

Traffic Impact Study

Stone Mesa Flats

Colorado Springs, Colorado

Prepared for:
The Garrett Companies, Inc.

Kimley»Horn

T R A F F I C I M P A C T S T U D Y

Stone Mesa Flats

Colorado Springs, Colorado

Prepared for
The Garrett Companies, Inc.
1051 Greenwood Springs Boulevard
Suite 101
Greenwood, Indiana 46143

Prepared by
Kimley-Horn and Associates, Inc.
2 North Nevada Avenue
Suite 300
Colorado Springs, Colorado 80903
(719) 453-0180



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1.0 EXECUTIVE SUMMARY

This report has been prepared to document the results of a Traffic Impact Study for the Stone Mesa Flats residential project proposed to be located on the northwest corner of the Stone Mesa Point and Tutt Boulevard intersection in Colorado Springs, Colorado. Stone Mesa Flats is proposed to include 158 multifamily housing units. It is expected that Stone Mesa Flats will be completed in the next several years; therefore, analysis was conducted for the 2025 short-term buildout horizon as well as the 2045 long-term twenty-year planning horizon.

The purpose of this traffic study is to identify project traffic generation characteristics to determine potential project traffic related impacts on the local street system and to develop the necessary mitigation measures required for the identified traffic impacts. The following intersections were incorporated into this traffic study in accordance with the City of Colorado Springs standards and requirements:

- Woodmen Road & Tutt Boulevard (#1)
- Stone Mesa Point & Tutt Boulevard (#2)
- Stone Mesa Point & Templeton Gap Road (#3)
- Dublin Boulevard & Tutt Boulevard (#4)

Regional access to Stone Mesa Flats will be provided by Interstate 25, Powers Boulevard (SH-21), and US Highway 24 (US-24). Primary access will be provided by Woodmen Road and Dublin Boulevard. Direct access will be provided by a proposed full movement access along the west side of Tutt Boulevard to align with Stone Mesa Point. In addition, an emergency only access is proposed along Tutt Boulevard at the north limits of the property.

Stone Mesa Flats is expected to generate approximately 708 weekday daily trips, with 58 of these trips occurring during the morning peak hour and 62 of these trips occurring during the afternoon peak hour.

Based on the analysis presented in this report, Kimley-Horn believes Stone Mesa Flats will be successfully incorporated into the existing and future roadway network. Analysis of the existing street network, the proposed project development, and expected traffic volumes resulted in the following conclusions and recommendations:

2025 Recommendations:

- Without the addition of project traffic in 2025, the intersection of Woodmen Road and Tutt Boulevard (#1) is anticipated to operate at LOS E during the afternoon peak hour with existing signal timings. Therefore, it is recommended that the signal timings at this intersection be optimized which primarily consists of providing additional green time along the eastbound approach of Woodmen Road while reducing the green time of the westbound and southbound left turn movements during the critical PM peak hour. With signal optimization, this intersection is anticipated to operate acceptably in 2025 with the addition of project traffic.
- With construction of this development, a west leg is proposed at the intersection of Stone Mesa Point and Tutt Boulevard (#2) to provide access to the project. When this west leg is constructed, it is recommended that a R1-1 “STOP” sign be installed, and that the exiting approach of this west leg have one shared lane for all movements.
- Vehicle queues are all anticipated to remain within the existing or recommended turn lane lengths through 2025 with exception of the eastbound left turn queue at the intersection of Dublin Boulevard and Tutt Boulevard (#4). This turn lane cannot be extended due to the back-to-back left turn lane to the west. It should be noted that if the signal at this intersection was optimized giving more green time to the eastbound left turn movement, it is expected that all vehicle queues would be contained within the available storage length in the 2025 buildout year.

2045 Recommendations:

- If future traffic volume projections materialize, three eastbound and westbound through lanes may be needed at the intersection of Woodmen Road and Tutt Boulevard (#1).

- If future traffic volumes are realized by 2045, the westbound left turn lane at the intersection of Dublin Boulevard and Tutt Boulevard (#4) may need to be extended from 225 feet to 275 feet. It should be noted that project traffic does not contribute to this movement.

General Recommendations:

- Any onsite or offsite improvements should be incorporated into the Civil Drawings and conform to standards of the City of Colorado Springs and the Manual on Uniform Traffic Control Devices (MUTCD) – 2009 Edition.

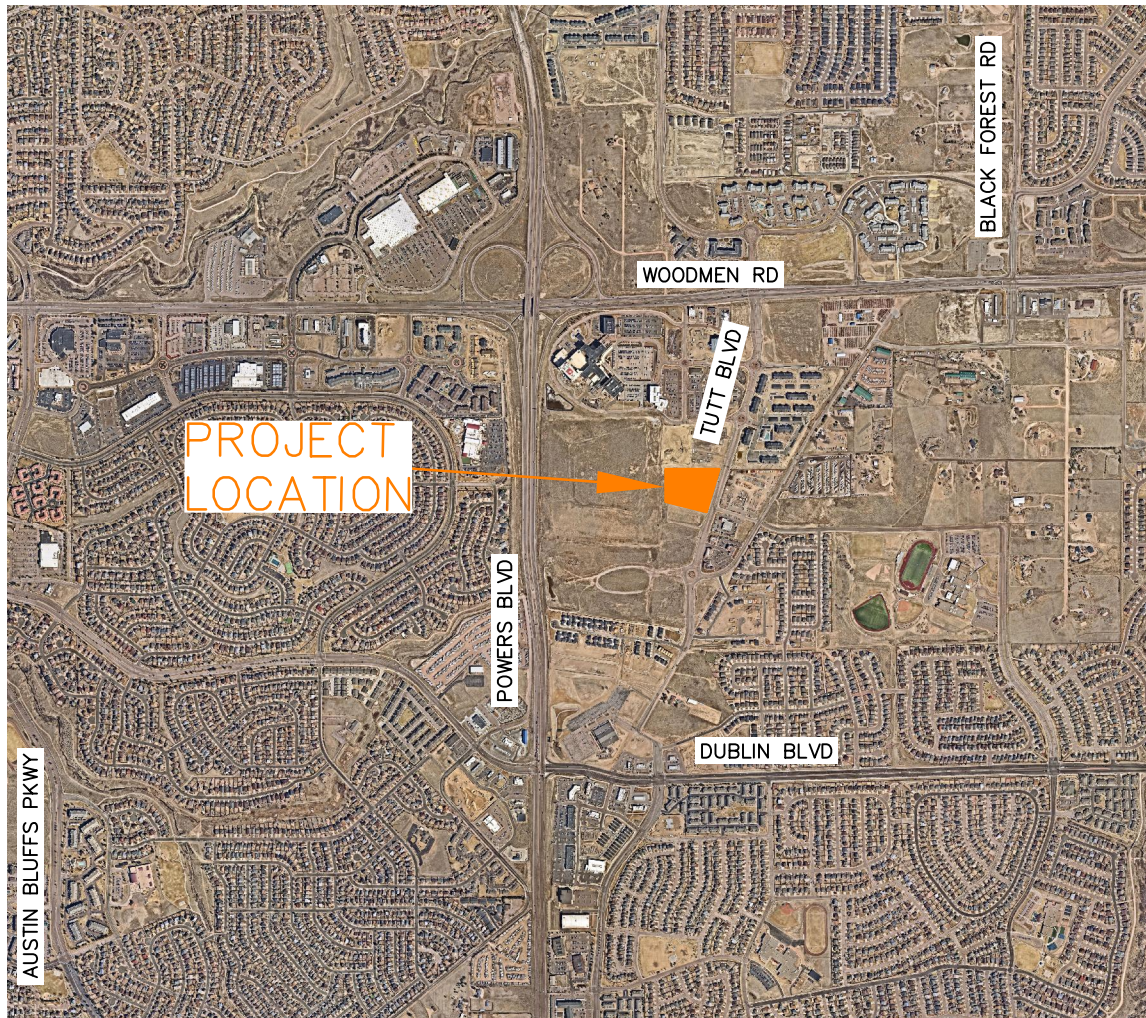
2.0 INTRODUCTION

Kimley-Horn and Associates, Inc. has prepared this report to document the results of a Traffic Impact Study for the Stone Mesa Flats residential project proposed to be located on the northwest corner of the Stone Mesa Point and Tutt Boulevard intersection in Colorado Springs, Colorado. A vicinity map illustrating the Stone Mesa Flats development location is shown in **Figure 1**. Stone Mesa Flats is proposed to include 158 multifamily housing units. A conceptual site plan is attached in **Appendix G**. It is expected that Stone Mesa Flats will be completed in the next several years; therefore, analysis was conducted for the 2025 short-term buildout horizon as well as the 2045 long-term twenty-year planning horizon.

The purpose of this traffic study is to identify project traffic generation characteristics to determine potential project traffic related impacts on the local street system and to develop the necessary mitigation measures required for the identified traffic impacts. The following intersections were incorporated into this traffic study in accordance with the City of Colorado Springs standards and requirements:

- Woodmen Road & Tutt Boulevard (#1)
- Stone Mesa Point & Tutt Boulevard (#2)
- Stone Mesa Point & Templeton Gap Road (#3)
- Dublin Boulevard & Tutt Boulevard (#4)

Regional access to Stone Mesa Flats will be provided by Interstate 25, Powers Boulevard (SH-21), and US Highway 24 (US-24). Primary access will be provided by Woodmen Road and Dublin Boulevard. Direct access will be provided by a proposed full movement access along the west side of Tutt Boulevard to align with Stone Mesa Point. In addition, an emergency only access is proposed along Tutt Boulevard at the north limits of the property.



STONE MESA FLATS
COLORADO SPRINGS, COLORADO
VICINITY MAP

FIGURE 1

3.0 EXISTING AND FUTURE CONDITIONS

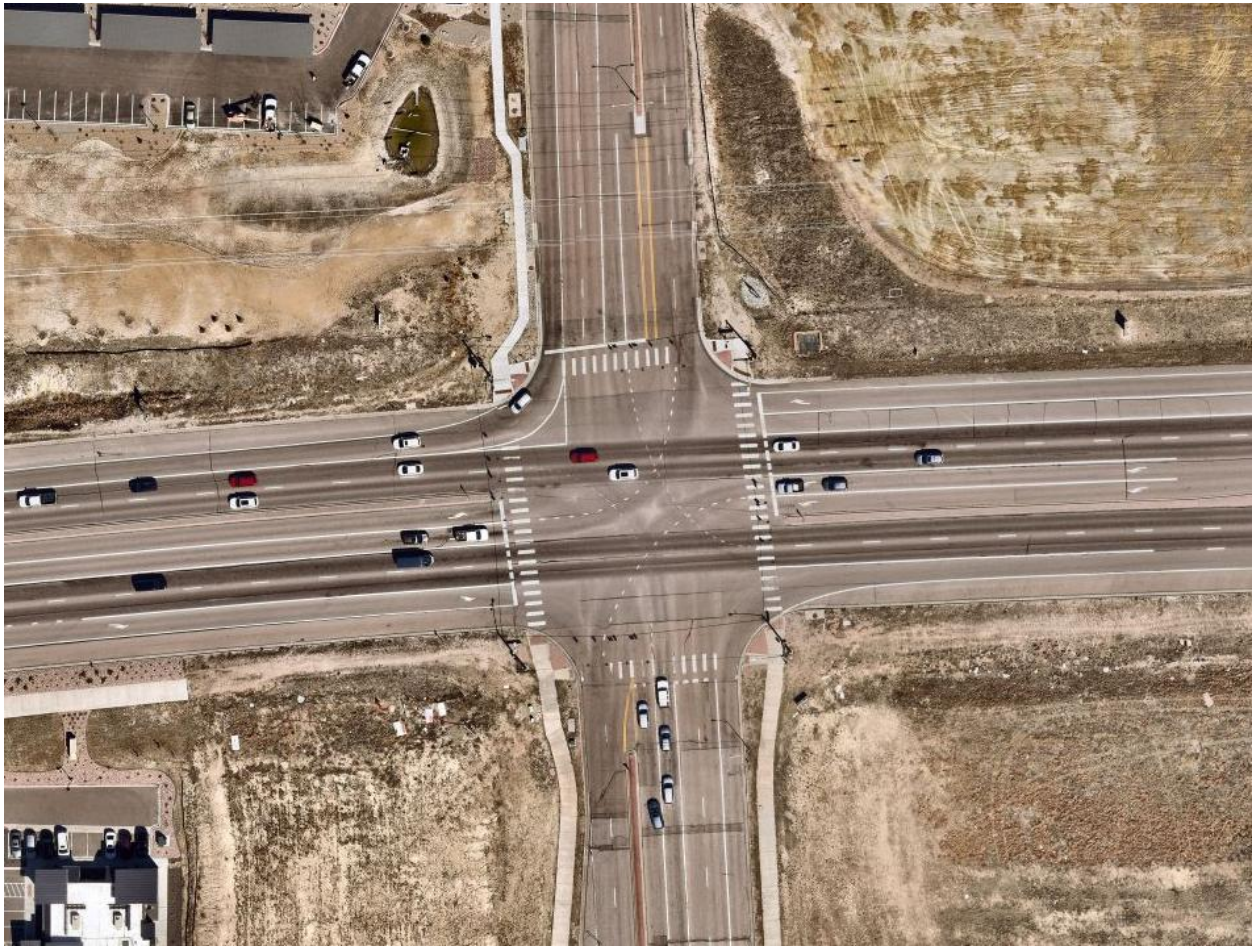
3.1 Existing Study Area

The existing site is comprised of vacant land. St. Francis Medical Center is located north of the site. Single family residences are located east and south of the site and in the extended area in each direction while multifamily housing is located east of the site and north of Woodmen Road. Powers Boulevard (SH-21) is located to the west of the site. A guest house is currently being developed north of the project site as an expansion to the existing St. Francis Hospital.

3.2 Existing Roadway Network

Woodmen Road extends east/west with two through lanes of travel in each direction and has a posted speed limit of 45 miles per hour. Tutt Boulevard extends primarily northbound and southbound with two through lanes in each direction and posted speed limits ranging from 30 to 35 miles per hour. Stone Mesa Point provides one through lane in each direction extending eastbound and westbound with a posted speed limit of 30 miles per hour. Templeton Gap Road extends primarily northbound and southbound with one through lane of travel in each direction and a posted speed limit of 35 miles per hour. Dublin Boulevard is a six-lane roadway extending eastbound and westbound with a posted speed limit of 45 miles per hour.

The signalized intersection of Woodmen Road and Tutt Boulevard (#1) operates with protected only left turn phasing on all four approaches. The intersection approaches all consist of dual left turn lanes, two through lanes, and a right turn lane. The northbound and southbound right turn lanes operate as free movements. An aerial photo of the existing intersection configuration is below (north is up - typical).



Woodmen Road & Tutt Boulevard (#1)

The unsignalized 'T'-intersection of Stone Mesa Point and Tutt Boulevard (#2) operates with stop control on the westbound Stone Mesa Point approach. The northbound approach provides a left turn lane (for future use) and two through lanes with the outside lane being a shared through/right turn lane. The southbound approach provides a left turn lane and two through lanes. The westbound approach provides a shared left/right turn lane. An aerial photo of the existing intersection configuration is below.



Stone Mesa Point & Tutt Boulevard (#2)

The unsignalized intersection of Stone Mesa Point and Templeton Gap Road (#3) operates with stop control on the eastbound and westbound Stone Mesa Point approaches. The northbound, southbound, and westbound approaches provide a left turn lane and a shared through/right turn lane while the eastbound approach provides one shared lane for all movements. An aerial photo of the existing intersection configuration is below.



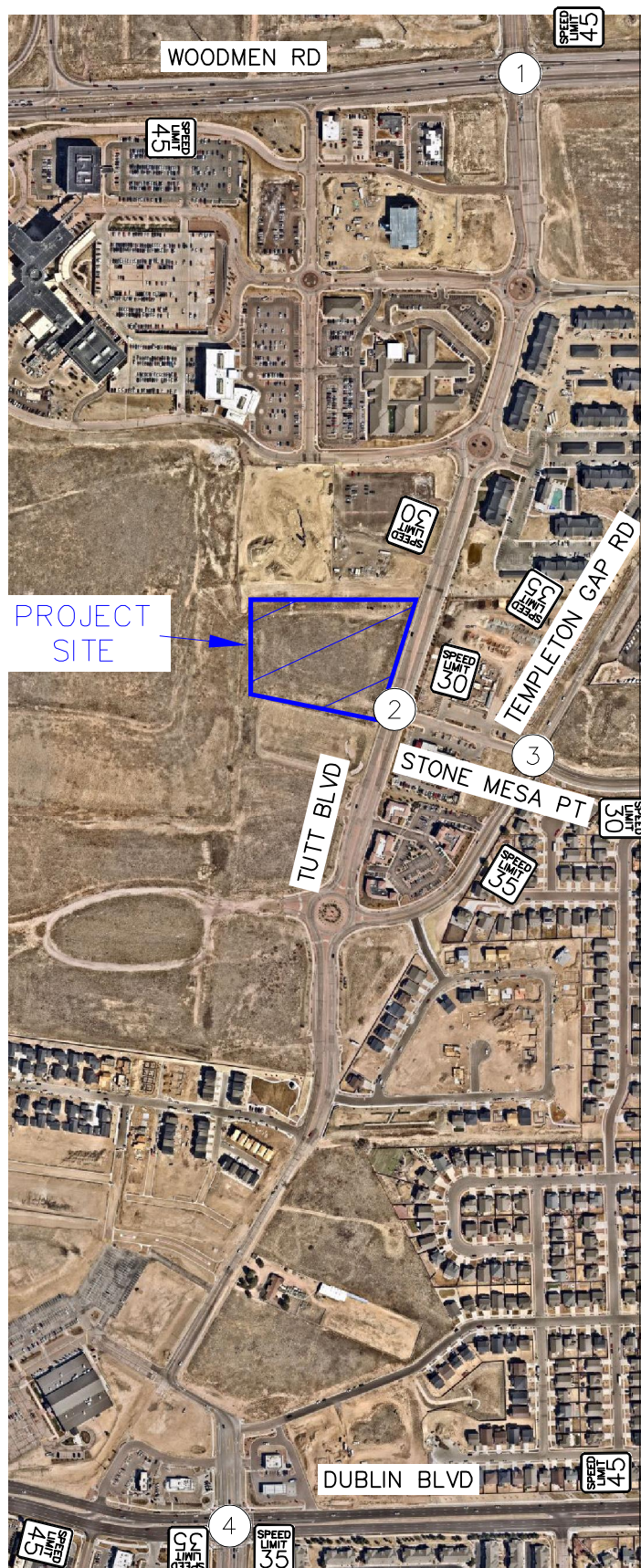
Stone Mesa Point & Templeton Gap Road (#3)

The signalized intersection of Dublin Boulevard and Tutt Boulevard (#4) operates with protected-permitted left turn phasing on all approaches except the northbound Tutt Boulevard approach which operates with protected-only left turn phasing. The northbound approach provides dual left turn lanes, two through lanes, and a right turn lane while the southbound approach consists of a left turn lane, two through lanes, and a right turn lane. The eastbound approach of this intersection consists of a left turn lane, three through lanes, and a right turn lane while the westbound approach provides a left turn lane and three through lanes with the outside lane being a shared through/right turn lane. An aerial photo of the existing intersection configuration is below.

