20:30 - 20:44	18	51	69
20:45 - 20:59	15	47	62
21:00 - 21:14	18	36	54
21:15 - 21:29	15	46	61
21:30 - 21:44	15	42	57
21:45 - 21:59	12	17	29
22:00 - 22:14	10	21	31
22:15 - 22:29	6	20	26
22:30 - 22:44	12	21	33
22:45 - 22:59	6	22	28
23:00 - 23:14	10	12	22
23:15 - 23:29	10	16	26
23:30 - 23:44	8	18	26
23:45 - 23:59	13	9	22
<b>Totals</b>	<b>1991</b>	<b>3356</b>	<b>5347</b>
<b>AM Peak Time</b>	<b>10:46 - 11:45</b>	<b>10:59 - 11:58</b>	<b>10:56 - 11:55</b>
<b>AM Peak Volume</b>	<b>128</b>	<b>239</b>	<b>365</b>
<b>PM Peak Time</b>	<b>16:48 - 17:47</b>	<b>18:42 - 19:41</b>	<b>16:48 - 17:47</b>
<b>PM Peak Volume</b>	<b>190</b>	<b>279</b>	<b>438</b>

## **Traffic Survey Specialists, Inc.**

# Daily Vehicle Volume Report

Study Date: Friday, 10/15/2021

Unit ID: Massachusetts

Location: NW 54th Avenue South of Cullum Road

Comments: Coconut Creek, Florida

## Traffic Survey Specialists, Inc. Daily Vehicle Volume Report

Study Date: Saturday, 10/16/2021

Unit ID: Massachusetts

Location: NW 54th Avenue South of Cullum Road

Comments: Coconut Creek, Florida

	Northbound Volume	Southbound Volume	Total Volume
00:00 - 00:14	7	11	18
00:15 - 00:29	4	11	15
00:30 - 00:44	6	10	16
00:45 - 00:59	9	8	17
01:00 - 01:14	7	8	15
01:15 - 01:29	4	4	8
01:30 - 01:44	5	7	12
01:45 - 01:59	2	4	6
02:00 - 02:14	1	7	8
02:15 - 02:29	2	10	12
02:30 - 02:44	5	6	11
02:45 - 02:59	3	4	7
03:00 - 03:14	1	5	6
03:15 - 03:29	0	8	8
03:30 - 03:44	3	7	10
03:45 - 03:59	3	7	10
04:00 - 04:14	4	2	6
04:15 - 04:29	1	5	6
04:30 - 04:44	7	3	10
04:45 - 04:59	3	6	9
05:00 - 05:14	5	4	9
05:15 - 05:29	4	6	10
05:30 - 05:44	1	8	9
05:45 - 05:59	2	10	12
06:00 - 06:14	5	5	10
06:15 - 06:29	2	9	11
06:30 - 06:44	9	7	16
06:45 - 06:59	4	16	20
07:00 - 07:14	6	14	20
07:15 - 07:29	4	10	14
07:30 - 07:44	12	11	23
07:45 - 07:59	14	22	36
08:00 - 08:14	18	22	40
08:15 - 08:29	13	25	38
08:30 - 08:44	16	23	39
08:45 - 08:59	22	28	50
09:00 - 09:14	19	21	40
09:15 - 09:29	19	37	56
09:30 - 09:44	21	28	49
09:45 - 09:59	27	41	68
10:00 - 10:14	26	40	66
10:15 - 10:29	27	45	72
10:30 - 10:44	25	48	73
10:45 - 10:59	31	43	74
11:00 - 11:14	32	37	69
11:15 - 11:29	43	42	85
11:30 - 11:44	38	42	80
11:45 - 11:59	30	43	73
12:00 - 12:14	43	56	99
12:15 - 12:29	35	46	81
12:30 - 12:44	37	62	99
12:45 - 12:59	32	55	87

## Traffic Survey Specialists, Inc. Daily Vehicle Volume Report

Study Date: Saturday, 10/16/2021

Unit ID: Massachusetts

Location: NW 54th Avenue South of Cullum Road

Comments: Coconut Creek, Florida

	Northbound Volume	Southbound Volume	Total Volume
13:00 - 13:14	34	40	74
13:15 - 13:29	35	48	83
13:30 - 13:44	40	47	87
13:45 - 13:59	42	54	96
14:00 - 14:14	38	50	88
14:15 - 14:29	31	35	66
14:30 - 14:44	41	59	100
14:45 - 14:59	35	49	84
15:00 - 15:14	36	41	77
15:15 - 15:29	44	67	111
15:30 - 15:44	26	59	85
15:45 - 15:59	38	47	85
16:00 - 16:14	44	54	98
16:15 - 16:29	30	49	79
16:30 - 16:44	28	45	73
16:45 - 16:59	24	32	56
17:00 - 17:14	38	46	84
17:15 - 17:29	42	51	93
17:30 - 17:44	27	55	82
17:45 - 17:59	28	46	74
18:00 - 18:14	25	42	67
18:15 - 18:29	23	36	59
18:30 - 18:44	33	58	91
18:45 - 18:59	27	40	67
19:00 - 19:14	16	52	68
19:15 - 19:29	25	53	78
19:30 - 19:44	22	54	76
19:45 - 19:59	17	49	66
20:00 - 20:14	16	47	63
20:15 - 20:29	11	32	43
20:30 - 20:44	17	48	65
20:45 - 20:59	24	45	69
21:00 - 21:14	12	31	43
21:15 - 21:29	15	44	59
21:30 - 21:44	13	31	44
21:45 - 21:59	12	22	34
22:00 - 22:14	14	27	41
22:15 - 22:29	11	24	35
22:30 - 22:44	9	35	44
22:45 - 22:59	11	34	45
23:00 - 23:14	7	26	33
23:15 - 23:29	14	18	32
23:30 - 23:44	8	18	26
23:45 - 23:59	9	25	34
<b>Totals</b>	<b>1791</b>	<b>2904</b>	<b>4695</b>
<b>AM Peak Time</b>	<b>10:56 - 11:55</b>	<b>09:52 - 10:51</b>	<b>10:59 - 11:58</b>
<b>AM Peak Volume</b>	<b>149</b>	<b>190</b>	<b>312</b>
<b>PM Peak Time</b>	<b>13:12 - 14:11</b>	<b>15:18 - 16:17</b>	<b>15:17 - 16:16</b>
<b>PM Peak Volume</b>	<b>161</b>	<b>234</b>	<b>387</b>

## **Traffic Survey Specialists, Inc.**

### **Daily Vehicle Volume Report**

Study Date: Saturday, 10/16/2021

Unit ID: Massachusetts

Location: NW 54th Avenue South of Cullum Road

Comments: Coconut Creek, Florida

## Traffic Survey Specialists, Inc. Daily Vehicle Volume Report

Study Date: Sunday, 10/17/2021

Unit ID: Massachusetts

Location: NW 54th Avenue South of Cullum Road

Comments: Coconut Creek, Florida

	Northbound Volume	Southbound Volume	Total Volume
00:00 - 00:14	11	27	38
00:15 - 00:29	7	20	27
00:30 - 00:44	6	8	14
00:45 - 00:59	6	9	15
01:00 - 01:14	10	9	19
01:15 - 01:29	7	9	16
01:30 - 01:44	4	5	9
01:45 - 01:59	6	7	13
02:00 - 02:14	3	11	14
02:15 - 02:29	3	4	7
02:30 - 02:44	4	7	11
02:45 - 02:59	3	2	5
03:00 - 03:14	4	5	9
03:15 - 03:29	4	5	9
03:30 - 03:44	3	5	8
03:45 - 03:59	4	3	7
04:00 - 04:14	5	7	12
04:15 - 04:29	6	3	9
04:30 - 04:44	2	2	4
04:45 - 04:59	0	2	2
05:00 - 05:14	1	6	7
05:15 - 05:29	1	1	2
05:30 - 05:44	5	5	10
05:45 - 05:59	4	9	13
06:00 - 06:14	5	5	10
06:15 - 06:29	0	6	6
06:30 - 06:44	4	3	7
06:45 - 06:59	1	12	13
07:00 - 07:14	2	6	8
07:15 - 07:29	4	12	16
07:30 - 07:44	5	8	13
07:45 - 07:59	2	12	14
08:00 - 08:14	3	7	10
08:15 - 08:29	11	7	18
08:30 - 08:44	10	8	18
08:45 - 08:59	6	18	24
09:00 - 09:14	6	14	20
09:15 - 09:29	11	31	42
09:30 - 09:44	8	29	37
09:45 - 09:59	14	31	45
10:00 - 10:14	14	29	43
10:15 - 10:29	16	38	54
10:30 - 10:44	10	29	39
10:45 - 10:59	22	37	59
11:00 - 11:14	14	37	51
11:15 - 11:29	21	35	56
11:30 - 11:44	23	42	65
11:45 - 11:59	17	35	52
12:00 - 12:14	21	43	64
12:15 - 12:29	26	47	73
12:30 - 12:44	22	55	77
12:45 - 12:59	19	54	73

## Traffic Survey Specialists, Inc. Daily Vehicle Volume Report

Study Date: Sunday, 10/17/2021

Unit ID: Massachusetts

Location: NW 54th Avenue South of Cullum Road

Comments: Coconut Creek, Florida

	Northbound Volume	Southbound Volume	Total Volume
13:00 - 13:14	24	35	59
13:15 - 13:29	23	51	74
13:30 - 13:44	25	62	87
13:45 - 13:59	31	53	84
14:00 - 14:14	37	43	80
14:15 - 14:29	20	42	62
14:30 - 14:44	27	46	73
14:45 - 14:59	35	46	81
15:00 - 15:14	28	34	62
15:15 - 15:29	30	42	72
15:30 - 15:44	31	58	89
15:45 - 15:59	30	39	69
16:00 - 16:14	29	46	75
16:15 - 16:29	21	34	55
16:30 - 16:44	24	48	72
16:45 - 16:59	23	44	67
17:00 - 17:14	21	41	62
17:15 - 17:29	24	43	67
17:30 - 17:44	19	54	73
17:45 - 17:59	27	29	56
18:00 - 18:14	26	34	60
18:15 - 18:29	19	39	58
18:30 - 18:44	24	33	57
18:45 - 18:59	13	43	56
19:00 - 19:14	23	37	60
19:15 - 19:29	16	42	58
19:30 - 19:44	16	38	54
19:45 - 19:59	14	30	44
20:00 - 20:14	13	39	52
20:15 - 20:29	15	30	45
20:30 - 20:44	11	17	28
20:45 - 20:59	8	29	37
21:00 - 21:14	8	22	30
21:15 - 21:29	5	34	39
21:30 - 21:44	6	17	23
21:45 - 21:59	13	13	26
22:00 - 22:14	6	16	22
22:15 - 22:29	4	12	16
22:30 - 22:44	7	12	19
22:45 - 22:59	3	10	13
23:00 - 23:14	6	7	13
23:15 - 23:29	5	6	11
23:30 - 23:44	4	2	6
23:45 - 23:59	3	3	6
<b>Totals</b>	<b>1223</b>	<b>2316</b>	<b>3539</b>
<b>AM Peak Time</b>	<b>10:39 - 11:38</b>	<b>10:59 - 11:58</b>	<b>10:45 - 11:44</b>
<b>AM Peak Volume</b>	<b>80</b>	<b>153</b>	<b>231</b>
<b>PM Peak Time</b>	<b>14:38 - 15:37</b>	<b>13:07 - 14:06</b>	<b>13:20 - 14:19</b>
<b>PM Peak Volume</b>	<b>131</b>	<b>213</b>	<b>328</b>

## **Traffic Survey Specialists, Inc.**

# Daily Vehicle Volume Report

Study Date: Sunday, 10/17/2021

Unit ID: Massachusetts

Location: NW 54th Avenue South of Cullum Road

Comments: Coconut Creek, Florida

## Traffic Survey Specialists, Inc. Daily Vehicle Volume Report

Study Date: Wednesday, 10/13/2021

Unit ID:

Location: Banks Road South of NW 40th Street

Comments: Coconut Creek, Florida

	Northbound Volume	Southbound Volume	Total Volume
00:00 - 00:14	0	0	0
00:15 - 00:29	0	0	0
00:30 - 00:44	0	0	0
00:45 - 00:59	0	0	0
01:00 - 01:14	0	0	0
01:15 - 01:29	0	0	0
01:30 - 01:44	0	0	0
01:45 - 01:59	1	0	1
02:00 - 02:14	0	0	0
02:15 - 02:29	0	1	1
02:30 - 02:44	1	0	1
02:45 - 02:59	0	0	0
03:00 - 03:14	0	0	0
03:15 - 03:29	1	0	1
03:30 - 03:44	2	0	2
03:45 - 03:59	0	0	0
04:00 - 04:14	0	0	0
04:15 - 04:29	0	0	0
04:30 - 04:44	0	0	0
04:45 - 04:59	0	0	0
05:00 - 05:14	0	0	0
05:15 - 05:29	0	0	0
05:30 - 05:44	2	0	2
05:45 - 05:59	1	0	1
06:00 - 06:14	0	0	0
06:15 - 06:29	1	0	1
06:30 - 06:44	1	0	1
06:45 - 06:59	4	1	5
07:00 - 07:14	2	0	2
07:15 - 07:29	3	1	4
07:30 - 07:44	0	1	1
07:45 - 07:59	1	0	1
08:00 - 08:14	3	5	8
08:15 - 08:29	3	1	4
08:30 - 08:44	0	3	3
08:45 - 08:59	6	3	9
09:00 - 09:14	3	4	7
09:15 - 09:29	2	0	2
09:30 - 09:44	2	2	4
09:45 - 09:59	5	5	10
10:00 - 10:14	7	2	9
10:15 - 10:29	8	3	11
10:30 - 10:44	7	0	7
10:45 - 10:59	7	3	10
11:00 - 11:14	4	3	7
11:15 - 11:29	2	3	5
11:30 - 11:44	7	3	10
11:45 - 11:59	7	1	8
12:00 - 12:14	5	4	9
12:15 - 12:29	5	5	10
12:30 - 12:44	6	1	7
12:45 - 12:59	3	0	3

## Traffic Survey Specialists, Inc. Daily Vehicle Volume Report

Study Date: Wednesday, 10/13/2021

Unit ID:

Location: Banks Road South of NW 40th Street

Comments: Coconut Creek, Florida

	Northbound Volume	Southbound Volume	Total Volume
13:00 - 13:14	4	3	7
13:15 - 13:29	5	2	7
13:30 - 13:44	4	2	6
13:45 - 13:59	11	2	13
14:00 - 14:14	4	2	6
14:15 - 14:29	6	1	7
14:30 - 14:44	7	3	10
14:45 - 14:59	7	2	9
15:00 - 15:14	9	4	13
15:15 - 15:29	6	1	7
15:30 - 15:44	4	0	4
15:45 - 15:59	4	0	4
16:00 - 16:14	4	4	8
16:15 - 16:29	4	1	5
16:30 - 16:44	10	5	15
16:45 - 16:59	4	0	4
17:00 - 17:14	10	0	10
17:15 - 17:29	6	3	9
17:30 - 17:44	14	2	16
17:45 - 17:59	10	2	12
18:00 - 18:14	9	2	11
18:15 - 18:29	2	0	2
18:30 - 18:44	2	1	3
18:45 - 18:59	7	1	8
19:00 - 19:14	6	1	7
19:15 - 19:29	2	0	2
19:30 - 19:44	9	0	9
19:45 - 19:59	7	1	8
20:00 - 20:14	2	1	3
20:15 - 20:29	2	0	2
20:30 - 20:44	0	0	0
20:45 - 20:59	3	0	3
21:00 - 21:14	3	0	3
21:15 - 21:29	0	0	0
21:30 - 21:44	2	0	2
21:45 - 21:59	1	0	1
22:00 - 22:14	0	0	0
22:15 - 22:29	1	0	1
22:30 - 22:44	0	0	0
22:45 - 22:59	1	0	1
23:00 - 23:14	0	0	0
23:15 - 23:29	0	0	0
23:30 - 23:44	1	0	1
23:45 - 23:59	0	0	0
<b>Totals</b>	<b>305</b>	<b>101</b>	<b>406</b>
<b>AM Peak Time</b>	<b>09:54 - 10:53</b>	<b>08:06 - 09:05</b>	<b>09:55 - 10:54</b>
<b>AM Peak Volume</b>	<b>30</b>	<b>13</b>	<b>40</b>
<b>PM Peak Time</b>	<b>17:03 - 18:02</b>	<b>12:01 - 13:00</b>	<b>17:04 - 18:03</b>
<b>PM Peak Volume</b>	<b>41</b>	<b>11</b>	<b>50</b>

## **Traffic Survey Specialists, Inc.**

### **Daily Vehicle Volume Report**

Study Date: Wednesday, 10/13/2021

Unit ID:

Location: Banks Road South of NW 40th Street

Comments: Coconut Creek, Florida

## Traffic Survey Specialists, Inc. Daily Vehicle Volume Report

Study Date: Thursday, 10/14/2021

Unit ID:

Location: Banks Road South of NW 40th Street

Comments: Coconut Creek, Florida

	Northbound Volume	Southbound Volume	Total Volume
00:00 - 00:14	0	0	0
00:15 - 00:29	0	0	0
00:30 - 00:44	0	0	0
00:45 - 00:59	0	0	0
01:00 - 01:14	0	0	0
01:15 - 01:29	0	0	0
01:30 - 01:44	0	0	0
01:45 - 01:59	1	0	1
02:00 - 02:14	0	0	0
02:15 - 02:29	1	0	1
02:30 - 02:44	1	0	1
02:45 - 02:59	0	0	0
03:00 - 03:14	1	0	1
03:15 - 03:29	0	0	0
03:30 - 03:44	0	1	1
03:45 - 03:59	0	0	0
04:00 - 04:14	0	0	0
04:15 - 04:29	1	0	1
04:30 - 04:44	0	0	0
04:45 - 04:59	0	0	0
05:00 - 05:14	0	0	0
05:15 - 05:29	0	0	0
05:30 - 05:44	1	0	1
05:45 - 05:59	0	0	0
06:00 - 06:14	1	0	1
06:15 - 06:29	0	0	0
06:30 - 06:44	0	0	0
06:45 - 06:59	3	0	3
07:00 - 07:14	2	1	3
07:15 - 07:29	2	0	2
07:30 - 07:44	1	0	1
07:45 - 07:59	3	1	4
08:00 - 08:14	3	2	5
08:15 - 08:29	0	0	0
08:30 - 08:44	2	2	4
08:45 - 08:59	4	0	4
09:00 - 09:14	5	7	12
09:15 - 09:29	2	1	3
09:30 - 09:44	3	2	5
09:45 - 09:59	2	0	2
10:00 - 10:14	1	1	2
10:15 - 10:29	8	2	10
10:30 - 10:44	5	3	8
10:45 - 10:59	5	3	8
11:00 - 11:14	3	3	6
11:15 - 11:29	3	0	3
11:30 - 11:44	6	1	7
11:45 - 11:59	10	4	14
12:00 - 12:14	5	3	8
12:15 - 12:29	1	3	4
12:30 - 12:44	4	3	7
12:45 - 12:59	3	1	4

## Traffic Survey Specialists, Inc. Daily Vehicle Volume Report

Study Date: Thursday, 10/14/2021

Unit ID:

Location: Banks Road South of NW 40th Street

Comments: Coconut Creek, Florida

	Northbound Volume	Southbound Volume	Total Volume
13:00 - 13:14	3	5	8
13:15 - 13:29	3	2	5
13:30 - 13:44	6	3	9
13:45 - 13:59	6	2	8
14:00 - 14:14	7	2	9
14:15 - 14:29	4	1	5
14:30 - 14:44	9	4	13
14:45 - 14:59	7	2	9
15:00 - 15:14	10	0	10
15:15 - 15:29	7	1	8
15:30 - 15:44	4	5	9
15:45 - 15:59	11	4	15
16:00 - 16:14	4	3	7
16:15 - 16:29	4	2	6
16:30 - 16:44	8	1	9
16:45 - 16:59	7	2	9
17:00 - 17:14	13	5	18
17:15 - 17:29	10	4	14
17:30 - 17:44	5	3	8
17:45 - 17:59	7	0	7
18:00 - 18:14	7	2	9
18:15 - 18:29	7	1	8
18:30 - 18:44	3	0	3
18:45 - 18:59	2	2	4
19:00 - 19:14	6	1	7
19:15 - 19:29	2	0	2
19:30 - 19:44	3	0	3
19:45 - 19:59	3	0	3
20:00 - 20:14	0	0	0
20:15 - 20:29	1	0	1
20:30 - 20:44	3	0	3
20:45 - 20:59	1	0	1
21:00 - 21:14	1	2	3
21:15 - 21:29	0	0	0
21:30 - 21:44	0	0	0
21:45 - 21:59	3	0	3
22:00 - 22:14	1	2	3
22:15 - 22:29	5	0	5
22:30 - 22:44	0	0	0
22:45 - 22:59	1	0	1
23:00 - 23:14	0	0	0
23:15 - 23:29	0	0	0
23:30 - 23:44	0	0	0
23:45 - 23:59	0	0	0
<b>Totals</b>	<b>277</b>	<b>105</b>	<b>382</b>
<b>AM Peak Time</b>	<b>10:09 - 11:08</b>	<b>10:09 - 11:08</b>	<b>10:09 - 11:08</b>
<b>AM Peak Volume</b>	<b>22</b>	<b>12</b>	<b>34</b>
<b>PM Peak Time</b>	<b>16:21 - 17:20</b>	<b>15:21 - 16:20</b>	<b>16:49 - 17:48</b>
<b>PM Peak Volume</b>	<b>40</b>	<b>15</b>	<b>53</b>

## **Traffic Survey Specialists, Inc.**

# Daily Vehicle Volume Report

Study Date: Thursday, 10/14/2021

Unit ID:

Location: Banks Road South of NW 40th Street

Comments: Coconut Creek, Florida

## Traffic Survey Specialists, Inc. Daily Vehicle Volume Report

Study Date: Friday, 10/15/2021

Unit ID:

Location: Banks Road South of NW 40th Street

Comments: Coconut Creek, Florida

	Northbound Volume	Southbound Volume	Total Volume
00:00 - 00:14	0	1	1
00:15 - 00:29	0	0	0
00:30 - 00:44	0	0	0
00:45 - 00:59	0	0	0
01:00 - 01:14	0	0	0
01:15 - 01:29	1	1	2
01:30 - 01:44	0	0	0
01:45 - 01:59	0	0	0
02:00 - 02:14	1	0	1
02:15 - 02:29	1	0	1
02:30 - 02:44	0	0	0
02:45 - 02:59	0	0	0
03:00 - 03:14	0	0	0
03:15 - 03:29	0	0	0
03:30 - 03:44	0	0	0
03:45 - 03:59	0	0	0
04:00 - 04:14	0	0	0
04:15 - 04:29	0	0	0
04:30 - 04:44	0	0	0
04:45 - 04:59	0	0	0
05:00 - 05:14	0	0	0
05:15 - 05:29	0	0	0
05:30 - 05:44	1	0	1
05:45 - 05:59	1	0	1
06:00 - 06:14	1	0	1
06:15 - 06:29	0	0	0
06:30 - 06:44	0	0	0
06:45 - 06:59	0	0	0
07:00 - 07:14	0	2	2
07:15 - 07:29	2	0	2
07:30 - 07:44	2	4	6
07:45 - 07:59	2	0	2
08:00 - 08:14	0	1	1
08:15 - 08:29	2	3	5
08:30 - 08:44	3	1	4
08:45 - 08:59	4	1	5
09:00 - 09:14	2	4	6
09:15 - 09:29	2	4	6
09:30 - 09:44	2	3	5
09:45 - 09:59	6	4	10
10:00 - 10:14	5	2	7
10:15 - 10:29	3	1	4
10:30 - 10:44	3	1	4
10:45 - 10:59	9	5	14
11:00 - 11:14	4	1	5
11:15 - 11:29	5	2	7
11:30 - 11:44	7	2	9
11:45 - 11:59	6	1	7
12:00 - 12:14	3	2	5
12:15 - 12:29	3	3	6
12:30 - 12:44	4	6	10
12:45 - 12:59	10	3	13

## Traffic Survey Specialists, Inc. Daily Vehicle Volume Report

Study Date: Friday, 10/15/2021

Unit ID:

Location: Banks Road South of NW 40th Street

Comments: Coconut Creek, Florida

	Northbound Volume	Southbound Volume	Total Volume
13:00 - 13:14	3	3	6
13:15 - 13:29	7	2	9
13:30 - 13:44	7	3	10
13:45 - 13:59	6	6	12
14:00 - 14:14	5	2	7
14:15 - 14:29	8	3	11
14:30 - 14:44	10	2	12
14:45 - 14:59	7	1	8
15:00 - 15:14	11	1	12
15:15 - 15:29	6	3	9
15:30 - 15:44	6	2	8
15:45 - 15:59	15	1	16
16:00 - 16:14	9	3	12
16:15 - 16:29	4	1	5
16:30 - 16:44	10	1	11
16:45 - 16:59	6	2	8
17:00 - 17:14	9	4	13
17:15 - 17:29	3	1	4
17:30 - 17:44	14	3	17
17:45 - 17:59	7	0	7
18:00 - 18:14	5	1	6
18:15 - 18:29	9	0	9
18:30 - 18:44	5	1	6
18:45 - 18:59	9	1	10
19:00 - 19:14	5	0	5
19:15 - 19:29	2	0	2
19:30 - 19:44	8	0	8
19:45 - 19:59	9	0	9
20:00 - 20:14	2	0	2
20:15 - 20:29	1	0	1
20:30 - 20:44	2	0	2
20:45 - 20:59	2	0	2
21:00 - 21:14	1	1	2
21:15 - 21:29	1	2	3
21:30 - 21:44	3	0	3
21:45 - 21:59	1	0	1
22:00 - 22:14	0	0	0
22:15 - 22:29	3	0	3
22:30 - 22:44	3	0	3
22:45 - 22:59	1	0	1
23:00 - 23:14	0	0	0
23:15 - 23:29	2	0	2
23:30 - 23:44	2	0	2
23:45 - 23:59	1	0	1
<b>Totals</b>	<b>325</b>	<b>108</b>	<b>433</b>
<b>AM Peak Time</b>	<b>10:41 - 11:40</b>	<b>09:01 - 10:00</b>	<b>10:41 - 11:40</b>
<b>AM Peak Volume</b>	<b>25</b>	<b>16</b>	<b>35</b>
<b>PM Peak Time</b>	<b>14:58 - 15:57</b>	<b>12:34 - 13:33</b>	<b>14:58 - 15:57</b>
<b>PM Peak Volume</b>	<b>41</b>	<b>17</b>	<b>49</b>

## **Traffic Survey Specialists, Inc.**

### **Daily Vehicle Volume Report**

Study Date: Friday, 10/15/2021

Unit ID:

Location: Banks Road South of NW 40th Street

Comments: Coconut Creek, Florida

## Traffic Survey Specialists, Inc. Daily Vehicle Volume Report

Study Date: Saturday, 10/16/2021

Unit ID:

Location: Banks Road South of NW 40th Street

Comments: Coconut Creek, Florida

	Northbound Volume	Southbound Volume	Total Volume
00:00 - 00:14	0	0	0
00:15 - 00:29	0	0	0
00:30 - 00:44	0	0	0
00:45 - 00:59	0	0	0
01:00 - 01:14	0	0	0
01:15 - 01:29	0	0	0
01:30 - 01:44	0	1	1
01:45 - 01:59	1	0	1
02:00 - 02:14	0	0	0
02:15 - 02:29	0	0	0
02:30 - 02:44	0	0	0
02:45 - 02:59	1	0	1
03:00 - 03:14	0	0	0
03:15 - 03:29	0	0	0
03:30 - 03:44	0	0	0
03:45 - 03:59	0	0	0
04:00 - 04:14	0	0	0
04:15 - 04:29	0	0	0
04:30 - 04:44	0	0	0
04:45 - 04:59	1	0	1
05:00 - 05:14	0	0	0
05:15 - 05:29	1	0	1
05:30 - 05:44	1	0	1
05:45 - 05:59	1	0	1
06:00 - 06:14	0	0	0
06:15 - 06:29	0	0	0
06:30 - 06:44	0	0	0
06:45 - 06:59	0	1	1
07:00 - 07:14	0	1	1
07:15 - 07:29	0	0	0
07:30 - 07:44	5	0	5
07:45 - 07:59	2	2	4
08:00 - 08:14	0	1	1
08:15 - 08:29	1	2	3
08:30 - 08:44	3	2	5
08:45 - 08:59	4	3	7
09:00 - 09:14	4	0	4
09:15 - 09:29	3	3	6
09:30 - 09:44	5	2	7
09:45 - 09:59	5	5	10
10:00 - 10:14	5	2	7
10:15 - 10:29	9	3	12
10:30 - 10:44	4	3	7
10:45 - 10:59	7	5	12
11:00 - 11:14	3	3	6
11:15 - 11:29	4	1	5
11:30 - 11:44	7	1	8
11:45 - 11:59	9	4	13
12:00 - 12:14	1	1	2
12:15 - 12:29	5	1	6
12:30 - 12:44	5	6	11
12:45 - 12:59	10	1	11

## Traffic Survey Specialists, Inc. Daily Vehicle Volume Report

Study Date: Saturday, 10/16/2021

Unit ID:

Location: Banks Road South of NW 40th Street

Comments: Coconut Creek, Florida

	Northbound Volume	Southbound Volume	Total Volume
13:00 - 13:14	2	3	5
13:15 - 13:29	6	3	9
13:30 - 13:44	9	2	11
13:45 - 13:59	8	3	11
14:00 - 14:14	5	5	10
14:15 - 14:29	8	1	9
14:30 - 14:44	7	1	8
14:45 - 14:59	6	2	8
15:00 - 15:14	8	1	9
15:15 - 15:29	16	2	18
15:30 - 15:44	4	1	5
15:45 - 15:59	5	1	6
16:00 - 16:14	5	1	6
16:15 - 16:29	3	1	4
16:30 - 16:44	7	1	8
16:45 - 16:59	3	2	5
17:00 - 17:14	4	0	4
17:15 - 17:29	7	1	8
17:30 - 17:44	2	0	2
17:45 - 17:59	2	0	2
18:00 - 18:14	5	0	5
18:15 - 18:29	1	1	2
18:30 - 18:44	4	1	5
18:45 - 18:59	9	0	9
19:00 - 19:14	4	1	5
19:15 - 19:29	5	3	8
19:30 - 19:44	16	1	17
19:45 - 19:59	4	0	4
20:00 - 20:14	2	0	2
20:15 - 20:29	3	0	3
20:30 - 20:44	2	0	2
20:45 - 20:59	3	0	3
21:00 - 21:14	3	0	3
21:15 - 21:29	1	0	1
21:30 - 21:44	1	0	1
21:45 - 21:59	1	1	2
22:00 - 22:14	1	0	1
22:15 - 22:29	3	0	3
22:30 - 22:44	4	0	4
22:45 - 22:59	0	0	0
23:00 - 23:14	1	0	1
23:15 - 23:29	3	0	3
23:30 - 23:44	1	0	1
23:45 - 23:59	1	0	1
<b>Totals</b>	<b>302</b>	<b>93</b>	<b>395</b>
<b>AM Peak Time</b>	<b>09:34 - 10:33</b>	<b>10:06 - 11:05</b>	<b>10:06 - 11:05</b>
<b>AM Peak Volume</b>	<b>25</b>	<b>15</b>	<b>40</b>
<b>PM Peak Time</b>	<b>14:31 - 15:30</b>	<b>12:25 - 13:24</b>	<b>13:40 - 14:39</b>
<b>PM Peak Volume</b>	<b>38</b>	<b>13</b>	<b>47</b>

## **Traffic Survey Specialists, Inc.**

# Daily Vehicle Volume Report

Study Date: Saturday, 10/16/2021

Unit ID:

Location: Banks Road South of NW 40th Street

Comments: Coconut Creek, Florida

## Traffic Survey Specialists, Inc. Daily Vehicle Volume Report

Study Date: Sunday, 10/17/2021

Unit ID:

Location: Banks Road South of NW 40th Street

Comments: Coconut Creek, Florida

	Northbound Volume	Southbound Volume	Total Volume
00:00 - 00:14	0	0	0
00:15 - 00:29	0	0	0
00:30 - 00:44	0	0	0
00:45 - 00:59	1	0	1
01:00 - 01:14	0	0	0
01:15 - 01:29	1	0	1
01:30 - 01:44	1	1	2
01:45 - 01:59	1	0	1
02:00 - 02:14	0	0	0
02:15 - 02:29	1	0	1
02:30 - 02:44	1	1	2
02:45 - 02:59	1	0	1
03:00 - 03:14	3	0	3
03:15 - 03:29	0	0	0
03:30 - 03:44	1	0	1
03:45 - 03:59	1	0	1
04:00 - 04:14	0	0	0
04:15 - 04:29	0	0	0
04:30 - 04:44	0	0	0
04:45 - 04:59	0	0	0
05:00 - 05:14	0	0	0
05:15 - 05:29	0	0	0
05:30 - 05:44	0	0	0
05:45 - 05:59	0	0	0
06:00 - 06:14	0	0	0
06:15 - 06:29	0	0	0
06:30 - 06:44	0	0	0
06:45 - 06:59	1	0	1
07:00 - 07:14	1	2	3
07:15 - 07:29	1	0	1
07:30 - 07:44	0	1	1
07:45 - 07:59	0	2	2
08:00 - 08:14	0	0	0
08:15 - 08:29	1	1	2
08:30 - 08:44	2	0	2
08:45 - 08:59	1	1	2
09:00 - 09:14	4	0	4
09:15 - 09:29	4	1	5
09:30 - 09:44	1	2	3
09:45 - 09:59	4	1	5
10:00 - 10:14	2	2	4
10:15 - 10:29	4	0	4
10:30 - 10:44	3	2	5
10:45 - 10:59	1	0	1
11:00 - 11:14	1	0	1
11:15 - 11:29	4	1	5
11:30 - 11:44	4	0	4
11:45 - 11:59	6	0	6
12:00 - 12:14	2	0	2
12:15 - 12:29	5	0	5
12:30 - 12:44	1	1	2
12:45 - 12:59	3	0	3

## Traffic Survey Specialists, Inc. Daily Vehicle Volume Report

Study Date: Sunday, 10/17/2021

Unit ID:

Location: Banks Road South of NW 40th Street

Comments: Coconut Creek, Florida

	Northbound Volume	Southbound Volume	Total Volume
13:00 - 13:14	5	1	6
13:15 - 13:29	2	2	4
13:30 - 13:44	7	0	7
13:45 - 13:59	4	1	5
14:00 - 14:14	5	1	6
14:15 - 14:29	4	2	6
14:30 - 14:44	5	0	5
14:45 - 14:59	2	1	3
15:00 - 15:14	6	2	8
15:15 - 15:29	5	3	8
15:30 - 15:44	5	2	7
15:45 - 15:59	3	0	3
16:00 - 16:14	6	0	6
16:15 - 16:29	2	1	3
16:30 - 16:44	3	0	3
16:45 - 16:59	2	0	2
17:00 - 17:14	4	0	4
17:15 - 17:29	3	0	3
17:30 - 17:44	2	0	2
17:45 - 17:59	5	0	5
18:00 - 18:14	0	1	1
18:15 - 18:29	3	0	3
18:30 - 18:44	0	0	0
18:45 - 18:59	1	0	1
19:00 - 19:14	2	0	2
19:15 - 19:29	5	0	5
19:30 - 19:44	7	0	7
19:45 - 19:59	4	0	4
20:00 - 20:14	1	0	1
20:15 - 20:29	0	0	0
20:30 - 20:44	1	0	1
20:45 - 20:59	1	0	1
21:00 - 21:14	1	0	1
21:15 - 21:29	0	0	0
21:30 - 21:44	1	0	1
21:45 - 21:59	0	0	0
22:00 - 22:14	3	0	3
22:15 - 22:29	1	0	1
22:30 - 22:44	1	0	1
22:45 - 22:59	1	0	1
23:00 - 23:14	0	0	0
23:15 - 23:29	0	0	0
23:30 - 23:44	1	0	1
23:45 - 23:59	2	0	2
<b>Totals</b>	<b>184</b>	<b>36</b>	<b>220</b>
<b>AM Peak Time</b>	<b>10:53 - 11:52</b>	<b>09:05 - 10:04</b>	<b>08:56 - 09:55</b>
<b>AM Peak Volume</b>	<b>15</b>	<b>6</b>	<b>19</b>
<b>PM Peak Time</b>	<b>13:08 - 14:07</b>	<b>14:45 - 15:44</b>	<b>14:25 - 15:24</b>
<b>PM Peak Volume</b>	<b>20</b>	<b>8</b>	<b>27</b>

## **Traffic Survey Specialists, Inc.**

### **Daily Vehicle Volume Report**

Study Date: Sunday, 10/17/2021

Unit ID:

Location: Banks Road South of NW 40th Street

Comments: Coconut Creek, Florida

## APPENDIX C: SIGNAL TIMING DATA

Station : 1014 - Sample Rd & SR 7 ( Standard File )

Phase	1 (EL)	2 (WT)	3	4 (NL)	5 (WL)	6 (ET)	7	8 (SL)	9	10	11	12	13	14	15	16
Walk			7	7												
Ped Clearance			34	34												
Min Green	6	10	6	6	6	10	6									
Gap Ext	1.5	3	1.5	1.5	1.5	3	1.5									
Max1	20	40	20	20	20	40	20									
Max2																
Yellow Clr	5	5	5.5	5.5	5	5	5.5	5.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Red Clr	2	4	3	3	2	4	3	2	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Red Revert																
Added Initial																
Max Initial																
Time Before Reduce																
Cars Before Reduce																
Time To Reduce																
Reduce By																
Min Gap																
Dynamic Max Limit																
Dynamic Max Step																
Enable	ON	ON	ON	ON	ON	ON	ON									
Auto Flash Entry							ON									
Auto Flash Exit		ON				ON										
Non-Actuated 1																
Non-Actuated 2																
Lock Call									ON							
Min Recall																
Max Recall		ON				ON										
Ped Recall																
Soft Recall																
Dual Entry																
Sim Gap Enable									ON							
Guar Passage																
Rest In Walk		ON				ON										
Cond Service																
Add Init Calc																

Preemption

Channel	1	2	3	4	5	6
Lock Input	ON	ON	ON	ON	ON	ON
Override Auto Flash						
Override Higher Preempt						
Flash in Dwell						
Link to Preempt						
Delay						
Min Duration						
Min Green		6	6	6	6	6
Min Walk						
Ped Clear						
Track Green						
Min Dwell		8	8	8	8	8
Max Presence		180	180	180	180	180
Track Veh 1						
Track Veh 2						
Track Veh 3						
Track Veh 4						
Dwell Cyc Veh 1		2	4	2	3	1
Dwell Cyc Veh 2		6		5		6
Dwell Cyc Veh 3						
Dwell Cyc Veh 4						
Dwell Cyc Veh 5						
Dwell Cyc Veh 6						

Preempt LP

Channel	1	2	3	4
Min				
Max				
Enable				
Lock Mode	MAX	MAX	MAX	MAX
Coord in Preempt				
No Skip				
Priority P1				
Priority P2				
Priority P3				
Priority P4				
Lock				
Headway				
Group Lock				
Queue Jump				
Free Mode				
Alt Table				

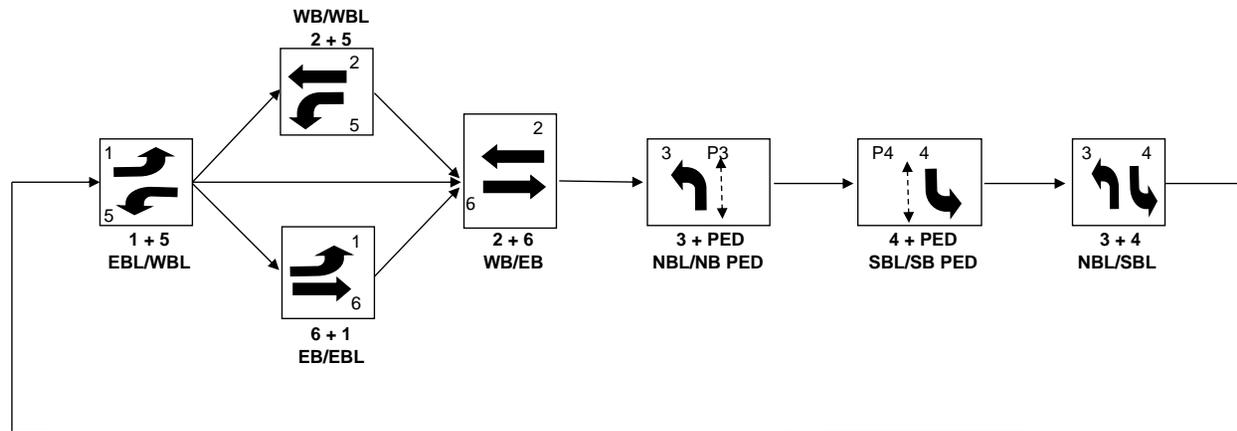






## Sequence of Operation for 1014

SAMPLE ROAD and SR 7 (US 441) (Coral Springs) MOD 30 AND UP





**BROWARD COUNTY TRAFFIC ENGINEERING**  
**ACTUATED TRAFFIC SIGNAL TIMING SHEET**

<b>Intersection Number</b>	1014	<b>Initial Operation Date</b>	5/25/70
<b>Controller Type</b>	2070 LN	<b>System Number</b>	1014
<b>Modification Number</b>	30	<b>Modification Date</b>	09/30/2020
<b>Drawing/Project No</b>	86100-3531	<b>FPL Grid Number</b>	87291521708
<b>Intersection</b>	SAMPLE ROAD (SR 834) and SR 7 (US 441)		
<b>Municipality</b>	CORAL SPRINGS		

<b>Controller Phase</b>	1	2	3	4	5	6	7
<b>Face Number</b>	1	2	3	4	5	6	7
<b>Direction</b>	EBL	WB	NBL	SBL	WBL	EB	
<b>Initial Green(MIN)</b>	6.0	10	6.0	6.0	6.0	10	6.0
<b>Vehicle Ext.(GAP)</b>	1.5	3.0	1.5	1.5	1.5	3.0	1.5
<b>Maximum Green I</b>	20.	40	20	20.	20.	40	20
<b>Maximum Green II</b>							
<b>Yellow Clearance</b>	5.0	5.0	5.5	5.5	5.0	5.0	5.5
<b>All Red Clearance</b>	2.0	4.0	3.0	3.0	2.0	4.0	3.0
<b>Phase Recall</b>	OFF	MIN	OFF	OFF	OFF	MIN	OFF
<b>Detector Delay</b>							
<b>Walk</b>			7	7			
<b>Pedestrian Clearance</b>			34	34			
<b>Permissive</b>	DUAL		DUAL	DUAL	DUAL		
<b>Flash Operation</b>	RED	YELLOW	RED	RED	RED	YELLOW	

**Attachment**                    **A-014 MOD 30.pdf**

**NOTES:**

1. PH 3 SERVICE NBL AND NB-PED, PH 4 SERVICE SBL AND SB-PED, PH 7 SERVICE NBL/SBL WHEN PED IS NOT ACTIVATED
2. MOD. 30 UPDATES PHASE 3 & 4 WALK VALUES AND PEDESTRIAN CLEARANCE VALUES PER CURRENT STANDARDS.

**Submitted By** \_\_\_\_\_

**Approved By** \_\_\_\_\_

Station : 1039 - SR 7 & Wiles Rd ( Standard File )

Phase	1 (SL)	2 (NT)	3 (WL)	4 (ET)	5 (NL)	6 (ST)	7 (EL)	8 (WT)	9	10	11	12	13	14	15	16
Walk		7		7		7		7								
Ped Clearance		29		36		29		36								
Min Green	5	10	5	6	5	10	5	6								
Gap Ext	1.5	3	1.5	2	1.5	3	1.5	2								
Max1	20	45	25	35	25	45	35	35								
Max2																
Yellow Clr	5.5	5.5	5	5	5.5	5.5	5	5	3	3	3	3	3	3	3	3
Red Clr	2	2	2	2	2	2	2	2								
Red Revert																
Added Initial																
Max Initial																
Time Before Reduce																
Cars Before Reduce																
Time To Reduce																
Reduce By																
Min Gap																
Dynamic Max Limit																
Dynamic Max Step																
Enable	ON															
Auto Flash Entry				ON				ON								
Auto Flash Exit		ON				ON										
Non-Actuated 1																
Non-Actuated 2																
Lock Call																
Min Recall		ON				ON										
Max Recall																
Ped Recall																
Soft Recall																
Dual Entry				ON				ON								
Sim Gap Enable													ON	ON	ON	ON
Guar Passage																
Rest In Walk		ON				ON										
Cond Service																
Add Init Calc																

Preemption

Channel	1	2	3	4	5	6
Lock Input	ON	ON	ON	ON	ON	ON
Override Auto Flash						
Override Higher Preempt						
Flash in Dwell						
Link to Preempt						
Delay						
Min Duration						
Min Green	6	6	6	6	6	6
Min Walk						
Ped Clear						
Track Green						
Min Dwell	8	8	8	8	8	8
Max Presence	180	180	180	180	180	180
Track Veh 1						
Track Veh 2						
Track Veh 3						
Track Veh 4						
Dwell Cyc Veh 1	2	4	1	3	2	4
Dwell Cyc Veh 2	6	8	6	8	5	7
Dwell Cyc Veh 3						
Dwell Cyc Veh 4						
Dwell Cyc Veh 5						
Dwell Cyc Veh 6						

Preempt LP

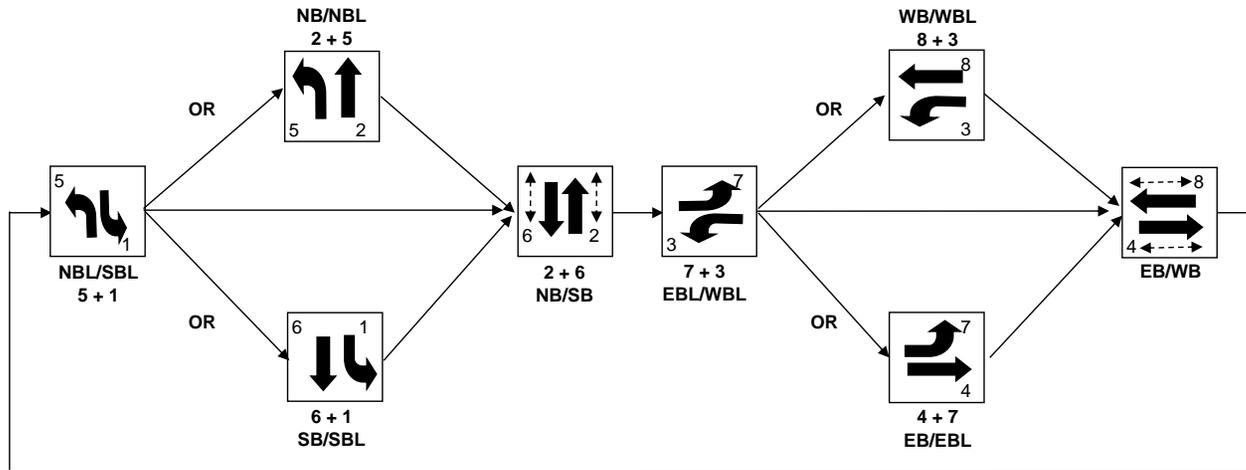
Channel	1	2	3	4
Min				
Max				
Enable				
Lock Mode	MAX	MAX	MAX	MAX
Coord in Preempt				
No Skip				
Priority P1				
Priority P2				
Priority P3				
Priority P4				
Lock				
Headway				
Group Lock				
Queue Jump				
Free Mode				
Alt Table				







**Sequence of Operation for (1039) SR 7(US 441) and Wiles Road  
Fort Lauderdale**





**BROWARD COUNTY TRAFFIC ENGINEERING**  
**ACTUATED TRAFFIC SIGNAL TIMING SHEET**

<b>Intersection Number</b>	1039	<b>Initial Operation Date</b>	4/11/79
<b>Controller Type</b>	2070 LN2 (BIU)	<b>System Number</b>	1039
<b>Modification Number</b>	20	<b>Modification Date</b>	03/06/2019
<b>Drawing/Project No</b>	421662-1-52-01	<b>FPL Grid Number</b>	87292490903
<b>Intersection</b>	SR 7 (US 441) and WILES ROAD		
<b>Municipality</b>	CORAL SPRINGS		

<b>Controller Phase</b>	1	2	3	4	5	6	7	8
<b>Face Number</b>	1, 8R	2	3, 2R	4	5, 4R	6	7	8
<b>Direction</b>	SBL	NB	WBL	EB	NBL	SB	EBL	WB
<b>Initial Green(MIN)</b>	5	10	5	6	5	10	5	6
<b>Vehicle Ext.(GAP)</b>	1.5	3.0	1.5	2.0	1.5	3.0	1.5	2.0
<b>Maximum Green I</b>	20	45	25	35	25	45	35	35
<b>Maximum Green II</b>								
<b>Yellow Clearance</b>	5.5	5.5	5.0	5.0	5.5	5.5	5.0	5.0
<b>All Red Clearance</b>	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
<b>Phase Recall</b>	OFF	MIN	OFF	OFF	OFF	MIN	OFF	OFF
<b>Detector Delay</b>				20-RT				20-RT
<b>Walk</b>		7		7		7		7
<b>Pedestrian Clearance</b>		29		36		29		36
<b>Permissive</b>	DUAL		DUAL		DUAL		DUAL	
<b>Flash Operation</b>	RED	RED	RED	RED	RED	RED	RED	RED

**Attachment**

**NOTES:**

1. DUAL ENTRY EAST/WEST.
2. NBR (HEAD 2R) HARDWIRED TO WBL.
3. EBR (HEAD 4R) HARDWIRED TO NBL.
4. WBR (HEAD 8R) HARDWIRED TO SBL.
5. PHOTO ENFORCEMENT, CITY OF CORAL SPRINGS.
6. MOD. 20 UPDATES WALK VALUES ON PHASES 4 & 8 PER CURRENT STANDARDS.

**Submitted By** \_\_\_\_\_

**Approved By** \_\_\_\_\_

Station : 1043 - Sample Rd & Lyons Rd ( Standard File )

Phase	1 (EL)	2 (WT)	3 (SL)	4 (NT)	5 (WL)	6 (ET)	7 (NL)	8 (ST)	9	10	11	12	13	14	15	16
Walk		7		5		7		5								
Ped Clearance		31		34		31		34								
Min Green	5	10	5	6	5	10	5	6								
Gap Ext	1.5	3	2	2.5	2	3	2	2.5								
Max1	20	50	20	40	25	50	20	40								
Max2																
Yellow Clr	5	5	5	5	5	5	5	5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Red Clr	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Red Revert																
Added Initial																
Max Initial																
Time Before Reduce																
Cars Before Reduce																
Time To Reduce																
Reduce By																
Min Gap																
Dynamic Max Limit																
Dynamic Max Step																
Enable	ON															
Auto Flash Entry				ON				ON								
Auto Flash Exit		ON				ON										
Non-Actuated 1																
Non-Actuated 2																
Lock Call									ON							
Min Recall		ON				ON										
Max Recall																
Ped Recall																
Soft Recall																
Dual Entry				ON				ON								
Sim Gap Enable				ON				ON	ON	ON	ON	ON	ON	ON	ON	ON
Guar Passage																
Rest In Walk		ON				ON										
Cond Service																
Add Init Calc																

Preemption

Channel	1	2	3	4	5	6
Lock Input	ON	ON	ON	ON	ON	ON
Override Auto Flash						
Override Higher Preempt						
Flash in Dwell						
Link to Preempt						
Delay						
Min Duration						
Min Green	6	6	6	6	6	6
Min Walk						
Ped Clear						
Track Green						
Min Dwell	8	8	8	8	8	8
Max Presence	180	180	180	180	180	180
Track Veh 1						
Track Veh 2						
Track Veh 3						
Track Veh 4						
Dwell Cyc Veh 1	4	2	3	2	4	1
Dwell Cyc Veh 2	8	6	8	5	7	6
Dwell Cyc Veh 3						
Dwell Cyc Veh 4						
Dwell Cyc Veh 5						
Dwell Cyc Veh 6						

Preempt LP

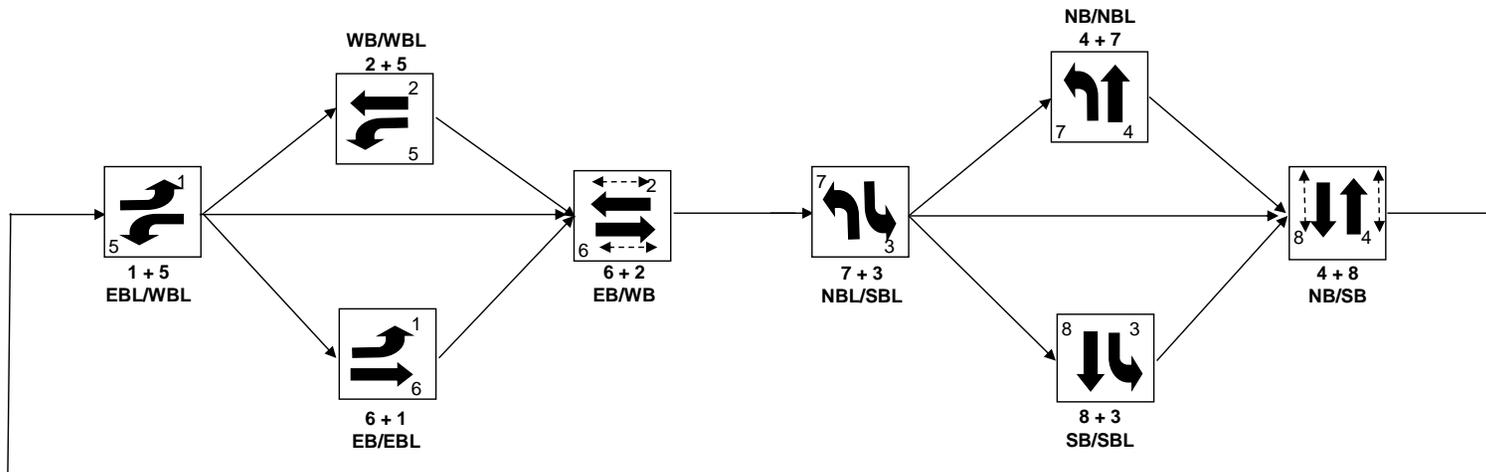
Channel	1	2	3	4
Min				
Max				
Enable				
Lock Mode	MAX	MAX	MAX	MAX
Coord in Preempt				
No Skip				
Priority P1				
Priority P2				
Priority P3				
Priority P4				
Lock				
Headway				
Group Lock				
Queue Jump				
Free Mode				
Alt Table				







## Sequence of Operation for (1043), Sample Road (SR 834) And Lyons Road





**BROWARD COUNTY TRAFFIC ENGINEERING**  
**ACTUATED TRAFFIC SIGNAL TIMING SHEET**

<b>Intersection Number</b>	1043	<b>Initial Operation Date</b>	5/19/81
<b>Controller Type</b>	TS 2	<b>System Number</b>	1043
<b>Modification Number</b>	26	<b>Modification Date</b>	03/26/2015
<b>Drawing/Project No</b>	421656-1-52-01	<b>FPL Grid Number</b>	87391611705
<b>Intersection</b>	SAMPLE ROAD (SR 834) and LYONS ROAD		
<b>Municipality</b>	COCONUT CREEK		

<b>Controller Phase</b>	1	2	3	4	5	6	7	8
<b>Face Number</b>	1,8R	2	3	4	5	6	7	8
<b>Direction</b>	EBL	WB	SBL	NB	WBL	EB	NBL	SB
<b>Initial Green(MIN)</b>	5	10	5	6	5	10	5	6
<b>Vehicle Ext.(GAP)</b>	1.5	3.0	2.0	2.5	2.0	3.0	2.0	2.5
<b>Maximum Green I</b>	20	50	20	40	25	50	20	40
<b>Maximum Green II</b>								
<b>Yellow Clearance</b>	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
<b>All Red Clearance</b>	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
<b>Phase Recall</b>	OFF	MIN	OFF	OFF	OFF	MIN	OFF	OFF
<b>Detector Delay</b>								20-RT
<b>Walk</b>		7		5		7		5
<b>Pedestrian Clearance</b>		31		34		31		34
<b>Permissive</b>	DUAL		DUAL		DUAL		DUAL	
<b>Flash Operation</b>	RED	RED	RED	RED	RED	RED	RED	RED

**Attachment**

**NOTES:**

1. DUAL ENTRY HARDWIRED NORTH/SOUTH.
2. SBR (8R) HARDWIRED TO PHASE 1 .
3. MOD. 26 UPDATES YELLOW CLEARANCE VALUES ON PHASES 1,3,4,5 & 7 PER FDOT STANDARDS.

**Submitted By** \_\_\_\_\_

**Approved By** \_\_\_\_\_

Station : 1495 - Sample Rd & NW 54 Ave/Perimeter Rd ( Standard File )

Phase	1 (EL)	2 (WT)	3 (SL)	4 (NT)	5 (WL)	6 (ET)	7 (NL)	8 (ST)	9	10	11	12	13	14	15	16
Walk		7		7		7		7								
Ped Clearance		23		31		23		31								
Min Green	5	10	5	6	5	10	5	6	4	4	4	4				4
Gap Ext	1.5	3	1.5	2	1.5	3	1.5	2	1	1	1	1				1
Max1	20	50	15	30	20	50	15	30	90	90	30	30				90
Max2																
Yellow Clr	5	5	4	4	5	5	4	4	5	5	5	5	5	5	5	5
Red Clr	2	2	2	2	2	2	2	2	2	2	4	4	1.5	1.5	1.5	2
Red Revert																
Added Initial																
Max Initial																
Time Before Reduce																
Cars Before Reduce																
Time To Reduce																
Reduce By																
Min Gap																
Dynamic Max Limit																
Dynamic Max Step																
Enable	ON															
Auto Flash Entry				ON				ON								
Auto Flash Exit		ON				ON										
Non-Actuated 1																
Non-Actuated 2																
Lock Call		ON				ON										
Min Recall		ON				ON										
Max Recall																
Ped Recall																
Soft Recall																
Dual Entry		ON		ON		ON		ON								ON
Sim Gap Enable		ON				ON										
Guar Passage																
Rest In Walk																
Cond Service																
Add Init Calc																

**Preemption**

Channel	1	2	3	4	5	6
Lock Input	ON	ON	ON	ON	ON	ON
Override Auto Flash						
Override Higher Preempt						
Flash in Dwell						
Link to Preempt						
Delay						
Min Duration						
Min Green	6	6	6	6	6	6
Min Walk						
Ped Clear						
Track Green						
Min Dwell	8	8	8	8	8	8
Max Presence	180	180	180	180	180	180
Track Veh 1						
Track Veh 2						
Track Veh 3						
Track Veh 4						
Dwell Cyc Veh 1	4	2	3	2	4	1
Dwell Cyc Veh 2	8	6	8	5	7	6
Dwell Cyc Veh 3						
Dwell Cyc Veh 4						
Dwell Cyc Veh 5						
Dwell Cyc Veh 6						

**Preempt LP**

Channel	1	2	3	4
Min	5	5		
Max	6	6		
Enable	ON			
Lock Mode	MAX	MAX	MAX	MAX
Coord in Preempt				
No Skip	ON	ON		
Priority P1	12	11		
Priority P2				
Priority P3				
Priority P4				
Lock				
Headway				
Group Lock				
Queue Jump	ON	ON		
Free Mode				
Alt Table	1	1		

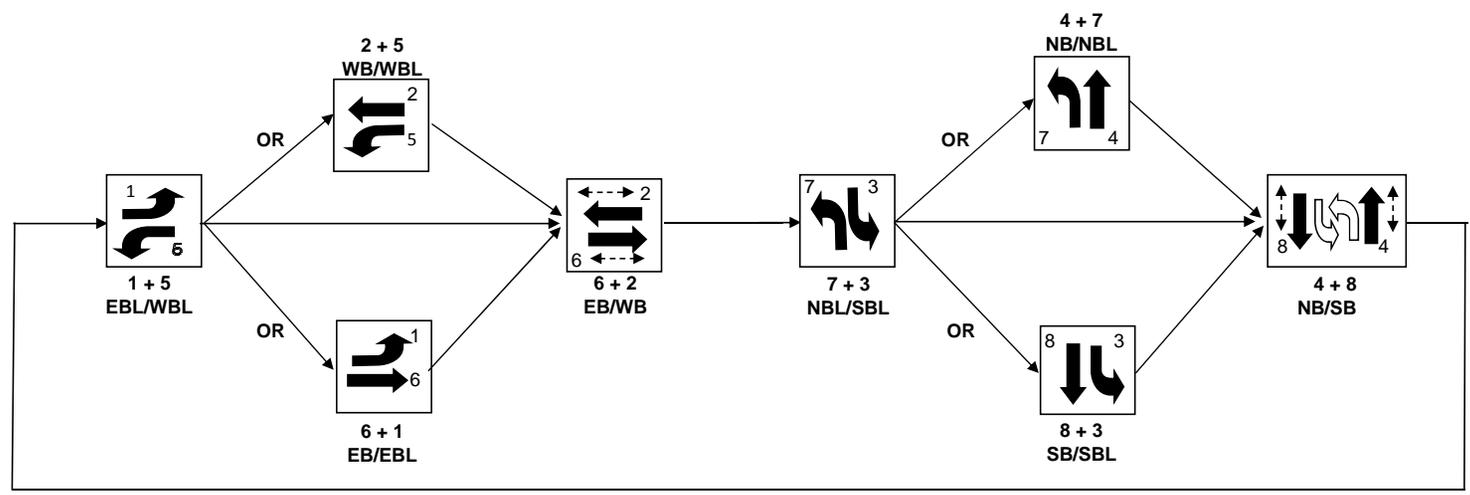






# Sequence of Operation for Sample Road (SR 834) and NW 54 Ave/Perimeter Rd (1495) Coconut Creek

Modification #5





**BROWARD COUNTY TRAFFIC ENGINEERING**  
**ACTUATED TRAFFIC SIGNAL TIMING SHEET**

<b>Intersection Number</b>	1495	<b>Initial Operation Date</b>	3/7/91
<b>Controller Type</b>	2070	<b>System Number</b>	1495
<b>Modification Number</b>	9	<b>Modification Date</b>	06/10/2020
<b>Drawing/Project No</b>	421656-1-52-01	<b>FPL Grid Number</b>	87291842105
<b>Intersection</b>	SAMPLE ROAD (SR 834) and NW 54 AVE./PERIMETER RD.		
<b>Municipality</b>	COCONUT CREEK		

<b>Controller Phase</b>	1	2	3	4	5	6	7	8
<b>Face Number</b>	1	2	3	4	5	6	7	8
<b>Direction</b>	EBL	WB	SBL	NB	WBL	EB	NBL	SB
<b>Initial Green(MIN)</b>	5	10	5	6	5	10	5	6
<b>Vehicle Ext.(GAP)</b>	2.0	3.0	1.5	2.0	2.0	3.0	1.5	2.0
<b>Maximum Green I</b>	20	50	15	30	20	50	15	30
<b>Maximum Green II</b>								
<b>Yellow Clearance</b>	5.0	5.0	4.0	4.0	5.0	5.0	4.0	4.0
<b>All Red Clearance</b>	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
<b>Phase Recall</b>	OFF	MIN	OFF	OFF	OFF	MIN	OFF	OFF
<b>Detector Delay</b>				20-RT				20-RT
<b>Walk</b>		7		7		7		7
<b>Pedestrian Clearance</b>		23		31		23		31
<b>Permissive</b>	DUAL		YES		DUAL		YES	
<b>Flash Operation</b>	RED	YELLOW		RED	RED	YELLOW		RED

**Attachment**

**NOTES:**

1. DUAL ENTRY HARDWIRED NORTH/SOUTH.
2. MOD. 9 UPDATES PHASES 2,3,6 & 7 INITIAL GREEN (MINIMUM) VALUES.  
UPDATES ALL MAXIMUM GREEN I VALUES.

**Submitted By** \_\_\_\_\_

**Approved By** \_\_\_\_\_

**Station : 1510 - SR 7 & Turtle Creek Dr ( Standard File )**

Phase	1 (SL)	2 (NT)	3 (WL)	4 (ET)	5 (NL)	6 (ST)	7 (EL)	8 (WT)	9	10	11	12	13	14	15	16
Walk		7		7		7		7								
Ped Clearance		28		35		28		35								
Min Green	5	15	4	6	5	15	5	6								
Gap Ext	1.5	3	1.5	2	1.5	3	1.5	2								
Max1	15	50	20	20	15	50	20	20								
Max2																
Yellow Clr	5.5	5.5	4	4	5.5	5.5	4	4	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Red Clr	2	2	2	2	2	2	2	2	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Red Revert																
Added Initial																
Max Initial																
Time Before Reduce																
Cars Before Reduce																
Time To Reduce																
Reduce By																
Min Gap																
Dynamic Max Limit																
Dynamic Max Step																
Enable	ON															
Auto Flash Entry				ON				ON								
Auto Flash Exit		ON				ON										
Non-Actuated 1																
Non-Actuated 2																
Lock Call									ON							
Min Recall		ON				ON										
Max Recall																
Ped Recall																
Soft Recall																
Dual Entry				ON				ON								
Sim Gap Enable									ON							
Guar Passage																
Rest In Walk		ON				ON										
Cond Service																
Add Init Calc																

**Preemption**

Channel	1	2	3	4	5	6
Lock Input	ON	ON	ON	ON	ON	ON
Override Auto Flash						
Override Higher Preempt						
Flash in Dwell						
Link to Preempt						
Delay						
Min Duration						
Min Green	6	6	6	6	6	6
Min Walk						
Ped Clear						
Track Green						
Min Dwell	8	8	8	8	8	8
Max Presence	180	180	180	180	180	180
Track Veh 1						
Track Veh 2						
Track Veh 3						
Track Veh 4						
Dwell Cyc Veh 1	2	4	1	3	2	4
Dwell Cyc Veh 2	6	8	6	8	5	7
Dwell Cyc Veh 3						
Dwell Cyc Veh 4						
Dwell Cyc Veh 5						
Dwell Cyc Veh 6						

**Preempt LP**

Channel	1	2	3	4
Min				
Max				
Enable				
Lock Mode	MAX	MAX	MAX	MAX
Coord in Preempt				
No Skip				
Priority P1				
Priority P2				
Priority P3				
Priority P4				
Lock				
Headway				
Group Lock				
Queue Jump				
Free Mode				
Alt Table				

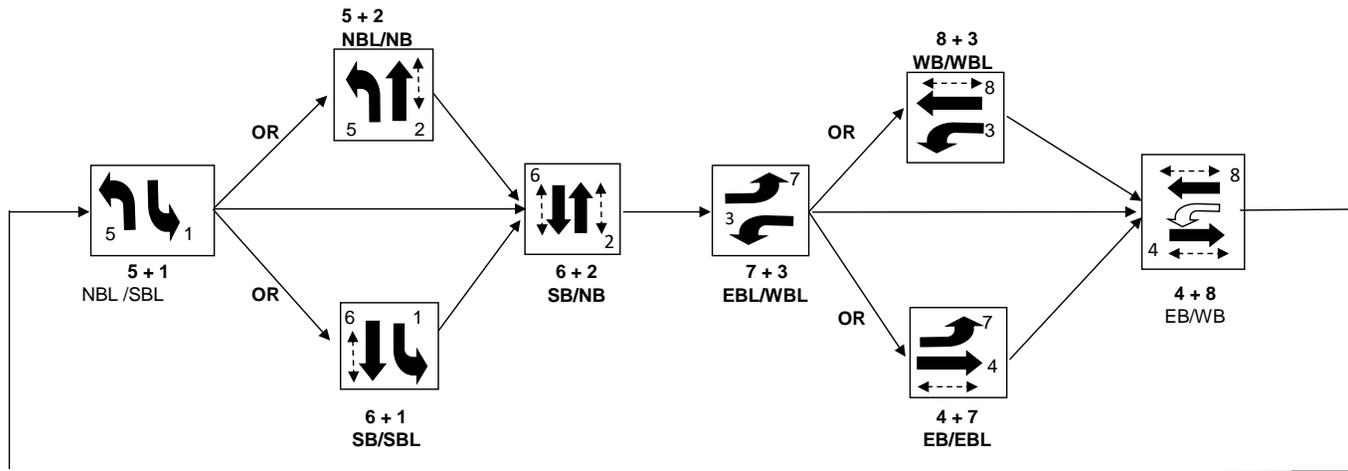






# Sequence of Operation: SR 7 (US 441) and Turtle Creek Drive (1510), Coconut Creek

Timesheet Modification #5 & higher



←---→ Denotes pedestrian crosswalk signal  
 Denotes permissive left turn

**NOTE:**

Signal operates Sequence 3 during patterns 2 ,3, 12 & 14  
 and Sequence 1 during patterns 4 & 14



**BROWARD COUNTY TRAFFIC ENGINEERING**  
**ACTUATED TRAFFIC SIGNAL TIMING SHEET**

<b>Intersection Number</b>	1510	<b>Initial Operation Date</b>	4/12/94
<b>Controller Type</b>	2070 LN	<b>System Number</b>	1510
<b>Modification Number</b>	7	<b>Modification Date</b>	04/12/2015
<b>Drawing/Project No</b>	421662-1-52-01	<b>FPL Grid Number</b>	87291486902
<b>Intersection</b>	SR 7 (US 441) and TURTLE CREEK DRIVE		
<b>Municipality</b>	COCONUT CREEK		

<b>Controller Phase</b>	1	2	3	4	5	6	7	8
<b>Face Number</b>	1	2	3	4	5	6	7	8
<b>Direction</b>	SBL	NB	WBL	EB	NBL	SB	EBL	WB
<b>Initial Green(MIN)</b>	5	15	4	6	5	15	5	6
<b>Vehicle Ext.(GAP)</b>	1.5	3.0	1.5	2.0	1.5	3.0	1.5	2.0
<b>Maximum Green I</b>	15	50	20	20	15	50	20	20
<b>Maximum Green II</b>								
<b>Yellow Clearance</b>	5.5	5.5	4.0	4.0	5.5	5.5	4.0	4.0
<b>All Red Clearance</b>	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
<b>Phase Recall</b>	OFF	MIN	OFF	OFF	OFF	MIN	OFF	OFF
<b>Detector Delay</b>								10-RT
<b>Walk</b>		7		7		7		7
<b>Pedestrian Clearance</b>		28		35		28		35
<b>Permissive</b>	DUAL		YES		DUAL		DUAL	
<b>Flash Operation</b>	RED	YELLOW		RED	RED	YELLOW	RED	RED

**Attachment**

**NOTES:**

1. DUAL ENTRY EAST/WEST.
2. MOD. 7 UPDATES YELLOW CLEARANCE VALUES ON PHASES 1,2,5 & 6 PER FDOT STANDARDS.

**Submitted By** \_\_\_\_\_

**Approved By** \_\_\_\_\_

Station : 1569 - Lyons Rd & Wiles Rd ( Standard File )

Phase	1 (SL)	2 (NT)	3 (WL)	4 (ET)	5 (NL)	6 (ST)	7 (EL)	8 (WT)	9	10	11	12	13	14	15	16
Walk		7		7		7		7								
Ped Clearance		36		38		36		38								
Min Green	5	12	5	6	5	12	5	6								
Gap Ext	1.5	3	1.5	2	1.5	3	1.5	2								
Max1	18	60	18	40	18	60	18	40								
Max2																
Yellow Clr	5	5	5	5	5	5	5	5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Red Clr	2	2	2	2	2	2	2	2	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Red Revert																
Added Initial																
Max Initial																
Time Before Reduce																
Cars Before Reduce																
Time To Reduce																
Reduce By																
Min Gap																
Dynamic Max Limit																
Dynamic Max Step																
Enable	ON															
Auto Flash Entry				ON				ON								
Auto Flash Exit		ON				ON										
Non-Actuated 1																
Non-Actuated 2																
Lock Call	ON		ON		ON		ON		ON							
Min Recall		ON				ON										
Max Recall																
Ped Recall																
Soft Recall																
Dual Entry				ON				ON								
Sim Gap Enable									ON							
Guar Passage																
Rest In Walk		ON				ON										
Cond Service																
Add Init Calc																

Preemption

Channel	1	2	3	4	5	6
Lock Input	ON	ON	ON	ON	ON	ON
Override Auto Flash	ON	ON	ON	ON	ON	ON
Override Higher Preempt	ON	ON	ON	ON	ON	ON
Flash in Dwell						
Link to Preempt						
Delay						
Min Duration						
Min Green						
Min Walk						
Ped Clear						
Track Green						
Min Dwell						
Max Presence						
Track Veh 1						
Track Veh 2						
Track Veh 3						
Track Veh 4						
Dwell Cyc Veh 1						
Dwell Cyc Veh 2						
Dwell Cyc Veh 3						
Dwell Cyc Veh 4						
Dwell Cyc Veh 5						
Dwell Cyc Veh 6						

Preempt LP

Channel	1	2	3	4
Min				
Max				
Enable				
Lock Mode	MAX	MAX	MAX	MAX
Coord in Preempt				
No Skip				
Priority P1				
Priority P2				
Priority P3				
Priority P4				
Lock				
Headway				
Group Lock				
Queue Jump				
Free Mode				
Alt Table				









**BROWARD COUNTY TRAFFIC ENGINEERING**  
**ACTUATED TRAFFIC SIGNAL TIMING SHEET**

<b>Intersection Number</b>	1569	<b>Initial Operation Date</b>	08/30/01
<b>Controller Type</b>	2070	<b>System Number</b>	1569
<b>Modification Number</b>	9	<b>Modification Date</b>	11/20/2014
<b>Drawing/Project No</b>		<b>FPL Grid Number</b>	87392520207
<b>Intersection</b>	LYONS ROAD and WILES ROAD		
<b>Municipality</b>	COCONUT CREEK		

<b>Controller Phase</b>	1	2	3	4	5	6	7	8
<b>Face Number</b>	1	2	3	4	5	6	7	8
<b>Direction</b>	SBL	NB	WBL	EB	NBL	SB	EBL	WB
<b>Initial Green(MIN)</b>	5	12	5	6	5	12	5	6
<b>Vehicle Ext.(GAP)</b>	1.5	3.0	1.5	2.0	1.5	3.0	1.5	2.0
<b>Maximum Green I</b>	18	60	18	40	18	60	18	40
<b>Maximum Green II</b>								
<b>Yellow Clearance</b>	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
<b>All Red Clearance</b>	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
<b>Phase Recall</b>	OFF	MIN	OFF	OFF	OFF	MIN	OFF	OFF
<b>Detector Delay</b>				20-RT				20-RT
<b>Walk</b>		7		7		7		7
<b>Pedestrian Clearance</b>		36		38		36		38
<b>Permissive</b>	DUAL		DUAL		DUAL		DUAL	
<b>Flash Operation</b>	RED	RED	RED	RED	RED	RED	RED	RED

**Attachment**

**NOTES:**

1. DUAL ENTRY HARDWIRED EAST/WEST.
2. MOD. 9 DEPLOYS SIGNAL ONTO ATMS.NOW AND UPDATES YELLOW CLEARANCE VALUES.

**Submitted By** \_\_\_\_\_

**Approved By** \_\_\_\_\_

## APPENDIX D: VOLUME CALCULATION DATA

Peak Season Conversion Factor Data

Growth Rate Calculation

ITE Trip Generation Excerpts

Year	Site #									Total Average
	0467	4505	4506	4507	5112	7116	9518	9694	9768	
2020	60500	5200	5600	3800	41500	31000	26000	21500	15400	210500
2019	64000	5500	5900	4000	43500	33000	31000	30000	16200	233100
2018	57500	5800	6400	4100	43000	33000	31000	30000	16000	226800
2017	63500	5800	6400	4100	53600	34000	31000	30000	15800	244200
2016	63000	6800	6300	5600	52000	33000	31000	30000	15400	243100
2015	54000	6700	6200	5500	47000	32000	23500	30000	15000	219900
2014	57500	6000	6100	4000	41000	40000	23000	23500	17500	218600
Growth Rate	2.17%	-1.73%	-0.66%	0.00%	1.19%	-3.77%	6.15%	5.01%	-1.53%	-4.69%

FLORIDA DEPARTMENT OF TRANSPORTATION  
 TRANSPORTATION STATISTICS OFFICE  
 2020 HISTORICAL AADT REPORT

COUNTY: 86 - BROWARD

SITE: 0467 - SR 834/SAMPLE RD - E OF SR 7/US 441

YEAR	AADT	DIRECTION 1	DIRECTION 2	*K FACTOR	D FACTOR	T FACTOR
2020	60500 F	E 29000	W 31500	9.00	53.90	3.80
2019	64000 C	E 30500	W 33500	9.00	54.60	3.80
2018	57500 C	E 28500	W 29000	9.00	54.50	3.80
2017	63500 C	E 31000	W 32500	9.00	51.90	2.50
2016	63000 C	E 32000	W 31000	9.00	54.10	2.50
2015	54000 C	E 26500	W 27500	9.00	54.00	2.50
2014	57500 C	E 28500	W 29000	9.00	54.20	5.00
2013	60500 C	E 28500	W 32000	9.00	53.60	5.50
2012	60000 C	E 29500	W 30500	9.00	52.20	5.50
2011	56500 C	E 28000	W 28500	9.00	52.50	3.50
2010	55500 C	E 26000	W 29500	8.35	52.69	3.50
2009	60000 C	E 28500	W 31500	8.53	53.89	3.10
2008	63500 C	E 30500	W 33000	8.81	54.16	3.10
2007	66000 C	E 33000	W 33000	8.63	55.75	3.10
2006	59500 C	E 29000	W 30500	8.40	55.34	3.60
2005	59500 C	E 29500	W 30000	8.20	51.70	3.60

AADT FLAGS: C = COMPUTED; E = MANUAL ESTIMATE; F = FIRST YEAR ESTIMATE  
 S = SECOND YEAR ESTIMATE; T = THIRD YEAR ESTIMATE; R = FOURTH YEAR ESTIMATE  
 V = FIFTH YEAR ESTIMATE; 6 = SIXTH YEAR ESTIMATE; X = UNKNOWN  
 \*K FACTOR: STARTING WITH YEAR 2011 IS STANDARDK, PRIOR YEARS ARE K30 VALUES

FLORIDA DEPARTMENT OF TRANSPORTATION  
 TRANSPORTATION STATISTICS OFFICE  
 2020 HISTORICAL AADT REPORT

COUNTY: 86 - BROWARD

SITE: 4505 - SR 834/SAMPLE RD ON RAMP TO NB SR 7/US 441

YEAR	AADT		DIRECTION 1	DIRECTION 2	*K FACTOR	D FACTOR	T FACTOR
----	-----		-----	-----	-----	-----	-----
2020	5200 F		0	0	9.00	99.90	7.00
2019	5500 C	N	5500	0	9.00	99.90	4.40
2018	5800 F		0	0	9.00	99.90	4.50
2017	5800 C	N	5800	0	9.00	99.90	5.90
2016	6800 F		0	0	9.00	99.90	4.70
2015	6700 C	N	6700	0	9.00	99.90	4.60
2014	6000 F				9.00	99.90	4.20
2013	5900 C	N	5900	0	9.00	99.90	3.10
2012	6200 F		0	0	9.00	99.90	3.40
2011	6200 C	N	6200	0	9.00	99.90	3.30
2010	5700 F		0	0	8.35	99.99	4.00
2009	5700 C	N	5700	0	8.53	99.99	4.10

AADT FLAGS: C = COMPUTED; E = MANUAL ESTIMATE; F = FIRST YEAR ESTIMATE  
 S = SECOND YEAR ESTIMATE; T = THIRD YEAR ESTIMATE; R = FOURTH YEAR ESTIMATE  
 V = FIFTH YEAR ESTIMATE; 6 = SIXTH YEAR ESTIMATE; X = UNKNOWN  
 \*K FACTOR: STARTING WITH YEAR 2011 IS STANDARDK, PRIOR YEARS ARE K30 VALUES

FLORIDA DEPARTMENT OF TRANSPORTATION  
 TRANSPORTATION STATISTICS OFFICE  
 2020 HISTORICAL AADT REPORT

COUNTY: 86 - BROWARD

SITE: 4506 - SR 7/US 441 SB OFF RAMP TO SR 834/SAMPLE RD

YEAR	AADT	DIRECTION 1	DIRECTION 2	*K FACTOR	D FACTOR	T FACTOR
2020	5600 F	0	0	9.00	99.90	7.00
2019	5900 C	S 5900	0	9.00	99.90	4.40
2018	6400 F	0	0	9.00	99.90	4.50
2017	6400 C	S 6400	0	9.00	99.90	5.90
2016	6300 F	0	0	9.00	99.90	4.70
2015	6200 C	S 6200	0	9.00	99.90	4.60
2014	6100 F	0	0	9.00	99.90	4.20
2013	6000 C	S 6000	0	9.00	99.90	3.10
2012	6200 F	0	0	9.00	99.90	3.40
2011	6200 C	S 6200	0	9.00	99.90	3.30
2010	5300 F	0	0	8.35	99.99	4.00
2009	5300 C	S 5300	0	8.53	99.99	4.10