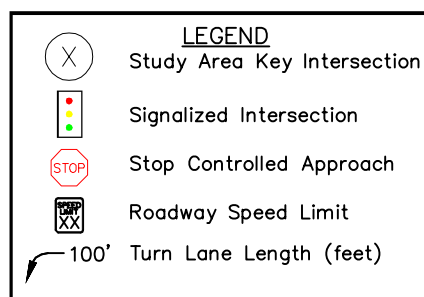
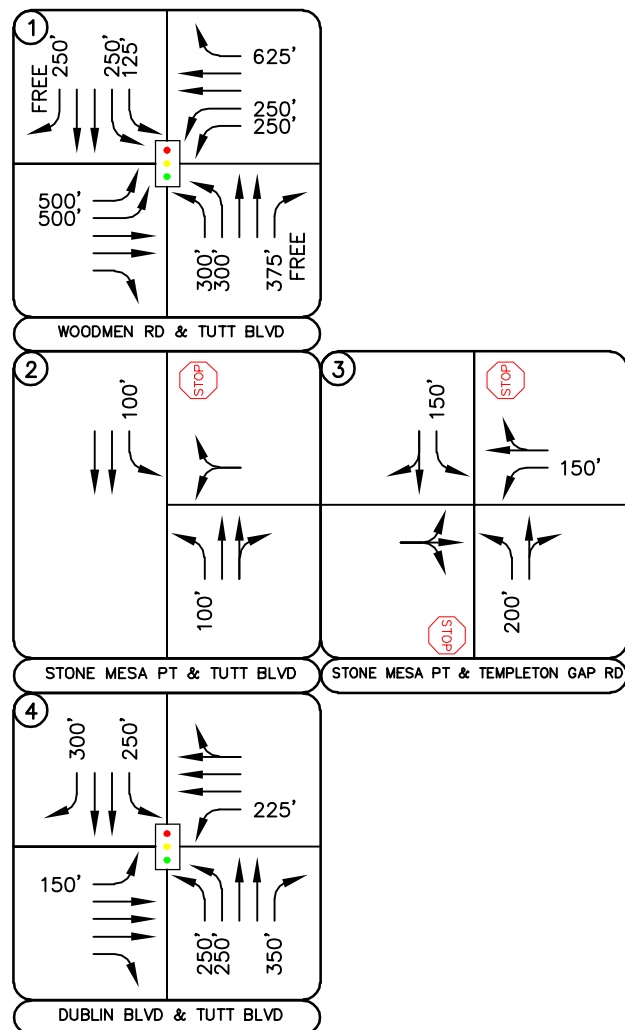


Dublin Boulevard & Tutt Boulevard (#4)

The intersection lane configuration and control for the study area intersections are shown in **Figure 2**.



PROJECT
SITE



STONE MESA FLATS
COLORADO SPRINGS, COLORADO
EXISTING GEOMETRY AND CONTROL

FIGURE 2

3.3 Existing Traffic Volumes

Existing turning movement counts were conducted at the study intersections on Thursday, May 5, 2022 during the weekday morning and afternoon peak hours. The counts were conducted during the morning and afternoon peak hours of adjacent street traffic in 15-minute intervals from 7:00 AM to 9:00 AM and 4:00 PM to 6:00 PM on this count date. The existing intersection traffic volumes are shown in **Figure 3** with count sheets provided in **Appendix A**.

3.4 Unspecified Development Traffic Growth

According to information provided on the website for the Colorado Department of Transportation (CDOT), the 20-year growth factor along SH-21 (Powers Boulevard) in the vicinity of the site is 1.36. The 20-year growth factor equates to annual growth rate of 1.5 percent. Traffic information from the CDOT Online Transportation Information System (OTIS) website is included in **Appendix B**. This annual growth rate was used to estimate near term 2025 and long term 2045 traffic volume projections at the key intersections. Background traffic volumes for 2025 and 2045 are shown in **Figures 4** and **5**, respectively.



STONE MESA FLATS
COLORADO SPRINGS, COLORADO
2022 EXISTING TRAFFIC VOLUMES

1	<div> <div> <div>353(222)</div> <div>46(34)</div> <div>48(32)</div> </div> <div> <div>124(224)</div> <div>1040(1897)</div> <div>64(59)</div> </div> </div> <div> <div>14(20)</div> <div>2037(1647)</div> <div>109(37)</div> </div> <div> <div>144(337)</div> <div>27(78)</div> <div>35(99)</div> </div>
---	---

WOODMEN RD & TUTT BLVD

Thurs, May 5, 2022

7:00 to 8:00AM

(4:30 to 5:30PM)

2	<div> <div>150(266)</div> <div>37(61)</div> </div> <div> <div>71(51)</div> <div>5(11)</div> </div> <div> <div>182(123)</div> <div>9(11)</div> </div>
---	--

STONE MESA PT & TUTT BLVD

Thurs, May 5, 2022

7:15 to 8:15AM

(4:15 to 5:15PM)

3	<div> <div>14(10)</div> <div>158(199)</div> <div>67(56)</div> </div> <div> <div>102(58)</div> <div>56(32)</div> <div>7(21)</div> </div> <div> <div>10(5)</div> <div>27(55)</div> <div>1(5)</div> </div> <div> <div>2(0)</div> <div>159(288)</div> <div>20(15)</div> </div>
---	--

STONE MESA PT & TEMPLETON GAP RD

Thurs, May 5, 2022

7:15 to 8:15AM

(4:30 to 5:30PM)

4	<div> <div>208(274)</div> <div>171(265)</div> <div>76(72)</div> </div> <div> <div>55(40)</div> <div>1010(756)</div> <div>146(214)</div> </div> <div> <div>221(260)</div> <div>388(901)</div> <div>165(270)</div> </div> <div> <div>344(336)</div> <div>206(265)</div> <div>75(205)</div> </div>
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DUBLIN BLVD & TUTT BLVD

Thurs, May 5, 2022

7:15 to 8:15AM

(4:30 to 5:30PM)

LEGEND



Study Area Key Intersection

XXX(XXX)

Weekday AM(PM)

Peak Hour Traffic Volumes

XX,X00

Estimated Daily Traffic Volume

FIGURE 3



<p>369(232)</p> <p>48(36)</p> <p>50(33)</p> <p>130(234)</p> <p>1088(1984)</p> <p>67(62)</p>	<p>15(21)</p> <p>2130(1722)</p> <p>114(39)</p> <p>151(352)</p> <p>28(82)</p> <p>37(104)</p>
---	---

WOODMEN RD & TUTTLE BLVD

<p>157(278)</p> <p>39(64)</p> <p>190(129)</p> <p>9(12)</p>	<p>74(53)</p> <p>5(12)</p>
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STONE MESA PT & TUTTLE BLVD

<p>15(10)</p> <p>165(208)</p> <p>70(59)</p> <p>10(5)</p> <p>28(58)</p> <p>1(5)</p>	<p>107(61)</p> <p>59(33)</p> <p>7(22)</p> <p>2(0)</p> <p>166(301)</p> <p>21(16)</p>
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STONE MESA PT & TEMPLETON GAP RD

<p>218(287)</p> <p>179(277)</p> <p>79(75)</p> <p>231(272)</p> <p>406(942)</p> <p>173(282)</p>	<p>58(42)</p> <p>1056(791)</p> <p>153(224)</p> <p>360(351)</p> <p>215(277)</p> <p>78(214)</p>
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DUBLIN BLVD & TUTTLE BLVD

LEGEND



Study Area Key Intersection

XXX(XXX)

Weekday AM(PM)
Peak Hour Traffic Volumes

XX,X00

Estimated Daily Traffic Volume

STONE MESA FLATS
COLORADO SPRINGS, COLORADO
2025 BACKGROUND TRAFFIC VOLUMES

FIGURE 4



①	<div> <div>497(313)</div> <div>65(48)</div> <div>68(45)</div> </div> <div> <div>175(315)</div> <div>1465(2672)</div> <div>90(83)</div> </div>	<div> <div>20(28)</div> <div>2869(2320)</div> <div>154(52)</div> </div> <div> <div>203(475)</div> <div>38(110)</div> <div>49(139)</div> </div>
---	---	--

WOODMEN RD & TUTT BLVD

②	<div> <div>211(375)</div> <div>52(86)</div> </div> <div> <div>256(173)</div> <div>13(15)</div> </div>	<div> <div>100(72)</div> <div>7(15)</div> </div>
---	---	--

STONE MESA PT & TUTT BLVD

③	<div> <div>20(14)</div> <div>223(280)</div> <div>94(79)</div> </div> <div> <div>14(7)</div> <div>38(77)</div> <div>1(7)</div> </div>	<div> <div>144(82)</div> <div>79(45)</div> <div>10(30)</div> </div> <div> <div>3(0)</div> <div>224(406)</div> <div>28(21)</div> </div>
---	--	--

STONE MESA PT & TEMPLETON GAP RD

④	<div> <div>293(386)</div> <div>241(373)</div> <div>107(101)</div> </div> <div> <div>311(366)</div> <div>546(1269)</div> <div>232(380)</div> </div>	<div> <div>77(56)</div> <div>1422(1065)</div> <div>206(301)</div> </div> <div> <div>484(473)</div> <div>290(373)</div> <div>106(289)</div> </div>
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DUBLIN BLVD & TUTT BLVD

LEGEND

- (X) Study Area Key Intersection
- XXX(XXX) Weekday AM(PM)
Peak Hour Traffic Volumes
- [XX,X00] Estimated Daily Traffic Volume

FIGURE 5

STONE MESA FLATS
COLORADO SPRINGS, COLORADO
2045 BACKGROUND TRAFFIC VOLUMES

4.0 PROJECT TRAFFIC CHARACTERISTICS

4.1 Trip Generation

Site-generated traffic estimates are determined through a process known as trip generation. Rates and equations are applied to the proposed land use to estimate traffic generated by the development during a specific time interval. The acknowledged source for trip generation rates is the *Trip Generation Manual*¹ published by the Institute of Transportation Engineers (ITE). ITE has established trip rates in nationwide studies of similar land uses. For this study, Kimley-Horn used the ITE Trip Generation Report fitted curve equations that applies to Multifamily Mid-Rise Housing (ITE Land Use Code 221), for traffic associated with the development.

Stone Mesa Flats is expected to generate approximately 708 weekday daily trips, with 58 of these trips occurring during the morning peak hour and 62 of these trips occurring during the afternoon peak hour. Calculations were based on the procedure and information provided in the ITE *Trip Generation Manual, 11th Edition – Volume 1: User's Guide and Handbook*, 2021. **Table 1** summarizes the estimated trip generation for the Stone Mesa Flats. The trip generation worksheets are included in **Appendix C**.

Table 1 – Stone Mesa Flats Traffic Generation

Land Use and Size	Weekday Vehicle Trips						
	Daily	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
Multifamily Mid-Rise Housing (ITE 221) – 158 Dwelling Units	708	13	45	58	38	24	62

¹ Institute of Transportation Engineers, *Trip Generation Manual*, Eleventh Edition, Washington DC, 2021.

4.2 Trip Distribution

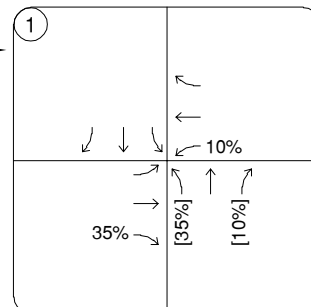
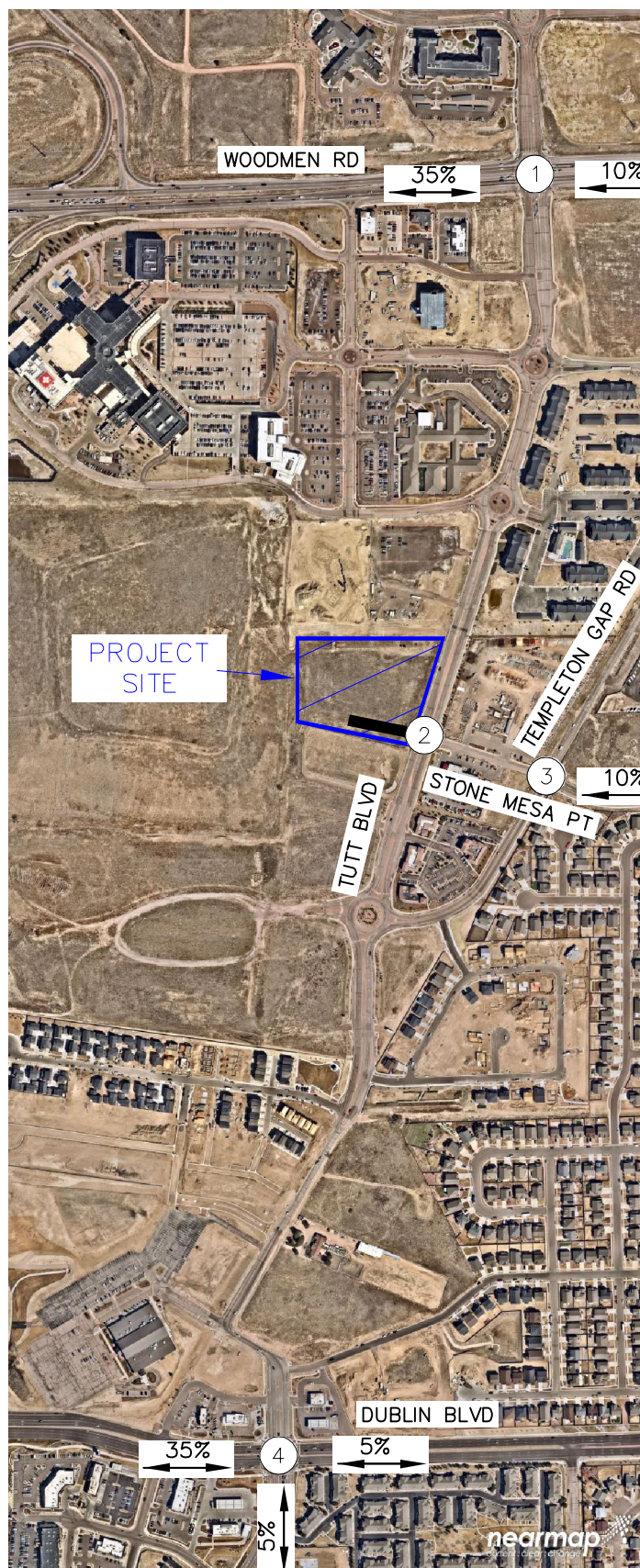
Distribution of site traffic on the street system was based on the area street system characteristics, existing traffic patterns, existing and anticipated surrounding employment, school, and attraction information, and the proposed access system for the project. The directional distribution of traffic is a means to quantify the percentage of site-generated traffic that approaches the site from a given direction and departs the site back to the original source. The project trip distribution for the proposed development is illustrated in **Figure 6**.

4.3 Traffic Assignment

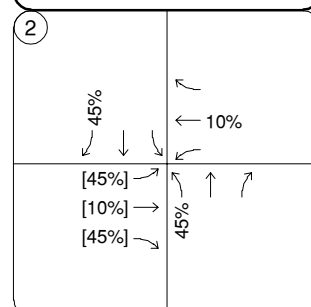
Stone Mesa Flats traffic assignment was obtained by applying the project trip distribution to the estimated traffic generation of the development shown in **Table 1**. Traffic assignment is shown in **Figure 7**.

4.4 Total (Background Plus Project) Traffic

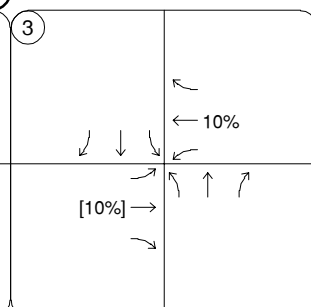
Site traffic volumes were added to the background volumes to represent estimated traffic conditions for the short-term 2025 buildout horizon and long-term 2045 twenty-year planning horizon. These total traffic volumes for the study area are illustrated for the 2025 and 2045 horizon years in **Figures 8** and **9**, respectively.



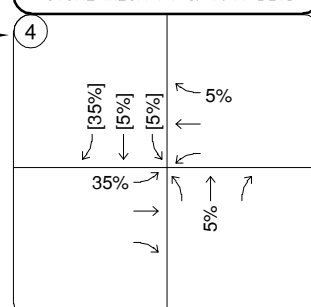
WOODMEN RD & TUTTLE BLVD



STONE MESA PT & TUTTLE BLVD



STONE MESA PT & TEMPLETON GAP RD



DUBLIN BLVD & TUTTLE BLVD

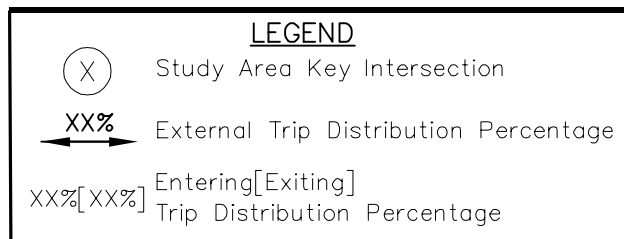
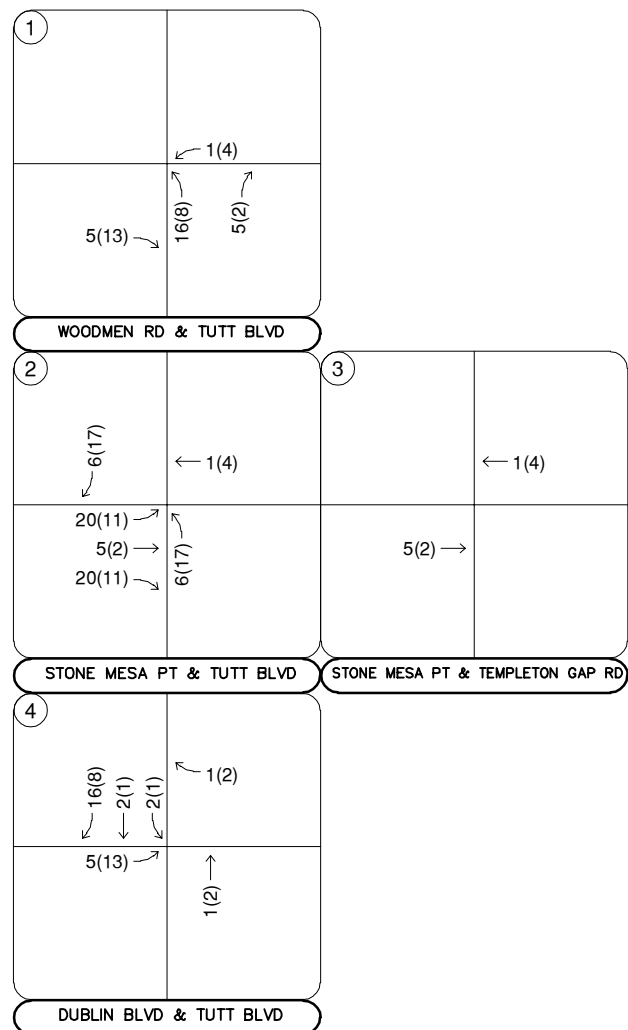