AADT FLAGS: C = COMPUTED; E = MANUAL ESTIMATE; F = FIRST YEAR ESTIMATE  
 S = SECOND YEAR ESTIMATE; T = THIRD YEAR ESTIMATE; R = FOURTH YEAR ESTIMATE  
 V = FIFTH YEAR ESTIMATE; 6 = SIXTH YEAR ESTIMATE; X = UNKNOWN  
 \*K FACTOR: STARTING WITH YEAR 2011 IS STANDARDK, PRIOR YEARS ARE K30 VALUES

FLORIDA DEPARTMENT OF TRANSPORTATION  
 TRANSPORTATION STATISTICS OFFICE  
 2020 HISTORICAL AADT REPORT

COUNTY: 86 - BROWARD

SITE: 4507 - SR 834/SAMPLE RD ON RAMP TO SB SR 7/US 441

YEAR	AADT	DIRECTION 1	DIRECTION 2	*K FACTOR	D FACTOR	T FACTOR
2020	3800 F	0	0	9.00	99.90	7.00
2019	4000 C	S 4000	0	9.00	99.90	4.40
2018	4100 F	0	0	9.00	99.90	4.50
2017	4100 C	S 4100	0	9.00	99.90	5.90
2016	5600 F	0	0	9.00	99.90	4.70
2015	5500 C	S 5500	0	9.00	99.90	4.60
2014	4000 F	0	0	9.00	99.90	4.20
2013	4000 C	S 4000	0	9.00	99.90	3.10
2012	3600 F	0	0	9.00	99.90	3.40
2011	3600 C	S 3600	0	9.00	99.90	3.30
2010	5800 F	0	0	8.35	99.99	4.00
2009	5800 C	S 5800	0	8.53	99.99	4.10

AADT FLAGS: C = COMPUTED; E = MANUAL ESTIMATE; F = FIRST YEAR ESTIMATE  
 S = SECOND YEAR ESTIMATE; T = THIRD YEAR ESTIMATE; R = FOURTH YEAR ESTIMATE  
 V = FIFTH YEAR ESTIMATE; 6 = SIXTH YEAR ESTIMATE; X = UNKNOWN  
 \*K FACTOR: STARTING WITH YEAR 2011 IS STANDARDK, PRIOR YEARS ARE K30 VALUES

FLORIDA DEPARTMENT OF TRANSPORTATION  
 TRANSPORTATION STATISTICS OFFICE  
 2020 HISTORICAL AADT REPORT

COUNTY: 86 - BROWARD

SITE: 5112 - SR 7/US 441 - N OF SR 834/SAMPLE RD

YEAR	AADT	DIRECTION 1	DIRECTION 2	*K FACTOR	D FACTOR	T FACTOR
2020	41500 F	N 22000	S 19500	9.00	53.90	2.90
2019	43500 C	N 23000	S 20500	9.00	54.60	2.90
2018	43000 C	N 21500	S 21500	9.00	54.50	1.60
2017	53600 E	N	S	9.00	51.90	1.60
2016	52000 C	N 26000	S 26000	9.00	54.10	1.60
2015	47000 C	N 23500	S 23500	9.00	54.00	4.30
2014	41000 C	N 19500	S 21500	9.00	54.20	2.00
2013	40500 C	N 20500	S 20000	9.00	53.60	1.90
2012	40000 C	N 21000	S 19000	9.00	52.20	3.80
2011	39000 C	N 21000	S 18000	9.00	52.50	3.80
2010	41500 C	N 21000	S 20500	8.35	52.69	3.80
2009	46500 C	N 23500	S 23000	8.53	53.89	6.30
2008	44500 C	N 22500	S 22000	8.81	54.16	6.30
2007	47500 C	N 24000	S 23500	8.63	55.75	2.60
2006	45500 C	N 22000	S 23500	8.40	55.34	3.50
2005	45500 C	N 22500	S 23000	8.20	51.70	3.50

AADT FLAGS: C = COMPUTED; E = MANUAL ESTIMATE; F = FIRST YEAR ESTIMATE  
 S = SECOND YEAR ESTIMATE; T = THIRD YEAR ESTIMATE; R = FOURTH YEAR ESTIMATE  
 V = FIFTH YEAR ESTIMATE; 6 = SIXTH YEAR ESTIMATE; X = UNKNOWN  
 \*K FACTOR: STARTING WITH YEAR 2011 IS STANDARDK, PRIOR YEARS ARE K30 VALUES

FLORIDA DEPARTMENT OF TRANSPORTATION  
 TRANSPORTATION STATISTICS OFFICE  
 2020 HISTORICAL AADT REPORT

COUNTY: 86 - BROWARD

SITE: 7116 - WILES RD, W OF SR 7

YEAR	AADT	DIRECTION 1	DIRECTION 2	*K FACTOR	D FACTOR	T FACTOR
2020	31000 S	E 17500	W 13500	9.00	55.10	8.80
2019	33000 F	E 18500	W 14500	9.00	56.00	5.50
2018	33000 C	E 18500	W 14500	9.00	56.30	6.00
2017	34000 S	E 19000	W 15000	9.00	57.10	4.30
2016	33000 F	E 18500	W 14500	9.00	56.10	4.30
2015	32000 C	E 18000	W 14000	9.00	56.20	4.30
2014	40000 S	E 19500	W 20500	9.00	56.80	4.90
2013	39000 F	E 19000	W 20000	9.00	56.20	4.90
2012	39000 C	E 19000	W 20000	9.00	57.00	4.90
2011	33500 S	0	0	9.00	59.10	6.30
2010	32500 F	E 16500	W 16000	9.60	57.92	9.30
2009	31500 C	E 16000	W 15500	9.71	58.42	5.30
2008	33500 C	E 16500	W 17000	9.67	56.67	6.50
2007	35000 C	E 17500	W 17500	10.19	60.63	4.80
2006	39500 C	E 20000	W 19500	9.61	59.08	2.90
2005	34500 C	E 17000	W 17500	10.00	58.10	0.00

AADT FLAGS: C = COMPUTED; E = MANUAL ESTIMATE; F = FIRST YEAR ESTIMATE  
 S = SECOND YEAR ESTIMATE; T = THIRD YEAR ESTIMATE; R = FOURTH YEAR ESTIMATE  
 V = FIFTH YEAR ESTIMATE; 6 = SIXTH YEAR ESTIMATE; X = UNKNOWN  
 \*K FACTOR: STARTING WITH YEAR 2011 IS STANDARDK, PRIOR YEARS ARE K30 VALUES

FLORIDA DEPARTMENT OF TRANSPORTATION  
 TRANSPORTATION STATISTICS OFFICE  
 2020 HISTORICAL AADT REPORT

COUNTY: 86 - BROWARD

SITE: 9581 - WILES ROAD, E OF SR 7

YEAR	AADT	DIRECTION 1	DIRECTION 2	*K FACTOR	D FACTOR	T FACTOR
2020	26000 C	E 13500	W 12500	9.00	53.90	8.80
2019	31000 T	E 16000	W 15000	9.00	54.60	5.50
2018	31000 S	E 16000	W 15000	9.00	54.50	6.00
2017	31000 F	E 16000	W 15000	9.00	51.90	6.20
2016	31000 C	E 16000	W 15000	9.00	54.10	2.90
2015	23500 V	0	0	9.00	54.00	3.40
2014	23000 R			9.00	54.20	7.40
2013	23000 T	0	0	9.00	53.60	7.60
2012	23000 S	0	0	9.00	52.20	5.90
2011	23000 F	0	0	9.00	52.50	6.30
2010	23000 C	E 12000	W 11000	8.35	52.69	9.30
2009	14500 F	E 7700	W 6800	8.53	53.89	5.30
2008	14900 C	E 7900	W 7000	8.81	54.16	6.50
2007	16900 C	E 9000	W 7900	8.63	55.75	4.80
2006	18900 C	E 10500	W 8400	8.40	55.34	2.90
2005	18100 C	E 9300	W 8800	8.20	51.70	0.00

AADT FLAGS: C = COMPUTED; E = MANUAL ESTIMATE; F = FIRST YEAR ESTIMATE  
 S = SECOND YEAR ESTIMATE; T = THIRD YEAR ESTIMATE; R = FOURTH YEAR ESTIMATE  
 V = FIFTH YEAR ESTIMATE; 6 = SIXTH YEAR ESTIMATE; X = UNKNOWN  
 \*K FACTOR: STARTING WITH YEAR 2011 IS STANDARDK, PRIOR YEARS ARE K30 VALUES

FLORIDA DEPARTMENT OF TRANSPORTATION  
 TRANSPORTATION STATISTICS OFFICE  
 2020 HISTORICAL AADT REPORT

COUNTY: 86 - BROWARD

SITE: 9694 - WILES ROAD, E OF LYONS

YEAR	AADT	DIRECTION 1	DIRECTION 2	*K FACTOR	D FACTOR	T FACTOR
2020	21500 C	E 10500	W 11000	9.00	53.90	8.80
2019	30000 R	E 14500	W 15500	9.00	54.60	5.50
2018	30000 T	E 14500	W 15500	9.00	54.50	6.00
2017	30000 S	E 14500	W 15500	9.00	51.90	6.20
2016	30000 F	E 14500	W 15500	9.00	54.10	2.90
2015	30000 C	E 14500	W 15500	9.00	54.00	3.40
2014	23500 T	E 11500	W 12000	9.00	54.20	7.40
2013	23500 S	E 11500	W 12000	9.00	53.60	7.60
2012	23500 F	E 11500	W 12000	9.00	52.20	5.90
2011	23500 C	E 11500	W 12000	9.00	52.50	6.30
2010	7500 F	E 3600	W 3900	8.35	52.69	9.30
2009	7500 C	E 3600	W 3900	8.53	53.89	5.30
2008	7800 C	E 4100	W 3700	8.81	54.16	6.50
2007	7900 C	E 4000	W 3900	8.63	55.75	4.80
2006	8300 C	E 4200	W 4100	8.40	55.34	2.90
2005	8900 C	E 4200	W 4700	8.20	51.70	0.00

AADT FLAGS: C = COMPUTED; E = MANUAL ESTIMATE; F = FIRST YEAR ESTIMATE  
 S = SECOND YEAR ESTIMATE; T = THIRD YEAR ESTIMATE; R = FOURTH YEAR ESTIMATE  
 V = FIFTH YEAR ESTIMATE; 6 = SIXTH YEAR ESTIMATE; X = UNKNOWN  
 \*K FACTOR: STARTING WITH YEAR 2011 IS STANDARDK, PRIOR YEARS ARE K30 VALUES

FLORIDA DEPARTMENT OF TRANSPORTATION  
 TRANSPORTATION STATISTICS OFFICE  
 2020 HISTORICAL AADT REPORT

COUNTY: 86 - BROWARD

SITE: 9768 - TURTLE CREEK DR N OF SAMPLE RD

YEAR	AADT	DIRECTION 1		DIRECTION 2		*K FACTOR	D FACTOR	T FACTOR
2020	15400 V	N	7600	S	7800	9.00	55.10	8.80
2019	16200 R	N	8000	S	8200	9.00	56.00	5.50
2018	16000 T	N	7900	S	8100	9.00	56.30	6.00
2017	15800 S	N	7800	S	8000	9.00	57.10	6.20
2016	15400 F	N	7600	S	7800	9.00	56.10	2.90
2015	15000 C	N	7400	S	7600	9.00	56.20	3.40
2014	17500 X					9.00	56.80	7.40
2013	17000 X		0		0	9.00	56.20	7.60
2012	17000 T		0		0	9.00	57.00	5.90
2011	16800 S		0		0	9.00	59.10	6.30
2010	16400 F	N	8200	S	8200	9.60	57.92	9.30
2009	16000 C	N	8000	S	8000	9.71	58.42	5.30
2008	12100 C	N	5900	S	6200	9.67	56.67	6.50
2007	15000 C	N	7400	S	7600	10.19	60.63	4.80
2006	17800 C	N	8500	S	9300	9.61	59.08	2.90

AADT FLAGS: C = COMPUTED; E = MANUAL ESTIMATE; F = FIRST YEAR ESTIMATE  
 S = SECOND YEAR ESTIMATE; T = THIRD YEAR ESTIMATE; R = FOURTH YEAR ESTIMATE  
 V = FIFTH YEAR ESTIMATE; 6 = SIXTH YEAR ESTIMATE; X = UNKNOWN  
 \*K FACTOR: STARTING WITH YEAR 2011 IS STANDARDK, PRIOR YEARS ARE K30 VALUES

2020 PEAK SEASON FACTOR CATEGORY REPORT - REPORT TYPE: ALL  
 CATEGORY: 8601 CEN.-W OF US1 TO SR7

WEEK	DATES	SF	MOCF: 0.92 PSCF
* 1	01/01/2020 - 01/04/2020	0.93	1.01
* 2	01/05/2020 - 01/11/2020	0.90	0.98
* 3	01/12/2020 - 01/18/2020	0.87	0.95
* 4	01/19/2020 - 01/25/2020	0.86	0.93
* 5	01/26/2020 - 02/01/2020	0.86	0.93
* 6	02/02/2020 - 02/08/2020	0.85	0.92
* 7	02/09/2020 - 02/15/2020	0.84	0.91
* 8	02/16/2020 - 02/22/2020	0.88	0.96
* 9	02/23/2020 - 02/29/2020	0.91	0.99
*10	03/01/2020 - 03/07/2020	0.95	1.03
*11	03/08/2020 - 03/14/2020	0.98	1.07
*12	03/15/2020 - 03/21/2020	1.02	1.11
*13	03/22/2020 - 03/28/2020	1.13	1.23
14	03/29/2020 - 04/04/2020	1.24	1.35
15	04/05/2020 - 04/11/2020	1.35	1.47
16	04/12/2020 - 04/18/2020	1.46	1.59
17	04/19/2020 - 04/25/2020	1.39	1.51
18	04/26/2020 - 05/02/2020	1.33	1.45
19	05/03/2020 - 05/09/2020	1.26	1.37
20	05/10/2020 - 05/16/2020	1.20	1.30
21	05/17/2020 - 05/23/2020	1.16	1.26
22	05/24/2020 - 05/30/2020	1.12	1.22
23	05/31/2020 - 06/06/2020	1.09	1.18
24	06/07/2020 - 06/13/2020	1.05	1.14
25	06/14/2020 - 06/20/2020	1.02	1.11
26	06/21/2020 - 06/27/2020	1.02	1.11
27	06/28/2020 - 07/04/2020	1.02	1.11
28	07/05/2020 - 07/11/2020	1.02	1.11
29	07/12/2020 - 07/18/2020	1.03	1.12
30	07/19/2020 - 07/25/2020	1.02	1.11
31	07/26/2020 - 08/01/2020	1.02	1.11
32	08/02/2020 - 08/08/2020	1.01	1.10
33	08/09/2020 - 08/15/2020	1.01	1.10
34	08/16/2020 - 08/22/2020	1.00	1.09
35	08/23/2020 - 08/29/2020	1.00	1.09
36	08/30/2020 - 09/05/2020	1.00	1.09
37	09/06/2020 - 09/12/2020	1.00	1.09
38	09/13/2020 - 09/19/2020	0.99	1.08
39	09/20/2020 - 09/26/2020	0.98	1.07
40	09/27/2020 - 10/03/2020	0.98	1.07
41	10/04/2020 - 10/10/2020	0.97	1.05
42	10/11/2020 - 10/17/2020	0.96	1.04
43	10/18/2020 - 10/24/2020	0.96	1.04
44	10/25/2020 - 10/31/2020	0.96	1.04
45	11/01/2020 - 11/07/2020	0.97	1.05
46	11/08/2020 - 11/14/2020	0.97	1.05
47	11/15/2020 - 11/21/2020	0.97	1.05
48	11/22/2020 - 11/28/2020	0.96	1.04
49	11/29/2020 - 12/05/2020	0.95	1.03
50	12/06/2020 - 12/12/2020	0.94	1.02
51	12/13/2020 - 12/19/2020	0.93	1.01
52	12/20/2020 - 12/26/2020	0.90	0.98
53	12/27/2020 - 12/31/2020	0.87	0.95

\* PEAK SEASON

27-FEB-2021 10:30:02

830UPD

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# Land Use: 220

## Multifamily Housing (Low-Rise)

---

### Description

Low-rise multifamily housing includes apartments, townhouses, and condominiums located within the same building with at least three other dwelling units and that have two or three floors (levels). Various configurations fit this description, including walkup apartment, mansion apartment, and stacked townhouse.

- A walkup apartment typically is two or three floors in height with dwelling units that are accessed by a single or multiple entrances with stairways and hallways.
- A mansion apartment is a single structure that contains several apartments within what appears to be a single-family dwelling unit.
- A fourplex is a single two-story structure with two matching dwelling units on the ground and second floors. Access to the individual units is typically internal to the structure and provided through a central entry and stairway.
- A stacked townhouse is designed to match the external appearance of a townhouse. But, unlike a townhouse dwelling unit that only shares walls with an adjoining unit, the stacked townhouse units share both floors and walls. Access to the individual units is typically internal to the structure and provided through a central entry and stairway.

Multifamily housing (mid-rise) (Land Use 221), multifamily housing (high-rise) (Land Use 222), affordable housing (Land Use 223), and off-campus student apartment (low-rise) (Land Use 225) are related land uses.

### Land Use Subcategory

Data are presented for two subcategories for this land use: (1) not close to rail transit and (2) close to rail transit. A site is considered close to rail transit if the walking distance between the residential site entrance and the closest rail transit station entrance is ½ mile or less.

### Additional Data

For the three sites for which both the number of residents and the number of occupied dwelling units were available, there were an average of 2.72 residents per occupied dwelling unit.

For the two sites for which the numbers of both total dwelling units and occupied dwelling units were available, an average of 96.2 percent of the total dwelling units were occupied.

The technical appendices provide supporting information on time-of-day distributions for this land use. The appendices can be accessed through either the ITETripGen web app or the trip

generation resource page on the ITE website (<https://www.ite.org/technical-resources/topics/trip-and-parking-generation/>).

For the three sites for which data were provided for both occupied dwelling units and residents, there was an average of 2.72 residents per occupied dwelling unit.

***It is expected that the number of bedrooms and number of residents are likely correlated to the trips generated by a residential site. To assist in future analysis, trip generation studies of all multifamily housing should attempt to obtain information on occupancy rate and on the mix of residential unit sizes (i.e., number of units by number of bedrooms at the site complex).***

The sites were surveyed in the 1980s, the 1990s, the 2000s, the 2010s, and the 2020s in British Columbia (CAN), California, Delaware, Florida, Georgia, Illinois, Indiana, Maine, Maryland, Massachusetts, Minnesota, New Jersey, Ontario (CAN), Oregon, Pennsylvania, South Carolina, South Dakota, Tennessee, Texas, Utah, and Washington.

### **Source Numbers**

188, 204, 237, 300, 305, 306, 320, 321, 357, 390, 412, 525, 530, 579, 583, 638, 864, 866, 896, 901, 903, 904, 936, 939, 944, 946, 947, 948, 963, 964, 966, 967, 1012, 1013, 1014, 1036, 1047, 1056, 1071, 1076

# Multifamily Housing (Low-Rise) Not Close to Rail Transit (220)

Vehicle Trip Ends vs: Dwelling Units  
On a: Weekday

Setting/Location: General Urban/Suburban

Number of Studies: 22

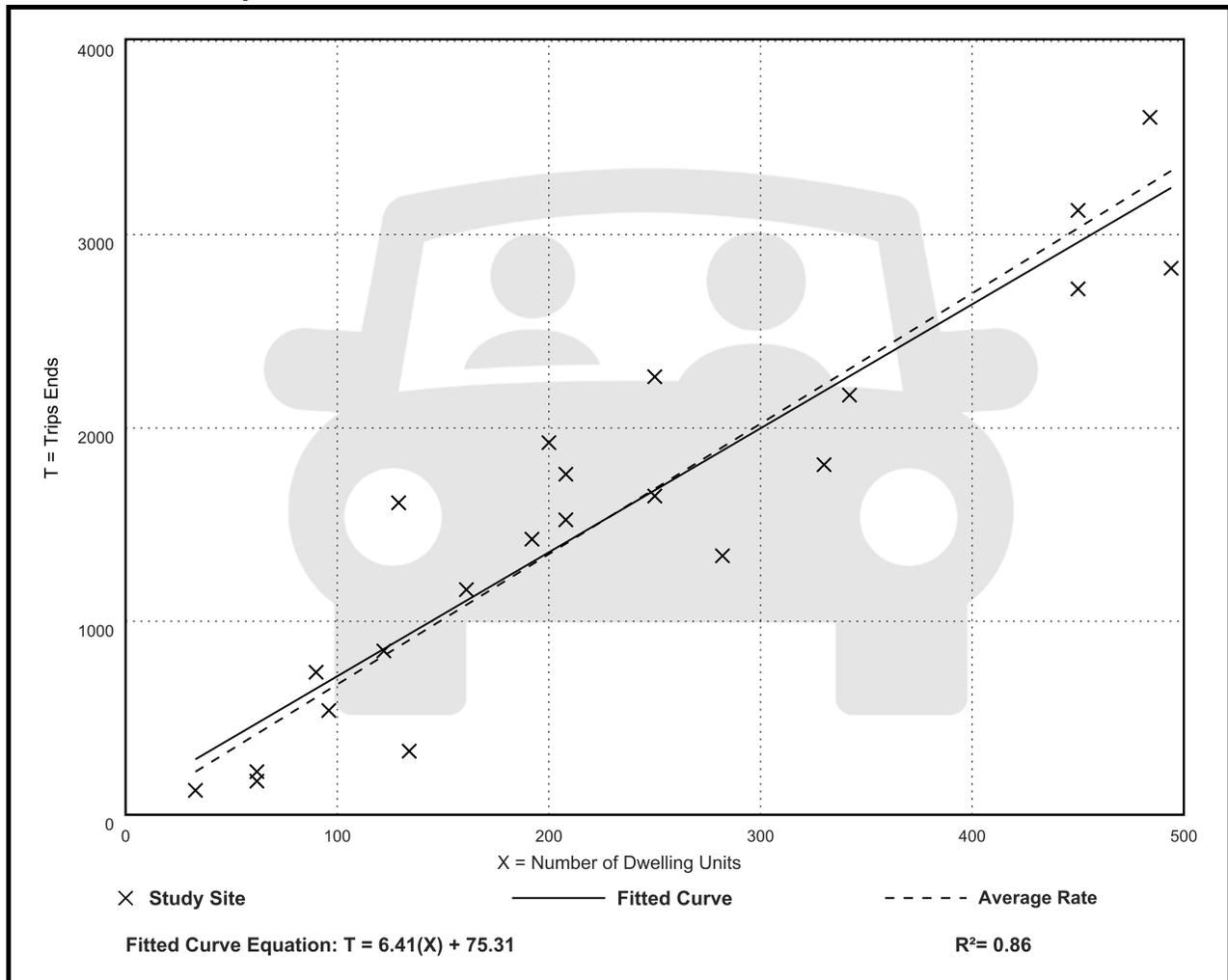
Avg. Num. of Dwelling Units: 229

Directional Distribution: 50% entering, 50% exiting

## Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
6.74	2.46 - 12.50	1.79

## Data Plot and Equation



# Multifamily Housing (Low-Rise) Not Close to Rail Transit (220)

## Vehicle Trip Ends vs: Dwelling Units

On a: **Weekday,**

**Peak Hour of Adjacent Street Traffic,**

**One Hour Between 7 and 9 a.m.**

**Setting/Location: General Urban/Suburban**

Number of Studies: 49

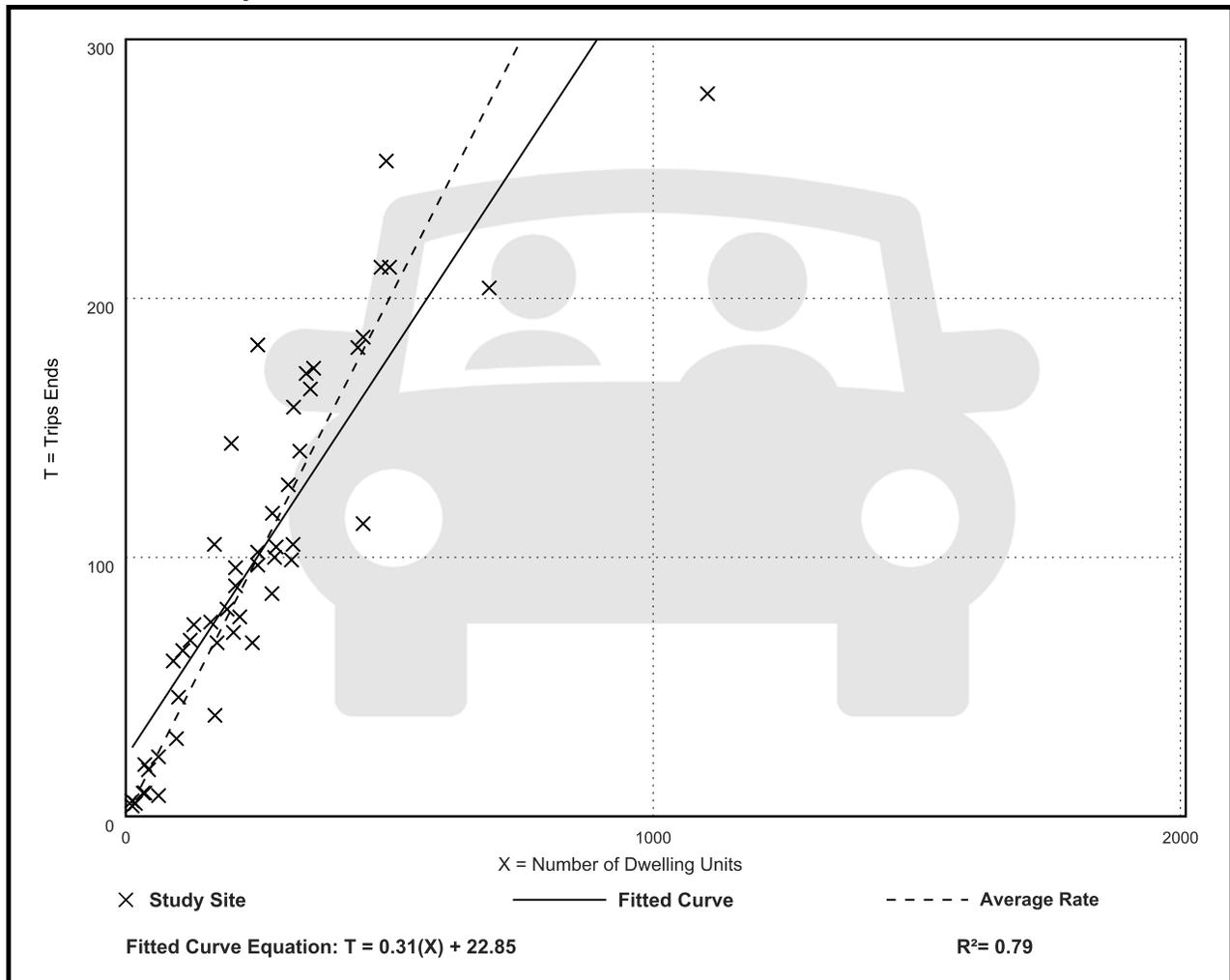
Avg. Num. of Dwelling Units: 249

Directional Distribution: 24% entering, 76% exiting

## Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.40	0.13 - 0.73	0.12

## Data Plot and Equation



# Multifamily Housing (Low-Rise) Not Close to Rail Transit (220)

Vehicle Trip Ends vs: Dwelling Units

On a: Weekday,

Peak Hour of Adjacent Street Traffic,

One Hour Between 4 and 6 p.m.

Setting/Location: General Urban/Suburban

Number of Studies: 59

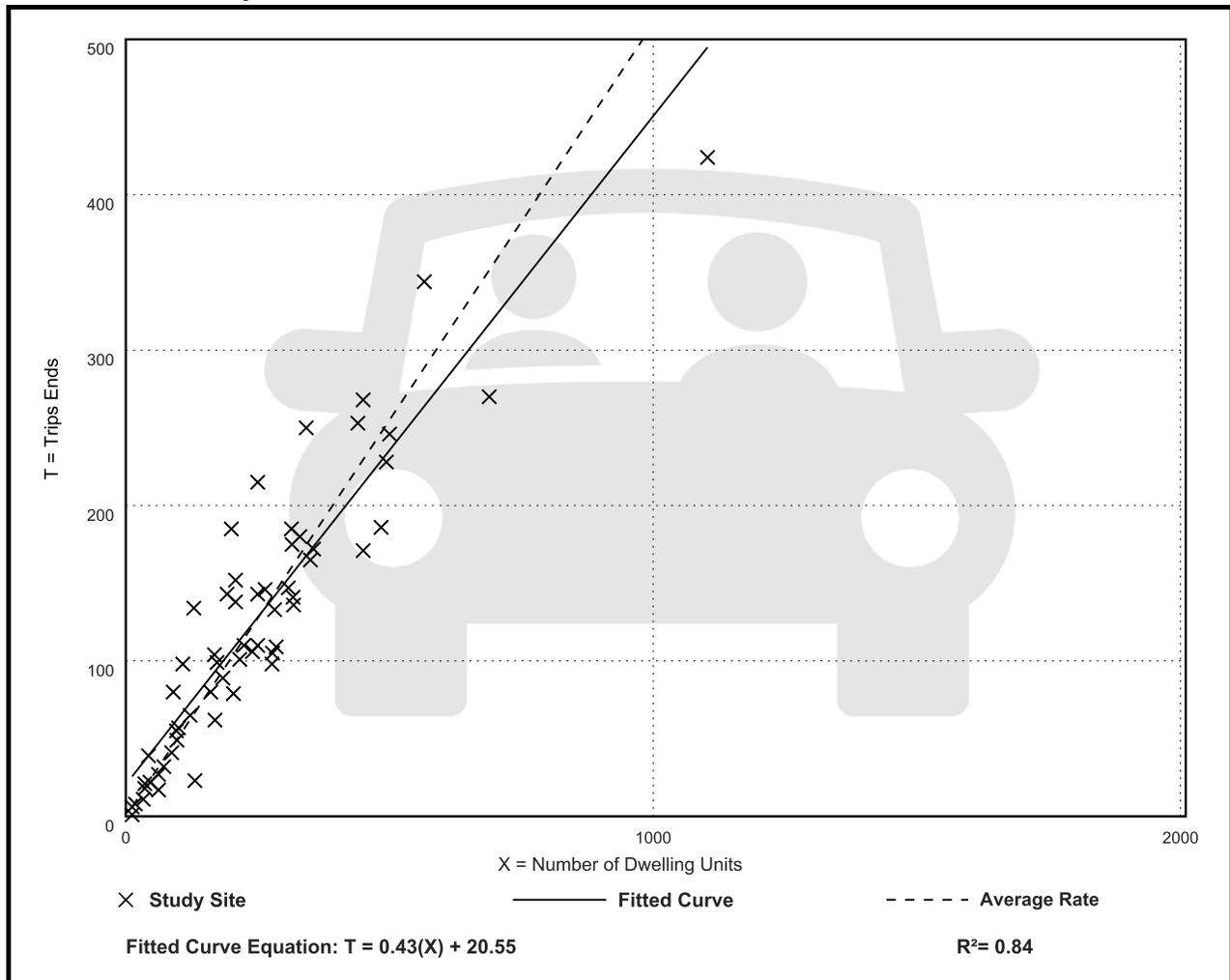
Avg. Num. of Dwelling Units: 241

Directional Distribution: 63% entering, 37% exiting

## Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.51	0.08 - 1.04	0.15

## Data Plot and Equation



# Land Use: 221

## Multifamily Housing (Mid-Rise)

---

### Description

Mid-rise multifamily housing includes apartments and condominiums located in a building that has between four and 10 floors of living space. Access to individual dwelling units is through an outside building entrance, a lobby, elevator, and a set of hallways.

Multifamily housing (low-rise) (Land Use 220), multifamily housing (high-rise) (Land Use 222), off-campus student apartment (mid-rise) (Land Use 226), and mid-rise residential with ground-floor commercial (Land Use 231) are related land uses.

### Land Use Subcategory

Data are presented for two subcategories for this land use: (1) not close to rail transit and (2) close to rail transit. A site is considered close to rail transit if the walking distance between the residential site entrance and the closest rail transit station entrance is ½ mile or less.

### Additional Data

For the six sites for which both the number of residents and the number of occupied dwelling units were available, there were an average of 2.5 residents per occupied dwelling unit.

For the five sites for which the numbers of both total dwelling units and occupied dwelling units were available, an average of 96 percent of the total dwelling units were occupied.

The technical appendices provide supporting information on time-of-day distributions for this land use. The appendices can be accessed through either the ITETripGen web app or the trip generation resource page on the ITE website (<https://www.ite.org/technical-resources/topics/trip-and-parking-generation/>).

***It is expected that the number of bedrooms and number of residents are likely correlated to the trips generated by a residential site. To assist in future analysis, trip generation studies of all multifamily housing should attempt to obtain information on occupancy rate and on the mix of residential unit sizes (i.e., number of units by number of bedrooms at the site complex).***

The sites were surveyed in the 1990s, the 2000s, the 2010s, and the 2020s in Alberta (CAN), California, District of Columbia, Florida, Georgia, Illinois, Maryland, Massachusetts, Minnesota, Montana, New Jersey, New York, Ontario (CAN), Oregon, Utah, and Virginia.

### Source Numbers

168, 188, 204, 305, 306, 321, 818, 857, 862, 866, 901, 904, 910, 949, 951, 959, 963, 964, 966, 967, 969, 970, 1004, 1014, 1022, 1023, 1025, 1031, 1032, 1035, 1047, 1056, 1057, 1058, 1071, 1076

# Multifamily Housing (Mid-Rise) Not Close to Rail Transit (221)

Vehicle Trip Ends vs: Dwelling Units  
On a: Weekday

Setting/Location: General Urban/Suburban

Number of Studies: 11

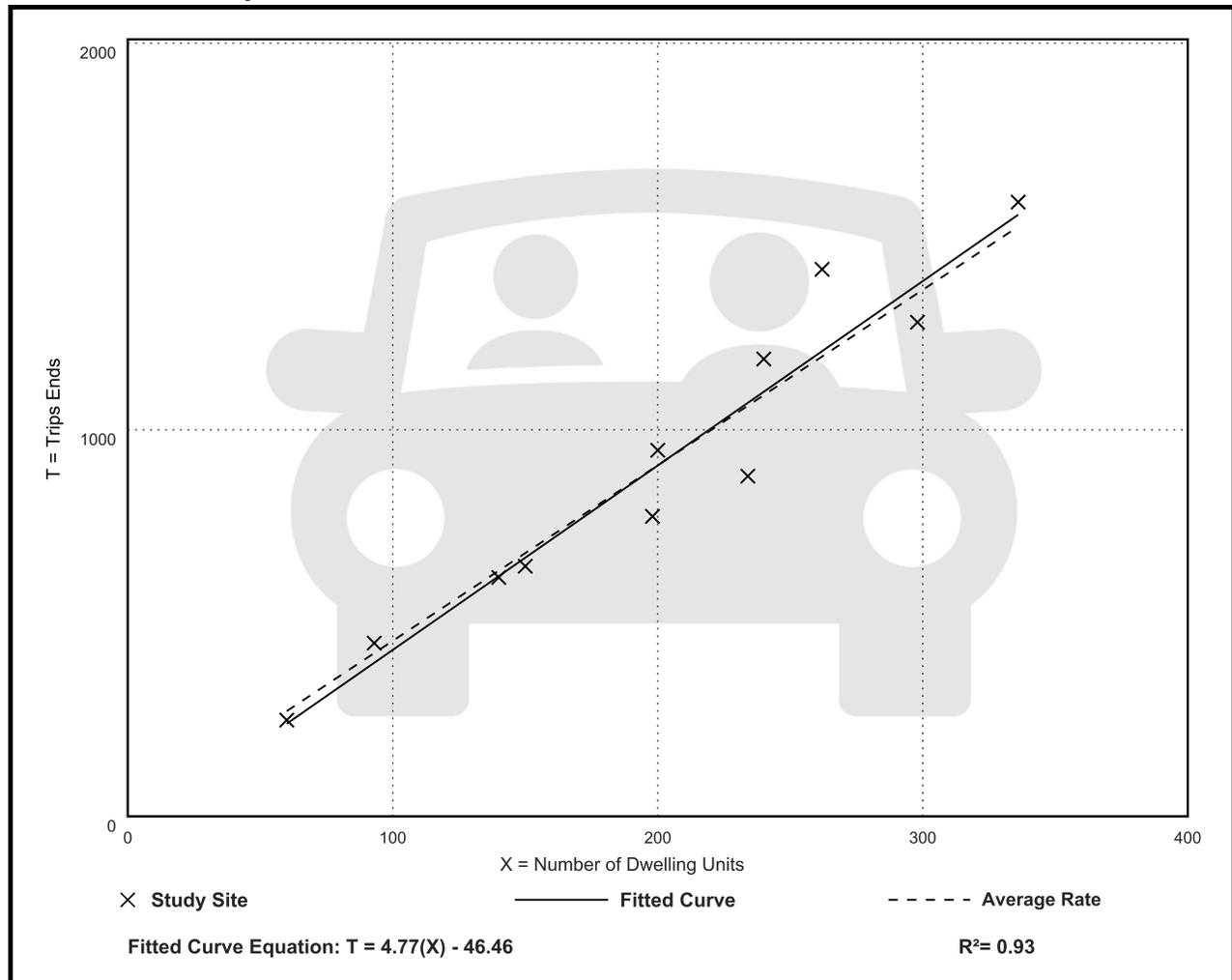
Avg. Num. of Dwelling Units: 201

Directional Distribution: 50% entering, 50% exiting

## Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
4.54	3.76 - 5.40	0.51

## Data Plot and Equation



# Multifamily Housing (Mid-Rise) Not Close to Rail Transit (221)

## Vehicle Trip Ends vs: Dwelling Units

On a: Weekday,

Peak Hour of Adjacent Street Traffic,

One Hour Between 7 and 9 a.m.

Setting/Location: General Urban/Suburban

Number of Studies: 30

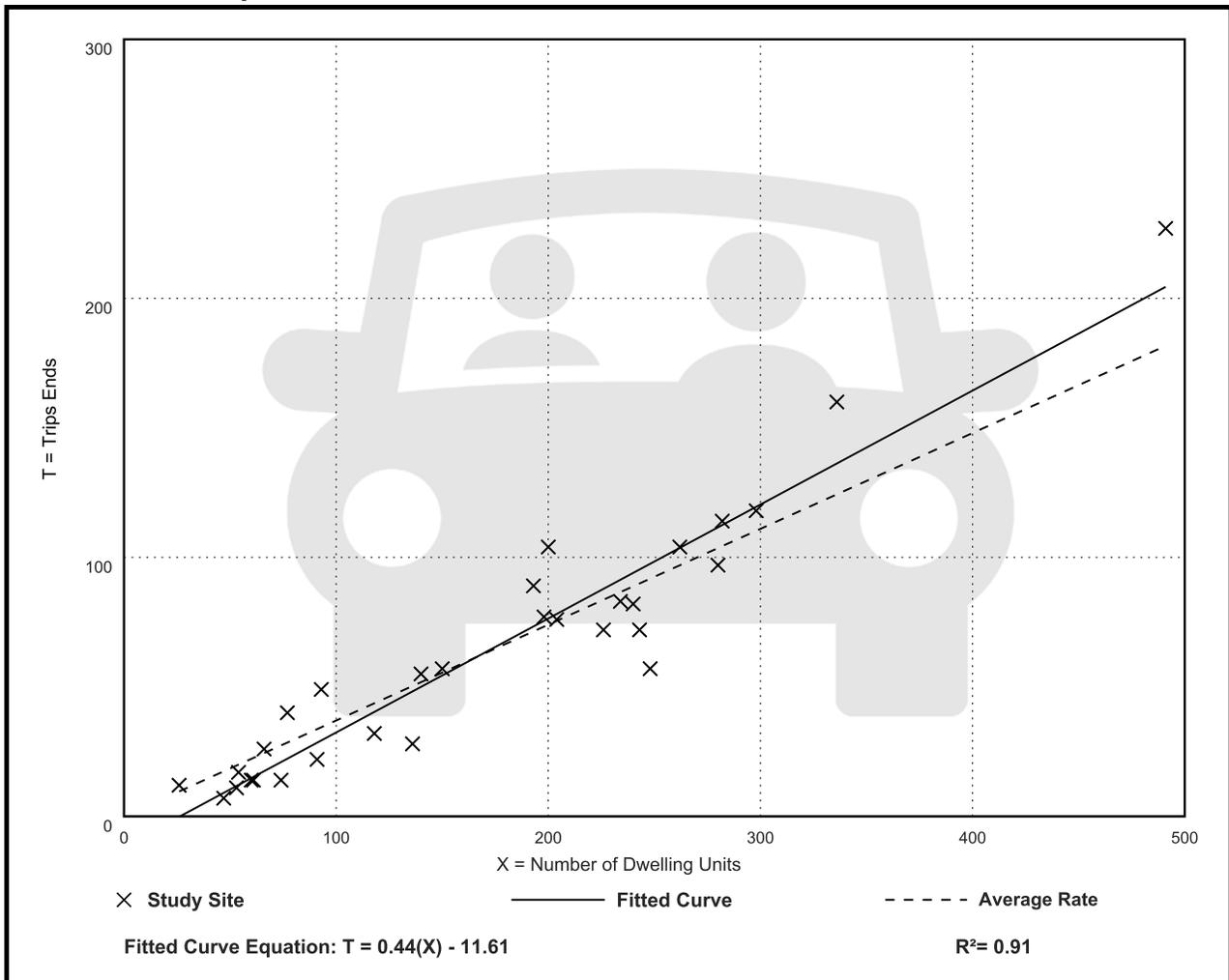
Avg. Num. of Dwelling Units: 173

Directional Distribution: 23% entering, 77% exiting

## Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.37	0.15 - 0.53	0.09

## Data Plot and Equation



# Multifamily Housing (Mid-Rise) Not Close to Rail Transit (221)

Vehicle Trip Ends vs: Dwelling Units

On a: Weekday,

Peak Hour of Adjacent Street Traffic,

One Hour Between 4 and 6 p.m.

Setting/Location: General Urban/Suburban

Number of Studies: 31

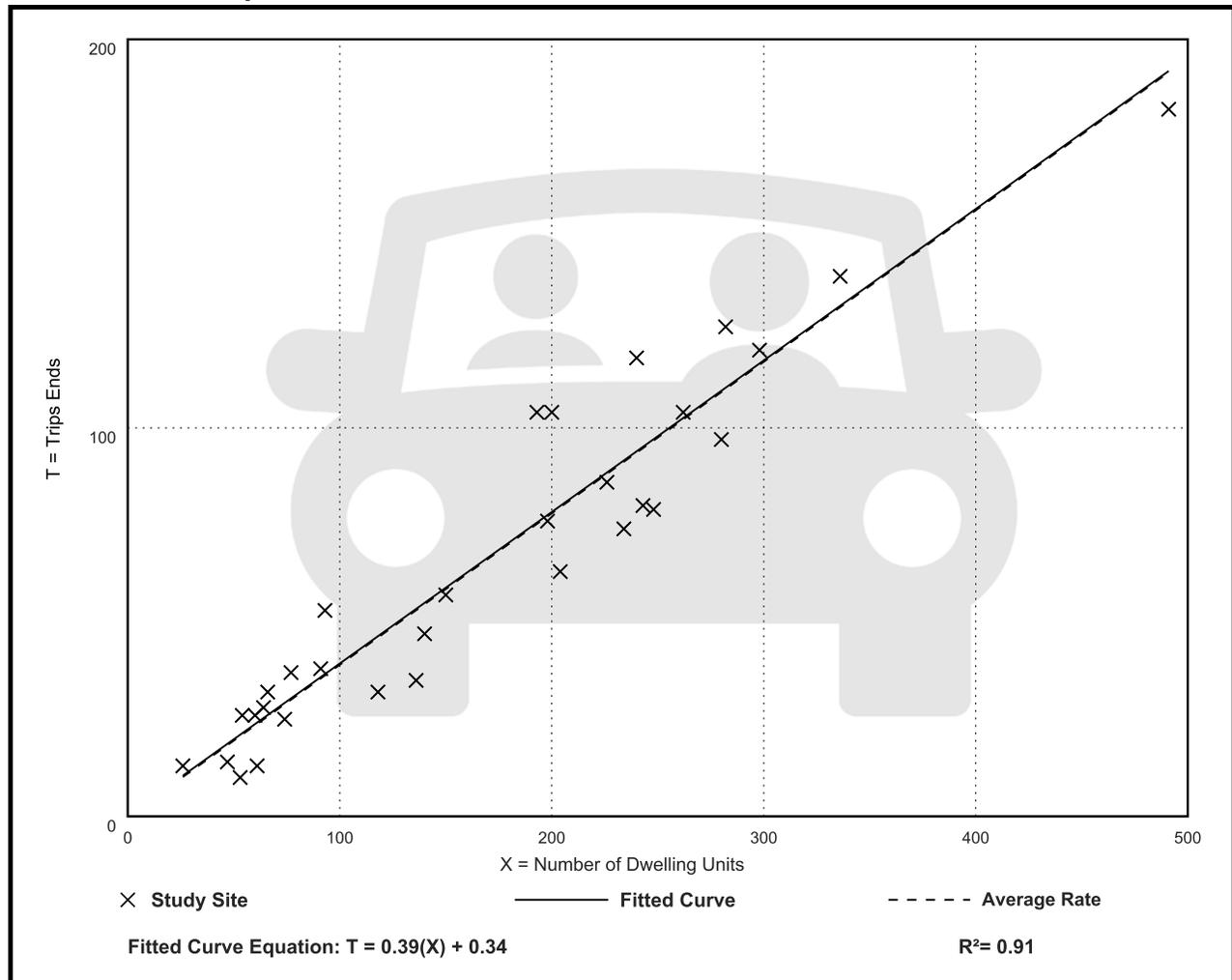
Avg. Num. of Dwelling Units: 169

Directional Distribution: 61% entering, 39% exiting

## Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.39	0.19 - 0.57	0.08

## Data Plot and Equation



# Land Use: 538

## Charter School (K-12)

---

### **Description**

A charter school (K-12) is a school that is publicly funded and privately managed. The school serves students attending kindergarten through the 12th grade. The school may also offer extended care and day care. Elementary school (Land Use 520), middle school/junior high school (Land Use 522), high school (Land Use 525), private school (K-8) (Land Use 530), private school (K-12) (Land Use 532), private high school (Land Use 534), and charter elementary school (Land Use 536) are related uses.

### **Additional Data**

The sites were surveyed in the 2010s in Minnesota and Nevada.

### **Source Numbers**

1039, 1047

# Charter School (K-12) (538)

## Vehicle Trip Ends vs: Students

On a: **Weekday,**

**Peak Hour of Adjacent Street Traffic,**

**One Hour Between 7 and 9 a.m.**

**Setting/Location: General Urban/Suburban**

Number of Studies: 2

Avg. Num. of Students: 613

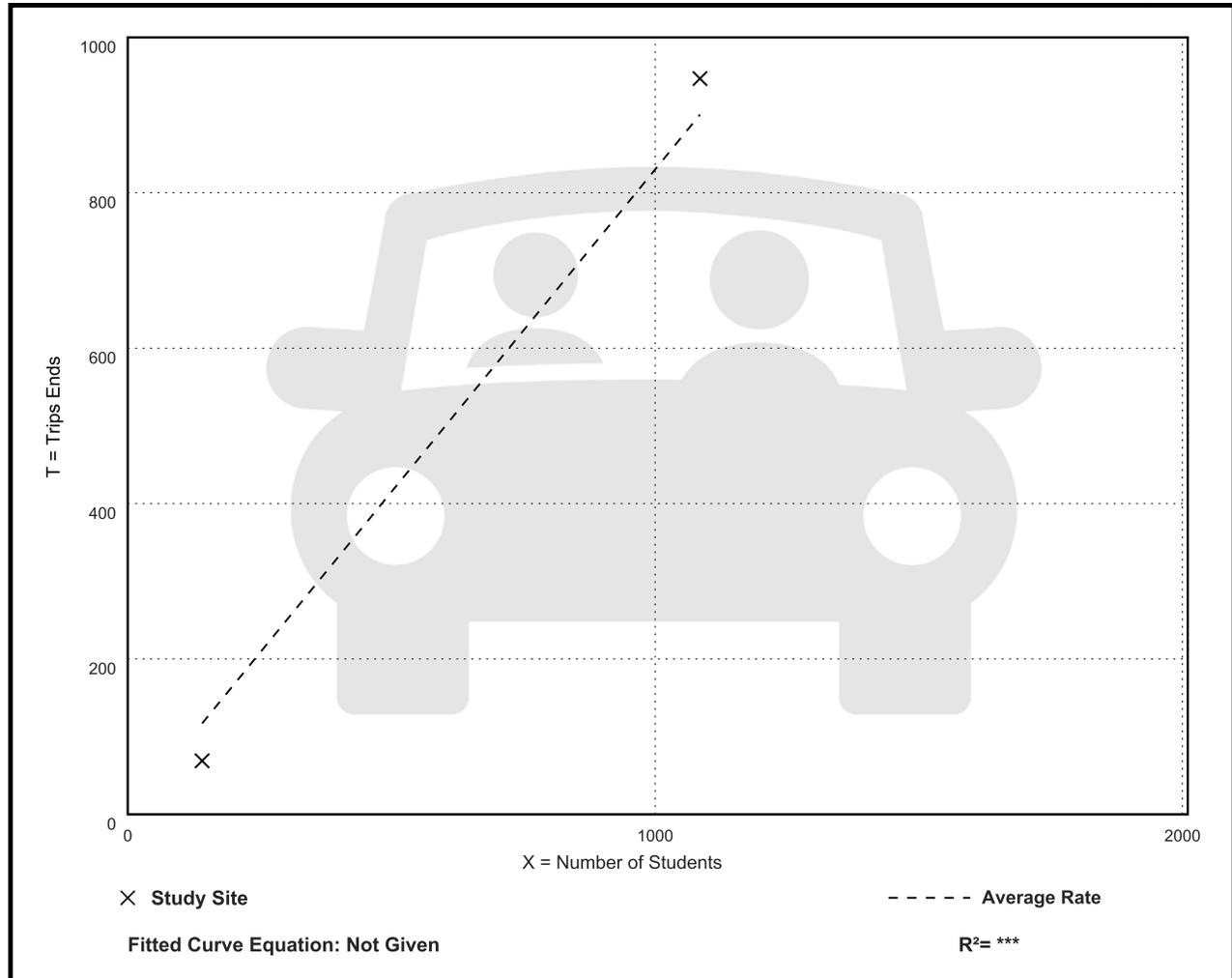
Directional Distribution: 51% entering, 49% exiting

## Vehicle Trip Generation per Student

Average Rate	Range of Rates	Standard Deviation
0.83	0.49 - 0.87	***

## Data Plot and Equation

*Caution – Small Sample Size*



# Charter School (K-12) (538)

## Vehicle Trip Ends vs: Students

On a: **Weekday,**

**AM Peak Hour of Generator**

**Setting/Location: General Urban/Suburban**

Number of Studies: 4

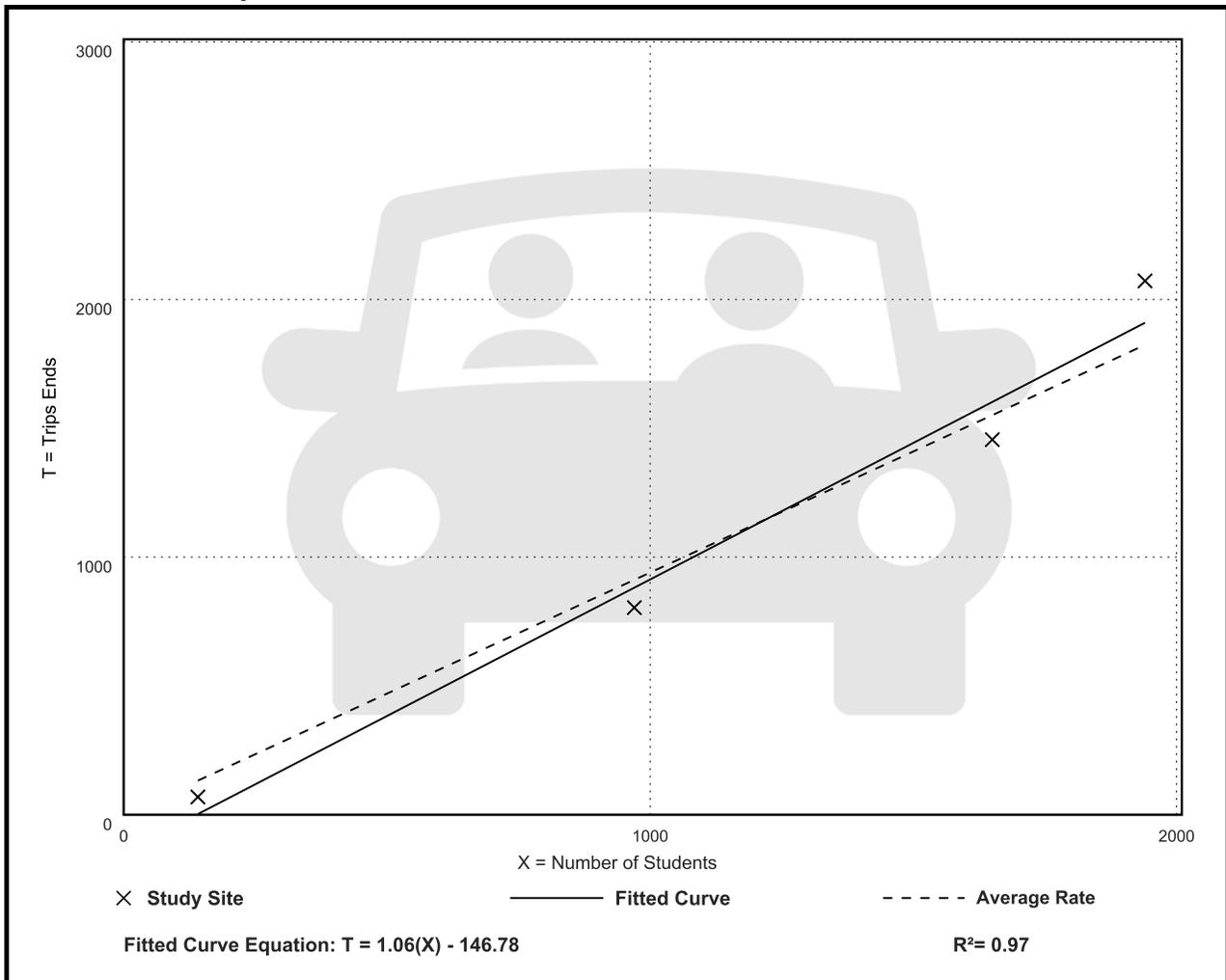
Avg. Num. of Students: 1175

Directional Distribution: 53% entering, 47% exiting

### Vehicle Trip Generation per Student

Average Rate	Range of Rates	Standard Deviation
0.94	0.49 - 1.07	0.15

### Data Plot and Equation



# Charter School (K-12) (538)

## Vehicle Trip Ends vs: Students

On a: **Weekday,**

**PM Peak Hour of Generator**

**Setting/Location: General Urban/Suburban**

Number of Studies: 4

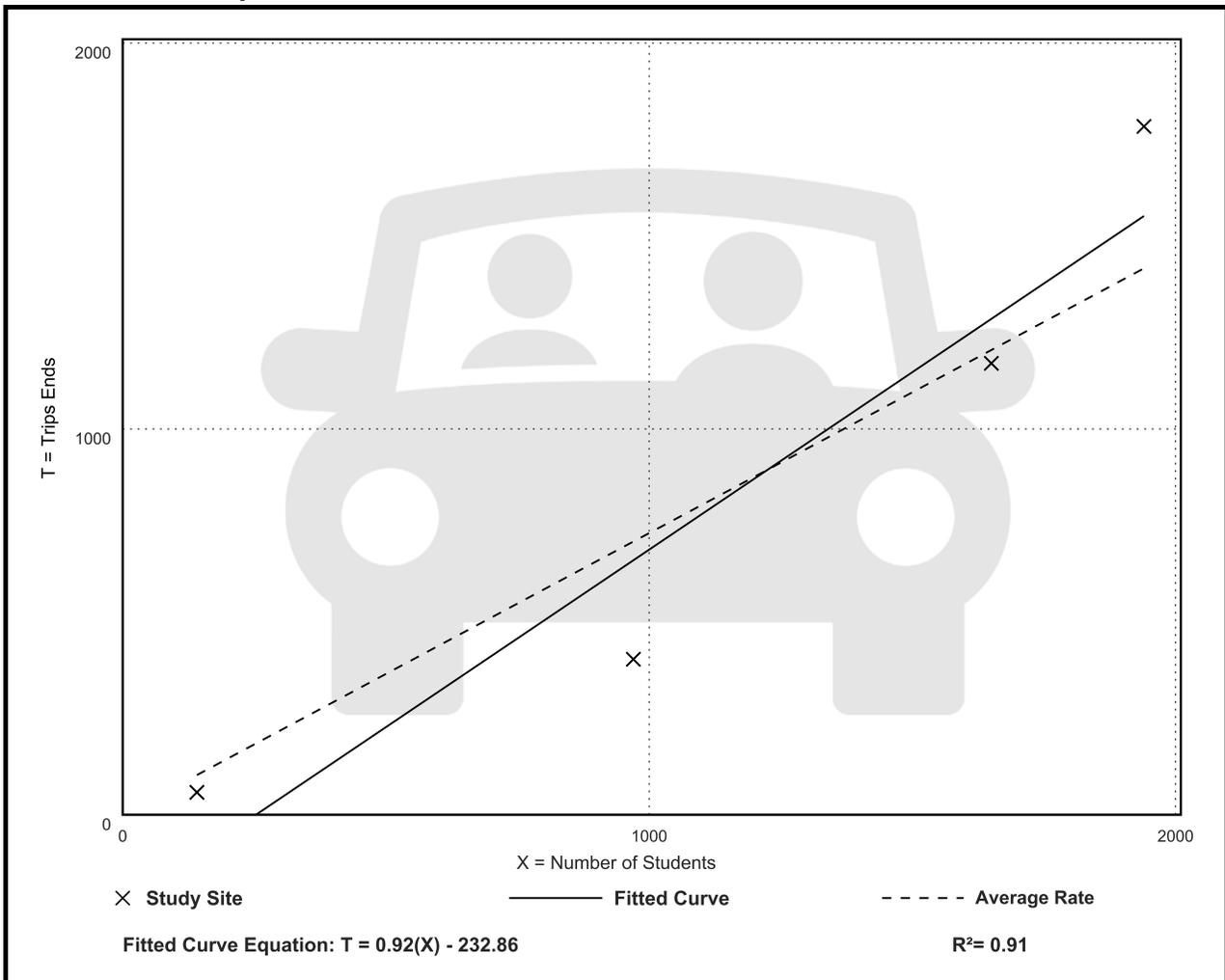
Avg. Num. of Students: 1175

Directional Distribution: 50% entering, 50% exiting

### Vehicle Trip Generation per Student

Average Rate	Range of Rates	Standard Deviation
0.73	0.41 - 0.92	0.23

### Data Plot and Equation



# Land Use: 820

## Shopping Center (>150k)

---

### Description

A shopping center is an integrated group of commercial establishments that is planned, developed, owned, and managed as a unit. Each study site in this land use has at least 150,000 square feet of gross leasable area (GLA). It often has more than one anchor store. Various names can be assigned to a shopping center within this size range, depending on its specific size and tenants, such as community center, regional center, superregional center, fashion center, and power center.

A shopping center of this size typically contains more than retail merchandising facilities. Office space, a movie theater, restaurants, a post office, banks, a health club, and recreational facilities are common tenants.

A shopping center of this size can be enclosed or open-air. The vehicle trips generated at a shopping center are based upon the total GLA of the center. In the case of a smaller center without an enclosed mall or peripheral buildings, the GLA is the same as the gross floor area of the building.

The 150,000 square feet GLA threshold value between community/regional shopping center and shopping plaza (Land Use 821) is based on an examination of trip generation data. For a shopping plaza that is smaller than the threshold value, the presence or absence of a supermarket within the plaza has a measurable effect on site trip generation. For a shopping center that is larger than the threshold value, the trips generated by its other major tenants mask any effects of the presence or absence of an on-site supermarket.

Shopping plaza (40-150k) (Land Use 821), strip retail plaza (<40k) (Land Use 822), and factory outlet center (Land Use 823) are related uses.

### Additional Data

***Many shopping centers—in addition to the integrated unit of shops in one building or enclosed around a mall—include outparcels (peripheral buildings or pads located on the perimeter of the center adjacent to the streets and major access points). These buildings are typically drive-in banks, retail stores, restaurants, or small offices. Although the data herein do not indicate which of the centers studied include peripheral buildings, it can be assumed that some of the data show their effect.***

The technical appendices provide supporting information on time-of-day distributions for this land use. The appendices can be accessed through either the ITETripGen web app or the trip generation resource page on the ITE website (<https://www.ite.org/technical-resources/topics/trip-and-parking-generation/>).

The sites were surveyed in the 1980s, the 1990s, the 2000s, and the 2010s in Alberta (CAN), California, Colorado, Connecticut, Delaware, Florida, Georgia, Illinois, Indiana, Iowa, Kentucky,

Maryland, Massachusetts, Michigan, Minnesota, New Jersey, New York, North Carolina, Ohio, Oklahoma, Pennsylvania, Tennessee, Texas, Vermont, Virginia, Washington, West Virginia, and Wisconsin.

### **Source Numbers**

77, 110, 154, 156, 159, 190, 199, 202, 204, 213, 251, 269, 294, 295, 299, 304, 305, 307, 308, 309, 311, 314, 315, 316, 317, 319, 365, 385, 404, 414, 423, 442, 446, 562, 629, 702, 715, 728, 868, 871, 880, 899, 912, 926, 946, 962, 973, 974, 978, 1034, 1040, 1067

# Shopping Center (>150k) (820)

**Vehicle Trip Ends vs: 1000 Sq. Ft. GLA**  
**On a: Weekday**

**Setting/Location: General Urban/Suburban**

Number of Studies: 108

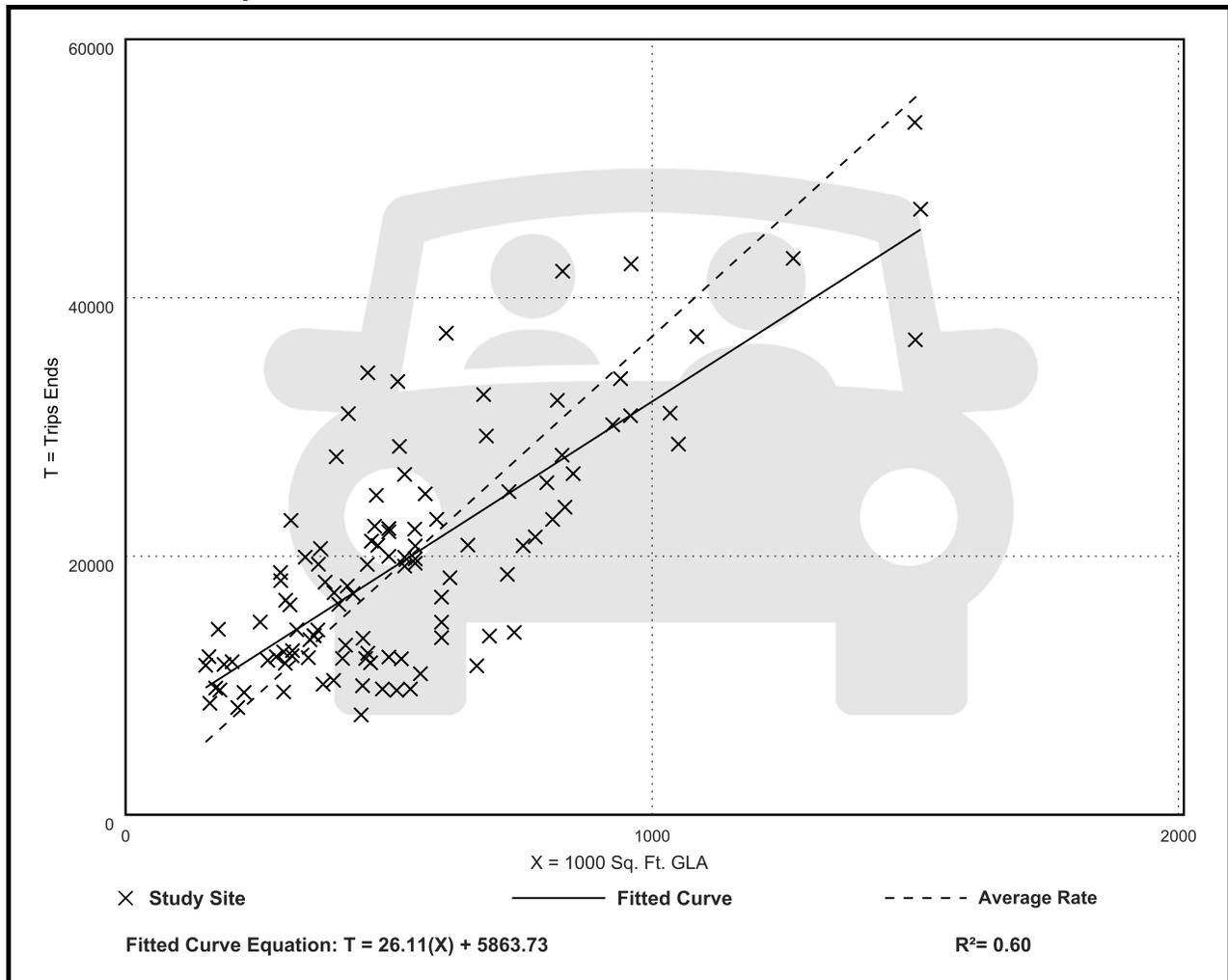
Avg. 1000 Sq. Ft. GLA: 538

Directional Distribution: 50% entering, 50% exiting

## Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
37.01	17.27 - 81.53	12.79

## Data Plot and Equation



# Shopping Center (>150k) (820)

Vehicle Trip Ends vs: 1000 Sq. Ft. GLA

On a: Weekday,

Peak Hour of Adjacent Street Traffic,

One Hour Between 7 and 9 a.m.

Setting/Location: General Urban/Suburban

Number of Studies: 44

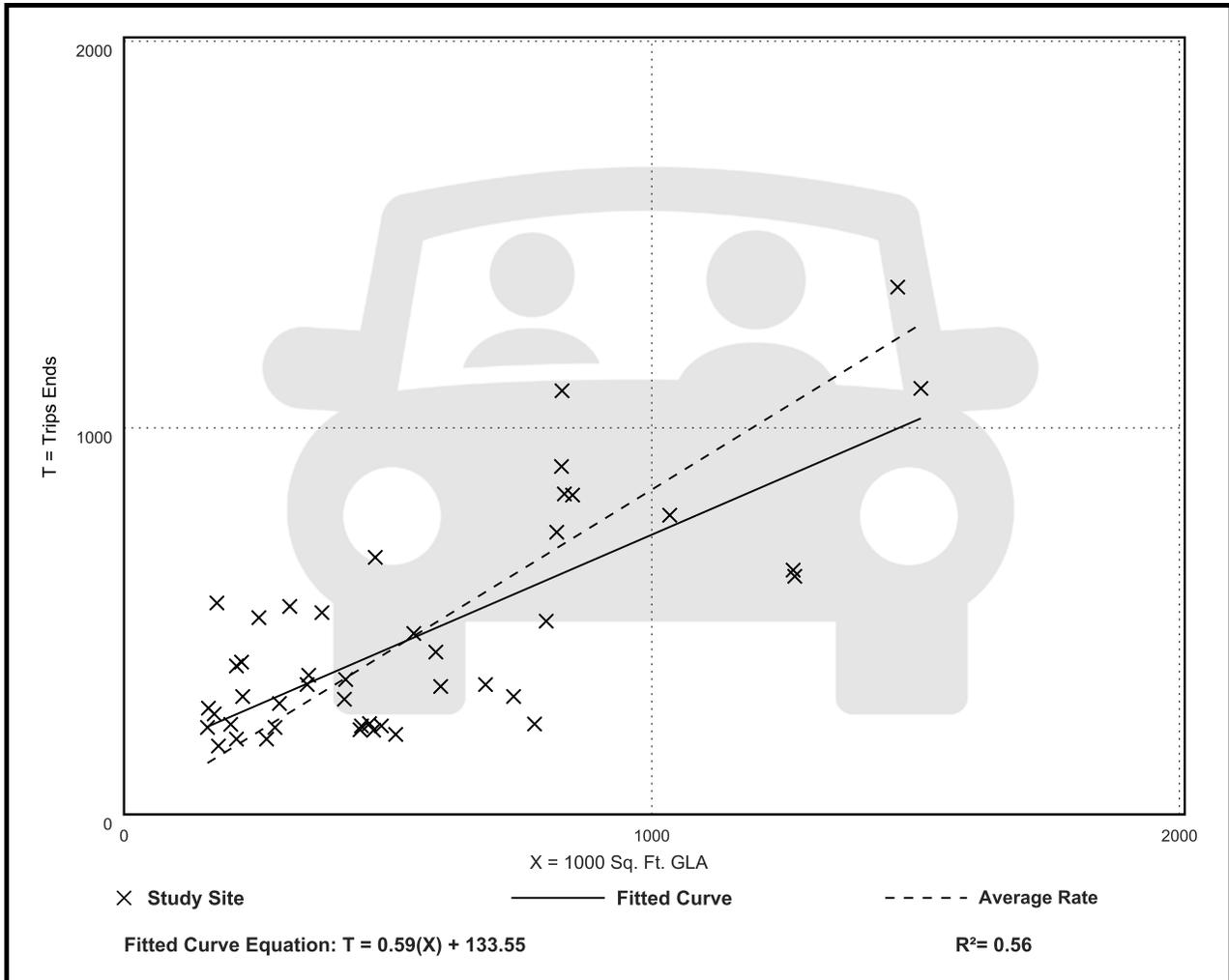
Avg. 1000 Sq. Ft. GLA: 546

Directional Distribution: 62% entering, 38% exiting

## Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
0.84	0.30 - 3.11	0.42

## Data Plot and Equation



# Shopping Center (>150k) (820)

**Vehicle Trip Ends vs: 1000 Sq. Ft. GLA**

**On a: Weekday,**

**Peak Hour of Adjacent Street Traffic,**

**One Hour Between 4 and 6 p.m.**

**Setting/Location: General Urban/Suburban**

Number of Studies: 126

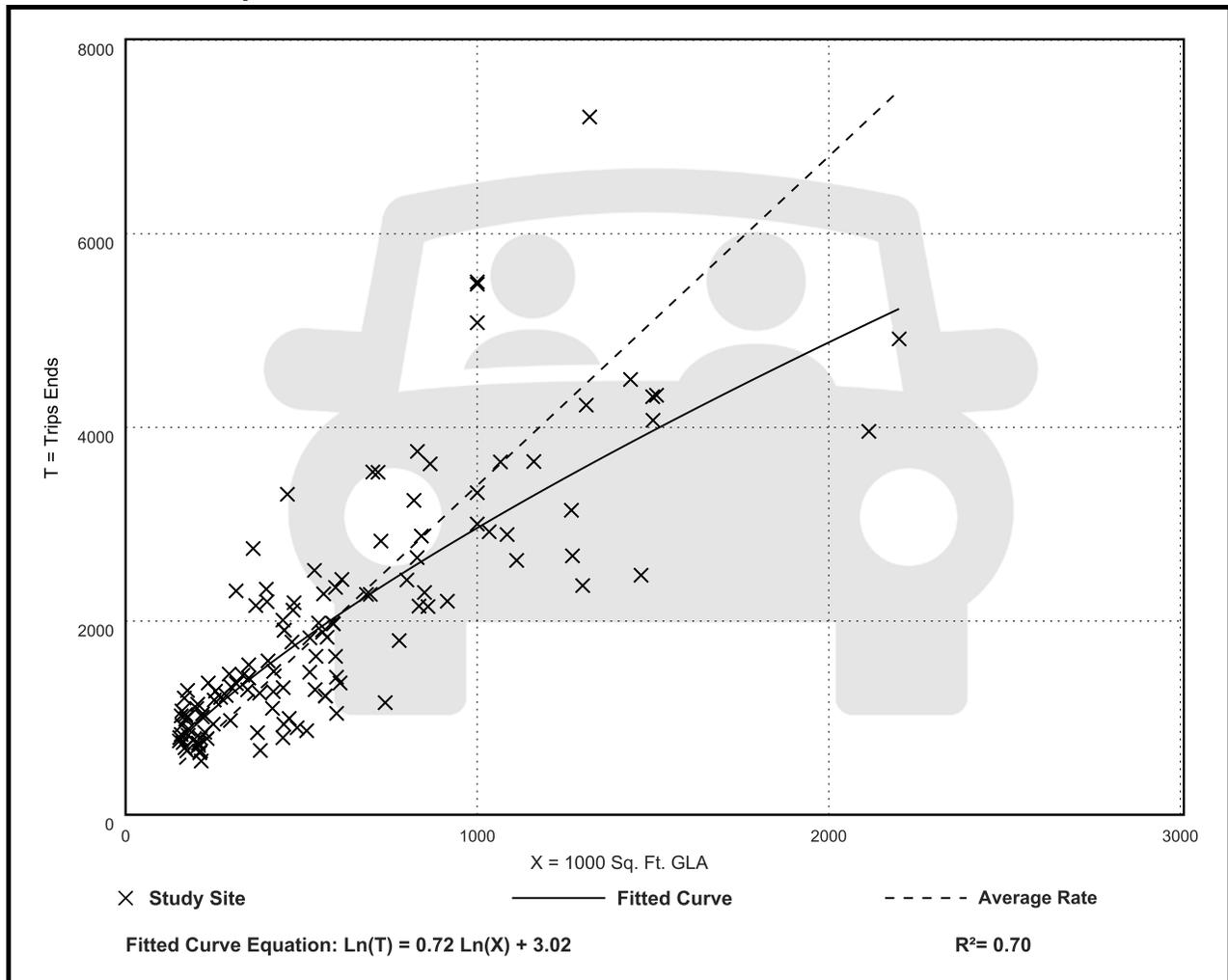
Avg. 1000 Sq. Ft. GLA: 581

Directional Distribution: 48% entering, 52% exiting

## Vehicle Trip Generation per 1000 Sq. Ft. GLA

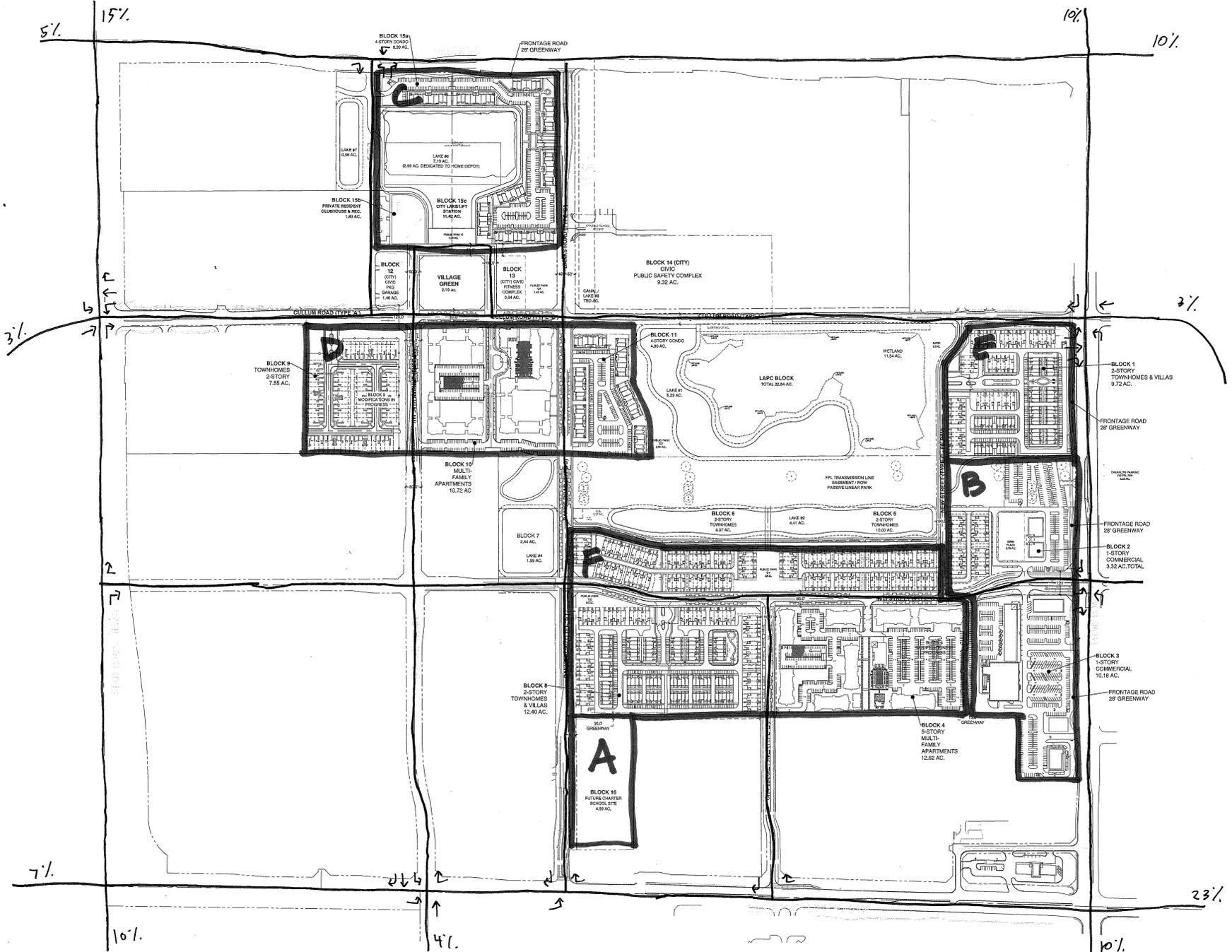
Average Rate	Range of Rates	Standard Deviation
3.40	1.57 - 7.58	1.26

## Data Plot and Equation



## APPENDIX E: PROJECT TRAFFIC ASSIGNMENT

SCHOOL  
COMM.  
RES



5%

15%

10%

10%

3%

3%

2%

7%

10%

4%

23%

10%

Block	Proposed Use	Land Use (ITE)	Intensity	% of Use	Added	New Total
1	Townhomes 2 story	220	120 DU	22.2%	14	134 DU
2	Commercial	820	15,000 SF	14.3%	17,143	32,143 SF
3	Commercial	820	90,000 SF	85.7%	102,857	192,857 SF
4	MF Apts 5 story	221	500 DU	28.5%	0	500 DU
5	Townhomes 2 story	220	90 DU	16.7%	11	101 DU
6	Townhomes 2 story	220	70 DU	13.0%	8	78 DU
7	Open Space	-	-			
8	Villas 2 story	220	65 DU	12.0%	8	73 DU
	Villas 2 story	220	95 DU	17.6%	11	106 DU
9	Townhomes 2 story	220	100 DU	18.5%	13	113 DU
10	MF Apts 5 story	221	700 DU	39.9%	0	700 DU
11	Condominium 3-4 story	221	150 DU	8.5%	0	150 DU
12	Civic	-	-			
13	Civic	-	-			
14	Civic	-	-			
15	Condominium 3-4 story	221	230 DU	13.1%	0	230 DU
	Private Rec	-	25,000 SF		0	25,000 SF
16	MF Apts 5 story	221	175 DU	10.0%	0	175 DU

Block	Proposed Use	Land Use (ITE)	% of Use	% of Total	% of Group	AM Peak Hour			PM Peak Hour		
						Total	In	Out	Total	In	Out
1	Townhomes 2 story	220	22.2%	3.4%	5.5%	46	11	35	50	30	20
2	Commercial	820	14.3%	5.5%	14.3%	36	23	14	118	62	55
3	Commercial	820	85.7%	32.8%	85.7%	218	135	82	708	374	333
4	MF Apts 5 story	221	28.5%	13.2%	21.4%	214	49	166	158	91	66
5	Townhomes 2 story	220	16.7%	2.6%	4.2%	35	8	26	38	23	15
6	Townhomes 2 story	220	13.0%	2.0%	3.3%	27	6	21	29	18	12
7	Open Space	-	0.0%	0.0%							
8	Villas 2 story	220	12.0%	1.8%	3.0%	25	6	19	27	16	11
	Villas 2 story	220	17.6%	2.7%	4.4%	36	9	28	40	24	16
9	Townhomes 2 story	220	18.5%	2.8%	4.6%	38	9	29	42	25	16
10	MF Apts 5 story	221	39.9%	18.5%	30.0%	300	68	232	221	128	93
11	Condominium 3-4 story	221	8.5%	4.0%	6.4%	64	15	50	47	27	20
12	Civic	-	0.0%	0.0%							
13	Civic	-	0.0%	0.0%							
14	Civic	-	0.0%	0.0%							
15	Condominium 3-4 story	221	13.1%	6.1%	9.8%	99	22	76	72	42	30
	Private Rec	-	0.0%	0.0%							
16	MF Apts 5 story	221	10.0%	4.6%	7.0%	75	17	58	55	32	23
<b>Check</b>			<b>1.00</b>	<b>1.99</b>	<b>1.99</b>	<b>1,213</b>	<b>378</b>	<b>836</b>	<b>1,605</b>	<b>892</b>	<b>710</b>

Super-Block	AM Peak Hour			PM Peak Hour		
	Total	In	Out	Total	In	Out
A	75	17	58	55	32	23
B	254	158	96	826	436	388
C	99	22	76	72	42	30
D	438	101	339	350	204	145
E	46	11	35	50	30	20
F	301	69	232	252	148	104
<b>Check</b>	<b>1,213</b>	<b>378</b>	<b>836</b>	<b>1,605</b>	<b>892</b>	<b>710</b>

Land Use	Intensity
220	540 DU
221	1,755 DU
538	0 Students
820	105,000 SF

Rem. Entitlements	
220	65 DU
221	0 DU
820	120,000 SF

Land Use	% Total	AM Peak Hour		PM Peak Hour			
		Total	In	Out	Total	In	Out
220	15.3%	17%	13%	19%	14%	15%	13%
221	46.3%	62%	45%	70%	34%	36%	33%
538	0.0%	0%	0%	0%	0%	0%	0%
820	38.3%	21%	42%	11%	51%	49%	55%
<b>Check</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>

	ITE	AM Peak Hour		PM Peak Hour			
		Total	In	Out	Total	In	Out
Multifamily Low-Rise	220	207	49	158	225	136	89
Multifamily Mid-Rise	221	752	171	581	553	321	232
Charter School (K-12)	538	0	0	0	0	0	0
General Commercial	820	254	158	96	826	437	389
<b>Net New Trips</b>	<b>1,213</b>	<b>378</b>	<b>835</b>	<b>1,604</b>	<b>894</b>	<b>710</b>	

MAX DRI

Land Use	Intensity
220	605 DU
221	1,755 DU
538	0 Students
820	225,000 SF

## Internal Capture Reduction Calculations

Methodology for A.M. Peak Hour and P.M. Peak Hour  
based on the *Trip Generation Handbook*, 3rd Edition, published by the Institute of Transportation Engineers

Methodology for Daily  
based on the average of the Unconstrained Rates for the A.M. Peak Hour and P.M. Peak Hour

### SUMMARY

GROSS TRIP GENERATION							
INPUT	Land Use	Daily		A.M. Peak Hour		P.M. Peak Hour	
		Enter	Exit	Enter	Exit	Enter	Exit
	Office						
Retail	5,869	5,869	165	101	486	526	
Restaurant							
Cinema/Entertainment							
Residential	6,139	6,139	225	746	595	371	
Hotel							
		12,008	12,008	390	847	1,081	897

INTERNAL TRIPS							
OUTPUT	Land Use	Daily		A.M. Peak Hour		P.M. Peak Hour	
		Enter	Exit	Enter	Exit	Enter	Exit
	Office	0	0	0	0	0	0
Retail	792	1,174	7	5	49	137	
Restaurant	0	0	0	0	0	0	
Cinema/Entertainment	0	0	0	0	0	0	
Residential	1,174	792	5	7	137	49	
Hotel	0	0	0	0	0	0	
		1,966	1,966	12	12	186	186
	% Reduction		16.4%		1.9%		18.8%

EXTERNAL TRIPS							
OUTPUT	Land Use	Daily		A.M. Peak Hour		P.M. Peak Hour	
		Enter	Exit	Enter	Exit	Enter	Exit
	Office	0	0	0	0	0	0
Retail	5,077	4,695	158	96	437	389	
Restaurant	0	0	0	0	0	0	
Cinema/Entertainment	0	0	0	0	0	0	
Residential	4,965	5,347	220	739	458	322	
Hotel	0	0	0	0	0	0	
		10,042	10,042	378	835	895	711

**DAILY**

GROSS TRIP GENERATION

<b>DAILY</b>	Land Use	Daily	
		Enter	Exit
	Office	0	0
	Retail	5,869	5,869
	Restaurant	0	0
	Cinema/Entertainment	0	0
	Residential	6,139	6,139
	Hotel	0	0
	12,008	12,008	

Estimated Trip Origins within a Mixed-Use Development (Daily)  
(Average of A.M. Peak Hour and P.M. Peak Hour)

<b>DAILY</b>	Origin Land Use	Destination Land Use					
		Office	Retail	Restaurant	Cinema/Ent.	Residential	Hotel
	Office	0%	24%	34%	0%	2%	0%
	Retail	16%	0%	21%	2%	20%	3%
	Restaurant	17%	28%	0%	4%	11%	5%
	Cinema/Entertainment	1%	11%	16%	0%	4%	1%
	Residential	3%	22%	21%	0%	0%	2%
	Hotel	38%	15%	39%	0%	1%	0%

Estimated Trip Destinations within a Mixed-Use Development (Daily)  
(Average of A.M. Peak Hour and P.M. Peak Hour)

<b>DAILY</b>	Origin Land Use	Destination Land Use					
		Office	Retail	Restaurant	Cinema/Ent.	Residential	Hotel
	Office	0%	20%	13%	1%	2%	0%
	Retail	18%	0%	40%	13%	24%	9%
	Restaurant	22%	29%	0%	16%	11%	38%
	Cinema/Entertainment	3%	2%	2%	0%	2%	1%
	Residential	30%	14%	17%	0%	0%	6%
	Hotel	2%	3%	6%	0%	0%	0%

\*\*\* BASED ON EXIT \*\*\*

<b>DAILY</b>	(Exit) Land Use	(Enter) Land Use					
		Office	Retail	Restaurant	Cinema/Ent.	Residential	Hotel
	Office	0	0	0	0	0	0
	Retail	910	0	1,232	117	1,174	147
	Restaurant	0	0	0	0	0	0
	Cinema/Entertainment	0	0	0	0	0	0
	Residential	184	1,320	1,258	0	0	92
	Hotel	0	0	0	0	0	0

\*\*\* BASED ON ENTER \*\*\*

<b>DAILY</b>	(Exit) Land Use	(Enter) Land Use					
		Office	Retail	Restaurant	Cinema/Ent.	Residential	Hotel
	Office	0	1,174	0	0	123	0
	Retail	0	0	0	0	1,473	0
	Restaurant	0	1,702	0	0	645	0
	Cinema/Entertainment	0	117	0	0	123	0
	Residential	0	792	0	0	0	0
	Hotel	0	176	0	0	0	0

\*\*\* MINIMUM \*\*\*

<b>DAILY</b>	(Exit) Land Use	(Enter) Land Use					
		Office	Retail	Restaurant	Cinema/Ent.	Residential	Hotel
	Office	0	0	0	0	0	0
	Retail	0	0	0	0	1,174	0
	Restaurant	0	0	0	0	0	0
	Cinema/Entertainment	0	0	0	0	0	0
	Residential	0	792	0	0	0	0
	Hotel	0	0	0	0	0	0

INTERNAL TRIPS

<b>DAILY</b>	Land Use	Daily	
		Enter	Exit
	Office	0	0
	Retail	792	1,174
	Restaurant	0	0
	Cinema/Entertainment	0	0
	Residential	1,174	792
	Hotel	0	0
	1,966	1,966	

## A.M. PEAK HOUR

### GROSS TRIP GENERATION

A.M. PEAK	Land Use	A.M. Peak Hour	
		Enter	Exit
	Office	0	0
Retail	165	101	
Restaurant	0	0	
Cinema/Entertainment	0	0	
Residential	225	746	
Hotel	0	0	
	390	847	

Table 6.1 Unconstrained Internal Person Trip Capture Rates  
for Trip Origins within a Mixed-Use Development (A.M. Peak Hour)

A.M. PEAK	Origin Land Use	Destination Land Use					
		Office	Retail	Restaurant	Cinema/Ent.	Residential	Hotel
	Office	0%	28%	63%	0%	1%	0%
	Retail	29%	0%	13%	0%	14%	0%
	Restaurant	31%	14%	0%	0%	4%	3%
	Cinema/Entertainment	0%	0%	0%	0%	0%	0%
	Residential	2%	1%	20%	0%	0%	0%
	Hotel	75%	14%	9%	0%	0%	0%

Table 6.2 Unconstrained Internal Person Trip Capture Rates  
for Trip Destinations within a Mixed-Use Development (A.M. Peak Hour)

A.M. PEAK	Origin Land Use	Destination Land Use					
		Office	Retail	Restaurant	Cinema/Ent.	Residential	Hotel
	Office	0%	32%	23%	0%	0%	0%
	Retail	4%	0%	50%	0%	2%	0%
	Restaurant	14%	8%	0%	0%	5%	4%
	Cinema/Entertainment	0%	0%	0%	0%	0%	0%
	Residential	3%	17%	20%	0%	0%	0%
	Hotel	3%	4%	6%	0%	0%	0%

\*\*\* BASED ON EXIT \*\*\*

A.M. PEAK	(Exit) Land Use	(Enter) Land Use					
		Office	Retail	Restaurant	Cinema/Ent.	Residential	Hotel
	Office	0	0	0	0	0	0
	Retail	29	0	13	0	14	0
	Restaurant	0	0	0	0	0	0
	Cinema/Entertainment	0	0	0	0	0	0
	Residential	15	7	149	0	0	0
	Hotel	0	0	0	0	0	0

\*\*\* BASED ON ENTER \*\*\*

A.M. PEAK	(Exit) Land Use	(Enter) Land Use					
		Office	Retail	Restaurant	Cinema/Ent.	Residential	Hotel
	Office	0	53	0	0	0	0
	Retail	0	0	0	0	5	0
	Restaurant	0	13	0	0	11	0
	Cinema/Entertainment	0	0	0	0	0	0
	Residential	0	28	0	0	0	0
	Hotel	0	7	0	0	0	0

\*\*\* MINIMUM \*\*\*

A.M. PEAK	(Exit) Land Use	(Enter) Land Use					
		Office	Retail	Restaurant	Cinema/Ent.	Residential	Hotel
	Office	0	0	0	0	0	0
	Retail	0	0	0	0	5	0
	Restaurant	0	0	0	0	0	0
	Cinema/Entertainment	0	0	0	0	0	0
	Residential	0	7	0	0	0	0
	Hotel	0	0	0	0	0	0

### INTERNAL TRIPS

A.M. PEAK	Land Use	A. M. Peak Hour	
		Enter	Exit
	Office	0	0
Retail	7	5	
Restaurant	0	0	
Cinema/Entertainment	0	0	
Residential	5	7	
Hotel	0	0	
	12	12	

## P.M. PEAK HOUR

### GROSS TRIP GENERATION

P.M. PEAK	Land Use	P.M. Peak Hour	
		Enter	Exit
	Office	0	0
Retail	486	526	
Restaurant	0	0	
Cinema/Entertainment	0	0	
Residential	595	371	
Hotel	0	0	
	1,081	897	

Table 6.1 Unconstrained Internal Person Trip Capture Rates  
for Trip Origins within a Mixed-Use Development (P.M. Peak Hour)

P.M. PEAK	Origin Land Use	Destination Land Use					
		Office	Retail	Restaurant	Cinema/Ent.	Residential	Hotel
	Office		20%	4%	0%	2%	0%
	Retail	2%		29%	4%	26%	5%
	Restaurant	3%	41%		8%	18%	7%
	Cinema/Entertainment	2%	21%	31%		8%	2%
	Residential	4%	42%	21%	0%		3%
	Hotel	0%	16%	68%	0%	2%	

Table 6.2 Unconstrained Internal Person Trip Capture Rates  
for Trip Destinations within a Mixed-Use Development (P.M. Peak Hour)

P.M. PEAK	Origin Land Use	Destination Land Use					
		Office	Retail	Restaurant	Cinema/Ent.	Residential	Hotel
	Office		8%	2%	1%	4%	0%
	Retail	31%		29%	26%	46%	17%
	Restaurant	30%	50%		32%	16%	71%
	Cinema/Entertainment	6%	4%	3%		4%	1%
	Residential	57%	10%	14%	0%		12%
	Hotel	0%	2%	5%	0%	0%	

\*\*\* BASED ON EXIT \*\*\*

P.M. PEAK	(Exit) Land Use	(Enter) Land Use					
		Office	Retail	Restaurant	Cinema/Ent.	Residential	Hotel
	Office		0	0	0	0	0
	Retail	11		153	21	137	26
	Restaurant	0	0		0	0	0
	Cinema/Entertainment	0	0	0		0	0
	Residential	15	156	78	0		11
	Hotel	0	0	0	0	0	

\*\*\* BASED ON ENTER \*\*\*

P.M. PEAK	(Exit) Land Use	(Enter) Land Use					
		Office	Retail	Restaurant	Cinema/Ent.	Residential	Hotel
	Office		39	0	0	24	0
	Retail	0		0	0	274	0
	Restaurant	0	243		0	95	0
	Cinema/Entertainment	0	19	0		24	0
	Residential	0	49	0	0		0
	Hotel	0	10	0	0	0	

\*\*\* MINIMUM \*\*\*

P.M. PEAK	(Exit) Land Use	(Enter) Land Use					
		Office	Retail	Restaurant	Cinema/Ent.	Residential	Hotel
	Office		0	0	0	0	0
	Retail	0		0	0	137	0
	Restaurant	0	0		0	0	0
	Cinema/Entertainment	0	0	0		0	0
	Residential	0	49	0	0		0
	Hotel	0	0	0	0	0	

### INTERNAL TRIPS

P.M. PEAK	Land Use	P.M. Peak Hour	
		Enter	Exit
	Office	0	0
Retail	49	137	
Restaurant	0	0	
Cinema/Entertainment	0	0	
Residential	137	49	
Hotel	0	0	
	186	186	

## APPENDIX F: VOLUME VEVELOPMENT WORKSHEETS

VOLUME DEVELOPMENT SHEET  
 MAIN STREET COCONUT CREEK  
 US 441 & Wiles Road  
 EXISTING GEOMETRY

Growth Rate = 0.50%  
 Peak Season = 1.04 1.04  
 Buildout Year = 2030 2030  
 Years = 9 9

AM Peak Hour

	Northbound			Southbound			Eastbound			Westbound			
	LT	Thru	RT	LT	Thru	RT	LT	Thru	RT	LT	Thru	RT	
Existing Volume on 10/13/2021	248	1,170	185	280	1,271	293	616	666	471	211	437	280	2,021
Peak Season Volume	258	1,217	192	291	1,322	305	641	693	490	219	454	291	
Traffic Volume Growth Committed Development	12	56	9	13	61	14	29	32	22	10	21	13	
Background Traffic Volumes	270	1,273	201	304	1,383	319	670	725	512	229	475	304	
Superblock A (Residential)													
Inbound Traffic Assignment				12.0%	3.0%			5.0%					Inbound
Inbound Traffic Volumes				2	1			1					17
Outbound Traffic Assignment		3.0%								5.0%	12.0%		Outbound
Outbound Traffic Volumes		2								3	7		58
Project Traffic		2		2	1			1		3	7		
Superblock B (Commercial)													
Inbound Traffic Assignment				13.0%	2.0%			4.0%	1.0%				Inbound
Inbound Traffic Volumes				21	3			6	2				158
Outbound Traffic Assignment	3.0%	8.0%								2.0%	7.0%		Outbound
Outbound Traffic Volumes	3	8								2	7		96
Project Traffic	3	8		21	3			6	2		2	7	
Superblock C (Residential)													
Inbound Traffic Assignment			10.0%	15.0%				5.0%					Inbound
Inbound Traffic Volumes			2	3				1					22
Outbound Traffic Assignment										5.0%	15.0%		Outbound
Outbound Traffic Volumes										4	11		76
Project Traffic			2	3				1		4	11		
Superblock D (Residential)													
Inbound Traffic Assignment				5.0%	10.0%			3.0%	2.0%				Inbound
Inbound Traffic Volumes				5	10			3	2				101
Outbound Traffic Assignment	3.0%	11.0%								2.0%	4.0%		Outbound
Outbound Traffic Volumes	10	37								7	14		339
Project Traffic	10	37		5	10			3	2		7	14	
Superblock E (Residential)													
Inbound Traffic Assignment				11.0%	4.0%			4.0%	1.0%				Inbound
Inbound Traffic Volumes				1									11
Outbound Traffic Assignment	2.0%	8.0%								3.0%	7.0%		Outbound
Outbound Traffic Volumes	1	3								1	2		35
Project Traffic	1	3		1						1	2		
Superblock F (Residential)													
Inbound Traffic Assignment				4.0%	11.0%			2.0%	3.0%				Inbound
Inbound Traffic Volumes				3	8			1	2				69
Outbound Traffic Assignment	3.0%	11.0%								2.0%	4.0%		Outbound
Outbound Traffic Volumes	7	26								5	9		232
Project Traffic	7	26		3	8			1	2		5	9	
Total Project Traffic	21	76	2	35	22	0	0	12	6	0	22	50	
Cullum Road Connection Traffic Diversion			-50							-50			
TOTAL TRAFFIC	291	1,349	153	339	1,405	319	670	737	518	179	497	354	

VOLUME DEVELOPMENT SHEET  
 MAIN STREET COCONUT CREEK  
 US 441 & Wiles Road  
 EXISTING GEOMETRY

Growth Rate = 0.50%  
 Peak Season = 1.04 1.04  
 Buildout Year = 2030 2030  
 Years = 9 9

PM Peak Hour

	Northbound			Southbound			Eastbound			Westbound			
	LT	Thru	RT	LT	Thru	RT	LT	Thru	RT	LT	Thru	RT	
Existing Volume on 10/13/2021	405	1443	295	313	1276	407	614	774	175	356	654	136	2,021
Peak Season Volume	421	1,501	307	326	1,327	423	639	805	182	370	680	141	
Traffic Volume Growth Committed Development	19	69	14	15	61	19	29	37	8	17	31	6	
Background Traffic Volumes	440	1,570	321	341	1,388	442	668	842	190	387	711	147	
Superblock A (Residential)													
Inbound Traffic Assignment				12.0%	3.0%			5.0%					Inbound
Inbound Traffic Volumes				4	1			2					32
Outbound Traffic Assignment		3.0%								5.0%	12.0%		Outbound
Outbound Traffic Volumes		1								1	3		23
Project Traffic		1		4	1			2			1	3	
Superblock B (Commercial)													
Inbound Traffic Assignment				13.0%	2.0%			4.0%	1.0%				Inbound
Inbound Traffic Volumes				57	9			17	4				436
Outbound Traffic Assignment	3.0%	8.0%								2.0%	7.0%		Outbound
Outbound Traffic Volumes	12	31								8	27		388
Project Traffic	12	31		57	9			17	4		8	27	
Superblock C (Residential)													
Inbound Traffic Assignment			10.0%	15.0%				5.0%					Inbound
Inbound Traffic Volumes			4	6				2					42
Outbound Traffic Assignment										5.0%	15.0%		Outbound
Outbound Traffic Volumes										2	5		30
Project Traffic			4	6				2			2	5	
Superblock D (Residential)													
Inbound Traffic Assignment				5.0%	10.0%			3.0%	2.0%				Inbound
Inbound Traffic Volumes				10	20			6	4				204
Outbound Traffic Assignment	3.0%	11.0%								2.0%	4.0%		Outbound
Outbound Traffic Volumes	4	16								3	6		145
Project Traffic	4	16		10	20			6	4		3	6	
Superblock E (Residential)													
Inbound Traffic Assignment				11.0%	4.0%			4.0%	1.0%				Inbound
Inbound Traffic Volumes				3	1			1					30
Outbound Traffic Assignment	2.0%	8.0%								3.0%	7.0%		Outbound
Outbound Traffic Volumes		2								1	1		20
Project Traffic		2		3	1			1			1	1	
Superblock F (Residential)													
Inbound Traffic Assignment				4.0%	11.0%			2.0%	3.0%				Inbound
Inbound Traffic Volumes				6	16			3	4				148
Outbound Traffic Assignment	3.0%	11.0%								2.0%	4.0%		Outbound
Outbound Traffic Volumes	3	11								2	4		104
Project Traffic	3	11		6	16			3	4		2	4	
<b>Total Project Traffic</b>	<b>19</b>	<b>61</b>	<b>4</b>	<b>86</b>	<b>47</b>	<b>0</b>	<b>0</b>	<b>31</b>	<b>12</b>	<b>0</b>	<b>17</b>	<b>46</b>	
Cullum Road Connection Traffic Diversion			-50							-50			
<b>TOTAL TRAFFIC</b>	<b>459</b>	<b>1,631</b>	<b>275</b>	<b>427</b>	<b>1,435</b>	<b>442</b>	<b>668</b>	<b>873</b>	<b>202</b>	<b>337</b>	<b>728</b>	<b>193</b>	

VOLUME DEVELOPMENT SHEET  
 MAIN STREET COCONUT CREEK  
 US 441 & Cullum Road  
 EXISTING GEOMETRY

Growth Rate = 0.50%  
 Peak Season = 1.04 1.04  
 Buildout Year = 2030 2030  
 Years = 9 9

AM Peak Hour

	Northbound			Southbound			Eastbound			Westbound			
	LT	Thru	RT	LT	Thru	RT	LT	Thru	RT	LT	Thru	RT	
Existing Volume on 10/13/2021	107	1,426	35	127	1,672	172	241	33	14	6	15	64	2,021
Peak Season Volume	111	1,483	36	132	1,739	179	251	34	15	6	16	67	
Traffic Volume Growth Committed Development	5	68	2	6	80	8	12	2	1	0	1	3	
Background Traffic Volumes	116	1,551	38	138	1,819	187	263	36	16	6	17	70	
Superblock A (Residential)													
Inbound Traffic Assignment				3.0%				3.0%					Inbound
Inbound Traffic Volumes				1				1					17
Outbound Traffic Assignment										3.0%	3.0%		Outbound
Outbound Traffic Volumes										2	2		58
Project Traffic				1				1			2	2	
Superblock B (Commercial)													
Inbound Traffic Assignment				3.0%				3.0%					Inbound
Inbound Traffic Volumes				5				5					158
Outbound Traffic Assignment										3.0%	11.0%		Outbound
Outbound Traffic Volumes										3	11		96
Project Traffic				5				5			3	11	
Superblock C (Residential)													
Inbound Traffic Assignment		10.0%	2.0%					3.0%					Inbound
Inbound Traffic Volumes		2						1					22
Outbound Traffic Assignment										11.0%	3.0%		Outbound
Outbound Traffic Volumes										8	2		76
Project Traffic		2						1		8	2		
Superblock D (Residential)													
Inbound Traffic Assignment			7.0%	12.0%				3.0%					Inbound
Inbound Traffic Volumes			7	12				3					101
Outbound Traffic Assignment										7.0%	3.0%	14.0%	Outbound
Outbound Traffic Volumes										24	10	47	339
Project Traffic			7	12				3		24	10	47	
Superblock E (Residential)													
Inbound Traffic Assignment			10.0%	5.0%				3.0%					Inbound
Inbound Traffic Volumes			1	1									11
Outbound Traffic Assignment										10.0%	3.0%	10.0%	Outbound
Outbound Traffic Volumes										4	1	4	35
Project Traffic			1	1						4	1	4	
Superblock F (Residential)													
Inbound Traffic Assignment				14.0%				3.0%					Inbound
Inbound Traffic Volumes				10				2					69
Outbound Traffic Assignment											3.0%	14.0%	Outbound
Outbound Traffic Volumes											7	32	232
Project Traffic				10				2			7	32	
<b>Total Project Traffic</b>	<b>0</b>	<b>2</b>	<b>8</b>	<b>29</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>12</b>	<b>0</b>	<b>36</b>	<b>25</b>	<b>96</b>	
Cullum Road Connection Traffic Diversion						-50	-50	50			50		
<b>TOTAL TRAFFIC</b>	<b>116</b>	<b>1,553</b>	<b>46</b>	<b>167</b>	<b>1,819</b>	<b>137</b>	<b>213</b>	<b>98</b>	<b>16</b>	<b>42</b>	<b>92</b>	<b>166</b>	

VOLUME DEVELOPMENT SHEET  
 MAIN STREET COCONUT CREEK  
 US 441 & Cullum Road  
 EXISTING GEOMETRY

Growth Rate = 0.50%  
 Peak Season = 1.04 1.04  
 Buildout Year = 2030 2030  
 Years = 9 9

PM Peak Hour

	Northbound			Southbound			Eastbound			Westbound			
	LT	Thru	RT	LT	Thru	RT	LT	Thru	RT	LT	Thru	RT	
Existing Volume on 10/13/2021	218	1587	19	218	1396	294	323	31	59	40	72	141	2,021
Peak Season Volume	227	1,650	20	227	1,452	306	336	32	61	42	75	147	
Traffic Volume Growth Committed Development	10	76	1	10	67	14	15	1	3	2	3	7	
Background Traffic Volumes	237	1,726	21	237	1,519	320	351	33	64	44	78	154	
Superblock A (Residential)													
Inbound Traffic Assignment				3.0%				3.0%					Inbound
Inbound Traffic Volumes				1				1					32
Outbound Traffic Assignment										3.0%	3.0%		Outbound
Outbound Traffic Volumes										1	1		23
Project Traffic													
Superblock B (Commercial)				1				1			1	1	
Inbound Traffic Assignment				3.0%				3.0%					Inbound
Inbound Traffic Volumes				13				13					436
Outbound Traffic Assignment										3.0%	11.0%		Outbound
Outbound Traffic Volumes										12	43		388
Project Traffic													
Superblock C (Residential)				13				13			12	43	
Inbound Traffic Assignment		10.0%	2.0%					3.0%					Inbound
Inbound Traffic Volumes		4	1					1					42
Outbound Traffic Assignment										11.0%	3.0%		Outbound
Outbound Traffic Volumes										3	1		30
Project Traffic													
Superblock D (Residential)		4	1					1		3	1		
Inbound Traffic Assignment			7.0%	12.0%				3.0%					Inbound
Inbound Traffic Volumes			14	24				6					204
Outbound Traffic Assignment										7.0%	3.0%	14.0%	Outbound
Outbound Traffic Volumes										10	4	20	145
Project Traffic													
Superblock E (Residential)			14	24				6		10	4	20	
Inbound Traffic Assignment			10.0%	5.0%				3.0%					Inbound
Inbound Traffic Volumes			3	2				1					30
Outbound Traffic Assignment										10.0%	3.0%	10.0%	Outbound
Outbound Traffic Volumes										2	1	2	20
Project Traffic													
Superblock F (Residential)			3	2				1		2	1	2	
Inbound Traffic Assignment				14.0%				3.0%					Inbound
Inbound Traffic Volumes				21				4					148
Outbound Traffic Assignment										3.0%	14.0%		Outbound
Outbound Traffic Volumes										3	15		104
Project Traffic					21			4			3	15	
Total Project Traffic	0	4	18	61	0	0	0	26	0	15	22	81	
Cullum Road Connection Traffic Diversion						-50	-50	50			50		
TOTAL TRAFFIC	237	1,730	39	298	1,519	270	301	109	64	59	150	235	

VOLUME DEVELOPMENT SHEET  
 MAIN STREET COCONUT CREEK  
 US 441 & 40th Street  
 EXISTING GEOMETRY

Growth Rate = 0.50%  
 Peak Season = 1.04 1.04  
 Buildout Year = 2030 2030  
 Years = 9 9

AM Peak Hour

	Northbound			Southbound			Eastbound			Westbound			
	LT	Thru	RT	LT	Thru	RT	LT	Thru	RT	LT	Thru	RT	
Existing Volume on 10/13/2021	0	1,532	40	0	1,769	0	0	0	0	0	0	43	2,021
Peak Season Volume	0	1,593	42	0	1,840	0	0	0	0	0	0	45	
Traffic Volume Growth Committed Development	0	73	2	0	84	0	0	0	0	0	0	2	
Background Traffic Volumes	0	1,666	44	0	1,924	0	0	0	0	0	0	47	
Superblock A (Residential)													
Inbound Traffic Assignment													Inbound
Inbound Traffic Volumes													17
Outbound Traffic Assignment													Outbound
Outbound Traffic Volumes													58
Project Traffic													
Superblock B (Commercial)													
Inbound Traffic Assignment													Inbound
Inbound Traffic Volumes													158
Outbound Traffic Assignment													Outbound
Outbound Traffic Volumes													96
Project Traffic													
Superblock C (Residential)													
Inbound Traffic Assignment		12.0%											Inbound
Inbound Traffic Volumes		3											22
Outbound Traffic Assignment					11.0%								Outbound
Outbound Traffic Volumes					8								76
Project Traffic													
Superblock D (Residential)													
Inbound Traffic Assignment		7.0%											Inbound
Inbound Traffic Volumes		7											101
Outbound Traffic Assignment					7.0%								Outbound
Outbound Traffic Volumes					24								339
Project Traffic													
Superblock E (Residential)													
Inbound Traffic Assignment		10.0%											Inbound
Inbound Traffic Volumes		1											11
Outbound Traffic Assignment					10.0%								Outbound
Outbound Traffic Volumes					4								35
Project Traffic													
Superblock F (Residential)													
Inbound Traffic Assignment			6.0%										Inbound
Inbound Traffic Volumes			4										69
Outbound Traffic Assignment													Outbound
Outbound Traffic Volumes													232
Project Traffic			4										
<b>Total Project Traffic</b>	<b>0</b>	<b>11</b>	<b>4</b>	<b>0</b>	<b>36</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	
Cullum Road Connection Traffic Diversion													
<b>TOTAL TRAFFIC</b>	<b>0</b>	<b>1,677</b>	<b>48</b>	<b>0</b>	<b>1,960</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>47</b>	



VOLUME DEVELOPMENT SHEET  
 MAIN STREET COCONUT CREEK  
 US 441 & Sample Road  
 EXISTING GEOMETRY

Growth Rate = 0.50%  
 Peak Season = 1.04 1.04  
 Buildout Year = 2030 2030  
 Years = 9 9

AM Peak Hour

	Northbound			Southbound			Eastbound			Westbound			
	LT	Thru	RT	LT	Thru	RT	LT	Thru	RT	LT	Thru	RT	
Existing Volume on 10/13/2021	164	0	158	269	0	97	105	1,792	178	127	1,159	217	2,021
Peak Season Volume	171	0	164	280	0	101	109	1,864	185	132	1,205	226	
Traffic Volume Growth Committed Development	8	0	8	13	0	5	5	86	8	6	55	10	
Background Traffic Volumes	179	0	172	293	0	106	114	1,950	193	138	1,260	236	
Superblock A (Residential)													
Inbound Traffic Assignment			10.0%					7.0%					Inbound
Inbound Traffic Volumes			2					1					17
Outbound Traffic Assignment									10.0%	7.0%			Outbound
Outbound Traffic Volumes									6	4			58
Project Traffic			2					1		6	4		
Superblock B (Commercial)													
Inbound Traffic Assignment			10.0%					7.0%					Inbound
Inbound Traffic Volumes			16					11					158
Outbound Traffic Assignment									10.0%	7.0%			Outbound
Outbound Traffic Volumes									10	7			96
Project Traffic			16					11		10	7		
Superblock C (Residential)													
Inbound Traffic Assignment			3.0%				5.0%	2.0%					Inbound
Inbound Traffic Volumes			1				1						22
Outbound Traffic Assignment						5.0%			4.0%	2.0%			Outbound
Outbound Traffic Volumes						4			3	2			76
Project Traffic			1			4	1			3	2		
Superblock D (Residential)													
Inbound Traffic Assignment			5.0%				2.0%	5.0%					Inbound
Inbound Traffic Volumes			5				2	5					101
Outbound Traffic Assignment						2.0%			5.0%	5.0%			Outbound
Outbound Traffic Volumes						7			17	17			339
Project Traffic			5			7	2	5		17	17		
Superblock E (Residential)													
Inbound Traffic Assignment			3.0%				3.0%	4.0%					Inbound
Inbound Traffic Volumes													11
Outbound Traffic Assignment									3.0%	4.0%			Outbound
Outbound Traffic Volumes									1	1			35
Project Traffic										1	1		
Superblock F (Residential)													
Inbound Traffic Assignment			4.0%					7.0%					Inbound
Inbound Traffic Volumes			3					5					69
Outbound Traffic Assignment									10.0%	7.0%			Outbound
Outbound Traffic Volumes									23	16			232
Project Traffic			3					5		23	16		
<b>Total Project Traffic</b>	<b>0</b>	<b>0</b>	<b>27</b>	<b>0</b>	<b>0</b>	<b>11</b>	<b>3</b>	<b>22</b>	<b>0</b>	<b>60</b>	<b>47</b>	<b>0</b>	
Cullum Road Connection Traffic Diversion													
<b>TOTAL TRAFFIC</b>	<b>179</b>	<b>0</b>	<b>199</b>	<b>293</b>	<b>0</b>	<b>117</b>	<b>117</b>	<b>1,972</b>	<b>193</b>	<b>198</b>	<b>1,307</b>	<b>236</b>	

VOLUME DEVELOPMENT SHEET  
 MAIN STREET COCONUT CREEK  
 US 441 & Sample Road  
 EXISTING GEOMETRY

Growth Rate = 0.50%  
 Peak Season = 1.04 1.04  
 Buildout Year = 2030 2030  
 Years = 9 9

PM Peak Hour

	Northbound			Southbound			Eastbound			Westbound			
	LT	Thru	RT	LT	Thru	RT	LT	Thru	RT	LT	Thru	RT	
Existing Volume on 10/13/2021	152	0	113	211	0	224	196	1,510	103	145	1,745	275	2,021
Peak Season Volume	158	0	118	219	0	233	204	1,570	107	151	1,815	286	
Traffic Volume Growth Committed Development	7	0	5	10	0	11	9	72	5	7	83	13	
Background Traffic Volumes	165	0	123	229	0	244	213	1,642	112	158	1,898	299	
Superblock A (Residential)													
Inbound Traffic Assignment			10.0%					7.0%					Inbound
Inbound Traffic Volumes			3					2					32
Outbound Traffic Assignment									10.0%	7.0%			Outbound
Outbound Traffic Volumes									2	2			23
Project Traffic			3					2		2	2		
Superblock B (Commercial)													
Inbound Traffic Assignment			10.0%					7.0%					Inbound
Inbound Traffic Volumes			44					31					436
Outbound Traffic Assignment									10.0%	7.0%			Outbound
Outbound Traffic Volumes									39	27			388
Project Traffic			44					31		39	27		
Superblock C (Residential)													
Inbound Traffic Assignment			3.0%				5.0%	2.0%					Inbound
Inbound Traffic Volumes			1				2	1					42
Outbound Traffic Assignment						5.0%			4.0%	2.0%			Outbound
Outbound Traffic Volumes						2			1	1			30
Project Traffic			1			2	2	1		1	1		
Superblock D (Residential)													
Inbound Traffic Assignment			5.0%				2.0%	5.0%					Inbound
Inbound Traffic Volumes			10				4	10					204
Outbound Traffic Assignment						2.0%			5.0%	5.0%			Outbound
Outbound Traffic Volumes						3			7	7			145
Project Traffic			10			3	4	10		7	7		
Superblock E (Residential)													
Inbound Traffic Assignment			3.0%				3.0%	4.0%					Inbound
Inbound Traffic Volumes			1				1	1					30
Outbound Traffic Assignment									3.0%	4.0%			Outbound
Outbound Traffic Volumes									1	1			20
Project Traffic			1				1	1		1	1		
Superblock F (Residential)													
Inbound Traffic Assignment			4.0%					7.0%					Inbound
Inbound Traffic Volumes			6					10					148
Outbound Traffic Assignment									10.0%	7.0%			Outbound
Outbound Traffic Volumes									10	7			104
Project Traffic			6					10		10	7		
<b>Total Project Traffic</b>	<b>0</b>	<b>0</b>	<b>65</b>	<b>0</b>	<b>0</b>	<b>5</b>	<b>7</b>	<b>55</b>	<b>0</b>	<b>60</b>	<b>45</b>	<b>0</b>	
Cullum Road Connection Traffic Diversion													
<b>TOTAL TRAFFIC</b>	<b>165</b>	<b>0</b>	<b>188</b>	<b>229</b>	<b>0</b>	<b>249</b>	<b>220</b>	<b>1,697</b>	<b>112</b>	<b>218</b>	<b>1,943</b>	<b>299</b>	

VOLUME DEVELOPMENT SHEET  
 MAIN STREET COCONUT CREEK  
 54th Avenue & Sample Road  
 EXISTING GEOMETRY

Growth Rate = 0.50%  
 Peak Season = 1.04 1.04  
 Buildout Year = 2030 2030  
 Years = 9 9

AM Peak Hour

	Northbound			Southbound			Eastbound			Westbound			
	LT	Thru	RT	LT	Thru	RT	LT	Thru	RT	LT	Thru	RT	
Existing Volume on 10/13/2021	30	18	281	94	17	38	58	1,921	53	205	1,264	118	2,021
Peak Season Volume	31	19	292	98	18	40	60	1,998	55	213	1,315	123	
Traffic Volume Growth Committed Development	1	1	13	4	1	2	3	92	3	10	60	6	
Background Traffic Volumes	32	20	305	102	19	42	63	2,090	58	223	1,375	129	
Superblock A (Residential)													
Inbound Traffic Assignment			4.0%					17.0%					Inbound
Inbound Traffic Volumes			1					3					17
Outbound Traffic Assignment									37.0%	17.0%			Outbound
Outbound Traffic Volumes									21	10			58
Project Traffic			1					3		21	10		
Superblock B (Commercial)													
Inbound Traffic Assignment		2.0%	2.0%				2.0%	15.0%					Inbound
Inbound Traffic Volumes		3	3				3	24					158
Outbound Traffic Assignment					2.0%	6.0%				2.0%	11.0%		Outbound
Outbound Traffic Volumes					2	6				2	11		96
Project Traffic			3		2	6	3	24		2	11		
Superblock C (Residential)													
Inbound Traffic Assignment		4.0%					2.0%	3.0%				1.0%	Inbound
Inbound Traffic Volumes		1						1					22
Outbound Traffic Assignment				9.0%	4.0%	2.0%							Outbound
Outbound Traffic Volumes				7	3	2							76
Project Traffic		3	3		2	6	3	24		2	11		
Superblock D (Residential)													
Inbound Traffic Assignment		4.0%					10.0%					14.0%	Inbound
Inbound Traffic Volumes		4					10					14	101
Outbound Traffic Assignment				17.0%	4.0%	4.0%					6.0%		Outbound
Outbound Traffic Volumes				58	14	14					20		339
Project Traffic		4		58	14	14	10				20	14	
Superblock E (Residential)													
Inbound Traffic Assignment		3.0%	1.0%					7.0%					Inbound
Inbound Traffic Volumes								1					11
Outbound Traffic Assignment					4.0%	4.0%					3.0%		Outbound
Outbound Traffic Volumes					1	1					1		35
Project Traffic					1	1		1			1		
Superblock F (Residential)													
Inbound Traffic Assignment		3.0%	1.0%				3.0%	8.0%					Inbound
Inbound Traffic Volumes		2	1				2	6					69
Outbound Traffic Assignment					3.0%	2.0%				1.0%	15.0%		Outbound
Outbound Traffic Volumes					7	5				2	35		232
Project Traffic		2	1		7	5	2	6		2	35		
<b>Total Project Traffic</b>	<b>0</b>	<b>10</b>	<b>5</b>	<b>65</b>	<b>27</b>	<b>28</b>	<b>15</b>	<b>35</b>	<b>0</b>	<b>25</b>	<b>77</b>	<b>14</b>	
Cullum Road Connection Traffic Diversion													
<b>TOTAL TRAFFIC</b>	<b>32</b>	<b>30</b>	<b>310</b>	<b>167</b>	<b>46</b>	<b>70</b>	<b>78</b>	<b>2,125</b>	<b>58</b>	<b>248</b>	<b>1,452</b>	<b>143</b>	

VOLUME DEVELOPMENT SHEET  
 MAIN STREET COCONUT CREEK  
 54th Avenue & Sample Road  
 EXISTING GEOMETRY

Growth Rate = 0.50%  
 Peak Season = 1.04 1.04  
 Buildout Year = 2030 2030  
 Years = 9 9

PM Peak Hour

	Northbound			Southbound			Eastbound			Westbound			
	LT	Thru	RT	LT	Thru	RT	LT	Thru	RT	LT	Thru	RT	
Existing Volume on 10/13/2021	122	41	277	207	47	82	155	1,432	54	373	1,751	267	2,021
Peak Season Volume	127	43	288	215	49	85	161	1,489	56	388	1,821	278	
Traffic Volume Growth Committed Development	6	2	13	10	2	4	7	68	3	18	84	13	
Background Traffic Volumes	133	45	301	225	51	89	168	1,557	59	406	1,905	291	
Superblock A (Residential)													
Inbound Traffic Assignment			4.0%					17.0%					Inbound
Inbound Traffic Volumes			1					5					32
Outbound Traffic Assignment									37.0%	17.0%			Outbound
Outbound Traffic Volumes									9	4			23
Project Traffic			1					5		9	4		
Superblock B (Commercial)													
Inbound Traffic Assignment		2.0%	2.0%				2.0%	15.0%					Inbound
Inbound Traffic Volumes		9	9				9	65					436
Outbound Traffic Assignment				2.0%	6.0%				2.0%	11.0%			Outbound
Outbound Traffic Volumes				8	23				8	43			388
Project Traffic		9	9		8	23	9	65		8	43		
Superblock C (Residential)													
Inbound Traffic Assignment		4.0%					2.0%	3.0%				1.0%	Inbound
Inbound Traffic Volumes		2					1	1					42
Outbound Traffic Assignment				9.0%	4.0%	2.0%							Outbound
Outbound Traffic Volumes				3	1	1							30
Project Traffic		2		3	1	1	1	1					
Superblock D (Residential)													
Inbound Traffic Assignment		4.0%					10.0%					14.0%	Inbound
Inbound Traffic Volumes		8					20					29	204
Outbound Traffic Assignment				17.0%	4.0%	4.0%				6.0%			Outbound
Outbound Traffic Volumes				25	6	6				9			145
Project Traffic		8		25	6	6	20				9	29	
Superblock E (Residential)													
Inbound Traffic Assignment		3.0%	1.0%					7.0%					Inbound
Inbound Traffic Volumes		1						2					30
Outbound Traffic Assignment					4.0%	4.0%					3.0%		Outbound
Outbound Traffic Volumes					1	1					1		20
Project Traffic		1			1	1		2			1		
Superblock F (Residential)													
Inbound Traffic Assignment		3.0%	1.0%				3.0%	8.0%					Inbound
Inbound Traffic Volumes		4	1				4	12					148
Outbound Traffic Assignment					3.0%	2.0%				1.0%	15.0%		Outbound
Outbound Traffic Volumes					3	2				1	16		104
Project Traffic		4	1		3	2	4	12		1	16		
Total Project Traffic	0	24	11	28	19	33	34	85	0	18	73	29	
Cullum Road Connection Traffic Diversion													
TOTAL TRAFFIC	133	69	312	253	70	122	202	1,642	59	424	1,978	320	

VOLUME DEVELOPMENT SHEET  
 MAIN STREET COCONUT CREEK  
 Banks Road & Sample Road  
 EXISTING GEOMETRY

Growth Rate = 0.50%  
 Peak Season = 1.04 1.04  
 Buildout Year = 2030 2030  
 Years = 9 9

AM Peak Hour

	Northbound			Southbound			Eastbound			Westbound			
	LT	Thru	RT	LT	Thru	RT	LT	Thru	RT	LT	Thru	RT	
Existing Volume on 10/13/2021	0	0	184	0	0	4	18	2,252	91	251	1,622	9	2,021
Peak Season Volume	0	0	191	0	0	4	19	2,342	95	261	1,687	9	
Traffic Volume Growth Committed Development	0	0	9	0	0	0	1	108	4	12	77	0	
Background Traffic Volumes	0	0	200	0	0	4	20	2,450	99	273	1,764	9	
Superblock A (Residential)													
Inbound Traffic Assignment							21.0%					33.0%	Inbound
Inbound Traffic Volumes							4					6	17
Outbound Traffic Assignment						54.0%		33.0%					Outbound
Outbound Traffic Volumes						31		19					58
Project Traffic						31	4	19				6	
Superblock B (Commercial)													
Inbound Traffic Assignment							2.0%	15.0%					Inbound
Inbound Traffic Volumes							3	24					158
Outbound Traffic Assignment						5.0%				6.0%			Outbound
Outbound Traffic Volumes						5				6			96
Project Traffic						5	3	24				6	
Superblock C (Residential)													
Inbound Traffic Assignment							3.0%				1.0%	5.0%	Inbound
Inbound Traffic Volumes							1					1	22
Outbound Traffic Assignment						4.0%		9.0%					Outbound
Outbound Traffic Volumes						3		7					76
Project Traffic						3	1	7				1	
Superblock D (Residential)													
Inbound Traffic Assignment											14.0%	14.0%	Inbound
Inbound Traffic Volumes											14	14	101
Outbound Traffic Assignment						6.0%		17.0%					Outbound
Outbound Traffic Volumes						20		58					339
Project Traffic						20		58			14	14	
Superblock E (Residential)													
Inbound Traffic Assignment								8.0%					Inbound
Inbound Traffic Volumes								1					11
Outbound Traffic Assignment						2.0%				1.0%			Outbound
Outbound Traffic Volumes						1							35
Project Traffic						1		1					
Superblock F (Residential)													
Inbound Traffic Assignment							10.0%						Inbound
Inbound Traffic Volumes							7						69
Outbound Traffic Assignment						9.0%					6.0%		Outbound
Outbound Traffic Volumes						21					14		232
Project Traffic						21	7				14		
<b>Total Project Traffic</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>81</b>	<b>15</b>	<b>109</b>	<b>0</b>	<b>0</b>	<b>34</b>	<b>21</b>	
Cullum Road Connection Traffic Diversion													
<b>TOTAL TRAFFIC</b>	<b>0</b>	<b>0</b>	<b>200</b>	<b>0</b>	<b>0</b>	<b>85</b>	<b>35</b>	<b>2,559</b>	<b>99</b>	<b>273</b>	<b>1,798</b>	<b>30</b>	

VOLUME DEVELOPMENT SHEET  
 MAIN STREET COCONUT CREEK  
 Banks Road & Sample Road  
 EXISTING GEOMETRY

Growth Rate = 0.50%  
 Peak Season = 1.04 1.04  
 Buildout Year = 2030 2030  
 Years = 9 9

PM Peak Hour

	Northbound			Southbound			Eastbound			Westbound			
	LT	Thru	RT	LT	Thru	RT	LT	Thru	RT	LT	Thru	RT	
Existing Volume on 10/13/2021	0	0	173	0	0	10	4	1,808	103	234	2,469	34	2,021
Peak Season Volume	0	0	180	0	0	10	4	1,880	107	243	2,568	35	
Traffic Volume Growth Committed Development	0	0	8	0	0	0	0	86	5	11	118	2	
Background Traffic Volumes	0	0	188	0	0	10	4	1,966	112	254	2,686	37	
Superblock A (Residential)													
Inbound Traffic Assignment							21.0%					33.0%	Inbound
Inbound Traffic Volumes							7					11	32
Outbound Traffic Assignment						54.0%		33.0%					Outbound
Outbound Traffic Volumes						12		8					23
Project Traffic						12	7	8				11	
Superblock B (Commercial)													
Inbound Traffic Assignment							2.0%	15.0%					Inbound
Inbound Traffic Volumes							9	65					436
Outbound Traffic Assignment						5.0%					6.0%		Outbound
Outbound Traffic Volumes						19					23		388
Project Traffic						19	9	65			23		
Superblock C (Residential)													
Inbound Traffic Assignment							3.0%				1.0%	5.0%	Inbound
Inbound Traffic Volumes							1				2		42
Outbound Traffic Assignment						4.0%		9.0%					Outbound
Outbound Traffic Volumes						1		3					30
Project Traffic						1	1	3				2	
Superblock D (Residential)													
Inbound Traffic Assignment											14.0%	14.0%	Inbound
Inbound Traffic Volumes											29	29	204
Outbound Traffic Assignment						6.0%		17.0%					Outbound
Outbound Traffic Volumes						9		25					145
Project Traffic						9		25			29	29	
Superblock E (Residential)													
Inbound Traffic Assignment								8.0%					Inbound
Inbound Traffic Volumes								2					30
Outbound Traffic Assignment						2.0%					1.0%		Outbound
Outbound Traffic Volumes													20
Project Traffic								2					
Superblock F (Residential)													
Inbound Traffic Assignment							10.0%						Inbound
Inbound Traffic Volumes							15						148
Outbound Traffic Assignment						9.0%					6.0%		Outbound
Outbound Traffic Volumes						9					6		104
Project Traffic						9	15				6		
<b>Total Project Traffic</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>50</b>	<b>32</b>	<b>103</b>	<b>0</b>	<b>0</b>	<b>58</b>	<b>42</b>	
Cullum Road Connection Traffic Diversion													
<b>TOTAL TRAFFIC</b>	<b>0</b>	<b>0</b>	<b>188</b>	<b>0</b>	<b>0</b>	<b>60</b>	<b>36</b>	<b>2,069</b>	<b>112</b>	<b>254</b>	<b>2,744</b>	<b>79</b>	

VOLUME DEVELOPMENT SHEET  
 MAIN STREET COCONUT CREEK  
 54th Avenue & 40th Street  
 EXISTING GEOMETRY

Growth Rate = 0.50%  
 Peak Season = 1.04 1.04  
 Buildout Year = 2030 2030  
 Years = 9 9

AM Peak Hour

	Northbound			Southbound			Eastbound			Westbound			
	LT	Thru	RT	LT	Thru	RT	LT	Thru	RT	LT	Thru	RT	
Existing Volume on 10/13/2021	49	74	2	13	97	5	8	0	37	5	1	2	2,021
Peak Season Volume	51	77	2	14	101	5	8	0	38	5	1	2	
Traffic Volume Growth Committed Development	2	4	0	1	5	0	0	0	2	0	0	0	
Background Traffic Volumes	53	81	2	15	106	5	8	0	40	5	1	2	
Superblock A (Residential)													
Inbound Traffic Assignment													Inbound
Inbound Traffic Volumes													17
Outbound Traffic Assignment													Outbound
Outbound Traffic Volumes													58
Project Traffic													
Superblock B (Commercial)													
Inbound Traffic Assignment			4.0%						8.0%				Inbound
Inbound Traffic Volumes			6						13				158
Outbound Traffic Assignment													Outbound
Outbound Traffic Volumes													96
Project Traffic													
Superblock C (Residential)													
Inbound Traffic Assignment		7.0%								13			Inbound
Inbound Traffic Volumes		2											22
Outbound Traffic Assignment					9.0%					6.0%			Outbound
Outbound Traffic Volumes					7					5			76
Project Traffic													
Superblock D (Residential)													
Inbound Traffic Assignment		28.0%											Inbound
Inbound Traffic Volumes		28											101
Outbound Traffic Assignment					18.0%					7.0%			Outbound
Outbound Traffic Volumes					61					24			339
Project Traffic													
Superblock E (Residential)													
Inbound Traffic Assignment		1.0%	2.0%										Inbound
Inbound Traffic Volumes													11
Outbound Traffic Assignment					1.0%					7.0%			Outbound
Outbound Traffic Volumes										2			35
Project Traffic													
Superblock F (Residential)													
Inbound Traffic Assignment			6.0%					6.0%					Inbound
Inbound Traffic Volumes			4					4					69
Outbound Traffic Assignment										5.0%			Outbound
Outbound Traffic Volumes										12			232
Project Traffic													
Total Project Traffic	0	30	10	0	68	0	0	4	0	56	0	0	
Cullum Road Connection Traffic Diversion													
TOTAL TRAFFIC	53	111	12	15	174	5	8	4	40	61	1	2	



VOLUME DEVELOPMENT SHEET  
 MAIN STREET COCONUT CREEK  
 Lyons Road & Sample Road  
 EXISTING GEOMETRY

Growth Rate = 0.50%  
 Peak Season = 1.04 1.04  
 Buildout Year = 2030 2030  
 Years = 9 9

AM Peak Hour

	Northbound			Southbound			Eastbound			Westbound			
	LT	Thru	RT	LT	Thru	RT	LT	Thru	RT	LT	Thru	RT	
Existing Volume on 10/13/2021	412	869	172	340	818	405	397	1,684	367	84	897	227	2,021
Peak Season Volume	428	904	179	354	851	421	413	1,751	382	87	933	236	
Traffic Volume Growth Committed Development	20	42	8	16	39	19	19	80	18	4	43	11	
Background Traffic Volumes	448	946	187	370	890	440	432	1,831	400	91	976	247	
Superblock A (Residential)													
Inbound Traffic Assignment	10.0%										23.0%		Inbound
Inbound Traffic Volumes	2										4		17
Outbound Traffic Assignment								23.0%	10.0%				Outbound
Outbound Traffic Volumes								13	6				58
Project Traffic	2							13	6		4		
Superblock B (Commercial)													
Inbound Traffic Assignment		10.0%					15.0%					23.0%	Inbound
Inbound Traffic Volumes		16					24					36	158
Outbound Traffic Assignment				23.0%	10.0%	4.0%							Outbound
Outbound Traffic Volumes				22	10	4							96
Project Traffic													
Superblock C (Residential)													
Inbound Traffic Assignment	3.0%	7.0%									4.0%	19.0%	Inbound
Inbound Traffic Volumes	1	2									1	4	22
Outbound Traffic Assignment				17.0%	7.0%			6.0%	3.0%				Outbound
Outbound Traffic Volumes				13	5			5	2				76
Project Traffic	1	2		13	5	4	24						
Superblock D (Residential)													
Inbound Traffic Assignment	10.0%										18.0%	5.0%	Inbound
Inbound Traffic Volumes	10										18	5	101
Outbound Traffic Assignment				11.0%	5.0%			12.0%	5.0%				Outbound
Outbound Traffic Volumes				37	17			41	17				339
Project Traffic	10			37	17			41	17		18	5	
Superblock E (Residential)													
Inbound Traffic Assignment		10.0%					8.0%					23.0%	Inbound
Inbound Traffic Volumes		1					1					3	11
Outbound Traffic Assignment				23.0%	10.0%	1.0%							Outbound
Outbound Traffic Volumes				8	4								35
Project Traffic													
Superblock F (Residential)													
Inbound Traffic Assignment	5.0%	5.0%									18.0%	5.0%	Inbound
Inbound Traffic Volumes	3	3									12	3	69
Outbound Traffic Assignment				23.0%	10.0%								Outbound
Outbound Traffic Volumes				53	23								232
Project Traffic	3	3		53	23						12	3	
Total Project Traffic	16	22	0	133	59	4	25	59	25	0	35	51	
Cullum Road Connection Traffic Diversion													
TOTAL TRAFFIC	464	968	187	503	949	444	457	1,890	425	91	1,011	298	

VOLUME DEVELOPMENT SHEET  
 MAIN STREET COCONUT CREEK  
 Lyons Road & Sample Road  
 EXISTING GEOMETRY

Growth Rate = 0.50%  
 Peak Season = 1.04 1.04  
 Buildout Year = 2030 2030  
 Years = 9 9

PM Peak Hour

	Northbound			Southbound			Eastbound			Westbound			
	LT	Thru	RT	LT	Thru	RT	LT	Thru	RT	LT	Thru	RT	
Existing Volume on 10/13/2021	435	932	127	274	864	527	348	1,114	348	142	1,703	325	2,021
Peak Season Volume	452	969	132	285	899	548	362	1,159	362	148	1,771	338	
Traffic Volume Growth Committed Development	21	44	6	13	41	25	17	53	17	7	81	16	
Background Traffic Volumes	473	1,013	138	298	940	573	379	1,212	379	155	1,852	354	
Superblock A (Residential)													
Inbound Traffic Assignment	10.0%										23.0%		Inbound
Inbound Traffic Volumes	3										7		32
Outbound Traffic Assignment								23.0%	10.0%				Outbound
Outbound Traffic Volumes								5	2				23
Project Traffic	3							5	2		7		
Superblock B (Commercial)													
Inbound Traffic Assignment		10.0%					15.0%					23.0%	Inbound
Inbound Traffic Volumes		44					65					100	436
Outbound Traffic Assignment				23.0%	10.0%	4.0%							Outbound
Outbound Traffic Volumes				89	39	16							388
Project Traffic		44		89	39	16	65					100	
Superblock C (Residential)													
Inbound Traffic Assignment	3.0%	7.0%									4.0%	19.0%	Inbound
Inbound Traffic Volumes	1	3									2	8	42
Outbound Traffic Assignment				17.0%	7.0%			6.0%	3.0%				Outbound
Outbound Traffic Volumes				5	2			2	1				30
Project Traffic	1	3		5	2			2	1		2	8	
Superblock D (Residential)													
Inbound Traffic Assignment	10.0%										18.0%	5.0%	Inbound
Inbound Traffic Volumes	20										37	10	204
Outbound Traffic Assignment				11.0%	5.0%			12.0%	5.0%				Outbound
Outbound Traffic Volumes				16	7			17	7				145
Project Traffic	20			16	7			17	7		37	10	
Superblock E (Residential)													
Inbound Traffic Assignment		10.0%					8.0%					23.0%	Inbound
Inbound Traffic Volumes		3					2					7	30
Outbound Traffic Assignment				23.0%	10.0%	1.0%							Outbound
Outbound Traffic Volumes				5	2								20
Project Traffic		3		5	2		2					7	
Superblock F (Residential)													
Inbound Traffic Assignment	5.0%	5.0%									18.0%	5.0%	Inbound
Inbound Traffic Volumes	7	7									27	7	148
Outbound Traffic Assignment				23.0%	10.0%								Outbound
Outbound Traffic Volumes				24	10								104
Project Traffic	7	7		24	10						27	7	
Total Project Traffic	31	57	0	139	60	16	67	24	10	0	73	132	
Cullum Road Connection Traffic Diversion													
TOTAL TRAFFIC	504	1,070	138	437	1,000	589	446	1,236	389	155	1,925	486	

VOLUME DEVELOPMENT SHEET  
 MAIN STREET COCONUT CREEK  
 Lyons Road & Coral Tree Circle  
 EXISTING GEOMETRY

Growth Rate = 0.50%  
 Peak Season = 1.04 1.04  
 Buildout Year = 2030 2030  
 Years = 9 9

AM Peak Hour

	Northbound			Southbound			Eastbound			Westbound			
	LT	Thru	RT	LT	Thru	RT	LT	Thru	RT	LT	Thru	RT	
Existing Volume on 10/13/2021	12	1,471	22	119	1,475	0	0	0	0	14	0	137	2,021
Peak Season Volume	12	1,530	23	124	1,534	0	0	0	0	15	0	142	
Traffic Volume Growth Committed Development	1	70	1	6	70	0	0	0	0	1	0	7	
Background Traffic Volumes	13	1,600	24	130	1,604	0	0	0	0	16	0	149	
Superblock A (Residential)													
Inbound Traffic Assignment													Inbound
Inbound Traffic Volumes													17
Outbound Traffic Assignment													Outbound
Outbound Traffic Volumes													58
Project Traffic													
Superblock B (Commercial)													
Inbound Traffic Assignment		48.0%				5.0%							Inbound
Inbound Traffic Volumes		76				8							158
Outbound Traffic Assignment					32.0%			5.0%					Outbound
Outbound Traffic Volumes					31			5					96
Project Traffic													
Superblock C (Residential)													
Inbound Traffic Assignment		26.0%											Inbound
Inbound Traffic Volumes		6											22
Outbound Traffic Assignment					24.0%								Outbound
Outbound Traffic Volumes					18								76
Project Traffic													
Superblock D (Residential)													
Inbound Traffic Assignment		5.0%											Inbound
Inbound Traffic Volumes		5											101
Outbound Traffic Assignment					16.0%								Outbound
Outbound Traffic Volumes					54								339
Project Traffic													
Superblock E (Residential)													
Inbound Traffic Assignment		41.0%											Inbound
Inbound Traffic Volumes		5											11
Outbound Traffic Assignment					34.0%								Outbound
Outbound Traffic Volumes					12								35
Project Traffic													
Superblock F (Residential)													
Inbound Traffic Assignment		10.0%			33.0%								Inbound
Inbound Traffic Volumes		7			23								69
Outbound Traffic Assignment													Outbound
Outbound Traffic Volumes													232
Project Traffic													
Project Traffic		7			23								
Total Project Traffic	0	99	0	0	138	8	0	0	5	0	0	0	
Cullum Road Connection Traffic Diversion													
TOTAL TRAFFIC	13	1,699	24	130	1,742	8	0	0	5	16	0	149	

VOLUME DEVELOPMENT SHEET  
 MAIN STREET COCONUT CREEK  
 Lyons Road & Coral Tree Circle  
 EXISTING GEOMETRY

Growth Rate = 0.50%  
 Peak Season = 1.04 1.04  
 Buildout Year = 2030 2030  
 Years = 9 9

PM Peak Hour

	Northbound			Southbound			Eastbound			Westbound			
	LT	Thru	RT	LT	Thru	RT	LT	Thru	RT	LT	Thru	RT	
Existing Volume on 10/13/2021	17	1519	40	90	1628	0	0	0	0	20	0	286	2,021
Peak Season Volume	18	1,580	42	94	1,693	0	0	0	0	21	0	297	
Traffic Volume Growth Committed Development	1	73	2	4	78	0	0	0	0	1	0	14	
Background Traffic Volumes	19	1,653	44	98	1,771	0	0	0	0	22	0	311	
Superblock A (Residential)													
Inbound Traffic Assignment													Inbound
Inbound Traffic Volumes													32
Outbound Traffic Assignment													Outbound
Outbound Traffic Volumes													23
Project Traffic													
Superblock B (Commercial)													
Inbound Traffic Assignment		48.0%				5.0%							Inbound
Inbound Traffic Volumes		209				22							436
Outbound Traffic Assignment					32.0%				5.0%				Outbound
Outbound Traffic Volumes					124				19				388
Project Traffic		209			124	22			19				
Superblock C (Residential)													
Inbound Traffic Assignment		26.0%											Inbound
Inbound Traffic Volumes		11											42
Outbound Traffic Assignment					24.0%								Outbound
Outbound Traffic Volumes					7								30
Project Traffic		11			7								
Superblock D (Residential)													
Inbound Traffic Assignment		5.0%											Inbound
Inbound Traffic Volumes		10											204
Outbound Traffic Assignment					16.0%								Outbound
Outbound Traffic Volumes					23								145
Project Traffic		10			23								
Superblock E (Residential)													
Inbound Traffic Assignment		41.0%											Inbound
Inbound Traffic Volumes		12											30
Outbound Traffic Assignment					34.0%								Outbound
Outbound Traffic Volumes					7								20
Project Traffic		12			7								
Superblock F (Residential)													
Inbound Traffic Assignment		10.0%			33.0%								Inbound
Inbound Traffic Volumes		15			49								148
Outbound Traffic Assignment													Outbound
Outbound Traffic Volumes													104
Project Traffic		15			49								
<b>Total Project Traffic</b>	<b>0</b>	<b>257</b>	<b>0</b>	<b>0</b>	<b>210</b>	<b>22</b>	<b>0</b>	<b>0</b>	<b>19</b>	<b>0</b>	<b>0</b>	<b>0</b>	
Cullum Road Connection Traffic Diversion													
<b>TOTAL TRAFFIC</b>	<b>19</b>	<b>1,910</b>	<b>44</b>	<b>98</b>	<b>1,981</b>	<b>22</b>	<b>0</b>	<b>0</b>	<b>19</b>	<b>22</b>	<b>0</b>	<b>311</b>	

VOLUME DEVELOPMENT SHEET  
 MAIN STREET COCONUT CREEK  
 Lyons Road & 40th Street  
 EXISTING GEOMETRY

Growth Rate = 0.50%  
 Peak Season = 1.04 1.04  
 Buildout Year = 2030 2030  
 Years = 9 9

AM Peak Hour

	Northbound			Southbound			Eastbound			Westbound			
	LT	Thru	RT	LT	Thru	RT	LT	Thru	RT	LT	Thru	RT	
Existing Volume on 10/13/2021	0	1,564	14	37	1,572	0	0	0	0	45	0	54	2,021
Peak Season Volume	0	1,627	15	38	1,635	0	0	0	0	47	0	56	
Traffic Volume Growth Committed Development	0	75	1	2	75	0	0	0	0	2	0	3	
Background Traffic Volumes	0	1,702	16	40	1,710	0	0	0	0	49	0	59	
Superblock A (Residential)													
Inbound Traffic Assignment						4.0%							Inbound
Inbound Traffic Volumes						1							17
Outbound Traffic Assignment							4.0%						Outbound
Outbound Traffic Volumes							2						58
Project Traffic						1	2						
Superblock B (Commercial)													
Inbound Traffic Assignment	45.0%	3.0%			10.0%	24.0%							Inbound
Inbound Traffic Volumes	71	5			16	38							158
Outbound Traffic Assignment				1.0%	1.0%		30.0%		22.0%				Outbound
Outbound Traffic Volumes				1	1		29		21				96
Project Traffic	71	5		1	17	38	29		21				
Superblock C (Residential)													
Inbound Traffic Assignment	1.0%	25.0%											Inbound
Inbound Traffic Volumes		6											22
Outbound Traffic Assignment					21.0%				3.0%				Outbound
Outbound Traffic Volumes					16				2				76
Project Traffic		6			16				2				
Superblock D (Residential)													
Inbound Traffic Assignment		5.0%											Inbound
Inbound Traffic Volumes		5											101
Outbound Traffic Assignment					13.0%				3.0%				Outbound
Outbound Traffic Volumes					44				10				339
Project Traffic		5			44				10				
Superblock E (Residential)													
Inbound Traffic Assignment	35.0%	6.0%											Inbound
Inbound Traffic Volumes	4	1											11
Outbound Traffic Assignment					5.0%				29.0%				Outbound
Outbound Traffic Volumes					2				10				35
Project Traffic	4	1			2				10				
Superblock F (Residential)													
Inbound Traffic Assignment	10.0%					16.0%							Inbound
Inbound Traffic Volumes	7					11							69
Outbound Traffic Assignment							16.0%		33.0%				Outbound
Outbound Traffic Volumes							37		77				232
Project Traffic	7					11	37		77				
<b>Total Project Traffic</b>	<b>82</b>	<b>17</b>	<b>0</b>	<b>1</b>	<b>79</b>	<b>50</b>	<b>68</b>	<b>0</b>	<b>120</b>	<b>0</b>	<b>0</b>	<b>0</b>	
Cullum Road Connection Traffic Diversion													
<b>TOTAL TRAFFIC</b>	<b>82</b>	<b>1,719</b>	<b>16</b>	<b>41</b>	<b>1,789</b>	<b>50</b>	<b>68</b>	<b>0</b>	<b>120</b>	<b>49</b>	<b>0</b>	<b>59</b>	

VOLUME DEVELOPMENT SHEET  
 MAIN STREET COCONUT CREEK  
 Lyons Road & 40th Street  
 EXISTING GEOMETRY

Growth Rate = 0.50%  
 Peak Season = 1.04 1.04  
 Buildout Year = 2030 2030  
 Years = 9 9

PM Peak Hour

	Northbound			Southbound			Eastbound			Westbound			
	LT	Thru	RT	LT	Thru	RT	LT	Thru	RT	LT	Thru	RT	
Existing Volume on 10/13/2021	0	1783	50	40	1742	0	0	0	0	26	0	27	2,021
Peak Season Volume	0	1,854	52	42	1,812	0	0	0	0	27	0	28	
Traffic Volume Growth Committed Development	0	85	2	2	83	0	0	0	0	1	0	1	
Background Traffic Volumes	0	1,939	54	44	1,895	0	0	0	0	28	0	29	
Superblock A (Residential)													
Inbound Traffic Assignment						4.0%							Inbound
Inbound Traffic Volumes						1							32
Outbound Traffic Assignment							4.0%						Outbound
Outbound Traffic Volumes							1						23
Project Traffic						1	1						
Superblock B (Commercial)													
Inbound Traffic Assignment	45.0%	3.0%			10.0%	24.0%							Inbound
Inbound Traffic Volumes	196	13			44	105							436
Outbound Traffic Assignment				1.0%	1.0%		30.0%		22.0%				Outbound
Outbound Traffic Volumes				4	4		116		85				388
Project Traffic	196	13		4	48	105	116		85				
Superblock C (Residential)													
Inbound Traffic Assignment	1.0%	25.0%											Inbound
Inbound Traffic Volumes		11											42
Outbound Traffic Assignment					21.0%				3.0%				Outbound
Outbound Traffic Volumes					6				1				30
Project Traffic		11			6				1				
Superblock D (Residential)													
Inbound Traffic Assignment		5.0%											Inbound
Inbound Traffic Volumes		10											204
Outbound Traffic Assignment					13.0%				3.0%				Outbound
Outbound Traffic Volumes					19				4				145
Project Traffic		10			19				4				
Superblock E (Residential)													
Inbound Traffic Assignment	35.0%	6.0%											Inbound
Inbound Traffic Volumes	11	2											30
Outbound Traffic Assignment					5.0%				29.0%				Outbound
Outbound Traffic Volumes					1				6				20
Project Traffic	11	2			1				6				
Superblock F (Residential)													
Inbound Traffic Assignment	10.0%					16.0%							Inbound
Inbound Traffic Volumes	15					24							148
Outbound Traffic Assignment							16.0%		33.0%				Outbound
Outbound Traffic Volumes							17		34				104
Project Traffic	15					24	17		34				
<b>Total Project Traffic</b>	<b>222</b>	<b>36</b>	<b>0</b>	<b>4</b>	<b>74</b>	<b>130</b>	<b>134</b>	<b>0</b>	<b>130</b>	<b>0</b>	<b>0</b>	<b>0</b>	
Cullum Road Connection Traffic Diversion													
<b>TOTAL TRAFFIC</b>	<b>222</b>	<b>1,975</b>	<b>54</b>	<b>48</b>	<b>1,969</b>	<b>130</b>	<b>134</b>	<b>0</b>	<b>130</b>	<b>28</b>	<b>0</b>	<b>29</b>	

VOLUME DEVELOPMENT SHEET  
 MAIN STREET COCONUT CREEK  
 Lyons Road & Cullum Road  
 EXISTING GEOMETRY

Growth Rate = 0.50%  
 Peak Season = 1.04 1.04  
 Buildout Year = 2030 2030  
 Years = 9 9

AM Peak Hour

	Northbound			Southbound			Eastbound			Westbound			
	LT	Thru	RT	LT	Thru	RT	LT	Thru	RT	LT	Thru	RT	
Existing Volume on 10/13/2021	143	1,478	14	22	1,407	48	7	2	139	10	2	66	2,021
Peak Season Volume	149	1,537	15	23	1,463	50	7	2	145	10	2	69	
Traffic Volume Growth Committed Development	7	71	1	1	67	2	0	0	7	0	0	3	
Background Traffic Volumes	156	1,608	16	24	1,530	52	7	2	152	10	2	72	
Superblock A (Residential)													
Inbound Traffic Assignment					4.0%	12.0%					3.0%		Inbound
Inbound Traffic Volumes					1	2					1		17
Outbound Traffic Assignment		4.0%					12.0%	3.0%					Outbound
Outbound Traffic Volumes		2					7	2					58
Project Traffic		2			1	2	7	2			1		
Superblock B (Commercial)													
Inbound Traffic Assignment					33.0%				2.0%	3.0%			Inbound
Inbound Traffic Volumes					52				3	5			158
Outbound Traffic Assignment	1.0%	27.0%	3.0%										Outbound
Outbound Traffic Volumes	1	26	3										96
Project Traffic	1	26	3		52				3	5			
Superblock C (Residential)													
Inbound Traffic Assignment	20.0%	5.0%									3.0%		Inbound
Inbound Traffic Volumes	4	1									1		22
Outbound Traffic Assignment					4.0%			3.0%	17.0%				Outbound
Outbound Traffic Volumes					3			2	13				76
Project Traffic	4	1			3			2	13		1		
Superblock D (Residential)													
Inbound Traffic Assignment	5.0%					8.0%					3.0%		Inbound
Inbound Traffic Volumes	5					8					3		101
Outbound Traffic Assignment							6.0%	3.0%	13.0%				Outbound
Outbound Traffic Volumes							20	10	44				339
Project Traffic	5					8	20	10	44		3		
Superblock E (Residential)													
Inbound Traffic Assignment	6.0%					30.0%					3.0%		Inbound
Inbound Traffic Volumes	1					3							11
Outbound Traffic Assignment							27.0%	3.0%	5.0%				Outbound
Outbound Traffic Volumes							9	1	2				35
Project Traffic	1					3	9	1	2				
Superblock F (Residential)													
Inbound Traffic Assignment					16.0%	4.0%					3.0%		Inbound
Inbound Traffic Volumes					11	3					2		69
Outbound Traffic Assignment		16.0%					4.0%	3.0%					Outbound
Outbound Traffic Volumes		37					9	7					232
Project Traffic		37			11	3	9	7			2		
<b>Total Project Traffic</b>	<b>11</b>	<b>66</b>	<b>3</b>	<b>0</b>	<b>67</b>	<b>16</b>	<b>45</b>	<b>22</b>	<b>62</b>	<b>5</b>	<b>7</b>	<b>0</b>	
Cullum Road Connection Traffic Diversion						50	50						
<b>TOTAL TRAFFIC</b>	<b>167</b>	<b>1,674</b>	<b>19</b>	<b>24</b>	<b>1,597</b>	<b>118</b>	<b>102</b>	<b>24</b>	<b>214</b>	<b>15</b>	<b>9</b>	<b>72</b>	

VOLUME DEVELOPMENT SHEET  
 MAIN STREET COCONUT CREEK  
 Lyons Road & Cullum Road  
 EXISTING GEOMETRY

Growth Rate = 0.50%  
 Peak Season = 1.04 1.04  
 Buildout Year = 2030 2030  
 Years = 9 9

PM Peak Hour

	Northbound			Southbound			Eastbound			Westbound			
	LT	Thru	RT	LT	Thru	RT	LT	Thru	RT	LT	Thru	RT	
Existing Volume on 10/13/2021	75	1717	18	50	1648	20	13	0	81	9	1	38	2,021
Peak Season Volume	78	1,786	19	52	1,714	21	14	0	84	9	1	40	
Traffic Volume Growth Committed Development	4	82	1	2	79	1	1	0	4	0	0	2	
Background Traffic Volumes	82	1,868	20	54	1,793	22	15	0	88	9	1	42	
Superblock A (Residential)													
Inbound Traffic Assignment					4.0%	12.0%					3.0%		Inbound
Inbound Traffic Volumes					1	4					1		32
Outbound Traffic Assignment		4.0%					12.0%	3.0%					Outbound
Outbound Traffic Volumes		1					3	1					23
Project Traffic		1			1	4	3	1			1		
Superblock B (Commercial)													
Inbound Traffic Assignment					33.0%				2.0%	3.0%			Inbound
Inbound Traffic Volumes					144				9	13			436
Outbound Traffic Assignment	1.0%	27.0%	3.0%										Outbound
Outbound Traffic Volumes	4	105	12										388
Project Traffic	4	105	12		144				9	13			
Superblock C (Residential)													
Inbound Traffic Assignment	20.0%	5.0%									3.0%		Inbound
Inbound Traffic Volumes	8	2									1		42
Outbound Traffic Assignment					4.0%			3.0%	17.0%				Outbound
Outbound Traffic Volumes					1			1	5				30
Project Traffic	8	2			1			1	5		1		
Superblock D (Residential)													
Inbound Traffic Assignment	5.0%					8.0%					3.0%		Inbound
Inbound Traffic Volumes	10					16					6		204
Outbound Traffic Assignment							6.0%	3.0%	13.0%				Outbound
Outbound Traffic Volumes							9	4	19				145
Project Traffic	10					16	9	4	19		6		
Superblock E (Residential)													
Inbound Traffic Assignment	6.0%					30.0%					3.0%		Inbound
Inbound Traffic Volumes	2					9					1		30
Outbound Traffic Assignment							27.0%	3.0%	5.0%				Outbound
Outbound Traffic Volumes							5	1	1				20
Project Traffic	2					9	5	1	1		1		
Superblock F (Residential)													
Inbound Traffic Assignment					16.0%	4.0%					3.0%		Inbound
Inbound Traffic Volumes					24	6					4		148
Outbound Traffic Assignment		16.0%					4.0%	3.0%					Outbound
Outbound Traffic Volumes		17					4	3					104
Project Traffic		17			24	6	4	3			4		
<b>Total Project Traffic</b>	<b>24</b>	<b>125</b>	<b>12</b>	<b>0</b>	<b>170</b>	<b>35</b>	<b>21</b>	<b>10</b>	<b>34</b>	<b>13</b>	<b>13</b>	<b>0</b>	
Cullum Road Connection Traffic Diversion						50	50						
<b>TOTAL TRAFFIC</b>	<b>106</b>	<b>1,993</b>	<b>32</b>	<b>54</b>	<b>1,963</b>	<b>107</b>	<b>86</b>	<b>10</b>	<b>122</b>	<b>22</b>	<b>14</b>	<b>42</b>	

VOLUME DEVELOPMENT SHEET  
 MAIN STREET COCONUT CREEK  
 Lyons Road & Wiles Road  
 EXISTING GEOMETRY

Growth Rate = 0.50%  
 Peak Season = 1.04 1.04  
 Buildout Year = 2030 2030  
 Years = 9 9

AM Peak Hour

	Northbound			Southbound			Eastbound			Westbound			
	LT	Thru	RT	LT	Thru	RT	LT	Thru	RT	LT	Thru	RT	
Existing Volume on 10/13/2021	139	845	500	274	900	282	278	696	284	319	558	217	2,021
Peak Season Volume	145	879	520	285	936	293	289	724	295	332	580	226	
Traffic Volume Growth Committed Development	7	40	24	13	43	13	13	33	14	15	27	10	
Background Traffic Volumes	152	919	544	298	979	306	302	757	309	347	607	236	
Superblock A (Residential)													
Inbound Traffic Assignment					10.0%					6.0%	4.0%		Inbound
Inbound Traffic Volumes					2					1	1		17
Outbound Traffic Assignment		10.0%	6.0%					4.0%					Outbound
Outbound Traffic Volumes		6	3					2					58
Project Traffic		6	3		2			2		1	1		
Superblock B (Commercial)													
Inbound Traffic Assignment					10.0%				13.0%	10.0%			Inbound
Inbound Traffic Volumes					16				21	16			158
Outbound Traffic Assignment	7.0%	10.0%	10.0%										Outbound
Outbound Traffic Volumes	7	10	10										96
Project Traffic	7	10	10		16				21	16			
Superblock C (Residential)													
Inbound Traffic Assignment	5.0%					10.0%					10.0%		Inbound
Inbound Traffic Volumes	1					2					2		22
Outbound Traffic Assignment							10.0%	10.0%	4.0%				Outbound
Outbound Traffic Volumes							8	8	3				76
Project Traffic	1					2	8	8	3		2		
Superblock D (Residential)													
Inbound Traffic Assignment					6.0%	4.0%				2.0%	8.0%		Inbound
Inbound Traffic Volumes					6	4				2	8		101
Outbound Traffic Assignment		3.0%	3.0%				7.0%	7.0%					Outbound
Outbound Traffic Volumes		10	10				24	24					339
Project Traffic		10	10		6	4	24	24		2	8		
Superblock E (Residential)													
Inbound Traffic Assignment					10.0%				10.0%	10.0%			Inbound
Inbound Traffic Volumes					1				1	1			11
Outbound Traffic Assignment	7.0%	10.0%	10.0%										Outbound
Outbound Traffic Volumes	2	4	4										35
Project Traffic	2	4	4		1				1	1			
Superblock F (Residential)													
Inbound Traffic Assignment					10.0%					10.0%			Inbound
Inbound Traffic Volumes					7					7			69
Outbound Traffic Assignment		10.0%	10.0%										Outbound
Outbound Traffic Volumes		23	23										232
Project Traffic		23	23		7					7			
<b>Total Project Traffic</b>	<b>10</b>	<b>53</b>	<b>50</b>	<b>0</b>	<b>32</b>	<b>6</b>	<b>32</b>	<b>34</b>	<b>25</b>	<b>27</b>	<b>11</b>	<b>0</b>	
Cullum Road Connection Traffic Diversion		25	25				-25	-25		50	-50		
<b>TOTAL TRAFFIC</b>	<b>162</b>	<b>997</b>	<b>619</b>	<b>298</b>	<b>1,011</b>	<b>312</b>	<b>309</b>	<b>766</b>	<b>334</b>	<b>424</b>	<b>568</b>	<b>236</b>	

VOLUME DEVELOPMENT SHEET  
 MAIN STREET COCONUT CREEK  
 Lyons Road & Wiles Road  
 EXISTING GEOMETRY

Growth Rate = 0.50%  
 Peak Season = 1.04 1.04  
 Buildout Year = 2030 2030  
 Years = 9 9