FIGURE 6

STONE MESA FLATS
COLORADO SPRINGS, COLORADO
PROJECT TRIP DISTRIBUTION



STONE MESA FLATS
COLORADO SPRINGS, COLORADO
PROJECT TRAFFIC ASSIGNMENT



LEGEND

(X) Study Area Key Intersection

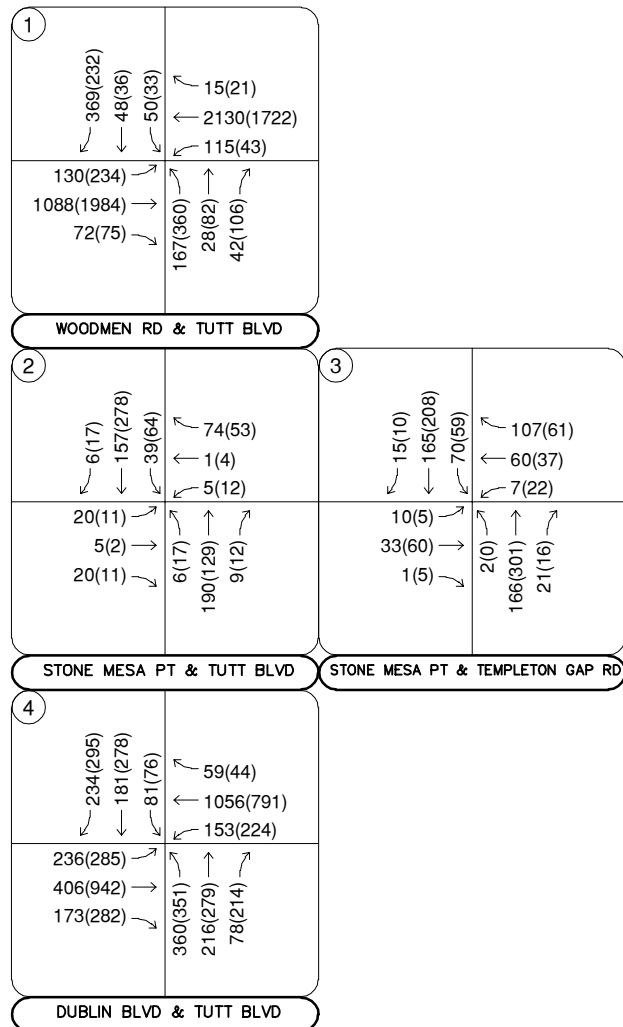
XXX(XXX) Weekday AM(PM)
Peak Hour Traffic Volumes

[XX,X00] Estimated Daily Traffic Volume

FIGURE 7



STONE MESA FLATS
COLORADO SPRINGS, COLORADO
2025 TOTAL TRAFFIC VOLUMES



LEGEND	
(X)	Study Area Key Intersection
XXX(XXX)	Weekday AM(PM) Peak Hour Traffic Volumes
[XX,X00]	Estimated Daily Traffic Volume

FIGURE 8



STONE MESA FLATS
COLORADO SPRINGS, COLORADO
2045 TOTAL TRAFFIC VOLUMES

①

497(313) ↙ ↘ 65(48) ↙ ↘ 68(45) ↙ ↘	20(28) ↗ ↖ 2869(2320) ↗ ↖ 155(56) ↗ ↖
175(315) ↗ ↖ 1465(2672) ↗ ↖ 95(96) ↗ ↖	219(483) ↗ ↖ 38(110) ↗ ↖ 54(141) ↗ ↖

WOODMEN RD & TUTT BLVD

②

6(17) ↙ ↘ 211(375) ↙ ↘ 52(86) ↙ ↘	100(72) ↗ ↖ 1(4) ↗ ↖ 7(15) ↗ ↖
20(11) ↗ ↖ 5(2) ↗ ↖ 20(11) ↗ ↖	6(17) ↗ ↖ 256(173) ↗ ↖ 13(15) ↗ ↖

STONE MESA PT & TUTT BLVD

③

20(14) ↙ ↘ 223(280) ↙ ↘ 94(79) ↙ ↘	144(82) ↗ ↖ 80(49) ↗ ↖ 10(30) ↗ ↖
14(7) ↗ ↖ 43(79) ↗ ↖ 1(7) ↗ ↖	3(0) ↗ ↖ 224(406) ↗ ↖ 28(21) ↗ ↖

STONE MESA PT & TEMPLETON GAP RD

④

309(394) ↙ ↘ 243(374) ↙ ↘ 109(102) ↙ ↘	78(58) ↗ ↖ 1422(1065) ↗ ↖ 206(301) ↗ ↖
316(379) ↗ ↖ 546(1269) ↗ ↖ 232(380) ↗ ↖	484(473) ↗ ↖ 291(375) ↗ ↖ 106(289) ↗ ↖

DUBLIN BLVD & TUTT BLVD

LEGEND	
(X)	Study Area Key Intersection
XXX(XXX)	Weekday AM(PM) Peak Hour Traffic Volumes
[XX,X00]	Estimated Daily Traffic Volume

FIGURE 9

5.0 TRAFFIC OPERATIONS ANALYSIS

Kimley-Horn's analysis of traffic operations in the site vicinity was conducted to determine potential capacity deficiencies in the 2025 and 2045 development horizons at the identified key intersections. The acknowledged source for determining overall capacity is the current edition of the *Highway Capacity Manual (HCM)*².

5.1 Analysis Methodology

Capacity analysis results are listed in terms of Level of Service (LOS). LOS is a qualitative term describing operating conditions a driver will experience while traveling on a particular street or highway during a specific time interval. It ranges from A (very little delay) to F (long delays and congestion). For intersections and roadways in this study area, standard traffic engineering practice recommends overall intersection LOS D and movement/approach LOS E as the minimum desirable thresholds for acceptable operations. **Table 2** shows the definition of level of service for signalized and unsignalized intersections.

Table 2 – Level of Service Definitions

Level of Service	Signalized Intersection Average Total Delay (sec/veh)	Unsignalized Intersection Average Total Delay (sec/veh)
A	≤ 10	≤ 10
B	> 10 and ≤ 20	> 10 and ≤ 15
C	> 20 and ≤ 35	> 15 and ≤ 25
D	> 35 and ≤ 55	> 25 and ≤ 35
E	> 55 and ≤ 80	> 35 and ≤ 50
F	> 80	> 50

Definitions provided from the Highway Capacity Manual, Sixth Edition, Transportation Research Board, 2016.

Study area intersections were analyzed based on average total delay analysis for signalized and unsignalized intersections. Under the unsignalized analysis, the LOS for a two-way stop-controlled intersection is determined by the computed or measured control delay and is defined for each minor movement. LOS for a two-way stop-controlled intersection is not defined for the intersection as a whole. LOS for signalized, roundabout, and all-way stop controlled intersections are defined for each approach and for the overall intersection.

² Transportation Research Board, *Highway Capacity Manual*, Sixth Edition, Washington DC, 2016.

5.2 Key Intersection Operational Analysis

Calculations for the operational level of service at the key intersections for the study area are provided in **Appendix D**. The existing year analysis is based on the lane geometry and intersection control shown in **Figure 2**. Existing peak hour factors were utilized in the existing, 2025 horizon, and 2045 horizon analysis years. The signalized intersection analysis utilizes the signal phasing and timings provided by the City of Colorado Springs. The existing signal timings are attached in **Appendix E**. Synchro traffic analysis software was used to analyze the signalized, and unsignalized key intersections for HCM level of service.

Woodmen Road & Tutt Boulevard (#1)

The signalized intersection of Woodmen Road and Tutt Boulevard (#1) operates with protected-only left turn phasing on all four approaches. The intersection operates acceptably at LOS D or better during both peak hours under existing conditions. Without the addition of project traffic in 2025, this intersection is anticipated to operate at LOS E during the afternoon peak hour with the existing signal timings. Therefore, it is recommended that the signal timings at this intersection be optimized by 2025 which primarily consists of providing additional green time along the eastbound approach of Woodmen Road while reducing the green time of the westbound and southbound left turn movements during the critical PM peak hour. With signal optimization, this intersection is anticipated to operate acceptably in 2025 with the addition of project traffic. By 2045, three eastbound and westbound through lanes may be needed at this intersection in order to provide acceptable operations. It should be noted that this intersection currently provides the width for an additional through lane. **Table 3** provides the results of the LOS analysis conducted at this intersection.

Table 3 – Woodmen Road & Tutt Boulevard (#1) LOS Results

Scenario	AM Peak Hour		PM Peak Hour	
	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
2022 Existing	32.8	C	46.9	D
2025 Background	38.6	D	58.0	E
2025 Background Plus Project	39.8	D	58.5	E
2025 Background Plus Project #	38.3	D	54.3	D
2045 Background	135.0	F	193.3	F
2045 Background Plus Project ##	35.8	D	53.9	D

= Optimized signal timings

= # + Three eastbound and westbound through lanes

Stone Mesa Point & Tutt Boulevard (#2)

The unsignalized 'T'-intersection of Stone Mesa Point and Tutt Boulevard (#2) operates with stop control on the westbound Stone Mesa Point approach. The intersection movements operate acceptably at LOS A during both peak hours under existing conditions. With construction of this development, a west leg is proposed at this intersection to provide access to the project. When this west leg is constructed, it is recommended that a R1-1 "STOP" sign be installed, and that the exiting approach of this west leg have one shared lane for all movements. With project traffic and the west access leg, all movements are anticipated to operate at an acceptable level of service throughout the 2045 horizon. **Table 4** provides the results of the LOS analysis conducted at this intersection.

Table 4 – Stone Mesa Point & Tutt Boulevard (#2) LOS Results

Scenario	AM Peak Hour		PM Peak Hour	
	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
2022 Existing				
Westbound Approach	9.4	A	9.4	A
Southbound Left	7.8	A	7.6	A
2025 Background				
Westbound Approach	9.5	A	9.5	A
Southbound Left	7.8	A	7.6	A
2025 Background Plus Project #				
Northbound Left	7.6	A	7.9	A
Eastbound Approach	10.8	B	11.5	B
Westbound Approach	9.6	A	10.0	B
Southbound Left	7.8	A	7.6	A
2045 Background				
Westbound Approach	10.1	B	10.0	B
Southbound Left	8.0	A	7.8	A
2045 Background Plus Project #				
Northbound Left	7.7	A	8.2	A
Eastbound Approach	11.8	B	12.8	B
Westbound Approach	10.2	B	10.6	B
Southbound Left	8.0	A	7.8	A

Stone Mesa Point & Templeton Gap Road (#3)

The unsignalized 'T'-intersection of Stone Mesa Point and Templeton Gap Road (#3) operates with stop control on the eastbound and westbound Stone Mesa Point approaches. The intersection movements operate acceptably at LOS B or better during both peak hours under existing conditions. With project traffic, all movements are anticipated to continue operating at an acceptable level of service throughout the 2045 horizon. Therefore, no improvements or modifications are anticipated to be needed at this intersection based on the addition of project traffic and this operational level of service analysis. **Table 5** provides the results of the LOS analysis conducted at this intersection.

Table 5 – Stone Mesa Point & Templeton Gap Road (#3) LOS Results

Scenario	AM Peak Hour		PM Peak Hour	
	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
2022 Existing				
Northbound Left	7.6	A	0.0	A
Eastbound Approach	14.2	B	14.5	B
Westbound Left	12.9	B	14.1	B
Westbound Through/Right	12.7	B	12.2	B
Southbound Left	7.8	A	8.1	A
2025 Background				
Northbound Left	7.7	A	0.0	A
Eastbound Approach	14.6	B	14.9	B
Westbound Left	13.1	B	14.5	B
Westbound Through/Right	13.1	B	12.5	B
Southbound Left	7.9	A	8.1	A
2025 Background Plus Project				
Northbound Left	7.7	A	0.0	A
Eastbound Approach	14.6	B	15.0	C
Westbound Left	13.2	B	14.6	B
Westbound Through/Right	13.1	B	12.6	B
Southbound Left	7.9	A	8.1	A
2045 Background				
Northbound Left	7.8	A	0.0	A
Eastbound Approach	19.3	C	19.6	C
Westbound Left	15.8	C	18.6	C
Westbound Through/Right	17.3	C	15.2	C
Southbound Left	8.1	A	8.5	A
2045 Background Plus Project				
Northbound Left	7.8	A	0.0	A
Eastbound Approach	19.4	C	19.7	C
Westbound Left	15.9	C	18.7	C
Westbound Through/Right	17.4	C	15.5	C
Southbound Left	8.1	A	8.5	A

Dublin Boulevard & Tutt Boulevard (#4)

The signalized intersection of Dublin Boulevard and Tutt Boulevard (#4) operates with protected-permitted left turn phasing on all approaches except the northbound Tutt Boulevard approach which operates with protected-only left turn phasing. The intersection operates acceptably at LOS C during both peak hours under existing conditions. With project traffic, this intersection is anticipated to continue operating at an acceptable level of service throughout the 2045 horizon. Therefore, no improvements or modifications are anticipated to be needed at this intersection based on the addition of project traffic and this operational level of service analysis. **Table 6** provides the results of the LOS analysis conducted at this intersection.

Table 6 – Dublin Boulevard & Tutt Boulevard (#4) LOS Results

Scenario	AM Peak Hour		PM Peak Hour	
	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
2022 Existing	27.3	C	27.0	C
2025 Background	28.6	C	27.9	C
2025 Background Plus Project	28.8	C	28.0	C
2045 Background	51.0	C	44.7	D
2045 Background Plus Project	51.5	D	45.7	D

5.3 Vehicle Queuing Analysis

A vehicle queuing analysis was conducted for the study area intersections. The queuing analysis was performed using Synchro presenting the results of the 95th percentile queue lengths. Results are shown in the following **Table 7** with calculations provided within the level of service operational sheets of **Appendix D** for unsignalized intersections and **Appendix F** for signalized intersections.

Table 7 – Turn Lane Queuing Analysis Results

Intersection Turn Lane	Existing Turn Lane Length (feet)	2025 Calculated Queue (feet)	2025 Recommended Length (feet)	2045 Calculated Queue (feet)	2045 Recommended Length (feet)
Woodmen Rd & Tutt Blvd (#1)					
Eastbound Left	500' DL	203'	500' DL	261'	500' DL
Westbound Left	250' DL	88'	250' DL	111'	250' DL
Westbound Right	625'	25'	625'	25'	625'
Northbound Left	300' DL	301'	300' DL	405'	300' DL
Northbound Right	375'	25'	375'	25'	375'
Southbound Left	250'/125' DL	50'	250'/125' DL	60'	250'/125' DL
Southbound Right	375'	25'	375'	25'	375'
Stone Mesa Pt & Tutt Blvd (#2)					
Northbound Left	100'	25'	100'	25'	100'
Southbound Left	100'	25'	100'	25'	100'
Stone Mesa Pt & Templeton Gap Rd (#3)					
Northbound Left	200'	25'	200'	25'	200'
Southbound Left	150'	25'	150'	25'	150'
Westbound Left	150'	25'	150'	25'	150'
Dublin Blvd & Tutt Blvd (#4)					
Eastbound Left	150'	200'	150'	358'	150'
Westbound Left	225'	143'	225'	257'	275'
Northbound Left	250' DL	171'	250' DL	251'	250' DL
Northbound Right	350'	57'	350'	65'	350'
Southbound Left	250'	56'	250'	72'	250'
Southbound Right	300'	88'	300'	226'	300'
Dublin Blvd & Tutt Blvd (#4) #					
Eastbound Left	150'	150'	150'	-	-
Westbound Left	225'	115'	225'	-	-
Northbound Left	250' DL	187'	250' DL	-	-
Northbound Right	350'	57'	350'	-	-
Southbound Left	250'	56'	250'	-	-
Southbound Right	300'	65'	300'	-	-

DL = Dual Left Turn Lanes; **Red** Text = Storage Deficiency; **Blue** Text = Recommendation; # = Optimized Signal Timings

Vehicle queues are all anticipated to remain within the existing or recommended turn lane lengths through 2025 with exception of the eastbound left turn queue at the intersection of Dublin Boulevard and Tutt Boulevard (#4). This turn lane cannot be extended due to the back-to-back left turn lane to the west. It should be noted that if the signal at this intersection was optimized

giving more green time to the eastbound left turn movement, it is expected that all vehicle queues would be contained within the available storage length in the 2025 buildout year.

If future traffic volume projections materialize by 2045, it is anticipated that the northbound left turn queue at the intersection of Woodmen Road and Tutt Boulevard (#1) will extend beyond the available storage, however this turn lane cannot be extended due to the roundabout to the south.

If future volumes are realized by 2045, the westbound left turn lane at the intersection of Dublin Boulevard and Tutt Boulevard (#4) may need to be extended from 225 feet to 275 feet. It should be noted that project traffic does not contribute to this turning movement.

5.4 Improvement Summary

Based on the results of the intersection operational and vehicle queuing analysis, the key intersection recommended improvements and control are shown in **Figure 10** for the 2025 horizon and **Figure 11** for the 2045 horizon.