PM Peak Hour

	Northbound			Southbound			Eastbound			Westbound			
	LT	Thru	RT	LT	Thru	RT	LT	Thru	RT	LT	Thru	RT	
Existing Volume on 10/13/2021	223	1204	292	189	1047	272	378	642	320	413	777	242	2,021
Peak Season Volume	232	1,252	304	197	1,089	283	393	668	333	430	808	252	
Traffic Volume Growth Committed Development	11	57	14	9	50	13	18	31	15	20	37	12	
Background Traffic Volumes	243	1,309	318	206	1,139	296	411	699	348	450	845	264	
Superblock A (Residential)													
Inbound Traffic Assignment					10.0%					6.0%	4.0%		Inbound
Inbound Traffic Volumes					3					2	1		32
Outbound Traffic Assignment		10.0%	6.0%					4.0%					Outbound
Outbound Traffic Volumes		2	1					1					23
Project Traffic		2	1		3			1		2	1		
Superblock B (Commercial)													
Inbound Traffic Assignment					10.0%				13.0%	10.0%			Inbound
Inbound Traffic Volumes					44				57	44			436
Outbound Traffic Assignment	7.0%	10.0%	10.0%										Outbound
Outbound Traffic Volumes	27	39	39										388
Project Traffic	27	39	39		44				57	44			
Superblock C (Residential)													
Inbound Traffic Assignment	5.0%					10.0%					10.0%		Inbound
Inbound Traffic Volumes	2					4					4		42
Outbound Traffic Assignment							10.0%	10.0%	4.0%				Outbound
Outbound Traffic Volumes							3	3	1				30
Project Traffic	2					4	3	3	1		4		
Superblock D (Residential)													
Inbound Traffic Assignment					6.0%	4.0%				2.0%	8.0%		Inbound
Inbound Traffic Volumes					12	8				4	16		204
Outbound Traffic Assignment		3.0%	3.0%				7.0%	7.0%					Outbound
Outbound Traffic Volumes		4	4				10	10					145
Project Traffic		4	4		12	8	10	10		4	16		
Superblock E (Residential)													
Inbound Traffic Assignment					10.0%				10.0%	10.0%			Inbound
Inbound Traffic Volumes					3				3	3			30
Outbound Traffic Assignment	7.0%	10.0%	10.0%										Outbound
Outbound Traffic Volumes	1	2	2										20
Project Traffic	1	2	2		3				3	3			
Superblock F (Residential)													
Inbound Traffic Assignment					10.0%					10.0%			Inbound
Inbound Traffic Volumes					15					15			148
Outbound Traffic Assignment		10.0%	10.0%										Outbound
Outbound Traffic Volumes		10	10										104
Project Traffic		10	10		15					15			
<b>Total Project Traffic</b>	<b>30</b>	<b>57</b>	<b>56</b>	<b>0</b>	<b>77</b>	<b>12</b>	<b>13</b>	<b>14</b>	<b>61</b>	<b>68</b>	<b>21</b>	<b>0</b>	
Cullum Road Connection Traffic Diversion		25	25				-25	-25		50	-50		
<b>TOTAL TRAFFIC</b>	<b>273</b>	<b>1,391</b>	<b>399</b>	<b>206</b>	<b>1,216</b>	<b>308</b>	<b>399</b>	<b>688</b>	<b>409</b>	<b>568</b>	<b>816</b>	<b>264</b>	

VOLUME DEVELOPMENT SHEET  
 MAIN STREET COCONUT CREEK  
 Banks Road & Wiles Road  
 EXISTING GEOMETRY

Growth Rate = 0.50%  
 Peak Season = 1.04 1.04  
 Buildout Year = 2030 2030  
 Years = 9 9

AM Peak Hour

	Northbound			Southbound			Eastbound			Westbound			
	LT	Thru	RT	LT	Thru	RT	LT	Thru	RT	LT	Thru	RT	
Existing Volume on 10/13/2021	58	0	85	0	0	0	14	992	56	24	814	0	2,021
Peak Season Volume	60	0	88	0	0	0	15	1,032	58	25	847	0	
Traffic Volume Growth Committed Development	3	0	4	0	0	0	1	47	3	1	39	0	
Background Traffic Volumes	63	0	92	0	0	0	16	1,079	61	26	886	0	
Superblock A (Residential)													
Inbound Traffic Assignment									14.0%	4.0%			Inbound
Inbound Traffic Volumes									2	1			17
Outbound Traffic Assignment	5.0%		4.0%										Outbound
Outbound Traffic Volumes	3		2										58
Project Traffic	3		2						2	1			
Superblock B (Commercial)													
Inbound Traffic Assignment								13.0%	4.0%				Inbound
Inbound Traffic Volumes								21	6				158
Outbound Traffic Assignment	2.0%										7.0%		Outbound
Outbound Traffic Volumes	2										7		96
Project Traffic	2							21	6		7		
Superblock C (Residential)													
Inbound Traffic Assignment									10.0%	20.0%	5.0%		Inbound
Inbound Traffic Volumes									2	4	1		22
Outbound Traffic Assignment	5.0%		20.0%					4.0%					Outbound
Outbound Traffic Volumes	4		15					3					76
Project Traffic	4		15					3	2	4	1		
Superblock D (Residential)													
Inbound Traffic Assignment									4.0%	10.0%	2.0%		Inbound
Inbound Traffic Volumes									4	10	2		101
Outbound Traffic Assignment	5.0%		10.0%					4.0%					Outbound
Outbound Traffic Volumes	17		34					14					339
Project Traffic	17		34					14	4	10	2		
Superblock E (Residential)													
Inbound Traffic Assignment								10.0%	5.0%				Inbound
Inbound Traffic Volumes								1	1				11
Outbound Traffic Assignment	3.0%										7.0%		Outbound
Outbound Traffic Volumes	1										2		35
Project Traffic	1							1	1		2		
Superblock F (Residential)													
Inbound Traffic Assignment									6.0%				Inbound
Inbound Traffic Volumes									4				69
Outbound Traffic Assignment	6.0%												Outbound
Outbound Traffic Volumes	14												232
Project Traffic	14								4				
<b>Total Project Traffic</b>	<b>41</b>	<b>0</b>	<b>51</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>39</b>	<b>19</b>	<b>15</b>	<b>12</b>	<b>0</b>	
Cullum Road Connection Traffic Diversion								-50			-50		
<b>TOTAL TRAFFIC</b>	<b>104</b>	<b>0</b>	<b>143</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>16</b>	<b>1,068</b>	<b>80</b>	<b>41</b>	<b>848</b>	<b>0</b>	

VOLUME DEVELOPMENT SHEET  
 MAIN STREET COCONUT CREEK  
 Banks Road & Wiles Road  
 EXISTING GEOMETRY

Growth Rate = 0.50%  
 Peak Season = 1.04 1.04  
 Buildout Year = 2030 2030  
 Years = 9 9

PM Peak Hour

	Northbound			Southbound			Eastbound			Westbound			
	LT	Thru	RT	LT	Thru	RT	LT	Thru	RT	LT	Thru	RT	
Existing Volume on 10/13/2021	17	0	21	0	0	0	14	1,294	10	12	1,230	0	2,021
Peak Season Volume	18	0	22	0	0	0	15	1,346	10	12	1,279	0	
Traffic Volume Growth Committed Development	1	0	1	0	0	0	1	62	0	1	59	0	
Background Traffic Volumes	19	0	23	0	0	0	16	1,408	10	13	1,338	0	
Superblock A (Residential)													
Inbound Traffic Assignment									14.0%	4.0%			Inbound
Inbound Traffic Volumes									4	1			32
Outbound Traffic Assignment	5.0%		4.0%										Outbound
Outbound Traffic Volumes	1		1										23
Project Traffic	1		1						4	1			
Superblock B (Commercial)													
Inbound Traffic Assignment								13.0%	4.0%				Inbound
Inbound Traffic Volumes								57	17				436
Outbound Traffic Assignment	2.0%										7.0%		Outbound
Outbound Traffic Volumes	8										27		388
Project Traffic	8							57	17		27		
Superblock C (Residential)													
Inbound Traffic Assignment									10.0%	20.0%	5.0%		Inbound
Inbound Traffic Volumes									4	8	2		42
Outbound Traffic Assignment	5.0%		20.0%					4.0%					Outbound
Outbound Traffic Volumes	2		6					1					30
Project Traffic	2		6					1	4	8	2		
Superblock D (Residential)													
Inbound Traffic Assignment									4.0%	10.0%	2.0%		Inbound
Inbound Traffic Volumes									8	20	4		204
Outbound Traffic Assignment	5.0%		10.0%					4.0%					Outbound
Outbound Traffic Volumes	7		15					6					145
Project Traffic	7		15					6	8	20	4		
Superblock E (Residential)													
Inbound Traffic Assignment								10.0%	5.0%				Inbound
Inbound Traffic Volumes								3	2				30
Outbound Traffic Assignment	3.0%										7.0%		Outbound
Outbound Traffic Volumes	1										1		20
Project Traffic	1							3	2		1		
Superblock F (Residential)													
Inbound Traffic Assignment									6.0%				Inbound
Inbound Traffic Volumes									9				148
Outbound Traffic Assignment	6.0%												Outbound
Outbound Traffic Volumes	6												104
Project Traffic	6								9				
<b>Total Project Traffic</b>	<b>25</b>	<b>0</b>	<b>22</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>67</b>	<b>44</b>	<b>29</b>	<b>34</b>	<b>0</b>	
Cullum Road Connection Traffic Diversion								-50			-50		
<b>TOTAL TRAFFIC</b>	<b>44</b>	<b>0</b>	<b>45</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>16</b>	<b>1,425</b>	<b>54</b>	<b>42</b>	<b>1,322</b>	<b>0</b>	

VOLUME DEVELOPMENT SHEET  
 MAIN STREET COCONUT CREEK  
 City Market Avenue & Sample Road  
 EXISTING GEOMETRY

Growth Rate = 0.50%  
 Peak Season = 1.04 1.04  
 Buildout Year = 2030 2030  
 Years = 9 9

AM Peak Hour

	Northbound			Southbound			Eastbound			Westbound			
	LT	Thru	RT	LT	Thru	RT	LT	Thru	RT	LT	Thru	RT	
Existing Volume on 10/13/2021	0	0	0	0	0	0	0	2,436	0	0	1,882	0	2,021
Peak Season Volume	0	0	0	0	0	0	0	2,533	0	0	1,957	0	
Traffic Volume Growth Committed Development	0	0	0	0	0	0	0	116	0	0	90	0	
Background Traffic Volumes	0	0	0	0	0	0	0	2,649	0	0	2,047	0	
Superblock A (Residential)													
Inbound Traffic Assignment											33.0%		Inbound
Inbound Traffic Volumes											6		17
Outbound Traffic Assignment								33.0%					Outbound
Outbound Traffic Volumes								19					58
Project Traffic								19			6		
Superblock B (Commercial)													
Inbound Traffic Assignment								15.0%					Inbound
Inbound Traffic Volumes								24					158
Outbound Traffic Assignment						2.0%					4.0%		Outbound
Outbound Traffic Volumes						2					4		96
Project Traffic						2					4		
Superblock C (Residential)													
Inbound Traffic Assignment											6.0%	1.0%	Inbound
Inbound Traffic Volumes											1		22
Outbound Traffic Assignment								9.0%					Outbound
Outbound Traffic Volumes								7					76
Project Traffic								7			1		
Superblock D (Residential)													
Inbound Traffic Assignment											28.0%		Inbound
Inbound Traffic Volumes											28		101
Outbound Traffic Assignment								17.0%					Outbound
Outbound Traffic Volumes								58					339
Project Traffic								58			28		
Superblock E (Residential)													
Inbound Traffic Assignment								8.0%					Inbound
Inbound Traffic Volumes								1					11
Outbound Traffic Assignment											1.0%		Outbound
Outbound Traffic Volumes													35
Project Traffic								1					
Superblock F (Residential)													
Inbound Traffic Assignment												23.0%	Inbound
Inbound Traffic Volumes												16	69
Outbound Traffic Assignment						6.0%							Outbound
Outbound Traffic Volumes						14							232
Project Traffic						14							16
<b>Total Project Traffic</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>16</b>	<b>0</b>	<b>109</b>	<b>0</b>	<b>0</b>	<b>39</b>	<b>16</b>	
Cullum Road Connection Traffic Diversion													
<b>TOTAL TRAFFIC</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>16</b>	<b>0</b>	<b>2,758</b>	<b>0</b>	<b>0</b>	<b>2,086</b>	<b>16</b>	

VOLUME DEVELOPMENT SHEET  
 MAIN STREET COCONUT CREEK  
 City Market Avenue & Sample Road  
 EXISTING GEOMETRY

Growth Rate = 0.50%  
 Peak Season = 1.04 1.04  
 Buildout Year = 2030 2030  
 Years = 9 9

PM Peak Hour

	Northbound			Southbound			Eastbound			Westbound			
	LT	Thru	RT	LT	Thru	RT	LT	Thru	RT	LT	Thru	RT	
Existing Volume on 10/13/2021	0	0	0	0	0	0	0	1,981	0	0	2,737	0	2,021
Peak Season Volume	0	0	0	0	0	0	0	2,060	0	0	2,846	0	
Traffic Volume Growth Committed Development	0	0	0	0	0	0	0	95	0	0	131	0	
Background Traffic Volumes	0	0	0	0	0	0	0	2,155	0	0	2,977	0	
Superblock A (Residential)													
Inbound Traffic Assignment											33.0%		Inbound
Inbound Traffic Volumes											11		32
Outbound Traffic Assignment								33.0%					Outbound
Outbound Traffic Volumes								8					23
Project Traffic								8			11		
Superblock B (Commercial)													
Inbound Traffic Assignment								15.0%					Inbound
Inbound Traffic Volumes								65					436
Outbound Traffic Assignment						2.0%					4.0%		Outbound
Outbound Traffic Volumes						8					16		388
Project Traffic						8		65			16		
Superblock C (Residential)													
Inbound Traffic Assignment											6.0%	1.0%	Inbound
Inbound Traffic Volumes											3		42
Outbound Traffic Assignment								9.0%					Outbound
Outbound Traffic Volumes								3					30
Project Traffic								3			3		
Superblock D (Residential)													
Inbound Traffic Assignment											28.0%		Inbound
Inbound Traffic Volumes											57		204
Outbound Traffic Assignment								17.0%					Outbound
Outbound Traffic Volumes								25					145
Project Traffic								25			57		
Superblock E (Residential)													
Inbound Traffic Assignment								8.0%					Inbound
Inbound Traffic Volumes								2					30
Outbound Traffic Assignment											1.0%		Outbound
Outbound Traffic Volumes													20
Project Traffic								2					
Superblock F (Residential)													
Inbound Traffic Assignment												23.0%	Inbound
Inbound Traffic Volumes												34	148
Outbound Traffic Assignment						6.0%							Outbound
Outbound Traffic Volumes						6							104
Project Traffic						6							34
Total Project Traffic	0	0	0	0	0	14	0	103	0	0	87	34	
Cullum Road Connection Traffic Diversion													
TOTAL TRAFFIC	0	0	0	0	0	14	0	2,258	0	0	3,064	34	

\*Counts extrapolated from the counts collected at the intersection of Banks Road & Sample Road

## APPENDIX G: SYNCHRO OUTPUT WORKSHEETS

Existing Conditions – AM Peak Hour

Existing Conditions – PM Peak Hour

Future Background Conditions – AM Peak Hour

Future Background Conditions – PM Peak Hour

Total Future Conditions – AM Peak Hour

Total Future Conditions – PM Peak Hour

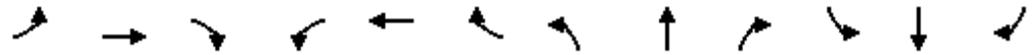
Total Future Conditions Mitigations – AM Peak Hour

Total Future Conditions Mitigations – PM Peak Hour



Queues  
1: US 441 & Wiles Road

EX AM  
12/15/2022



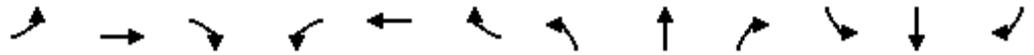
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	675	729	516	231	478	306	272	1281	202	306	1392	321
v/c Ratio	0.89	0.73	0.73	0.67	0.84	0.53	0.83	0.76	0.25	0.85	0.80	0.48
Control Delay	75.6	57.0	39.1	78.4	58.9	22.8	107.6	38.6	4.2	90.0	52.8	18.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	75.6	57.0	39.1	78.4	58.9	22.8	107.6	38.6	4.2	90.0	52.8	18.4
Queue Length 50th (ft)	310	313	324	83	226	158	136	408	12	145	444	88
Queue Length 95th (ft)	374	387	473	119	283	251	#207	297	29	#238	500	175
Internal Link Dist (ft)		609			2304			1352			507	
Turn Bay Length (ft)	320		250	360		420	300		560	320		190
Base Capacity (vph)	815	1011	710	493	619	577	330	1689	887	362	1739	672
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.83	0.72	0.73	0.47	0.77	0.53	0.82	0.76	0.23	0.85	0.80	0.48

Intersection Summary

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

HCM 6th Signalized Intersection Summary  
1: US 441 & Wiles Road

EX AM  
12/15/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↑↑	↖	↖↗	↑↑	↖	↖↗	↑↑↑	↖	↖↗	↑↑↑	↖
Traffic Volume (veh/h)	641	693	490	219	454	291	258	1217	192	291	1322	305
Future Volume (veh/h)	641	693	490	219	454	291	258	1217	192	291	1322	305
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	675	729	516	231	478	306	272	1281	202	306	1392	321
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	733	1086	627	282	622	421	312	1741	670	313	1743	541
Arrive On Green	0.21	0.31	0.31	0.08	0.17	0.17	0.09	0.34	0.34	0.09	0.34	0.34
Sat Flow, veh/h	3456	3554	1585	3456	3554	1585	3456	5106	1585	3456	5106	1585
Grp Volume(v), veh/h	675	729	516	231	478	306	272	1281	202	306	1392	321
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1728	1777	1585	1728	1702	1585	1728	1702	1585
Q Serve(g_s), s	30.6	28.7	46.7	10.5	20.5	28.0	12.4	35.3	13.5	14.1	39.5	26.8
Cycle Q Clear(g_c), s	30.6	28.7	46.7	10.5	20.5	28.0	12.4	35.3	13.5	14.1	39.5	26.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	733	1086	627	282	622	421	312	1741	670	313	1743	541
V/C Ratio(X)	0.92	0.67	0.82	0.82	0.77	0.73	0.87	0.74	0.30	0.98	0.80	0.59
Avail Cap(c_a), veh/h	821	1086	627	497	622	421	313	1741	670	313	1743	541
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.83	0.83	0.83	1.00	1.00	1.00
Uniform Delay (d), s/veh	61.7	48.5	43.3	72.3	62.9	53.5	71.9	46.4	30.6	72.6	47.7	43.5
Incr Delay (d2), s/veh	14.6	1.6	8.7	5.8	5.8	6.2	19.4	2.3	1.0	44.5	3.9	4.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	15.0	13.1	19.8	4.9	9.8	12.0	6.4	15.4	5.4	8.2	17.5	11.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	76.4	50.2	52.0	78.1	68.7	59.7	91.2	48.7	31.5	117.1	51.6	48.2
LnGrp LOS	E	D	D	E	E	E	F	D	C	F	D	D
Approach Vol, veh/h		1920			1015			1755			2019	
Approach Delay, s/veh		59.9			68.1			53.3			61.0	
Approach LOS		E			E			D			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	22.0	62.1	20.1	55.9	21.9	62.1	40.9	35.0				
Change Period (Y+Rc), s	7.5	7.5	7.0	7.0	7.5	7.5	7.0	7.0				
Max Green Setting (Gmax), s	14.5	50.5	23.0	43.0	14.5	50.5	38.0	28.0				
Max Q Clear Time (g_c+I1), s	16.1	37.3	12.5	48.7	14.4	41.5	32.6	30.0				
Green Ext Time (p_c), s	0.0	7.7	0.5	0.0	0.0	6.4	1.3	0.0				

Intersection Summary

HCM 6th Ctrl Delay	59.7
HCM 6th LOS	E

Notes

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

Timings  
2: US 441 & Cullum Road

EX AM  
12/15/2022

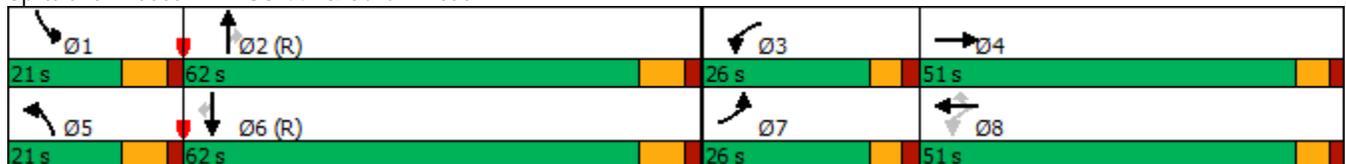


Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↘	↖	↕↕	↗	↖↗	↕↕↕	↗	↖↗	↕↕↕	↗
Traffic Volume (vph)	251	34	6	16	67	111	1483	36	132	1739	179
Future Volume (vph)	251	34	6	16	67	111	1483	36	132	1739	179
Turn Type	Prot	NA	pm+pt	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8		5	2		1	6	
Permitted Phases			8		8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	6.0	4.0	6.0	6.0	5.0	15.0	15.0	5.0	15.0	15.0
Minimum Split (s)	11.0	48.0	10.0	48.0	48.0	12.5	42.5	42.5	12.5	42.5	42.5
Total Split (s)	26.0	51.0	26.0	51.0	51.0	21.0	62.0	62.0	21.0	62.0	62.0
Total Split (%)	16.3%	31.9%	16.3%	31.9%	31.9%	13.1%	38.8%	38.8%	13.1%	38.8%	38.8%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	5.5	5.5	5.5	5.5	5.5	5.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	7.5	7.5	7.5	7.5	7.5	7.5
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes										
Recall Mode	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	C-Min
Act Effct Green (s)	17.1	27.0	12.5	6.4	6.4	10.8	97.6	97.6	11.8	98.6	98.6
Actuated g/C Ratio	0.11	0.17	0.08	0.04	0.04	0.07	0.61	0.61	0.07	0.62	0.62
v/c Ratio	0.72	0.17	0.05	0.12	0.39	0.51	0.50	0.04	0.55	0.58	0.18
Control Delay	80.4	44.9	53.2	75.6	6.3	79.3	18.8	0.1	71.6	17.2	7.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	80.4	44.9	53.2	75.6	6.3	79.3	18.8	0.1	71.6	17.2	7.2
LOS	F	D	D	E	A	E	B	A	E	B	A
Approach Delay		74.5		21.8			22.5			19.8	
Approach LOS		E		C			C			B	

Intersection Summary

Cycle Length: 160  
 Actuated Cycle Length: 160  
 Offset: 59 (37%), Referenced to phase 2:NBT and 6:SBT, Start of Green  
 Natural Cycle: 125  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.72  
 Intersection Signal Delay: 25.0  
 Intersection LOS: C  
 Intersection Capacity Utilization 69.1%  
 ICU Level of Service C  
 Analysis Period (min) 15

Splits and Phases: 2: US 441 & Cullum Road



Queues  
2: US 441 & Cullum Road

EX AM  
12/15/2022



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	264	52	6	17	71	117	1561	38	139	1831	188
v/c Ratio	0.72	0.17	0.05	0.12	0.39	0.51	0.50	0.04	0.55	0.58	0.18
Control Delay	80.4	44.9	53.2	75.6	6.3	79.3	18.8	0.1	71.6	17.2	7.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	80.4	44.9	53.2	75.6	6.3	79.3	18.8	0.1	71.6	17.2	7.2
Queue Length 50th (ft)	123	30	5	7	0	54	284	0	67	271	16
Queue Length 95th (ft)	165	71	17	21	0	84	357	0	m88	333	m44
Internal Link Dist (ft)		532		554			340			1352	
Turn Bay Length (ft)	250		240		330	330			260		210
Base Capacity (vph)	429	509	273	995	533	290	3103	1009	296	3135	1018
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.62	0.10	0.02	0.02	0.13	0.40	0.50	0.04	0.47	0.58	0.18

Intersection Summary

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

# HCM 6th Signalized Intersection Summary

## 2: US 441 & Cullum Road

EX AM  
12/15/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↗		↖	↕	↗	↖↗	↕	↗	↖↗	↕	↗
Traffic Volume (veh/h)	251	34	15	6	16	67	111	1483	36	132	1739	179
Future Volume (veh/h)	251	34	15	6	16	67	111	1483	36	132	1739	179
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	264	36	16	6	17	71	117	1561	38	139	1831	188
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	313	176	78	134	208	93	161	3216	998	182	3246	1008
Arrive On Green	0.09	0.14	0.14	0.01	0.06	0.06	0.05	0.63	0.63	0.11	1.00	1.00
Sat Flow, veh/h	3456	1227	545	1781	3554	1585	3456	5106	1585	3456	5106	1585
Grp Volume(v), veh/h	264	0	52	6	17	71	117	1561	38	139	1831	188
Grp Sat Flow(s),veh/h/ln	1728	0	1772	1781	1777	1585	1728	1702	1585	1728	1702	1585
Q Serve(g_s), s	12.0	0.0	4.1	0.5	0.7	7.1	5.3	26.1	1.5	6.3	0.0	0.0
Cycle Q Clear(g_c), s	12.0	0.0	4.1	0.5	0.7	7.1	5.3	26.1	1.5	6.3	0.0	0.0
Prop In Lane	1.00		0.31	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	313	0	254	134	208	93	161	3216	998	182	3246	1008
V/C Ratio(X)	0.84	0.00	0.21	0.04	0.08	0.77	0.73	0.49	0.04	0.77	0.56	0.19
Avail Cap(c_a), veh/h	432	0	498	347	999	446	292	3216	998	292	3246	1008
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(l)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.55	0.55	0.55
Uniform Delay (d), s/veh	71.6	0.0	60.5	70.3	71.3	74.2	75.3	15.8	11.2	70.6	0.0	0.0
Incr Delay (d2), s/veh	10.6	0.0	0.4	0.1	0.2	12.3	6.1	0.5	0.1	3.7	0.4	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.8	0.0	1.9	0.2	0.3	3.2	2.5	10.3	0.5	2.8	0.1	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	82.2	0.0	60.9	70.4	71.4	86.6	81.4	16.3	11.3	74.3	0.4	0.2
LnGrp LOS	F	A	E	E	E	F	F	B	B	E	A	A
Approach Vol, veh/h		316			94			1716			2158	
Approach Delay, s/veh		78.7			82.8			20.6			5.1	
Approach LOS		E			F			C			A	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	15.9	108.3	6.9	28.9	14.9	109.2	20.5	15.3				
Change Period (Y+Rc), s	7.5	7.5	6.0	6.0	7.5	7.5	6.0	6.0				
Max Green Setting (Gmax), s	13.5	54.5	20.0	45.0	13.5	54.5	20.0	45.0				
Max Q Clear Time (g_c+I1), s	8.3	28.1	2.5	6.1	7.3	2.0	14.0	9.1				
Green Ext Time (p_c), s	0.2	13.7	0.0	0.3	0.1	25.0	0.4	0.3				

### Intersection Summary

HCM 6th Ctrl Delay	18.5
HCM 6th LOS	B

Intersection						
Int Delay, s/veh	0.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗ ↑↑↑	↑↑↑ ↘			↑↑↑
Traffic Vol, veh/h	0	45	1195	42	0	1840
Future Vol, veh/h	0	45	1195	42	0	1840
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	47	1258	44	0	1937

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	-	651	0	0	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	7.14	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	3.92	-	-	-
Pot Cap-1 Maneuver	0	352	-	-	0
Stage 1	0	-	-	-	0
Stage 2	0	-	-	-	0
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	-	352	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	16.8	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBT
Capacity (veh/h)	-	-	352
HCM Lane V/C Ratio	-	-	0.135
HCM Control Delay (s)	-	-	16.8
HCM Lane LOS	-	-	C
HCM 95th %tile Q(veh)	-	-	0.5

Timings  
4: Sample Road & US 441

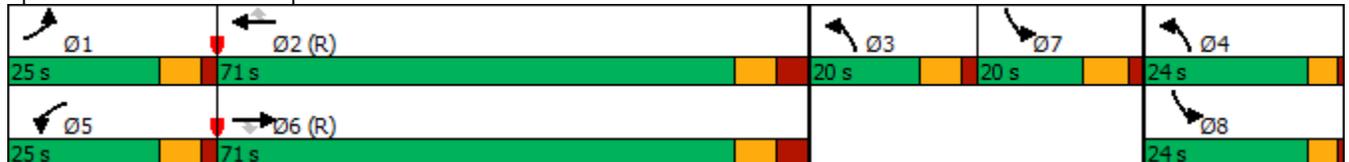
EX AM  
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											Ø3	Ø4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBR	SBL	SBR	Ø3	Ø4
Lane Configurations	↖↖	↑↑↑	↗	↖↖	↑↑↑	↗	↖↖	↗	↖↖	↗		
Traffic Volume (vph)	105	1864	185	126	1205	226	171	164	280	101		
Future Volume (vph)	105	1864	185	126	1205	226	171	164	280	101		
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	Free	Prot	Free		
Protected Phases	1	6		5	2		3 4		7 8		3	4
Permitted Phases			6			2		Free		Free		
Detector Phase	1	6	6	5	2	2	3 4		7 8			
Switch Phase												
Minimum Initial (s)	6.0	10.0	10.0	6.0	10.0	10.0					6.0	5.0
Minimum Split (s)	18.0	19.0	19.0	13.0	27.0	27.0					13.0	45.5
Total Split (s)	25.0	71.0	71.0	25.0	71.0	71.0					20.0	24.0
Total Split (%)	15.6%	44.4%	44.4%	15.6%	44.4%	44.4%					13%	15%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0					5.0	3.5
All-Red Time (s)	2.0	4.0	4.0	2.0	4.0	4.0					2.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0						
Total Lost Time (s)	7.0	9.0	9.0	7.0	9.0	9.0						
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag					Lead	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes					Yes	
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min					None	None
Act Effct Green (s)	10.5	80.6	80.6	11.5	81.6	81.6	17.0	160.0	25.9	160.0		
Actuated g/C Ratio	0.07	0.50	0.50	0.07	0.51	0.51	0.11	1.00	0.16	1.00		
v/c Ratio	0.49	0.77	0.22	0.54	0.49	0.26	0.49	0.11	0.53	0.07		
Control Delay	79.2	35.3	3.5	79.4	26.9	3.3	50.6	0.1	65.2	0.1		
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Total Delay	79.2	35.3	3.5	79.4	26.9	3.3	50.6	0.1	65.2	0.1		
LOS	E	D	A	E	C	A	D	A	E	A		
Approach Delay		34.7			27.8							
Approach LOS		C			C							

Intersection Summary

Cycle Length: 160  
 Actuated Cycle Length: 160  
 Offset: 33 (21%), Referenced to phase 2:WBT and 6:EBT, Start of Green  
 Natural Cycle: 155  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.77  
 Intersection Signal Delay: 32.8  
 Intersection LOS: C  
 Intersection Capacity Utilization 68.6%  
 ICU Level of Service C  
 Analysis Period (min) 15

Splits and Phases: 4: Sample Road & US 441



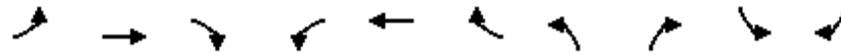
Timings  
 4: Sample Road & US 441

EX AM  
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Lane Group	Ø7	Ø8
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Turn Type		
Protected Phases	7	8
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	6.0	5.0
Minimum Split (s)	48.5	22.5
Total Split (s)	20.0	24.0
Total Split (%)	13%	15%
Yellow Time (s)	5.5	3.5
All-Red Time (s)	2.0	1.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lag	
Lead-Lag Optimize?	Yes	
Recall Mode	None	None
Act Effect Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Intersection Summary		

Queues  
4: Sample Road & US 441

EX AM  
12/15/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBR	SBL	SBR
Lane Group Flow (vph)	111	1962	195	133	1268	238	180	173	295	106
v/c Ratio	0.49	0.77	0.22	0.54	0.49	0.26	0.49	0.11	0.53	0.07
Control Delay	79.2	35.3	3.5	79.4	26.9	3.3	50.6	0.1	65.2	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	79.2	35.3	3.5	79.4	26.9	3.3	50.6	0.1	65.2	0.1
Queue Length 50th (ft)	52	522	0	62	272	0	65	0	130	0
Queue Length 95th (ft)	80	633	41	93	340	43	92	0	172	0
Internal Link Dist (ft)		858			1521					
Turn Bay Length (ft)	350		430	350		400	400		400	
Base Capacity (vph)	386	2560	893	386	2593	923	643	1583	802	1583
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.29	0.77	0.22	0.34	0.49	0.26	0.28	0.11	0.37	0.07

Intersection Summary

HCM Signalized Intersection Capacity Analysis  
4: Sample Road & US 441

EX AM  
12/15/2022

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	 	  		 	  		 				 		
Traffic Volume (vph)	105	1864	185	126	1205	226	171	0	164	280	0	101	
Future Volume (vph)	105	1864	185	126	1205	226	171	0	164	280	0	101	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	7.0	9.0	9.0	7.0	9.0	9.0	7.0		4.0	7.5		4.0	
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97		1.00	0.97		1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00		0.85	1.00		0.85	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95		1.00	
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433		1583	3433		1583	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95		1.00	
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433		1583	3433		1583	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	
Adj. Flow (vph)	111	1962	195	133	1268	238	180	0	173	295	0	106	
RTOR Reduction (vph)	0	0	97	0	0	117	0	0	0	0	0	0	
Lane Group Flow (vph)	111	1962	98	133	1268	121	180	0	173	295	0	106	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot		Free	Prot		Free	
Protected Phases	1	6		5	2		3 4			7 8			
Permitted Phases			6			2			Free			Free	
Actuated Green, G (s)	10.5	80.6	80.6	11.5	81.6	81.6	19.5		160.0	28.9		160.0	
Effective Green, g (s)	10.5	80.6	80.6	11.5	81.6	81.6	19.5		160.0	28.9		160.0	
Actuated g/C Ratio	0.07	0.50	0.50	0.07	0.51	0.51	0.12		1.00	0.18		1.00	
Clearance Time (s)	7.0	9.0	9.0	7.0	9.0	9.0							
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0							
Lane Grp Cap (vph)	225	2561	797	246	2593	807	418		1583	620		1583	
v/s Ratio Prot	0.03	c0.39		c0.04	0.25		c0.05			c0.09			
v/s Ratio Perm			0.06			0.08			c0.11			0.07	
v/c Ratio	0.49	0.77	0.12	0.54	0.49	0.15	0.43		0.11	0.48		0.07	
Uniform Delay, d1	72.2	32.1	21.0	71.7	25.6	20.8	65.1		0.0	58.8		0.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	
Incremental Delay, d2	1.7	2.3	0.3	2.4	0.7	0.4	0.7		0.1	0.6		0.1	
Delay (s)	73.9	34.3	21.3	74.1	26.3	21.2	65.8		0.1	59.3		0.1	
Level of Service	E	C	C	E	C	C	E		A	E		A	
Approach Delay (s)		35.2			29.4			33.6			43.7		
Approach LOS		D			C			C			D		
<b>Intersection Summary</b>													
HCM 2000 Control Delay			33.7									HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.69										
Actuated Cycle Length (s)			160.0									Sum of lost time (s)	35.0
Intersection Capacity Utilization			68.6%									ICU Level of Service	C
Analysis Period (min)			15										

c Critical Lane Group

Timings  
5: Sample Road & NW 54th Avenue

EX AM  
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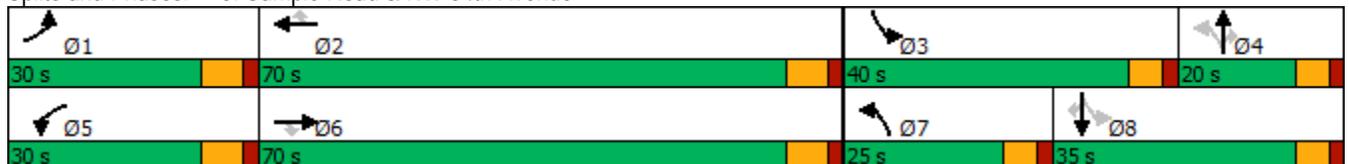
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	60	1998	55	213	1315	123	31	19	292	98	18	40
Future Volume (vph)	60	1998	55	213	1315	123	31	19	292	98	18	40
Turn Type	Prot	NA	Perm	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases			6			2	4		4	8		8
Detector Phase	1	6	6	5	2	2	7	4	4	3	8	8
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	5.0
Minimum Split (s)	12.0	37.0	37.0	12.0	37.0	37.0	11.0	44.0	44.0	11.0	44.0	44.0
Total Split (s)	30.0	70.0	70.0	30.0	70.0	70.0	25.0	20.0	20.0	40.0	35.0	35.0
Total Split (%)	18.8%	43.8%	43.8%	18.8%	43.8%	43.8%	15.6%	12.5%	12.5%	25.0%	21.9%	21.9%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag									
Lead-Lag Optimize?	Yes											
Recall Mode	None	Min	Min	None	Min	Min	None	None	None	None	None	None
Act Effect Green (s)	7.7	63.3	63.3	13.3	71.8	71.8	15.4	8.0	8.0	24.9	17.2	17.2
Actuated g/C Ratio	0.06	0.52	0.52	0.11	0.59	0.59	0.13	0.07	0.07	0.20	0.14	0.14
v/c Ratio	0.29	0.80	0.07	0.60	0.46	0.13	0.17	0.09	0.79	0.39	0.04	0.13
Control Delay	60.2	28.4	0.1	59.7	16.4	1.9	41.2	55.6	21.1	45.1	49.6	0.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	60.2	28.4	0.1	59.7	16.4	1.9	41.2	55.6	21.1	45.1	49.6	0.8
LOS	E	C	A	E	B	A	D	E	C	D	D	A
Approach Delay		28.5			20.9			24.9			34.3	
Approach LOS		C			C			C			C	

Intersection Summary

Cycle Length: 160  
 Actuated Cycle Length: 122.2  
 Natural Cycle: 125  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 0.80  
 Intersection Signal Delay: 25.5  
 Intersection Capacity Utilization 77.9%  
 Analysis Period (min) 15

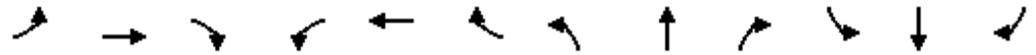
Intersection LOS: C  
 ICU Level of Service D

Splits and Phases: 5: Sample Road & NW 54th Avenue



Queues  
5: Sample Road & NW 54th Avenue

EX AM  
12/15/2022

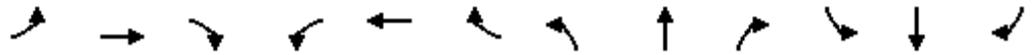


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	63	2103	58	224	1384	129	33	20	307	103	19	42
v/c Ratio	0.29	0.80	0.07	0.60	0.46	0.13	0.17	0.09	0.79	0.39	0.04	0.13
Control Delay	60.2	28.4	0.1	59.7	16.4	1.9	41.2	55.6	21.1	45.1	49.6	0.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	60.2	28.4	0.1	59.7	16.4	1.9	41.2	55.6	21.1	45.1	49.6	0.8
Queue Length 50th (ft)	21	406	0	75	192	0	19	6	0	60	6	0
Queue Length 95th (ft)	45	605	0	123	291	20	45	20	84	109	17	0
Internal Link Dist (ft)		1521			667			578			917	
Turn Bay Length (ft)	200			340		460	160		160	180		190
Base Capacity (vph)	649	2634	892	649	2985	991	343	407	453	497	843	465
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.10	0.80	0.07	0.35	0.46	0.13	0.10	0.05	0.68	0.21	0.02	0.09

Intersection Summary

HCM 6th Signalized Intersection Summary  
5: Sample Road & NW 54th Avenue

EX AM  
12/15/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↑↑↑	↖	↖↗	↑↑↑	↖	↖	↑↑	↖	↖	↑↑	↖
Traffic Volume (veh/h)	60	1998	55	213	1315	123	31	19	292	98	18	40
Future Volume (veh/h)	60	1998	55	213	1315	123	31	19	292	98	18	40
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	63	2103	58	224	1384	129	33	20	307	103	19	42
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	130	2565	796	296	2811	873	275	430	192	303	566	252
Arrive On Green	0.04	0.50	0.50	0.09	0.55	0.55	0.03	0.12	0.12	0.07	0.16	0.16
Sat Flow, veh/h	3456	5106	1585	3456	5106	1585	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	63	2103	58	224	1384	129	33	20	307	103	19	42
Grp Sat Flow(s),veh/h/ln	1728	1702	1585	1728	1702	1585	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	2.1	40.4	2.2	7.3	19.4	4.6	1.9	0.6	14.0	5.7	0.5	2.6
Cycle Q Clear(g_c), s	2.1	40.4	2.2	7.3	19.4	4.6	1.9	0.6	14.0	5.7	0.5	2.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	130	2565	796	296	2811	873	275	430	192	303	566	252
V/C Ratio(X)	0.49	0.82	0.07	0.76	0.49	0.15	0.12	0.05	1.60	0.34	0.03	0.17
Avail Cap(c_a), veh/h	686	2778	862	686	2811	873	517	430	192	707	890	397
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.6	24.4	14.9	51.7	16.0	12.7	42.7	45.0	50.9	40.2	41.1	42.0
Incr Delay (d2), s/veh	2.8	1.9	0.0	3.9	0.1	0.1	0.2	0.0	293.8	0.7	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	16.1	0.8	3.3	7.4	1.6	0.8	0.3	21.2	2.6	0.2	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	57.4	26.3	14.9	55.7	16.2	12.8	42.9	45.0	344.7	40.9	41.2	42.3
LnGrp LOS	E	C	B	E	B	B	D	D	F	D	D	D
Approach Vol, veh/h		2224			1737			360			164	
Approach Delay, s/veh		26.9			21.0			300.4			41.3	
Approach LOS		C			C			F			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.3	70.7	13.7	20.0	16.9	65.2	9.3	24.4				
Change Period (Y+Rc), s	7.0	7.0	6.0	6.0	7.0	7.0	6.0	6.0				
Max Green Setting (Gmax), s	23.0	63.0	34.0	14.0	23.0	63.0	19.0	29.0				
Max Q Clear Time (g_c+I1), s	4.1	21.4	7.7	16.0	9.3	42.4	3.9	4.6				
Green Ext Time (p_c), s	0.1	14.7	0.2	0.0	0.6	15.8	0.0	0.2				

Intersection Summary

HCM 6th Ctrl Delay	47.1
HCM 6th LOS	D

Notes

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

Intersection												
Int Delay, s/veh	102.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑↑	↗	↘	↑↑↑				↗			↗
Traffic Vol, veh/h	19	2342	95	261	1687	9	0	0	191	0	0	4
Future Vol, veh/h	19	2342	95	261	1687	9	0	0	191	0	0	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	170	-	0	300	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	20	2465	100	275	1776	9	0	0	201	0	0	4

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1785	0	0	2565	0	0	-	-	1233	-	-	893
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	5.34	-	-	5.34	-	-	-	-	7.14	-	-	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.12	-	-	3.12	-	-	-	-	3.92	-	-	3.92
Pot Cap-1 Maneuver	*686	-	-	~ 64	-	-	0	0	~ 145	0	0	*545
Stage 1	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %	1	-	-	-	-	-	-	-	-	-	-	1
Mov Cap-1 Maneuver	*686	-	-	~ 64	-	-	-	-	~ 145	-	-	*545
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	215.1	268.7	11.7
HCM LOS			F	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	145	* 686	-	-	~ 64	-	-	545
HCM Lane V/C Ratio	1.387	0.029	-	-	4.293	-	-	0.008
HCM Control Delay (s)	268.7	10.4	-	-	\$ 1613	-	-	11.7
HCM Lane LOS	F	B	-	-	F	-	-	B
HCM 95th %tile Q(veh)	12.9	0.1	-	-	29.8	-	-	0

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

Intersection	
Intersection Delay, s/veh	8
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↕	↕	↕		↕	↕	↕	↕	↕	↕
Traffic Vol, veh/h	8	0	38	5	1	2	51	39	2	14	51	5
Future Vol, veh/h	8	0	38	5	1	2	51	39	2	14	51	5
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	8	0	40	5	1	2	54	41	2	15	54	5
Number of Lanes	0	1	1	1	1	0	1	1	1	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	3	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	3	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	3	2	2
HCM Control Delay	7.4	7.9	8.2	8
HCM LOS	A	A	A	A

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	0%	100%	0%	100%	0%	100%	0%	0%
Vol Thru, %	0%	100%	0%	0%	0%	0%	33%	0%	100%	0%
Vol Right, %	0%	0%	100%	0%	100%	0%	67%	0%	0%	100%
Sign Control	Stop									
Traffic Vol by Lane	51	39	2	8	38	5	3	14	51	5
LT Vol	51	0	0	8	0	5	0	14	0	0
Through Vol	0	39	0	0	0	0	1	0	51	0
RT Vol	0	0	2	0	38	0	2	0	0	5
Lane Flow Rate	54	41	2	8	40	5	3	15	54	5
Geometry Grp	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.078	0.054	0.002	0.013	0.048	0.008	0.004	0.022	0.073	0.006
Departure Headway (Hd)	5.242	4.741	4.041	5.504	4.305	5.575	4.609	5.383	4.882	4.181
Convergence, Y/N	Yes									
Cap	675	745	870	654	836	645	780	668	738	860
Service Time	3.04	2.539	1.838	3.208	2.009	3.282	2.316	3.087	2.587	1.886
HCM Lane V/C Ratio	0.08	0.055	0.002	0.012	0.048	0.008	0.004	0.022	0.073	0.006
HCM Control Delay	8.5	7.8	6.8	8.3	7.2	8.3	7.3	8.2	8	6.9
HCM Lane LOS	A	A	A	A	A	A	A	A	A	A
HCM 95th-tile Q	0.3	0.2	0	0	0.2	0	0	0.1	0.2	0

Timings  
8: Sample Road & Lyons Road

EX AM  
12/15/2022

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	413	1751	382	87	933	236	428	904	179	354	851	421
Future Volume (vph)	413	1751	382	87	933	236	428	904	179	354	851	421
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	1	6		5	2		7	4		3	8	1
Permitted Phases			6			2			4			8
Detector Phase	1	6	6	5	2	2	7	4	4	3	8	1
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0
Minimum Split (s)	12.5	45.5	45.5	12.5	45.5	45.5	12.5	46.5	46.5	12.5	46.5	12.5
Total Split (s)	27.0	71.0	71.0	18.0	62.0	62.0	28.0	43.0	43.0	28.0	43.0	27.0
Total Split (%)	16.9%	44.4%	44.4%	11.3%	38.8%	38.8%	17.5%	26.9%	26.9%	17.5%	26.9%	16.9%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
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	0.0
Total Lost Time (s)	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes											
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None	None	None
Act Effct Green (s)	20.7	66.0	66.0	9.3	54.5	54.5	20.5	34.8	34.8	20.0	34.3	62.5
Actuated g/C Ratio	0.13	0.41	0.41	0.06	0.34	0.34	0.13	0.22	0.22	0.12	0.21	0.39
v/c Ratio	0.98	0.88	0.46	0.46	0.57	0.35	1.03	0.86	0.39	0.87	0.82	0.66
Control Delay	105.7	49.6	6.3	80.4	44.7	5.4	116.5	69.1	9.3	104.1	59.6	27.3
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	105.7	49.6	6.3	80.4	44.7	5.4	116.5	69.1	9.3	104.1	59.6	27.3
LOS	F	D	A	F	D	A	F	E	A	F	E	C
Approach Delay		52.2			39.8			75.5			60.9	
Approach LOS		D			D			E			E	

Intersection Summary

Cycle Length: 160  
 Actuated Cycle Length: 160  
 Offset: 82 (51%), Referenced to phase 2:WBT and 6:EBT, Start of Green  
 Natural Cycle: 150  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 1.03  
 Intersection Signal Delay: 57.1  
 Intersection LOS: E  
 Intersection Capacity Utilization 91.7%  
 ICU Level of Service F  
 Analysis Period (min) 15

Splits and Phases: 8: Sample Road & Lyons Road



Queues  
8: Sample Road & Lyons Road

EX AM  
12/15/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	435	1843	402	92	982	248	451	952	188	373	896	443
v/c Ratio	0.98	0.88	0.46	0.46	0.57	0.35	1.03	0.86	0.39	0.87	0.82	0.66
Control Delay	105.7	49.6	6.3	80.4	44.7	5.4	116.5	69.1	9.3	104.1	59.6	27.3
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	105.7	49.6	6.3	80.4	44.7	5.4	116.5	69.1	9.3	104.1	59.6	27.3
Queue Length 50th (ft)	~222	580	20	42	271	0	~227	310	3	173	296	273
Queue Length 95th (ft)	#323	646	91	71	314	55	#329	361	63	m#246	320	m391
Internal Link Dist (ft)		2637			746			683			751	
Turn Bay Length (ft)	260		580	270		480	300		300	300		340
Base Capacity (vph)	444	2096	867	225	1732	702	439	1128	494	439	1128	668
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.98	0.88	0.46	0.41	0.57	0.35	1.03	0.84	0.38	0.85	0.79	0.66

Intersection Summary

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

HCM 6th Signalized Intersection Summary  
8: Sample Road & Lyons Road

EX AM  
12/15/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↑↑↑	↗	↔↔	↑↑↑	↗	↔↔	↑↑↑	↗	↔↔	↑↑↑	↗
Traffic Volume (veh/h)	413	1751	382	87	933	236	428	904	179	354	851	421
Future Volume (veh/h)	413	1751	382	87	933	236	428	904	179	354	851	421
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	435	1843	402	92	982	248	451	952	188	373	896	443
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	421	2164	672	133	1739	540	443	1173	364	416	1133	545
Arrive On Green	0.12	0.42	0.42	0.04	0.34	0.34	0.13	0.23	0.23	0.12	0.22	0.22
Sat Flow, veh/h	3456	5106	1585	3456	5106	1585	3456	5106	1585	3456	5106	1585
Grp Volume(v), veh/h	435	1843	402	92	982	248	451	952	188	373	896	443
Grp Sat Flow(s),veh/h/ln	1728	1702	1585	1728	1702	1585	1728	1702	1585	1728	1702	1585
Q Serve(g_s), s	19.5	52.1	31.3	4.2	25.1	19.6	20.5	28.2	16.6	17.0	26.5	35.5
Cycle Q Clear(g_c), s	19.5	52.1	31.3	4.2	25.1	19.6	20.5	28.2	16.6	17.0	26.5	35.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	421	2164	672	133	1739	540	443	1173	364	416	1133	545
V/C Ratio(X)	1.03	0.85	0.60	0.69	0.56	0.46	1.02	0.81	0.52	0.90	0.79	0.81
Avail Cap(c_a), veh/h	421	2164	672	227	1739	540	443	1173	364	443	1133	545
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	70.3	41.5	35.6	76.0	43.1	41.2	69.8	58.4	53.9	69.4	58.7	47.8
Incr Delay (d2), s/veh	52.6	4.5	3.9	6.2	1.3	2.8	47.6	4.4	1.3	19.9	3.9	9.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.7	22.7	13.0	2.0	10.9	8.2	12.0	12.7	6.8	8.7	11.9	17.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	122.8	46.0	39.5	82.2	44.4	44.0	117.3	62.8	55.1	89.3	62.6	57.0
LnGrp LOS	F	D	D	F	D	D	F	E	E	F	E	E
Approach Vol, veh/h		2680			1322			1591			1712	
Approach Delay, s/veh		57.5			47.0			77.3			67.0	
Approach LOS		E			D			E			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	27.0	62.0	26.8	44.2	13.7	75.3	28.0	43.0				
Change Period (Y+Rc), s	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5				
Max Green Setting (Gmax), s	19.5	54.5	20.5	35.5	10.5	63.5	20.5	35.5				
Max Q Clear Time (g_c+I1), s	21.5	27.1	19.0	30.2	6.2	54.1	22.5	37.5				
Green Ext Time (p_c), s	0.0	8.9	0.2	3.1	0.1	7.9	0.0	0.0				

Intersection Summary

HCM 6th Ctrl Delay	62.1
HCM 6th LOS	E

Notes

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

Intersection												
Int Delay, s/veh	1.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↘		↗	↘	↑↑↑	↗	↘	↑↑↑	
Traffic Vol, veh/h	0	0	0	15	0	142	12	1530	23	124	1534	0
Future Vol, veh/h	0	0	0	15	0	142	12	1530	23	124	1534	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None									
Storage Length	-	-	-	0	-	160	210	-	210	200	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	16	0	149	13	1611	24	131	1615	0

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	2545	- 806 1615	0 0 1635 0 0
Stage 1	1637	- - -	- - - - -
Stage 2	908	- - -	- - - - -
Critical Hdwy	5.74	- 7.14 5.34	- - 5.34 - -
Critical Hdwy Stg 1	6.64	- - -	- - - - -
Critical Hdwy Stg 2	6.04	- - -	- - - - -
Follow-up Hdwy	3.82	- 3.92 3.12	- - 3.12 - -
Pot Cap-1 Maneuver	*123	0 *577 195	- - *726 - 0
Stage 1	*593	0 - -	- - - - 0
Stage 2	*320	0 - -	- - - - 0
Platoon blocked, %	1	1	- - 1 -
Mov Cap-1 Maneuver	*94	0 *577 195	- - *726 - -
Mov Cap-2 Maneuver	*192	0 - -	- - - - -
Stage 1	*553	0 - -	- - - - -
Stage 2	*262	0 - -	- - - - -

Approach	WB	NB	SB
HCM Control Delay, s	14.5	0.2	0.8
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	195	-	-	192	577	* 726	-
HCM Lane V/C Ratio	0.065	-	-	0.082	0.259	0.18	-
HCM Control Delay (s)	24.7	-	-	25.4	13.4	11	-
HCM Lane LOS	C	-	-	D	B	B	-
HCM 95th %tile Q(veh)	0.2	-	-	0.3	1	0.7	-

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

Intersection												
Int Delay, s/veh	0.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↵		↵	↵	↑↑↑	↵	↵	↑↑↑	
Traffic Vol, veh/h	0	0	0	47	0	56	0	1627	15	38	1635	0
Future Vol, veh/h	0	0	0	47	0	56	0	1627	15	38	1635	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None									
Storage Length	-	-	-	0	-	0	160	-	210	210	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	49	0	59	0	1713	16	40	1721	0

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	2481	- 857 1721	0 0 1729 0 0
Stage 1	1713	- - -	- - - - -
Stage 2	768	- - -	- - - - -
Critical Hdwy	5.74	- 7.14 5.34	- - 5.34 - -
Critical Hdwy Stg 1	6.64	- - -	- - - - -
Critical Hdwy Stg 2	6.04	- - -	- - - - -
Follow-up Hdwy	3.82	- 3.92 3.12	- - 3.12 - -
Pot Cap-1 Maneuver	*164	0 *545 173	- - *686 - 0
Stage 1	*560	0 - -	- - - - 0
Stage 2	*380	0 - -	- - - - 0
Platoon blocked, %	1	1	- - 1 -
Mov Cap-1 Maneuver	*154	0 *545 173	- - *686 - -
Mov Cap-2 Maneuver	*265	0 - -	- - - - -
Stage 1	*560	0 - -	- - - - -
Stage 2	*358	0 - -	- - - - -

Approach	WB	NB	SB
HCM Control Delay, s	16.6	0	0.2
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	173	-	-	265	545	* 686	-
HCM Lane V/C Ratio	-	-	-	0.187	0.108	0.058	-
HCM Control Delay (s)	0	-	-	21.7	12.4	10.6	-
HCM Lane LOS	A	-	-	C	B	B	-
HCM 95th %tile Q(veh)	0	-	-	0.7	0.4	0.2	-

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

Intersection												
Int Delay, s/veh	1.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↵	↵		↵	↵		↵	↑↑↑	↵	↵	↑↑↑	↵
Traffic Vol, veh/h	7	2	145	10	2	69	149	1537	15	23	1463	50
Future Vol, veh/h	7	2	145	10	2	69	149	1537	15	23	1463	50
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None									
Storage Length	200	-	-	0	-	-	200	-	220	200	-	400
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	2	153	11	2	73	157	1618	16	24	1540	53

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	2550	3536	770	2597	3573	809	1593	0	0	1634	0	0
Stage 1	1588	1588	-	1932	1932	-	-	-	-	-	-	-
Stage 2	962	1948	-	665	1641	-	-	-	-	-	-	-
Critical Hdwy	6.44	6.54	7.14	6.44	6.54	7.14	5.34	-	-	5.34	-	-
Critical Hdwy Stg 1	7.34	5.54	-	7.34	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.74	5.54	-	6.74	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.82	4.02	3.92	3.82	4.02	3.92	3.12	-	-	3.12	-	-
Pot Cap-1 Maneuver	*260	*65	*593	*260	55	*577	741	-	-	*726	-	-
Stage 1	*609	*579	-	*312	370	-	-	-	-	-	-	-
Stage 2	*593	*360	-	*609	534	-	-	-	-	-	-	-
Platoon blocked, %	1	1	1	1	1	1	1	-	-	1	-	-
Mov Cap-1 Maneuver	*184	*50	*593	*157	42	*577	741	-	-	*726	-	-
Mov Cap-2 Maneuver	*276	*181	-	*190	166	-	-	-	-	-	-	-
Stage 1	*480	*560	-	*246	291	-	-	-	-	-	-	-
Stage 2	*405	*284	-	*436	517	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	13.8		14.3		1		0.2	
HCM LOS	B		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	741	-	-	276	575	190	539	*726	-	-
HCM Lane V/C Ratio	0.212	-	-	0.027	0.269	0.055	0.139	0.033	-	-
HCM Control Delay (s)	11.2	-	-	18.4	13.6	25.1	12.8	10.1	-	-
HCM Lane LOS	B	-	-	C	B	D	B	B	-	-
HCM 95th %tile Q(veh)	0.8	-	-	0.1	1.1	0.2	0.5	0.1	-	-

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

Timings  
12: Lyons Road & Wiles Road

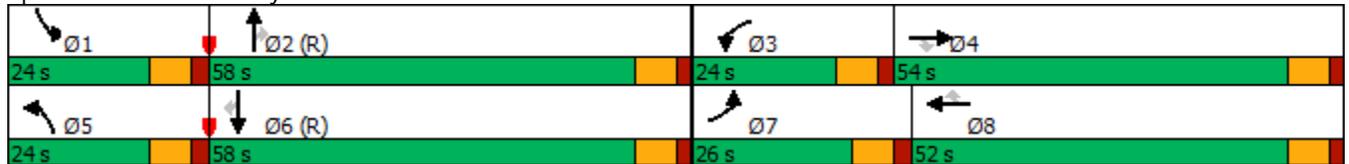
EX AM  
12/15/2022

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	289	724	295	332	580	226	145	879	520	285	936	293
Future Volume (vph)	289	724	295	332	580	226	145	879	520	285	936	293
Turn Type	Prot	NA	Perm									
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	6.0	6.0	5.0	6.0	6.0	5.0	12.0	12.0	5.0	12.0	12.0
Minimum Split (s)	12.0	52.0	52.0	12.0	52.0	52.0	12.0	50.0	50.0	12.0	50.0	50.0
Total Split (s)	26.0	54.0	54.0	24.0	52.0	52.0	24.0	58.0	58.0	24.0	58.0	58.0
Total Split (%)	16.3%	33.8%	33.8%	15.0%	32.5%	32.5%	15.0%	36.3%	36.3%	15.0%	36.3%	36.3%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Lead/Lag	Lead	Lag	Lag									
Lead-Lag Optimize?	Yes											
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min						
Act Effct Green (s)	17.9	42.4	42.4	18.9	43.5	43.5	12.5	53.4	53.4	17.2	58.2	58.2
Actuated g/C Ratio	0.11	0.26	0.26	0.12	0.27	0.27	0.08	0.33	0.33	0.11	0.36	0.36
v/c Ratio	0.79	0.81	0.53	0.86	0.64	0.39	0.57	0.55	0.78	0.81	0.53	0.40
Control Delay	71.0	58.2	24.3	89.0	54.5	6.8	73.6	70.7	57.7	87.0	42.3	5.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	71.0	58.2	24.3	89.0	54.5	6.8	73.6	70.7	57.7	87.0	42.3	5.6
LOS	E	E	C	F	D	A	E	E	E	F	D	A
Approach Delay		53.4			55.1			66.6			43.6	
Approach LOS		D			E			E			D	

Intersection Summary

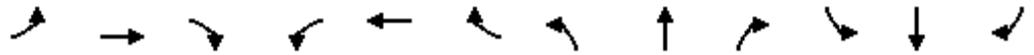
Cycle Length: 160  
 Actuated Cycle Length: 160  
 Offset: 70 (44%), Referenced to phase 2:NBT and 6:SBT, Start of Green  
 Natural Cycle: 140  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.86  
 Intersection Signal Delay: 54.8  
 Intersection LOS: D  
 Intersection Capacity Utilization 77.9%  
 ICU Level of Service D  
 Analysis Period (min) 15

Splits and Phases: 12: Lyons Road & Wiles Road



Queues  
12: Lyons Road & Wiles Road

EX AM  
12/15/2022



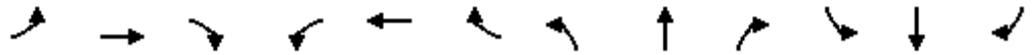
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	304	762	311	349	611	238	153	925	547	300	985	308
v/c Ratio	0.79	0.81	0.53	0.86	0.64	0.39	0.57	0.55	0.78	0.81	0.53	0.40
Control Delay	71.0	58.2	24.3	89.0	54.5	6.8	73.6	70.7	57.7	87.0	42.3	5.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	71.0	58.2	24.3	89.0	54.5	6.8	73.6	70.7	57.7	87.0	42.3	5.6
Queue Length 50th (ft)	137	371	147	164	261	0	75	271	320	139	267	2
Queue Length 95th (ft)	m176	431	m190	#259	318	59	m92	m295	m363	#206	322	66
Internal Link Dist (ft)		2625			480			1249			449	
Turn Bay Length (ft)	340		370	210		220	290		300	290		310
Base Capacity (vph)	409	1039	627	405	995	616	364	1708	703	378	1849	769
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.74	0.73	0.50	0.86	0.61	0.39	0.42	0.54	0.78	0.79	0.53	0.40

Intersection Summary

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

HCM 6th Signalized Intersection Summary  
 12: Lyons Road & Wiles Road

EX AM  
 12/15/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↑↑	↗	↔↔	↑↑	↗	↔↔	↑↑↑	↗	↔↔	↑↑↑	↗
Traffic Volume (veh/h)	289	724	295	332	580	226	145	879	520	285	936	293
Future Volume (veh/h)	289	724	295	332	580	226	145	879	520	285	936	293
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	304	762	311	349	611	238	153	925	547	300	985	308
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	350	885	395	367	902	402	199	1893	588	342	2104	653
Arrive On Green	0.10	0.25	0.25	0.11	0.25	0.25	0.06	0.37	0.37	0.10	0.41	0.41
Sat Flow, veh/h	3456	3554	1585	3456	3554	1585	3456	5106	1585	3456	5106	1585
Grp Volume(v), veh/h	304	762	311	349	611	238	153	925	547	300	985	308
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1728	1777	1585	1728	1702	1585	1728	1702	1585
Q Serve(g_s), s	13.9	32.8	29.3	16.1	24.8	21.1	7.0	22.3	53.1	13.7	22.5	22.7
Cycle Q Clear(g_c), s	13.9	32.8	29.3	16.1	24.8	21.1	7.0	22.3	53.1	13.7	22.5	22.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	350	885	395	367	902	402	199	1893	588	342	2104	653
V/C Ratio(X)	0.87	0.86	0.79	0.95	0.68	0.59	0.77	0.49	0.93	0.88	0.47	0.47
Avail Cap(c_a), veh/h	410	1044	466	367	999	446	367	1893	588	367	2104	653
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	70.9	57.5	56.1	71.1	53.8	52.4	74.3	38.7	48.4	71.1	34.3	34.3
Incr Delay (d2), s/veh	16.0	6.6	7.5	34.2	1.6	1.7	6.1	0.9	23.5	19.6	0.8	2.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.0	15.6	12.6	8.9	11.4	8.7	3.3	9.6	24.8	7.0	9.6	9.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	86.8	64.0	63.7	105.3	55.4	54.1	80.4	39.6	71.8	90.8	35.0	36.7
LnGrp LOS	F	E	E	F	E	D	F	D	E	F	D	D
Approach Vol, veh/h		1377			1198			1625			1593	
Approach Delay, s/veh		69.0			69.7			54.3			45.8	
Approach LOS		E			E			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	22.8	66.3	24.0	46.8	16.2	72.9	23.2	47.6				
Change Period (Y+Rc), s	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0				
Max Green Setting (Gmax), s	17.0	51.0	17.0	47.0	17.0	51.0	19.0	45.0				
Max Q Clear Time (g_c+I1), s	15.7	55.1	18.1	34.8	9.0	24.7	15.9	26.8				
Green Ext Time (p_c), s	0.1	0.0	0.0	5.0	0.3	9.1	0.3	4.7				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				58.6								
HCM 6th LOS				E								

Intersection												
Int Delay, s/veh	1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖		↗			
Traffic Vol, veh/h	15	1032	58	25	847	0	60	0	88	0	0	0
Future Vol, veh/h	15	1032	58	25	847	0	60	0	88	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	150	-	-	230	-	-	0	-	100	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	16	1086	61	26	892	0	63	0	93	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	892	0	0	1147	0	0	1647	-	574
Stage 1	-	-	-	-	-	-	1149	-	-
Stage 2	-	-	-	-	-	-	498	-	-
Critical Hdwy	4.14	-	-	4.14	-	-	6.84	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	5.84	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.84	-	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	-	3.32
Pot Cap-1 Maneuver	*1133	-	-	973	-	0	*360	0	*682
Stage 1	-	-	-	-	-	0	*601	0	-
Stage 2	-	-	-	-	-	0	*715	0	-
Platoon blocked, %	1	-	-	1	-	-	1	-	1
Mov Cap-1 Maneuver	*1133	-	-	973	-	-	*345	0	*682
Mov Cap-2 Maneuver	-	-	-	-	-	-	*445	0	-
Stage 1	-	-	-	-	-	-	*593	0	-
Stage 2	-	-	-	-	-	-	*695	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0.1	0.3	12.4
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT
Capacity (veh/h)	445	682	*1133	-	-	973	-
HCM Lane V/C Ratio	0.142	0.136	0.014	-	-	0.027	-
HCM Control Delay (s)	14.4	11.1	8.2	-	-	8.8	-
HCM Lane LOS	B	B	A	-	-	A	-
HCM 95th %tile Q(veh)	0.5	0.5	0	-	-	0.1	-

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

Timings  
1: US 441 & Wiles Road

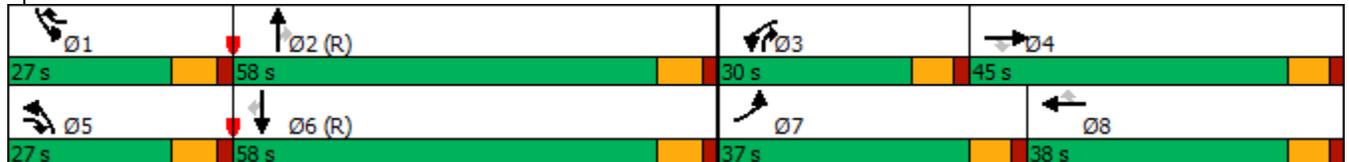
EX PM  
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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	639	805	182	370	680	141	421	1501	307	326	1327	423
Future Volume (vph)	639	805	182	370	680	141	421	1501	307	326	1327	423
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	Perm
Protected Phases	7	4	5	3	8	1	5	2	3	1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	5	3	8	1	5	2	3	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	5.0	5.0	10.0	5.0	5.0	10.0	10.0
Minimum Split (s)	12.5	43.5	12.5	12.5	43.0	12.5	12.5	43.5	12.5	12.5	43.5	43.5
Total Split (s)	37.0	45.0	27.0	30.0	38.0	27.0	27.0	58.0	30.0	27.0	58.0	58.0
Total Split (%)	23.1%	28.1%	16.9%	18.8%	23.8%	16.9%	16.9%	36.3%	18.8%	16.9%	36.3%	36.3%
Yellow Time (s)	5.0	5.0	5.5	5.0	5.0	5.5	5.5	5.5	5.0	5.5	5.5	5.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.5	7.0	7.0	7.5	7.5	7.5	7.0	7.5	7.5	7.5
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes											
Recall Mode	None	C-Min	None	None	C-Min	C-Min						
Act Effct Green (s)	30.0	39.4	65.9	21.6	31.0	56.9	19.5	51.1	80.3	18.9	50.5	50.5
Actuated g/C Ratio	0.19	0.25	0.41	0.14	0.19	0.36	0.12	0.32	0.50	0.12	0.32	0.32
v/c Ratio	1.05	0.97	0.28	0.84	1.05	0.24	1.06	0.97	0.39	0.85	0.87	0.65
Control Delay	109.4	83.7	19.5	50.3	104.3	38.8	124.2	73.4	17.0	88.2	58.7	21.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	109.4	83.7	19.5	50.3	104.3	38.8	124.2	73.4	17.0	88.2	58.7	21.9
LOS	F	F	B	D	F	D	F	E	B	F	E	C
Approach Delay		86.6			79.8			75.2			55.8	
Approach LOS		F			E			E			E	

Intersection Summary

Cycle Length: 160  
 Actuated Cycle Length: 160  
 Offset: 33 (21%), Referenced to phase 2:NBT and 6:SBT, Start of Green  
 Natural Cycle: 145  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 1.06  
 Intersection Signal Delay: 72.9  
 Intersection Capacity Utilization 99.5%  
 Analysis Period (min) 15  
 Intersection LOS: E  
 ICU Level of Service F

Splits and Phases: 1: US 441 & Wiles Road



Queues  
1: US 441 & Wiles Road

EX PM  
12/15/2022



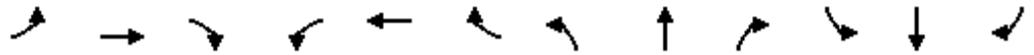
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	673	847	192	389	716	148	443	1580	323	343	1397	445
v/c Ratio	1.05	0.97	0.28	0.84	1.05	0.24	1.06	0.97	0.39	0.85	0.87	0.65
Control Delay	109.4	83.7	19.5	50.3	104.3	38.8	124.2	73.4	17.0	88.2	58.7	21.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	109.4	83.7	19.5	50.3	104.3	38.8	124.2	73.4	17.0	88.2	58.7	21.9
Queue Length 50th (ft)	~345	~420	68	163	~382	94	~235	382	77	161	446	136
Queue Length 95th (ft)	#458	#548	123	m212	#504	m128	#337	#613	184	#225	502	250
Internal Link Dist (ft)		609			2304			1352			507	
Turn Bay Length (ft)	320		250	360		420	300		560	320		190
Base Capacity (vph)	643	870	697	493	685	618	418	1624	845	418	1604	687
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.05	0.97	0.28	0.79	1.05	0.24	1.06	0.97	0.38	0.82	0.87	0.65

Intersection Summary

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

HCM 6th Signalized Intersection Summary  
1: US 441 & Wiles Road

EX PM  
12/15/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↑↑	↗	↔↔	↑↑	↗	↔↔	↑↑↑	↗	↔↔	↑↑↑	↗
Traffic Volume (veh/h)	639	805	182	370	680	141	421	1501	307	326	1327	423
Future Volume (veh/h)	639	805	182	370	680	141	421	1501	307	326	1327	423
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	673	847	192	389	716	148	443	1580	323	343	1397	445
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	648	906	597	436	689	484	421	1663	716	387	1612	500
Arrive On Green	0.19	0.26	0.26	0.13	0.19	0.19	0.08	0.22	0.22	0.11	0.32	0.32
Sat Flow, veh/h	3456	3554	1585	3456	3554	1585	3456	5106	1585	3456	5106	1585
Grp Volume(v), veh/h	673	847	192	389	716	148	443	1580	323	343	1397	445
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1728	1777	1585	1728	1702	1585	1728	1702	1585
Q Serve(g_s), s	30.0	37.3	13.7	17.7	31.0	11.4	19.5	48.8	24.0	15.7	41.2	42.7
Cycle Q Clear(g_c), s	30.0	37.3	13.7	17.7	31.0	11.4	19.5	48.8	24.0	15.7	41.2	42.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	648	906	597	436	689	484	421	1663	716	387	1612	500
V/C Ratio(X)	1.04	0.93	0.32	0.89	1.04	0.31	1.05	0.95	0.45	0.89	0.87	0.89
Avail Cap(c_a), veh/h	648	906	597	497	689	484	421	1663	716	421	1612	500
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.67	0.67	0.67	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.70	0.70	0.70	1.00	1.00	1.00
Uniform Delay (d), s/veh	65.0	58.3	35.3	68.8	64.5	42.5	73.5	61.3	35.5	70.1	51.6	52.1
Incr Delay (d2), s/veh	45.8	16.4	0.3	16.7	45.1	0.4	51.1	10.0	1.4	18.9	6.6	20.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	17.4	18.9	5.5	8.9	18.4	4.6	11.9	23.4	10.1	8.0	18.6	19.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	110.8	74.7	35.7	85.5	109.6	42.9	124.5	71.3	36.9	89.0	58.1	72.6
LnGrp LOS	F	E	D	F	F	D	F	E	D	F	E	E
Approach Vol, veh/h		1712			1253			2346			2185	
Approach Delay, s/veh		84.5			94.2			76.6			65.9	
Approach LOS		F			F			E			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	25.4	59.6	27.2	47.8	27.0	58.0	37.0	38.0				
Change Period (Y+Rc), s	7.5	7.5	7.0	7.0	7.5	7.5	7.0	7.0				
Max Green Setting (Gmax), s	19.5	50.5	23.0	38.0	19.5	50.5	30.0	31.0				
Max Q Clear Time (g_c+I1), s	17.7	50.8	19.7	39.3	21.5	44.7	32.0	33.0				
Green Ext Time (p_c), s	0.2	0.0	0.5	0.0	0.0	4.5	0.0	0.0				

Intersection Summary

HCM 6th Ctrl Delay	78.2
HCM 6th LOS	E

Notes

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

Timings  
2: US 441 & Cullum Road

EX PM  
12/15/2022

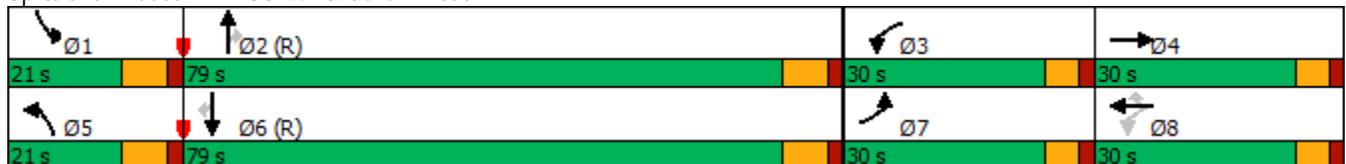


Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↖	↗	↖	↕↕	↗	↖↖	↕↕↕	↗	↖↖	↕↕↕	↗
Traffic Volume (vph)	336	32	42	75	147	227	1650	20	227	1452	306
Future Volume (vph)	336	32	42	75	147	227	1650	20	227	1452	306
Turn Type	Prot	NA	pm+pt	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8		5	2		1	6	
Permitted Phases			8		8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	6.0	4.0	6.0	6.0	5.0	15.0	15.0	5.0	15.0	15.0
Minimum Split (s)	11.0	48.0	10.0	48.0	48.0	12.5	42.5	42.5	12.5	42.5	42.5
Total Split (s)	30.0	30.0	30.0	30.0	30.0	21.0	79.0	79.0	21.0	79.0	79.0
Total Split (%)	18.8%	18.8%	18.8%	18.8%	18.8%	13.1%	49.4%	49.4%	13.1%	49.4%	49.4%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	5.5	5.5	5.5	5.5	5.5	5.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	7.5	7.5	7.5	7.5	7.5	7.5
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes										
Recall Mode	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	C-Min
Act Effct Green (s)	21.1	24.6	18.1	9.6	9.6	16.8	85.5	85.5	16.8	85.5	85.5
Actuated g/C Ratio	0.13	0.15	0.11	0.06	0.06	0.10	0.53	0.53	0.10	0.53	0.53
v/c Ratio	0.78	0.33	0.26	0.37	0.66	0.67	0.64	0.02	0.67	0.56	0.34
Control Delay	79.7	33.8	51.4	76.4	25.6	78.0	28.9	0.1	75.9	18.6	4.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	79.7	33.8	51.4	76.4	25.6	78.0	28.9	0.1	75.9	18.6	4.2
LOS	E	C	D	E	C	E	C	A	E	B	A
Approach Delay		69.7		44.1			34.4			23.0	
Approach LOS		E		D			C			C	

Intersection Summary

Cycle Length: 160  
 Actuated Cycle Length: 160  
 Offset: 48 (30%), Referenced to phase 2:NBT and 6:SBT, Start of Green  
 Natural Cycle: 145  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.78  
 Intersection Signal Delay: 33.3  
 Intersection LOS: C  
 Intersection Capacity Utilization 72.1%  
 ICU Level of Service C  
 Analysis Period (min) 15

Splits and Phases: 2: US 441 & Cullum Road



Queues  
2: US 441 & Cullum Road

EX PM  
12/15/2022



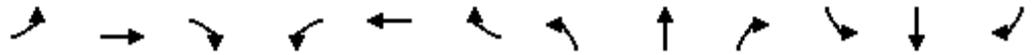
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	354	98	44	79	155	239	1737	21	239	1528	322
v/c Ratio	0.78	0.33	0.26	0.37	0.66	0.67	0.64	0.02	0.67	0.56	0.34
Control Delay	79.7	33.8	51.4	76.4	25.6	78.0	28.9	0.1	75.9	18.6	4.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	79.7	33.8	51.4	76.4	25.6	78.0	28.9	0.1	75.9	18.6	4.2
Queue Length 50th (ft)	164	40	32	37	6	110	405	0	119	161	28
Queue Length 95th (ft)	212	90	60	62	72	150	524	0	m142	176	m35
Internal Link Dist (ft)		532		554			340			1352	
Turn Bay Length (ft)	250		240		330	330			260		210
Base Capacity (vph)	514	311	340	530	363	363	2718	898	363	2718	961
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.69	0.32	0.13	0.15	0.43	0.66	0.64	0.02	0.66	0.56	0.34

Intersection Summary

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

HCM 6th Signalized Intersection Summary  
2: US 441 & Cullum Road

EX PM  
12/15/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↗		↖	↕	↗	↖↗	↕↕↕	↗	↖↗	↕↕↕	↗
Traffic Volume (veh/h)	336	32	61	42	75	147	227	1650	20	227	1452	306
Future Volume (veh/h)	336	32	61	42	75	147	227	1650	20	227	1452	306
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	354	34	64	44	79	155	239	1737	21	239	1528	322
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	405	116	218	243	397	177	280	2665	827	277	2661	826
Arrive On Green	0.12	0.20	0.20	0.03	0.11	0.11	0.08	0.52	0.52	0.16	1.00	1.00
Sat Flow, veh/h	3456	581	1093	1781	3554	1585	3456	5106	1585	3456	5106	1585
Grp Volume(v), veh/h	354	0	98	44	79	155	239	1737	21	239	1528	322
Grp Sat Flow(s),veh/h/ln	1728	0	1674	1781	1777	1585	1728	1702	1585	1728	1702	1585
Q Serve(g_s), s	16.1	0.0	8.0	3.5	3.2	15.4	10.9	39.4	1.0	10.8	0.0	0.0
Cycle Q Clear(g_c), s	16.1	0.0	8.0	3.5	3.2	15.4	10.9	39.4	1.0	10.8	0.0	0.0
Prop In Lane	1.00		0.65	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	405	0	334	243	397	177	280	2665	827	277	2661	826
V/C Ratio(X)	0.87	0.00	0.29	0.18	0.20	0.87	0.85	0.65	0.03	0.86	0.57	0.39
Avail Cap(c_a), veh/h	518	0	334	457	533	238	292	2665	827	292	2661	826
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.49	0.49	0.49
Uniform Delay (d), s/veh	69.5	0.0	54.5	60.4	64.5	70.0	72.6	27.7	18.5	66.3	0.0	0.0
Incr Delay (d2), s/veh	12.6	0.0	0.5	0.4	0.2	22.9	20.4	1.3	0.1	11.9	0.4	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.9	0.0	3.5	1.6	1.5	7.4	5.7	16.4	0.4	4.9	0.1	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	82.1	0.0	55.0	60.8	64.8	92.9	93.0	29.0	18.6	78.2	0.4	0.7
LnGrp LOS	F	A	D	E	E	F	F	C	B	E	A	A
Approach Vol, veh/h		452			278			1997			2089	
Approach Delay, s/veh		76.2			79.8			36.5			9.4	
Approach LOS		E			E			D			A	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	20.3	91.0	10.8	37.9	20.5	90.9	24.8	23.9				
Change Period (Y+Rc), s	7.5	7.5	6.0	6.0	7.5	7.5	6.0	6.0				
Max Green Setting (Gmax), s	13.5	71.5	24.0	24.0	13.5	71.5	24.0	24.0				
Max Q Clear Time (g_c+I1), s	12.8	41.4	5.5	10.0	12.9	2.0	18.1	17.4				
Green Ext Time (p_c), s	0.1	16.7	0.1	0.4	0.0	21.4	0.6	0.5				

Intersection Summary

HCM 6th Ctrl Delay	31.0
HCM 6th LOS	C

Notes

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

Intersection						
Int Delay, s/veh	1.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↑ ↑↑	↑↑↑			↑↑↑
Traffic Vol, veh/h	0	151	1319	71	0	1649
Future Vol, veh/h	0	151	1319	71	0	1649
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	159	1388	75	0	1736

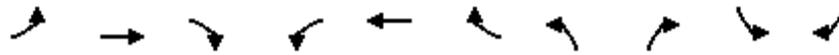
Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	-	732	0	0	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	7.14	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	3.92	-	-	-
Pot Cap-1 Maneuver	0	312	-	-	0
Stage 1	0	-	-	-	0
Stage 2	0	-	-	-	0
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	-	312	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	27.9	0	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBT
Capacity (veh/h)	-	-	312
HCM Lane V/C Ratio	-	-	0.509
HCM Control Delay (s)	-	-	27.9
HCM Lane LOS	-	-	D
HCM 95th %tile Q(veh)	-	-	2.7

Timings  
4: Sample Road & US 441

EX PM  
12/15/2022

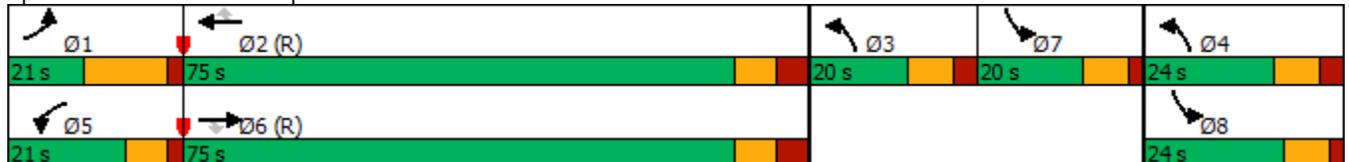


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBR	SBL	SBR	Ø3	Ø4
Lane Configurations	↔↔	↑↑↑	↗	↔↔	↑↑↑	↗	↔↔	↗	↔↔	↗		
Traffic Volume (vph)	193	1570	107	139	1815	286	158	118	219	233		
Future Volume (vph)	193	1570	107	139	1815	286	158	118	219	233		
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	Free	Prot	Free		
Protected Phases	1	6		5	2		3 4		7 8		3	4
Permitted Phases			6			2		Free		Free		
Detector Phase	1	6	6	5	2	2	3 4		7 8			
Switch Phase												
Minimum Initial (s)	6.0	10.0	10.0	6.0	10.0	10.0					6.0	6.0
Minimum Split (s)	18.0	19.0	19.0	13.0	27.0	27.0					49.5	49.5
Total Split (s)	21.0	75.0	75.0	21.0	75.0	75.0					20.0	24.0
Total Split (%)	13.1%	46.9%	46.9%	13.1%	46.9%	46.9%					13%	15%
Yellow Time (s)	10.0	5.0	5.0	5.0	5.0	5.0					5.5	5.5
All-Red Time (s)	2.0	4.0	4.0	2.0	4.0	4.0					3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0						
Total Lost Time (s)	12.0	9.0	9.0	7.0	9.0	9.0						
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag					Lead	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes					Yes	
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min					None	None
Act Effct Green (s)	16.9	77.4	77.4	12.1	67.6	67.6	17.5	160.0	27.9	160.0		
Actuated g/C Ratio	0.11	0.48	0.48	0.08	0.42	0.42	0.11	1.00	0.17	1.00		
v/c Ratio	0.56	0.67	0.13	0.56	0.89	0.36	0.44	0.08	0.39	0.15		
Control Delay	74.5	33.8	0.3	79.5	49.2	4.1	49.0	0.1	60.5	0.2		
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Total Delay	74.5	33.8	0.3	79.5	49.2	4.1	49.0	0.1	60.5	0.2		
LOS	E	C	A	E	D	A	D	A	E	A		
Approach Delay		36.1			45.3							
Approach LOS		D			D							

Intersection Summary

Cycle Length: 160  
 Actuated Cycle Length: 160  
 Offset: 5 (3%), Referenced to phase 2:WBT and 6:EBT, Start of Green  
 Natural Cycle: 195  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.89  
 Intersection Signal Delay: 39.3  
 Intersection LOS: D  
 Intersection Capacity Utilization 70.6%  
 ICU Level of Service C  
 Analysis Period (min) 15

Splits and Phases: 4: Sample Road & US 441



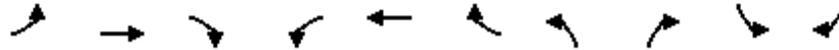
Timings  
4: Sample Road & US 441

EX PM  
12/15/2022

Lane Group	Ø7	Ø8
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Turn Type		
Protected Phases	7	8
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	6.0	6.0
Minimum Split (s)	48.5	48.5
Total Split (s)	20.0	24.0
Total Split (%)	13%	15%
Yellow Time (s)	5.5	5.5
All-Red Time (s)	2.0	2.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lag	
Lead-Lag Optimize?	Yes	
Recall Mode	None	None
Act Effect Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Intersection Summary		

Queues  
4: Sample Road & US 441

EX PM  
12/15/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBR	SBL	SBR
Lane Group Flow (vph)	203	1653	113	146	1911	301	166	124	231	245
v/c Ratio	0.56	0.67	0.13	0.56	0.89	0.36	0.44	0.08	0.39	0.15
Control Delay	74.5	33.8	0.3	79.5	49.2	4.1	49.0	0.1	60.5	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	74.5	33.8	0.3	79.5	49.2	4.1	49.0	0.1	60.5	0.2
Queue Length 50th (ft)	93	424	0	68	598	0	58	0	98	0
Queue Length 95th (ft)	132	497	0	100	664	52	86	0	137	0
Internal Link Dist (ft)	858		1521							
Turn Bay Length (ft)	350		430	350		400	400		400	
Base Capacity (vph)	362	2459	883	306	2149	842	579	1583	756	1583
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.56	0.67	0.13	0.48	0.89	0.36	0.29	0.08	0.31	0.15

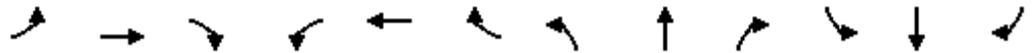
Intersection Summary

# HCM Signalized Intersection Capacity Analysis

## 4: Sample Road & US 441

EX PM

12/15/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↖	↑↑↑	↗	↖↖	↑↑↑	↗	↖↖		↗	↖↖		↗
Traffic Volume (vph)	193	1570	107	139	1815	286	158	0	118	219	0	233
Future Volume (vph)	193	1570	107	139	1815	286	158	0	118	219	0	233
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	12.0	9.0	9.0	7.0	9.0	9.0	8.5		4.0	7.5		4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97		1.00	0.97		1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00		0.85	1.00		0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95		1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433		1583	3433		1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95		1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433		1583	3433		1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	203	1653	113	146	1911	301	166	0	124	231	0	245
RTOR Reduction (vph)	0	0	58	0	0	174	0	0	0	0	0	0
Lane Group Flow (vph)	203	1653	55	146	1911	127	166	0	124	231	0	245
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot		Free	Prot		Free
Protected Phases	1	6		5	2		3 4			7 8		
Permitted Phases			6			2			Free			Free
Actuated Green, G (s)	16.9	77.4	77.4	12.1	67.6	67.6	17.5		160.0	27.9		160.0
Effective Green, g (s)	16.9	77.4	77.4	12.1	67.6	67.6	17.5		160.0	27.9		160.0
Actuated g/C Ratio	0.11	0.48	0.48	0.08	0.42	0.42	0.11		1.00	0.17		1.00
Clearance Time (s)	12.0	9.0	9.0	7.0	9.0	9.0						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0						
Lane Grp Cap (vph)	362	2459	765	259	2148	668	375		1583	598		1583
v/s Ratio Prot	c0.06	c0.33		0.04	c0.38		c0.05			c0.07		
v/s Ratio Perm			0.03			0.08			0.08			0.15
v/c Ratio	0.56	0.67	0.07	0.56	0.89	0.19	0.44		0.08	0.39		0.15
Uniform Delay, d1	68.0	31.6	22.1	71.4	42.7	29.0	66.7		0.0	58.5		0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00
Incremental Delay, d2	2.0	1.5	0.2	2.8	6.0	0.6	0.8		0.1	0.4		0.2
Delay (s)	70.0	33.1	22.3	74.2	48.8	29.6	67.5		0.1	58.9		0.2
Level of Service	E	C	C	E	D	C	E		A	E		A
Approach Delay (s)		36.3			47.9			38.7			28.7	
Approach LOS		D			D			D			C	

### Intersection Summary

HCM 2000 Control Delay	41.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	45.5
Intersection Capacity Utilization	70.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Timings  
5: Sample Road & NW 54th Avenue

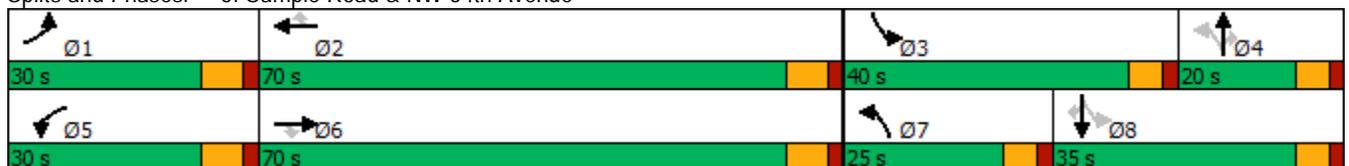
EX PM  
12/15/2022

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	161	1489	56	388	1821	278	127	43	288	215	49	85
Future Volume (vph)	161	1489	56	388	1821	278	127	43	288	215	49	85
Turn Type	Prot	NA	Perm	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases			6			2	4		4	8		8
Detector Phase	1	6	6	5	2	2	7	4	4	3	8	8
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	5.0
Minimum Split (s)	12.0	37.0	37.0	12.0	37.0	37.0	11.0	44.0	44.0	11.0	44.0	44.0
Total Split (s)	30.0	70.0	70.0	30.0	70.0	70.0	25.0	20.0	20.0	40.0	35.0	35.0
Total Split (%)	18.8%	43.8%	43.8%	18.8%	43.8%	43.8%	15.6%	12.5%	12.5%	25.0%	21.9%	21.9%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag									
Lead-Lag Optimize?	Yes											
Recall Mode	None	Min	Min	None	Min	Min	None	None	None	None	None	None
Act Effect Green (s)	12.1	57.6	57.6	20.3	65.8	65.8	22.3	8.5	8.5	33.6	14.6	14.6
Actuated g/C Ratio	0.09	0.43	0.43	0.15	0.50	0.50	0.17	0.06	0.06	0.25	0.11	0.11
v/c Ratio	0.54	0.71	0.08	0.78	0.76	0.31	0.50	0.20	0.79	0.65	0.13	0.32
Control Delay	66.6	34.0	0.2	66.4	30.8	3.4	47.2	64.7	22.1	51.6	56.5	7.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	66.6	34.0	0.2	66.4	30.8	3.4	47.2	64.7	22.1	51.6	56.5	7.1
LOS	E	C	A	E	C	A	D	E	C	D	E	A
Approach Delay		36.0			33.3			33.0			41.5	
Approach LOS		D			C			C			D	

Intersection Summary

Cycle Length: 160  
 Actuated Cycle Length: 132.7  
 Natural Cycle: 115  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 0.79  
 Intersection Signal Delay: 34.8  
 Intersection LOS: C  
 Intersection Capacity Utilization 75.1%  
 ICU Level of Service D  
 Analysis Period (min) 15

Splits and Phases: 5: Sample Road & NW 54th Avenue



Queues  
5: Sample Road & NW 54th Avenue

EX PM  
12/15/2022



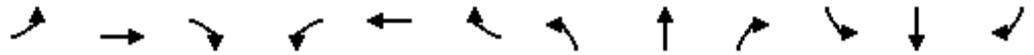
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	169	1567	59	408	1917	293	134	45	303	226	52	89
v/c Ratio	0.54	0.71	0.08	0.78	0.76	0.31	0.50	0.20	0.79	0.65	0.13	0.32
Control Delay	66.6	34.0	0.2	66.4	30.8	3.4	47.2	64.7	22.1	51.6	56.5	7.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	66.6	34.0	0.2	66.4	30.8	3.4	47.2	64.7	22.1	51.6	56.5	7.1
Queue Length 50th (ft)	63	350	0	150	408	0	82	17	0	146	18	0
Queue Length 95th (ft)	109	486	0	#237	601	48	140	38	88	230	40	25
Internal Link Dist (ft)		1521			667			578			917	
Turn Bay Length (ft)	200			340		460	160		160	180		190
Base Capacity (vph)	604	2450	840	604	2580	947	342	378	440	482	784	441
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.28	0.64	0.07	0.68	0.74	0.31	0.39	0.12	0.69	0.47	0.07	0.20

Intersection Summary

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

HCM 6th Signalized Intersection Summary  
5: Sample Road & NW 54th Avenue

EX PM  
12/15/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↑↑↑	↗	↔↔	↑↑↑	↗	↖	↑↑	↗	↖	↑↑	↗
Traffic Volume (veh/h)	161	1489	56	388	1821	278	127	43	288	215	49	85
Future Volume (veh/h)	161	1489	56	388	1821	278	127	43	288	215	49	85
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	169	1567	59	408	1917	293	134	45	303	226	52	89
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	234	2051	637	480	2414	749	351	411	183	397	576	257
Arrive On Green	0.07	0.40	0.40	0.14	0.47	0.47	0.08	0.12	0.12	0.13	0.16	0.16
Sat Flow, veh/h	3456	5106	1585	3456	5106	1585	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	169	1567	59	408	1917	293	134	45	303	226	52	89
Grp Sat Flow(s),veh/h/ln	1728	1702	1585	1728	1702	1585	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	5.8	32.1	2.8	14.0	38.4	14.5	7.9	1.4	14.0	13.1	1.5	6.0
Cycle Q Clear(g_c), s	5.8	32.1	2.8	14.0	38.4	14.5	7.9	1.4	14.0	13.1	1.5	6.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	234	2051	637	480	2414	749	351	411	183	397	576	257
V/C Ratio(X)	0.72	0.76	0.09	0.85	0.79	0.39	0.38	0.11	1.65	0.57	0.09	0.35
Avail Cap(c_a), veh/h	657	2657	825	657	2657	825	483	411	183	667	851	380
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.3	31.3	22.5	50.9	26.9	20.6	42.1	47.9	53.5	38.2	43.1	45.0
Incr Delay (d2), s/veh	4.2	1.0	0.1	7.7	1.6	0.3	0.7	0.1	316.9	1.3	0.1	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	13.2	1.1	6.5	15.5	5.4	3.6	0.6	21.7	5.8	0.7	2.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	59.5	32.3	22.6	58.6	28.5	21.0	42.8	48.1	370.4	39.5	43.2	45.8
LnGrp LOS	E	C	C	E	C	C	D	D	F	D	D	D
Approach Vol, veh/h		1795			2618			482				367
Approach Delay, s/veh		34.5			32.4			249.2				41.5
Approach LOS		C			C			F				D
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	15.2	64.2	21.6	20.0	23.8	55.6	16.0	25.6				
Change Period (Y+Rc), s	7.0	7.0	6.0	6.0	7.0	7.0	6.0	6.0				
Max Green Setting (Gmax), s	23.0	63.0	34.0	14.0	23.0	63.0	19.0	29.0				
Max Q Clear Time (g_c+I1), s	7.8	40.4	15.1	16.0	16.0	34.1	9.9	8.0				
Green Ext Time (p_c), s	0.4	16.4	0.6	0.0	0.9	14.5	0.2	0.5				

Intersection Summary

HCM 6th Ctrl Delay	53.6
HCM 6th LOS	D

Notes

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

Intersection												
Int Delay, s/veh	35.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↑↑↑	↗	↖	↑↑↑				↗			↗
Traffic Vol, veh/h	4	1880	107	243	2568	35	0	0	180	0	0	10
Future Vol, veh/h	4	1880	107	243	2568	35	0	0	180	0	0	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	170	-	0	300	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	1979	113	256	2703	37	0	0	189	0	0	11

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	2740	0	0	2092	0	0	-	-	990	-	-	1370
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	5.34	-	-	5.34	-	-	-	-	7.14	-	-	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.12	-	-	3.12	-	-	-	-	3.92	-	-	3.92
Pot Cap-1 Maneuver	*425	-	-	~ 112	-	-	0	0	211	0	0	*338
Stage 1	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %	1	-	-	-	-	-	-	-	-	-	-	1
Mov Cap-1 Maneuver	*425	-	-	~ 112	-	-	-	-	211	-	-	*338
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	57	85.3	16
HCM LOS			F	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	211	* 425	-	-	~ 112	-	-	338
HCM Lane V/C Ratio	0.898	0.01	-	-	2.284	-	-	0.031
HCM Control Delay (s)	85.3	13.6	-	-	667.3	-	-	16
HCM Lane LOS	F	B	-	-	F	-	-	C
HCM 95th %tile Q(veh)	7.2	0	-	-	22.3	-	-	0.1

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

Intersection	
Intersection Delay, s/veh	8.8
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖	↗	↖	↗		↖	↗	↗	↖	↗	↖
Traffic Vol, veh/h	16	1	106	5	18	15	121	76	3	8	56	5
Future Vol, veh/h	16	1	106	5	18	15	121	76	3	8	56	5
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	17	1	112	5	19	16	127	80	3	8	59	5
Number of Lanes	0	1	1	1	1	0	1	1	1	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	3	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	3	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	3	2	2
HCM Control Delay	8.3	8.4	9.3	8.6
HCM LOS	A	A	A	A

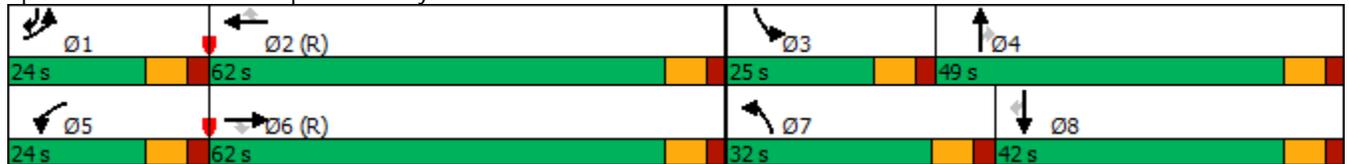
Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	0%	94%	0%	100%	0%	100%	0%	0%
Vol Thru, %	0%	100%	0%	6%	0%	0%	55%	0%	100%	0%
Vol Right, %	0%	0%	100%	0%	100%	0%	45%	0%	0%	100%
Sign Control	Stop									
Traffic Vol by Lane	121	76	3	17	106	5	33	8	56	5
LT Vol	121	0	0	16	0	5	0	8	0	0
Through Vol	0	76	0	1	0	0	18	0	56	0
RT Vol	0	0	3	0	106	0	15	0	0	5
Lane Flow Rate	127	80	3	18	112	5	35	8	59	5
Geometry Grp	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.2	0.114	0.004	0.029	0.146	0.009	0.051	0.014	0.089	0.007
Departure Headway (Hd)	5.652	5.15	4.447	5.864	4.695	6.058	5.24	5.943	5.44	4.737
Convergence, Y/N	Yes									
Cap	634	694	802	610	762	590	681	601	657	752
Service Time	3.396	2.894	2.191	3.604	2.434	3.807	2.988	3.692	3.189	2.486
HCM Lane V/C Ratio	0.2	0.115	0.004	0.03	0.147	0.008	0.051	0.013	0.09	0.007
HCM Control Delay	9.8	8.6	7.2	8.8	8.2	8.9	8.3	8.8	8.7	7.5
HCM Lane LOS	A	A	A	A	A	A	A	A	A	A
HCM 95th-tile Q	0.7	0.4	0	0.1	0.5	0	0.2	0	0.3	0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	362	1159	362	148	1771	338	452	969	132	285	899	548
Future Volume (vph)	362	1159	362	148	1771	338	452	969	132	285	899	548
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	1	6		5	2		7	4		3	8	1
Permitted Phases			6			2			4			8
Detector Phase	1	6	6	5	2	2	7	4	4	3	8	1
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0
Minimum Split (s)	12.5	45.5	45.5	12.5	45.5	45.5	12.5	46.5	46.5	12.5	46.5	12.5
Total Split (s)	24.0	62.0	62.0	24.0	62.0	62.0	32.0	49.0	49.0	25.0	42.0	24.0
Total Split (%)	15.0%	38.8%	38.8%	15.0%	38.8%	38.8%	20.0%	30.6%	30.6%	15.6%	26.3%	15.0%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
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	0.0
Total Lost Time (s)	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes											
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None	None	None
Act Effct Green (s)	17.6	59.5	59.5	12.6	54.5	54.5	24.1	41.0	41.0	16.9	33.8	58.9
Actuated g/C Ratio	0.11	0.37	0.37	0.08	0.34	0.34	0.15	0.26	0.26	0.11	0.21	0.37
v/c Ratio	1.01	0.65	0.48	0.58	1.08	0.49	0.92	0.78	0.27	0.83	0.88	0.91
Control Delay	117.1	44.0	9.6	79.5	94.6	11.3	90.8	60.3	8.0	106.1	62.6	38.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	117.1	44.0	9.6	79.5	94.6	11.3	90.8	60.3	8.0	106.1	62.6	38.5
LOS	F	D	A	E	F	B	F	E	A	F	E	D
Approach Delay		51.5			81.1			64.8			62.1	
Approach LOS		D			F			E			E	

Intersection Summary

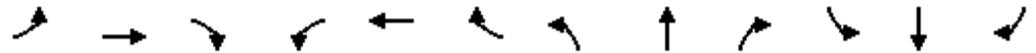
Cycle Length: 160  
 Actuated Cycle Length: 160  
 Offset: 30 (19%), Referenced to phase 2:WBT and 6:EBT, Start of Green  
 Natural Cycle: 150  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 1.08  
 Intersection Signal Delay: 65.8  
 Intersection LOS: E  
 Intersection Capacity Utilization 99.8%  
 ICU Level of Service F  
 Analysis Period (min) 15

Splits and Phases: 8: Sample Road & Lyons Road



Queues  
8: Sample Road & Lyons Road

EX PM  
12/15/2022



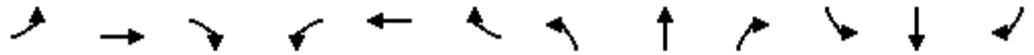
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	381	1220	381	156	1864	356	476	1020	139	300	946	577
v/c Ratio	1.01	0.65	0.48	0.58	1.08	0.49	0.92	0.78	0.27	0.83	0.88	0.91
Control Delay	117.1	44.0	9.6	79.5	94.6	11.3	90.8	60.3	8.0	106.1	62.6	38.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	117.1	44.0	9.6	79.5	94.6	11.3	90.8	60.3	8.0	106.1	62.6	38.5
Queue Length 50th (ft)	~200	343	40	72	-697	47	225	321	0	140	322	65
Queue Length 95th (ft)	#297	405	126	106	#779	130	#312	371	50	m174	m353	m#586
Internal Link Dist (ft)		2637			746			683			751	
Turn Bay Length (ft)	260		580	270		480	300		300	300		340
Base Capacity (vph)	378	1891	787	354	1732	725	525	1318	513	375	1096	634
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.01	0.65	0.48	0.44	1.08	0.49	0.91	0.77	0.27	0.80	0.86	0.91

Intersection Summary

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

HCM 6th Signalized Intersection Summary  
8: Sample Road & Lyons Road

EX PM  
12/15/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↑↑↑	↔	↔↔	↑↑↑	↔	↔↔	↑↑↑	↔	↔↔	↑↑↑	↔
Traffic Volume (veh/h)	362	1159	362	148	1771	338	452	969	132	285	899	548
Future Volume (veh/h)	362	1159	362	148	1771	338	452	969	132	285	899	548
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	381	1220	381	156	1864	356	476	1020	139	300	946	577
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	356	1986	616	202	1758	546	516	1357	421	343	1101	505
Arrive On Green	0.10	0.39	0.39	0.06	0.34	0.34	0.15	0.27	0.27	0.10	0.22	0.22
Sat Flow, veh/h	3456	5106	1585	3456	5106	1585	3456	5106	1585	3456	5106	1585
Grp Volume(v), veh/h	381	1220	381	156	1864	356	476	1020	139	300	946	577
Grp Sat Flow(s),veh/h/ln	1728	1702	1585	1728	1702	1585	1728	1702	1585	1728	1702	1585
Q Serve(g_s), s	16.5	30.7	30.9	7.1	55.1	30.4	21.7	29.3	11.3	13.7	28.5	34.5
Cycle Q Clear(g_c), s	16.5	30.7	30.9	7.1	55.1	30.4	21.7	29.3	11.3	13.7	28.5	34.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	356	1986	616	202	1758	546	516	1357	421	343	1101	505
V/C Ratio(X)	1.07	0.61	0.62	0.77	1.06	0.65	0.92	0.75	0.33	0.87	0.86	1.14
Avail Cap(c_a), veh/h	356	1986	616	356	1758	546	529	1357	421	378	1101	505
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	71.8	39.2	39.3	74.3	52.5	44.4	67.1	53.9	47.3	71.1	60.4	54.5
Incr Delay (d2), s/veh	67.2	1.4	4.6	6.1	39.4	6.0	21.5	2.4	0.5	18.5	7.0	85.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.7	13.2	13.0	3.4	29.9	12.9	11.2	12.9	4.6	7.0	13.1	32.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	139.0	40.7	43.9	80.4	91.9	50.3	88.6	56.3	47.7	89.6	67.4	139.9
LnGrp LOS	F	D	D	F	F	D	F	E	D	F	E	F
Approach Vol, veh/h		1982			2376			1635			1823	
Approach Delay, s/veh		60.2			84.9			65.0			94.0	
Approach LOS		E			F			E			F	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	24.0	62.6	23.4	50.0	16.9	69.7	31.4	42.0				
Change Period (Y+Rc), s	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5				
Max Green Setting (Gmax), s	16.5	54.5	17.5	41.5	16.5	54.5	24.5	34.5				
Max Q Clear Time (g_c+l1), s	18.5	57.1	15.7	31.3	9.1	32.9	23.7	36.5				
Green Ext Time (p_c), s	0.0	0.0	0.2	5.2	0.3	10.7	0.2	0.0				

Intersection Summary

HCM 6th Ctrl Delay	76.6
HCM 6th LOS	E

Notes

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

Intersection												
Int Delay, s/veh	2.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↵		↵	↵	↑↑↑	↵	↵	↑↑↑	
Traffic Vol, veh/h	0	0	0	21	0	297	18	1580	42	94	1693	0
Future Vol, veh/h	0	0	0	21	0	297	18	1580	42	94	1693	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None									
Storage Length	-	-	-	0	-	160	210	-	210	200	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	22	0	313	19	1663	44	99	1782	0

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	2612	- 832 1782	0 0 1707 0 0
Stage 1	1701	- - -	- - -
Stage 2	911	- - -	- - -
Critical Hdwy	5.74	- 7.14 5.34	- - 5.34 - -
Critical Hdwy Stg 1	6.64	- - -	- - -
Critical Hdwy Stg 2	6.04	- - -	- - -
Follow-up Hdwy	3.82	- 3.92 3.12	- - 3.12 - -
Pot Cap-1 Maneuver	*116	0 *561 161	- - *706 - 0
Stage 1	*576	0 - -	- - - - 0
Stage 2	*319	0 - -	- - - - 0
Platoon blocked, %	1	1	- - 1 -
Mov Cap-1 Maneuver	*88	0 *561 161	- - *706 - -
Mov Cap-2 Maneuver	*189	0 - -	- - - - -
Stage 1	*508	0 - -	- - - - -
Stage 2	*274	0 - -	- - - - -

Approach	WB	NB	SB
HCM Control Delay, s	19.7	0.3	0.6
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	161	-	-	189	561	* 706	-
HCM Lane V/C Ratio	0.118	-	-	0.117	0.557	0.14	-
HCM Control Delay (s)	30.3	-	-	26.6	19.2	10.9	-
HCM Lane LOS	D	-	-	D	C	B	-
HCM 95th %tile Q(veh)	0.4	-	-	0.4	3.4	0.5	-

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

Intersection												
Int Delay, s/veh	0.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↘		↗	↘	↑↑↑	↗	↘	↑↑↑	
Traffic Vol, veh/h	0	0	0	27	0	28	0	1854	52	42	1812	0
Future Vol, veh/h	0	0	0	27	0	28	0	1854	52	42	1812	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None									
Storage Length	-	-	-	0	-	0	160	-	210	210	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	28	0	29	0	1952	55	44	1907	0

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	2803	- 976 1907	0 0 2007 0 0
Stage 1	1952	- - -	- - - - -
Stage 2	851	- - -	- - - - -
Critical Hdwy	5.74	- 7.14 5.34	- - 5.34 - -
Critical Hdwy Stg 1	6.64	- - -	- - - - -
Critical Hdwy Stg 2	6.04	- - -	- - - - -
Follow-up Hdwy	3.82	- 3.92 3.12	- - 3.12 - -
Pot Cap-1 Maneuver	*109	0 *498 139	- - *626 - 0
Stage 1	*511	0 - -	- - - - 0
Stage 2	*343	0 - -	- - - - 0
Platoon blocked, %	1	1	- - 1 -
Mov Cap-1 Maneuver	*101	0 *498 139	- - *626 - -
Mov Cap-2 Maneuver	*222	0 - -	- - - - -
Stage 1	*511	0 - -	- - - - -
Stage 2	*319	0 - -	- - - - -

Approach	WB	NB	SB
HCM Control Delay, s	18.1	0	0.3
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	139	-	-	222	498	* 626	-
HCM Lane V/C Ratio	-	-	-	0.128	0.059	0.071	-
HCM Control Delay (s)	0	-	-	23.6	12.7	11.2	-
HCM Lane LOS	A	-	-	C	B	B	-
HCM 95th %tile Q(veh)	0	-	-	0.4	0.2	0.2	-

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

Intersection												
Int Delay, s/veh	1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↵	↵		↵	↵		↵	↑↑↑	↵	↵	↑↑↑	↵
Traffic Vol, veh/h	14	0	84	9	1	40	78	1786	19	52	1714	21
Future Vol, veh/h	14	0	84	9	1	40	78	1786	19	52	1714	21
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None									
Storage Length	200	-	-	0	-	-	200	-	220	200	-	400
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	15	0	88	9	1	42	82	1880	20	55	1804	22

Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	2831	3978	902	2876	3980	940	1826	0	0	1900	0	0
Stage 1	1914	1914	-	2044	2044	-	-	-	-	-	-	-
Stage 2	917	2064	-	832	1936	-	-	-	-	-	-	-
Critical Hdwy	6.44	6.54	7.14	6.44	6.54	7.14	5.34	-	-	5.34	-	-
Critical Hdwy Stg 1	7.34	5.54	-	7.34	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.74	5.54	-	6.74	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.82	4.02	3.92	3.82	4.02	3.92	3.12	-	-	3.12	-	-
Pot Cap-1 Maneuver	*129	50	*529	*129	49	*514	*666	-	-	*646	-	-
Stage 1	*527	506	-	*444	448	-	-	-	-	-	-	-
Stage 2	*527	432	-	*543	488	-	-	-	-	-	-	-
Platoon blocked, %	1	1	1	1	1	1	1	-	-	1	-	-
Mov Cap-1 Maneuver	*100	40	*529	*91	39	*514	*666	-	-	*646	-	-
Mov Cap-2 Maneuver	*232	192	-	*205	190	-	-	-	-	-	-	-
Stage 1	*462	463	-	*389	393	-	-	-	-	-	-	-
Stage 2	*423	379	-	*414	446	-	-	-	-	-	-	-

Approach	EB		WB			NB			SB		
HCM Control Delay, s	14.4		14.9			0.5			0.3		
HCM LOS	B		B								

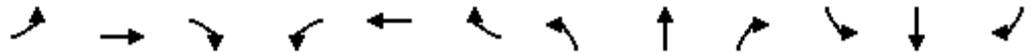
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	* 666	-	-	232	529	205	493	* 646	-	-
HCM Lane V/C Ratio	0.123	-	-	0.064	0.167	0.046	0.088	0.085	-	-
HCM Control Delay (s)	11.2	-	-	21.6	13.2	23.4	13	11.1	-	-
HCM Lane LOS	B	-	-	C	B	C	B	B	-	-
HCM 95th %tile Q(veh)	0.4	-	-	0.2	0.6	0.1	0.3	0.3	-	-

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



Queues  
12: Lyons Road & Wiles Road

EX PM  
12/15/2022



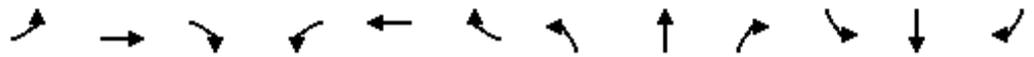
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	414	703	351	453	851	265	244	1318	320	207	1146	298
v/c Ratio	1.00	0.72	0.59	1.09	0.87	0.45	0.73	0.77	0.45	0.67	0.68	0.43
Control Delay	121.6	30.7	5.8	133.3	65.9	13.9	76.4	79.1	33.9	80.8	48.8	9.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	121.6	30.7	5.8	133.3	65.9	13.9	76.4	79.1	33.9	80.8	48.8	9.4
Queue Length 50th (ft)	~221	231	44	~265	388	41	119	426	124	96	336	28
Queue Length 95th (ft)	m#270	m305	m59	#368	464	116	m152	m470	m188	135	386	100
Internal Link Dist (ft)		2625			480			1249			449	
Turn Bay Length (ft)	340		370	210		220	290		300	290		310
Base Capacity (vph)	415	1017	612	415	1017	601	364	1715	714	364	1683	693
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.00	0.69	0.57	1.09	0.84	0.44	0.67	0.77	0.45	0.57	0.68	0.43

Intersection Summary

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

HCM 6th Signalized Intersection Summary  
 12: Lyons Road & Wiles Road

EX PM  
 12/15/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↑↑	↖	↖↗	↑↑	↖	↖↗	↑↑↑	↖	↖↗	↑↑↑	↖
Traffic Volume (veh/h)	393	668	333	430	808	252	232	1252	304	197	1089	283
Future Volume (veh/h)	393	668	333	430	808	252	232	1252	304	197	1089	283
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	414	703	351	453	851	265	244	1318	320	207	1146	298
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	367	947	423	367	947	423	290	1934	600	254	1880	584
Arrive On Green	0.11	0.27	0.27	0.11	0.27	0.27	0.08	0.38	0.38	0.07	0.37	0.37
Sat Flow, veh/h	3456	3554	1585	3456	3554	1585	3456	5106	1585	3456	5106	1585
Grp Volume(v), veh/h	414	703	351	453	851	265	244	1318	320	207	1146	298
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1728	1777	1585	1728	1702	1585	1728	1702	1585
Q Serve(g_s), s	17.0	28.9	33.4	17.0	36.9	23.6	11.1	34.6	25.1	9.4	29.3	23.4
Cycle Q Clear(g_c), s	17.0	28.9	33.4	17.0	36.9	23.6	11.1	34.6	25.1	9.4	29.3	23.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	367	947	423	367	947	423	290	1934	600	254	1880	584
V/C Ratio(X)	1.13	0.74	0.83	1.23	0.90	0.63	0.84	0.68	0.53	0.82	0.61	0.51
Avail Cap(c_a), veh/h	367	1022	456	367	1022	456	367	1934	600	367	1880	584
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	71.5	53.6	55.3	71.5	56.6	51.7	72.2	41.6	38.7	73.1	41.2	39.3
Incr Delay (d2), s/veh	86.2	2.7	11.6	126.7	10.1	2.4	13.2	2.0	3.4	9.0	1.5	3.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.0	13.4	14.8	14.0	18.0	9.7	5.5	15.0	10.5	4.5	12.7	9.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	157.7	56.4	66.9	198.2	66.7	54.1	85.4	43.6	42.1	82.0	42.6	42.5
LnGrp LOS	F	E	E	F	E	D	F	D	D	F	D	D
Approach Vol, veh/h		1468			1569			1882			1651	
Approach Delay, s/veh		87.5			102.5			48.8			47.6	
Approach LOS		F			F			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	18.7	67.6	24.0	49.7	20.4	65.9	24.0	49.7				
Change Period (Y+Rc), s	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0				
Max Green Setting (Gmax), s	17.0	52.0	17.0	46.0	17.0	52.0	17.0	46.0				
Max Q Clear Time (g_c+l1), s	11.4	36.6	19.0	35.4	13.1	31.3	19.0	38.9				
Green Ext Time (p_c), s	0.3	9.2	0.0	4.4	0.3	9.5	0.0	3.7				

Intersection Summary												
HCM 6th Ctrl Delay											69.9	
HCM 6th LOS											E	

Intersection												
Int Delay, s/veh	0.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↖↗		↖	↖↗		↖		↖			
Traffic Vol, veh/h	15	1346	10	12	1279	0	18	0	22	0	0	0
Future Vol, veh/h	15	1346	10	12	1279	0	18	0	22	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	150	-	-	230	-	-	0	-	100	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	16	1417	11	13	1346	0	19	0	23	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	1346	0	0	1428	0	0	2154	-	714
Stage 1	-	-	-	-	-	-	1455	-	-
Stage 2	-	-	-	-	-	-	699	-	-
Critical Hdwy	4.14	-	-	4.14	-	-	6.84	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	5.84	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.84	-	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	-	3.32
Pot Cap-1 Maneuver	*851	-	-	*823	-	0	*107	0	*550
Stage 1	-	-	-	-	-	0	*519	0	-
Stage 2	-	-	-	-	-	0	*537	0	-
Platoon blocked, %	1	-	-	1	-	-	1	-	1
Mov Cap-1 Maneuver	*851	-	-	*823	-	-	*103	0	*550
Mov Cap-2 Maneuver	-	-	-	-	-	-	*280	0	-
Stage 1	-	-	-	-	-	-	*509	0	-
Stage 2	-	-	-	-	-	-	*528	0	-

Approach	EB			WB			NB		
HCM Control Delay, s	0.1			0.1			15		
HCM LOS							C		

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT
Capacity (veh/h)	280	550	* 851	-	-	* 823	-
HCM Lane V/C Ratio	0.068	0.042	0.019	-	-	0.015	-
HCM Control Delay (s)	18.8	11.8	9.3	-	-	9.4	-
HCM Lane LOS	C	B	A	-	-	A	-
HCM 95th %tile Q(veh)	0.2	0.1	0.1	-	-	0	-

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

Timings  
1: US 441 & Wiles Road

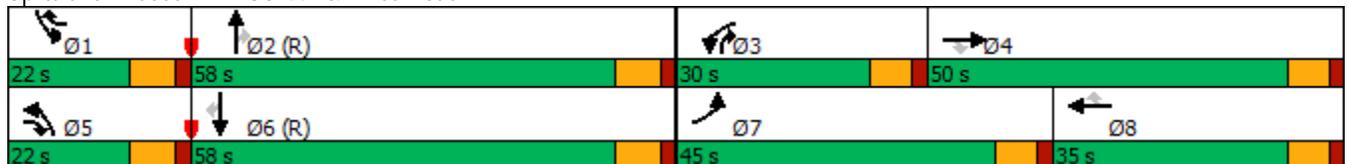
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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	670	725	512	229	475	304	270	1273	201	304	1383	319
Future Volume (vph)	670	725	512	229	475	304	270	1273	201	304	1383	319
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	Perm
Protected Phases	7	4	5	3	8	1	5	2	3	1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	5	3	8	1	5	2	3	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	5.0	5.0	10.0	5.0	5.0	10.0	10.0
Minimum Split (s)	12.5	43.5	12.5	12.5	43.0	12.5	12.5	43.5	12.5	12.5	43.5	43.5
Total Split (s)	45.0	50.0	22.0	30.0	35.0	22.0	22.0	58.0	30.0	22.0	58.0	58.0
Total Split (%)	28.1%	31.3%	13.8%	18.8%	21.9%	13.8%	13.8%	36.3%	18.8%	13.8%	36.3%	36.3%
Yellow Time (s)	5.0	5.0	5.5	5.0	5.0	5.5	5.5	5.5	5.0	5.5	5.5	5.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.5	7.0	7.0	7.5	7.5	7.5	7.0	7.5	7.5	7.5
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes											
Recall Mode	None	C-Min	None	None	C-Min	C-Min						
Act Effct Green (s)	36.1	45.9	68.4	16.5	26.3	50.3	15.5	51.6	75.6	17.0	53.1	53.1
Actuated g/C Ratio	0.23	0.29	0.43	0.10	0.16	0.31	0.10	0.32	0.47	0.11	0.33	0.33
v/c Ratio	0.91	0.75	0.75	0.68	0.86	0.55	0.85	0.82	0.26	0.88	0.86	0.51
Control Delay	76.8	57.2	40.1	81.6	60.1	22.6	110.0	41.0	4.5	93.6	56.8	20.1
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	76.8	57.2	40.1	81.6	60.1	22.6	110.0	41.0	4.5	93.6	56.8	20.1
LOS	E	E	D	F	E	C	F	D	A	F	E	C
Approach Delay		59.5			53.6			47.5			56.6	
Approach LOS		E			D			D			E	

Intersection Summary

Cycle Length: 160  
 Actuated Cycle Length: 160  
 Offset: 47 (29%), Referenced to phase 2:NBT and 6:SBT, Start of Green  
 Natural Cycle: 145  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.91  
 Intersection Signal Delay: 54.6  
 Intersection Capacity Utilization 90.8%  
 Analysis Period (min) 15  
 Intersection LOS: D  
 ICU Level of Service E

Splits and Phases: 1: US 441 & Wiles Road



Queues  
1: US 441 & Wiles Road

BY AM  
12/15/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	705	763	539	241	500	320	284	1340	212	320	1456	336
v/c Ratio	0.91	0.75	0.75	0.68	0.86	0.55	0.85	0.82	0.26	0.88	0.86	0.51
Control Delay	76.8	57.2	40.1	81.6	60.1	22.6	110.0	41.0	4.5	93.6	56.8	20.1
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	76.8	57.2	40.1	81.6	60.1	22.6	110.0	41.0	4.5	93.6	56.8	20.1
Queue Length 50th (ft)	324	326	350	92	237	167	143	427	14	-161	472	100
Queue Length 95th (ft)	#397	410	510	124	298	275	#220	315	32	#254	530	191
Internal Link Dist (ft)		609			2304			1352			507	
Turn Bay Length (ft)	320		250	360		420	300		560	320		190
Base Capacity (vph)	815	1024	721	493	619	583	333	1640	873	364	1687	658
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.87	0.75	0.75	0.49	0.81	0.55	0.85	0.82	0.24	0.88	0.86	0.51

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

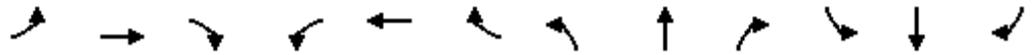
Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

HCM 6th Signalized Intersection Summary  
1: US 441 & Wiles Road

BY AM  
12/15/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↑↑	↗	↔↔	↑↑	↗	↔↔	↑↑↑	↗	↔↔	↑↑↑	↗
Traffic Volume (veh/h)	670	725	512	229	475	304	270	1273	201	304	1383	319
Future Volume (veh/h)	670	725	512	229	475	304	270	1273	201	304	1383	319
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	705	763	539	241	500	320	284	1340	212	320	1456	336
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	759	1102	635	292	622	421	313	1703	663	313	1703	529
Arrive On Green	0.22	0.31	0.31	0.08	0.17	0.17	0.09	0.33	0.33	0.09	0.33	0.33
Sat Flow, veh/h	3456	3554	1585	3456	3554	1585	3456	5106	1585	3456	5106	1585
Grp Volume(v), veh/h	705	763	539	241	500	320	284	1340	212	320	1456	336
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1728	1777	1585	1728	1702	1585	1728	1702	1585
Q Serve(g_s), s	32.0	30.2	49.4	11.0	21.6	28.0	13.0	37.9	14.4	14.5	42.5	28.7
Cycle Q Clear(g_c), s	32.0	30.2	49.4	11.0	21.6	28.0	13.0	37.9	14.4	14.5	42.5	28.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	759	1102	635	292	622	421	313	1703	663	313	1703	529
V/C Ratio(X)	0.93	0.69	0.85	0.82	0.80	0.76	0.91	0.79	0.32	1.02	0.85	0.64
Avail Cap(c_a), veh/h	821	1102	635	497	622	421	313	1703	663	313	1703	529
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00	0.81	0.81	0.81	1.00	1.00	1.00
Uniform Delay (d), s/veh	61.2	48.5	43.5	72.1	63.4	54.1	72.1	48.2	31.3	72.7	49.7	45.1
Incr Delay (d2), s/veh	16.1	1.9	10.5	5.8	7.6	7.9	24.4	3.1	1.0	56.5	5.7	5.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	15.8	13.8	21.2	5.1	10.5	12.8	6.9	16.7	5.8	8.9	19.1	12.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	77.3	50.4	54.1	77.9	70.9	61.9	96.5	51.2	32.3	129.3	55.4	50.8
LnGrp LOS	E	D	D	E	E	E	F	D	C	F	E	D
Approach Vol, veh/h		2007			1061			1836			2112	
Approach Delay, s/veh		60.8			69.8			56.1			65.9	
Approach LOS		E			E			E			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	22.0	60.9	20.5	56.6	22.0	60.9	42.1	35.0				
Change Period (Y+Rc), s	7.5	7.5	7.0	7.0	7.5	7.5	7.0	7.0				
Max Green Setting (Gmax), s	14.5	50.5	23.0	43.0	14.5	50.5	38.0	28.0				
Max Q Clear Time (g_c+l1), s	16.5	39.9	13.0	51.4	15.0	44.5	34.0	30.0				
Green Ext Time (p_c), s	0.0	6.9	0.6	0.0	0.0	4.6	1.1	0.0				

Intersection Summary

HCM 6th Ctrl Delay	62.5
HCM 6th LOS	E

Notes

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

Timings  
2: US 441 & Cullum Road

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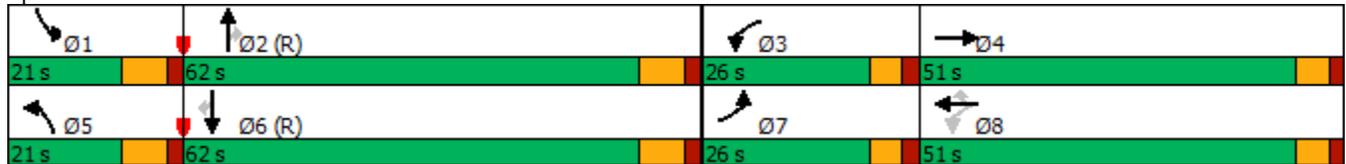


Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↖	↗	↖	↕↕	↗	↖↖	↕↕↕	↗	↖↖	↕↕↕	↗
Traffic Volume (vph)	263	36	6	17	70	116	1551	38	138	1819	187
Future Volume (vph)	263	36	6	17	70	116	1551	38	138	1819	187
Turn Type	Prot	NA	pm+pt	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8		5	2		1	6	
Permitted Phases			8		8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	6.0	4.0	6.0	6.0	5.0	15.0	15.0	5.0	15.0	15.0
Minimum Split (s)	11.0	48.0	10.0	48.0	48.0	12.5	42.5	42.5	12.5	42.5	42.5
Total Split (s)	26.0	51.0	26.0	51.0	51.0	21.0	62.0	62.0	21.0	62.0	62.0
Total Split (%)	16.3%	31.9%	16.3%	31.9%	31.9%	13.1%	38.8%	38.8%	13.1%	38.8%	38.8%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	5.5	5.5	5.5	5.5	5.5	5.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	7.5	7.5	7.5	7.5	7.5	7.5
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes										
Recall Mode	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	C-Min
Act Effct Green (s)	17.6	27.4	12.5	6.5	6.5	11.0	96.9	96.9	12.1	97.9	97.9
Actuated g/C Ratio	0.11	0.17	0.08	0.04	0.04	0.07	0.61	0.61	0.08	0.61	0.61
v/c Ratio	0.73	0.17	0.05	0.13	0.41	0.52	0.53	0.04	0.56	0.62	0.19
Control Delay	80.8	45.1	53.0	75.8	7.3	79.3	19.7	0.1	70.6	18.9	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
Total Delay	80.8	45.1	53.0	75.8	7.3	79.3	19.7	0.1	70.6	18.9	8.2
LOS	F	D	D	E	A	E	B	A	E	B	A
Approach Delay		74.9		22.6			23.3			21.3	
Approach LOS		E		C			C			C	

Intersection Summary

Cycle Length: 160  
 Actuated Cycle Length: 160  
 Offset: 59 (37%), Referenced to phase 2:NBT and 6:SBT, Start of Green  
 Natural Cycle: 135  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.73  
 Intersection Signal Delay: 26.1  
 Intersection LOS: C  
 Intersection Capacity Utilization 71.0%  
 ICU Level of Service C  
 Analysis Period (min) 15

Splits and Phases: 2: US 441 & Cullum Road



Queues  
2: US 441 & Cullum Road

BY AM  
12/15/2022



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	277	55	6	18	74	122	1633	40	145	1915	197
v/c Ratio	0.73	0.17	0.05	0.13	0.41	0.52	0.53	0.04	0.56	0.62	0.19
Control Delay	80.8	45.1	53.0	75.8	7.3	79.3	19.7	0.1	70.6	18.9	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
Total Delay	80.8	45.1	53.0	75.8	7.3	79.3	19.7	0.1	70.6	18.9	8.2
Queue Length 50th (ft)	128	32	5	8	0	57	309	0	70	304	21
Queue Length 95th (ft)	173	76	17	22	4	87	382	0	m87	345	m43
Internal Link Dist (ft)		532		554			340			1352	
Turn Bay Length (ft)	250		240		330	330			260		210
Base Capacity (vph)	429	509	274	995	533	292	3079	1002	297	3111	1012
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.65	0.11	0.02	0.02	0.14	0.42	0.53	0.04	0.49	0.62	0.19

Intersection Summary

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

HCM 6th Signalized Intersection Summary  
2: US 441 & Cullum Road

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12/15/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↔		↔	↑↑	↔	↔↔	↑↑↑	↔	↔↔	↑↑↑	↔
Traffic Volume (veh/h)	263	36	16	6	17	70	116	1551	38	138	1819	187
Future Volume (veh/h)	263	36	16	6	17	70	116	1551	38	138	1819	187
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	277	38	17	6	18	74	122	1633	40	145	1915	197
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	325	182	81	137	215	96	166	3178	986	188	3210	996
Arrive On Green	0.09	0.15	0.15	0.01	0.06	0.06	0.05	0.62	0.62	0.11	1.00	1.00
Sat Flow, veh/h	3456	1224	548	1781	3554	1585	3456	5106	1585	3456	5106	1585
Grp Volume(v), veh/h	277	0	55	6	18	74	122	1633	40	145	1915	197
Grp Sat Flow(s),veh/h/ln	1728	0	1772	1781	1777	1585	1728	1702	1585	1728	1702	1585
Q Serve(g_s), s	12.6	0.0	4.4	0.5	0.8	7.4	5.6	28.4	1.6	6.5	0.0	0.0
Cycle Q Clear(g_c), s	12.6	0.0	4.4	0.5	0.8	7.4	5.6	28.4	1.6	6.5	0.0	0.0
Prop In Lane	1.00		0.31	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	325	0	264	137	215	96	166	3178	986	188	3210	996
V/C Ratio(X)	0.85	0.00	0.21	0.04	0.08	0.77	0.73	0.51	0.04	0.77	0.60	0.20
Avail Cap(c_a), veh/h	432	0	498	349	999	446	292	3178	986	292	3210	996
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(l)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.47	0.47	0.47
Uniform Delay (d), s/veh	71.4	0.0	59.8	70.0	71.0	74.1	75.1	16.8	11.7	70.4	0.0	0.0
Incr Delay (d2), s/veh	11.8	0.0	0.4	0.1	0.2	12.3	6.2	0.6	0.1	3.2	0.4	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.2	0.0	2.0	0.2	0.4	3.3	2.6	11.3	0.6	2.9	0.1	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	83.1	0.0	60.2	70.1	71.2	86.4	81.3	17.4	11.8	73.6	0.4	0.2
LnGrp LOS	F	A	E	E	E	F	F	B	B	E	A	A
Approach Vol, veh/h		332			98			1795			2257	
Approach Delay, s/veh		79.3			82.6			21.6			5.1	
Approach LOS		E			F			C			A	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	16.2	107.1	6.9	29.8	15.2	108.1	21.1	15.7				
Change Period (Y+Rc), s	7.5	7.5	6.0	6.0	7.5	7.5	6.0	6.0				
Max Green Setting (Gmax), s	13.5	54.5	20.0	45.0	13.5	54.5	20.0	45.0				
Max Q Clear Time (g_c+I1), s	8.5	30.4	2.5	6.4	7.6	2.0	14.6	9.4				
Green Ext Time (p_c), s	0.2	13.7	0.0	0.3	0.2	26.9	0.4	0.3				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			18.9									
HCM 6th LOS			B									

Intersection						
Int Delay, s/veh	0.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗ ↑↑↑	↑↑↑			↑↑↑
Traffic Vol, veh/h	0	47	1250	44	0	1924
Future Vol, veh/h	0	47	1250	44	0	1924
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	49	1316	46	0	2025

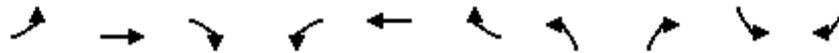
Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	-	681	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	7.14	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	3.92	-
Pot Cap-1 Maneuver	0	337	-
Stage 1	0	-	-
Stage 2	0	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	337	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	17.5	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBT
Capacity (veh/h)	-	-	337
HCM Lane V/C Ratio	-	-	0.147
HCM Control Delay (s)	-	-	17.5
HCM Lane LOS	-	-	C
HCM 95th %tile Q(veh)	-	-	0.5

Timings  
4: Sample Road & US 441

BY AM  
12/15/2022

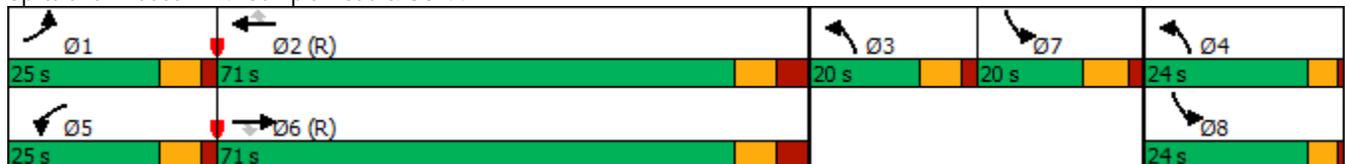


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBR	SBL	SBR	Ø3	Ø4
Lane Configurations	↖↗	↑↑↑	↖	↖↗	↑↑↑	↖	↖↗	↖	↖↗	↖		
Traffic Volume (vph)	110	1950	193	132	1260	236	179	172	293	106		
Future Volume (vph)	110	1950	193	132	1260	236	179	172	293	106		
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	Free	Prot	Free		
Protected Phases	1	6		5	2		3 4		7 8		3	4
Permitted Phases			6			2		Free		Free		
Detector Phase	1	6	6	5	2	2	3 4		7 8			
Switch Phase												
Minimum Initial (s)	6.0	10.0	10.0	6.0	10.0	10.0					6.0	5.0
Minimum Split (s)	18.0	19.0	19.0	13.0	27.0	27.0					13.0	45.5
Total Split (s)	25.0	71.0	71.0	25.0	71.0	71.0					20.0	24.0
Total Split (%)	15.6%	44.4%	44.4%	15.6%	44.4%	44.4%					13%	15%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0					5.0	3.5
All-Red Time (s)	2.0	4.0	4.0	2.0	4.0	4.0					2.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0						
Total Lost Time (s)	7.0	9.0	9.0	7.0	9.0	9.0						
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag					Lead	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes					Yes	
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min					None	None
Act Effct Green (s)	10.8	79.9	79.9	11.8	80.9	80.9	17.4	160.0	26.2	160.0		
Actuated g/C Ratio	0.07	0.50	0.50	0.07	0.51	0.51	0.11	1.00	0.16	1.00		
v/c Ratio	0.50	0.81	0.23	0.55	0.52	0.27	0.50	0.11	0.55	0.07		
Control Delay	79.3	37.6	3.5	79.5	27.9	3.3	50.4	0.1	65.3	0.1		
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Total Delay	79.3	37.6	3.5	79.5	27.9	3.3	50.4	0.1	65.3	0.1		
LOS	E	D	A	E	C	A	D	A	E	A		
Approach Delay		36.7			28.5							
Approach LOS		D			C							

Intersection Summary

Cycle Length: 160  
 Actuated Cycle Length: 160  
 Offset: 33 (21%), Referenced to phase 2:WBT and 6:EBT, Start of Green  
 Natural Cycle: 155  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.81  
 Intersection Signal Delay: 34.0  
 Intersection LOS: C  
 Intersection Capacity Utilization 70.6%  
 ICU Level of Service C  
 Analysis Period (min) 15

Splits and Phases: 4: Sample Road & US 441



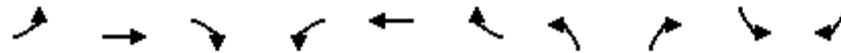
Timings  
4: Sample Road & US 441

BY AM  
12/15/2022

Lane Group	Ø7	Ø8
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Turn Type		
Protected Phases	7	8
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	6.0	5.0
Minimum Split (s)	48.5	22.5
Total Split (s)	20.0	24.0
Total Split (%)	13%	15%
Yellow Time (s)	5.5	3.5
All-Red Time (s)	2.0	1.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lag	
Lead-Lag Optimize?	Yes	
Recall Mode	None	None
Act Effect Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Intersection Summary		

Queues  
4: Sample Road & US 441

BY AM  
12/15/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBR	SBL	SBR
Lane Group Flow (vph)	116	2053	203	139	1326	248	188	181	308	112
v/c Ratio	0.50	0.81	0.23	0.55	0.52	0.27	0.50	0.11	0.55	0.07
Control Delay	79.3	37.6	3.5	79.5	27.9	3.3	50.4	0.1	65.3	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	79.3	37.6	3.5	79.5	27.9	3.3	50.4	0.1	65.3	0.1
Queue Length 50th (ft)	54	565	0	64	290	0	68	0	137	0
Queue Length 95th (ft)	84	690	42	96	364	45	94	0	178	0
Internal Link Dist (ft)		858			1521					
Turn Bay Length (ft)	350		430	350		400	400		400	
Base Capacity (vph)	386	2537	891	386	2571	922	643	1583	802	1583
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.30	0.81	0.23	0.36	0.52	0.27	0.29	0.11	0.38	0.07

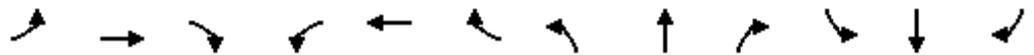
Intersection Summary

# HCM Signalized Intersection Capacity Analysis

## 4: Sample Road & US 441

BY AM

12/15/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↑↑↑	↖	↖↗	↑↑↑	↖	↖↗		↖	↖↗		↖
Traffic Volume (vph)	110	1950	193	132	1260	236	179	0	172	293	0	106
Future Volume (vph)	110	1950	193	132	1260	236	179	0	172	293	0	106
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	9.0	9.0	7.0	9.0	9.0	7.0		4.0	7.5		4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97		1.00	0.97		1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00		0.85	1.00		0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95		1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433		1583	3433		1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95		1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433		1583	3433		1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	116	2053	203	139	1326	248	188	0	181	308	0	112
RTOR Reduction (vph)	0	0	102	0	0	123	0	0	0	0	0	0
Lane Group Flow (vph)	116	2053	101	139	1326	125	188	0	181	308	0	112
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot		Free	Prot		Free
Protected Phases	1	6		5	2		3 4			7 8		
Permitted Phases			6			2			Free			Free
Actuated Green, G (s)	10.8	79.9	79.9	11.8	80.9	80.9	19.9		160.0	29.2		160.0
Effective Green, g (s)	10.8	79.9	79.9	11.8	80.9	80.9	19.9		160.0	29.2		160.0
Actuated g/C Ratio	0.07	0.50	0.50	0.07	0.51	0.51	0.12		1.00	0.18		1.00
Clearance Time (s)	7.0	9.0	9.0	7.0	9.0	9.0						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0						
Lane Grp Cap (vph)	231	2539	790	253	2571	800	426		1583	626		1583
v/s Ratio Prot	0.03	c0.40		c0.04	0.26		c0.05			c0.09		
v/s Ratio Perm			0.06			0.08			c0.11			0.07
v/c Ratio	0.50	0.81	0.13	0.55	0.52	0.16	0.44		0.11	0.49		0.07
Uniform Delay, d1	72.0	33.6	21.4	71.5	26.5	21.2	64.9		0.0	58.7		0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00
Incremental Delay, d2	1.7	2.9	0.3	2.4	0.7	0.4	0.7		0.1	0.6		0.1
Delay (s)	73.7	36.5	21.8	74.0	27.2	21.7	65.6		0.1	59.3		0.1
Level of Service	E	D	C	E	C	C	E		A	E		A
Approach Delay (s)		37.1			30.2			33.5			43.5	
Approach LOS		D			C			C			D	

### Intersection Summary

HCM 2000 Control Delay	34.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	35.0
Intersection Capacity Utilization	70.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Timings  
5: Sample Road & NW 54th Avenue

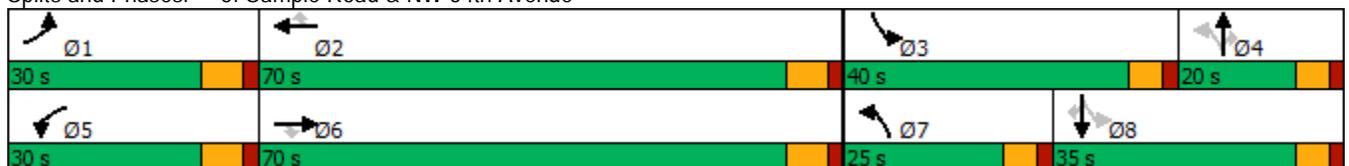
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12/15/2022

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	63	2090	58	223	1375	129	32	20	305	102	19	42
Future Volume (vph)	63	2090	58	223	1375	129	32	20	305	102	19	42
Turn Type	Prot	NA	Perm	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases			6			2	4		4	8		8
Detector Phase	1	6	6	5	2	2	7	4	4	3	8	8
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	5.0
Minimum Split (s)	12.0	37.0	37.0	12.0	37.0	37.0	11.0	44.0	44.0	11.0	44.0	44.0
Total Split (s)	30.0	70.0	70.0	30.0	70.0	70.0	25.0	20.0	20.0	40.0	35.0	35.0
Total Split (%)	18.8%	43.8%	43.8%	18.8%	43.8%	43.8%	15.6%	12.5%	12.5%	25.0%	21.9%	21.9%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag									
Lead-Lag Optimize?	Yes											
Recall Mode	None	Min	Min	None	Min	Min	None	None	None	None	None	None
Act Effect Green (s)	7.8	63.3	63.3	13.7	72.1	72.1	15.5	8.1	8.1	25.3	17.6	17.6
Actuated g/C Ratio	0.06	0.51	0.51	0.11	0.59	0.59	0.13	0.07	0.07	0.21	0.14	0.14
v/c Ratio	0.30	0.84	0.07	0.62	0.49	0.14	0.17	0.09	0.79	0.40	0.04	0.14
Control Delay	60.7	30.5	0.2	60.2	16.9	2.2	41.4	56.0	21.2	45.4	49.7	0.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	60.7	30.5	0.2	60.2	16.9	2.2	41.4	56.0	21.2	45.4	49.7	0.9
LOS	E	C	A	E	B	A	D	E	C	D	D	A
Approach Delay		30.5			21.4			25.0			34.5	
Approach LOS		C			C			C			C	

Intersection Summary

Cycle Length: 160  
 Actuated Cycle Length: 123  
 Natural Cycle: 135  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 0.84  
 Intersection Signal Delay: 26.7  
 Intersection Capacity Utilization 80.8%  
 Analysis Period (min) 15  
 Intersection LOS: C  
 ICU Level of Service D

Splits and Phases: 5: Sample Road & NW 54th Avenue



Queues  
5: Sample Road & NW 54th Avenue

BY AM  
12/15/2022



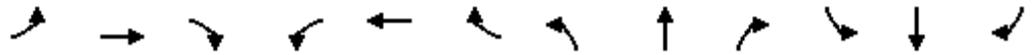
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	66	2200	61	235	1447	136	34	21	321	107	20	44
v/c Ratio	0.30	0.84	0.07	0.62	0.49	0.14	0.17	0.09	0.79	0.40	0.04	0.14
Control Delay	60.7	30.5	0.2	60.2	16.9	2.2	41.4	56.0	21.2	45.4	49.7	0.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	60.7	30.5	0.2	60.2	16.9	2.2	41.4	56.0	21.2	45.4	49.7	0.9
Queue Length 50th (ft)	22	446	0	80	206	0	19	7	0	63	6	0
Queue Length 95th (ft)	47	#666	0	129	312	23	46	20	86	113	18	0
Internal Link Dist (ft)		1521			667			578			917	
Turn Bay Length (ft)	200			340		460	160		160	180		190
Base Capacity (vph)	645	2617	887	645	2980	989	343	405	465	494	838	463
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.10	0.84	0.07	0.36	0.49	0.14	0.10	0.05	0.69	0.22	0.02	0.10

Intersection Summary

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

HCM 6th Signalized Intersection Summary  
5: Sample Road & NW 54th Avenue

BY AM  
12/15/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↑↑↑	↔	↔↔	↑↑↑	↔	↔	↑↑	↔	↔	↑↑	↔
Traffic Volume (veh/h)	63	2090	58	223	1375	129	32	20	305	102	19	42
Future Volume (veh/h)	63	2090	58	223	1375	129	32	20	305	102	19	42
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	66	2200	61	235	1447	136	34	21	321	107	20	44
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	129	2583	802	306	2845	883	269	419	187	300	562	251
Arrive On Green	0.04	0.51	0.51	0.09	0.56	0.56	0.03	0.12	0.12	0.07	0.16	0.16
Sat Flow, veh/h	3456	5106	1585	3456	5106	1585	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	66	2200	61	235	1447	136	34	21	321	107	20	44
Grp Sat Flow(s),veh/h/ln	1728	1702	1585	1728	1702	1585	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	2.2	44.4	2.3	7.9	20.8	4.9	2.0	0.6	14.0	6.1	0.6	2.9
Cycle Q Clear(g_c), s	2.2	44.4	2.3	7.9	20.8	4.9	2.0	0.6	14.0	6.1	0.6	2.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	129	2583	802	306	2845	883	269	419	187	300	562	251
V/C Ratio(X)	0.51	0.85	0.08	0.77	0.51	0.15	0.13	0.05	1.72	0.36	0.04	0.18
Avail Cap(c_a), veh/h	670	2710	841	670	2845	883	504	419	187	688	868	387
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	56.1	25.4	15.1	52.9	16.2	12.7	44.1	46.4	52.3	41.1	42.3	43.3
Incr Delay (d2), s/veh	3.1	2.7	0.0	4.1	0.2	0.1	0.2	0.0	344.2	0.7	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	17.9	0.9	3.6	7.9	1.8	0.9	0.3	23.4	2.8	0.3	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	59.2	28.2	15.1	57.0	16.4	12.8	44.3	46.5	396.5	41.9	42.3	43.6
LnGrp LOS	E	C	B	E	B	B	D	D	F	D	D	D
Approach Vol, veh/h		2327			1818			376				171
Approach Delay, s/veh		28.7			21.4			345.1				42.4
Approach LOS		C			C			F				D
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.4	73.1	14.1	20.0	17.5	67.0	9.4	24.8				
Change Period (Y+Rc), s	7.0	7.0	6.0	6.0	7.0	7.0	6.0	6.0				
Max Green Setting (Gmax), s	23.0	63.0	34.0	14.0	23.0	63.0	19.0	29.0				
Max Q Clear Time (g_c+I1), s	4.2	22.8	8.1	16.0	9.9	46.4	4.0	4.9				
Green Ext Time (p_c), s	0.1	15.5	0.3	0.0	0.6	13.7	0.0	0.2				

Intersection Summary

HCM 6th Ctrl Delay	51.7
HCM 6th LOS	D

Notes

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

Intersection												
Int Delay, s/veh	128.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑↑	↗	↘	↑↑↑				↗			↗
Traffic Vol, veh/h	20	2450	99	273	1764	9	0	0	200	0	0	4
Future Vol, veh/h	20	2450	99	273	1764	9	0	0	200	0	0	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	170	-	0	300	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	21	2579	104	287	1857	9	0	0	211	0	0	4

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1866	0	0	2683	0	0	-	-	1290	-	-	933
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	5.34	-	-	5.34	-	-	-	-	7.14	-	-	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.12	-	-	3.12	-	-	-	-	3.92	-	-	3.92
Pot Cap-1 Maneuver	*646	-	-	~ 56	-	-	0	0	~ 132	0	0	*514
Stage 1	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %	1	-	-	-	-	-	-	-	-	-	-	1
Mov Cap-1 Maneuver	*646	-	-	~ 56	-	-	-	-	~ 132	-	-	*514
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	267.6	\$ 359.7	12.1
HCM LOS			F	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	132	* 646	-	-	~ 56	-	-	514
HCM Lane V/C Ratio	1.595	0.033	-	-	5.132	-	-	0.008
HCM Control Delay (s)	\$ 359.7	10.8	-	-	\$ 2005.2	-	-	12.1
HCM Lane LOS	F	B	-	-	F	-	-	B
HCM 95th %tile Q(veh)	15.1	0.1	-	-	32.3	-	-	0

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

Intersection	
Intersection Delay, s/veh	8
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↕	↕	↕		↕	↕	↕	↕	↕	↕
Traffic Vol, veh/h	8	0	40	5	1	2	53	41	2	15	53	5
Future Vol, veh/h	8	0	40	5	1	2	53	41	2	15	53	5
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	8	0	42	5	1	2	56	43	2	16	56	5
Number of Lanes	0	1	1	1	1	0	1	1	1	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	3	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	3	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	3	2	2
HCM Control Delay	7.5	8	8.2	8
HCM LOS	A	A	A	A

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	0%	100%	0%	100%	0%	100%	0%	0%
Vol Thru, %	0%	100%	0%	0%	0%	0%	33%	0%	100%	0%
Vol Right, %	0%	0%	100%	0%	100%	0%	67%	0%	0%	100%
Sign Control	Stop									
Traffic Vol by Lane	53	41	2	8	40	5	3	15	53	5
LT Vol	53	0	0	8	0	5	0	15	0	0
Through Vol	0	41	0	0	0	0	1	0	53	0
RT Vol	0	0	2	0	40	0	2	0	0	5
Lane Flow Rate	56	43	2	8	42	5	3	16	56	5
Geometry Grp	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.083	0.058	0.002	0.013	0.051	0.008	0.004	0.024	0.076	0.006
Departure Headway (Hd)	5.354	4.853	4.152	5.523	4.324	5.599	4.633	5.398	4.897	4.196
Convergence, Y/N	Yes									
Cap	673	742	867	651	831	641	775	666	735	856
Service Time	3.054	2.553	1.852	3.234	2.035	3.313	2.347	3.107	2.606	1.905
HCM Lane V/C Ratio	0.083	0.058	0.002	0.012	0.051	0.008	0.004	0.024	0.076	0.006
HCM Control Delay	8.5	7.9	6.9	8.3	7.3	8.4	7.4	8.2	8	6.9
HCM Lane LOS	A	A	A	A	A	A	A	A	A	A
HCM 95th-tile Q	0.3	0.2	0	0	0.2	0	0	0.1	0.2	0

Timings

8: Sample Road & Lyons Road

BY AM

12/15/2022

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	432	1831	400	91	976	247	448	946	187	370	890	440
Future Volume (vph)	432	1831	400	91	976	247	448	946	187	370	890	440
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	1	6		5	2		7	4		3	8	1
Permitted Phases			6			2			4			8
Detector Phase	1	6	6	5	2	2	7	4	4	3	8	1
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0
Minimum Split (s)	12.5	45.5	45.5	12.5	45.5	45.5	12.5	46.5	46.5	12.5	46.5	12.5
Total Split (s)	27.0	71.0	71.0	18.0	62.0	62.0	28.0	43.0	43.0	28.0	43.0	27.0
Total Split (%)	16.9%	44.4%	44.4%	11.3%	38.8%	38.8%	17.5%	26.9%	26.9%	17.5%	26.9%	16.9%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
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	0.0
Total Lost Time (s)	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes											
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None	None	None
Act Effct Green (s)	20.1	65.3	65.3	9.3	54.5	54.5	20.5	35.2	35.2	20.2	34.9	62.5
Actuated g/C Ratio	0.13	0.41	0.41	0.06	0.34	0.34	0.13	0.22	0.22	0.13	0.22	0.39
v/c Ratio	1.06	0.93	0.49	0.48	0.59	0.37	1.08	0.89	0.40	0.90	0.84	0.69
Control Delay	123.5	54.2	7.5	80.9	45.3	5.4	127.9	71.1	10.7	111.1	59.0	28.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	123.5	54.2	7.5	80.9	45.3	5.4	127.9	71.1	10.7	111.1	59.0	28.5
LOS	F	D	A	F	D	A	F	E	B	F	E	C
Approach Delay		58.5			40.3			80.1			62.4	
Approach LOS		E			D			F			E	

Intersection Summary

Cycle Length: 160  
 Actuated Cycle Length: 160  
 Offset: 82 (51%), Referenced to phase 2:WBT and 6:EBT, Start of Green  
 Natural Cycle: 150  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 1.08  
 Intersection Signal Delay: 60.8  
 Intersection LOS: E  
 Intersection Capacity Utilization 94.5%  
 ICU Level of Service F  
 Analysis Period (min) 15

Splits and Phases: 8: Sample Road & Lyons Road





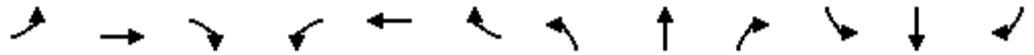
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	455	1927	421	96	1027	260	472	996	197	389	937	463
v/c Ratio	1.06	0.93	0.49	0.48	0.59	0.37	1.08	0.89	0.40	0.90	0.84	0.69
Control Delay	123.5	54.2	7.5	80.9	45.3	5.4	127.9	71.1	10.7	111.1	59.0	28.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	123.5	54.2	7.5	80.9	45.3	5.4	127.9	71.1	10.7	111.1	59.0	28.5
Queue Length 50th (ft)	~241	623	33	44	286	0	~247	328	9	188	313	307
Queue Length 95th (ft)	#343	#706	112	73	330	56	#352	379	72	m#261	330	m414
Internal Link Dist (ft)		2637			746			683			751	
Turn Bay Length (ft)	260		580	270		480	300		300	300		340
Base Capacity (vph)	431	2074	860	225	1732	710	439	1128	494	439	1128	668
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.06	0.93	0.49	0.43	0.59	0.37	1.08	0.88	0.40	0.89	0.83	0.69

#### Intersection Summary

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

HCM 6th Signalized Intersection Summary  
 8: Sample Road & Lyons Road

BY AM  
 12/15/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↗↘	↑↑↑	↗	↗↘	↑↑↑	↗	↗↘	↑↑↑	↗	↗↘	↑↑↑	↗
Traffic Volume (veh/h)	432	1831	400	91	976	247	448	946	187	370	890	440
Future Volume (veh/h)	432	1831	400	91	976	247	448	946	187	370	890	440
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	455	1927	421	96	1027	260	472	996	197	389	937	463
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	421	2158	670	138	1739	540	443	1152	358	430	1133	545
Arrive On Green	0.12	0.42	0.42	0.04	0.34	0.34	0.13	0.23	0.23	0.12	0.22	0.22
Sat Flow, veh/h	3456	5106	1585	3456	5106	1585	3456	5106	1585	3456	5106	1585
Grp Volume(v), veh/h	455	1927	421	96	1027	260	472	996	197	389	937	463
Grp Sat Flow(s),veh/h/ln	1728	1702	1585	1728	1702	1585	1728	1702	1585	1728	1702	1585
Q Serve(g_s), s	19.5	56.0	33.4	4.4	26.6	20.7	20.5	30.0	17.6	17.8	28.0	35.5
Cycle Q Clear(g_c), s	19.5	56.0	33.4	4.4	26.6	20.7	20.5	30.0	17.6	17.8	28.0	35.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	421	2158	670	138	1739	540	443	1152	358	430	1133	545
V/C Ratio(X)	1.08	0.89	0.63	0.70	0.59	0.48	1.07	0.86	0.55	0.91	0.83	0.85
Avail Cap(c_a), veh/h	421	2158	670	227	1739	540	443	1152	358	443	1133	545
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	70.3	42.8	36.3	75.9	43.5	41.6	69.8	59.6	54.8	69.1	59.3	48.7
Incr Delay (d2), s/veh	67.1	6.2	4.4	6.2	1.5	3.1	61.5	7.0	1.8	21.6	5.2	12.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.6	24.7	13.9	2.1	11.6	8.7	12.9	13.8	7.3	9.2	12.7	19.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	137.4	49.0	40.7	82.1	45.0	44.7	131.2	66.6	56.6	90.7	64.5	60.8
LnGrp LOS	F	D	D	F	D	D	F	E	E	F	E	E
Approach Vol, veh/h		2803			1383			1665			1789	
Approach Delay, s/veh		62.1			47.5			83.7			69.2	
Approach LOS		E			D			F			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	27.0	62.0	27.4	43.6	13.9	75.1	28.0	43.0				
Change Period (Y+Rc), s	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5				
Max Green Setting (Gmax), s	19.5	54.5	20.5	35.5	10.5	63.5	20.5	35.5				
Max Q Clear Time (g_c+I1), s	21.5	28.6	19.8	32.0	6.4	58.0	22.5	37.5				
Green Ext Time (p_c), s	0.0	9.2	0.1	2.2	0.1	4.9	0.0	0.0				

Intersection Summary

HCM 6th Ctrl Delay	65.8
HCM 6th LOS	E

Notes

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

Intersection												
Int Delay, s/veh	1.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↘		↗	↘	↑↑↑	↗	↘	↑↑↑	
Traffic Vol, veh/h	0	0	0	16	0	149	13	1600	24	130	1604	0
Future Vol, veh/h	0	0	0	16	0	149	13	1600	24	130	1604	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None									
Storage Length	-	-	-	0	-	160	210	-	210	200	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	17	0	157	14	1684	25	137	1688	0

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	2661	- 842 1688	0 0 1709 0 0
Stage 1	1712	- - -	- - - - -
Stage 2	949	- - -	- - - - -
Critical Hdwy	5.74	- 7.14 5.34	- - 5.34 - -
Critical Hdwy Stg 1	6.64	- - -	- - - - -
Critical Hdwy Stg 2	6.04	- - -	- - - - -
Follow-up Hdwy	3.82	- 3.92 3.12	- - 3.12 - -
Pot Cap-1 Maneuver	*106	0 *561 180	- - *706 - 0
Stage 1	*576	0 - -	- - - - 0
Stage 2	*304	0 - -	- - - - 0
Platoon blocked, %	1	1	- - 1 -
Mov Cap-1 Maneuver	*79	0 *561 180	- - *706 - -
Mov Cap-2 Maneuver	*176	0 - -	- - - - -
Stage 1	*531	0 - -	- - - - -
Stage 2	*245	0 - -	- - - - -

Approach	WB	NB	SB
HCM Control Delay, s	15.2	0.2	0.8
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	180	-	-	176	561	* 706	-
HCM Lane V/C Ratio	0.076	-	-	0.096	0.28	0.194	-
HCM Control Delay (s)	26.6	-	-	27.6	13.9	11.3	-
HCM Lane LOS	D	-	-	D	B	B	-
HCM 95th %tile Q(veh)	0.2	-	-	0.3	1.1	0.7	-

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

Intersection												
Int Delay, s/veh	0.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↵		↵	↵	↑↑↑	↵	↵	↑↑↑	
Traffic Vol, veh/h	0	0	0	49	0	59	0	1702	16	40	1710	0
Future Vol, veh/h	0	0	0	49	0	59	0	1702	16	40	1710	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None									
Storage Length	-	-	-	0	-	0	160	-	210	210	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	52	0	62	0	1792	17	42	1800	0

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	2596	- 896 1800	0 0 1809 0 0
Stage 1	1792	- - -	- - - - -
Stage 2	804	- - -	- - - - -
Critical Hdwy	5.74	- 7.14 5.34	- - 5.34 - -
Critical Hdwy Stg 1	6.64	- - -	- - - - -
Critical Hdwy Stg 2	6.04	- - -	- - - - -
Follow-up Hdwy	3.82	- 3.92 3.12	- - 3.12 - -
Pot Cap-1 Maneuver	*141	0 *529 158	- - *666 - 0
Stage 1	*543	0 - -	- - - - 0
Stage 2	*364	0 - -	- - - - 0
Platoon blocked, %	1	1	- - 1 -
Mov Cap-1 Maneuver	*133	0 *529 158	- - *666 - -
Mov Cap-2 Maneuver	*247	0 - -	- - - - -
Stage 1	*543	0 - -	- - - - -
Stage 2	*341	0 - -	- - - - -