STONE MESA FLATS
COLORADO SPRINGS, COLORADO
2025 RECOMMENDED GEOMETRY
AND CONTROL

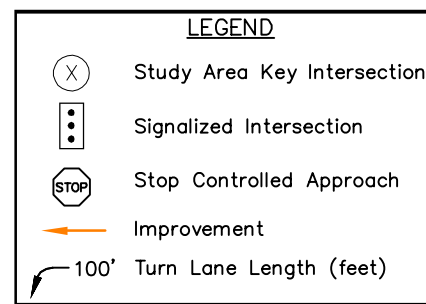
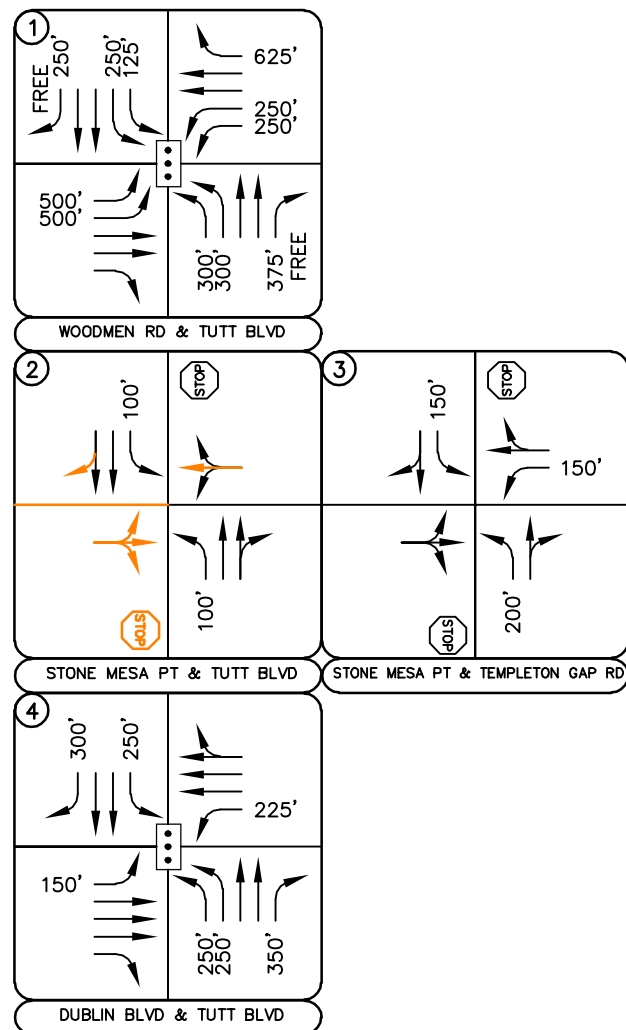


FIGURE 10



STONE MESA FLATS
COLORADO SPRINGS, COLORADO
2045 RECOMMENDED GEOMETRY
AND CONTROL

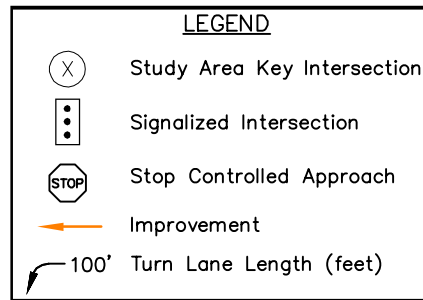
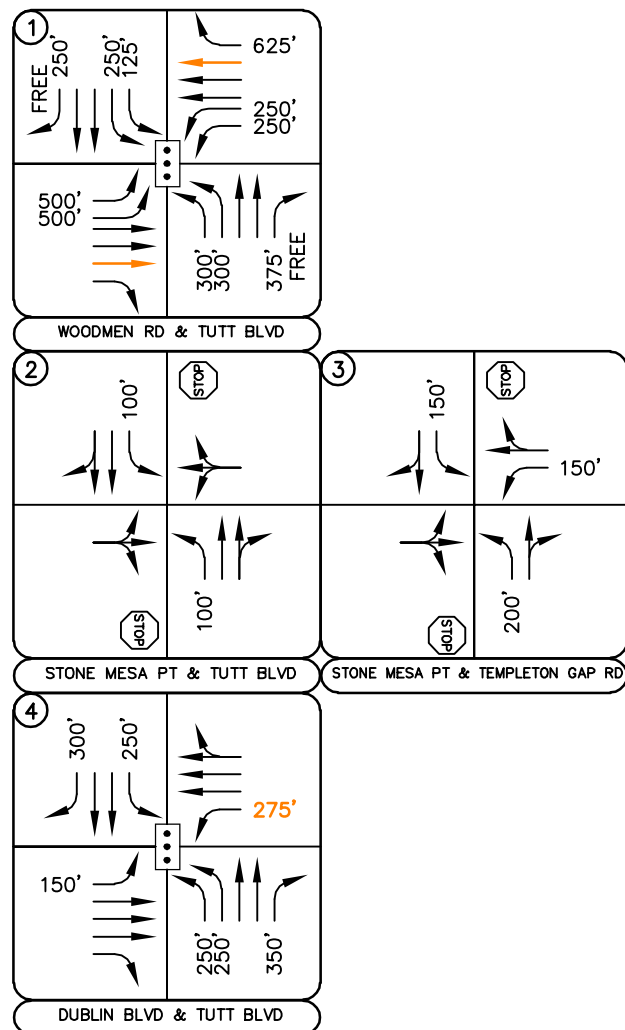


FIGURE 11

6.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the analysis presented in this report, Kimley-Horn believes Stone Mesa Flats will be successfully incorporated into the existing and future roadway network. Analysis of the existing street network, the proposed project development, and expected traffic volumes resulted in the following conclusions and recommendations:

2025 Recommendations:

- Without the addition of project traffic in 2025, the intersection of Woodmen Road and Tutt Boulevard (#1) is anticipated to operate at LOS E during the afternoon peak hour with existing signal timings. Therefore, it is recommended that the signal timings at this intersection be optimized which primarily consists of providing additional green time along the eastbound approach of Woodmen Road while reducing the green time of the westbound and southbound left turn movements during the critical PM peak hour. With signal optimization, this intersection is anticipated to operate acceptably in 2025 with the addition of project traffic.
- With construction of this development, a west leg is proposed at the intersection of Stone Mesa Point and Tutt Boulevard (#2) to provide access to the project. When this west leg is constructed, it is recommended that a R1-1 “STOP” sign be installed, and that the exiting approach of this west leg have one shared lane for all movements.
- Vehicle queues are all anticipated to remain within the existing or recommended turn lane lengths through 2025 with exception of the eastbound left turn queue at the intersection of Dublin Boulevard and Tutt Boulevard (#4). This turn lane cannot be extended due to the back-to-back left turn lane to the west. It should be noted that if the signal at this intersection was optimized giving more green time to the eastbound left turn movement, it is expected that all vehicle queues would be contained within the available storage length in the 2025 buildout year.

2045 Recommendations:

- If future traffic volume projections materialize, three eastbound and westbound through lanes may be needed at the intersection of Woodmen Road and Tutt Boulevard (#1).

- If future traffic volumes are realized by 2045, the westbound left turn lane at the intersection of Dublin Boulevard and Tutt Boulevard (#4) may need to be extended from 225 feet to 275 feet. It should be noted that project traffic does not contribute to this movement.

General Recommendations:

- Any onsite or offsite improvements should be incorporated into the Civil Drawings and conform to standards of the City of Colorado Springs and the Manual on Uniform Traffic Control Devices (MUTCD) – 2009 Edition.

APPENDICES

APPENDIX A

Intersection Count Sheets

Colorado Springs, CO
Tutt at Stone Mesa Point
AM Peak
Woodmen Rd and Tutt Blvd

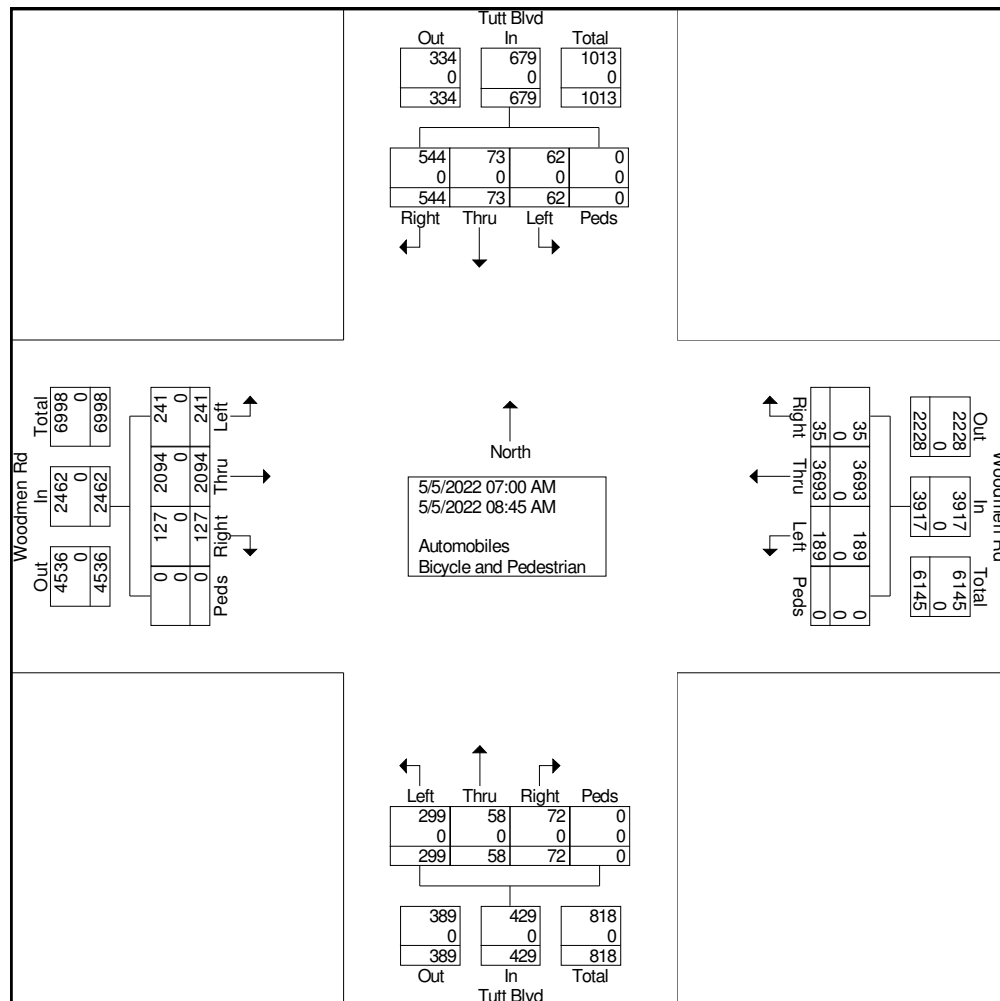
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Site Code : IPO 604
Start Date : 5/5/2022
Page No : 1

Groups Printed- Automobiles - Bicycle and Pedestrian

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File Name : Woodmen and Tutt AM
Site Code : IPO 604
Start Date : 5/5/2022
Page No : 2



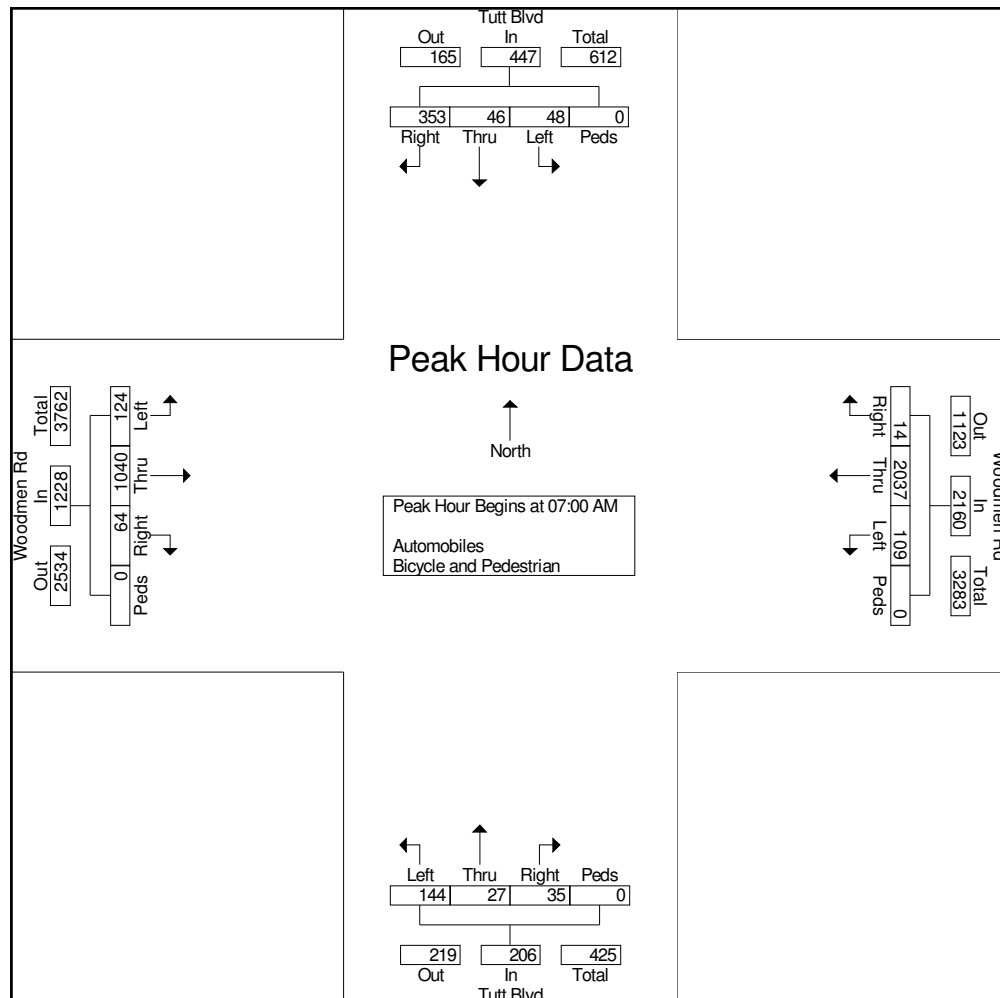


Ridgeview Data
Collection

Colorado Springs, CO
Tutt at Stone Mesa Point
AM Peak
Woodmen Rd and Tutt Blvd

File Name : Woodmen and Tutt AM
Site Code : IPO 604
Start Date : 5/5/2022
Page No : 3

	Woodmen Rd Eastbound					Woodmen Rd Westbound					Tutt Blvd Northbound					Tutt Blvd Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	28	233	17	0	278	13	504	5	0	522	33	4	4	0	41	13	7	89	0	109	950
07:15 AM	22	252	24	0	298	25	549	3	0	577	27	5	8	0	40	11	11	108	0	130	1045
07:30 AM	27	254	12	0	293	26	491	3	0	520	54	5	16	0	75	18	13	91	0	122	1010
07:45 AM	47	301	11	0	359	45	493	3	0	541	30	13	7	0	50	6	15	65	0	86	1036
Total Volume	124	1040	64	0	1228	109	2037	14	0	2160	144	27	35	0	206	48	46	353	0	447	4041
% App. Total	10.1	84.7	5.2	0		5	94.3	0.6	0		69.9	13.1	17	0		10.7	10.3	79	0		
PHF	.660	.864	.667	.000	.855	.606	.928	.700	.000	.936	.667	.519	.547	.000	.687	.667	.767	.817	.000	.860	.967





Ridgeview Data
Collection

Colorado Springs, CO
Tutt at Stone Mesa Point
PM Peak
Woodmen Rd and Tutt Blvd

File Name : Woodmen and Tutt PM
Site Code : IPO 604
Start Date : 5/5/2022
Page No : 1

Groups Printed- Automobiles - Bicycle and Pedestrian

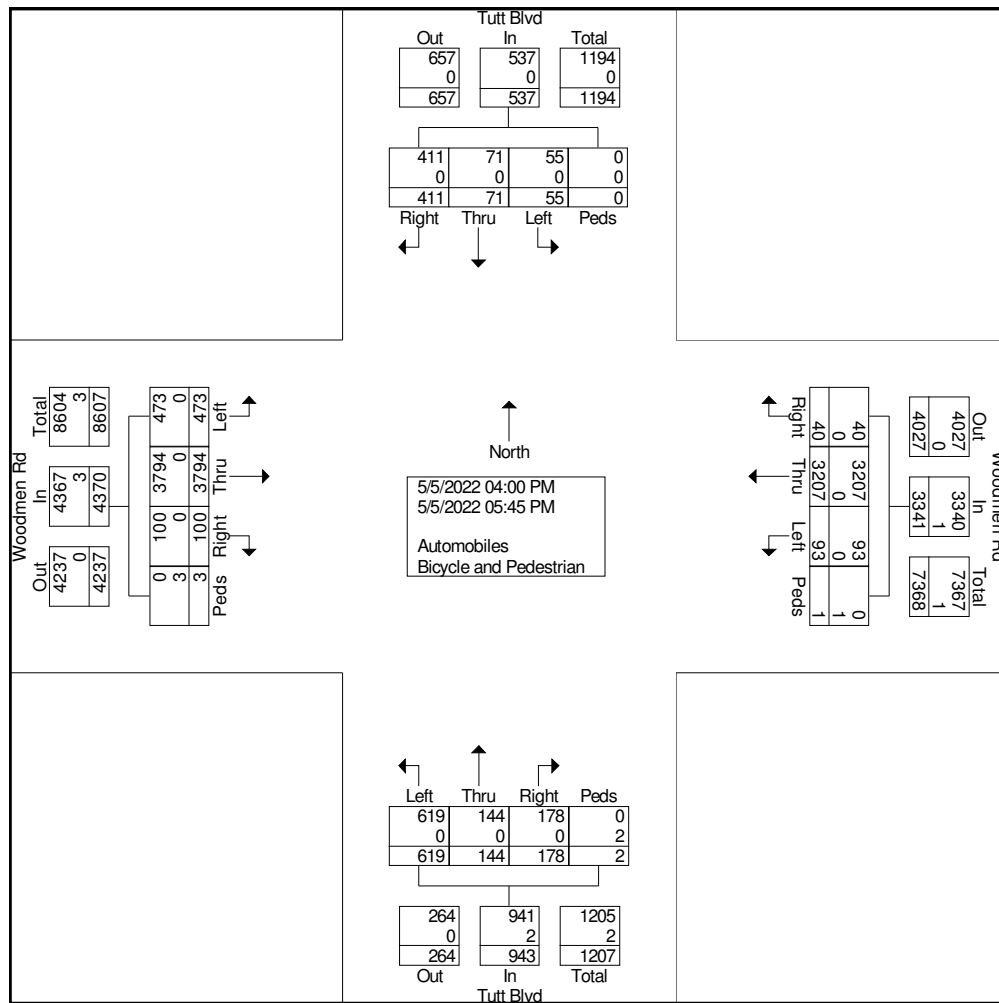
	Woodmen Rd Eastbound					Woodmen Rd Westbound					Tutt Blvd Northbound					Tutt Blvd Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
04:00 PM	66	498	14	0	578	10	401	8	0	419	93	18	32	1	144	1	10	48	0	59	1200
04:15 PM	72	432	3	0	507	19	362	3	1	385	84	12	19	1	116	6	12	44	0	62	1070
04:30 PM	54	542	16	0	612	9	434	8	0	451	90	13	25	0	128	8	9	60	0	77	1268
04:45 PM	53	410	22	0	485	13	391	2	0	406	87	15	20	0	122	5	7	56	0	68	1081
Total	245	1882	55	0	2182	51	1588	21	1	1661	354	58	96	2	510	20	38	208	0	266	4619
05:00 PM	54	458	12	1	525	9	429	7	0	445	90	20	35	0	145	12	6	53	0	71	1186
05:15 PM	63	487	9	2	561	6	393	3	0	402	70	30	19	0	119	7	12	53	0	72	1154
05:30 PM	62	490	14	0	566	10	454	7	0	471	64	17	14	0	95	11	6	47	0	64	1196
05:45 PM	49	477	10	0	536	17	343	2	0	362	41	19	14	0	74	5	9	50	0	64	1036
Total	228	1912	45	3	2188	42	1619	19	0	1680	265	86	82	0	433	35	33	203	0	271	4572
Grand Total	473	3794	100	3	4370	93	3207	40	1	3341	619	144	178	2	943	55	71	411	0	537	9191
Apprch %	10.8	86.8	2.3	0.1		2.8	96	1.2	0		65.6	15.3	18.9	0.2		10.2	13.2	76.5	0		
Total %	5.1	41.3	1.1	0	47.5	1	34.9	0.4	0	36.4	6.7	1.6	1.9	0	10.3	0.6	0.8	4.5	0	5.8	
Automobiles	473	3794	100	0	4367	93	3207	40	0	3340	619	144	178	0	941	55	71	411	0	537	9185
% Automobiles	100	100	100	0	99.9	100	100	100	0	100	100	100	100	0	99.8	100	100	100	0	100	99.9
Bicycle and Pedestrian	0	0	0	3	3	0	0	0	1	1	0	0	0	2	2	0	0	0	0	0	6
% Bicycle and Pedestrian	0	0	0	100	0.1	0	0	0	100	0	0	0	0	100	0.2	0	0	0	0	0	0.1