Approach	WB	NB	SB
HCM Control Delay, s	17.6	0	0.2
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	158	-	-	247	529	* 666	-
HCM Lane V/C Ratio	-	-	-	0.209	0.117	0.063	-
HCM Control Delay (s)	0	-	-	23.4	12.7	10.8	-
HCM Lane LOS	A	-	-	C	B	B	-
HCM 95th %tile Q(veh)	0	-	-	0.8	0.4	0.2	-

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

Intersection												
Int Delay, s/veh	1.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↵	↵		↵	↵		↵	↑↑↑	↵	↵	↑↑↑	↵
Traffic Vol, veh/h	7	2	152	10	2	72	156	1608	16	24	1530	52
Future Vol, veh/h	7	2	152	10	2	72	156	1608	16	24	1530	52
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None									
Storage Length	200	-	-	0	-	-	200	-	220	200	-	400
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	2	160	11	2	76	164	1693	17	25	1611	55

Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	2667	3699	806	2716	3737	847	1666	0	0	1710	0	0
Stage 1	1661	1661	-	2021	2021	-	-	-	-	-	-	-
Stage 2	1006	2038	-	695	1716	-	-	-	-	-	-	-
Critical Hdwy	6.44	6.54	7.14	6.44	6.54	7.14	5.34	-	-	5.34	-	-
Critical Hdwy Stg 1	7.34	5.54	-	7.34	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.74	5.54	-	6.74	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.82	4.02	3.92	3.82	4.02	3.92	3.12	-	-	3.12	-	-
Pot Cap-1 Maneuver	*228	*45	*577	*228	36	*561	*726	-	-	*706	-	-
Stage 1	*593	*564	-	*290	348	-	-	-	-	-	-	-
Stage 2	*576	*339	-	*593	522	-	-	-	-	-	-	-
Platoon blocked, %	1	1	1	1	1	1	1	-	-	1	-	-
Mov Cap-1 Maneuver	*157	*34	*577	*131	27	*561	*726	-	-	*706	-	-
Mov Cap-2 Maneuver	*253	*164	-	*167	150	-	-	-	-	-	-	-
Stage 1	*459	*544	-	*224	270	-	-	-	-	-	-	-
Stage 2	*383	*262	-	*411	504	-	-	-	-	-	-	-

Approach	EB		WB			NB			SB		
HCM Control Delay, s	14.2		14.9			1			0.2		
HCM LOS	B		B								

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	* 726	-	-	253	559	167	522	* 706	-	-
HCM Lane V/C Ratio	0.226	-	-	0.029	0.29	0.063	0.149	0.036	-	-
HCM Control Delay (s)	11.4	-	-	19.7	14	28	13.1	10.3	-	-
HCM Lane LOS	B	-	-	C	B	D	B	B	-	-
HCM 95th %tile Q(veh)	0.9	-	-	0.1	1.2	0.2	0.5	0.1	-	-

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

Timings  
12: Lyons Road & Wiles Road

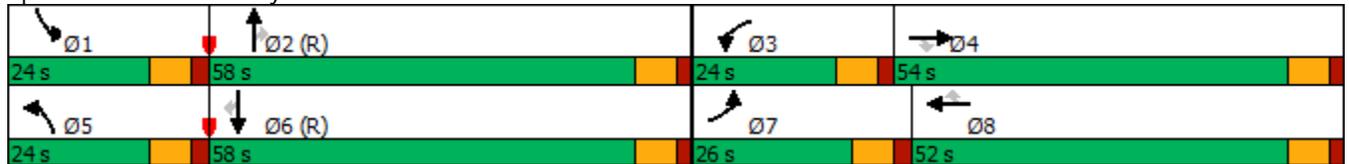
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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	302	757	309	347	607	236	152	919	544	298	979	306
Future Volume (vph)	302	757	309	347	607	236	152	919	544	298	979	306
Turn Type	Prot	NA	Perm									
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	6.0	6.0	5.0	6.0	6.0	5.0	12.0	12.0	5.0	12.0	12.0
Minimum Split (s)	12.0	52.0	52.0	12.0	52.0	52.0	12.0	50.0	50.0	12.0	50.0	50.0
Total Split (s)	26.0	54.0	54.0	24.0	52.0	52.0	24.0	58.0	58.0	24.0	58.0	58.0
Total Split (%)	16.3%	33.8%	33.8%	15.0%	32.5%	32.5%	15.0%	36.3%	36.3%	15.0%	36.3%	36.3%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Lead/Lag	Lead	Lag	Lag									
Lead-Lag Optimize?	Yes											
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min						
Act Effct Green (s)	18.1	43.6	43.6	19.4	44.9	44.9	12.8	51.7	51.7	17.3	56.2	56.2
Actuated g/C Ratio	0.11	0.27	0.27	0.12	0.28	0.28	0.08	0.32	0.32	0.11	0.35	0.35
v/c Ratio	0.82	0.83	0.54	0.88	0.64	0.41	0.58	0.59	0.84	0.85	0.58	0.43
Control Delay	71.7	59.2	25.2	90.3	54.1	8.3	75.1	71.3	60.5	90.1	44.3	7.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	71.7	59.2	25.2	90.3	54.1	8.3	75.1	71.3	60.5	90.1	44.3	7.4
LOS	E	E	C	F	D	A	E	E	E	F	D	A
Approach Delay		54.3			55.6			68.0			45.8	
Approach LOS		D			E			E			D	

Intersection Summary

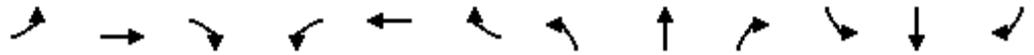
Cycle Length: 160  
 Actuated Cycle Length: 160  
 Offset: 70 (44%), Referenced to phase 2:NBT and 6:SBT, Start of Green  
 Natural Cycle: 140  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.88  
 Intersection Signal Delay: 56.1  
 Intersection LOS: E  
 Intersection Capacity Utilization 80.6%  
 ICU Level of Service D  
 Analysis Period (min) 15

Splits and Phases: 12: Lyons Road & Wiles Road



Queues  
12: Lyons Road & Wiles Road

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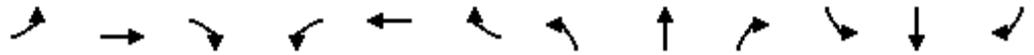
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	318	797	325	365	639	248	160	967	573	314	1031	322
v/c Ratio	0.82	0.83	0.54	0.88	0.64	0.41	0.58	0.59	0.84	0.85	0.58	0.43
Control Delay	71.7	59.2	25.2	90.3	54.1	8.3	75.1	71.3	60.5	90.1	44.3	7.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	71.7	59.2	25.2	90.3	54.1	8.3	75.1	71.3	60.5	90.1	44.3	7.4
Queue Length 50th (ft)	143	387	159	-176	276	10	78	268	318	147	282	16
Queue Length 95th (ft)	m182	m450	m212	#275	334	74	m92	m304	m369	#220	341	87
Internal Link Dist (ft)		2625			480			1249			449	
Turn Bay Length (ft)	340		370	210		220	290		300	290		310
Base Capacity (vph)	407	1039	626	416	1006	617	364	1663	689	377	1787	748
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.78	0.77	0.52	0.88	0.64	0.40	0.44	0.58	0.83	0.83	0.58	0.43

Intersection Summary

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

HCM 6th Signalized Intersection Summary  
 12: Lyons Road & Wiles Road

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↑↑	↗	↔↔	↑↑	↗	↔↔	↑↑↑	↗	↔↔	↑↑↑	↗
Traffic Volume (veh/h)	302	757	309	347	607	236	152	919	544	298	979	306
Future Volume (veh/h)	302	757	309	347	607	236	152	919	544	298	979	306
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	318	797	325	365	639	248	160	967	573	314	1031	322
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	363	915	408	367	919	410	207	1831	568	355	2050	636
Arrive On Green	0.10	0.26	0.26	0.11	0.26	0.26	0.06	0.36	0.36	0.10	0.40	0.40
Sat Flow, veh/h	3456	3554	1585	3456	3554	1585	3456	5106	1585	3456	5106	1585
Grp Volume(v), veh/h	318	797	325	365	639	248	160	967	573	314	1031	322
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1728	1777	1585	1728	1702	1585	1728	1702	1585
Q Serve(g_s), s	14.5	34.3	30.6	16.9	26.0	22.0	7.3	24.0	57.4	14.3	24.2	24.4
Cycle Q Clear(g_c), s	14.5	34.3	30.6	16.9	26.0	22.0	7.3	24.0	57.4	14.3	24.2	24.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	363	915	408	367	919	410	207	1831	568	355	2050	636
V/C Ratio(X)	0.88	0.87	0.80	0.99	0.70	0.60	0.77	0.53	1.01	0.88	0.50	0.51
Avail Cap(c_a), veh/h	410	1044	466	367	999	446	367	1831	568	367	2050	636
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	70.6	56.9	55.5	71.4	53.6	52.1	74.2	40.6	51.3	70.9	35.9	36.0
Incr Delay (d2), s/veh	17.4	7.4	8.3	45.3	1.9	2.0	6.1	1.1	39.8	21.3	0.9	2.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.3	16.4	13.2	9.8	12.0	9.1	3.4	10.4	29.0	7.4	10.4	10.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	87.9	64.3	63.8	116.8	55.5	54.1	80.3	41.7	91.1	92.2	36.8	38.8
LnGrp LOS	F	E	E	F	E	D	F	D	F	F	D	D
Approach Vol, veh/h		1440			1252			1700			1667	
Approach Delay, s/veh		69.4			73.1			62.0			47.6	
Approach LOS		E			E			E			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	23.4	64.4	24.0	48.2	16.6	71.2	23.8	48.4				
Change Period (Y+Rc), s	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0				
Max Green Setting (Gmax), s	17.0	51.0	17.0	47.0	17.0	51.0	19.0	45.0				
Max Q Clear Time (g_c+l1), s	16.3	59.4	18.9	36.3	9.3	26.4	16.5	28.0				
Green Ext Time (p_c), s	0.1	0.0	0.0	4.8	0.3	9.4	0.3	4.8				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				62.1								
HCM 6th LOS				E								

Intersection												
Int Delay, s/veh	1.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↕		↖	↕		↖		↖			
Traffic Vol, veh/h	16	1079	61	26	886	0	63	0	92	0	0	0
Future Vol, veh/h	16	1079	61	26	886	0	63	0	92	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	150	-	-	230	-	-	0	-	100	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	17	1136	64	27	933	0	66	0	97	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	933	0	0	1200	0	0	1723	-	600
Stage 1	-	-	-	-	-	-	1202	-	-
Stage 2	-	-	-	-	-	-	521	-	-
Critical Hdwy	4.14	-	-	4.14	-	-	6.84	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	5.84	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.84	-	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	-	3.32
Pot Cap-1 Maneuver	*1105	-	-	944	-	0	*319	0	*663
Stage 1	-	-	-	-	-	0	*583	0	-
Stage 2	-	-	-	-	-	0	*697	0	-
Platoon blocked, %	1	-	-	1	-	-	1	-	1
Mov Cap-1 Maneuver	*1105	-	-	944	-	-	*305	0	*663
Mov Cap-2 Maneuver	-	-	-	-	-	-	*418	0	-
Stage 1	-	-	-	-	-	-	*574	0	-
Stage 2	-	-	-	-	-	-	*677	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0.1	0.3	12.9
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT
Capacity (veh/h)	418	663	* 1105	-	-	944	-
HCM Lane V/C Ratio	0.159	0.146	0.015	-	-	0.029	-
HCM Control Delay (s)	15.2	11.4	8.3	-	-	8.9	-
HCM Lane LOS	C	B	A	-	-	A	-
HCM 95th %tile Q(veh)	0.6	0.5	0	-	-	0.1	-

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

Timings  
1: US 441 & Wiles Road

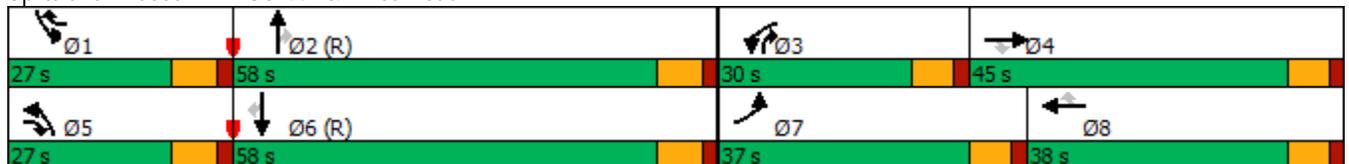
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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	668	842	190	387	711	147	440	1570	321	341	1388	442
Future Volume (vph)	668	842	190	387	711	147	440	1570	321	341	1388	442
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	Perm
Protected Phases	7	4	5	3	8	1	5	2	3	1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	5	3	8	1	5	2	3	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	5.0	5.0	10.0	5.0	5.0	10.0	10.0
Minimum Split (s)	12.5	43.5	12.5	12.5	43.0	12.5	12.5	43.5	12.5	12.5	43.5	43.5
Total Split (s)	37.0	45.0	27.0	30.0	38.0	27.0	27.0	58.0	30.0	27.0	58.0	58.0
Total Split (%)	23.1%	28.1%	16.9%	18.8%	23.8%	16.9%	16.9%	36.3%	18.8%	16.9%	36.3%	36.3%
Yellow Time (s)	5.0	5.0	5.5	5.0	5.0	5.5	5.5	5.5	5.0	5.5	5.5	5.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.5	7.0	7.0	7.5	7.5	7.5	7.0	7.5	7.5	7.5
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes											
Recall Mode	None	C-Min	None	None	C-Min	C-Min						
Act Effct Green (s)	30.0	39.0	65.5	22.0	31.0	57.1	19.5	50.9	80.5	19.1	50.5	50.5
Actuated g/C Ratio	0.19	0.24	0.41	0.14	0.19	0.36	0.12	0.32	0.50	0.12	0.32	0.32
v/c Ratio	1.09	1.03	0.29	0.86	1.09	0.25	1.11	1.02	0.41	0.88	0.91	0.68
Control Delay	122.2	96.0	20.3	51.9	116.2	39.0	133.7	86.4	19.0	91.5	61.9	24.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	122.2	96.0	20.3	51.9	116.2	39.0	133.7	86.4	19.0	91.5	61.9	24.0
LOS	F	F	C	D	F	D	F	F	B	F	E	C
Approach Delay		97.8			87.1			86.0			58.9	
Approach LOS		F			F			F			E	

Intersection Summary

Cycle Length: 160  
 Actuated Cycle Length: 160  
 Offset: 33 (21%), Referenced to phase 2:NBT and 6:SBT, Start of Green  
 Natural Cycle: 145  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 1.11  
 Intersection Signal Delay: 81.0  
 Intersection LOS: F  
 Intersection Capacity Utilization 102.9%  
 ICU Level of Service G  
 Analysis Period (min) 15

Splits and Phases: 1: US 441 & Wiles Road



Queues  
1: US 441 & Wiles Road

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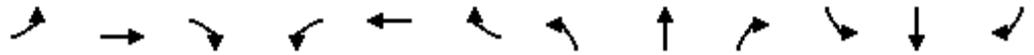
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	703	886	200	407	748	155	463	1653	338	359	1461	465
v/c Ratio	1.09	1.03	0.29	0.86	1.09	0.25	1.11	1.02	0.41	0.88	0.91	0.68
Control Delay	122.2	96.0	20.3	51.9	116.2	39.0	133.7	86.4	19.0	91.5	61.9	24.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	122.2	96.0	20.3	51.9	116.2	39.0	133.7	86.4	19.0	91.5	61.9	24.0
Queue Length 50th (ft)	~374	~467	73	174	~414	98	~255	~578	89	170	475	156
Queue Length 95th (ft)	#488	#587	130	m219	m#531	m129	#360	#668	210	#242	532	276
Internal Link Dist (ft)		609			2304			1352			507	
Turn Bay Length (ft)	320		250	360		420	300		560	320		190
Base Capacity (vph)	643	862	693	493	685	618	418	1618	843	418	1604	687
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.09	1.03	0.29	0.83	1.09	0.25	1.11	1.02	0.40	0.86	0.91	0.68

Intersection Summary

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

HCM 6th Signalized Intersection Summary  
 1: US 441 & Wiles Road

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 12/15/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↑↑	↗	↔↔	↑↑	↗	↔↔	↑↑↑	↗	↔↔	↑↑↑	↗
Traffic Volume (veh/h)	668	842	190	387	711	147	440	1570	321	341	1388	442
Future Volume (veh/h)	668	842	190	387	711	147	440	1570	321	341	1388	442
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	703	886	200	407	748	155	463	1653	338	359	1461	465
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	648	890	590	452	689	491	421	1642	717	401	1612	500
Arrive On Green	0.19	0.25	0.25	0.13	0.19	0.19	0.08	0.22	0.22	0.12	0.32	0.32
Sat Flow, veh/h	3456	3554	1585	3456	3554	1585	3456	5106	1585	3456	5106	1585
Grp Volume(v), veh/h	703	886	200	407	748	155	463	1653	338	359	1461	465
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1728	1777	1585	1728	1702	1585	1728	1702	1585
Q Serve(g_s), s	30.0	39.8	14.5	18.6	31.0	12.0	19.5	51.4	25.2	16.4	43.9	45.5
Cycle Q Clear(g_c), s	30.0	39.8	14.5	18.6	31.0	12.0	19.5	51.4	25.2	16.4	43.9	45.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	648	890	590	452	689	491	421	1642	717	401	1612	500
V/C Ratio(X)	1.08	1.00	0.34	0.90	1.09	0.32	1.10	1.01	0.47	0.90	0.91	0.93
Avail Cap(c_a), veh/h	648	890	590	497	689	491	421	1642	717	421	1612	500
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.67	0.67	0.67	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00	0.65	0.65	0.65	1.00	1.00	1.00
Uniform Delay (d), s/veh	65.0	59.9	36.1	68.5	64.5	42.2	73.5	62.8	35.7	69.8	52.5	53.0
Incr Delay (d2), s/veh	60.6	29.1	0.3	18.2	60.1	0.4	65.6	19.6	1.4	20.6	8.9	26.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	18.7	21.6	5.8	9.4	19.8	4.8	12.8	26.0	10.6	8.4	20.1	21.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	125.6	89.0	36.4	86.7	124.6	42.6	139.1	82.4	37.2	90.4	61.4	79.1
LnGrp LOS	F	F	D	F	F	D	F	F	D	F	E	E
Approach Vol, veh/h		1789			1310			2454			2285	
Approach Delay, s/veh		97.5			103.1			86.8			69.6	
Approach LOS		F			F			F			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	26.1	58.9	28.0	47.0	27.0	58.0	37.0	38.0				
Change Period (Y+Rc), s	7.5	7.5	7.0	7.0	7.5	7.5	7.0	7.0				
Max Green Setting (Gmax), s	19.5	50.5	23.0	38.0	19.5	50.5	30.0	31.0				
Max Q Clear Time (g_c+l1), s	18.4	53.4	20.6	41.8	21.5	47.5	32.0	33.0				
Green Ext Time (p_c), s	0.2	0.0	0.4	0.0	0.0	2.6	0.0	0.0				

Intersection Summary

HCM 6th Ctrl Delay	87.0
HCM 6th LOS	F

Notes

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

Timings  
2: US 441 & Cullum Road

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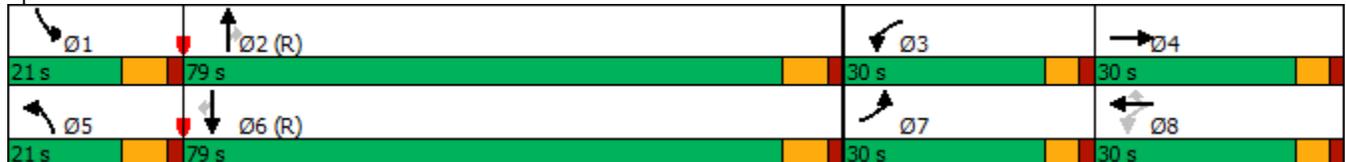


Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↖	↗	↖	↗↗	↗	↖↖	↗↗↗	↗	↖↖	↗↗↗	↗
Traffic Volume (vph)	351	33	44	78	154	237	1726	21	237	1519	320
Future Volume (vph)	351	33	44	78	154	237	1726	21	237	1519	320
Turn Type	Prot	NA	pm+pt	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8		5	2		1	6	
Permitted Phases			8		8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	6.0	4.0	6.0	6.0	5.0	15.0	15.0	5.0	15.0	15.0
Minimum Split (s)	11.0	48.0	10.0	48.0	48.0	12.5	42.5	42.5	12.5	42.5	42.5
Total Split (s)	30.0	30.0	30.0	30.0	30.0	21.0	79.0	79.0	21.0	79.0	79.0
Total Split (%)	18.8%	18.8%	18.8%	18.8%	18.8%	13.1%	49.4%	49.4%	13.1%	49.4%	49.4%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	5.5	5.5	5.5	5.5	5.5	5.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	7.5	7.5	7.5	7.5	7.5	7.5
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes										
Recall Mode	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	C-Min
Act Effect Green (s)	21.5	25.3	18.7	10.0	10.0	17.4	84.0	84.0	17.4	84.0	84.0
Actuated g/C Ratio	0.13	0.16	0.12	0.06	0.06	0.11	0.52	0.52	0.11	0.52	0.52
v/c Ratio	0.80	0.33	0.26	0.37	0.69	0.67	0.68	0.02	0.67	0.60	0.36
Control Delay	80.6	33.8	50.8	75.7	28.8	77.2	31.0	0.0	77.3	18.7	4.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	80.6	33.8	50.8	75.7	28.8	77.2	31.0	0.0	77.3	18.7	4.4
LOS	F	C	D	E	C	E	C	A	E	B	A
Approach Delay		70.5		45.5			36.2			23.2	
Approach LOS		E		D			D			C	

Intersection Summary

Cycle Length: 160  
 Actuated Cycle Length: 160  
 Offset: 48 (30%), Referenced to phase 2:NBT and 6:SBT, Start of Green  
 Natural Cycle: 145  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.80  
 Intersection Signal Delay: 34.3  
 Intersection Capacity Utilization 74.3%  
 Analysis Period (min) 15  
 Intersection LOS: C  
 ICU Level of Service D

Splits and Phases: 2: US 441 & Cullum Road



Queues  
2: US 441 & Cullum Road

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Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	369	102	46	82	162	249	1817	22	249	1599	337
v/c Ratio	0.80	0.33	0.26	0.37	0.69	0.67	0.68	0.02	0.67	0.60	0.36
Control Delay	80.6	33.8	50.8	75.7	28.8	77.2	31.0	0.0	77.3	18.7	4.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	80.6	33.8	50.8	75.7	28.8	77.2	31.0	0.0	77.3	18.7	4.4
Queue Length 50th (ft)	171	42	34	38	14	115	444	0	124	163	30
Queue Length 95th (ft)	221	93	62	63	82	155	572	0	m143	185	m36
Internal Link Dist (ft)		532		554			340			1352	
Turn Bay Length (ft)	250		240		330	330			260		210
Base Capacity (vph)	514	316	344	530	361	374	2669	884	374	2669	948
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.72	0.32	0.13	0.15	0.45	0.67	0.68	0.02	0.67	0.60	0.36

Intersection Summary

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

# HCM 6th Signalized Intersection Summary

## 2: US 441 & Cullum Road

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↔		↔	↑↑	↔	↔↔	↑↑↑	↔	↔↔	↑↑↑	↔
Traffic Volume (veh/h)	351	33	64	44	78	154	237	1726	21	237	1519	320
Future Volume (veh/h)	351	33	64	44	78	154	237	1726	21	237	1519	320
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	369	35	67	46	82	162	249	1817	22	249	1599	337
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	420	119	227	250	412	184	289	2609	810	286	2604	808
Arrive On Green	0.12	0.21	0.21	0.03	0.12	0.12	0.08	0.51	0.51	0.17	1.00	1.00
Sat Flow, veh/h	3456	574	1099	1781	3554	1585	3456	5106	1585	3456	5106	1585
Grp Volume(v), veh/h	369	0	102	46	82	162	249	1817	22	249	1599	337
Grp Sat Flow(s),veh/h/ln	1728	0	1673	1781	1777	1585	1728	1702	1585	1728	1702	1585
Q Serve(g_s), s	16.8	0.0	8.2	3.6	3.3	16.1	11.4	43.2	1.1	11.2	0.0	0.0
Cycle Q Clear(g_c), s	16.8	0.0	8.2	3.6	3.3	16.1	11.4	43.2	1.1	11.2	0.0	0.0
Prop In Lane	1.00		0.66	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	420	0	345	250	412	184	289	2609	810	286	2604	808
V/C Ratio(X)	0.88	0.00	0.30	0.18	0.20	0.88	0.86	0.70	0.03	0.87	0.61	0.42
Avail Cap(c_a), veh/h	518	0	345	462	533	238	292	2609	810	292	2604	808
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(l)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.43	0.43	0.43
Uniform Delay (d), s/veh	69.1	0.0	53.6	59.7	64.0	69.6	72.4	29.7	19.4	65.9	0.0	0.0
Incr Delay (d2), s/veh	13.7	0.0	0.5	0.3	0.2	24.7	22.0	1.6	0.1	11.6	0.5	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.3	0.0	3.6	1.7	1.5	7.8	6.0	18.1	0.4	5.1	0.1	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	82.8	0.0	54.1	60.1	64.2	94.3	94.3	31.3	19.5	77.5	0.5	0.7
LnGrp LOS	F	A	D	E	E	F	F	C	B	E	A	A
Approach Vol, veh/h		471			290			2088			2185	
Approach Delay, s/veh		76.6			80.4			38.7			9.3	
Approach LOS		E			F			D			A	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	20.8	89.2	10.9	39.0	20.9	89.1	25.4	24.6				
Change Period (Y+Rc), s	7.5	7.5	6.0	6.0	7.5	7.5	6.0	6.0				
Max Green Setting (Gmax), s	13.5	71.5	24.0	24.0	13.5	71.5	24.0	24.0				
Max Q Clear Time (g_c+l1), s	13.2	45.2	5.6	10.2	13.4	2.0	18.8	18.1				
Green Ext Time (p_c), s	0.0	16.2	0.1	0.4	0.0	23.4	0.6	0.5				

### Intersection Summary

HCM 6th Ctrl Delay	31.9
HCM 6th LOS	C

### Notes

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

Intersection						
Int Delay, s/veh	1.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗ ↑↑↑	↗ ↑↑↑			↗ ↑↑↑
Traffic Vol, veh/h	0	158	1379	74	0	1725
Future Vol, veh/h	0	158	1379	74	0	1725
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	166	1452	78	0	1816

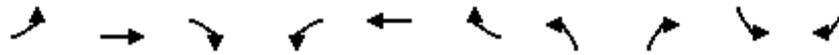
Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	-	765	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	7.14	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	3.92	-
Pot Cap-1 Maneuver	0	297	-
Stage 1	0	-	-
Stage 2	0	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	-	297	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	31.5	0	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBT
Capacity (veh/h)	-	-	297
HCM Lane V/C Ratio	-	-	0.56
HCM Control Delay (s)	-	-	31.5
HCM Lane LOS	-	-	D
HCM 95th %tile Q(veh)	-	-	3.2

Timings  
4: Sample Road & US 441

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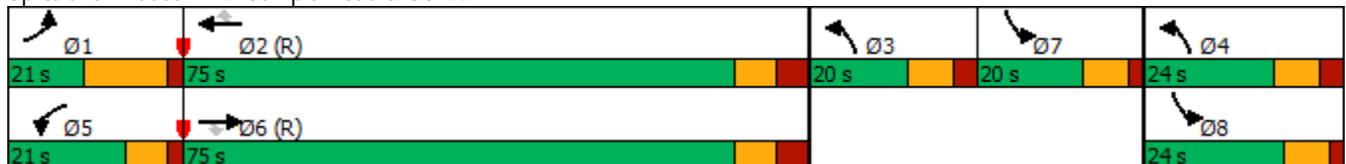


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBR	SBL	SBR	Ø3	Ø4
Lane Configurations	↖↗	↑↑↑	↗	↖↗	↑↑↑	↗	↖↗	↗	↖↗	↗		
Traffic Volume (vph)	202	1642	112	145	1898	299	165	123	229	244		
Future Volume (vph)	202	1642	112	145	1898	299	165	123	229	244		
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	Free	Prot	Free		
Protected Phases	1	6		5	2		3 4		7 8		3	4
Permitted Phases			6			2		Free		Free		
Detector Phase	1	6	6	5	2	2	3 4		7 8			
Switch Phase												
Minimum Initial (s)	6.0	10.0	10.0	6.0	10.0	10.0					6.0	6.0
Minimum Split (s)	18.0	19.0	19.0	13.0	27.0	27.0					49.5	49.5
Total Split (s)	21.0	75.0	75.0	21.0	75.0	75.0					20.0	24.0
Total Split (%)	13.1%	46.9%	46.9%	13.1%	46.9%	46.9%					13%	15%
Yellow Time (s)	10.0	5.0	5.0	5.0	5.0	5.0					5.5	5.5
All-Red Time (s)	2.0	4.0	4.0	2.0	4.0	4.0					3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0						
Total Lost Time (s)	12.0	9.0	9.0	7.0	9.0	9.0						
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag					Lead	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes					Yes	
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min					None	None
Act Effct Green (s)	17.7	76.8	76.8	12.5	66.6	66.6	17.7	160.0	28.0	160.0		
Actuated g/C Ratio	0.11	0.48	0.48	0.08	0.42	0.42	0.11	1.00	0.18	1.00		
v/c Ratio	0.56	0.71	0.13	0.57	0.94	0.37	0.46	0.08	0.40	0.16		
Control Delay	74.0	35.3	0.3	79.4	55.2	4.1	49.1	0.1	60.7	0.2		
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Total Delay	74.0	35.3	0.3	79.4	55.2	4.1	49.1	0.1	60.7	0.2		
LOS	E	D	A	E	E	A	D	A	E	A		
Approach Delay		37.3			50.2							
Approach LOS		D			D							

Intersection Summary

Cycle Length: 160  
 Actuated Cycle Length: 160  
 Offset: 5 (3%), Referenced to phase 2:WBT and 6:EBT, Start of Green  
 Natural Cycle: 195  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.94  
 Intersection Signal Delay: 42.0  
 Intersection LOS: D  
 Intersection Capacity Utilization 72.7%  
 ICU Level of Service C  
 Analysis Period (min) 15

Splits and Phases: 4: Sample Road & US 441



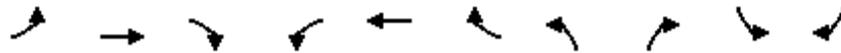
Timings  
 4: Sample Road & US 441

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Lane Group	Ø7	Ø8
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Turn Type		
Protected Phases	7	8
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	6.0	6.0
Minimum Split (s)	48.5	48.5
Total Split (s)	20.0	24.0
Total Split (%)	13%	15%
Yellow Time (s)	5.5	5.5
All-Red Time (s)	2.0	2.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lag	
Lead-Lag Optimize?	Yes	
Recall Mode	None	None
Act Effect Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Intersection Summary		

## 4: Sample Road &amp; US 441

12/15/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBR	SBL	SBR
Lane Group Flow (vph)	213	1728	118	153	1998	315	174	129	241	257
v/c Ratio	0.56	0.71	0.13	0.57	0.94	0.37	0.46	0.08	0.40	0.16
Control Delay	74.0	35.3	0.3	79.4	55.2	4.1	49.1	0.1	60.7	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	74.0	35.3	0.3	79.4	55.2	4.1	49.1	0.1	60.7	0.2
Queue Length 50th (ft)	97	457	0	71	648	0	61	0	103	0
Queue Length 95th (ft)	139	533	0	104	#720	53	89	0	142	0
Internal Link Dist (ft)		858			1521					
Turn Bay Length (ft)	350		430	350		400	400		400	
Base Capacity (vph)	378	2440	878	308	2116	843	579	1583	756	1583
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.56	0.71	0.13	0.50	0.94	0.37	0.30	0.08	0.32	0.16

## Intersection Summary

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

HCM Signalized Intersection Capacity Analysis  
4: Sample Road & US 441

BY PM  
12/15/2022

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	 	  		 	  		 			 			
Traffic Volume (vph)	202	1642	112	145	1898	299	165	0	123	229	0	244	
Future Volume (vph)	202	1642	112	145	1898	299	165	0	123	229	0	244	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	12.0	9.0	9.0	7.0	9.0	9.0	8.5		4.0	7.5		4.0	
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97		1.00	0.97		1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00		0.85	1.00		0.85	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95		1.00	
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433		1583	3433		1583	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95		1.00	
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433		1583	3433		1583	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	
Adj. Flow (vph)	213	1728	118	153	1998	315	174	0	129	241	0	257	
RTOR Reduction (vph)	0	0	61	0	0	184	0	0	0	0	0	0	
Lane Group Flow (vph)	213	1728	57	153	1998	131	174	0	129	241	0	257	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot		Free	Prot		Free	
Protected Phases	1	6		5	2		3 4			7 8			
Permitted Phases			6			2			Free			Free	
Actuated Green, G (s)	17.7	76.8	76.8	12.5	66.6	66.6	17.7		160.0	28.0		160.0	
Effective Green, g (s)	17.7	76.8	76.8	12.5	66.6	66.6	17.7		160.0	28.0		160.0	
Actuated g/C Ratio	0.11	0.48	0.48	0.08	0.42	0.42	0.11		1.00	0.18		1.00	
Clearance Time (s)	12.0	9.0	9.0	7.0	9.0	9.0							
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0							
Lane Grp Cap (vph)	379	2440	759	268	2116	658	379		1583	600		1583	
v/s Ratio Prot	c0.06	c0.34		0.04	c0.39		c0.05			c0.07			
v/s Ratio Perm			0.04			0.08			0.08			0.16	
v/c Ratio	0.56	0.71	0.07	0.57	0.94	0.20	0.46		0.08	0.40		0.16	
Uniform Delay, d1	67.5	32.8	22.4	71.2	44.9	29.7	66.7		0.0	58.6		0.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	
Incremental Delay, d2	1.9	1.8	0.2	2.9	10.2	0.7	0.9		0.1	0.4		0.2	
Delay (s)	69.4	34.5	22.6	74.1	55.1	30.4	67.5		0.1	59.0		0.2	
Level of Service	E	C	C	E	E	C	E		A	E		A	
Approach Delay (s)		37.5			53.2			38.8			28.7		
Approach LOS		D			D			D			C		
<b>Intersection Summary</b>													
HCM 2000 Control Delay			44.0									HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio			0.82										
Actuated Cycle Length (s)			160.0									Sum of lost time (s)	45.5
Intersection Capacity Utilization			72.7%									ICU Level of Service	C
Analysis Period (min)			15										

c Critical Lane Group

Timings  
5: Sample Road & NW 54th Avenue

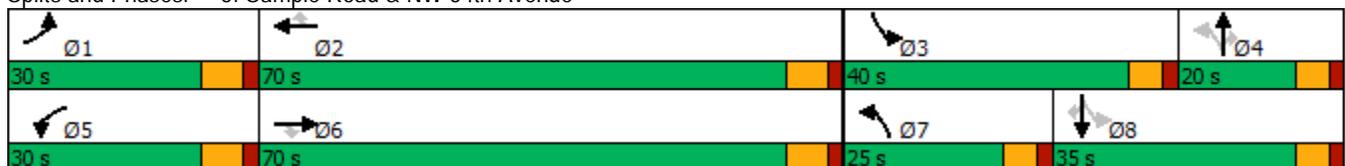
BY PM  
12/15/2022

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	168	1557	59	406	1905	291	133	45	301	225	51	89
Future Volume (vph)	168	1557	59	406	1905	291	133	45	301	225	51	89
Turn Type	Prot	NA	Perm	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases			6			2	4		4	8		8
Detector Phase	1	6	6	5	2	2	7	4	4	3	8	8
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	5.0
Minimum Split (s)	12.0	37.0	37.0	12.0	37.0	37.0	11.0	44.0	44.0	11.0	44.0	44.0
Total Split (s)	30.0	70.0	70.0	30.0	70.0	70.0	25.0	20.0	20.0	40.0	35.0	35.0
Total Split (%)	18.8%	43.8%	43.8%	18.8%	43.8%	43.8%	15.6%	12.5%	12.5%	25.0%	21.9%	21.9%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag									
Lead-Lag Optimize?	Yes											
Recall Mode	None	Min	Min	None	Min	Min	None	None	None	None	None	None
Act Effect Green (s)	12.5	59.5	59.5	21.1	68.0	68.0	23.0	8.7	8.7	35.2	15.6	15.6
Actuated g/C Ratio	0.09	0.44	0.44	0.15	0.50	0.50	0.17	0.06	0.06	0.26	0.11	0.11
v/c Ratio	0.56	0.74	0.08	0.81	0.79	0.33	0.52	0.21	0.81	0.67	0.13	0.33
Control Delay	68.5	35.9	0.2	69.6	32.8	3.4	48.5	65.8	24.9	52.8	56.8	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	68.5	35.9	0.2	69.6	32.8	3.4	48.5	65.8	24.9	52.8	56.8	8.2
LOS	E	D	A	E	C	A	D	E	C	D	E	A
Approach Delay		37.8			35.3			35.3			42.5	
Approach LOS		D			D			D			D	

Intersection Summary

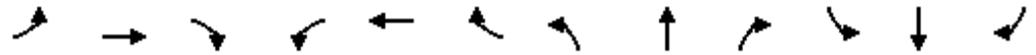
Cycle Length: 160  
 Actuated Cycle Length: 136.7  
 Natural Cycle: 115  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 0.81  
 Intersection Signal Delay: 36.6  
 Intersection LOS: D  
 Intersection Capacity Utilization 77.5%  
 ICU Level of Service D  
 Analysis Period (min) 15

Splits and Phases: 5: Sample Road & NW 54th Avenue



Queues  
5: Sample Road & NW 54th Avenue

BY PM  
12/15/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	177	1639	62	427	2005	306	140	47	317	237	54	94
v/c Ratio	0.56	0.74	0.08	0.81	0.79	0.33	0.52	0.21	0.81	0.67	0.13	0.33
Control Delay	68.5	35.9	0.2	69.6	32.8	3.4	48.5	65.8	24.9	52.8	56.8	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	68.5	35.9	0.2	69.6	32.8	3.4	48.5	65.8	24.9	52.8	56.8	8.2
Queue Length 50th (ft)	70	389	0	168	454	0	91	18	7	164	21	0
Queue Length 95th (ft)	114	524	0	#265	658	49	146	41	101	242	41	30
Internal Link Dist (ft)		1521			667			578			917	
Turn Bay Length (ft)	200			340		460	160		160	180		190
Base Capacity (vph)	584	2371	818	584	2531	941	334	366	439	471	759	430
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.30	0.69	0.08	0.73	0.79	0.33	0.42	0.13	0.72	0.50	0.07	0.22

Intersection Summary

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

HCM 6th Signalized Intersection Summary  
5: Sample Road & NW 54th Avenue

BY PM  
12/15/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↑↑↑	↖	↖↗	↑↑↑	↖	↖	↑↑	↖	↖	↑↑	↖
Traffic Volume (veh/h)	168	1557	59	406	1905	291	133	45	301	225	51	89
Future Volume (veh/h)	168	1557	59	406	1905	291	133	45	301	225	51	89
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	177	1639	62	427	2005	306	140	47	317	237	54	94
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	240	2084	647	494	2459	763	345	392	175	395	565	252
Arrive On Green	0.07	0.41	0.41	0.14	0.48	0.48	0.09	0.11	0.11	0.13	0.16	0.16
Sat Flow, veh/h	3456	5106	1585	3456	5106	1585	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	177	1639	62	427	2005	306	140	47	317	237	54	94
Grp Sat Flow(s),veh/h/ln	1728	1702	1585	1728	1702	1585	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	6.4	35.5	3.1	15.3	42.6	15.7	8.7	1.5	14.0	14.4	1.6	6.7
Cycle Q Clear(g_c), s	6.4	35.5	3.1	15.3	42.6	15.7	8.7	1.5	14.0	14.4	1.6	6.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	240	2084	647	494	2459	763	345	392	175	395	565	252
V/C Ratio(X)	0.74	0.79	0.10	0.87	0.82	0.40	0.41	0.12	1.81	0.60	0.10	0.37
Avail Cap(c_a), veh/h	626	2533	786	626	2533	786	460	392	175	634	811	362
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	58.0	32.8	23.1	53.2	28.1	21.1	44.6	50.9	56.5	40.2	45.6	47.8
Incr Delay (d2), s/veh	4.4	1.4	0.1	10.1	2.1	0.3	0.8	0.1	388.1	1.5	0.1	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	14.7	1.2	7.3	17.4	5.9	3.9	0.7	24.4	6.5	0.7	2.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	62.4	34.2	23.2	63.3	30.2	21.5	45.4	51.1	444.6	41.6	45.7	48.7
LnGrp LOS	E	C	C	E	C	C	D	D	F	D	D	D
Approach Vol, veh/h		1878			2738			504			385	
Approach Delay, s/veh		36.4			34.4			297.0			43.9	
Approach LOS		D			C			F			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	15.8	68.2	23.0	20.0	25.1	58.8	16.8	26.2				
Change Period (Y+Rc), s	7.0	7.0	6.0	6.0	7.0	7.0	6.0	6.0				
Max Green Setting (Gmax), s	23.0	63.0	34.0	14.0	23.0	63.0	19.0	29.0				
Max Q Clear Time (g_c+I1), s	8.4	44.6	16.4	16.0	17.3	37.5	10.7	8.7				
Green Ext Time (p_c), s	0.5	14.5	0.6	0.0	0.8	14.3	0.2	0.5				

Intersection Summary

HCM 6th Ctrl Delay	59.8
HCM 6th LOS	E

Notes

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

Intersection												
Int Delay, s/veh	45.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑↑	↗	↘	↑↑↑				↗			↗
Traffic Vol, veh/h	4	1966	112	254	2686	37	0	0	188	0	0	10
Future Vol, veh/h	4	1966	112	254	2686	37	0	0	188	0	0	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	170	-	0	300	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	2069	118	267	2827	39	0	0	198	0	0	11

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	2866	0	0	2187	0	0	-	-	1035	-	-	1433
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	5.34	-	-	5.34	-	-	-	-	7.14	-	-	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.12	-	-	3.12	-	-	-	-	3.92	-	-	3.92
Pot Cap-1 Maneuver	*385	-	-	~ 100	-	-	0	0	~ 197	0	0	*306
Stage 1	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %	1	-	-	-	-	-	-	-	-	-	-	1
Mov Cap-1 Maneuver	*385	-	-	~ 100	-	-	-	-	~ 197	-	-	*306
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	72.3	115.2	17.2
HCM LOS			F	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	197	* 385	-	-	~ 100	-	-	306
HCM Lane V/C Ratio	1.005	0.011	-	-	2.674	-	-	0.034
HCM Control Delay (s)	115.2	14.5	-	-	\$ 847.8	-	-	17.2
HCM Lane LOS	F	B	-	-	F	-	-	C
HCM 95th %tile Q(veh)	8.7	0	-	-	24.9	-	-	0.1

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

Intersection	
Intersection Delay, s/veh	8.9
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖	↗	↖	↗		↖	↗	↗	↖	↗	↖
Traffic Vol, veh/h	17	1	111	5	19	16	127	79	3	8	59	5
Future Vol, veh/h	17	1	111	5	19	16	127	79	3	8	59	5
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	18	1	117	5	20	17	134	83	3	8	62	5
Number of Lanes	0	1	1	1	1	0	1	1	1	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	3	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	3	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	3	2	2
HCM Control Delay	8.4	8.4	9.4	8.7
HCM LOS	A	A	A	A

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	0%	94%	0%	100%	0%	100%	0%	0%
Vol Thru, %	0%	100%	0%	6%	0%	0%	54%	0%	100%	0%
Vol Right, %	0%	0%	100%	0%	100%	0%	46%	0%	0%	100%
Sign Control	Stop									
Traffic Vol by Lane	127	79	3	18	111	5	35	8	59	5
LT Vol	127	0	0	17	0	5	0	8	0	0
Through Vol	0	79	0	1	0	0	19	0	59	0
RT Vol	0	0	3	0	111	0	16	0	0	5
Lane Flow Rate	134	83	3	19	117	5	37	8	62	5
Geometry Grp	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.211	0.12	0.004	0.031	0.154	0.009	0.054	0.014	0.095	0.007
Departure Headway (Hd)	5.684	5.182	4.479	5.908	4.737	6.108	5.287	5.987	5.484	4.781
Convergence, Y/N	Yes									
Cap	630	689	795	605	755	584	674	596	651	744
Service Time	3.432	2.929	2.226	3.651	2.48	3.863	3.043	3.742	3.24	2.536
HCM Lane V/C Ratio	0.213	0.12	0.004	0.031	0.155	0.009	0.055	0.013	0.095	0.007
HCM Control Delay	10	8.6	7.2	8.8	8.3	8.9	8.3	8.8	8.8	7.6
HCM Lane LOS	A	A	A	A	A	A	A	A	A	A
HCM 95th-tile Q	0.8	0.4	0	0.1	0.5	0	0.2	0	0.3	0

Timings

8: Sample Road & Lyons Road

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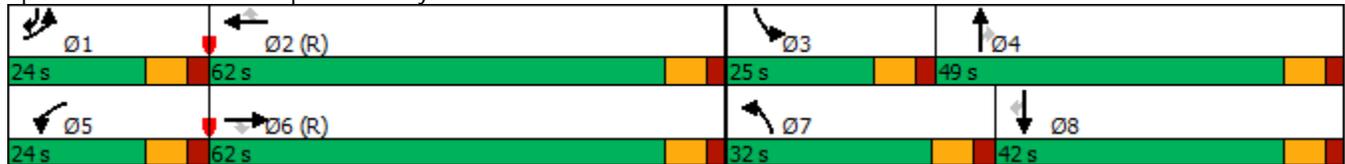
12/15/2022

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	379	1212	379	155	1852	354	473	1013	138	298	940	573
Future Volume (vph)	379	1212	379	155	1852	354	473	1013	138	298	940	573
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	1	6		5	2		7	4		3	8	1
Permitted Phases			6			2			4			8
Detector Phase	1	6	6	5	2	2	7	4	4	3	8	1
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0
Minimum Split (s)	12.5	45.5	45.5	12.5	45.5	45.5	12.5	46.5	46.5	12.5	46.5	12.5
Total Split (s)	24.0	62.0	62.0	24.0	62.0	62.0	32.0	49.0	49.0	25.0	42.0	24.0
Total Split (%)	15.0%	38.8%	38.8%	15.0%	38.8%	38.8%	20.0%	30.6%	30.6%	15.6%	26.3%	15.0%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
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	0.0
Total Lost Time (s)	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes											
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None	None	None
Act Effct Green (s)	16.7	58.3	58.3	12.9	54.5	54.5	24.5	41.7	41.7	17.1	34.3	58.5
Actuated g/C Ratio	0.10	0.36	0.36	0.08	0.34	0.34	0.15	0.26	0.26	0.11	0.21	0.37
v/c Ratio	1.11	0.69	0.51	0.59	1.13	0.51	0.95	0.81	0.28	0.86	0.91	0.96
Control Delay	143.6	45.9	11.5	79.5	112.0	12.8	94.7	61.0	7.8	109.2	63.6	44.6
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	143.6	45.9	11.5	79.5	112.0	12.8	94.7	61.0	7.8	109.2	63.6	44.6
LOS	F	D	B	E	F	B	F	E	A	F	E	D
Approach Delay		58.1			95.0			66.3			65.1	
Approach LOS		E			F			E			E	

Intersection Summary

Cycle Length: 160  
 Actuated Cycle Length: 160  
 Offset: 30 (19%), Referenced to phase 2:WBT and 6:EBT, Start of Green  
 Natural Cycle: 150  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 1.13  
 Intersection Signal Delay: 72.7  
 Intersection LOS: E  
 Intersection Capacity Utilization 103.5%  
 ICU Level of Service G  
 Analysis Period (min) 15

Splits and Phases: 8: Sample Road & Lyons Road





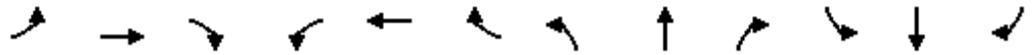
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	399	1276	399	163	1949	373	498	1066	145	314	989	603
v/c Ratio	1.11	0.69	0.51	0.59	1.13	0.51	0.95	0.81	0.28	0.86	0.91	0.96
Control Delay	143.6	45.9	11.5	79.5	112.0	12.8	94.7	61.0	7.8	109.2	63.6	44.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	143.6	45.9	11.5	79.5	112.0	12.8	94.7	61.0	7.8	109.2	63.6	44.6
Queue Length 50th (ft)	~218	365	54	76	~756	59	237	339	0	147	338	71
Queue Length 95th (ft)	#317	430	151	110	#836	150	#336	390	50	m#179	m364	m#620
Internal Link Dist (ft)		2637			746			683			751	
Turn Bay Length (ft)	260		580	270		480	300		300	300		340
Base Capacity (vph)	359	1853	775	354	1732	725	525	1324	519	375	1096	630
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.11	0.69	0.51	0.46	1.13	0.51	0.95	0.81	0.28	0.84	0.90	0.96

#### Intersection Summary

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

HCM 6th Signalized Intersection Summary  
 8: Sample Road & Lyons Road

BY PM  
 12/15/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↑↑↑	↔	↔↔	↑↑↑	↔	↔↔	↑↑↑	↔	↔↔	↑↑↑	↔
Traffic Volume (veh/h)	379	1212	379	155	1852	354	473	1013	138	298	940	573
Future Volume (veh/h)	379	1212	379	155	1852	354	473	1013	138	298	940	573
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	399	1276	399	163	1949	373	498	1066	145	314	989	603
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	356	1956	607	209	1739	540	529	1357	421	356	1101	505
Arrive On Green	0.10	0.38	0.38	0.06	0.34	0.34	0.15	0.27	0.27	0.10	0.22	0.22
Sat Flow, veh/h	3456	5106	1585	3456	5106	1585	3456	5106	1585	3456	5106	1585
Grp Volume(v), veh/h	399	1276	399	163	1949	373	498	1066	145	314	989	603
Grp Sat Flow(s),veh/h/ln	1728	1702	1585	1728	1702	1585	1728	1702	1585	1728	1702	1585
Q Serve(g_s), s	16.5	32.9	33.2	7.4	54.5	32.5	22.8	31.0	11.8	14.3	30.1	34.5
Cycle Q Clear(g_c), s	16.5	32.9	33.2	7.4	54.5	32.5	22.8	31.0	11.8	14.3	30.1	34.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	356	1956	607	209	1739	540	529	1357	421	356	1101	505
V/C Ratio(X)	1.12	0.65	0.66	0.78	1.12	0.69	0.94	0.79	0.34	0.88	0.90	1.19
Avail Cap(c_a), veh/h	356	1956	607	356	1739	540	529	1357	421	378	1101	505
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	71.8	40.6	40.7	74.1	52.8	45.5	67.0	54.5	47.5	70.8	61.0	54.5
Incr Delay (d2), s/veh	84.1	1.7	5.5	6.2	62.6	7.1	25.3	3.1	0.5	20.1	10.0	105.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.5	14.2	14.0	3.5	33.3	13.9	12.0	13.7	4.8	7.4	14.1	35.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	155.8	42.3	46.2	80.2	115.4	52.6	92.3	57.6	48.0	90.9	71.0	159.8
LnGrp LOS	F	D	D	F	F	D	F	E	D	F	E	F
Approach Vol, veh/h		2074			2485			1709			1906	
Approach Delay, s/veh		64.9			103.6			66.9			102.4	
Approach LOS		E			F			E			F	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	24.0	62.0	24.0	50.0	17.2	68.8	32.0	42.0				
Change Period (Y+Rc), s	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5				
Max Green Setting (Gmax), s	16.5	54.5	17.5	41.5	16.5	54.5	24.5	34.5				
Max Q Clear Time (g_c+l1), s	18.5	56.5	16.3	33.0	9.4	35.2	24.8	36.5				
Green Ext Time (p_c), s	0.0	0.0	0.1	4.8	0.3	10.6	0.0	0.0				

Intersection Summary

HCM 6th Ctrl Delay	85.8
HCM 6th LOS	F

Notes

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

Intersection												
Int Delay, s/veh	2.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↵		↵	↵	↑↑↑	↵	↵	↑↑↑	
Traffic Vol, veh/h	0	0	0	22	0	311	19	1653	44	98	1771	0
Future Vol, veh/h	0	0	0	22	0	311	19	1653	44	98	1771	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None									
Storage Length	-	-	-	0	-	160	210	-	210	200	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	23	0	327	20	1740	46	103	1864	0

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	2732	- 870 1864	0 0 1786 0 0
Stage 1	1780	- - -	- - - - -
Stage 2	952	- - -	- - - - -
Critical Hdwy	5.74	- 7.14 5.34	- - 5.34 - -
Critical Hdwy Stg 1	6.64	- - -	- - - - -
Critical Hdwy Stg 2	6.04	- - -	- - - - -
Follow-up Hdwy	3.82	- 3.92 3.12	- - 3.12 - -
Pot Cap-1 Maneuver	*99	0 *545 147	- - *686 - 0
Stage 1	*560	0 - -	- - - - 0
Stage 2	*303	0 - -	- - - - 0
Platoon blocked, %	1	1	- - 1 -
Mov Cap-1 Maneuver	*73	0 *545 147	- - *686 - -
Mov Cap-2 Maneuver	*174	0 - -	- - - - -
Stage 1	*484	0 - -	- - - - -
Stage 2	*258	0 - -	- - - - -

Approach	WB	NB	SB
HCM Control Delay, s	21.5	0.4	0.6
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	147	-	-	174	545	* 686	-
HCM Lane V/C Ratio	0.136	-	-	0.133	0.601	0.15	-
HCM Control Delay (s)	33.3	-	-	28.8	21	11.2	-
HCM Lane LOS	D	-	-	D	C	B	-
HCM 95th %tile Q(veh)	0.5	-	-	0.5	3.9	0.5	-

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

Intersection												
Int Delay, s/veh	0.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↵		↵	↵	↑↑↑	↵	↵	↑↑↑	
Traffic Vol, veh/h	0	0	0	28	0	29	0	1939	54	44	1895	0
Future Vol, veh/h	0	0	0	28	0	29	0	1939	54	44	1895	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None									
Storage Length	-	-	-	0	-	0	160	-	210	210	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	29	0	31	0	2041	57	46	1995	0

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	2931	- 1021	1995 0 0 2098 0 0
Stage 1	2041	- - -	- - - - - -
Stage 2	890	- - -	- - - - - -
Critical Hdwy	5.74	- 7.14	5.34 - - 5.34 - -
Critical Hdwy Stg 1	6.64	- - -	- - - - - -
Critical Hdwy Stg 2	6.04	- - -	- - - - - -
Follow-up Hdwy	3.82	- 3.92	3.12 - - 3.12 - -
Pot Cap-1 Maneuver	*89	0 *482	126 - - *606 - 0
Stage 1	*494	0 - -	- - - - - 0
Stage 2	*327	0 - -	- - - - - 0
Platoon blocked, %	1	1	- - 1 -
Mov Cap-1 Maneuver	*82	0 *482	126 - - *606 - -
Mov Cap-2 Maneuver	*206	0 - -	- - - - - -
Stage 1	*494	0 - -	- - - - - -
Stage 2	*302	0 - -	- - - - - -

Approach	WB	NB	SB
HCM Control Delay, s	19.1	0	0.3
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	126	-	-	206	482	*606	-
HCM Lane V/C Ratio	-	-	-	0.143	0.063	0.076	-
HCM Control Delay (s)	0	-	-	25.4	13	11.4	-
HCM Lane LOS	A	-	-	D	B	B	-
HCM 95th %tile Q(veh)	0	-	-	0.5	0.2	0.2	-

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

Intersection												
Int Delay, s/veh	1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↵	↵		↵	↵		↵	↑↑↑	↵	↵	↑↑↑	↵
Traffic Vol, veh/h	15	0	88	9	1	42	82	1868	20	54	1793	22
Future Vol, veh/h	15	0	88	9	1	42	82	1868	20	54	1793	22
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None									
Storage Length	200	-	-	0	-	-	200	-	220	200	-	400
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	16	0	93	9	1	44	86	1966	21	57	1887	23

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	2960	4160	944	3007	4162	983	1910	0	0	1987	0	0
Stage 1	2001	2001	-	2138	2138	-	-	-	-	-	-	-
Stage 2	959	2159	-	869	2024	-	-	-	-	-	-	-
Critical Hdwy	6.44	6.54	7.14	6.44	6.54	7.14	5.34	-	-	5.34	-	-
Critical Hdwy Stg 1	7.34	5.54	-	7.34	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.74	5.54	-	6.74	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.82	4.02	3.92	3.82	4.02	3.92	3.12	-	-	3.12	-	-
Pot Cap-1 Maneuver	*97	19	*514	*97	19	*498	*646	-	-	*626	-	-
Stage 1	*499	483	-	*410	421	-	-	-	-	-	-	-
Stage 2	*511	404	-	*527	464	-	-	-	-	-	-	-
Platoon blocked, %	1	1	1	1	1	1	1	-	-	1	-	-
Mov Cap-1 Maneuver	*73	15	*514	*66	15	*498	*646	-	-	*626	-	-
Mov Cap-2 Maneuver	*208	167	-	*180	167	-	-	-	-	-	-	-
Stage 1	*433	439	-	*355	365	-	-	-	-	-	-	-
Stage 2	*402	350	-	*393	422	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	15	15.6	0.5	0.3
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	* 646	-	-	208	514	180	476	* 626	-	-
HCM Lane V/C Ratio	0.134	-	-	0.076	0.18	0.053	0.095	0.091	-	-
HCM Control Delay (s)	11.4	-	-	23.7	13.5	26.1	13.4	11.3	-	-
HCM Lane LOS	B	-	-	C	B	D	B	B	-	-
HCM 95th %tile Q(veh)	0.5	-	-	0.2	0.7	0.2	0.3	0.3	-	-

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

Timings  
12: Lyons Road & Wiles Road

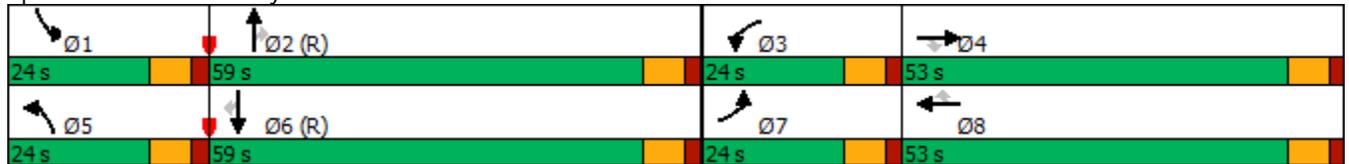
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12/15/2022

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	411	699	348	450	845	264	243	1309	318	206	1139	296
Future Volume (vph)	411	699	348	450	845	264	243	1309	318	206	1139	296
Turn Type	Prot	NA	Perm									
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	6.0	6.0	5.0	6.0	6.0	5.0	12.0	12.0	5.0	12.0	12.0
Minimum Split (s)	12.0	52.0	52.0	12.0	52.0	52.0	12.0	50.0	50.0	12.0	50.0	50.0
Total Split (s)	24.0	53.0	53.0	24.0	53.0	53.0	24.0	59.0	59.0	24.0	59.0	59.0
Total Split (%)	15.0%	33.1%	33.1%	15.0%	33.1%	33.1%	15.0%	36.9%	36.9%	15.0%	36.9%	36.9%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Lead/Lag	Lead	Lag	Lag									
Lead-Lag Optimize?	Yes											
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min						
Act Effct Green (s)	18.4	44.9	44.9	18.4	44.9	44.9	15.8	53.9	53.9	14.9	52.9	52.9
Actuated g/C Ratio	0.12	0.28	0.28	0.12	0.28	0.28	0.10	0.34	0.34	0.09	0.33	0.33
v/c Ratio	1.10	0.74	0.61	1.20	0.90	0.47	0.76	0.81	0.47	0.68	0.71	0.45
Control Delay	143.6	30.3	5.9	169.4	67.7	15.2	76.8	80.2	35.9	81.2	49.9	11.3
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	143.6	30.3	5.9	169.4	67.7	15.2	76.8	80.2	35.9	81.2	49.9	11.3
LOS	F	C	A	F	E	B	E	F	D	F	D	B
Approach Delay		56.4			88.2			72.2			46.9	
Approach LOS		E			F			E			D	

Intersection Summary

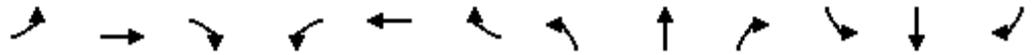
Cycle Length: 160  
 Actuated Cycle Length: 160  
 Offset: 7 (4%), Referenced to phase 2:NBT and 6:SBT, Start of Green  
 Natural Cycle: 140  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 1.20  
 Intersection Signal Delay: 66.1  
 Intersection LOS: E  
 Intersection Capacity Utilization 89.6%  
 ICU Level of Service E  
 Analysis Period (min) 15

Splits and Phases: 12: Lyons Road & Wiles Road



Queues  
12: Lyons Road & Wiles Road

BY PM  
12/15/2022



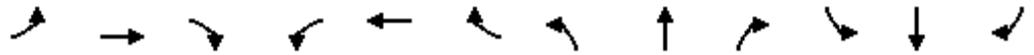
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	433	736	366	474	889	278	256	1378	335	217	1199	312
v/c Ratio	1.10	0.74	0.61	1.20	0.90	0.47	0.76	0.81	0.47	0.68	0.71	0.45
Control Delay	143.6	30.3	5.9	169.4	67.7	15.2	76.8	80.2	35.9	81.2	49.9	11.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	143.6	30.3	5.9	169.4	67.7	15.2	76.8	80.2	35.9	81.2	49.9	11.3
Queue Length 50th (ft)	~240	260	49	~286	412	50	125	449	139	101	358	40
Queue Length 95th (ft)	m#274	m315	m58	#390	491	128	m154	m485	m193	141	408	118
Internal Link Dist (ft)		2625			480			1249			449	
Turn Bay Length (ft)	340		370	210		220	290		300	290		310
Base Capacity (vph)	394	1017	611	394	1017	601	364	1711	709	364	1682	691
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.10	0.72	0.60	1.20	0.87	0.46	0.70	0.81	0.47	0.60	0.71	0.45

**Intersection Summary**

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

HCM 6th Signalized Intersection Summary  
 12: Lyons Road & Wiles Road

BY PM  
 12/15/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↑↑	↖	↖↗	↑↑	↖	↖↗	↑↑↑	↖	↖↗	↑↑↑	↖
Traffic Volume (veh/h)	411	699	348	450	845	264	243	1309	318	206	1139	296
Future Volume (veh/h)	411	699	348	450	845	264	243	1309	318	206	1139	296
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	433	736	366	474	889	278	256	1378	335	217	1199	312
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	367	973	434	367	973	434	301	1882	584	264	1826	567
Arrive On Green	0.11	0.27	0.27	0.11	0.27	0.27	0.09	0.37	0.37	0.08	0.36	0.36
Sat Flow, veh/h	3456	3554	1585	3456	3554	1585	3456	5106	1585	3456	5106	1585
Grp Volume(v), veh/h	433	736	366	474	889	278	256	1378	335	217	1199	312
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1728	1777	1585	1728	1702	1585	1728	1702	1585
Q Serve(g_s), s	17.0	30.3	34.9	17.0	38.8	24.7	11.7	37.3	27.1	9.9	31.5	25.2
Cycle Q Clear(g_c), s	17.0	30.3	34.9	17.0	38.8	24.7	11.7	37.3	27.1	9.9	31.5	25.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	367	973	434	367	973	434	301	1882	584	264	1826	567
V/C Ratio(X)	1.18	0.76	0.84	1.29	0.91	0.64	0.85	0.73	0.57	0.82	0.66	0.55
Avail Cap(c_a), veh/h	367	1022	456	367	1022	456	367	1882	584	367	1826	567
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	71.5	53.2	54.9	71.5	56.3	51.2	72.0	43.7	40.4	72.8	43.1	41.1
Incr Delay (d2), s/veh	105.4	3.1	13.0	149.9	11.9	2.8	14.6	2.6	4.1	10.1	1.9	3.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.9	14.1	15.5	15.2	19.0	10.2	5.8	16.3	11.3	4.8	13.7	10.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	176.9	56.3	67.9	221.4	68.2	54.0	86.6	46.2	44.5	83.0	45.0	44.9
LnGrp LOS	F	E	E	F	E	D	F	D	D	F	D	D
Approach Vol, veh/h		1535			1641			1969			1728	
Approach Delay, s/veh		93.1			110.0			51.2			49.7	
Approach LOS		F			F			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	19.2	66.0	24.0	50.8	21.0	64.2	24.0	50.8				
Change Period (Y+Rc), s	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0				
Max Green Setting (Gmax), s	17.0	52.0	17.0	46.0	17.0	52.0	17.0	46.0				
Max Q Clear Time (g_c+l1), s	11.9	39.3	19.0	36.9	13.7	33.5	19.0	40.8				
Green Ext Time (p_c), s	0.3	8.3	0.0	4.2	0.3	9.4	0.0	3.1				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				74.2								
HCM 6th LOS				E								

Intersection												
Int Delay, s/veh	0.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↖↗		↖	↖↗		↖		↖			
Traffic Vol, veh/h	16	1408	10	13	1338	0	19	0	23	0	0	0
Future Vol, veh/h	16	1408	10	13	1338	0	19	0	23	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	150	-	-	230	-	-	0	-	100	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	17	1482	11	14	1408	0	20	0	24	0	0	0

Major/Minor	Major1		Major2		Minor1				
Conflicting Flow All	1408	0	0	1493	0	0	2254	-	747
Stage 1	-	-	-	-	-	-	1522	-	-
Stage 2	-	-	-	-	-	-	732	-	-
Critical Hdwy	4.14	-	-	4.14	-	-	6.84	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	5.84	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.84	-	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	-	3.32
Pot Cap-1 Maneuver	*823	-	-	*766	-	0	*88	0	*512
Stage 1	-	-	-	-	-	0	*483	0	-
Stage 2	-	-	-	-	-	0	*519	0	-
Platoon blocked, %	1	-	-	1	-	-	1	-	1
Mov Cap-1 Maneuver	*823	-	-	*766	-	-	*84	0	*512
Mov Cap-2 Maneuver	-	-	-	-	-	-	*259	0	-
Stage 1	-	-	-	-	-	-	*473	0	-
Stage 2	-	-	-	-	-	-	*510	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0.1	0.1	15.9
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT
Capacity (veh/h)	259	512	*823	-	-	*766	-
HCM Lane V/C Ratio	0.077	0.047	0.02	-	-	0.018	-
HCM Control Delay (s)	20.1	12.4	9.5	-	-	9.8	-
HCM Lane LOS	C	B	A	-	-	A	-
HCM 95th %tile Q(veh)	0.2	0.1	0.1	-	-	0.1	-

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

Timings  
1: US 441 & Wiles Road

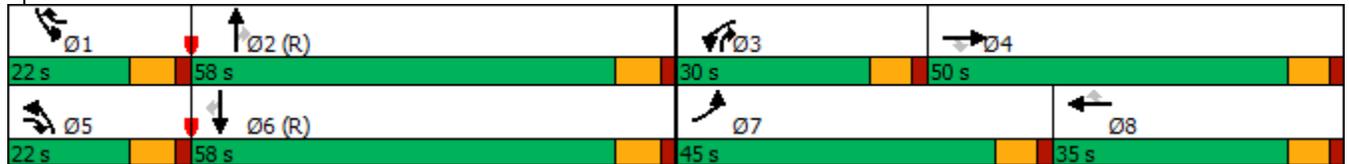
FY AM  
05/08/2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	670	738	518	179	497	356	291	1351	153	338	1407	319
Future Volume (vph)	670	738	518	179	497	356	291	1351	153	338	1407	319
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	Perm
Protected Phases	7	4	5	3	8	1	5	2	3	1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	5	3	8	1	5	2	3	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	5.0	5.0	10.0	5.0	5.0	10.0	10.0
Minimum Split (s)	12.5	43.5	12.5	12.5	43.0	12.5	12.5	43.5	12.5	12.5	43.5	43.5
Total Split (s)	45.0	50.0	22.0	30.0	35.0	22.0	22.0	58.0	30.0	22.0	58.0	58.0
Total Split (%)	28.1%	31.3%	13.8%	18.8%	21.9%	13.8%	13.8%	36.3%	18.8%	13.8%	36.3%	36.3%
Yellow Time (s)	5.0	5.0	5.5	5.0	5.0	5.5	5.5	5.5	5.0	5.5	5.5	5.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.5	7.0	7.0	7.5	7.5	7.5	7.0	7.5	7.5	7.5
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes											
Recall Mode	None	C-Min	None	None	C-Min	C-Min						
Act Effct Green (s)	36.1	48.8	71.9	14.1	26.7	51.4	16.1	50.5	72.1	17.7	52.0	52.0
Actuated g/C Ratio	0.23	0.30	0.45	0.09	0.17	0.32	0.10	0.32	0.45	0.11	0.32	0.32
v/c Ratio	0.91	0.72	0.72	0.62	0.88	0.63	0.88	0.89	0.21	0.94	0.90	0.52
Control Delay	76.8	53.9	37.1	89.6	62.5	25.8	111.4	47.9	2.5	101.6	59.7	20.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	76.8	53.9	37.1	89.6	62.5	25.8	111.4	47.9	2.5	101.6	59.7	20.9
LOS	E	D	D	F	E	C	F	D	A	F	E	C
Approach Delay		57.3			54.5			54.3			60.6	
Approach LOS		E			D			D			E	

Intersection Summary

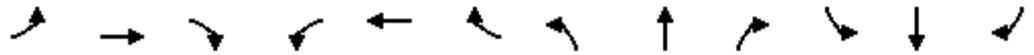
Cycle Length: 160  
 Actuated Cycle Length: 160  
 Offset: 47 (29%), Referenced to phase 2:NBT and 6:SBT, Start of Green  
 Natural Cycle: 145  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.94  
 Intersection Signal Delay: 57.1  
 Intersection LOS: E  
 Intersection Capacity Utilization 92.8%  
 ICU Level of Service F  
 Analysis Period (min) 15

Splits and Phases: 1: US 441 & Wiles Road



Queues  
1: US 441 & Wiles Road

FY AM  
05/08/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	705	777	545	188	523	375	306	1422	161	356	1481	336
v/c Ratio	0.91	0.72	0.72	0.62	0.88	0.63	0.88	0.89	0.21	0.94	0.90	0.52
Control Delay	76.8	53.9	37.1	89.6	62.5	25.8	111.4	47.9	2.5	101.6	59.7	20.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	76.8	53.9	37.1	89.6	62.5	25.8	111.4	47.9	2.5	101.6	59.7	20.9
Queue Length 50th (ft)	324	326	347	76	248	247	153	439	4	-196	484	103
Queue Length 95th (ft)	#397	408	502	106	#328	329	#244	367	14	#292	542	195
Internal Link Dist (ft)		609			2304			1352			507	
Turn Bay Length (ft)	320		250	360		420	300		560	320		190
Base Capacity (vph)	815	1078	754	493	619	593	346	1604	863	379	1653	646
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.87	0.72	0.72	0.38	0.84	0.63	0.88	0.89	0.19	0.94	0.90	0.52

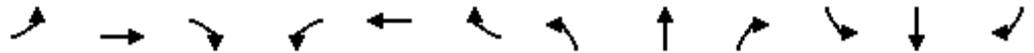
Intersection Summary

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

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

HCM 6th Signalized Intersection Summary  
1: US 441 & Wiles Road

FY AM  
05/08/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↖	↑↑	↗	↖↖	↑↑	↗	↖↖	↑↑↑	↗	↖↖	↑↑↑	↗
Traffic Volume (veh/h)	670	738	518	179	497	356	291	1351	153	338	1407	319
Future Volume (veh/h)	670	738	518	179	497	356	291	1351	153	338	1407	319
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	705	777	545	188	523	375	306	1422	161	356	1481	336
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	759	1157	660	238	622	421	313	1703	638	313	1703	529
Arrive On Green	0.22	0.33	0.33	0.07	0.17	0.17	0.06	0.22	0.22	0.09	0.33	0.33
Sat Flow, veh/h	3456	3554	1585	3456	3554	1585	3456	5106	1585	3456	5106	1585
Grp Volume(v), veh/h	705	777	545	188	523	375	306	1422	161	356	1481	336
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1728	1777	1585	1728	1702	1585	1728	1702	1585
Q Serve(g_s), s	32.0	30.2	48.9	8.6	22.8	28.0	14.1	42.5	12.1	14.5	43.6	28.7
Cycle Q Clear(g_c), s	32.0	30.2	48.9	8.6	22.8	28.0	14.1	42.5	12.1	14.5	43.6	28.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	759	1157	660	238	622	421	313	1703	638	313	1703	529
V/C Ratio(X)	0.93	0.67	0.83	0.79	0.84	0.89	0.98	0.83	0.25	1.14	0.87	0.64
Avail Cap(c_a), veh/h	821	1157	660	497	622	421	313	1703	638	313	1703	529
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.67	0.67	0.67	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.80	0.80	0.80	1.00	1.00	1.00
Uniform Delay (d), s/veh	61.2	46.6	41.5	73.4	63.8	56.5	75.0	57.9	37.5	72.7	50.0	45.1
Incr Delay (d2), s/veh	16.1	1.5	8.5	5.8	10.1	20.4	39.3	4.1	0.8	93.1	6.4	5.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	15.8	13.7	20.7	4.0	11.2	17.0	8.2	19.6	5.1	10.5	19.6	12.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	77.3	48.1	50.0	79.1	73.9	76.9	114.3	62.0	38.3	165.9	56.4	50.8
LnGrp LOS	E	D	D	E	E	E	F	E	D	F	E	D
Approach Vol, veh/h		2027			1086			1889			2173	
Approach Delay, s/veh		58.8			75.9			68.4			73.5	
Approach LOS		E			E			E			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	22.0	60.9	18.0	59.1	22.0	60.9	42.1	35.0				
Change Period (Y+Rc), s	7.5	7.5	7.0	7.0	7.5	7.5	7.0	7.0				
Max Green Setting (Gmax), s	14.5	50.5	23.0	43.0	14.5	50.5	38.0	28.0				
Max Q Clear Time (g_c+I1), s	16.5	44.5	10.6	50.9	16.1	45.6	34.0	30.0				
Green Ext Time (p_c), s	0.0	4.4	0.5	0.0	0.0	4.0	1.1	0.0				

Intersection Summary

HCM 6th Ctrl Delay	68.4
HCM 6th LOS	E

Notes

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

Timings  
2: US 441 & Cullum Road

FY AM  
05/08/2023

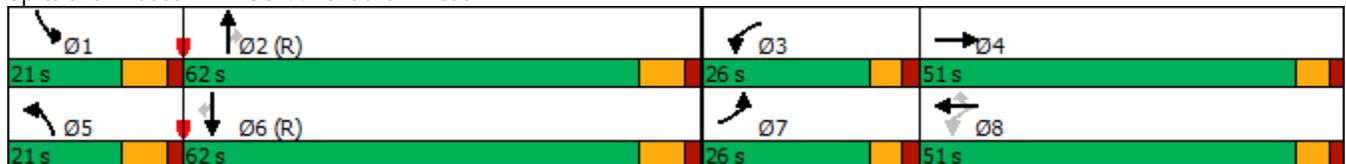


Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↖	↗	↖	↕↕	↗	↖↖	↕↕↕	↗	↖↖	↕↕↕	↗
Traffic Volume (vph)	213	98	42	92	170	116	1553	46	168	1819	137
Future Volume (vph)	213	98	42	92	170	116	1553	46	168	1819	137
Turn Type	Prot	NA	pm+pt	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8		5	2		1	6	
Permitted Phases			8		8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	6.0	4.0	6.0	6.0	5.0	15.0	15.0	5.0	15.0	15.0
Minimum Split (s)	11.0	48.0	10.0	48.0	48.0	12.5	42.5	42.5	12.5	42.5	42.5
Total Split (s)	26.0	51.0	26.0	51.0	51.0	21.0	62.0	62.0	21.0	62.0	62.0
Total Split (%)	16.3%	31.9%	16.3%	31.9%	31.9%	13.1%	38.8%	38.8%	13.1%	38.8%	38.8%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	5.5	5.5	5.5	5.5	5.5	5.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	7.5	7.5	7.5	7.5	7.5	7.5
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes										
Recall Mode	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	C-Min
Act Effct Green (s)	15.7	19.6	18.9	10.2	10.2	11.0	93.6	93.6	13.5	96.0	96.0
Actuated g/C Ratio	0.10	0.12	0.12	0.06	0.06	0.07	0.58	0.58	0.08	0.60	0.60
v/c Ratio	0.67	0.53	0.25	0.43	0.67	0.52	0.55	0.05	0.61	0.63	0.14
Control Delay	79.2	72.4	54.3	77.3	21.4	79.3	22.2	0.1	71.3	20.2	6.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	79.2	72.4	54.3	77.3	21.4	79.3	22.2	0.1	71.3	20.2	6.7
LOS	E	E	D	E	C	E	C	A	E	C	A
Approach Delay		76.8		42.9			25.5			23.4	
Approach LOS		E		D			C			C	

Intersection Summary

Cycle Length: 160  
 Actuated Cycle Length: 160  
 Offset: 59 (37%), Referenced to phase 2:NBT and 6:SBT, Start of Green  
 Natural Cycle: 135  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.67  
 Intersection Signal Delay: 29.4  
 Intersection Capacity Utilization 69.6%  
 Analysis Period (min) 15  
 Intersection LOS: C  
 ICU Level of Service C

Splits and Phases: 2: US 441 & Cullum Road



Queues  
2: US 441 & Cullum Road

FY AM  
05/08/2023



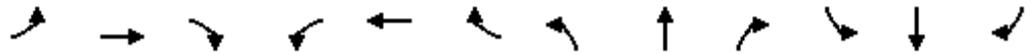
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	224	120	44	97	179	122	1635	48	177	1915	144
v/c Ratio	0.67	0.53	0.25	0.43	0.67	0.52	0.55	0.05	0.61	0.63	0.14
Control Delay	79.2	72.4	54.3	77.3	21.4	79.3	22.2	0.1	71.3	20.2	6.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	79.2	72.4	54.3	77.3	21.4	79.3	22.2	0.1	71.3	20.2	6.7
Queue Length 50th (ft)	104	103	34	46	0	57	323	0	84	309	8
Queue Length 95th (ft)	142	160	63	73	70	87	436	0	m102	364	m21
Internal Link Dist (ft)		532		554			340			1352	
Turn Bay Length (ft)	250		240		330	330			260		210
Base Capacity (vph)	429	516	298	995	573	292	2974	972	311	3052	994
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.52	0.23	0.15	0.10	0.31	0.42	0.55	0.05	0.57	0.63	0.14

Intersection Summary

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

HCM 6th Signalized Intersection Summary  
2: US 441 & Cullum Road

FY AM  
05/08/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↗		↖	↕	↗	↖↗	↕	↗	↖↗	↕	↖
Traffic Volume (veh/h)	213	98	16	42	92	170	116	1553	46	168	1819	137
Future Volume (veh/h)	213	98	16	42	92	170	116	1553	46	168	1819	137
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	224	103	17	44	97	179	122	1635	48	177	1915	144
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	273	282	47	253	463	207	166	2852	885	219	2930	910
Arrive On Green	0.08	0.18	0.18	0.03	0.13	0.13	0.05	0.56	0.56	0.13	1.00	1.00
Sat Flow, veh/h	3456	1565	258	1781	3554	1585	3456	5106	1585	3456	5106	1585
Grp Volume(v), veh/h	224	0	120	44	97	179	122	1635	48	177	1915	144
Grp Sat Flow(s),veh/h/ln	1728	0	1824	1781	1777	1585	1728	1702	1585	1728	1702	1585
Q Serve(g_s), s	10.2	0.0	9.2	3.4	3.9	17.7	5.6	33.3	2.2	8.0	0.0	0.0
Cycle Q Clear(g_c), s	10.2	0.0	9.2	3.4	3.9	17.7	5.6	33.3	2.2	8.0	0.0	0.0
Prop In Lane	1.00		0.14	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	273	0	328	253	463	207	166	2852	885	219	2930	910
V/C Ratio(X)	0.82	0.00	0.37	0.17	0.21	0.87	0.73	0.57	0.05	0.81	0.65	0.16
Avail Cap(c_a), veh/h	432	0	513	423	999	446	292	2852	885	292	2930	910
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(l)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.45	0.45	0.45
Uniform Delay (d), s/veh	72.6	0.0	57.6	57.9	62.2	68.2	75.1	22.9	16.1	68.9	0.0	0.0
Incr Delay (d2), s/veh	6.8	0.0	0.7	0.3	0.2	10.4	6.2	0.8	0.1	5.6	0.5	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.8	0.0	4.4	1.6	1.8	7.8	2.6	13.7	0.9	3.5	0.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	79.4	0.0	58.2	58.3	62.4	78.6	81.3	23.8	16.2	74.5	0.5	0.2
LnGrp LOS	E	A	E	E	E	E	F	C	B	E	A	A
Approach Vol, veh/h		344			320			1805			2236	
Approach Delay, s/veh		72.0			70.9			27.5			6.4	
Approach LOS		E			E			C			A	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	17.6	96.9	10.7	34.8	15.2	99.3	18.6	26.9				
Change Period (Y+Rc), s	7.5	7.5	6.0	6.0	7.5	7.5	6.0	6.0				
Max Green Setting (Gmax), s	13.5	54.5	20.0	45.0	13.5	54.5	20.0	45.0				
Max Q Clear Time (g_c+l1), s	10.0	35.3	5.4	11.2	7.6	2.0	12.2	19.7				
Green Ext Time (p_c), s	0.2	11.9	0.1	0.7	0.2	26.4	0.4	1.1				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				23.6								
HCM 6th LOS				C								

Intersection						
Int Delay, s/veh	0.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗ ↑↑↑	↑↑↑ ↘			↑↑↑
Traffic Vol, veh/h	0	47	1258	48	0	1960
Future Vol, veh/h	0	47	1258	48	0	1960
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	49	1324	51	0	2063

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	-	688	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	7.14	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	3.92	-
Pot Cap-1 Maneuver	0	333	-
Stage 1	0	-	-
Stage 2	0	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	-	333	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	17.7	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBT
Capacity (veh/h)	-	-	333
HCM Lane V/C Ratio	-	-	0.149
HCM Control Delay (s)	-	-	17.7
HCM Lane LOS	-	-	C
HCM 95th %tile Q(veh)	-	-	0.5

Timings  
4: Sample Road & US 441

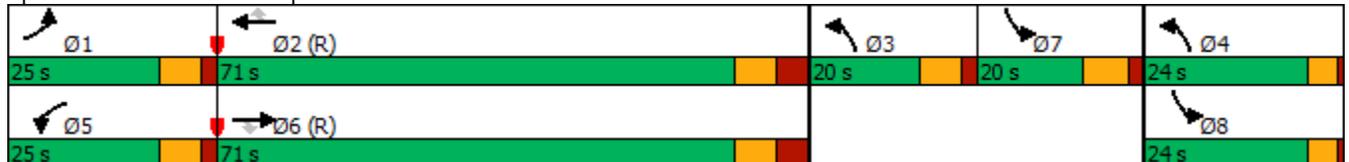
FY AM  
05/08/2023

											Ø3	Ø4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBR	SBL	SBR		
Lane Configurations	↖↗	↑↑↑	↖	↖↗	↑↑↑	↖	↖↗	↖	↖↗	↖		
Traffic Volume (vph)	117	1973	193	199	1309	236	179	199	293	117		
Future Volume (vph)	117	1973	193	199	1309	236	179	199	293	117		
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	Free	Prot	Free		
Protected Phases	1	6		5	2		3 4		7 8		3	4
Permitted Phases			6			2		Free		Free		
Detector Phase	1	6	6	5	2	2	3 4		7 8			
Switch Phase												
Minimum Initial (s)	6.0	10.0	10.0	6.0	10.0	10.0					6.0	5.0
Minimum Split (s)	18.0	19.0	19.0	13.0	27.0	27.0					13.0	45.5
Total Split (s)	25.0	71.0	71.0	25.0	71.0	71.0					20.0	24.0
Total Split (%)	15.6%	44.4%	44.4%	15.6%	44.4%	44.4%					13%	15%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0					5.0	3.5
All-Red Time (s)	2.0	4.0	4.0	2.0	4.0	4.0					2.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0						
Total Lost Time (s)	7.0	9.0	9.0	7.0	9.0	9.0						
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag					Lead	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes					Yes	
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min					None	None
Act Effct Green (s)	11.1	76.6	76.6	15.0	80.6	80.6	17.4	160.0	26.2	160.0		
Actuated g/C Ratio	0.07	0.48	0.48	0.09	0.50	0.50	0.11	1.00	0.16	1.00		
v/c Ratio	0.52	0.85	0.24	0.65	0.54	0.27	0.50	0.13	0.55	0.08		
Control Delay	79.3	41.6	4.0	79.3	28.6	3.4	50.4	0.2	65.3	0.1		
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Total Delay	79.3	41.6	4.0	79.3	28.6	3.4	50.4	0.2	65.3	0.1		
LOS	E	D	A	E	C	A	D	A	E	A		
Approach Delay		40.3			31.0							
Approach LOS		D			C							

Intersection Summary

Cycle Length: 160  
 Actuated Cycle Length: 160  
 Offset: 33 (21%), Referenced to phase 2:WBT and 6:EBT, Start of Green  
 Natural Cycle: 155  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.85  
 Intersection Signal Delay: 36.2  
 Intersection LOS: D  
 Intersection Capacity Utilization 71.7%  
 ICU Level of Service C  
 Analysis Period (min) 15

Splits and Phases: 4: Sample Road & US 441



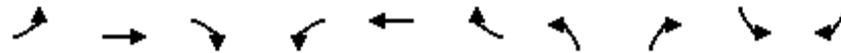
Timings  
4: Sample Road & US 441

FY AM  
05/08/2023

Lane Group	Ø7	Ø8
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Turn Type		
Protected Phases	7	8
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	6.0	5.0
Minimum Split (s)	48.5	22.5
Total Split (s)	20.0	24.0
Total Split (%)	13%	15%
Yellow Time (s)	5.5	3.5
All-Red Time (s)	2.0	1.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lag	
Lead-Lag Optimize?	Yes	
Recall Mode	None	None
Act Effect Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Intersection Summary		

Queues  
4: Sample Road & US 441

FY AM  
05/08/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBR	SBL	SBR
Lane Group Flow (vph)	123	2077	203	209	1378	248	188	209	308	123
v/c Ratio	0.52	0.85	0.24	0.65	0.54	0.27	0.50	0.13	0.55	0.08
Control Delay	79.3	41.6	4.0	79.3	28.6	3.4	50.4	0.2	65.3	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	79.3	41.6	4.0	79.3	28.6	3.4	50.4	0.2	65.3	0.1
Queue Length 50th (ft)	57	602	1	97	307	0	68	0	137	0
Queue Length 95th (ft)	88	#746	45	134	385	45	94	0	178	0
Internal Link Dist (ft)		858			1521					
Turn Bay Length (ft)	350		430	350		400	400		400	
Base Capacity (vph)	386	2435	862	390	2560	920	643	1583	802	1583
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.32	0.85	0.24	0.54	0.54	0.27	0.29	0.13	0.38	0.08

Intersection Summary

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

# HCM Signalized Intersection Capacity Analysis

## 4: Sample Road & US 441

FY AM  
05/08/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↑↑↑	↖	↖↗	↑↑↑	↖	↖↗		↖	↖↗		↖
Traffic Volume (vph)	117	1973	193	199	1309	236	179	0	199	293	0	117
Future Volume (vph)	117	1973	193	199	1309	236	179	0	199	293	0	117
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	9.0	9.0	7.0	9.0	9.0	7.0		4.0	7.5		4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97		1.00	0.97		1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00		0.85	1.00		0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95		1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433		1583	3433		1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95		1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433		1583	3433		1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	123	2077	203	209	1378	248	188	0	209	308	0	123
RTOR Reduction (vph)	0	0	105	0	0	123	0	0	0	0	0	0
Lane Group Flow (vph)	123	2077	98	209	1378	125	188	0	209	308	0	123
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot		Free	Prot		Free
Protected Phases	1	6		5	2		3 4			7 8		
Permitted Phases			6			2			Free			Free
Actuated Green, G (s)	11.1	76.7	76.7	15.0	80.6	80.6	19.9		160.0	29.2		160.0
Effective Green, g (s)	11.1	76.7	76.7	15.0	80.6	80.6	19.9		160.0	29.2		160.0
Actuated g/C Ratio	0.07	0.48	0.48	0.09	0.50	0.50	0.12		1.00	0.18		1.00
Clearance Time (s)	7.0	9.0	9.0	7.0	9.0	9.0						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0						
Lane Grp Cap (vph)	238	2437	758	321	2561	797	426		1583	626		1583
v/s Ratio Prot	0.04	c0.41		c0.06	c0.27		c0.05			c0.09		
v/s Ratio Perm			0.06			0.08			0.13			0.08
v/c Ratio	0.52	0.85	0.13	0.65	0.54	0.16	0.44		0.13	0.49		0.08
Uniform Delay, d1	71.9	36.7	23.1	70.0	27.0	21.4	64.9		0.0	58.7		0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00
Incremental Delay, d2	1.9	4.0	0.4	4.7	0.8	0.4	0.7		0.2	0.6		0.1
Delay (s)	73.8	40.7	23.5	74.6	27.8	21.8	65.6		0.2	59.3		0.1
Level of Service	E	D	C	E	C	C	E		A	E		A
Approach Delay (s)		40.9			32.4			31.2			42.4	
Approach LOS		D			C			C			D	

### Intersection Summary

HCM 2000 Control Delay	37.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	35.0
Intersection Capacity Utilization	71.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Timings  
5: Sample Road & NW 54th Avenue

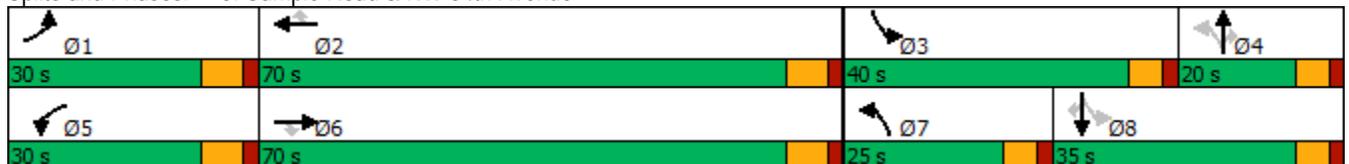
FY AM  
05/08/2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	79	2125	58	248	1454	144	32	30	310	168	47	71
Future Volume (vph)	79	2125	58	248	1454	144	32	30	310	168	47	71
Turn Type	Prot	NA	Perm	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases			6			2	4		4	8		8
Detector Phase	1	6	6	5	2	2	7	4	4	3	8	8
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	5.0
Minimum Split (s)	12.0	37.0	37.0	12.0	37.0	37.0	11.0	44.0	44.0	11.0	44.0	44.0
Total Split (s)	30.0	70.0	70.0	30.0	70.0	70.0	25.0	20.0	20.0	40.0	35.0	35.0
Total Split (%)	18.8%	43.8%	43.8%	18.8%	43.8%	43.8%	15.6%	12.5%	12.5%	25.0%	21.9%	21.9%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag									
Lead-Lag Optimize?	Yes											
Recall Mode	None	Min	Min	None	Min	Min	None	None	None	None	None	None
Act Effect Green (s)	8.6	63.4	63.4	15.1	69.9	69.9	15.7	8.3	8.3	30.7	22.5	22.5
Actuated g/C Ratio	0.07	0.49	0.49	0.12	0.54	0.54	0.12	0.06	0.06	0.24	0.17	0.17
v/c Ratio	0.36	0.90	0.07	0.65	0.56	0.16	0.18	0.14	0.80	0.55	0.08	0.20
Control Delay	64.5	37.1	0.2	63.6	21.5	3.2	41.4	60.4	21.9	48.5	48.4	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	64.5	37.1	0.2	63.6	21.5	3.2	41.4	60.4	21.9	48.5	48.4	3.1
LOS	E	D	A	E	C	A	D	E	C	D	D	A
Approach Delay		37.1			25.7			26.7			37.2	
Approach LOS		D			C			C			D	

Intersection Summary

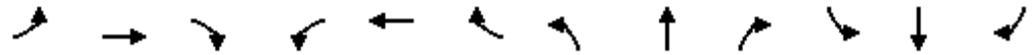
Cycle Length: 160  
 Actuated Cycle Length: 129.4  
 Natural Cycle: 135  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 0.90  
 Intersection Signal Delay: 31.9  
 Intersection LOS: C  
 Intersection Capacity Utilization 85.4%  
 ICU Level of Service E  
 Analysis Period (min) 15

Splits and Phases: 5: Sample Road & NW 54th Avenue



Queues  
5: Sample Road & NW 54th Avenue

FY AM  
05/08/2023



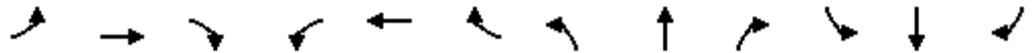
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	83	2237	61	261	1531	152	34	32	326	177	49	75
v/c Ratio	0.36	0.90	0.07	0.65	0.56	0.16	0.18	0.14	0.80	0.55	0.08	0.20
Control Delay	64.5	37.1	0.2	63.6	21.5	3.2	41.4	60.4	21.9	48.5	48.4	3.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	64.5	37.1	0.2	63.6	21.5	3.2	41.4	60.4	21.9	48.5	48.4	3.1
Queue Length 50th (ft)	29	517	0	94	252	0	20	12	0	110	16	0
Queue Length 95th (ft)	59	#809	0	149	379	33	46	28	90	179	35	11
Internal Link Dist (ft)		1521			667			578			917	
Turn Bay Length (ft)	200			340		460	160		160	180		190
Base Capacity (vph)	614	2492	852	614	2748	925	343	385	463	480	798	447
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.14	0.90	0.07	0.43	0.56	0.16	0.10	0.08	0.70	0.37	0.06	0.17

Intersection Summary

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

HCM 6th Signalized Intersection Summary  
5: Sample Road & NW 54th Avenue

FY AM  
05/08/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↑↑↑	↖	↖↗	↑↑↑	↖	↖	↑↑	↖	↖	↑↑	↖
Traffic Volume (veh/h)	79	2125	58	248	1454	144	32	30	310	168	47	71
Future Volume (veh/h)	79	2125	58	248	1454	144	32	30	310	168	47	71
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	83	2237	61	261	1531	152	34	32	326	177	49	75
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	134	2483	771	328	2770	860	245	392	175	346	663	296
Arrive On Green	0.04	0.49	0.49	0.09	0.54	0.54	0.03	0.11	0.11	0.10	0.19	0.19
Sat Flow, veh/h	3456	5106	1585	3456	5106	1585	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	83	2237	61	261	1531	152	34	32	326	177	49	75
Grp Sat Flow(s),veh/h/ln	1728	1702	1585	1728	1702	1585	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	3.0	50.9	2.6	9.4	24.9	6.2	2.1	1.0	14.0	10.8	1.4	5.1
Cycle Q Clear(g_c), s	3.0	50.9	2.6	9.4	24.9	6.2	2.1	1.0	14.0	10.8	1.4	5.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	134	2483	771	328	2770	860	245	392	175	346	663	296
V/C Ratio(X)	0.62	0.90	0.08	0.80	0.55	0.18	0.14	0.08	1.87	0.51	0.07	0.25
Avail Cap(c_a), veh/h	626	2532	786	626	2770	860	463	392	175	638	811	362
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	60.1	29.8	17.4	56.3	19.0	14.7	48.1	50.7	56.5	41.9	42.6	44.1
Incr Delay (d2), s/veh	4.6	4.9	0.0	4.4	0.2	0.1	0.3	0.1	410.9	1.2	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	21.4	1.0	4.3	9.7	2.2	1.0	0.5	25.5	4.9	0.6	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	64.8	34.7	17.5	60.7	19.2	14.8	48.4	50.8	467.4	43.0	42.6	44.5
LnGrp LOS	E	C	B	E	B	B	D	D	F	D	D	D
Approach Vol, veh/h		2381			1944			392			301	
Approach Delay, s/veh		35.3			24.5			397.0			43.3	
Approach LOS		D			C			F			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.9	75.9	19.2	20.0	19.1	68.8	9.5	29.7				
Change Period (Y+Rc), s	7.0	7.0	6.0	6.0	7.0	7.0	6.0	6.0				
Max Green Setting (Gmax), s	23.0	63.0	34.0	14.0	23.0	63.0	19.0	29.0				
Max Q Clear Time (g_c+I1), s	5.0	26.9	12.8	16.0	11.4	52.9	4.1	7.1				
Green Ext Time (p_c), s	0.2	16.2	0.4	0.0	0.7	8.9	0.0	0.4				

Intersection Summary

HCM 6th Ctrl Delay	59.8
HCM 6th LOS	E

Notes

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

Intersection												
Int Delay, s/veh	146.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑↑	↗	↘	↑↑↑				↗			↗
Traffic Vol, veh/h	35	2560	99	273	1800	31	0	0	200	0	0	87
Future Vol, veh/h	35	2560	99	273	1800	31	0	0	200	0	0	87
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	170	-	0	300	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	37	2695	104	287	1895	33	0	0	211	0	0	92

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1928	0	0	2799	0	0	-	-	1348	-	-	964
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	5.34	-	-	5.34	-	-	-	-	7.14	-	-	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.12	-	-	3.12	-	-	-	-	3.92	-	-	3.92
Pot Cap-1 Maneuver	*646	-	-	~ 48	-	-	0	0	~ 121	0	0	*514
Stage 1	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %	1	-	-	-	-	-	-	-	-	-	-	1
Mov Cap-1 Maneuver	*646	-	-	~ 48	-	-	-	-	~ 121	-	-	*514
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	\$ 312.8	\$ 427.1	13.5
HCM LOS			F	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	121	* 646	-	-	~ 48	-	-	514
HCM Lane V/C Ratio	1.74	0.057	-	-	5.987	-	-	0.178
HCM Control Delay (s)	\$ 427.1	10.9	-	-	\$ 2410.8	-	-	13.5
HCM Lane LOS	F	B	-	-	F	-	-	B
HCM 95th %tile Q(veh)	16.1	0.2	-	-	33.2	-	-	0.6

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

Intersection	
Intersection Delay, s/veh	8.5
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖	↗	↖	↗		↖	↗	↗	↖	↗	↖
Traffic Vol, veh/h	8	4	40	62	1	2	53	56	12	15	88	5
Future Vol, veh/h	8	4	40	62	1	2	53	56	12	15	88	5
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	8	4	42	65	1	2	56	59	13	16	93	5
Number of Lanes	0	1	1	1	1	0	1	1	1	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	3	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	3	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	3	2	2
HCM Control Delay	7.8	9.1	8.5	8.6
HCM LOS	A	A	A	A

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	0%	67%	0%	100%	0%	100%	0%	0%
Vol Thru, %	0%	100%	0%	33%	0%	0%	33%	0%	100%	0%
Vol Right, %	0%	0%	100%	0%	100%	0%	67%	0%	0%	100%
Sign Control	Stop									
Traffic Vol by Lane	53	56	12	12	40	62	3	15	88	5
LT Vol	53	0	0	8	0	62	0	15	0	0
Through Vol	0	56	0	4	0	0	1	0	88	0
RT Vol	0	0	12	0	40	0	2	0	0	5
Lane Flow Rate	56	59	13	13	42	65	3	16	93	5
Geometry Grp	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.087	0.084	0.016	0.02	0.054	0.105	0.004	0.025	0.133	0.007
Departure Headway (Hd)	5.638	5.136	4.434	5.671	4.638	5.785	4.819	5.669	5.167	4.465
Convergence, Y/N	Yes									
Cap	636	697	806	631	771	619	742	632	694	801
Service Time	3.369	2.867	2.165	3.406	2.373	3.519	2.553	3.398	2.896	2.193
HCM Lane V/C Ratio	0.088	0.085	0.016	0.021	0.054	0.105	0.004	0.025	0.134	0.006
HCM Control Delay	8.9	8.3	7.2	8.5	7.6	9.2	7.6	8.5	8.7	7.2
HCM Lane LOS	A	A	A	A	A	A	A	A	A	A
HCM 95th-tile Q	0.3	0.3	0	0.1	0.2	0.4	0	0.1	0.5	0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	457	1891	425	91	1013	299	466	969	187	508	950	444
Future Volume (vph)	457	1891	425	91	1013	299	466	969	187	508	950	444
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	1	6		5	2		7	4		3	8	1
Permitted Phases			6			2			4			8
Detector Phase	1	6	6	5	2	2	7	4	4	3	8	1
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0
Minimum Split (s)	12.5	45.5	45.5	12.5	45.5	45.5	12.5	46.5	46.5	12.5	46.5	12.5
Total Split (s)	27.0	71.0	71.0	18.0	62.0	62.0	28.0	43.0	43.0	28.0	43.0	27.0
Total Split (%)	16.9%	44.4%	44.4%	11.3%	38.8%	38.8%	17.5%	26.9%	26.9%	17.5%	26.9%	16.9%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
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	0.0
Total Lost Time (s)	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes											
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None	None	None
Act Effct Green (s)	19.6	64.8	64.8	9.3	54.5	54.5	20.5	35.4	35.4	20.5	35.4	62.5
Actuated g/C Ratio	0.12	0.40	0.40	0.06	0.34	0.34	0.13	0.22	0.22	0.13	0.22	0.39
v/c Ratio	1.15	0.97	0.52	0.48	0.62	0.42	1.12	0.91	0.40	1.22	0.89	0.70
Control Delay	149.4	59.8	9.3	80.9	45.9	5.4	140.2	72.7	10.7	182.9	63.6	31.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	149.4	59.8	9.3	80.9	45.9	5.4	140.2	72.7	10.7	182.9	63.6	31.4
LOS	F	E	A	F	D	A	F	E	B	F	E	C
Approach Delay		66.8			39.5			84.9			88.0	
Approach LOS		E			D			F			F	

Intersection Summary

Cycle Length: 160  
 Actuated Cycle Length: 160  
 Offset: 82 (51%), Referenced to phase 2:WBT and 6:EBT, Start of Green  
 Natural Cycle: 150  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 1.22  
 Intersection Signal Delay: 70.9  
 Intersection LOS: E  
 Intersection Capacity Utilization 98.9%  
 ICU Level of Service F  
 Analysis Period (min) 15

Splits and Phases: 8: Sample Road & Lyons Road





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	481	1991	447	96	1066	315	491	1020	197	535	1000	467
v/c Ratio	1.15	0.97	0.52	0.48	0.62	0.42	1.12	0.91	0.40	1.22	0.89	0.70
Control Delay	149.4	59.8	9.3	80.9	45.9	5.4	140.2	72.7	10.7	182.9	63.6	31.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	149.4	59.8	9.3	80.9	45.9	5.4	140.2	72.7	10.7	182.9	63.6	31.4
Queue Length 50th (ft)	~267	657	49	44	300	0	~266	338	9	~313	337	307
Queue Length 95th (ft)	#371	#765	140	73	345	61	#371	#397	72	m#392	m339	m388
Internal Link Dist (ft)		1221			746			683			751	
Turn Bay Length (ft)	260		580	270		480	300		300	300		340
Base Capacity (vph)	420	2059	856	225	1732	746	439	1128	494	439	1128	668
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.15	0.97	0.52	0.43	0.62	0.42	1.12	0.90	0.40	1.22	0.89	0.70

#### Intersection Summary

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

HCM 6th Signalized Intersection Summary  
8: Sample Road & Lyons Road

FY AM  
05/08/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↑↑↑	↗	↔↔	↑↑↑	↗	↔↔	↑↑↑	↗	↔↔	↑↑↑	↗
Traffic Volume (veh/h)	457	1891	425	91	1013	299	466	969	187	508	950	444
Future Volume (veh/h)	457	1891	425	91	1013	299	466	969	187	508	950	444
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	481	1991	447	96	1066	315	491	1020	197	535	1000	467
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	421	2158	670	138	1739	540	443	1133	352	443	1133	545
Arrive On Green	0.12	0.42	0.42	0.04	0.34	0.34	0.13	0.22	0.22	0.13	0.22	0.22
Sat Flow, veh/h	3456	5106	1585	3456	5106	1585	3456	5106	1585	3456	5106	1585
Grp Volume(v), veh/h	481	1991	447	96	1066	315	491	1020	197	535	1000	467
Grp Sat Flow(s),veh/h/ln	1728	1702	1585	1728	1702	1585	1728	1702	1585	1728	1702	1585
Q Serve(g_s), s	19.5	59.0	36.3	4.4	27.8	26.2	20.5	31.1	17.7	20.5	30.3	35.5
Cycle Q Clear(g_c), s	19.5	59.0	36.3	4.4	27.8	26.2	20.5	31.1	17.7	20.5	30.3	35.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	421	2158	670	138	1739	540	443	1133	352	443	1133	545
V/C Ratio(X)	1.14	0.92	0.67	0.70	0.61	0.58	1.11	0.90	0.56	1.21	0.88	0.86
Avail Cap(c_a), veh/h	421	2158	670	227	1739	540	443	1133	352	443	1133	545
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	70.3	43.7	37.1	75.9	44.0	43.4	69.8	60.5	55.3	69.8	60.2	48.8
Incr Delay (d2), s/veh	88.7	8.1	5.2	6.2	1.6	4.6	75.8	9.9	2.0	113.3	8.4	12.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.9	26.4	15.1	2.1	12.1	11.1	13.8	14.5	7.3	16.1	14.0	19.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	158.9	51.8	42.3	82.1	45.6	48.0	145.5	70.4	57.3	183.0	68.6	61.7
LnGrp LOS	F	D	D	F	D	D	F	E	E	F	E	E
Approach Vol, veh/h		2919			1477			1708			2002	
Approach Delay, s/veh		68.0			48.5			90.5			97.6	
Approach LOS		E			D			F			F	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	27.0	62.0	28.0	43.0	13.9	75.1	28.0	43.0				
Change Period (Y+Rc), s	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5				
Max Green Setting (Gmax), s	19.5	54.5	20.5	35.5	10.5	63.5	20.5	35.5				
Max Q Clear Time (g_c+I1), s	21.5	29.8	22.5	33.1	6.4	61.0	22.5	37.5				
Green Ext Time (p_c), s	0.0	9.7	0.0	1.6	0.1	2.3	0.0	0.0				

Intersection Summary

HCM 6th Ctrl Delay	76.5
HCM 6th LOS	E

Notes

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

Intersection												
Int Delay, s/veh	1.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↗	↘		↗	↘	↑↑↑		↗	↘	↑↑↑
Traffic Vol, veh/h	0	0	5	16	0	149	13	1698	24	130	1747	8
Future Vol, veh/h	0	0	5	16	0	149	13	1698	24	130	1747	8
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None									
Storage Length	-	-	0	0	-	160	210	-	210	200	-	-
Veh in Median Storage, #	-	0	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	5	17	0	157	14	1787	25	137	1839	8

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	-	-	924	2825	-	894	1847	0	0	1812	0	0
Stage 1	-	-	-	1815	-	-	-	-	-	-	-	-
Stage 2	-	-	-	1010	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	7.14	6.44	-	7.14	5.34	-	-	5.34	-	-
Critical Hdwy Stg 1	-	-	-	7.34	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	6.74	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.92	3.82	-	3.92	3.12	-	-	3.12	-	-
Pot Cap-1 Maneuver	0	0	233	*65	0	*529	149	-	-	*666	-	-
Stage 1	0	0	-	*543	0	-	-	-	-	-	-	-
Stage 2	0	0	-	*232	0	-	-	-	-	-	-	-
Platoon blocked, %				1		1				1		
Mov Cap-1 Maneuver	-	-	233	*50	-	*529	149	-	-	*666	-	-
Mov Cap-2 Maneuver	-	-	-	*130	-	-	-	-	-	-	-	-
Stage 1	-	-	-	*492	-	-	-	-	-	-	-	-
Stage 2	-	-	-	*180	-	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	20.8		16.8		0.2		0.8	
HCM LOS	C		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	149	-	-	233	130	529	*666	-	-
HCM Lane V/C Ratio	0.092	-	-	0.023	0.13	0.296	0.205	-	-
HCM Control Delay (s)	31.6	-	-	20.8	36.8	14.6	11.8	-	-
HCM Lane LOS	D	-	-	C	E	B	B	-	-
HCM 95th %tile Q(veh)	0.3	-	-	0.1	0.4	1.2	0.8	-	-

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

Intersection												
Int Delay, s/veh	2.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗	↖		↗	↖	↑↑↑	↗	↖	↑↑↑	
Traffic Vol, veh/h	70	0	125	49	0	59	83	1719	16	41	1790	51
Future Vol, veh/h	70	0	125	49	0	59	83	1719	16	41	1790	51
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None									
Storage Length	-	-	200	0	-	0	160	-	210	210	-	-
Veh in Median Storage, #	-	0	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	74	0	132	52	0	62	87	1809	17	43	1884	54

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	2895	3997	969	2823	-	905	1938	0	0	1826	0	0
Stage 1	1997	1997	-	1983	-	-	-	-	-	-	-	-
Stage 2	898	2000	-	840	-	-	-	-	-	-	-	-
Critical Hdwy	6.44	6.54	7.14	6.44	-	7.14	5.34	-	-	5.34	-	-
Critical Hdwy Stg 1	7.34	5.54	-	7.34	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.74	5.54	-	6.74	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.82	4.02	3.92	3.82	-	3.92	3.12	-	-	3.12	-	-
Pot Cap-1 Maneuver	*172	4	*514	*215	0	*529	*646	-	-	*666	-	-
Stage 1	*504	487	-	*439	0	-	-	-	-	-	-	-
Stage 2	*543	437	-	*527	0	-	-	-	-	-	-	-
Platoon blocked, %	1	1	1	1		1	1	-	-	1	-	-
Mov Cap-1 Maneuver	*129	3	*514	*137	-	*529	*646	-	-	*666	-	-
Mov Cap-2 Maneuver	*129	3	-	*207	-	-	-	-	-	-	-	-
Stage 1	*436	455	-	*380	-	-	-	-	-	-	-	-
Stage 2	*415	378	-	*367	-	-	-	-	-	-	-	-

Approach	EB		WB		NB			SB		
HCM Control Delay, s	32.5		19.7		0.5			0.2		
HCM LOS	D		C							

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	* 646	-	-	129	514	207	529	* 666	-	-
HCM Lane V/C Ratio	0.135	-	-	0.571	0.256	0.249	0.117	0.065	-	-
HCM Control Delay (s)	11.4	-	-	64.8	14.4	28.1	12.7	10.8	-	-
HCM Lane LOS	B	-	-	F	B	D	B	B	-	-
HCM 95th %tile Q(veh)	0.5	-	-	2.8	1	0.9	0.4	0.2	-	-

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

Intersection												
Int Delay, s/veh	3.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↑↑↑	↗	↖	↑↑↑	↗
Traffic Vol, veh/h	106	24	215	15	9	72	168	1676	19	24	1598	119
Future Vol, veh/h	106	24	215	15	9	72	168	1676	19	24	1598	119
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None									
Storage Length	200	-	-	0	-	-	200	-	220	200	-	400
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	112	25	226	16	9	76	177	1764	20	25	1682	125

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	2796	3870	841	2853	3975	882	1807	0	0	1784	0	0
Stage 1	1732	1732	-	2118	2118	-	-	-	-	-	-	-
Stage 2	1064	2138	-	735	1857	-	-	-	-	-	-	-
Critical Hdwy	6.44	6.54	7.14	6.44	6.54	7.14	5.34	-	-	5.34	-	-
Critical Hdwy Stg 1	7.34	5.54	-	7.34	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.74	5.54	-	6.74	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.82	4.02	3.92	3.82	4.02	3.92	3.12	-	-	3.12	-	-
Pot Cap-1 Maneuver	*195	*27	*561	*195	13	*545	635	-	-	*686	-	-
Stage 1	*576	*548	-	*262	324	-	-	-	-	-	-	-
Stage 2	*560	*312	-	*576	457	-	-	-	-	-	-	-
Platoon blocked, %	1	1	1	1	1	1	1	-	-	1	-	-
Mov Cap-1 Maneuver	*121	*~ 18	*561	*77	~ 9	*545	635	-	-	*686	-	-
Mov Cap-2 Maneuver	*215	*139	-	*106	117	-	-	-	-	-	-	-
Stage 1	*415	*528	-	*189	233	-	-	-	-	-	-	-
Stage 2	*333	*225	-	*315	441	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	28.8		21.3		1.2		0.1	
HCM LOS	D		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	635	-	-	215	430	106	387	* 686	-	-
HCM Lane V/C Ratio	0.278	-	-	0.519	0.585	0.149	0.22	0.037	-	-
HCM Control Delay (s)	12.8	-	-	38.5	24.5	44.8	16.9	10.4	-	-
HCM Lane LOS	B	-	-	E	C	E	C	B	-	-
HCM 95th %tile Q(veh)	1.1	-	-	2.7	3.6	0.5	0.8	0.1	-	-

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

Timings  
12: Lyons Road & Wiles Road

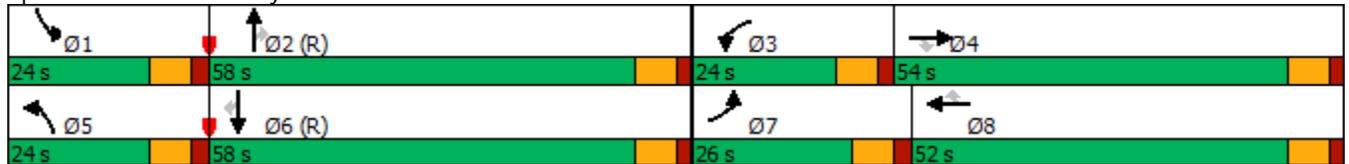
FY AM  
05/08/2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	309	766	333	424	568	236	163	998	620	298	1011	312
Future Volume (vph)	309	766	333	424	568	236	163	998	620	298	1011	312
Turn Type	Prot	NA	Perm									
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	6.0	6.0	5.0	6.0	6.0	5.0	12.0	12.0	5.0	12.0	12.0
Minimum Split (s)	12.0	52.0	52.0	12.0	52.0	52.0	12.0	50.0	50.0	12.0	50.0	50.0
Total Split (s)	26.0	54.0	54.0	24.0	52.0	52.0	24.0	58.0	58.0	24.0	58.0	58.0
Total Split (%)	16.3%	33.8%	33.8%	15.0%	32.5%	32.5%	15.0%	36.3%	36.3%	15.0%	36.3%	36.3%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Lead/Lag	Lead	Lag	Lag									
Lead-Lag Optimize?	Yes											
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min						
Act Effct Green (s)	18.2	43.8	43.8	17.8	43.3	43.3	13.3	53.2	53.2	17.3	57.1	57.1
Actuated g/C Ratio	0.11	0.27	0.27	0.11	0.27	0.27	0.08	0.33	0.33	0.11	0.36	0.36
v/c Ratio	0.83	0.83	0.59	1.17	0.62	0.42	0.60	0.62	0.94	0.85	0.59	0.43
Control Delay	69.4	62.0	28.4	160.4	54.4	8.8	76.5	66.3	67.0	90.6	44.2	7.7
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	69.4	62.0	28.4	160.4	54.4	8.8	76.5	66.3	67.0	90.6	44.2	7.7
LOS	E	E	C	F	D	A	E	E	E	F	D	A
Approach Delay		55.7			82.2			67.5			45.7	
Approach LOS		E			F			E			D	

Intersection Summary

Cycle Length: 160  
 Actuated Cycle Length: 160  
 Offset: 70 (44%), Referenced to phase 2:NBT and 6:SBT, Start of Green  
 Natural Cycle: 140  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 1.17  
 Intersection Signal Delay: 61.9  
 Intersection Capacity Utilization 85.6%  
 Analysis Period (min) 15  
 Intersection LOS: E  
 ICU Level of Service E

Splits and Phases: 12: Lyons Road & Wiles Road

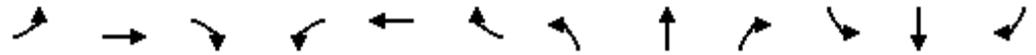


Queues

12: Lyons Road & Wiles Road

FY AM

05/08/2023



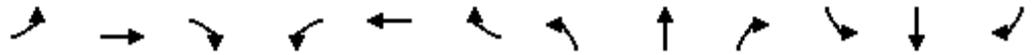
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	325	806	351	446	598	248	172	1051	653	314	1064	328
v/c Ratio	0.83	0.83	0.59	1.17	0.62	0.42	0.60	0.62	0.94	0.85	0.59	0.43
Control Delay	69.4	62.0	28.4	160.4	54.4	8.8	76.5	66.3	67.0	90.6	44.2	7.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	69.4	62.0	28.4	160.4	54.4	8.8	76.5	66.3	67.0	90.6	44.2	7.7
Queue Length 50th (ft)	146	393	123	~259	254	12	84	297	361	147	295	18
Queue Length 95th (ft)	m182	m451	m267	#361	311	76	m98	m326	m#513	#220	357	91
Internal Link Dist (ft)		2625			480			1249			449	
Turn Bay Length (ft)	340		370	210		220	290		300	290		310
Base Capacity (vph)	407	1039	623	380	995	611	364	1690	695	375	1815	757
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.80	0.78	0.56	1.17	0.60	0.41	0.47	0.62	0.94	0.84	0.59	0.43

Intersection Summary

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

HCM 6th Signalized Intersection Summary  
 12: Lyons Road & Wiles Road

FY AM  
 05/08/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↑↑	↖	↖↗	↑↑	↖	↖↗	↑↑↑	↖	↖↗	↑↑↑	↖
Traffic Volume (veh/h)	309	766	333	424	568	236	163	998	620	298	1011	312
Future Volume (veh/h)	309	766	333	424	568	236	163	998	620	298	1011	312
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	325	806	351	446	598	248	172	1051	653	314	1064	328
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	369	924	412	367	921	411	219	1819	565	355	2020	627
Arrive On Green	0.11	0.26	0.26	0.11	0.26	0.26	0.06	0.36	0.36	0.10	0.40	0.40
Sat Flow, veh/h	3456	3554	1585	3456	3554	1585	3456	5106	1585	3456	5106	1585
Grp Volume(v), veh/h	325	806	351	446	598	248	172	1051	653	314	1064	328
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1728	1777	1585	1728	1702	1585	1728	1702	1585
Q Serve(g_s), s	14.8	34.7	33.7	17.0	24.0	22.0	7.9	26.7	57.0	14.3	25.5	25.2
Cycle Q Clear(g_c), s	14.8	34.7	33.7	17.0	24.0	22.0	7.9	26.7	57.0	14.3	25.5	25.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	369	924	412	367	921	411	219	1819	565	355	2020	627
V/C Ratio(X)	0.88	0.87	0.85	1.21	0.65	0.60	0.79	0.58	1.16	0.88	0.53	0.52
Avail Cap(c_a), veh/h	410	1044	466	367	999	446	367	1819	565	367	2020	627
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	70.4	56.7	56.3	71.5	52.8	52.0	73.9	41.8	51.5	70.9	36.9	36.9
Incr Delay (d2), s/veh	18.1	7.6	12.9	119.1	1.3	2.0	6.1	1.3	89.1	21.3	1.0	3.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.5	16.6	15.0	13.6	11.0	9.1	3.7	11.6	36.5	7.4	10.9	10.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	88.5	64.3	69.2	190.6	54.1	54.0	80.0	43.1	140.6	92.2	37.9	40.0
LnGrp LOS	F	E	E	F	D	D	F	D	F	F	D	D
Approach Vol, veh/h		1482			1292			1876			1706	
Approach Delay, s/veh		70.8			101.2			80.4			48.3	
Approach LOS		E			F			F			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	23.4	64.0	24.0	48.6	17.1	70.3	24.1	48.5				
Change Period (Y+Rc), s	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0				
Max Green Setting (Gmax), s	17.0	51.0	17.0	47.0	17.0	51.0	19.0	45.0				
Max Q Clear Time (g_c+l1), s	16.3	59.0	19.0	36.7	9.9	27.5	16.8	26.0				
Green Ext Time (p_c), s	0.1	0.0	0.0	4.8	0.3	9.5	0.3	4.7				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				73.8								
HCM 6th LOS				E								

Intersection												
Int Delay, s/veh	1.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↖↗		↖	↖↗		↖		↖			
Traffic Vol, veh/h	16	1067	80	43	849	0	105	0	144	0	0	0
Future Vol, veh/h	16	1067	80	43	849	0	105	0	144	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	150	-	-	230	-	-	0	-	100	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	17	1123	84	45	894	0	111	0	152	0	0	0

Major/Minor	Major1		Major2		Minor1				
Conflicting Flow All	894	0	0	1207	0	0	1736	-	604
Stage 1	-	-	-	-	-	-	1199	-	-
Stage 2	-	-	-	-	-	-	537	-	-
Critical Hdwy	4.14	-	-	4.14	-	-	6.84	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	5.84	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.84	-	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	-	3.32
Pot Cap-1 Maneuver	*1133	-	-	935	-	0	*277	0	*663
Stage 1	-	-	-	-	-	0	*586	0	-
Stage 2	-	-	-	-	-	0	*715	0	-
Platoon blocked, %	1	-	-	1	-	-	1	-	1
Mov Cap-1 Maneuver	*1133	-	-	935	-	-	*260	0	*663
Mov Cap-2 Maneuver	-	-	-	-	-	-	*399	0	-
Stage 1	-	-	-	-	-	-	*577	0	-
Stage 2	-	-	-	-	-	-	*680	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0.1	0.4	14.3
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT
Capacity (veh/h)	399	663	* 1133	-	-	935	-
HCM Lane V/C Ratio	0.277	0.229	0.015	-	-	0.048	-
HCM Control Delay (s)	17.4	12	8.2	-	-	9	-
HCM Lane LOS	C	B	A	-	-	A	-
HCM 95th %tile Q(veh)	1.1	0.9	0	-	-	0.2	-

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

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑	↑		↑
Traffic Vol, veh/h	0	2759	2087	17	0	17
Future Vol, veh/h	0	2759	2087	17	0	17
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	200	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	2904	2197	18	0	18

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	-	0	- 0 - 1099
Stage 1	-	-	- - -
Stage 2	-	-	- - -
Critical Hdwy	-	-	- - 7.14
Critical Hdwy Stg 1	-	-	- - -
Critical Hdwy Stg 2	-	-	- - -
Follow-up Hdwy	-	-	- - 3.92
Pot Cap-1 Maneuver	0	-	- 0 178
Stage 1	0	-	- 0 -
Stage 2	0	-	- 0 -
Platoon blocked, %	-	-	- - -
Mov Cap-1 Maneuver	-	-	- - 178
Mov Cap-2 Maneuver	-	-	- - -
Stage 1	-	-	- - -
Stage 2	-	-	- - -

Approach	EB	WB	SB
HCM Control Delay, s	0	0	27.5
HCM LOS			D

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	178
HCM Lane V/C Ratio	-	-	-	0.101
HCM Control Delay (s)	-	-	-	27.5
HCM Lane LOS	-	-	-	D
HCM 95th %tile Q(veh)	-	-	-	0.3

Timings  
1: US 441 & Wiles Road

FY PM  
05/08/2023

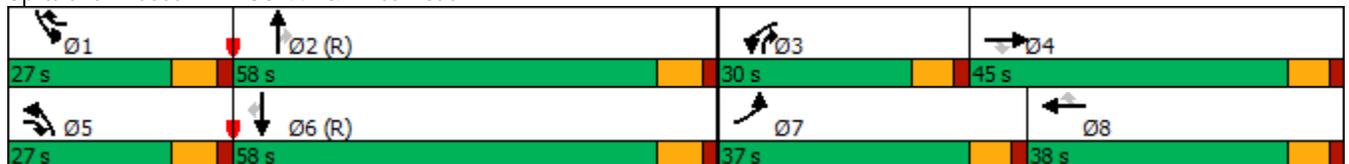
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	668	874	203	337	728	194	460	1633	275	429	1439	442
Future Volume (vph)	668	874	203	337	728	194	460	1633	275	429	1439	442
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	Perm
Protected Phases	7	4	5	3	8	1	5	2	3	1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	5	3	8	1	5	2	3	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	5.0	5.0	10.0	5.0	5.0	10.0	10.0
Minimum Split (s)	12.5	43.5	12.5	12.5	43.0	12.5	12.5	43.5	12.5	12.5	43.5	43.5
Total Split (s)	37.0	45.0	27.0	30.0	38.0	27.0	27.0	58.0	30.0	27.0	58.0	58.0
Total Split (%)	23.1%	28.1%	16.9%	18.8%	23.8%	16.9%	16.9%	36.3%	18.8%	16.9%	36.3%	36.3%
Yellow Time (s)	5.0	5.0	5.5	5.0	5.0	5.5	5.5	5.5	5.0	5.5	5.5	5.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.5	7.0	7.0	7.5	7.5	7.5	7.0	7.5	7.5	7.5
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes											
Recall Mode	None	C-Min	None	None	C-Min	C-Min						
Act Effct Green (s)	30.0	40.2	66.7	20.8	31.0	57.5	19.5	50.5	78.8	19.5	50.5	50.5
Actuated g/C Ratio	0.19	0.25	0.42	0.13	0.19	0.36	0.12	0.32	0.49	0.12	0.32	0.32
v/c Ratio	1.09	1.03	0.30	0.80	1.12	0.33	1.16	1.07	0.35	1.08	0.94	0.68
Control Delay	122.2	96.2	21.0	48.8	124.3	42.3	145.3	107.4	21.2	131.0	65.9	25.3
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	122.2	96.2	21.0	48.8	124.3	42.3	145.3	107.4	21.2	131.0	65.9	25.3
LOS	F	F	C	D	F	D	F	F	C	F	E	C
Approach Delay		97.4			91.4			104.7			70.2	
Approach LOS		F			F			F			E	

Intersection Summary

Cycle Length: 160  
 Actuated Cycle Length: 160  
 Offset: 33 (21%), Referenced to phase 2:NBT and 6:SBT, Start of Green  
 Natural Cycle: 145  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 1.16  
 Intersection Signal Delay: 90.5  
 Intersection Capacity Utilization 107.1%  
 Analysis Period (min) 15

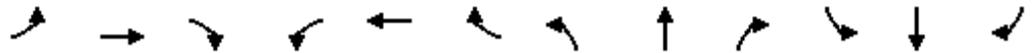
Intersection LOS: F  
 ICU Level of Service G

Splits and Phases: 1: US 441 & Wiles Road



Queues  
1: US 441 & Wiles Road

FY PM  
05/08/2023



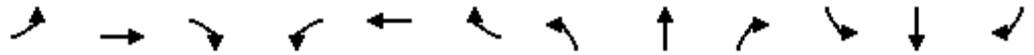
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	703	920	214	355	766	204	484	1719	289	452	1515	465
v/c Ratio	1.09	1.03	0.30	0.80	1.12	0.33	1.16	1.07	0.35	1.08	0.94	0.68
Control Delay	122.2	96.2	21.0	48.8	124.3	42.3	145.3	107.4	21.2	131.0	65.9	25.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	122.2	96.2	21.0	48.8	124.3	42.3	145.3	107.4	21.2	131.0	65.9	25.3
Queue Length 50th (ft)	~374	~487	82	142	~434	141	~276	~623	106	~238	500	165
Queue Length 95th (ft)	#488	#623	142	m187	#554	m180	#383	#719	168	#341	#583	286
Internal Link Dist (ft)		609			2304			1352			507	
Turn Bay Length (ft)	320		250	360		420	300		560	320		190
Base Capacity (vph)	643	890	705	493	685	618	418	1604	839	418	1604	680
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.09	1.03	0.30	0.72	1.12	0.33	1.16	1.07	0.34	1.08	0.94	0.68

Intersection Summary

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

HCM 6th Signalized Intersection Summary  
1: US 441 & Wiles Road

FY PM  
05/08/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↑↑	↖	↖↗	↑↑	↖	↖↗	↑↑↑	↖	↖↗	↑↑↑	↖
Traffic Volume (veh/h)	668	874	203	337	728	194	460	1633	275	429	1439	442
Future Volume (veh/h)	668	874	203	337	728	194	460	1633	275	429	1439	442
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	703	920	214	355	766	204	484	1719	289	452	1515	465
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	648	939	612	405	689	500	421	1612	686	421	1612	500
Arrive On Green	0.19	0.26	0.26	0.12	0.19	0.19	0.08	0.21	0.21	0.12	0.32	0.32
Sat Flow, veh/h	3456	3554	1585	3456	3554	1585	3456	5106	1585	3456	5106	1585
Grp Volume(v), veh/h	703	920	214	355	766	204	484	1719	289	452	1515	465
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1728	1777	1585	1728	1702	1585	1728	1702	1585
Q Serve(g_s), s	30.0	41.1	15.3	16.2	31.0	16.2	19.5	50.5	21.7	19.5	46.2	45.5
Cycle Q Clear(g_c), s	30.0	41.1	15.3	16.2	31.0	16.2	19.5	50.5	21.7	19.5	46.2	45.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	648	939	612	405	689	500	421	1612	686	421	1612	500
V/C Ratio(X)	1.08	0.98	0.35	0.88	1.11	0.41	1.15	1.07	0.42	1.07	0.94	0.93
Avail Cap(c_a), veh/h	648	939	612	497	689	500	421	1612	686	421	1612	500
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.67	0.67	0.67	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00	0.56	0.56	0.56	1.00	1.00	1.00
Uniform Delay (d), s/veh	65.0	58.4	34.9	69.5	64.5	43.0	73.5	63.1	36.8	70.3	53.3	53.0
Incr Delay (d2), s/veh	60.6	24.5	0.3	14.0	69.5	0.5	82.2	37.9	1.1	64.8	12.1	26.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	18.7	21.7	6.1	8.0	20.7	6.5	13.7	28.2	9.1	12.5	21.6	21.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	125.6	82.9	35.2	83.5	134.0	43.5	155.7	101.0	37.8	135.0	65.4	79.1
LnGrp LOS	F	F	D	F	F	D	F	F	D	F	E	E
Approach Vol, veh/h		1837			1325			2492			2432	
Approach Delay, s/veh		93.7			106.5			104.3			80.9	
Approach LOS		F			F			F			F	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	27.0	58.0	25.7	49.3	27.0	58.0	37.0	38.0				
Change Period (Y+Rc), s	7.5	7.5	7.0	7.0	7.5	7.5	7.0	7.0				
Max Green Setting (Gmax), s	19.5	50.5	23.0	38.0	19.5	50.5	30.0	31.0				
Max Q Clear Time (g_c+I1), s	21.5	52.5	18.2	43.1	21.5	48.2	32.0	33.0				
Green Ext Time (p_c), s	0.0	0.0	0.6	0.0	0.0	2.0	0.0	0.0				

Intersection Summary

HCM 6th Ctrl Delay	95.2
HCM 6th LOS	F

Notes

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

Timings  
2: US 441 & Cullum Road

FY PM  
05/08/2023

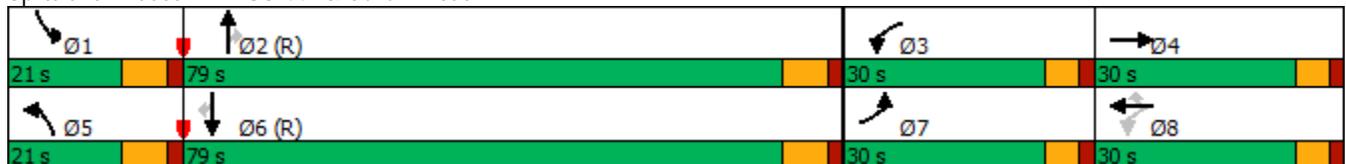


Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↖	↗	↖	↗↗	↗	↖↖	↗↗↗	↗	↖↖	↗↗↗	↗
Traffic Volume (vph)	301	111	60	151	237	237	1730	41	302	1519	270
Future Volume (vph)	301	111	60	151	237	237	1730	41	302	1519	270
Turn Type	Prot	NA	pm+pt	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8		5	2		1	6	
Permitted Phases			8		8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	6.0	4.0	6.0	6.0	5.0	15.0	15.0	5.0	15.0	15.0
Minimum Split (s)	11.0	48.0	10.0	48.0	48.0	12.5	42.5	42.5	12.5	42.5	42.5
Total Split (s)	30.0	30.0	30.0	30.0	30.0	21.0	79.0	79.0	21.0	79.0	79.0
Total Split (%)	18.8%	18.8%	18.8%	18.8%	18.8%	13.1%	49.4%	49.4%	13.1%	49.4%	49.4%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	5.5	5.5	5.5	5.5	5.5	5.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	7.5	7.5	7.5	7.5	7.5	7.5
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes										
Recall Mode	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	C-Min
Act Effct Green (s)	19.8	29.1	26.1	16.5	16.5	15.7	76.0	76.0	20.8	81.0	81.0
Actuated g/C Ratio	0.12	0.18	0.16	0.10	0.10	0.10	0.48	0.48	0.13	0.51	0.51
v/c Ratio	0.75	0.55	0.28	0.44	0.83	0.74	0.75	0.05	0.71	0.62	0.31
Control Delay	78.7	60.8	45.9	69.9	49.5	83.1	37.6	0.1	82.1	17.4	3.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	78.7	60.8	45.9	69.9	49.5	83.1	37.6	0.1	82.1	17.4	3.3
LOS	E	E	D	E	D	F	D	A	F	B	A
Approach Delay		72.1		55.9			42.2			24.9	
Approach LOS		E		E			D			C	

Intersection Summary

Cycle Length: 160  
 Actuated Cycle Length: 160  
 Offset: 48 (30%), Referenced to phase 2:NBT and 6:SBT, Start of Green  
 Natural Cycle: 145  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.83  
 Intersection Signal Delay: 39.0  
 Intersection LOS: D  
 Intersection Capacity Utilization 78.1%  
 ICU Level of Service D  
 Analysis Period (min) 15

Splits and Phases: 2: US 441 & Cullum Road



Queues  
2: US 441 & Cullum Road

FY PM  
05/08/2023



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	317	184	63	159	249	249	1821	43	318	1599	284
v/c Ratio	0.75	0.55	0.28	0.44	0.83	0.74	0.75	0.05	0.71	0.62	0.31
Control Delay	78.7	60.8	45.9	69.9	49.5	83.1	37.6	0.1	82.1	17.4	3.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	78.7	60.8	45.9	69.9	49.5	83.1	37.6	0.1	82.1	17.4	3.3
Queue Length 50th (ft)	147	147	45	73	90	115	510	0	158	153	17
Queue Length 95th (ft)	190	209	74	103	177	#187	578	0	m#216	m171	m22
Internal Link Dist (ft)		532		554			340			1352	
Turn Bay Length (ft)	250		240		330	330			260		210
Base Capacity (vph)	514	338	383	530	366	338	2414	810	445	2574	904
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.62	0.54	0.16	0.30	0.68	0.74	0.75	0.05	0.71	0.62	0.31

Intersection Summary

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

# HCM 6th Signalized Intersection Summary

## 2: US 441 & Cullum Road

FY PM  
05/08/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↗		↖	↕↕	↖	↖↗	↕↕↕	↖	↖↗	↕↕↕	↖
Traffic Volume (veh/h)	301	111	64	60	151	237	237	1730	41	302	1519	270
Future Volume (veh/h)	301	111	64	60	151	237	237	1730	41	302	1519	270
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	317	117	67	63	159	249	249	1821	43	318	1599	284
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	369	242	138	266	533	238	289	2502	777	292	2506	778
Arrive On Green	0.11	0.22	0.22	0.04	0.15	0.15	0.08	0.49	0.49	0.17	0.98	0.98
Sat Flow, veh/h	3456	1116	639	1781	3554	1585	3456	5106	1585	3456	5106	1585
Grp Volume(v), veh/h	317	0	184	63	159	249	249	1821	43	318	1599	284
Grp Sat Flow(s),veh/h/ln	1728	0	1755	1781	1777	1585	1728	1702	1585	1728	1702	1585
Q Serve(g_s), s	14.4	0.0	14.7	4.8	6.4	24.0	11.4	45.2	2.3	13.5	2.5	0.8
Cycle Q Clear(g_c), s	14.4	0.0	14.7	4.8	6.4	24.0	11.4	45.2	2.3	13.5	2.5	0.8
Prop In Lane	1.00		0.36	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	369	0	380	266	533	238	289	2502	777	292	2506	778
V/C Ratio(X)	0.86	0.00	0.48	0.24	0.30	1.05	0.86	0.73	0.06	1.09	0.64	0.37
Avail Cap(c_a), veh/h	518	0	380	462	533	238	292	2502	777	292	2506	778
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(l)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.40	0.40	0.40
Uniform Delay (d), s/veh	70.3	0.0	54.8	54.4	60.5	68.0	72.4	32.3	21.4	66.5	0.8	0.8
Incr Delay (d2), s/veh	10.0	0.0	1.0	0.5	0.3	71.3	22.0	1.9	0.1	60.7	0.5	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.9	0.0	6.7	2.2	2.9	14.5	6.0	19.1	0.9	7.9	0.5	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	80.3	0.0	55.8	54.9	60.8	139.3	94.3	34.2	21.5	127.2	1.3	1.3
LnGrp LOS	F	A	E	D	E	F	F	C	C	F	A	A
Approach Vol, veh/h		501			471			2113			2201	
Approach Delay, s/veh		71.3			101.5			41.1			19.5	
Approach LOS		E			F			D			B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	21.0	85.9	12.4	40.7	20.9	86.0	23.1	30.0				
Change Period (Y+Rc), s	7.5	7.5	6.0	6.0	7.5	7.5	6.0	6.0				
Max Green Setting (Gmax), s	13.5	71.5	24.0	24.0	13.5	71.5	24.0	24.0				
Max Q Clear Time (g_c+l1), s	15.5	47.2	6.8	16.7	13.4	4.5	16.4	26.0				
Green Ext Time (p_c), s	0.0	15.5	0.1	0.5	0.0	22.5	0.7	0.0				

### Intersection Summary

HCM 6th Ctrl Delay	40.3
HCM 6th LOS	D

### Notes

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

Intersection						
Int Delay, s/veh	1.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗ ↑↑↑	↗ ↑↑↑			↗ ↑↑↑
Traffic Vol, veh/h	0	158	1397	84	0	1741
Future Vol, veh/h	0	158	1397	84	0	1741
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	166	1471	88	0	1833

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	-	780	0	0	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	7.14	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	3.92	-	-	-
Pot Cap-1 Maneuver	0	290	-	-	0
Stage 1	0	-	-	-	0
Stage 2	0	-	-	-	0
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	-	290	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	32.9	0	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBT
Capacity (veh/h)	-	-	290
HCM Lane V/C Ratio	-	-	0.574
HCM Control Delay (s)	-	-	32.9
HCM Lane LOS	-	-	D
HCM 95th %tile Q(veh)	-	-	3.3

Timings  
4: Sample Road & US 441

FY PM  
05/08/2023

											Ø3	Ø4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBR	SBL	SBR		
Lane Configurations	↖↖	↑↑↑	↗	↖↖	↑↑↑	↗	↖↖	↗	↖↖	↗		
Traffic Volume (vph)	220	1699	112	220	1945	299	165	189	229	249		
Future Volume (vph)	220	1699	112	220	1945	299	165	189	229	249		
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	Free	Prot	Free		
Protected Phases	1	6		5	2		3 4		7 8		3	4
Permitted Phases			6			2		Free		Free		
Detector Phase	1	6	6	5	2	2	3 4		7 8			
Switch Phase												
Minimum Initial (s)	6.0	10.0	10.0	6.0	10.0	10.0					6.0	6.0
Minimum Split (s)	18.0	19.0	19.0	13.0	27.0	27.0					49.5	49.5
Total Split (s)	21.0	75.0	75.0	21.0	75.0	75.0					20.0	24.0
Total Split (%)	13.1%	46.9%	46.9%	13.1%	46.9%	46.9%					13%	15%
Yellow Time (s)	10.0	5.0	5.0	5.0	5.0	5.0					5.5	5.5
All-Red Time (s)	2.0	4.0	4.0	2.0	4.0	4.0					3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0						
Total Lost Time (s)	12.0	9.0	9.0	7.0	9.0	9.0						
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag					Lead	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes					Yes	
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min					None	None
Act Effct Green (s)	18.3	73.0	73.0	16.3	66.0	66.0	17.7	160.0	28.0	160.0		
Actuated g/C Ratio	0.11	0.46	0.46	0.10	0.41	0.41	0.11	1.00	0.18	1.00		
v/c Ratio	0.59	0.77	0.14	0.67	0.98	0.38	0.46	0.13	0.40	0.17		
Control Delay	74.6	40.0	0.3	78.6	60.7	4.5	49.1	0.2	60.7	0.2		
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Total Delay	74.6	40.0	0.3	78.6	60.7	4.5	49.1	0.2	60.7	0.2		
LOS	E	D	A	E	E	A	D	A	E	A		
Approach Delay		41.5			55.5							
Approach LOS		D			E							

Intersection Summary

Cycle Length: 160  
 Actuated Cycle Length: 160  
 Offset: 5 (3%), Referenced to phase 2:WBT and 6:EBT, Start of Green  
 Natural Cycle: 195  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.98  
 Intersection Signal Delay: 45.6  
 Intersection LOS: D  
 Intersection Capacity Utilization 74.1%  
 ICU Level of Service D  
 Analysis Period (min) 15

Splits and Phases: 4: Sample Road & US 441



Timings  
4: Sample Road & US 441

FY PM  
05/08/2023

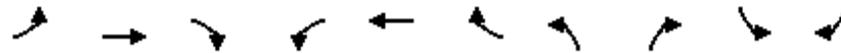
Lane Group	Ø7	Ø8
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Turn Type		
Protected Phases	7	8
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	6.0	6.0
Minimum Split (s)	48.5	48.5
Total Split (s)	20.0	24.0
Total Split (%)	13%	15%
Yellow Time (s)	5.5	5.5
All-Red Time (s)	2.0	2.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lag	
Lead-Lag Optimize?	Yes	
Recall Mode	None	None
Act Effect Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Intersection Summary		

Queues

4: Sample Road & US 441

FY PM

05/08/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBR	SBL	SBR
Lane Group Flow (vph)	232	1788	118	232	2047	315	174	199	241	262
v/c Ratio	0.59	0.77	0.14	0.67	0.98	0.38	0.46	0.13	0.40	0.17
Control Delay	74.6	40.0	0.3	78.6	60.7	4.5	49.1	0.2	60.7	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	74.6	40.0	0.3	78.6	60.7	4.5	49.1	0.2	60.7	0.2
Queue Length 50th (ft)	107	505	0	107	675	3	61	0	103	0
Queue Length 95th (ft)	150	589	0	146	#776	57	89	0	142	0
Internal Link Dist (ft)		858			1521					
Turn Bay Length (ft)	350		430	350		400	400		400	
Base Capacity (vph)	391	2320	846	357	2097	834	579	1583	756	1583
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.59	0.77	0.14	0.65	0.98	0.38	0.30	0.13	0.32	0.17

Intersection Summary

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

# HCM Signalized Intersection Capacity Analysis

## 4: Sample Road & US 441

FY PM

05/08/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↖	↗↗↗	↘	↖↖	↗↗↗	↘	↖↖		↘	↖↖		↘
Traffic Volume (vph)	220	1699	112	220	1945	299	165	0	189	229	0	249
Future Volume (vph)	220	1699	112	220	1945	299	165	0	189	229	0	249
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	12.0	9.0	9.0	7.0	9.0	9.0	8.5		4.0	7.5		4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97		1.00	0.97		1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00		0.85	1.00		0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95		1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433		1583	3433		1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95		1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433		1583	3433		1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	232	1788	118	232	2047	315	174	0	199	241	0	262
RTOR Reduction (vph)	0	0	64	0	0	182	0	0	0	0	0	0
Lane Group Flow (vph)	232	1788	54	232	2047	133	174	0	199	241	0	262
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot		Free	Prot		Free
Protected Phases	1	6		5	2		3 4			7 8		
Permitted Phases			6			2			Free			Free
Actuated Green, G (s)	18.3	73.0	73.0	16.3	66.0	66.0	17.7		160.0	28.0		160.0
Effective Green, g (s)	18.3	73.0	73.0	16.3	66.0	66.0	17.7		160.0	28.0		160.0
Actuated g/C Ratio	0.11	0.46	0.46	0.10	0.41	0.41	0.11		1.00	0.18		1.00
Clearance Time (s)	12.0	9.0	9.0	7.0	9.0	9.0						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0						
Lane Grp Cap (vph)	392	2320	722	349	2097	652	379		1583	600		1583
v/s Ratio Prot	c0.07	c0.35		0.07	c0.40		c0.05			c0.07		
v/s Ratio Perm			0.03			0.08			0.13			0.17
v/c Ratio	0.59	0.77	0.07	0.66	0.98	0.20	0.46		0.13	0.40		0.17
Uniform Delay, d1	67.3	36.5	24.5	69.2	46.2	30.2	66.7		0.0	58.6		0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00
Incremental Delay, d2	2.4	2.5	0.2	4.7	14.8	0.7	0.9		0.2	0.4		0.2
Delay (s)	69.7	39.0	24.7	73.9	61.0	30.9	67.5		0.2	59.0		0.2
Level of Service	E	D	C	E	E	C	E		A	E		A
Approach Delay (s)		41.6			58.5			31.6			28.4	
Approach LOS		D			E			C			C	

### Intersection Summary

HCM 2000 Control Delay	47.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	45.5
Intersection Capacity Utilization	74.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Timings  
5: Sample Road & NW 54th Avenue

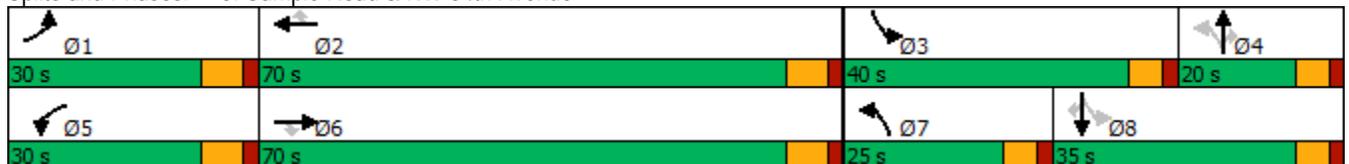
FY PM  
05/08/2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	205	1645	59	424	1979	321	133	71	313	254	70	122
Future Volume (vph)	205	1645	59	424	1979	321	133	71	313	254	70	122
Turn Type	Prot	NA	Perm	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases			6			2	4		4	8		8
Detector Phase	1	6	6	5	2	2	7	4	4	3	8	8
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	5.0
Minimum Split (s)	12.0	37.0	37.0	12.0	37.0	37.0	11.0	44.0	44.0	11.0	44.0	44.0
Total Split (s)	30.0	70.0	70.0	30.0	70.0	70.0	25.0	20.0	20.0	40.0	35.0	35.0
Total Split (%)	18.8%	43.8%	43.8%	18.8%	43.8%	43.8%	15.6%	12.5%	12.5%	25.0%	21.9%	21.9%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag									
Lead-Lag Optimize?	Yes											
Recall Mode	None	Min	Min	None	Min	Min	None	None	None	None	None	None
Act Effect Green (s)	14.4	60.9	60.9	22.0	68.4	68.4	24.4	10.1	10.1	39.9	19.6	19.6
Actuated g/C Ratio	0.10	0.43	0.43	0.15	0.48	0.48	0.17	0.07	0.07	0.28	0.14	0.14
v/c Ratio	0.63	0.80	0.08	0.85	0.86	0.36	0.52	0.30	0.85	0.69	0.15	0.39
Control Delay	71.5	40.4	0.2	75.4	38.6	3.7	48.4	68.5	31.1	53.6	55.9	12.2
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	71.5	40.4	0.2	75.4	38.6	3.7	48.4	68.5	31.1	53.6	55.9	12.2
LOS	E	D	A	E	D	A	D	E	C	D	E	B
Approach Delay		42.5			40.2			40.7			42.7	
Approach LOS		D			D			D			D	

Intersection Summary

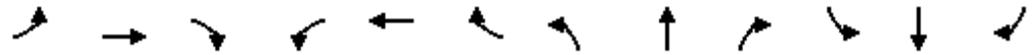
Cycle Length: 160  
 Actuated Cycle Length: 143  
 Natural Cycle: 125  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 0.86  
 Intersection Signal Delay: 41.3  
 Intersection Capacity Utilization 81.5%  
 Analysis Period (min) 15  
 Intersection LOS: D  
 ICU Level of Service D

Splits and Phases: 5: Sample Road & NW 54th Avenue



Queues  
5: Sample Road & NW 54th Avenue

FY PM  
05/08/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	216	1732	62	446	2083	338	140	75	329	267	74	128
v/c Ratio	0.63	0.80	0.08	0.85	0.86	0.36	0.52	0.30	0.85	0.69	0.15	0.39
Control Delay	71.5	40.4	0.2	75.4	38.6	3.7	48.4	68.5	31.1	53.6	55.9	12.2
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	71.5	40.4	0.2	75.4	38.6	3.7	48.4	68.5	31.1	53.6	55.9	12.2
Queue Length 50th (ft)	91	453	0	189	541	0	93	32	27	192	29	0
Queue Length 95th (ft)	137	587	0	#294	#784	54	146	60	#154	272	53	54
Internal Link Dist (ft)		1521			667			578			917	
Turn Bay Length (ft)	200			340		460	160		160	180		190
Base Capacity (vph)	557	2262	787	557	2434	933	330	350	423	466	724	426
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.39	0.77	0.08	0.80	0.86	0.36	0.42	0.21	0.78	0.57	0.10	0.30

Intersection Summary

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

HCM 6th Signalized Intersection Summary  
5: Sample Road & NW 54th Avenue

FY PM  
05/08/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↑↑↑	↗	↖↗	↑↑↑	↗	↖	↑↑	↗	↖	↑↑	↗
Traffic Volume (veh/h)	205	1645	59	424	1979	321	133	71	313	254	70	122
Future Volume (veh/h)	205	1645	59	424	1979	321	133	71	313	254	70	122
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	216	1732	62	446	2083	338	140	75	329	267	74	128
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	276	2102	653	504	2438	757	325	365	163	400	592	264
Arrive On Green	0.08	0.41	0.41	0.15	0.48	0.48	0.08	0.10	0.10	0.15	0.17	0.17
Sat Flow, veh/h	3456	5106	1585	3456	5106	1585	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	216	1732	62	446	2083	338	140	75	329	267	74	128
Grp Sat Flow(s),veh/h/ln	1728	1702	1585	1728	1702	1585	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	8.4	41.1	3.3	17.2	49.0	19.3	9.4	2.6	14.0	17.6	2.4	10.0
Cycle Q Clear(g_c), s	8.4	41.1	3.3	17.2	49.0	19.3	9.4	2.6	14.0	17.6	2.4	10.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	276	2102	653	504	2438	757	325	365	163	400	592	264
V/C Ratio(X)	0.78	0.82	0.10	0.89	0.85	0.45	0.43	0.21	2.02	0.67	0.12	0.48
Avail Cap(c_a), veh/h	584	2362	733	584	2438	757	423	365	163	580	757	338
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	61.5	35.7	24.5	57.0	31.4	23.6	48.8	56.0	61.1	43.2	48.3	51.4
Incr Delay (d2), s/veh	4.8	2.3	0.1	13.7	3.2	0.4	0.9	0.3	479.5	1.9	0.1	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.9	17.4	1.3	8.5	20.5	7.3	4.3	1.2	27.3	8.0	1.1	4.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	66.3	37.9	24.6	70.7	34.6	24.0	49.7	56.3	540.6	45.2	48.4	52.8
LnGrp LOS	E	D	C	E	C	C	D	E	F	D	D	D
Approach Vol, veh/h		2010			2867			544			469	
Approach Delay, s/veh		40.6			39.0			347.4			47.8	
Approach LOS		D			D			F			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	17.9	72.0	26.3	20.0	26.9	63.1	17.6	28.7				
Change Period (Y+Rc), s	7.0	7.0	6.0	6.0	7.0	7.0	6.0	6.0				
Max Green Setting (Gmax), s	23.0	63.0	34.0	14.0	23.0	63.0	19.0	29.0				
Max Q Clear Time (g_c+l1), s	10.4	51.0	19.6	16.0	19.2	43.1	11.4	12.0				
Green Ext Time (p_c), s	0.5	10.3	0.6	0.0	0.6	12.9	0.2	0.7				

Intersection Summary

HCM 6th Ctrl Delay	68.7
HCM 6th LOS	E

Notes

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

Intersection												
Int Delay, s/veh	52.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑↑	↗	↘	↑↑↑				↗			↗
Traffic Vol, veh/h	37	2071	112	254	2746	80	0	0	188	0	0	61
Future Vol, veh/h	37	2071	112	254	2746	80	0	0	188	0	0	61
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	170	-	0	300	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	39	2180	118	267	2891	84	0	0	198	0	0	64

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	2975	0	0	2298	0	0	-	-	1090	-	-	1488
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	5.34	-	-	5.34	-	-	-	-	7.14	-	-	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.12	-	-	3.12	-	-	-	-	3.92	-	-	3.92
Pot Cap-1 Maneuver	*365	-	-	~ 88	-	-	0	0	~ 181	0	0	*290
Stage 1	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %	1	-	-	-	-	-	-	-	-	-	-	1
Mov Cap-1 Maneuver	*365	-	-	~ 88	-	-	-	-	~ 181	-	-	*290
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.3			84.2			147			20.9		
HCM LOS							F			C		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	181	* 365	-	-	~ 88	-	-	290
HCM Lane V/C Ratio	1.093	0.107	-	-	3.038	-	-	0.221
HCM Control Delay (s)	147	16	-	-	\$ 1020.5	-	-	20.9
HCM Lane LOS	F	C	-	-	F	-	-	C
HCM 95th %tile Q(veh)	9.7	0.4	-	-	26.2	-	-	0.8

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

Intersection	
Intersection Delay, s/veh	9.5
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖	↗	↖	↗		↖	↗	↗	↖	↗	↖
Traffic Vol, veh/h	17	11	111	61	19	16	127	111	31	8	74	5
Future Vol, veh/h	17	11	111	61	19	16	127	111	31	8	74	5
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	18	12	117	64	20	17	134	117	33	8	78	5
Number of Lanes	0	1	1	1	1	0	1	1	1	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	3	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	3	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	3	2	2
HCM Control Delay	9	9.5	9.8	9.4
HCM LOS	A	A	A	A

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	0%	61%	0%	100%	0%	100%	0%	0%
Vol Thru, %	0%	100%	0%	39%	0%	0%	54%	0%	100%	0%
Vol Right, %	0%	0%	100%	0%	100%	0%	46%	0%	0%	100%
Sign Control	Stop									
Traffic Vol by Lane	127	111	31	28	111	61	35	8	74	5
LT Vol	127	0	0	17	0	61	0	8	0	0
Through Vol	0	111	0	11	0	0	19	0	74	0
RT Vol	0	0	31	0	111	0	16	0	0	5
Lane Flow Rate	134	117	33	29	117	64	37	8	78	5
Geometry Grp	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.222	0.177	0.043	0.05	0.165	0.115	0.058	0.015	0.129	0.008
Departure Headway (Hd)	5.97	5.467	4.762	6.09	5.086	6.445	5.625	6.459	5.955	5.249
Convergence, Y/N	Yes									
Cap	596	650	742	582	696	559	641	557	605	685
Service Time	3.764	3.26	2.555	3.885	2.881	4.145	3.325	4.165	3.661	2.955
HCM Lane V/C Ratio	0.225	0.18	0.044	0.05	0.168	0.114	0.058	0.014	0.129	0.007
HCM Control Delay	10.5	9.5	7.8	9.2	8.9	10	8.7	9.3	9.5	8
HCM Lane LOS	B	A	A	A	A	A	A	A	A	A
HCM 95th-tile Q	0.8	0.6	0.1	0.2	0.6	0.4	0.2	0	0.4	0

Timings

8: Sample Road & Lyons Road

FY PM

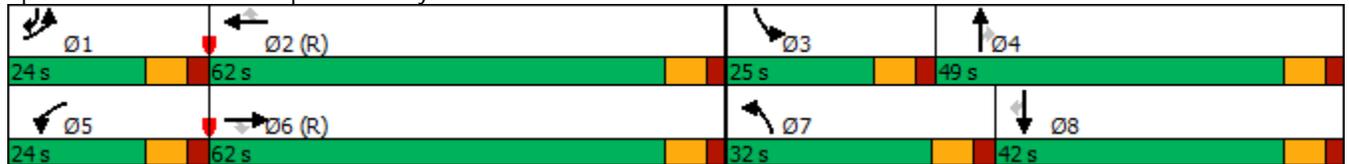
05/08/2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	447	1237	390	155	1930	489	507	1072	138	441	1002	589
Future Volume (vph)	447	1237	390	155	1930	489	507	1072	138	441	1002	589
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	1	6		5	2		7	4		3	8	1
Permitted Phases			6			2			4			8
Detector Phase	1	6	6	5	2	2	7	4	4	3	8	1
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0
Minimum Split (s)	12.5	45.5	45.5	12.5	45.5	45.5	12.5	46.5	46.5	12.5	46.5	12.5
Total Split (s)	24.0	62.0	62.0	24.0	62.0	62.0	32.0	49.0	49.0	25.0	42.0	24.0
Total Split (%)	15.0%	38.8%	38.8%	15.0%	38.8%	38.8%	20.0%	30.6%	30.6%	15.6%	26.3%	15.0%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
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	0.0
Total Lost Time (s)	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes											
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None	None	None
Act Effct Green (s)	16.5	58.1	58.1	12.9	54.5	54.5	24.5	41.5	41.5	17.5	34.5	58.5
Actuated g/C Ratio	0.10	0.36	0.36	0.08	0.34	0.34	0.15	0.26	0.26	0.11	0.22	0.37
v/c Ratio	1.33	0.71	0.53	0.59	1.17	0.71	1.02	0.86	0.28	1.24	0.96	0.98
Control Delay	218.6	46.5	12.4	79.5	130.3	26.1	109.0	63.9	7.9	187.9	71.1	48.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	218.6	46.5	12.4	79.5	130.3	26.1	109.0	63.9	7.9	187.9	71.1	48.4
LOS	F	D	B	E	F	C	F	E	A	F	E	D
Approach Delay		77.2			107.4			72.7			89.9	
Approach LOS		E			F			E			F	

Intersection Summary

Cycle Length: 160  
 Actuated Cycle Length: 160  
 Offset: 30 (19%), Referenced to phase 2:WBT and 6:EBT, Start of Green  
 Natural Cycle: 150  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 1.33  
 Intersection Signal Delay: 88.6  
 Intersection LOS: F  
 Intersection Capacity Utilization 108.9%  
 ICU Level of Service G  
 Analysis Period (min) 15

Splits and Phases: 8: Sample Road & Lyons Road





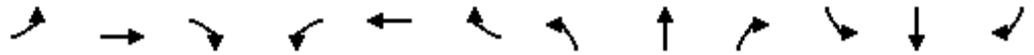
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	471	1302	411	163	2032	515	534	1128	145	464	1055	620
v/c Ratio	1.33	0.71	0.53	0.59	1.17	0.71	1.02	0.86	0.28	1.24	0.96	0.98
Control Delay	218.6	46.5	12.4	79.5	130.3	26.1	109.0	63.9	7.9	187.9	71.1	48.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	218.6	46.5	12.4	79.5	130.3	26.1	109.0	63.9	7.9	187.9	71.1	48.4
Queue Length 50th (ft)	-289	375	63	76	-814	197	-266	364	0	-267	365	407
Queue Length 95th (ft)	#392	441	163	110	#894	327	#373	417	50	m#313	m369	m#594
Internal Link Dist (ft)		1221			746			683			751	
Turn Bay Length (ft)	260		580	270		480	300		300	300		340
Base Capacity (vph)	354	1845	773	354	1732	723	525	1318	517	375	1096	630
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.33	0.71	0.53	0.46	1.17	0.71	1.02	0.86	0.28	1.24	0.96	0.98

#### Intersection Summary

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

HCM 6th Signalized Intersection Summary  
8: Sample Road & Lyons Road

FY PM  
05/08/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↑↑↑	↗	↔↔	↑↑↑	↗	↔↔	↑↑↑	↗	↔↔	↑↑↑	↗
Traffic Volume (veh/h)	447	1237	390	155	1930	489	507	1072	138	441	1002	589
Future Volume (veh/h)	447	1237	390	155	1930	489	507	1072	138	441	1002	589
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	471	1302	411	163	2032	515	534	1128	145	464	1055	620
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	356	1956	607	209	1739	540	529	1324	411	378	1101	505
Arrive On Green	0.10	0.38	0.38	0.06	0.34	0.34	0.15	0.26	0.26	0.11	0.22	0.22
Sat Flow, veh/h	3456	5106	1585	3456	5106	1585	3456	5106	1585	3456	5106	1585
Grp Volume(v), veh/h	471	1302	411	163	2032	515	534	1128	145	464	1055	620
Grp Sat Flow(s),veh/h/ln	1728	1702	1585	1728	1702	1585	1728	1702	1585	1728	1702	1585
Q Serve(g_s), s	16.5	33.8	34.5	7.4	54.5	50.8	24.5	33.6	11.9	17.5	32.7	34.5
Cycle Q Clear(g_c), s	16.5	33.8	34.5	7.4	54.5	50.8	24.5	33.6	11.9	17.5	32.7	34.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	356	1956	607	209	1739	540	529	1324	411	378	1101	505
V/C Ratio(X)	1.32	0.67	0.68	0.78	1.17	0.95	1.01	0.85	0.35	1.23	0.96	1.23
Avail Cap(c_a), veh/h	356	1956	607	356	1739	540	529	1324	411	378	1101	505
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	71.8	40.9	41.1	74.1	52.8	51.5	67.8	56.3	48.3	71.3	62.0	54.5
Incr Delay (d2), s/veh	163.2	1.8	6.0	6.2	82.3	28.8	41.4	5.5	0.5	123.7	17.9	118.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	15.4	14.6	14.6	3.5	36.5	24.5	13.9	15.2	4.8	14.3	16.0	37.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	234.9	42.7	47.1	80.2	135.1	80.4	109.2	61.9	48.8	194.9	80.0	173.3
LnGrp LOS	F	D	D	F	F	F	F	E	D	F	E	F
Approach Vol, veh/h		2184			2710			1807			2139	
Approach Delay, s/veh		85.0			121.4			74.8			132.0	
Approach LOS		F			F			E			F	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	24.0	62.0	25.0	49.0	17.2	68.8	32.0	42.0				
Change Period (Y+Rc), s	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5				
Max Green Setting (Gmax), s	16.5	54.5	17.5	41.5	16.5	54.5	24.5	34.5				
Max Q Clear Time (g_c+l1), s	18.5	56.5	19.5	35.6	9.4	36.5	26.5	36.5				
Green Ext Time (p_c), s	0.0	0.0	0.0	3.7	0.3	10.4	0.0	0.0				