Ridgeview Data
Collection

Colorado Springs, CO
Tutt at Stone Mesa Point
PM Peak
Woodmen Rd and Tutt Blvd

File Name : Woodmen and Tutt PM
Site Code : IPO 604
Start Date : 5/5/2022
Page No : 2



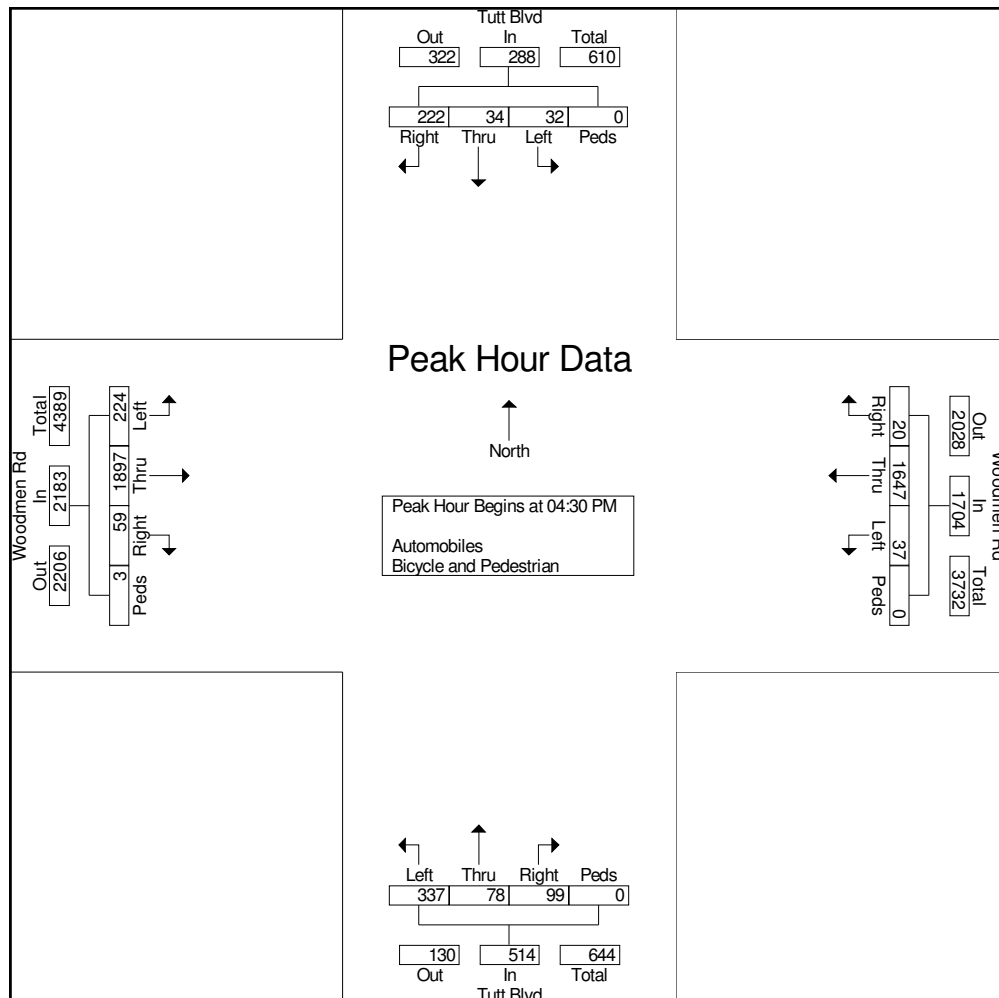


Ridgeview Data
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Colorado Springs, CO
Tutt at Stone Mesa Point
PM Peak
Woodmen Rd and Tutt Blvd

File Name : Woodmen and Tutt PM
Site Code : IPO 604
Start Date : 5/5/2022
Page No : 3

	Woodmen Rd Eastbound					Woodmen Rd Westbound					Tutt Blvd Northbound					Tutt Blvd Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	54	542	16	0	612	9	434	8	0	451	90	13	25	0	128	8	9	60	0	77	1268
04:45 PM	53	410	22	0	485	13	391	2	0	406	87	15	20	0	122	5	7	56	0	68	1081
05:00 PM	54	458	12	1	525	9	429	7	0	445	90	20	35	0	145	12	6	53	0	71	1186
05:15 PM	63	487	9	2	561	6	393	3	0	402	70	30	19	0	119	7	12	53	0	72	1154
Total Volume	224	1897	59	3	2183	37	1647	20	0	1704	337	78	99	0	514	32	34	222	0	288	4689
% App. Total	10.3	86.9	2.7	0.1		2.2	96.7	1.2	0		65.6	15.2	19.3	0		11.1	11.8	77.1	0		
PHF	.889	.875	.670	.375	.892	.712	.949	.625	.000	.945	.936	.650	.707	.000	.886	.667	.708	.925	.000	.935	.924



Colorado Springs, CO
Tutt at Stone Mesa Point
AM Peak
Stone Mesa Point/Access and Tutt Blvd

File Name : Stone Mesa and Tutt AM
Site Code : IPO 604
Start Date : 5/5/2022
Page No : 1

Groups Printed- Automobiles - Bicycle and Pedestrian

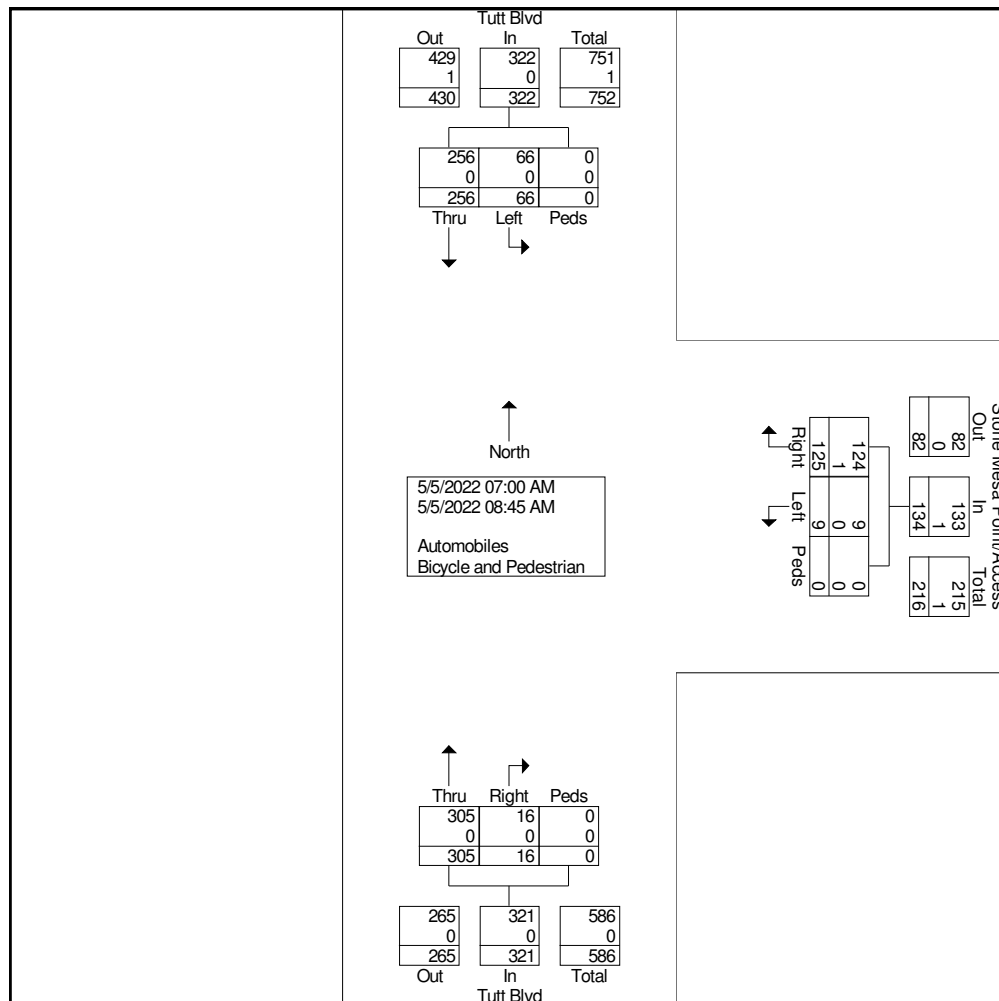
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Ridgeview Data
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Colorado Springs, CO
Tutt at Stone Mesa Point
AM Peak
Stone Mesa Point/Access and Tutt Blvd

File Name : Stone Mesa and Tutt AM
Site Code : IPO 604
Start Date : 5/5/2022
Page No : 2



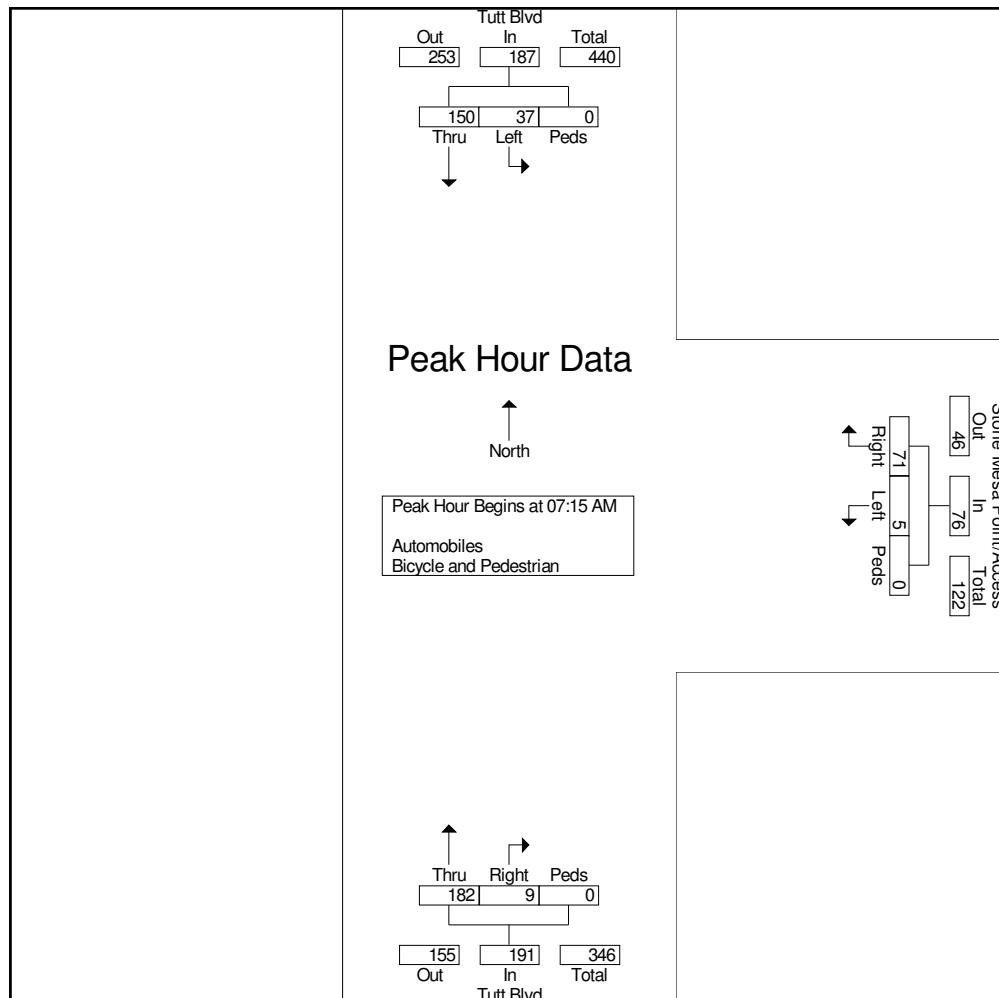


Ridgeview Data
Collection

Colorado Springs, CO
Tutt at Stone Mesa Point
AM Peak
Stone Mesa Point/Access and Tutt Blvd

File Name : Stone Mesa and Tutt AM
Site Code : IPO 604
Start Date : 5/5/2022
Page No : 3

	Stone Mesa Point/Access Westbound				Tutt Blvd Northbound				Tutt Blvd Southbound				
Start Time	Left	Right	Peds	App. Total	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Int. 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	9	0	9	38	2	0	40	14	33	0	47	96
07:30 AM	1	22	0	23	50	1	0	51	9	41	0	50	124
07:45 AM	2	25	0	27	55	3	0	58	8	36	0	44	129
08:00 AM	2	15	0	17	39	3	0	42	6	40	0	46	105
Total Volume	5	71	0	76	182	9	0	191	37	150	0	187	454
% App. Total	6.6	93.4	0		95.3	4.7	0		19.8	80.2	0		
PHF	.625	.710	.000	.704	.827	.750	.000	.823	.661	.915	.000	.935	.880





Ridgeview Data
Collection

Colorado Springs, CO
Tutt at Stone Mesa Point
PM Peak
Stone Mesa Point/Access and Tutt Blvd

File Name : Stone Mesa and Tutt PM
Site Code : IPO 604
Start Date : 5/5/2022
Page No : 1

Groups Printed- Automobiles - Bicycle and Pedestrian

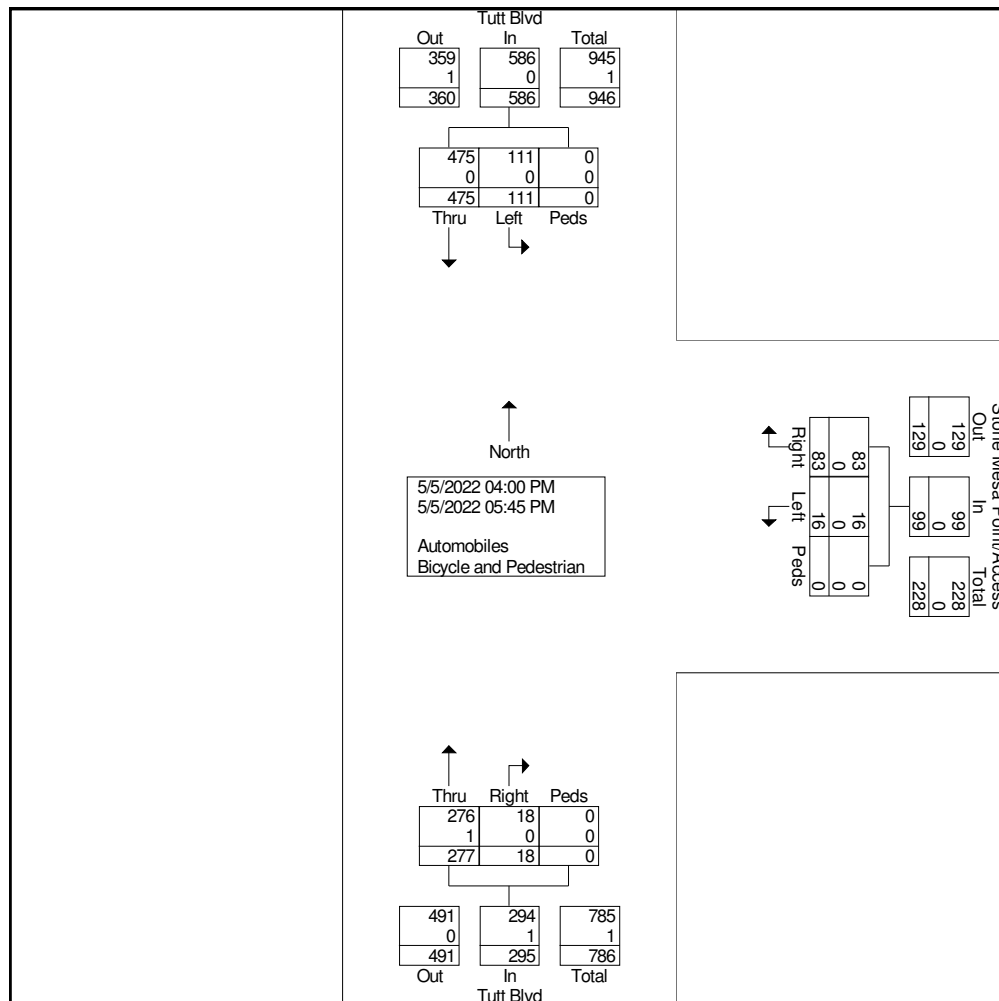
Start Time	Stone Mesa Point/Access Westbound				Tutt Blvd Northbound				Tutt Blvd Southbound				Int. Total
	Left	Right	Peds	App. Total	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	
04:00 PM	2	4	0	6	34	5	0	39	15	68	0	83	128
04:15 PM	3	15	0	18	31	8	0	39	14	66	0	80	137
04:30 PM	5	8	0	13	23	1	0	24	17	72	0	89	126
04:45 PM	3	10	0	13	36	1	0	37	20	61	0	81	131
Total	13	37	0	50	124	15	0	139	66	267	0	333	522
05:00 PM	0	18	0	18	33	1	0	34	10	67	0	77	129
05:15 PM	1	13	0	14	43	2	0	45	15	51	0	66	125
05:30 PM	2	8	0	10	44	0	0	44	13	45	0	58	112
05:45 PM	0	7	0	7	33	0	0	33	7	45	0	52	92
Total	3	46	0	49	153	3	0	156	45	208	0	253	458
Grand Total	16	83	0	99	277	18	0	295	111	475	0	586	980
Apprch %	16.2	83.8	0		93.9	6.1	0		18.9	81.1	0		
Total %	1.6	8.5	0	10.1	28.3	1.8	0	30.1	11.3	48.5	0	59.8	
Automobiles	16	83	0	99	276	18	0	294	111	475	0	586	979
% Automobiles	100	100	0	100	99.6	100	0	99.7	100	100	0	100	99.9
Bicycle and Pedestrian	0	0	0	0	1	0	0	1	0	0	0	0	1
% Bicycle and Pedestrian	0	0	0	0	0.4	0	0	0.3	0	0	0	0	0.1



Ridgeview Data
Collection

Colorado Springs, CO
Tutt at Stone Mesa Point
PM Peak
Stone Mesa Point/Access and Tutt Blvd

File Name : Stone Mesa and Tutt PM
Site Code : IPO 604
Start Date : 5/5/2022
Page No : 2