Intersection Summary

HCM 6th Ctrl Delay	105.4
HCM 6th LOS	F

Notes

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

Intersection												
Int Delay, s/veh	2.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↗	↘		↗	↘	↑↑↑		↗	↘	↑↑↑
Traffic Vol, veh/h	0	0	19	22	0	311	19	1915	44	98	1987	22
Future Vol, veh/h	0	0	19	22	0	311	19	1915	44	98	1987	22
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None									
Storage Length	-	-	0	0	-	160	210	-	210	200	-	-
Veh in Median Storage, #	-	0	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	20	23	0	327	20	2016	46	103	2092	23

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	-	-	1058	3099	-	1008	2115	0	0	2062	0	0
Stage 1	-	-	-	2056	-	-	-	-	-	-	-	-
Stage 2	-	-	-	1043	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	7.14	6.44	-	7.14	5.34	-	-	5.34	-	-
Critical Hdwy Stg 1	-	-	-	7.34	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	6.74	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.92	3.82	-	3.92	3.12	-	-	3.12	-	-
Pot Cap-1 Maneuver	0	0	190	*43	0	*482	109	-	-	*606	-	-
Stage 1	0	0	-	*494	0	-	-	-	-	-	-	-
Stage 2	0	0	-	*221	0	-	-	-	-	-	-	-
Platoon blocked, %				1		1				1		
Mov Cap-1 Maneuver	-	-	190	*29	-	*482	109	-	-	*606	-	-
Mov Cap-2 Maneuver	-	-	-	*107	-	-	-	-	-	-	-	-
Stage 1	-	-	-	*404	-	-	-	-	-	-	-	-
Stage 2	-	-	-	*164	-	-	-	-	-	-	-	-

Approach	EB		WB		NB			SB		
HCM Control Delay, s	26.2		28.2		0.4			0.6		
HCM LOS	D		D							

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	109	-	-	190	107	482	* 606	-	-
HCM Lane V/C Ratio	0.183	-	-	0.105	0.216	0.679	0.17	-	-
HCM Control Delay (s)	45.3	-	-	26.2	47.7	26.8	12.2	-	-
HCM Lane LOS	E	-	-	D	E	D	B	-	-
HCM 95th %tile Q(veh)	0.6	-	-	0.3	0.8	5	0.6	-	-

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

Intersection												
Int Delay, s/veh	9.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗	↖		↗	↖	↑↑↑	↗	↖	↑↑↑	
Traffic Vol, veh/h	135	0	135	28	0	29	225	1976	54	48	1971	132
Future Vol, veh/h	135	0	135	28	0	29	225	1976	54	48	1971	132
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None									
Storage Length	-	-	200	0	-	0	160	-	210	210	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	142	0	142	29	0	31	237	2080	57	51	2075	139

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	3553	4858	1107	3486	-	1040	2214	0	0	2137	0	0
Stage 1	2247	2247	-	2554	-	-	-	-	-	-	-	-
Stage 2	1306	2611	-	932	-	-	-	-	-	-	-	-
Critical Hdwy	6.44	6.54	7.14	6.44	-	7.14	5.34	-	-	5.34	-	-
Critical Hdwy Stg 1	7.34	5.54	-	7.34	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.74	5.54	-	6.74	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.82	4.02	3.92	3.82	-	3.92	3.12	-	-	3.12	-	-
Pot Cap-1 Maneuver	*~ 18	0	*466	*~ 22	0	*466	*585	-	-	*585	-	-
Stage 1	*435	428	-	*171	0	-	-	-	-	-	-	-
Stage 2	*478	205	-	*478	0	-	-	-	-	-	-	-
Platoon blocked, %	1	1	1	1		1	1	-	-	1	-	-
Mov Cap-1 Maneuver	*~ 11	0	*466	*~ 10	-	*466	*585	-	-	*585	-	-
Mov Cap-2 Maneuver	*~ 112	55	-	*41	-	-	-	-	-	-	-	-
Stage 1	*259	390	-	*102	-	-	-	-	-	-	-	-
Stage 2	*266	122	-	*303	-	-	-	-	-	-	-	-

Approach	EB		WB		NB			SB		
HCM Control Delay, s	131.1		109.7		1.5			0.3		
HCM LOS	F		F							

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	* 585	-	-	112	466	41	466	* 585	-	-
HCM Lane V/C Ratio	0.405	-	-	1.269	0.305	0.719	0.066	0.086	-	-
HCM Control Delay (s)	15.3	-	-	246	16.1	209.6	13.3	11.7	-	-
HCM Lane LOS	C	-	-	F	C	F	B	B	-	-
HCM 95th %tile Q(veh)	2	-	-	9.4	1.3	2.7	0.2	0.3	-	-

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

Intersection												
Int Delay, s/veh	2.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↑↑↑	↗	↖	↑↑↑	↗
Traffic Vol, veh/h	87	11	123	22	16	42	108	1994	32	54	1965	110
Future Vol, veh/h	87	11	123	22	16	42	108	1994	32	54	1965	110
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None									
Storage Length	200	-	-	0	-	-	200	-	220	200	-	400
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	92	12	129	23	17	44	114	2099	34	57	2068	116

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	3258	4543	1034	3274	4625	1050	2184	0	0	2133	0	0
Stage 1	2182	2182	-	2327	2327	-	-	-	-	-	-	-
Stage 2	1076	2361	-	947	2298	-	-	-	-	-	-	-
Critical Hdwy	6.44	6.54	7.14	6.44	6.54	7.14	5.34	-	-	5.34	-	-
Critical Hdwy Stg 1	7.34	5.54	-	7.34	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.74	5.54	-	6.74	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.82	4.02	3.92	3.82	4.02	3.92	3.12	-	-	3.12	-	-
Pot Cap-1 Maneuver	*~ 48	0	*482	*48	0	*466	551	-	-	*585	-	-
Stage 1	*434	432	-	*342	366	-	-	-	-	-	-	-
Stage 2	*478	342	-	*494	346	-	-	-	-	-	-	-
Platoon blocked, %	1	1	1	1	1	1	1	-	-	1	-	-
Mov Cap-1 Maneuver	*~ 34	0	*482	*28	0	*466	551	-	-	*585	-	-
Mov Cap-2 Maneuver	*152	126	-	*118	108	-	-	-	-	-	-	-
Stage 1	*344	390	-	*271	290	-	-	-	-	-	-	-
Stage 2	*323	271	-	*317	313	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	35		29.7		0.7		0.3	
HCM LOS	E		D					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	551	-	-	152	391	118	243	* 585	-	-
HCM Lane V/C Ratio	0.206	-	-	0.602	0.361	0.196	0.251	0.097	-	-
HCM Control Delay (s)	13.2	-	-	59.3	19.3	42.8	24.7	11.8	-	-
HCM Lane LOS	B	-	-	F	C	E	C	B	-	-
HCM 95th %tile Q(veh)	0.8	-	-	3.2	1.6	0.7	1	0.3	-	-

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

Timings  
12: Lyons Road & Wiles Road

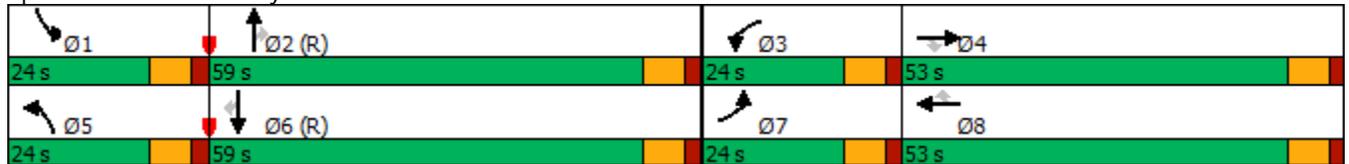
FY PM  
05/08/2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	400	689	410	570	817	264	274	1393	401	206	1219	309
Future Volume (vph)	400	689	410	570	817	264	274	1393	401	206	1219	309
Turn Type	Prot	NA	Perm									
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	6.0	6.0	5.0	6.0	6.0	5.0	12.0	12.0	5.0	12.0	12.0
Minimum Split (s)	12.0	52.0	52.0	12.0	52.0	52.0	12.0	50.0	50.0	12.0	50.0	50.0
Total Split (s)	24.0	53.0	53.0	24.0	53.0	53.0	24.0	59.0	59.0	24.0	59.0	59.0
Total Split (%)	15.0%	33.1%	33.1%	15.0%	33.1%	33.1%	15.0%	36.9%	36.9%	15.0%	36.9%	36.9%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Lead/Lag	Lead	Lag	Lag									
Lead-Lag Optimize?	Yes											
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min						
Act Effct Green (s)	17.5	44.3	44.3	17.5	44.3	44.3	16.4	55.3	55.3	14.9	53.8	53.8
Actuated g/C Ratio	0.11	0.28	0.28	0.11	0.28	0.28	0.10	0.35	0.35	0.09	0.34	0.34
v/c Ratio	1.12	0.74	0.73	1.60	0.88	0.47	0.82	0.83	0.58	0.68	0.75	0.47
Control Delay	149.2	32.1	9.5	323.8	66.3	14.3	77.7	76.0	40.0	81.2	50.9	12.7
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	149.2	32.1	9.5	323.8	66.3	14.3	77.7	76.0	40.0	81.2	50.9	12.7
LOS	F	C	A	F	E	B	E	E	D	F	D	B
Approach Delay		57.2			146.9			69.2			47.7	
Approach LOS		E			F			E			D	

Intersection Summary

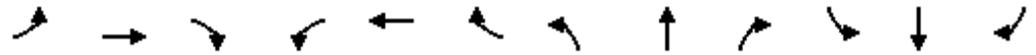
Cycle Length: 160  
 Actuated Cycle Length: 160  
 Offset: 7 (4%), Referenced to phase 2:NBT and 6:SBT, Start of Green  
 Natural Cycle: 150  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 1.60  
 Intersection Signal Delay: 79.7  
 Intersection LOS: E  
 Intersection Capacity Utilization 91.4%  
 ICU Level of Service F  
 Analysis Period (min) 15

Splits and Phases: 12: Lyons Road & Wiles Road



Queues  
12: Lyons Road & Wiles Road

FY PM  
05/08/2023



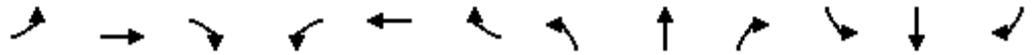
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	421	725	432	600	860	278	288	1466	422	217	1283	325
v/c Ratio	1.12	0.74	0.73	1.60	0.88	0.47	0.82	0.83	0.58	0.68	0.75	0.47
Control Delay	149.2	32.1	9.5	323.8	66.3	14.3	77.7	76.0	40.0	81.2	50.9	12.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	149.2	32.1	9.5	323.8	66.3	14.3	77.7	76.0	40.0	81.2	50.9	12.7
Queue Length 50th (ft)	~229	254	82	~410	394	45	140	484	191	101	391	50
Queue Length 95th (ft)	m#236	m251	m76	#520	470	122	m163	m507	m243	141	443	133
Internal Link Dist (ft)		2625			480			1249			449	
Turn Bay Length (ft)	340		370	210		220	290		300	290		310
Base Capacity (vph)	375	1017	610	375	1017	606	364	1757	722	364	1708	696
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.12	0.71	0.71	1.60	0.85	0.46	0.79	0.83	0.58	0.60	0.75	0.47

Intersection Summary

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

HCM 6th Signalized Intersection Summary  
 12: Lyons Road & Wiles Road

FY PM  
 05/08/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↑↑	↗	↔↔	↑↑	↗	↔↔	↑↑↑	↗	↔↔	↑↑↑	↗
Traffic Volume (veh/h)	400	689	410	570	817	264	274	1393	401	206	1219	309
Future Volume (veh/h)	400	689	410	570	817	264	274	1393	401	206	1219	309
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	421	725	432	600	860	278	288	1466	422	217	1283	325
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	367	1013	452	367	1013	452	331	1825	567	264	1725	536
Arrive On Green	0.11	0.28	0.28	0.11	0.28	0.28	0.10	0.36	0.36	0.08	0.34	0.34
Sat Flow, veh/h	3456	3554	1585	3456	3554	1585	3456	5106	1585	3456	5106	1585
Grp Volume(v), veh/h	421	725	432	600	860	278	288	1466	422	217	1283	325
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1728	1777	1585	1728	1702	1585	1728	1702	1585
Q Serve(g_s), s	17.0	29.3	42.9	17.0	36.5	24.3	13.2	41.4	37.3	9.9	35.6	27.3
Cycle Q Clear(g_c), s	17.0	29.3	42.9	17.0	36.5	24.3	13.2	41.4	37.3	9.9	35.6	27.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	367	1013	452	367	1013	452	331	1825	567	264	1725	536
V/C Ratio(X)	1.15	0.72	0.96	1.63	0.85	0.62	0.87	0.80	0.74	0.82	0.74	0.61
Avail Cap(c_a), veh/h	367	1022	456	367	1022	456	367	1825	567	367	1725	536
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	71.5	51.4	56.2	71.5	54.0	49.6	71.3	46.3	45.0	72.8	46.8	44.1
Incr Delay (d2), s/veh	93.1	2.4	31.1	297.5	6.8	2.4	18.2	3.9	8.6	10.1	3.0	5.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.3	13.5	21.0	22.7	17.4	10.0	6.7	18.3	16.1	4.8	15.6	11.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	164.6	53.8	87.3	369.0	60.8	52.0	89.6	50.2	53.6	83.0	49.8	49.2
LnGrp LOS	F	D	F	F	E	D	F	D	D	F	D	D
Approach Vol, veh/h		1578			1738			2176			1825	
Approach Delay, s/veh		92.5			165.8			56.1			53.6	
Approach LOS		F			F			E			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	19.2	64.2	24.0	52.6	22.3	61.1	24.0	52.6				
Change Period (Y+Rc), s	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0				
Max Green Setting (Gmax), s	17.0	52.0	17.0	46.0	17.0	52.0	17.0	46.0				
Max Q Clear Time (g_c+l1), s	11.9	43.4	19.0	44.9	15.2	37.6	19.0	38.5				
Green Ext Time (p_c), s	0.3	6.5	0.0	0.7	0.2	8.6	0.0	3.9				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				89.4								
HCM 6th LOS				F								

Intersection												
Int Delay, s/veh	0.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↖↗		↖	↖↗		↖		↖			
Traffic Vol, veh/h	16	1426	57	45	1323	0	46	0	45	0	0	0
Future Vol, veh/h	16	1426	57	45	1323	0	46	0	45	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	150	-	-	230	-	-	0	-	100	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	17	1501	60	47	1393	0	48	0	47	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	1393	0	0	1561	0	0	2356	-	781
Stage 1	-	-	-	-	-	-	1565	-	-
Stage 2	-	-	-	-	-	-	791	-	-
Critical Hdwy	4.14	-	-	4.14	-	-	6.84	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	5.84	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.84	-	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	-	3.32
Pot Cap-1 Maneuver	*823	-	-	*766	-	0	*58	0	*512
Stage 1	-	-	-	-	-	0	*483	0	-
Stage 2	-	-	-	-	-	0	*519	0	-
Platoon blocked, %	1	-	-	1	-	-	1	-	1
Mov Cap-1 Maneuver	*823	-	-	*766	-	-	*53	0	*512
Mov Cap-2 Maneuver	-	-	-	-	-	-	*239	0	-
Stage 1	-	-	-	-	-	-	*473	0	-
Stage 2	-	-	-	-	-	-	*487	0	-

Approach	EB			WB			NB		
HCM Control Delay, s	0.1			0.3			18.4		
HCM LOS							C		

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT
Capacity (veh/h)	239	512	* 823	-	-	* 766	-
HCM Lane V/C Ratio	0.203	0.093	0.02	-	-	0.062	-
HCM Control Delay (s)	23.9	12.7	9.5	-	-	10	-
HCM Lane LOS	C	B	A	-	-	B	-
HCM 95th %tile Q(veh)	0.7	0.3	0.1	-	-	0.2	-

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

Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑	↑		↑
Traffic Vol, veh/h	0	2260	3068	37	0	15
Future Vol, veh/h	0	2260	3068	37	0	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	200	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	2379	3229	39	0	16

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	-	0	-	0	- 1615
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	-	-	-	- 7.14
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	- 3.92
Pot Cap-1 Maneuver	0	-	-	-	0 79
Stage 1	0	-	-	-	0 -
Stage 2	0	-	-	-	0 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	- 79
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	61.6
HCM LOS			F

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	79
HCM Lane V/C Ratio	-	-	-	0.2
HCM Control Delay (s)	-	-	-	61.6
HCM Lane LOS	-	-	-	F
HCM 95th %tile Q(veh)	-	-	-	0.7

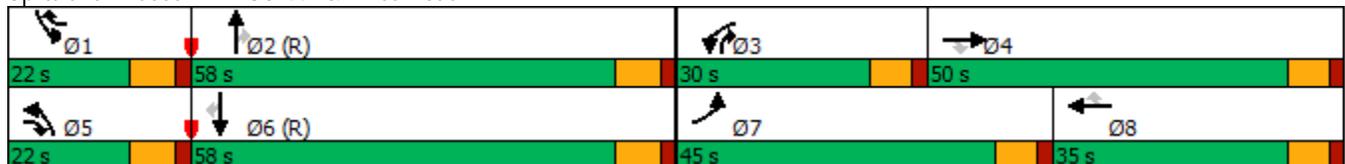
Timings  
1: US 441 & Wiles Road

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	670	738	518	179	497	356	291	1351	153	338	1407	319
Future Volume (vph)	670	738	518	179	497	356	291	1351	153	338	1407	319
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	Perm
Protected Phases	7	4	5	3	8	1	5	2	3	1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	5	3	8	1	5	2	3	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	5.0	5.0	10.0	5.0	5.0	10.0	10.0
Minimum Split (s)	12.5	43.5	12.5	12.5	43.0	12.5	12.5	43.5	12.5	12.5	43.5	43.5
Total Split (s)	45.0	50.0	22.0	30.0	35.0	22.0	22.0	58.0	30.0	22.0	58.0	58.0
Total Split (%)	28.1%	31.3%	13.8%	18.8%	21.9%	13.8%	13.8%	36.3%	18.8%	13.8%	36.3%	36.3%
Yellow Time (s)	5.0	5.0	5.5	5.0	5.0	5.5	5.5	5.5	5.0	5.5	5.5	5.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.5	7.0	7.0	7.5	7.5	7.5	7.0	7.5	7.5	7.5
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes											
Recall Mode	None	C-Min	None	None	C-Min	C-Min						
Act Effect Green (s)	36.1	48.8	69.7	14.1	26.7	48.1	14.0	53.8	75.3	14.4	54.2	54.2
Actuated g/C Ratio	0.23	0.30	0.44	0.09	0.17	0.30	0.09	0.34	0.47	0.09	0.34	0.34
v/c Ratio	0.91	0.72	0.74	0.62	0.88	0.66	0.70	0.83	0.20	0.79	0.86	0.52
Control Delay	76.8	53.9	38.9	87.9	61.8	27.3	96.4	43.0	2.4	84.8	56.0	23.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	76.8	53.9	38.9	87.9	61.8	27.3	96.4	43.0	2.4	84.8	56.0	23.4
LOS	E	D	D	F	E	C	F	D	A	F	E	C
Approach Delay		57.8			54.4			48.2			55.7	
Approach LOS		E			D			D			E	

Intersection Summary

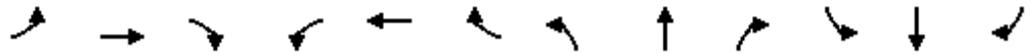
Cycle Length: 160  
 Actuated Cycle Length: 160  
 Offset: 47 (29%), Referenced to phase 2:NBT and 6:SBT, Start of Green  
 Natural Cycle: 145  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.91  
 Intersection Signal Delay: 54.1  
 Intersection LOS: D  
 Intersection Capacity Utilization 89.7%  
 ICU Level of Service E  
 Analysis Period (min) 15

Splits and Phases: 1: US 441 & Wiles Road



Queues

1: US 441 & Wiles Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	705	777	545	188	523	375	306	1422	161	356	1481	336
v/c Ratio	0.91	0.72	0.74	0.62	0.88	0.66	0.70	0.83	0.20	0.79	0.86	0.52
Control Delay	76.8	53.9	38.9	87.9	61.8	27.3	96.4	43.0	2.4	84.8	56.0	23.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	76.8	53.9	38.9	87.9	61.8	27.3	96.4	43.0	2.4	84.8	56.0	23.4
Queue Length 50th (ft)	368	371	394	87	272	287	119	499	5	131	550	138
Queue Length 95th (ft)	#452	464	570	120	#373	380	156	417	16	#171	616	243
Internal Link Dist (ft)		609			2304			1352			507	
Turn Bay Length (ft)	320		250	360		420	300		560	320		190
Base Capacity (vph)	815	1078	739	493	619	566	453	1708	893	457	1721	651
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.87	0.72	0.74	0.38	0.84	0.66	0.68	0.83	0.18	0.78	0.86	0.52

Intersection Summary

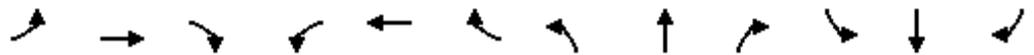
# 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

HCM 6th Signalized Intersection Summary

FY AM IMPROVEMENTS

1: US 441 & Wiles Road

05/12/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↑↑	↖	↖↗	↑↑	↖	↖↗↘	↑↑↑	↖	↖↗↘	↑↑↑	↖
Traffic Volume (veh/h)	670	738	518	179	497	356	291	1351	153	338	1407	319
Future Volume (veh/h)	670	738	518	179	497	356	291	1351	153	338	1407	319
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	705	777	545	188	523	375	306	1422	161	356	1481	336
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	759	1158	635	238	622	410	375	1738	649	420	1784	554
Arrive On Green	0.22	0.33	0.33	0.07	0.17	0.17	0.07	0.34	0.34	0.08	0.35	0.35
Sat Flow, veh/h	3456	3554	1585	3456	3554	1585	5023	5106	1585	5023	5106	1585
Grp Volume(v), veh/h	705	777	545	188	523	375	306	1422	161	356	1481	336
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1728	1777	1585	1674	1702	1585	1674	1702	1585
Q Serve(g_s), s	32.0	30.2	50.3	8.6	22.8	28.0	9.6	40.7	10.7	11.2	42.5	28.0
Cycle Q Clear(g_c), s	32.0	30.2	50.3	8.6	22.8	28.0	9.6	40.7	10.7	11.2	42.5	28.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	759	1158	635	238	622	410	375	1738	649	420	1784	554
V/C Ratio(X)	0.93	0.67	0.86	0.79	0.84	0.91	0.82	0.82	0.25	0.85	0.83	0.61
Avail Cap(c_a), veh/h	821	1158	635	497	622	410	455	1738	649	455	1784	554
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.80	0.80	0.80	1.00	1.00	1.00
Uniform Delay (d), s/veh	61.2	46.5	43.8	73.3	63.8	57.6	73.0	48.2	31.1	72.3	47.7	43.0
Incr Delay (d2), s/veh	16.0	1.5	11.4	5.8	10.1	24.8	7.6	3.6	0.7	13.1	4.6	4.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	15.8	13.7	21.7	4.0	11.2	17.6	4.4	17.9	4.3	5.3	18.9	11.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	77.2	48.1	55.2	79.1	73.9	82.4	80.6	51.8	31.8	85.4	52.3	47.8
LnGrp LOS	E	D	E	E	E	F	F	D	C	F	D	D
Approach Vol, veh/h		2027			1086			1889			2173	
Approach Delay, s/veh		60.1			77.7			54.8			57.1	
Approach LOS		E			E			D			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	20.9	62.0	18.0	59.1	19.4	63.4	42.1	35.0				
Change Period (Y+Rc), s	7.5	7.5	7.0	7.0	7.5	7.5	7.0	7.0				
Max Green Setting (Gmax), s	14.5	50.5	23.0	43.0	14.5	50.5	38.0	28.0				
Max Q Clear Time (g_c+I1), s	13.2	42.7	10.6	52.3	11.6	44.5	34.0	30.0				
Green Ext Time (p_c), s	0.2	5.6	0.5	0.0	0.3	4.7	1.2	0.0				

Intersection Summary

HCM 6th Ctrl Delay	60.5
HCM 6th LOS	E

Notes

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

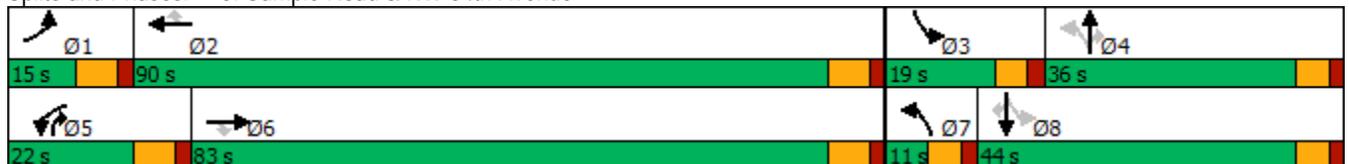
Timings  
5: Sample Road & NW 54th Avenue

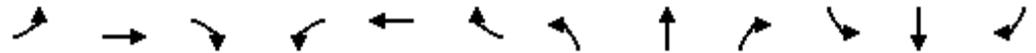
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	79	2125	58	248	1454	144	32	30	310	168	47	71
Future Volume (vph)	79	2125	58	248	1454	144	32	30	310	168	47	71
Turn Type	Prot	NA	Perm	Prot	NA	Perm	pm+pt	NA	pm+ov	pm+pt	NA	Perm
Protected Phases	1	6		5	2		7	4	5	3	8	
Permitted Phases			6			2	4		4	8		8
Detector Phase	1	6	6	5	2	2	7	4	5	3	8	8
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	5.0
Minimum Split (s)	12.0	37.0	37.0	12.0	37.0	37.0	11.0	44.0	12.0	11.0	44.0	44.0
Total Split (s)	15.0	83.0	83.0	22.0	90.0	90.0	11.0	36.0	22.0	19.0	44.0	44.0
Total Split (%)	9.4%	51.9%	51.9%	13.8%	56.3%	56.3%	6.9%	22.5%	13.8%	11.9%	27.5%	27.5%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	4.0	4.0	5.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	6.0	6.0	7.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Min	Min	None	Min	Min	None	None	None	None	None	None
Act Effect Green (s)	7.6	73.5	73.5	14.9	80.8	80.8	9.2	6.7	22.4	20.1	13.9	13.9
Actuated g/C Ratio	0.06	0.57	0.57	0.12	0.63	0.63	0.07	0.05	0.17	0.16	0.11	0.11
v/c Ratio	0.41	0.77	0.06	0.66	0.48	0.14	0.27	0.17	0.89	0.82	0.13	0.27
Control Delay	67.5	24.2	0.1	64.8	14.0	2.0	53.2	63.9	61.3	79.5	55.4	4.8
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	67.5	24.2	0.1	64.8	14.0	2.0	53.2	63.9	61.3	79.5	55.4	4.8
LOS	E	C	A	E	B	A	D	E	E	E	E	A
Approach Delay		25.1			19.9			60.8			57.0	
Approach LOS		C			B			E			E	

Intersection Summary

Cycle Length: 160  
 Actuated Cycle Length: 128.7  
 Natural Cycle: 135  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 0.89  
 Intersection Signal Delay: 27.8  
 Intersection Capacity Utilization 86.2%  
 Analysis Period (min) 15  
 Intersection LOS: C  
 ICU Level of Service E

Splits and Phases: 5: Sample Road & NW 54th Avenue





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	83	2237	61	261	1531	152	34	32	326	177	49	75
v/c Ratio	0.41	0.77	0.06	0.66	0.48	0.14	0.27	0.17	0.89	0.82	0.13	0.27
Control Delay	67.5	24.2	0.1	64.8	14.0	2.0	53.2	63.9	61.3	79.5	55.4	4.8
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	67.5	24.2	0.1	64.8	14.0	2.0	53.2	63.9	61.3	79.5	55.4	4.8
Queue Length 50th (ft)	37	555	0	117	265	0	25	14	190	143	21	0
Queue Length 95th (ft)	66	633	0	167	310	28	57	33	#329	#242	42	14
Internal Link Dist (ft)		1521			667			578			917	
Turn Bay Length (ft)	200			340		460	160		160	180		190
Base Capacity (vph)	215	3031	1004	404	3313	1084	127	832	367	223	1054	553
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.39	0.74	0.06	0.65	0.46	0.14	0.27	0.04	0.89	0.79	0.05	0.14

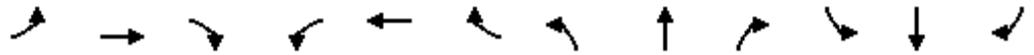
#### Intersection Summary

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

HCM 6th Signalized Intersection Summary  
5: Sample Road & NW 54th Avenue

FY AM IMPROVEMENTS

05/12/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↑↑↑	↖	↖↗	↑↑↑	↖	↖	↑↑	↖	↖	↑↑	↖
Traffic Volume (veh/h)	79	2125	58	248	1454	144	32	30	310	168	47	71
Future Volume (veh/h)	79	2125	58	248	1454	144	32	30	310	168	47	71
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	83	2237	61	261	1531	152	34	32	326	177	49	75
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	123	2425	753	304	2692	836	330	675	441	379	881	393
Arrive On Green	0.04	0.47	0.47	0.09	0.53	0.53	0.02	0.19	0.19	0.08	0.25	0.25
Sat Flow, veh/h	3456	5106	1585	3456	5106	1585	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	83	2237	61	261	1531	152	34	32	326	177	49	75
Grp Sat Flow(s),veh/h/ln	1728	1702	1585	1728	1702	1585	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	3.7	64.6	3.3	11.8	32.0	7.9	2.4	1.2	29.5	12.4	1.7	5.9
Cycle Q Clear(g_c), s	3.7	64.6	3.3	11.8	32.0	7.9	2.4	1.2	29.5	12.4	1.7	5.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	123	2425	753	304	2692	836	330	675	441	379	881	393
V/C Ratio(X)	0.67	0.92	0.08	0.86	0.57	0.18	0.10	0.05	0.74	0.47	0.06	0.19
Avail Cap(c_a), veh/h	175	2459	763	328	2692	836	343	675	441	379	881	393
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	75.2	38.7	22.6	71.0	25.2	19.5	49.6	52.2	51.8	44.8	45.3	46.9
Incr Delay (d2), s/veh	6.2	6.4	0.0	18.9	0.3	0.1	0.1	0.0	6.5	0.9	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	28.2	1.3	6.0	13.1	3.0	1.1	0.5	12.6	5.7	0.8	2.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	81.4	45.1	22.7	89.9	25.5	19.6	49.8	52.3	58.3	45.7	45.3	47.1
LnGrp LOS	F	D	C	F	C	B	D	D	E	D	D	D
Approach Vol, veh/h		2381			1944			392			301	
Approach Delay, s/veh		45.8			33.7			57.1			46.0	
Approach LOS		D			C			E			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.6	90.2	19.0	36.0	20.9	82.0	9.9	45.1				
Change Period (Y+Rc), s	7.0	7.0	6.0	6.0	7.0	7.0	6.0	6.0				
Max Green Setting (Gmax), s	8.0	83.0	13.0	30.0	15.0	76.0	5.0	38.0				
Max Q Clear Time (g_c+I1), s	5.7	34.0	14.4	31.5	13.8	66.6	4.4	7.9				
Green Ext Time (p_c), s	0.0	18.5	0.0	0.0	0.1	8.3	0.0	0.5				

Intersection Summary

HCM 6th Ctrl Delay	42.0
HCM 6th LOS	D

Notes

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

Timings

8: Sample Road & Lyons Road

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	457	1891	425	91	1013	299	466	969	187	508	950	444
Future Volume (vph)	457	1891	425	91	1013	299	466	969	187	508	950	444
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	1	6		5	2		7	4		3	8	1
Permitted Phases			6			2			4			8
Detector Phase	1	6	6	5	2	2	7	4	4	3	8	1
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0
Minimum Split (s)	12.5	45.5	45.5	12.5	45.5	45.5	12.5	46.5	46.5	12.5	46.5	12.5
Total Split (s)	27.0	71.0	71.0	18.0	62.0	62.0	28.0	43.0	43.0	28.0	43.0	27.0
Total Split (%)	16.9%	44.4%	44.4%	11.3%	38.8%	38.8%	17.5%	26.9%	26.9%	17.5%	26.9%	16.9%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
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	0.0
Total Lost Time (s)	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes											
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None	None	None
Act Effct Green (s)	18.9	65.2	65.2	9.3	55.7	55.7	19.5	35.4	35.4	20.0	36.0	62.4
Actuated g/C Ratio	0.12	0.41	0.41	0.06	0.35	0.35	0.12	0.22	0.22	0.12	0.22	0.39
v/c Ratio	0.82	0.96	0.52	0.48	0.60	0.42	0.81	0.91	0.40	0.86	0.87	0.70
Control Delay	80.8	58.4	9.2	80.9	45.0	5.3	79.6	72.7	10.7	100.4	61.3	32.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	80.8	58.4	9.2	80.9	45.0	5.3	79.6	72.7	10.7	100.4	61.3	32.6
LOS	F	E	A	F	D	A	E	E	B	F	E	C
Approach Delay		54.6			38.9			67.5			65.0	
Approach LOS		D			D			E			E	

Intersection Summary

Cycle Length: 160  
 Actuated Cycle Length: 160  
 Offset: 82 (51%), Referenced to phase 2:WBT and 6:EBT, Start of Green  
 Natural Cycle: 150  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.96  
 Intersection Signal Delay: 57.0  
 Intersection LOS: E  
 Intersection Capacity Utilization 94.1%  
 ICU Level of Service F  
 Analysis Period (min) 15

Splits and Phases: 8: Sample Road & Lyons Road



Queues

8: Sample Road & Lyons Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	481	1991	447	96	1066	315	491	1020	197	535	1000	467
v/c Ratio	0.82	0.96	0.52	0.48	0.60	0.42	0.81	0.91	0.40	0.86	0.87	0.70
Control Delay	80.8	58.4	9.2	80.9	45.0	5.3	79.6	72.7	10.7	100.4	61.3	32.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	80.8	58.4	9.2	80.9	45.0	5.3	79.6	72.7	10.7	100.4	61.3	32.6
Queue Length 50th (ft)	176	747	56	51	341	0	179	384	11	206	383	358
Queue Length 95th (ft)	220	#869	159	83	392	69	223	#451	82	m#252	413	m498
Internal Link Dist (ft)		1221			746			683			751	
Turn Bay Length (ft)	260		580	270		480	300		300	300		340
Base Capacity (vph)	608	2073	859	225	1769	755	639	1128	494	639	1143	672
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.79	0.96	0.52	0.43	0.60	0.42	0.77	0.90	0.40	0.84	0.87	0.69

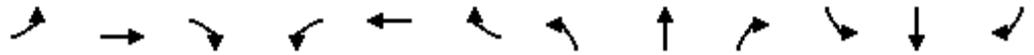
Intersection Summary

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

HCM 6th Signalized Intersection Summary  
8: Sample Road & Lyons Road

FY AM IMPROVEMENTS

05/12/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔↔	↑↑↑	↗	↔↔	↑↑↑	↗	↔↔↔	↑↑↑	↗	↔↔↔	↑↑↑	↗
Traffic Volume (veh/h)	457	1891	425	91	1013	299	466	969	187	508	950	444
Future Volume (veh/h)	457	1891	425	91	1013	299	466	969	187	508	950	444
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	481	1991	447	96	1066	315	491	1020	197	535	1000	467
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	552	2222	690	138	1864	579	566	1110	345	603	1148	531
Arrive On Green	0.11	0.44	0.44	0.04	0.37	0.37	0.11	0.22	0.22	0.12	0.22	0.22
Sat Flow, veh/h	5023	5106	1585	3456	5106	1585	5023	5106	1585	5023	5106	1585
Grp Volume(v), veh/h	481	1991	447	96	1066	315	491	1020	197	535	1000	467
Grp Sat Flow(s),veh/h/ln	1674	1702	1585	1728	1702	1585	1674	1702	1585	1674	1702	1585
Q Serve(g_s), s	15.1	57.8	35.5	4.4	26.8	25.2	15.4	31.3	17.8	16.8	30.2	36.0
Cycle Q Clear(g_c), s	15.1	57.8	35.5	4.4	26.8	25.2	15.4	31.3	17.8	16.8	30.2	36.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	552	2222	690	138	1864	579	566	1110	345	603	1148	531
V/C Ratio(X)	0.87	0.90	0.65	0.70	0.57	0.54	0.87	0.92	0.57	0.89	0.87	0.88
Avail Cap(c_a), veh/h	612	2222	690	227	1864	579	644	1133	352	644	1148	531
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	70.1	41.8	35.5	75.9	40.8	40.2	69.8	61.2	55.9	69.3	59.8	50.2
Incr Delay (d2), s/veh	12.1	6.2	4.7	6.2	1.3	3.6	11.1	11.7	2.1	13.6	7.5	15.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.1	25.4	14.7	2.1	11.6	10.5	7.2	14.8	7.4	8.0	13.9	20.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	82.2	48.0	40.2	82.1	42.0	43.9	80.9	72.9	58.1	83.0	67.2	65.9
LnGrp LOS	F	D	D	F	D	D	F	E	E	F	E	E
Approach Vol, veh/h		2919			1477			1708			2002	
Approach Delay, s/veh		52.5			45.0			73.5			71.1	
Approach LOS		D			D			E			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	25.1	65.9	26.7	42.3	13.9	77.1	25.5	43.5				
Change Period (Y+Rc), s	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5				
Max Green Setting (Gmax), s	19.5	54.5	20.5	35.5	10.5	63.5	20.5	35.5				
Max Q Clear Time (g_c+I1), s	17.1	28.8	18.8	33.3	6.4	59.8	17.4	38.0				
Green Ext Time (p_c), s	0.5	10.0	0.4	1.5	0.1	3.5	0.6	0.0				

Intersection Summary

HCM 6th Ctrl Delay	60.1
HCM 6th LOS	E

Notes

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

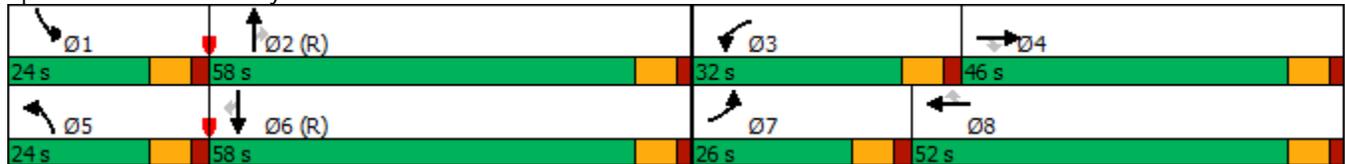
Timings  
12: Lyons Road & Wiles Road

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	309	766	333	424	568	236	163	998	620	298	1011	312
Future Volume (vph)	309	766	333	424	568	236	163	998	620	298	1011	312
Turn Type	Prot	NA	Perm									
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	6.0	6.0	5.0	6.0	6.0	5.0	12.0	12.0	5.0	12.0	12.0
Minimum Split (s)	12.0	52.0	52.0	12.0	52.0	52.0	12.0	50.0	50.0	12.0	50.0	50.0
Total Split (s)	26.0	46.0	46.0	32.0	52.0	52.0	24.0	58.0	58.0	24.0	58.0	58.0
Total Split (%)	16.3%	28.8%	28.8%	20.0%	32.5%	32.5%	15.0%	36.3%	36.3%	15.0%	36.3%	36.3%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Lead/Lag	Lead	Lag	Lag									
Lead-Lag Optimize?	Yes											
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min						
Act Effct Green (s)	18.2	39.0	39.0	23.9	44.7	44.7	13.3	52.4	52.4	16.7	55.8	55.8
Actuated g/C Ratio	0.11	0.24	0.24	0.15	0.28	0.28	0.08	0.33	0.33	0.10	0.35	0.35
v/c Ratio	0.83	0.94	0.63	0.87	0.61	0.41	0.60	0.63	0.92	0.88	0.60	0.43
Control Delay	67.1	76.5	32.9	84.4	53.0	9.2	77.8	68.4	64.4	94.7	45.3	5.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	67.1	76.5	32.9	84.4	53.0	9.2	77.8	68.4	64.4	94.7	45.3	5.5
LOS	E	E	C	F	D	A	E	E	E	F	D	A
Approach Delay		64.1			55.5			67.9			46.7	
Approach LOS		E			E			E			D	

Intersection Summary

Cycle Length: 160  
 Actuated Cycle Length: 160  
 Offset: 70 (44%), Referenced to phase 2:NBT and 6:SBT, Start of Green  
 Natural Cycle: 140  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.94  
 Intersection Signal Delay: 58.8  
 Intersection LOS: E  
 Intersection Capacity Utilization 85.6%  
 ICU Level of Service E  
 Analysis Period (min) 15

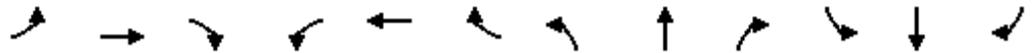
Splits and Phases: 12: Lyons Road & Wiles Road



Queues

12: Lyons Road & Wiles Road

05/12/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	325	806	351	446	598	248	172	1051	653	314	1064	328
v/c Ratio	0.83	0.94	0.63	0.87	0.61	0.41	0.60	0.63	0.92	0.88	0.60	0.43
Control Delay	67.1	76.5	32.9	84.4	53.0	9.2	77.8	68.4	64.4	94.7	45.3	5.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	67.1	76.5	32.9	84.4	53.0	9.2	77.8	68.4	64.4	94.7	45.3	5.5
Queue Length 50th (ft)	161	458	140	236	286	17	96	337	403	169	339	0
Queue Length 95th (ft)	m#223	#571	318	#314	353	92	m120	m388	m#565	#251	405	73
Internal Link Dist (ft)		2625			480			1249			449	
Turn Bay Length (ft)	340		370	300		220	290		300	290		310
Base Capacity (vph)	407	867	558	536	997	608	364	1663	711	364	1772	765
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.80	0.93	0.63	0.83	0.60	0.41	0.47	0.63	0.92	0.86	0.60	0.43

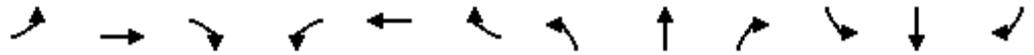
Intersection Summary

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

HCM 6th Signalized Intersection Summary  
 12: Lyons Road & Wiles Road

FY AM IMPROVEMENTS

05/12/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↑↑	↖	↖↗	↑↑	↖	↖↗	↑↑↑	↖	↖↗	↑↑↑	↖
Traffic Volume (veh/h)	309	766	333	424	568	236	163	998	620	298	1011	312
Future Volume (veh/h)	309	766	333	424	568	236	163	998	620	298	1011	312
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	325	806	351	446	598	248	172	1051	653	314	1064	328
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	369	856	382	493	983	438	219	1730	537	355	1931	600
Arrive On Green	0.11	0.24	0.24	0.14	0.28	0.28	0.06	0.34	0.34	0.10	0.38	0.38
Sat Flow, veh/h	3456	3554	1585	3456	3554	1585	3456	5106	1585	3456	5106	1585
Grp Volume(v), veh/h	325	806	351	446	598	248	172	1051	653	314	1064	328
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1728	1777	1585	1728	1702	1585	1728	1702	1585
Q Serve(g_s), s	14.8	35.6	34.5	20.3	23.4	21.5	7.8	27.4	54.2	14.3	26.2	26.0
Cycle Q Clear(g_c), s	14.8	35.6	34.5	20.3	23.4	21.5	7.8	27.4	54.2	14.3	26.2	26.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	369	856	382	493	983	438	219	1730	537	355	1931	600
V/C Ratio(X)	0.88	0.94	0.92	0.91	0.61	0.57	0.79	0.61	1.22	0.88	0.55	0.55
Avail Cap(c_a), veh/h	410	866	386	540	999	446	367	1730	537	367	1931	600
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	70.4	59.6	59.2	67.5	50.3	49.6	73.9	44.0	52.9	70.8	39.1	39.0
Incr Delay (d2), s/veh	18.0	18.0	26.6	17.9	1.0	1.6	6.1	1.6	113.2	21.3	1.1	3.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.5	18.2	16.7	10.2	10.7	8.8	3.7	11.9	38.4	7.4	11.3	10.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	88.5	77.6	85.8	85.4	51.4	51.3	80.0	45.6	166.1	92.2	40.2	42.6
LnGrp LOS	F	E	F	F	D	D	E	D	F	F	D	D
Approach Vol, veh/h		1482			1292			1876			1706	
Approach Delay, s/veh		81.9			63.1			90.7			50.2	
Approach LOS		F			E			F			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	23.4	61.2	29.8	45.5	17.1	67.5	24.1	51.2				
Change Period (Y+Rc), s	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0				
Max Green Setting (Gmax), s	17.0	51.0	25.0	39.0	17.0	51.0	19.0	45.0				
Max Q Clear Time (g_c+l1), s	16.3	56.2	22.3	37.6	9.8	28.2	16.8	25.4				
Green Ext Time (p_c), s	0.1	0.0	0.5	0.9	0.3	9.6	0.3	4.9				

Intersection Summary

HCM 6th Ctrl Delay	72.2
HCM 6th LOS	E

Notes

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

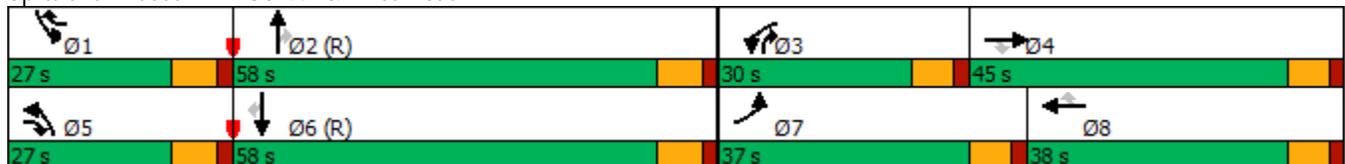
Timings  
1: US 441 & Wiles Road

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	668	874	203	337	728	194	460	1633	275	429	1439	442
Future Volume (vph)	668	874	203	337	728	194	460	1633	275	429	1439	442
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	Perm
Protected Phases	7	4	5	3	8	1	5	2	3	1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	5	3	8	1	5	2	3	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	5.0	5.0	10.0	5.0	5.0	10.0	10.0
Minimum Split (s)	12.5	43.5	12.5	12.5	43.0	12.5	12.5	43.5	12.5	12.5	43.5	43.5
Total Split (s)	37.0	45.0	27.0	30.0	38.0	27.0	27.0	58.0	30.0	27.0	58.0	58.0
Total Split (%)	23.1%	28.1%	16.9%	18.8%	23.8%	16.9%	16.9%	36.3%	18.8%	16.9%	36.3%	36.3%
Yellow Time (s)	5.0	5.0	5.5	5.0	5.0	5.5	5.5	5.5	5.0	5.5	5.5	5.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.5	7.0	7.0	7.5	7.5	7.5	7.0	7.5	7.5	7.5
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes											
Recall Mode	None	C-Min	None	None	C-Min	C-Min						
Act Effct Green (s)	30.0	40.2	66.1	20.8	31.0	56.4	18.8	51.6	79.8	18.4	51.2	51.2
Actuated g/C Ratio	0.19	0.25	0.41	0.13	0.19	0.35	0.12	0.32	0.50	0.12	0.32	0.32
v/c Ratio	1.09	1.03	0.31	0.80	1.12	0.34	0.82	1.05	0.35	0.79	0.93	0.70
Control Delay	122.2	96.2	21.1	54.8	123.1	39.4	73.2	99.9	21.1	79.3	63.8	28.8
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	122.2	96.2	21.1	54.8	123.1	39.4	73.2	99.9	21.1	79.3	63.8	28.8
LOS	F	F	C	D	F	D	E	F	C	E	E	C
Approach Delay		97.4			91.9			85.6			60.0	
Approach LOS		F			F			F			E	

Intersection Summary

Cycle Length: 160  
 Actuated Cycle Length: 160  
 Offset: 33 (21%), Referenced to phase 2:NBT and 6:SBT, Start of Green  
 Natural Cycle: 145  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 1.12  
 Intersection Signal Delay: 81.6  
 Intersection LOS: F  
 Intersection Capacity Utilization 103.1%  
 ICU Level of Service G  
 Analysis Period (min) 15

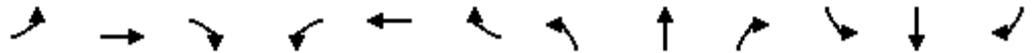
Splits and Phases: 1: US 441 & Wiles Road



Queues

1: US 441 & Wiles Road

05/12/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	703	920	214	355	766	204	484	1719	289	452	1515	465
v/c Ratio	1.09	1.03	0.31	0.80	1.12	0.34	0.82	1.05	0.35	0.79	0.93	0.70
Control Delay	122.2	96.2	21.1	54.8	123.1	39.4	73.2	99.9	21.1	79.3	63.8	28.8
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	122.2	96.2	21.1	54.8	123.1	39.4	73.2	99.9	21.1	79.3	63.8	28.8
Queue Length 50th (ft)	~425	~553	93	164	~493	157	189	~708	121	164	568	218
Queue Length 95th (ft)	#555	#707	162	m208	#630	m196	230	#817	191	207	#662	359
Internal Link Dist (ft)		609			2304			1352			507	
Turn Bay Length (ft)	320		250	360		420	300		560	320		190
Base Capacity (vph)	643	890	705	493	685	618	608	1638	849	608	1626	667
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.09	1.03	0.30	0.72	1.12	0.33	0.80	1.05	0.34	0.74	0.93	0.70

Intersection Summary

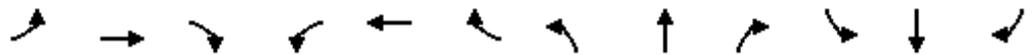
- ~ Volume exceeds capacity, queue is theoretically infinite.  
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

HCM 6th Signalized Intersection Summary

FY PM IMPROVEMENTS

1: US 441 & Wiles Road

05/12/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↑↑	↗	↔↔	↑↑	↗	↔↔↔	↑↑↑	↗	↔↔↔	↑↑↑	↗
Traffic Volume (veh/h)	668	874	203	337	728	194	460	1633	275	429	1439	442
Future Volume (veh/h)	668	874	203	337	728	194	460	1633	275	429	1439	442
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	703	920	214	355	766	204	484	1719	289	452	1515	465
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	648	938	594	405	689	473	557	1699	713	526	1668	518
Arrive On Green	0.19	0.26	0.26	0.12	0.19	0.19	0.07	0.22	0.22	0.10	0.33	0.33
Sat Flow, veh/h	3456	3554	1585	3456	3554	1585	5023	5106	1585	5023	5106	1585
Grp Volume(v), veh/h	703	920	214	355	766	204	484	1719	289	452	1515	465
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1728	1777	1585	1674	1702	1585	1674	1702	1585
Q Serve(g_s), s	30.0	41.1	15.6	16.2	31.0	16.6	15.3	53.2	21.3	14.2	45.4	44.7
Cycle Q Clear(g_c), s	30.0	41.1	15.6	16.2	31.0	16.6	15.3	53.2	21.3	14.2	45.4	44.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	648	938	594	405	689	473	557	1699	713	526	1668	518
V/C Ratio(X)	1.08	0.98	0.36	0.88	1.11	0.43	0.87	1.01	0.41	0.86	0.91	0.90
Avail Cap(c_a), veh/h	648	938	594	497	689	473	612	1699	713	612	1668	518
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.67	0.67	0.67	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00	0.56	0.56	0.56	1.00	1.00	1.00
Uniform Delay (d), s/veh	65.0	58.5	36.1	69.5	64.5	45.2	72.9	62.2	35.0	70.4	51.6	51.3
Incr Delay (d2), s/veh	60.6	24.6	0.4	14.0	69.5	0.6	7.2	19.3	1.0	10.5	8.8	21.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	18.7	21.7	6.2	8.0	20.7	6.7	7.1	26.8	8.9	6.6	20.8	20.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	125.6	83.0	36.5	83.4	134.0	45.8	80.1	81.5	36.0	81.0	60.4	72.3
LnGrp LOS	F	F	D	F	F	D	F	F	D	F	E	E
Approach Vol, veh/h		1837			1325			2492			2432	
Approach Delay, s/veh		93.9			106.9			76.0			66.5	
Approach LOS		F			F			E			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	24.3	60.7	25.7	49.3	25.2	59.8	37.0	38.0				
Change Period (Y+Rc), s	7.5	7.5	7.0	7.0	7.5	7.5	7.0	7.0				
Max Green Setting (Gmax), s	19.5	50.5	23.0	38.0	19.5	50.5	30.0	31.0				
Max Q Clear Time (g_c+I1), s	16.2	55.2	18.2	43.1	17.3	47.4	32.0	33.0				
Green Ext Time (p_c), s	0.6	0.0	0.6	0.0	0.5	2.6	0.0	0.0				

Intersection Summary

HCM 6th Ctrl Delay	82.2
HCM 6th LOS	F

Notes

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

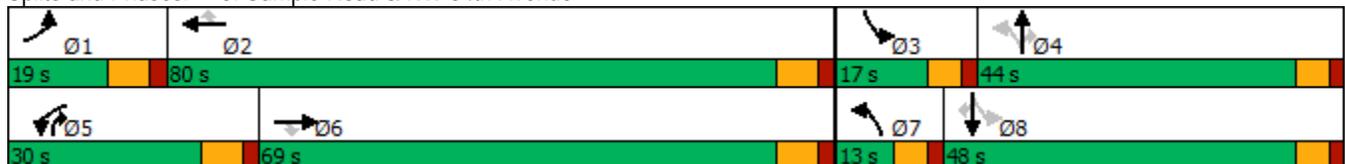
Timings  
5: Sample Road & NW 54th Avenue

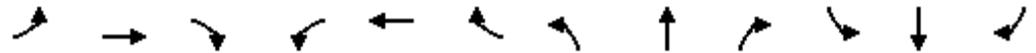
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	205	1645	59	424	1979	321	133	71	313	254	70	122
Future Volume (vph)	205	1645	59	424	1979	321	133	71	313	254	70	122
Turn Type	Prot	NA	Perm	Prot	NA	Perm	pm+pt	NA	pm+ov	pm+pt	NA	Perm
Protected Phases	1	6		5	2		7	4	5	3	8	
Permitted Phases			6			2	4		4	8		8
Detector Phase	1	6	6	5	2	2	7	4	5	3	8	8
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	5.0
Minimum Split (s)	12.0	37.0	37.0	12.0	37.0	37.0	11.0	44.0	12.0	11.0	44.0	44.0
Total Split (s)	19.0	69.0	69.0	30.0	80.0	80.0	13.0	44.0	30.0	17.0	48.0	48.0
Total Split (%)	11.9%	43.1%	43.1%	18.8%	50.0%	50.0%	8.1%	27.5%	18.8%	10.6%	30.0%	30.0%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	4.0	4.0	5.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	6.0	6.0	7.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes											
Recall Mode	None	Min	Min	None	Min	Min	None	None	None	None	None	None
Act Effect Green (s)	11.7	61.9	61.9	21.6	71.7	71.7	15.1	8.1	35.7	23.1	12.1	12.1
Actuated g/C Ratio	0.09	0.48	0.48	0.17	0.56	0.56	0.12	0.06	0.28	0.18	0.09	0.09
v/c Ratio	0.69	0.71	0.07	0.78	0.73	0.33	0.78	0.34	0.67	1.14	0.22	0.43
Control Delay	69.4	28.6	0.2	61.5	23.4	2.3	77.5	62.3	40.0	147.3	56.0	7.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	69.4	28.6	0.2	61.5	23.4	2.3	77.5	62.3	40.0	147.3	56.0	7.9
LOS	E	C	A	E	C	A	E	E	D	F	E	A
Approach Delay		32.1			26.8			52.7			94.8	
Approach LOS		C			C			D			F	

Intersection Summary

Cycle Length: 160  
 Actuated Cycle Length: 128.6  
 Natural Cycle: 125  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 1.14  
 Intersection Signal Delay: 36.4  
 Intersection Capacity Utilization 81.9%  
 Analysis Period (min) 15  
 Intersection LOS: D  
 ICU Level of Service D

Splits and Phases: 5: Sample Road & NW 54th Avenue





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	216	1732	62	446	2083	338	140	75	329	267	74	128
v/c Ratio	0.69	0.71	0.07	0.78	0.73	0.33	0.78	0.34	0.67	1.14	0.22	0.43
Control Delay	69.4	28.6	0.2	61.5	23.4	2.3	77.5	62.3	40.0	147.3	56.0	7.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	69.4	28.6	0.2	61.5	23.4	2.3	77.5	62.3	40.0	147.3	56.0	7.9
Queue Length 50th (ft)	92	414	0	185	458	0	105	32	195	-252	31	0
Queue Length 95th (ft)	138	486	0	248	535	43	#194	58	304	#352	56	31
Internal Link Dist (ft)		1521			667			578			917	
Turn Bay Length (ft)	200			340		460	160		160	180		190
Base Capacity (vph)	320	2469	849	614	2889	1045	179	1047	505	234	1157	627
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.68	0.70	0.07	0.73	0.72	0.32	0.78	0.07	0.65	1.14	0.06	0.20

#### Intersection Summary

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

HCM 6th Signalized Intersection Summary  
5: Sample Road & NW 54th Avenue

FY PM IMPROVEMENTS

05/12/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↑↑↑	↖	↖↗	↑↑↑	↖	↖	↑↑	↖	↖	↑↑	↖
Traffic Volume (veh/h)	205	1645	59	424	1979	321	133	71	313	254	70	122
Future Volume (veh/h)	205	1645	59	424	1979	321	133	71	313	254	70	122
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	216	1732	62	446	2083	338	140	75	329	267	74	128
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	262	2085	647	496	2432	755	365	694	537	358	791	353
Arrive On Green	0.08	0.41	0.41	0.14	0.48	0.48	0.05	0.20	0.20	0.08	0.22	0.22
Sat Flow, veh/h	3456	5106	1585	3456	5106	1585	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	216	1732	62	446	2083	338	140	75	329	267	74	128
Grp Sat Flow(s),veh/h/ln	1728	1702	1585	1728	1702	1585	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	9.0	44.5	3.5	18.6	52.8	20.8	7.0	2.5	25.4	11.0	2.4	10.0
Cycle Q Clear(g_c), s	9.0	44.5	3.5	18.6	52.8	20.8	7.0	2.5	25.4	11.0	2.4	10.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	262	2085	647	496	2432	755	365	694	537	358	791	353
V/C Ratio(X)	0.82	0.83	0.10	0.90	0.86	0.45	0.38	0.11	0.61	0.75	0.09	0.36
Avail Cap(c_a), veh/h	283	2163	671	543	2546	790	365	923	639	358	1020	455
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	66.7	38.8	26.7	61.6	33.9	25.5	45.7	48.4	40.4	48.3	45.2	48.1
Incr Delay (d2), s/veh	16.8	2.8	0.1	16.9	3.0	0.4	0.7	0.1	1.3	8.3	0.1	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.6	19.0	1.4	9.3	22.3	8.0	4.3	1.2	10.1	4.6	1.1	4.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	83.5	41.6	26.7	78.5	36.9	25.9	46.3	48.5	41.6	56.6	45.2	48.8
LnGrp LOS	F	D	C	E	D	C	D	D	D	E	D	D
Approach Vol, veh/h		2010			2867			544			469	
Approach Delay, s/veh		45.6			42.1			43.8			52.7	
Approach LOS		D			D			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	18.1	76.7	17.0	34.6	28.0	66.8	13.0	38.6				
Change Period (Y+Rc), s	7.0	7.0	6.0	6.0	7.0	7.0	6.0	6.0				
Max Green Setting (Gmax), s	12.0	73.0	11.0	38.0	23.0	62.0	7.0	42.0				
Max Q Clear Time (g_c+l1), s	11.0	54.8	13.0	27.4	20.6	46.5	9.0	12.0				
Green Ext Time (p_c), s	0.1	14.9	0.0	1.2	0.4	10.9	0.0	0.9				

Intersection Summary

HCM 6th Ctrl Delay	44.3
HCM 6th LOS	D

Notes

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

Timings

FY PM IMPROVEMENTS

8: Sample Road & Lyons Road

05/12/2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	447	1237	390	155	1930	489	507	1072	138	441	1002	589
Future Volume (vph)	447	1237	390	155	1930	489	507	1072	138	441	1002	589
Turn Type	Prot	NA	pm+ov									
Protected Phases	1	6	7	5	2	3	7	4	5	3	8	1
Permitted Phases			6			2			4			8
Detector Phase	1	6	7	5	2	3	7	4	5	3	8	1
Switch Phase												
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	5.0	5.0	10.0	5.0	5.0	10.0	5.0
Minimum Split (s)	12.5	45.5	12.5	12.5	45.5	12.5	12.5	46.5	12.5	12.5	46.5	12.5
Total Split (s)	24.0	68.0	32.0	24.0	68.0	27.0	32.0	41.0	24.0	27.0	36.0	24.0
Total Split (%)	15.0%	42.5%	20.0%	15.0%	42.5%	16.9%	20.0%	25.6%	15.0%	16.9%	22.5%	15.0%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
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	0.0
Total Lost Time (s)	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5
Lead/Lag	Lead	Lag	Lead									
Lead-Lag Optimize?	Yes											
Recall Mode	None	C-Min	None	None	C-Min	None						
Act Effect Green (s)	16.5	64.1	93.9	12.9	60.5	86.9	22.3	34.1	54.5	18.9	30.7	54.7
Actuated g/C Ratio	0.10	0.40	0.59	0.08	0.38	0.54	0.14	0.21	0.34	0.12	0.19	0.34
v/c Ratio	0.92	0.64	0.43	0.59	1.06	0.57	0.77	1.04	0.24	0.79	1.08	1.04
Control Delay	94.0	40.8	15.7	79.5	84.9	22.8	74.2	98.7	17.3	88.3	104.6	72.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	94.0	40.8	15.7	79.5	84.9	22.8	74.2	98.7	17.3	88.3	104.6	72.9
LOS	F	D	B	E	F	C	E	F	B	F	F	E
Approach Delay		47.5			72.8			84.9			91.9	
Approach LOS		D			E			F			F	

Intersection Summary

Cycle Length: 160  
 Actuated Cycle Length: 160  
 Offset: 30 (19%), Referenced to phase 2:WBT and 6:EBT, Start of Green  
 Natural Cycle: 150  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 1.08  
 Intersection Signal Delay: 73.6  
 Intersection LOS: E  
 Intersection Capacity Utilization 102.2%  
 ICU Level of Service G  
 Analysis Period (min) 15

Splits and Phases: 8: Sample Road & Lyons Road



## 8: Sample Road &amp; Lyons Road

05/12/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	471	1302	411	163	2032	515	534	1128	145	464	1055	620
v/c Ratio	0.92	0.64	0.43	0.59	1.06	0.57	0.77	1.04	0.24	0.79	1.08	1.04
Control Delay	94.0	40.8	15.7	79.5	84.9	22.8	74.2	98.7	17.3	88.3	104.6	72.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	94.0	40.8	15.7	79.5	84.9	22.8	74.2	98.7	17.3	88.3	104.6	72.9
Queue Length 50th (ft)	176	400	178	86	-849	291	192	-472	46	155	-471	-641
Queue Length 95th (ft)	#245	471	267	125	#940	406	235	#570	99	m188	m#560	m#837
Internal Link Dist (ft)		1221			746			683			751	
Turn Bay Length (ft)	260		580	270		480	300		300	300		340
Base Capacity (vph)	514	2036	983	354	1922	902	764	1082	626	608	975	595
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.92	0.64	0.42	0.46	1.06	0.57	0.70	1.04	0.23	0.76	1.08	1.04

## Intersection Summary

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

HCM 6th Signalized Intersection Summary  
8: Sample Road & Lyons Road

FY PM IMPROVEMENTS

05/12/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	447	1237	390	155	1930	489	507	1072	138	441	1002	589
Future Volume (veh/h)	447	1237	390	155	1930	489	507	1072	138	441	1002	589
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	471	1302	411	163	2032	515	534	1128	145	464	1055	620
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	518	2224	887	210	2007	793	622	1069	428	537	983	469
Arrive On Green	0.10	0.44	0.44	0.06	0.39	0.39	0.12	0.21	0.21	0.11	0.19	0.19
Sat Flow, veh/h	5023	5106	1585	3456	5106	1585	5023	5106	1585	5023	5106	1585
Grp Volume(v), veh/h	471	1302	411	163	2032	515	534	1128	145	464	1055	620
Grp Sat Flow(s),veh/h/ln	1674	1702	1585	1728	1702	1585	1674	1702	1585	1674	1702	1585
Q Serve(g_s), s	14.8	30.9	24.7	7.4	62.9	38.5	16.7	33.5	11.8	14.5	30.8	30.8
Cycle Q Clear(g_c), s	14.8	30.9	24.7	7.4	62.9	38.5	16.7	33.5	11.8	14.5	30.8	30.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	518	2224	887	210	2007	793	622	1069	428	537	983	469
V/C Ratio(X)	0.91	0.59	0.46	0.78	1.01	0.65	0.86	1.06	0.34	0.86	1.07	1.32
Avail Cap(c_a), veh/h	518	2224	887	356	2007	793	769	1069	428	612	983	469
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	71.0	34.2	21.0	74.1	48.6	29.6	68.7	63.2	46.9	70.3	64.6	56.3
Incr Delay (d2), s/veh	20.0	1.1	1.7	6.1	23.2	4.1	8.1	43.3	0.5	11.2	50.4	159.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.4	13.2	9.7	3.5	30.9	15.6	7.7	18.8	4.8	6.8	18.0	39.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	91.0	35.3	22.7	80.2	71.8	33.7	76.9	106.5	47.4	81.5	115.0	216.0
LnGrp LOS	F	D	C	F	F	C	E	F	D	F	F	F
Approach Vol, veh/h		2184			2710			1807			2139	
Approach Delay, s/veh		45.0			65.0			93.0			137.0	
Approach LOS		D			E			F			F	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	24.0	70.4	24.6	41.0	17.2	77.2	27.3	38.3				
Change Period (Y+Rc), s	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5				
Max Green Setting (Gmax), s	16.5	60.5	19.5	33.5	16.5	60.5	24.5	28.5				
Max Q Clear Time (g_c+I1), s	16.8	64.9	16.5	35.5	9.4	32.9	18.7	32.8				
Green Ext Time (p_c), s	0.0	0.0	0.6	0.0	0.3	13.4	1.1	0.0				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			83.2									
HCM 6th LOS			F									
<b>Notes</b>												
User approved pedestrian interval to be less than phase max green.												

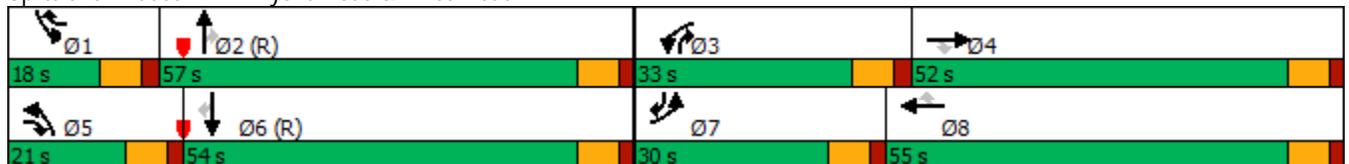
Timings  
12: Lyons Road & Wiles Road

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	400	689	410	570	817	264	274	1393	401	206	1219	309
Future Volume (vph)	400	689	410	570	817	264	274	1393	401	206	1219	309
Turn Type	Prot	NA	pm+ov									
Protected Phases	7	4	5	3	8	1	5	2	3	1	6	7
Permitted Phases			4			8			2			6
Detector Phase	7	4	5	3	8	1	5	2	3	1	6	7
Switch Phase												
Minimum Initial (s)	5.0	6.0	5.0	5.0	6.0	5.0	5.0	12.0	5.0	5.0	12.0	5.0
Minimum Split (s)	12.0	52.0	12.0	12.0	52.0	12.0	12.0	50.0	12.0	12.0	50.0	12.0
Total Split (s)	30.0	52.0	21.0	33.0	55.0	18.0	21.0	57.0	33.0	18.0	54.0	30.0
Total Split (%)	18.8%	32.5%	13.1%	20.6%	34.4%	11.3%	13.1%	35.6%	20.6%	11.3%	33.8%	18.8%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Lead/Lag	Lead	Lag	Lead									
Lead-Lag Optimize?	Yes											
Recall Mode	None	C-Min	None	None	C-Min	None						
Act Effct Green (s)	22.3	41.0	63.8	27.0	45.6	65.3	15.9	51.4	85.4	12.6	48.2	77.5
Actuated g/C Ratio	0.14	0.26	0.40	0.17	0.28	0.41	0.10	0.32	0.53	0.08	0.30	0.48
v/c Ratio	0.88	0.80	0.64	1.04	0.85	0.40	0.85	0.90	0.48	0.80	0.84	0.40
Control Delay	104.6	30.8	13.3	110.3	63.1	25.7	79.4	79.0	25.8	93.2	58.5	21.7
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	104.6	30.8	13.3	110.3	63.1	25.7	79.4	79.0	25.8	93.2	58.5	21.7
LOS	F	C	B	F	E	C	E	E	C	F	E	C
Approach Delay		45.7			73.4			68.7			56.0	
Approach LOS		D			E			E			E	

Intersection Summary

Cycle Length: 160  
 Actuated Cycle Length: 160  
 Offset: 7 (4%), Referenced to phase 2:NBT and 6:SBT, Start of Green  
 Natural Cycle: 150  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 1.04  
 Intersection Signal Delay: 61.7  
 Intersection LOS: E  
 Intersection Capacity Utilization 91.4%  
 ICU Level of Service F  
 Analysis Period (min) 15

Splits and Phases: 12: Lyons Road & Wiles Road



Queues

12: Lyons Road & Wiles Road

05/12/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	421	725	432	600	860	278	288	1466	422	217	1283	325
v/c Ratio	0.88	0.80	0.64	1.04	0.85	0.40	0.85	0.90	0.48	0.80	0.84	0.40
Control Delay	104.6	30.8	13.3	110.3	63.1	25.7	79.4	79.0	25.8	93.2	58.5	21.7
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	104.6	30.8	13.3	110.3	63.1	25.7	79.4	79.0	25.8	93.2	58.5	21.7
Queue Length 50th (ft)	211	283	251	~358	447	147	158	578	224	117	467	164
Queue Length 95th (ft)	m237	m325	m306	#484	524	228	m#202	m601	m258	#202	528	246
Internal Link Dist (ft)		2625			480			1249			449	
Turn Bay Length (ft)	340		370	300		220	290		300	290		310
Base Capacity (vph)	493	995	677	578	1061	690	340	1634	879	270	1531	811
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.85	0.73	0.64	1.04	0.81	0.40	0.85	0.90	0.48	0.80	0.84	0.40

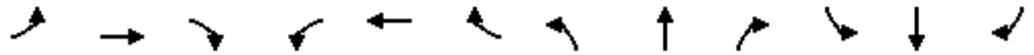
Intersection Summary

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

HCM 6th Signalized Intersection Summary  
 12: Lyons Road & Wiles Road

FY PM IMPROVEMENTS

05/12/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↑↑	↗	↔↔	↑↑	↗	↔↔	↑↑↑	↗	↔↔	↑↑↑	↗
Traffic Volume (veh/h)	400	689	410	570	817	264	274	1393	401	206	1219	309
Future Volume (veh/h)	400	689	410	570	817	264	274	1393	401	206	1219	309
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	421	725	432	600	860	278	288	1466	422	217	1283	325
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	465	957	566	562	1057	580	302	1656	772	238	1560	698
Arrive On Green	0.13	0.27	0.27	0.16	0.30	0.30	0.09	0.32	0.32	0.07	0.31	0.31
Sat Flow, veh/h	3456	3554	1585	3456	3554	1585	3456	5106	1585	3456	5106	1585
Grp Volume(v), veh/h	421	725	432	600	860	278	288	1466	422	217	1283	325
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1728	1777	1585	1728	1702	1585	1728	1702	1585
Q Serve(g_s), s	19.2	30.0	38.6	26.0	35.9	21.6	13.3	43.5	29.8	10.0	37.3	23.1
Cycle Q Clear(g_c), s	19.2	30.0	38.6	26.0	35.9	21.6	13.3	43.5	29.8	10.0	37.3	23.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	465	957	566	562	1057	580	302	1656	772	238	1560	698
V/C Ratio(X)	0.91	0.76	0.76	1.07	0.81	0.48	0.95	0.89	0.55	0.91	0.82	0.47
Avail Cap(c_a), veh/h	497	999	584	562	1066	584	302	1656	772	238	1560	698
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	68.2	53.6	45.5	67.0	52.1	39.0	72.7	51.2	28.7	74.0	51.5	31.5
Incr Delay (d2), s/veh	19.4	3.2	5.8	57.6	4.9	0.6	39.1	7.3	2.8	35.9	5.0	2.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.8	13.9	16.2	16.0	16.8	8.6	7.6	19.7	12.0	5.6	16.7	9.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	87.6	56.9	51.2	124.6	57.0	39.6	111.7	58.6	31.5	110.0	56.5	33.8
LnGrp LOS	F	E	D	F	E	D	F	E	C	F	E	C
Approach Vol, veh/h		1578			1738			2176			1825	
Approach Delay, s/veh		63.5			77.5			60.4			58.8	
Approach LOS		E			E			E			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	18.0	58.9	33.0	50.1	21.0	55.9	28.5	54.6				
Change Period (Y+Rc), s	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0				
Max Green Setting (Gmax), s	11.0	50.0	26.0	45.0	14.0	47.0	23.0	48.0				
Max Q Clear Time (g_c+l1), s	12.0	45.5	28.0	40.6	15.3	39.3	21.2	37.9				
Green Ext Time (p_c), s	0.0	3.7	0.0	2.6	0.0	5.4	0.3	4.9				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			64.7									
HCM 6th LOS			E									

## APPENDIX H: SIGNAL WARRANT ANALYSIS WORKSHEETS

Lyons Road & 40<sup>th</sup> Street SWA  
Lyons Road & Cullum Road SWA

## TRAFFIC SIGNAL WARRANT ANALYSIS

City/County:	<b>Broward County</b>	85th-percentile speed on the major street exceeds 40 mph? (Y or N)	<b>Y</b>
State:	<b>FL</b>	Isolated community with a population of less than 10,000? (Y or N)	<b>N</b>
Date:	<b>6/30/2022</b>	Apply 56% warrant to Warrant 1, Combination Warrant? (Y or N)	<b>N</b>
Major Street:	<b>Lyons Road</b>	Approach Lanes - Major? (1 or 2)	<b>2</b>
Minor Street:	<b>40th Street</b>	Approach Lanes - Minor? (1 or 2)	<b>2</b>

24-Hour Volume Summary			Major Street	Minor Street	Warrant 1, Condition A		Warrant 1, Condition B		Warrant 1, Combination Warrant				Warrant 2
			Total of Both Approaches	Higher Volume Approach	70%		70%		80%		80%		70%
			Major Street	Minor Street	Major Street	Minor Street	Major Street	Minor Street	Major Street	Minor Street	Major Street	Minor Street	Figure 4C-1
07:00 AM	TO	08:00 AM	3715	176	<b>885%</b>	<b>126%</b>	<b>590%</b>	<b>251%</b>	<b>774%</b>	<b>110%</b>	<b>516%</b>	<b>220%</b>	<b>220%</b>
08:00 AM	TO	09:00 AM	0	0	0%	0%	0%	0%	0%	0%	0%	0%	0%
09:00 AM	TO	10:00 AM	0	0	0%	0%	0%	0%	0%	0%	0%	0%	0%
10:00 AM	TO	11:00 AM	0	0	0%	0%	0%	0%	0%	0%	0%	0%	0%
11:00 AM	TO	12:00 PM	0	0	0%	0%	0%	0%	0%	0%	0%	0%	0%
12:00 PM	TO	01:00 PM	0	0	0%	0%	0%	0%	0%	0%	0%	0%	0%
01:00 PM	TO	02:00 PM	0	0	0%	0%	0%	0%	0%	0%	0%	0%	0%
02:00 PM	TO	03:00 PM	0	0	0%	0%	0%	0%	0%	0%	0%	0%	0%
03:00 PM	TO	04:00 PM	0	0	0%	0%	0%	0%	0%	0%	0%	0%	0%
04:00 PM	TO	05:00 PM	4432	268	<b>1055%</b>	<b>191%</b>	<b>703%</b>	<b>383%</b>	<b>923%</b>	<b>168%</b>	<b>616%</b>	<b>335%</b>	<b>335%</b>
Source:			MUTCD, 2009 Edition		Threshold		Threshold		Threshold		Threshold		MUTCD Figure
Created By:			Kimley-Horn and Associates, Inc.		420 140		630 70		480 160		720 80		4C-1 and 4C-2
			Summary		Summary		Summary		Summary		Summary		Summary
			TOTAL 2		TOTAL 2		TOTAL 2		TOTAL 2		TOTAL 2		TOTAL 2
			Met? NO		Met? NO		Met? NO		Met? NO		Met? NO		Met? NO

COMMENTS/NOTES:	Analysis:
Peak Hour Signal Warrant Analysis	Analyzed By: NDB
	Kimley-Horn and Associates, Inc.

## TRAFFIC SIGNAL WARRANT ANALYSIS

City/County:	<b>Broward County</b>	85th-percentile speed on the major street exceeds 40 mph? (Y or N)	<b>Y</b>
State:	<b>FL</b>	Isolated community with a population of less than 10,000? (Y or N)	<b>N</b>
Date:	<b>6/30/2022</b>	Apply 56% warrant to Warrant 1, Combination Warrant? (Y or N)	<b>N</b>
Major Street:	<b>Lyons Road</b>	Approach Lanes - Major? (1 or 2)	<b>2</b>
Minor Street:	<b>Cullum Road</b>	Approach Lanes - Minor? (1 or 2)	<b>2</b>

24-Hour Volume Summary	Major Street		Minor Street		Warrant 1, Condition A		Warrant 1, Condition B		Warrant 1, Combination Warrant				Warrant 2	
	Total of Both Approaches		Higher Volume Approach		70%		70%		80%		80%		70%	
	Major Street	Minor Street	Major Street	Minor Street	Major Street	Minor Street	Major Street	Minor Street	Major Street	Minor Street	Major Street	Minor Street	Major Street	Minor Street
07:00 AM TO 08:00 AM	3644	277	<b>868%</b>	<b>198%</b>	<b>578%</b>	<b>396%</b>	<b>759%</b>	<b>173%</b>	<b>506%</b>	<b>346%</b>	<b>346%</b>			
08:00 AM TO 09:00 AM	0	0	0%	0%	0%	0%	0%	0%	0%	0%	0%		0%	
09:00 AM TO 10:00 AM	0	0	0%	0%	0%	0%	0%	0%	0%	0%	0%		0%	
10:00 AM TO 11:00 AM	0	0	0%	0%	0%	0%	0%	0%	0%	0%	0%		0%	
11:00 AM TO 12:00 PM	0	0	0%	0%	0%	0%	0%	0%	0%	0%	0%		0%	
12:00 PM TO 01:00 PM	0	0	0%	0%	0%	0%	0%	0%	0%	0%	0%		0%	
01:00 PM TO 02:00 PM	0	0	0%	0%	0%	0%	0%	0%	0%	0%	0%		0%	
02:00 PM TO 03:00 PM	0	0	0%	0%	0%	0%	0%	0%	0%	0%	0%		0%	
03:00 PM TO 04:00 PM	0	0	0%	0%	0%	0%	0%	0%	0%	0%	0%		0%	
04:00 PM TO 05:00 PM	4243	170	<b>1010%</b>	<b>121%</b>	<b>673%</b>	<b>243%</b>	<b>884%</b>	<b>106%</b>	<b>589%</b>	<b>213%</b>	<b>213%</b>		<b>213%</b>	
Source: MUTCD, 2009 Edition				Threshold		Threshold		Threshold		Threshold		MUTCD Figure		
Created By: Kimley-Horn and Associates, Inc.				420 140		630 70		480 160		720 80		4C-1 and 4C-2		
				Summary		Summary		Summary		Summary		Summary		
				TOTAL 2		TOTAL 2		TOTAL 2		TOTAL 2		TOTAL 2		
				Met? NO		Met? NO		Met? NO		Met? NO		Met? NO		

COMMENTS/NOTES:	Analysis:
Peak Hour Signal Warrant Analysis	Analyzed By: NDB
	Kimley-Horn and Associates, Inc.