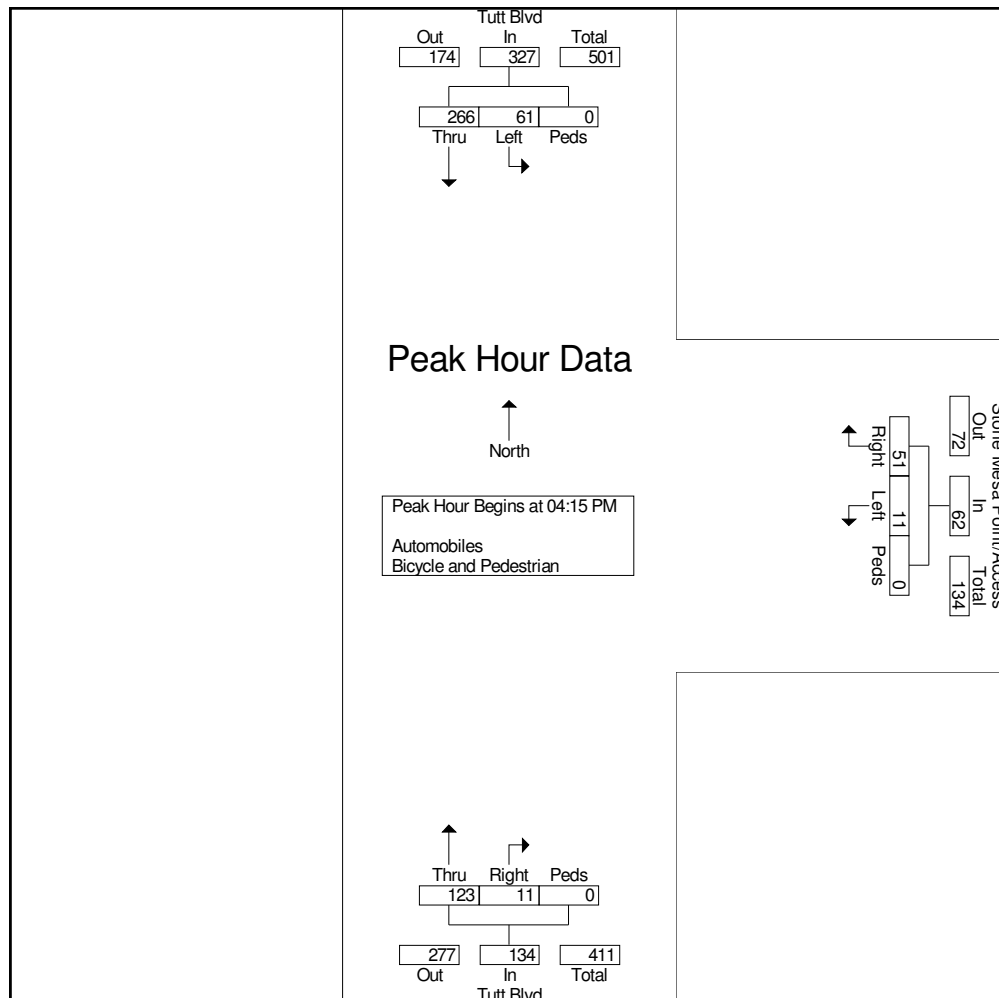


Ridgeview Data
Collection

Colorado Springs, CO
Tutt at Stone Mesa Point
PM Peak
Stone Mesa Point/Access and Tutt Blvd

File Name : Stone Mesa and Tutt PM
Site Code : IPO 604
Start Date : 5/5/2022
Page No : 3

	Stone Mesa Point/Access Westbound				Tutt Blvd Northbound				Tutt Blvd Southbound				
Start Time	Left	Right	Peds	App. Total	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 04:15 PM													
04:15 PM	3	15	0	18	31	8	0	39	14	66	0	80	137
04:30 PM	5	8	0	13	23	1	0	24	17	72	0	89	126
04:45 PM	3	10	0	13	36	1	0	37	20	61	0	81	131
05:00 PM	0	18	0	18	33	1	0	34	10	67	0	77	129
Total Volume	11	51	0	62	123	11	0	134	61	266	0	327	523
% App. Total	17.7	82.3	0		91.8	8.2	0		18.7	81.3	0		
PHF	.550	.708	.000	.861	.854	.344	.000	.859	.763	.924	.000	.919	.954





Ridgeview Data
Collection

Colorado Springs, CO
Tutt at Stone Mesa Point
AM Peak
Stone Mesa Pnt/Wolf Rdge and Templeton Page No : 1

File Name : Stone Mesa - Wolf Ridge and Templeton AM
Site Code : IPO 604
Start Date : 5/5/2022

Groups Printed- Automobiles - Bicycle and Pedestrian

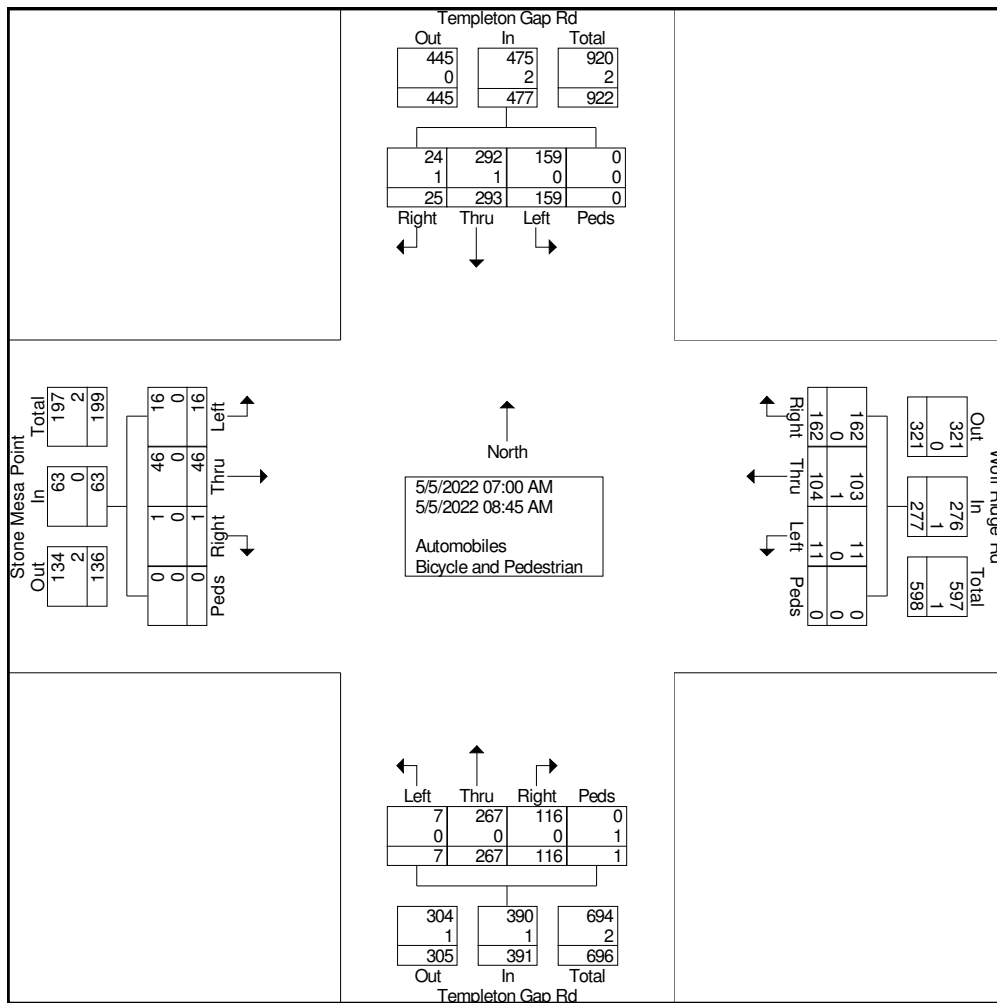
	Stone Mesa Point Eastbound					Wolf Ridge Rd Westbound					Templeton Gap Rd Northbound					Templeton Gap Rd Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
07:00 AM	1	5	0	0	6	0	12	14	0	26	1	25	10	0	36	20	23	2	0	45	113
07:15 AM	3	7	0	0	10	2	8	18	0	28	0	41	11	1	53	12	43	3	0	58	149
07:30 AM	2	10	0	0	12	1	14	43	0	58	0	45	4	0	49	19	44	6	0	69	188
07:45 AM	3	4	0	0	7	2	21	26	0	49	2	41	4	0	47	20	36	3	0	59	162
Total	9	26	0	0	35	5	55	101	0	161	3	152	29	1	185	71	146	14	0	231	612
08:00 AM	2	6	1	0	9	2	13	15	0	30	0	32	1	0	33	16	35	2	0	53	125
08:15 AM	2	3	0	0	5	1	11	8	0	20	0	37	7	0	44	10	27	2	0	39	108
08:30 AM	1	6	0	0	7	2	14	24	0	40	2	23	22	0	47	27	45	3	0	75	169
08:45 AM	2	5	0	0	7	1	11	14	0	26	2	23	57	0	82	35	40	4	0	79	194
Total	7	20	1	0	28	6	49	61	0	116	4	115	87	0	206	88	147	11	0	246	596
Grand Total	16	46	1	0	63	11	104	162	0	277	7	267	116	1	391	159	293	25	0	477	1208
Apprch %	25.4	73	1.6	0		4	37.5	58.5	0		1.8	68.3	29.7	0.3		33.3	61.4	5.2	0		
Total %	1.3	3.8	0.1	0	5.2	0.9	8.6	13.4	0	22.9	0.6	22.1	9.6	0.1	32.4	13.2	24.3	2.1	0	39.5	
Automobiles	16	46	1	0	63	11	103	162	0	276	7	267	116	0	390	159	292	24	0	475	1204
% Automobiles	100	100	100	0	100	100	99	100	0	99.6	100	100	100	0	99.7	100	99.7	96	0	99.6	99.7
Bicycle and Pedestrian	0	0	0	0	0	0	1	0	0	1	0	0	0	1	1	0	1	1	0	2	4
% Bicycle and Pedestrian	0	0	0	0	0	0	1	0	0	0.4	0	0	0	100	0.3	0	0.3	4	0	0.4	0.3



Ridgeview Data
Collection

Colorado Springs, CO
Tutt at Stone Mesa Point
AM Peak
Stone Mesa Pnt/Wolf Rdge and Templeton

File Name : Stone Mesa - Wolf Ridge and Templeton AM
Site Code : IPO 604
Start Date : 5/5/2022
Page No : 2



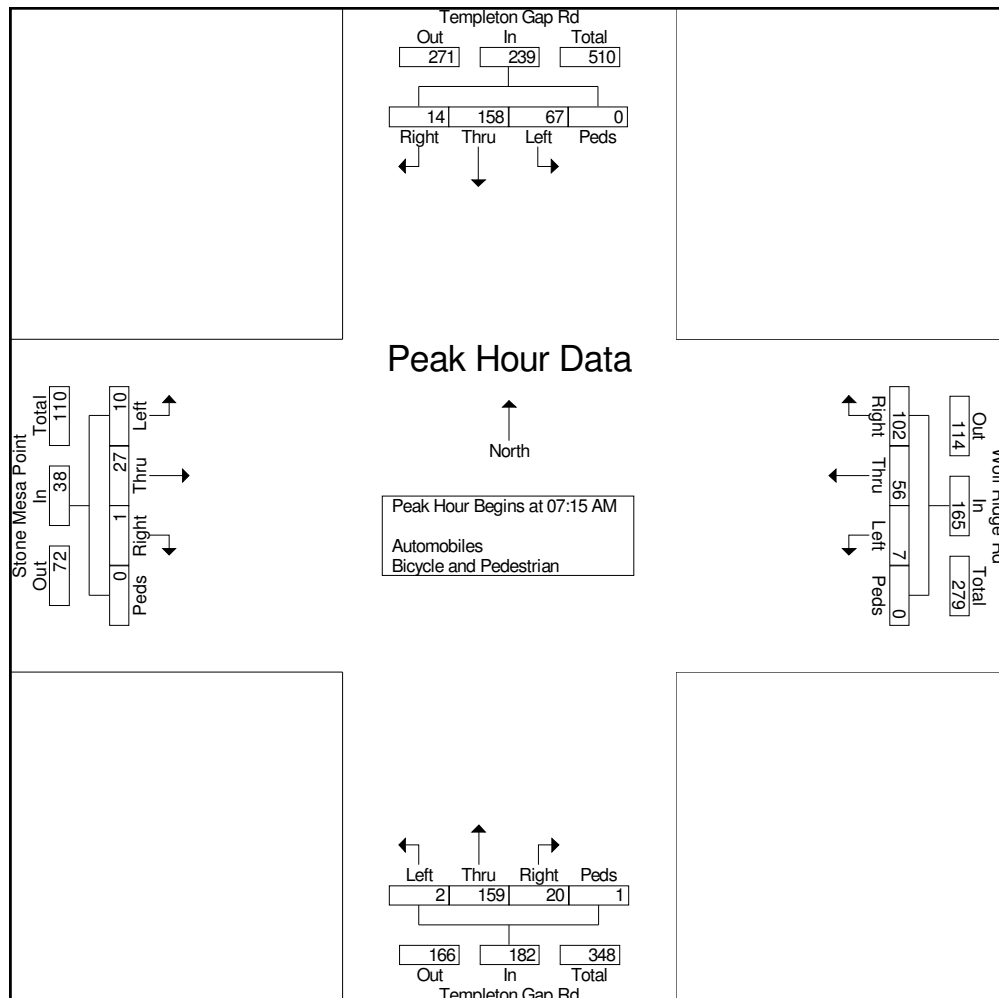


Ridgeview Data
Collection

Colorado Springs, CO
Tutt at Stone Mesa Point
AM Peak
Stone Mesa Pnt/Wolf Rdge and Templeton Page No : 3

File Name : Stone Mesa - Wolf Ridge and Templeton AM
Site Code : IPO 604
Start Date : 5/5/2022
Page No : 3

	Stone Mesa Point Eastbound					Wolf Ridge Rd Westbound					Templeton Gap Rd Northbound					Templeton Gap Rd Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	3	7	0	0	10	2	8	18	0	28	0	41	11	1	53	12	43	3	0	58	149
07:30 AM	2	10	0	0	12	1	14	43	0	58	0	45	4	0	49	19	44	6	0	69	188
07:45 AM	3	4	0	0	7	2	21	26	0	49	2	41	4	0	47	20	36	3	0	59	162
08:00 AM	2	6	1	0	9	2	13	15	0	30	0	32	1	0	33	16	35	2	0	53	125
Total Volume	10	27	1	0	38	7	56	102	0	165	2	159	20	1	182	67	158	14	0	239	624
% App. Total	26.3	71.1	2.6	0		4.2	33.9	61.8	0		1.1	87.4	11	0.5		28	66.1	5.9	0		
PHF	.833	.675	.250	.000	.792	.875	.667	.593	.000	.711	.250	.883	.455	.250	.858	.838	.898	.583	.000	.866	.830



Colorado Springs, CO
Tutt at Stone Mesa Point
PM Peak
Stone Mesa Pnt/Wolf Rd

File Name : Stone Mesa - Wolf Ridge and Templeton PM
Site Code : IPO 604
Start Date : 5/5/2022
Page No : 1

Groups Printed- Automobiles - Bicycle and Pedestrian

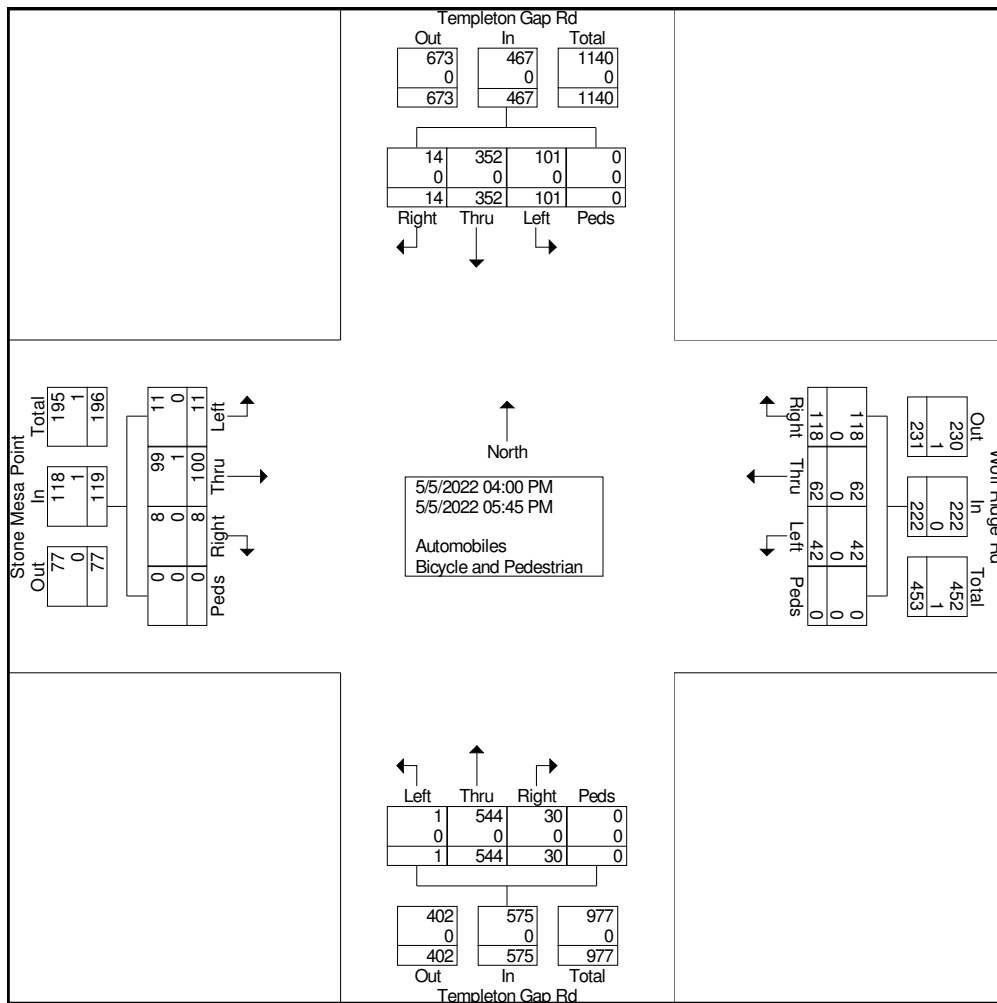
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Ridgeview Data
Collection

Colorado Springs, CO
Tutt at Stone Mesa Point
PM Peak
Stone Mesa Pnt/Wolf Rdge and Templeton

File Name : Stone Mesa - Wolf Ridge and Templeton PM
Site Code : IPO 604
Start Date : 5/5/2022
Page No : 2



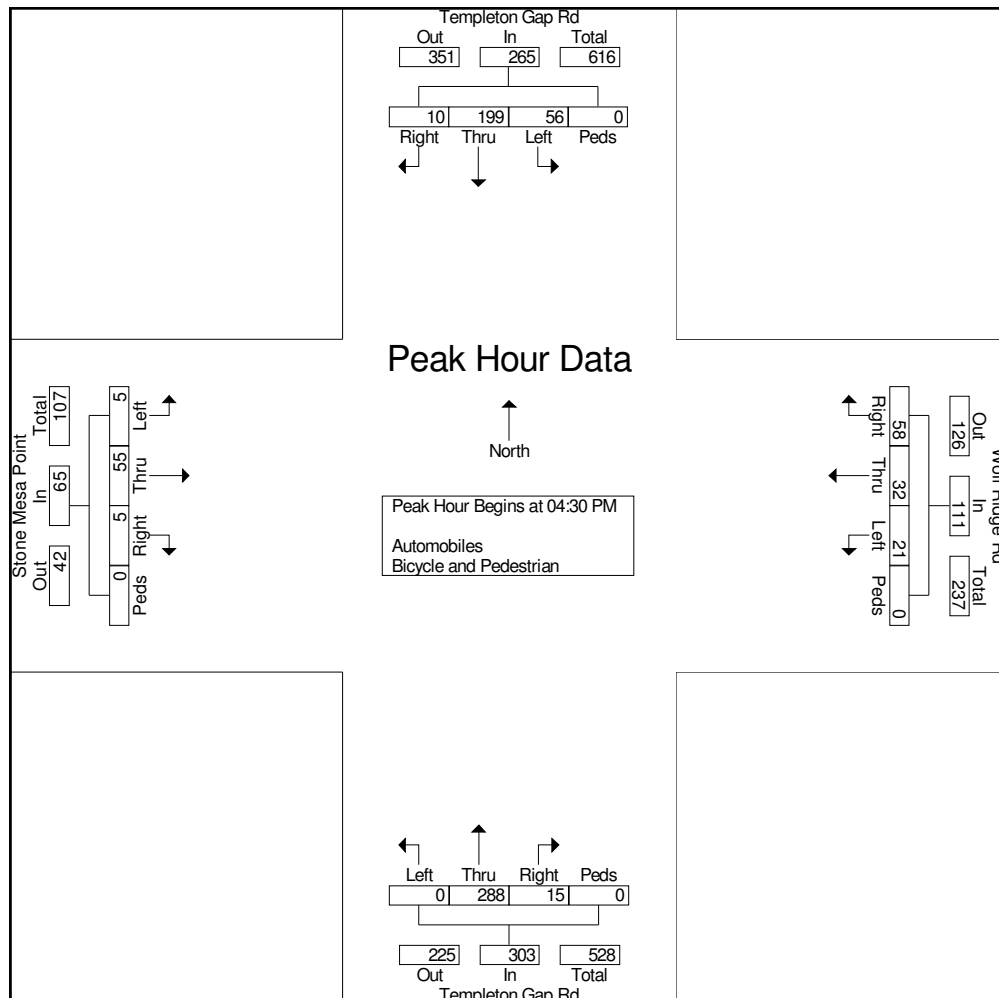


Ridgeview Data
Collection

Colorado Springs, CO
Tutt at Stone Mesa Point
PM Peak
Stone Mesa Pnt/Wolf Rdge and Templeton Page No : 3

File Name : Stone Mesa - Wolf Ridge and Templeton PM
Site Code : IPO 604
Start Date : 5/5/2022

	Stone Mesa Point Eastbound					Wolf Ridge Rd Westbound					Templeton Gap Rd Northbound					Templeton Gap Rd Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	2	15	3	0	20	5	7	11	0	23	0	70	5	0	75	12	46	2	0	60	178
04:45 PM	0	19	1	0	20	6	8	15	0	29	0	58	6	0	64	8	55	2	0	65	178
05:00 PM	2	7	0	0	9	4	9	20	0	33	0	85	3	0	88	17	37	3	0	57	187
05:15 PM	1	14	1	0	16	6	8	12	0	26	0	75	1	0	76	19	61	3	0	83	201
Total Volume	5	55	5	0	65	21	32	58	0	111	0	288	15	0	303	56	199	10	0	265	744
% App. Total	7.7	84.6	7.7	0		18.9	28.8	52.3	0		0	95	5	0		21.1	75.1	3.8	0		
PHF	.625	.724	.417	.000	.813	.875	.889	.725	.000	.841	.000	.847	.625	.000	.861	.737	.816	.833	.000	.798	.925





Ridgeview Data
Collection

Colorado Springs, CO
Tutt at Stone Mesa Point
AM Peak
Dublin Blvd and Tutt Blvd

File Name : Dublin and Tutt AM
Site Code : IPO 604
Start Date : 5/5/2022
Page No : 1

Groups Printed- Automobiles - Bicycle and Pedestrian

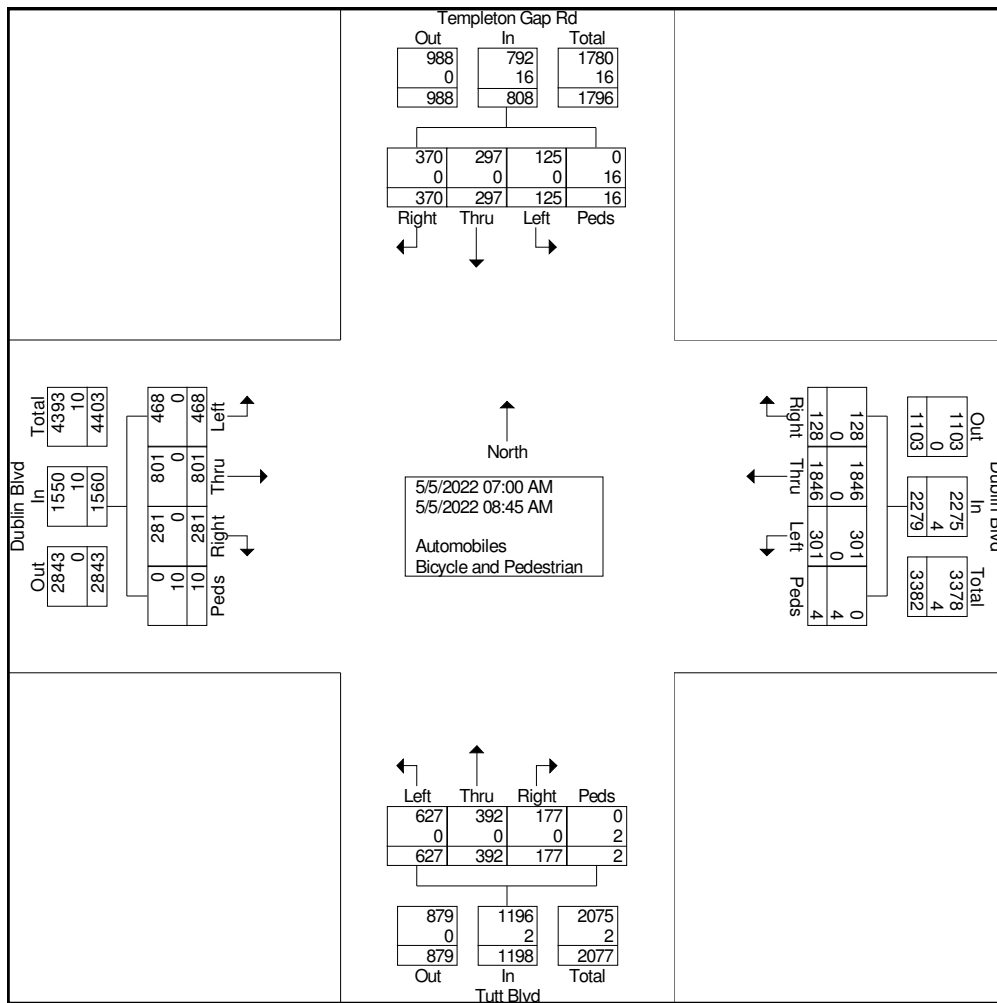
	Dublin Blvd Eastbound						Dublin Blvd Westbound						Tutt Blvd Northbound						Templeton Gap Rd Southbound						
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total				
07:00 AM	42	89	24	0	155	25	221	11	2	259	86	39	9	0	134	19	27	42	0	88	636				
07:15 AM	56	88	28	0	172	23	284	13	1	321	106	62	17	0	185	24	33	51	0	108	786				
07:30 AM	41	93	39	5	178	31	280	13	0	324	84	59	18	2	163	19	50	59	8	136	801				
07:45 AM	63	109	52	3	227	54	233	17	0	304	75	46	16	0	137	19	41	50	6	116	784				
Total	202	379	143	8	732	133	1018	54	3	1208	351	206	60	2	619	81	151	202	14	448	3007				
08:00 AM	61	98	46	0	205	38	213	12	0	263	79	39	24	0	142	14	47	48	0	109	719				
08:15 AM	49	105	28	2	184	44	201	22	0	267	66	48	25	0	139	10	29	42	1	82	672				
08:30 AM	69	109	32	0	210	43	208	18	0	269	70	49	29	0	148	8	35	33	0	76	703				
08:45 AM	87	110	32	0	229	43	206	22	1	272	61	50	39	0	150	12	35	45	1	93	744				
Total	266	422	138	2	828	168	828	74	1	1071	276	186	117	0	579	44	146	168	2	360	2838				
Grand Total	468	801	281	10	1560	301	1846	128	4	2279	627	392	177	2	1198	125	297	370	16	808	5845				
Apprch %	30	51.3	18	0.6		13.2	81	5.6	0.2		52.3	32.7	14.8	0.2		15.5	36.8	45.8	2						
Total %	8	13.7	4.8	0.2	26.7	5.1	31.6	2.2	0.1	39	10.7	6.7	3	0	20.5	2.1	5.1	6.3	0.3	13.8					
Automobiles	468	801	281	0	1550	301	1846	128	0	2275	627	392	177	0	1196	125	297	370	0	792	5813				
% Automobiles	100	100	100	0	99.4	100	100	100	0	99.8	100	100	100	0	99.8	100	100	100	0	98	99.5				
Bicycle and Pedestrian	0	0	0	10	10	0	0	0	4	4	0	0	0	2	2	0	0	0	16	16	32				
% Bicycle and Pedestrian	0	0	0	100	0.6	0	0	0	100	0.2	0	0	0	100	0.2	0	0	0	100	2	0.5				



Ridgeview Data
Collection

Colorado Springs, CO
Tutt at Stone Mesa Point
AM Peak
Dublin Blvd and Tutt Blvd

File Name : Dublin and Tutt AM
Site Code : IPO 604
Start Date : 5/5/2022
Page No : 2



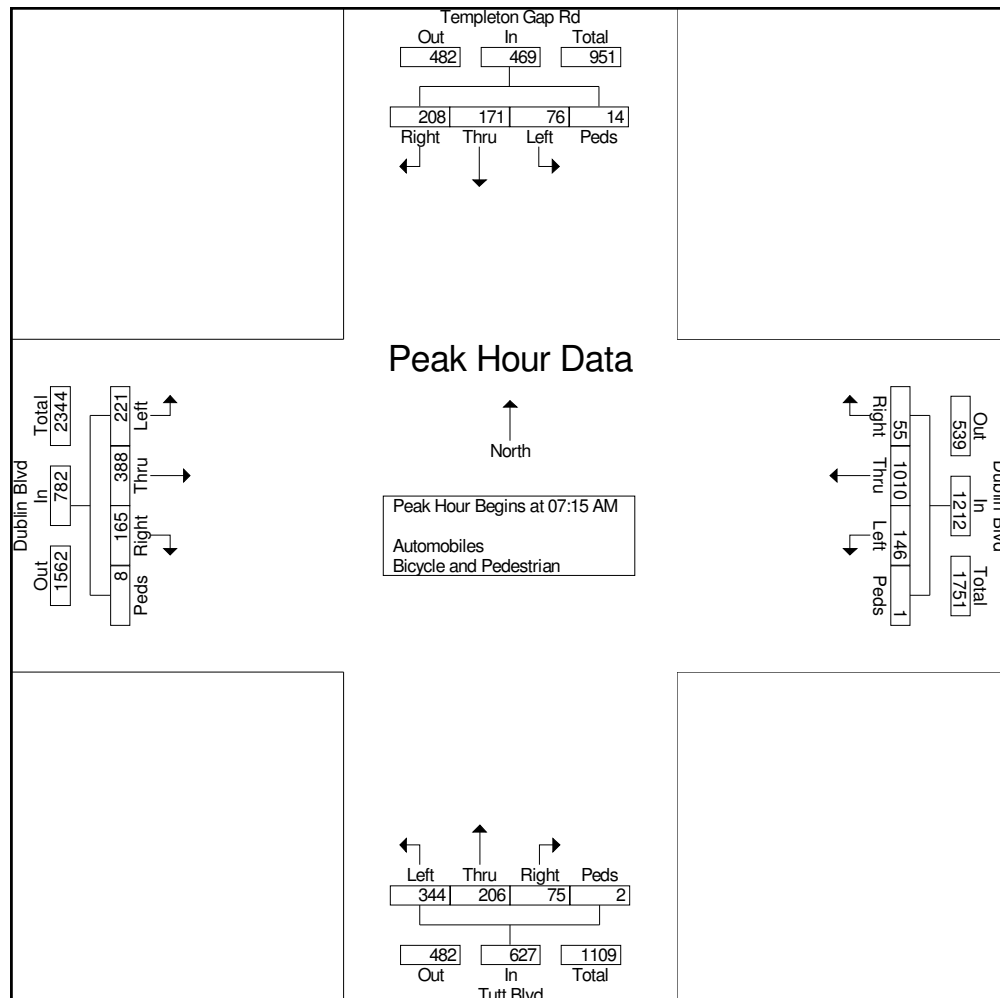


Ridgeview Data
Collection

Colorado Springs, CO
Tutt at Stone Mesa Point
AM Peak
Dublin Blvd and Tutt Blvd

File Name : Dublin and Tutt AM
Site Code : IPO 604
Start Date : 5/5/2022
Page No : 3

	Dublin Blvd Eastbound					Dublin Blvd Westbound					Tutt Blvd Northbound					Templeton Gap Rd Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	56	88	28	0	172	23	284	13	1	321	106	62	17	0	185	24	33	51	0	108	786
07:30 AM	41	93	39	5	178	31	280	13	0	324	84	59	18	2	163	19	50	59	8	136	801
07:45 AM	63	109	52	3	227	54	233	17	0	304	75	46	16	0	137	19	41	50	6	116	784
08:00 AM	61	98	46	0	205	38	213	12	0	263	79	39	24	0	142	14	47	48	0	109	719
Total Volume	221	388	165	8	782	146	1010	55	1	1212	344	206	75	2	627	76	171	208	14	469	3090
% App. Total	28.3	49.6	21.1	1		12	83.3	4.5	0.1		54.9	32.9	12	0.3		16.2	36.5	44.3	3		
PHF	.877	.890	.793	.400	.861	.676	.889	.809	.250	.935	.811	.831	.781	.250	.847	.792	.855	.881	.438	.862	.964





Ridgeview Data
Collection

Colorado Springs, CO
Tutt at Stone Mesa Point
PM Peak
Dublin Blvd and Tutt Blvd

File Name : Dublin and Tutt PM
Site Code : IPO 604
Start Date : 5/5/2022
Page No : 1

Groups Printed- Automobiles - Bicycle and Pedestrian

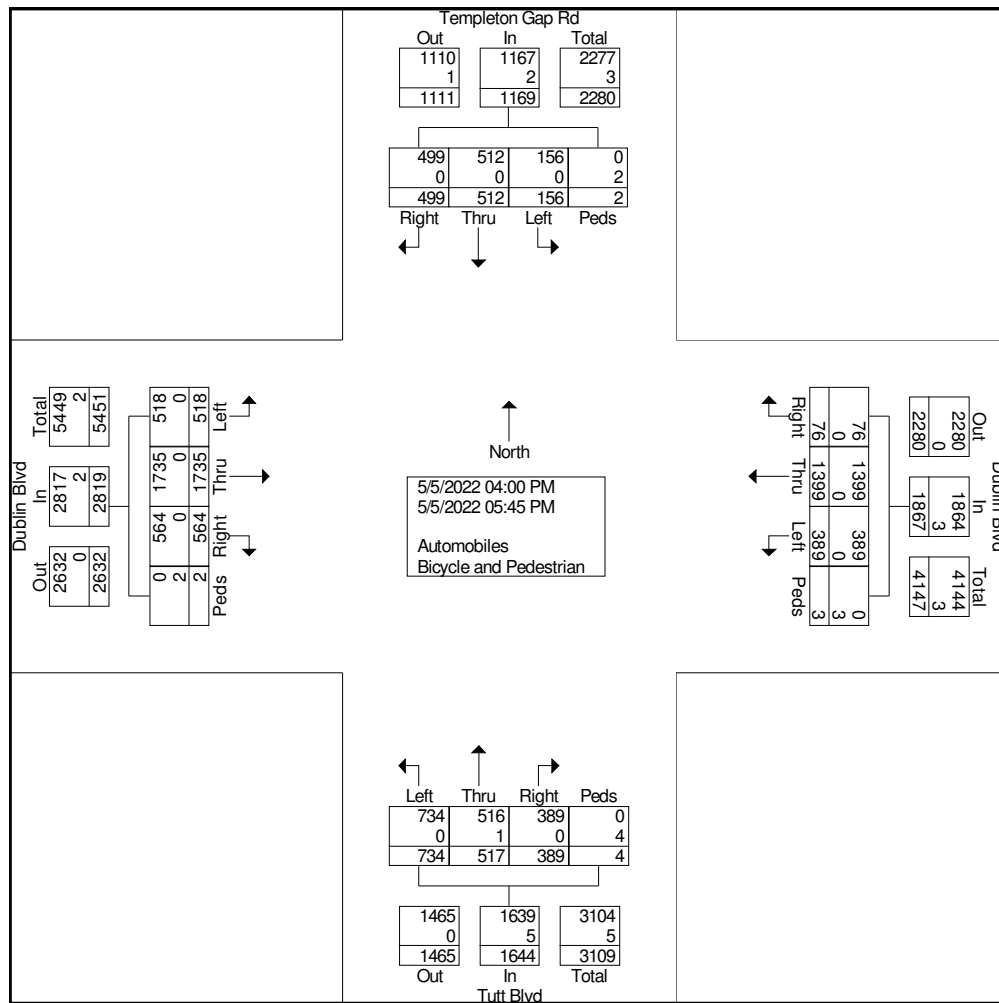
	Dublin Blvd Eastbound					Dublin Blvd Westbound					Tutt Blvd Northbound					Templeton Gap Rd Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
04:00 PM	65	170	66	0	301	40	155	5	1	201	104	63	37	0	204	23	71	70	0	164	870
04:15 PM	53	221	90	0	364	37	170	15	0	222	104	63	50	0	217	28	59	53	0	140	943
04:30 PM	63	221	78	0	362	43	201	7	2	253	96	65	40	1	202	21	59	76	0	156	973
04:45 PM	61	201	67	1	330	49	180	8	0	237	85	59	57	0	201	14	78	65	2	159	927
Total	242	813	301	1	1357	169	706	35	3	913	389	250	184	1	824	86	267	264	2	619	3713
05:00 PM	64	221	64	1	350	66	200	10	0	276	82	79	56	2	219	20	60	70	0	150	995
05:15 PM	72	258	61	0	391	56	175	15	0	246	73	62	52	0	187	17	68	63	0	148	972
05:30 PM	63	230	77	0	370	51	170	13	0	234	114	64	46	0	224	17	63	51	0	131	959
05:45 PM	77	213	61	0	351	47	148	3	0	198	76	62	51	1	190	16	54	51	0	121	860
Total	276	922	263	1	1462	220	693	41	0	954	345	267	205	3	820	70	245	235	0	550	3786
Grand Total	518	1735	564	2	2819	389	1399	76	3	1867	734	517	389	4	1644	156	512	499	2	1169	7499
Apprch %	18.4	61.5	20	0.1		20.8	74.9	4.1	0.2		44.6	31.4	23.7	0.2		13.3	43.8	42.7	0.2		
Total %	6.9	23.1	7.5	0	37.6	5.2	18.7	1	0	24.9	9.8	6.9	5.2	0.1	21.9	2.1	6.8	6.7	0	15.6	
Automobiles	518	1735	564	0	2817	389	1399	76	0	1864	734	516	389	0	1639	156	512	499	0	1167	7487
% Automobiles	100	100	100	0	99.9	100	100	100	0	99.8	100	99.8	100	0	99.7	100	100	100	0	99.8	99.8
Bicycle and Pedestrian	0	0	0	2	2	0	0	0	3	3	0	1	0	4	5	0	0	0	2	2	12
% Bicycle and Pedestrian	0	0	0	100	0.1	0	0	0	100	0.2	0	0.2	0	100	0.3	0	0	0	100	0.2	0.2



Ridgeview Data
Collection

Colorado Springs, CO
Tutt at Stone Mesa Point
PM Peak
Dublin Blvd and Tutt Blvd

File Name : Dublin and Tutt PM
Site Code : IPO 604
Start Date : 5/5/2022
Page No : 2



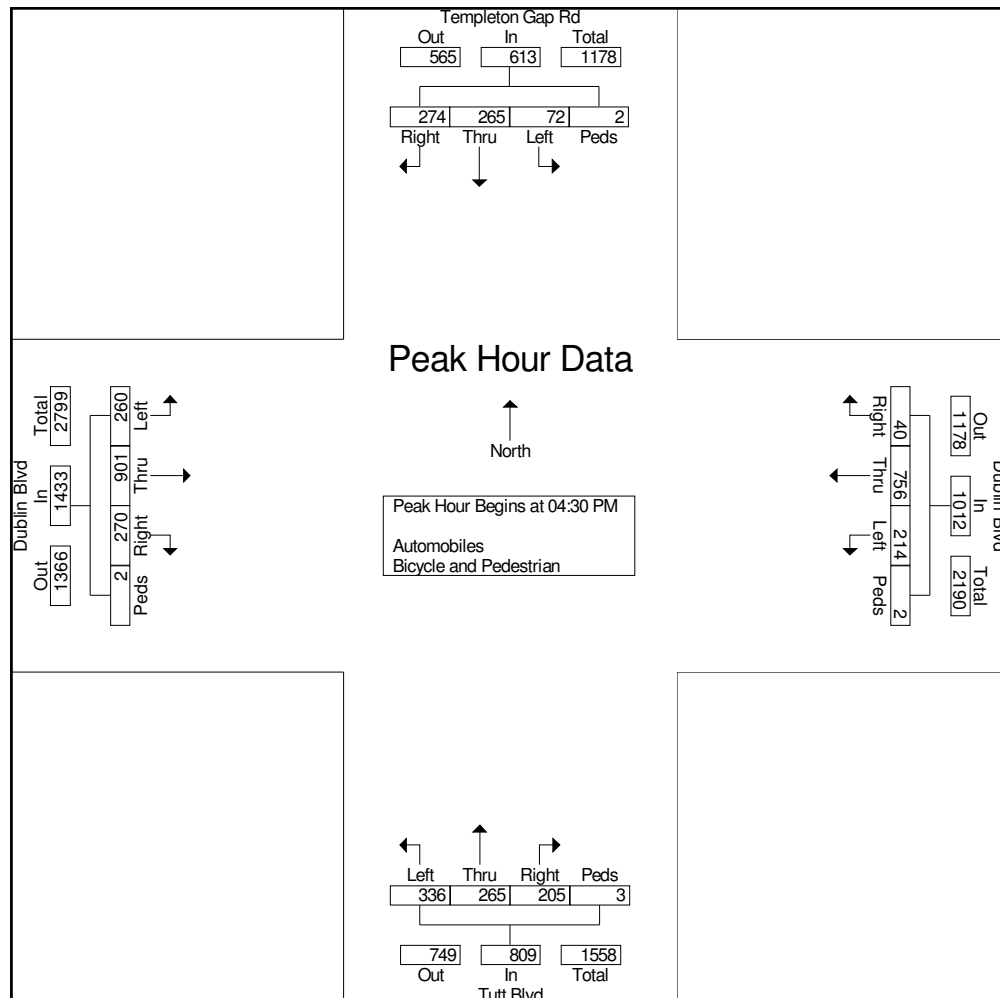


Ridgeview Data
Collection

Colorado Springs, CO
Tutt at Stone Mesa Point
PM Peak
Dublin Blvd and Tutt Blvd

File Name : Dublin and Tutt PM
Site Code : IPO 604
Start Date : 5/5/2022
Page No : 3

	Dublin Blvd Eastbound					Dublin Blvd Westbound					Tutt Blvd Northbound					Templeton Gap Rd Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	63	221	78	0	362	43	201	7	2	253	96	65	40	1	202	21	59	76	0	156	973
04:45 PM	61	201	67	1	330	49	180	8	0	237	85	59	57	0	201	14	78	65	2	159	927
05:00 PM	64	221	64	1	350	66	200	10	0	276	82	79	56	2	219	20	60	70	0	150	995
05:15 PM	72	258	61	0	391	56	175	15	0	246	73	62	52	0	187	17	68	63	0	148	972
Total Volume	260	901	270	2	1433	214	756	40	2	1012	336	265	205	3	809	72	265	274	2	613	3867
% App. Total	18.1	62.9	18.8	0.1		21.1	74.7	4	0.2		41.5	32.8	25.3	0.4		11.7	43.2	44.7	0.3		
PHF	.903	.873	.865	.500	.916	.811	.940	.667	.250	.917	.875	.839	.899	.375	.924	.857	.849	.901	.250	.964	.972



APPENDIX B

Future Traffic Projections

CDOT OTIS Traffic Projections: Stone Mesa Flats

ROUTE	ENDREFPT	LENGTH	AADTYR	PKTRK	YR20FACTOR	GROWTH RATE	DHV	LOCATION
021B	151.646	2.561	2020	0.5	1.36	1.5%	8	ON POWERS BLVD N/O WOODMEN RD COLORADO SPRINGS

APPENDIX C

Trip Generation Worksheets

Project Stone Mesa Flats
 Subject Trip Generation for Multifamily Housing (Mid-Rise)
 Designed by TES Date May 20, 2022 Job No. 096481005
 Checked by _____ Date _____ Sheet No. _____ of _____

TRIP GENERATION MANUAL TECHNIQUES

ITE Trip Generation Manual 11th Edition, Fitted Curve Equations

Land Use Code - Multifamily Housing (Mid-Rise) (221)

Independent Variable - Dwelling Units (X)

$$X = 158$$

T = Average Vehicle Trip Ends

Peak Hour of Adjacent Street Traffic, One Hour Between 7 and 9 a.m. (200 Series Page 275)

$$(T) = 0.44 (X) - 11.61$$

$$(T) = 0.44 * (158.0) - 11.61$$

Directional Distribution: 23% ent. 77% exit.

T = 58 Average Vehicle Trip Ends

13 entering 45 exiting

$$13 + 45 = 58$$

Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m. (200 Series Page 276)

$$(T) = 0.39 (X) + 0.34$$

$$(T) = 0.39 * (158.0) + 0.34$$

Directional Distribution: 61% ent. 39% exit.

T = 62 Average Vehicle Trip Ends

38 entering 24 exiting

$$38 + 24 = 62$$

Weekday (200 Series Page 274)

$$(T) = 4.77 (X) - 46.46$$

$$(T) = 4.77 * (158.0) - 46.46$$

Directional Distribution: 50% ent. 50% exit.

T = 708 Average Vehicle Trip Ends

354 entering 354 exiting

$$354 + 354 = 708$$

APPENDIX D

























Intersection Analysis Worksheets

Timings

1: Tutt Blvd & Woodmen Rd

2022 Existing AM

05/23/2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	124	1040	64	109	2037	14	144	27	35	48	46	353
Future Volume (vph)	124	1040	64	109	2037	14	144	27	35	48	46	353
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Free
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6			Free			Free
Detector Phase	5	2	2	1	6	6	7	4		3	8	
Switch Phase												
Minimum Initial (s)	4.0	20.0	20.0	4.0	20.0	20.0	4.0	4.0		4.0	4.0	
Minimum Split (s)	9.0	27.5	27.5	9.0	27.5	27.5	9.0	24.0		9.0	19.0	
Total Split (s)	19.0	78.0	78.0	19.0	78.0	78.0	22.0	24.0		17.0	19.0	
Total Split (%)	13.8%	56.5%	56.5%	13.8%	56.5%	56.5%	15.9%	17.4%		12.3%	13.8%	
Yellow Time (s)	3.0	5.5	5.5	3.0	5.5	5.5	3.0	5.0		3.0	5.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	7.5	7.5	5.0	7.5	7.5	5.0	7.0		5.0	7.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	Max		None	Max	
Act Effect Green (s)	10.5	74.6	74.6	9.9	74.0	74.0	11.3	23.7	138.0	7.4	17.7	138.0
Actuated g/C Ratio	0.08	0.54	0.54	0.07	0.54	0.54	0.08	0.17	1.00	0.05	0.13	1.00
v/c Ratio	0.49	0.56	0.07	0.46	1.11	0.02	0.53	0.05	0.02	0.27	0.10	0.23
Control Delay	67.2	22.6	0.5	67.1	87.8	0.0	67.3	50.6	0.0	65.9	55.1	0.3
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	67.2	22.6	0.5	67.1	87.8	0.0	67.3	50.6	0.0	65.9	55.1	0.3
LOS	E	C	A	E	F	A	E	D	A	E	E	A
Approach Delay		25.9			86.2			53.7			12.9	
Approach LOS		C			F			D			B	

Intersection Summary

Cycle Length: 138

Actuated Cycle Length: 138

Offset: 132 (96%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Natural Cycle: 120

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.11

Intersection Signal Delay: 58.1

Intersection LOS: E

Intersection Capacity Utilization 79.2%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 1: Tutt Blvd & Woodmen Rd



























HCM 6th Signalized Intersection Summary

2022 Existing AM

1: Tutt Blvd & Woodmen Rd

05/23/2022

























													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (veh/h)	124	1040	64	109	2037	14	144	27	35	48	46	353	
Future Volume (veh/h)	124	1040	64	109	2037	14	144	27	35	48	46	353	
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	128	1072	66	112	2100	14	148	28	0	49	47	0	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2	
Cap, veh/h	179	2231	995	162	2213	987	202	438		85	317		
Arrive On Green	0.05	0.63	0.63	0.05	0.62	0.62	0.06	0.12	0.00	0.02	0.09	0.00	
Sat Flow, veh/h	3456	3554	1585	3456	3554	1585	3456	3554	1585	3456	3554	1585	
Grp Volume(v), veh/h	128	1072	66	112	2100	14	148	28	0	49	47	0	
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1728	1777	1585	1728	1777	1585	1728	1777	1585	
Q Serve(g_s), s	5.0	22.2	2.2	4.4	75.2	0.5	5.8	1.0	0.0	1.9	1.7	0.0	
Cycle Q Clear(g_c), s	5.0	22.2	2.2	4.4	75.2	0.5	5.8	1.0	0.0	1.9	1.7	0.0	
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00	
Lane Grp Cap(c), veh/h	179	2231	995	162	2213	987	202	438		85	317		
V/C Ratio(X)	0.71	0.48	0.07	0.69	0.95	0.01	0.73	0.06		0.58	0.15		
Avail Cap(c_a), veh/h	351	2231	995	351	2213	987	426	438		300	317		
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	0.00	1.00	1.00	0.00	
Uniform Delay (d), s/veh	64.4	13.7	10.0	64.8	24.0	9.9	63.9	53.5	0.0	66.6	58.0	0.0	
Incr Delay (d2), s/veh	5.2	0.7	0.1	5.1	10.4	0.0	5.1	0.3	0.0	6.1	1.0	0.0	
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),veh/ln	2.4	9.0	0.8	2.1	32.9	0.2	2.7	0.5	0.0	0.9	0.8	0.0	
Unsig. Movement Delay, s/veh													
LnGrp Delay(d),s/veh	69.6	14.4	10.1	69.9	34.4	9.9	69.0	53.7	0.0	72.7	59.0	0.0	
LnGrp LOS	E	B	B	E	C	A	E	D		E	E		
Approach Vol, veh/h	1266			2226			176			A		96	A
Approach Delay, s/veh	19.8			36.0			66.5			66.0			
Approach LOS	B			D			E			E			
Timer - Assigned Phs	1	2	3	4	5	6	7	8					
Phs Duration (G+Y+Rc), s	11.5	94.1	8.4	24.0	12.2	93.4	13.1	19.3					
Change Period (Y+Rc), s	5.0	7.5	5.0	7.0	5.0	7.5	5.0	7.0					
Max Green Setting (Gmax), s	14.0	70.5	12.0	17.0	14.0	70.5	17.0	12.0					
Max Q Clear Time (g_c+I1), s	6.4	24.2	3.9	3.0	7.0	77.2	7.8	3.7					
Green Ext Time (p_c), s	0.2	10.7	0.0	0.1	0.2	0.0	0.3	0.1					
Intersection Summary													
HCM 6th Ctrl Delay	32.8												
HCM 6th LOS	C												

Timings

1: Tutt Blvd & Woodmen Rd

2022 Existing PM

05/23/2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	224	1897	59	37	1647	20	337	78	99	32	34	222
Future Volume (vph)	224	1897	59	37	1647	20	337	78	99	32	34	222
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Free
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6			Free			Free
Detector Phase	5	2	2	1	6	6	7	4		3	8	
Switch Phase												
Minimum Initial (s)	4.0	20.0	20.0	4.0	20.0	20.0	4.0	4.0		4.0	4.0	
Minimum Split (s)	9.0	27.5	27.5	9.0	27.5	27.5	9.0	24.0		9.0	19.0	
Total Split (s)	19.0	78.0	78.0	19.0	78.0	78.0	22.0	24.0		17.0	19.0	
Total Split (%)	13.8%	56.5%	56.5%	13.8%	56.5%	56.5%	15.9%	17.4%		12.3%	13.8%	
Yellow Time (s)	3.0	5.5	5.5	3.0	5.5	5.5	3.0	5.0		3.0	5.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	7.5	7.5	5.0	7.5	7.5	5.0	7.0		5.0	7.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	Max		None	Max	
Act Effect Green (s)	13.3	79.6	79.6	7.0	71.2	71.2	16.8	24.2	138.0	6.9	12.2	138.0
Actuated g/C Ratio	0.10	0.58	0.58	0.05	0.52	0.52	0.12	0.18	1.00	0.05	0.09	1.00
v/c Ratio	0.74	1.01	0.07	0.23	0.98	0.03	0.88	0.14	0.07	0.20	0.12	0.15
Control Delay	74.4	52.2	0.4	65.5	49.8	0.1	81.9	50.5	0.1	65.3	59.2	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	74.4	52.2	0.4	65.5	49.8	0.1	81.9	50.5	0.1	65.3	59.2	0.2
LOS	E	D	A	E	D	A	F	D	A	E	E	A
Approach Delay		53.1			49.6			61.3			14.5	
Approach LOS		D			D			E			B	

Intersection Summary

Cycle Length: 138

Actuated Cycle Length: 138

Offset: 132 (96%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Natural Cycle: 130

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.01

Intersection Signal Delay: 50.4

Intersection LOS: D

Intersection Capacity Utilization 88.3%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 1: Tutt Blvd & Woodmen Rd



























HCM 6th Signalized Intersection Summary

2022 Existing PM

1: Tutt Blvd & Woodmen Rd

05/23/2022

























												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	224	1897	59	37	1647	20	337	78	99	32	34	222
Future Volume (veh/h)	224	1897	59	37	1647	20	337	78	99	32	34	222
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	243	2062	64	40	1790	22	366	85	0	35	37	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	294	2108	940	79	1887	842	413	658		74	309	
Arrive On Green	0.09	0.59	0.59	0.02	0.53	0.53	0.12	0.19	0.00	0.02	0.09	0.00
Sat Flow, veh/h	3456	3554	1585	3456	3554	1585	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	243	2062	64	40	1790	22	366	85	0	35	37	0
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1728	1777	1585	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	9.5	77.6	2.4	1.6	65.7	0.9	14.4	2.8	0.0	1.4	1.3	0.0
Cycle Q Clear(g_c), s	9.5	77.6	2.4	1.6	65.7	0.9	14.4	2.8	0.0	1.4	1.3	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	294	2108	940	79	1887	842	413	658		74	309	
V/C Ratio(X)	0.83	0.98	0.07	0.51	0.95	0.03	0.89	0.13		0.47	0.12	
Avail Cap(c_a), veh/h	351	2108	940	351	1887	842	426	658		300	309	
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	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	62.1	27.2	11.9	66.7	30.6	15.4	59.8	47.0	0.0	66.8	58.1	0.0
Incr Delay (d2), s/veh	12.9	15.1	0.1	5.0	11.7	0.1	19.3	0.4	0.0	4.6	0.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.7	35.7	0.9	0.8	30.3	0.3	7.4	1.3	0.0	0.7	0.6	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	75.1	42.2	12.0	71.7	42.3	15.5	79.1	47.4	0.0	71.4	58.9	0.0
LnGrp LOS	E	D	B	E	D	B	E	D		E	E	
Approach Vol, veh/h	2369				1852				451		A	
Approach Delay, s/veh	44.8				42.6				73.1		65.0	
Approach LOS	D				D				E		E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.1	89.4	8.0	32.5	16.7	80.8	21.5	19.0				
Change Period (Y+Rc), s	5.0	7.5	5.0	7.0	5.0	7.5	5.0	7.0				
Max Green Setting (Gmax), s	14.0	70.5	12.0	17.0	14.0	70.5	17.0	12.0				
Max Q Clear Time (g_c+l1), s	3.6	79.6	3.4	4.8	11.5	67.7	16.4	3.3				
Green Ext Time (p_c), s	0.0	0.0	0.0	0.3	0.2	2.5	0.1	0.1				
Intersection Summary												
HCM 6th Ctrl Delay	46.9											
HCM 6th LOS	D											

Timings

1: Tutt Blvd & Woodmen Rd

2025 Background AM

05/23/2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	130	1088	67	114	2130	15	151	28	37	50	48	369
Future Volume (vph)	130	1088	67	114	2130	15	151	28	37	50	48	369
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Free
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6			Free			Free
Detector Phase	5	2	2	1	6	6	7	4		3	8	
Switch Phase												
Minimum Initial (s)	4.0	20.0	20.0	4.0	20.0	20.0	4.0	4.0		4.0	4.0	
Minimum Split (s)	9.0	27.5	27.5	9.0	27.5	27.5	9.0	24.0		9.0	19.0	
Total Split (s)	19.0	78.0	78.0	19.0	78.0	78.0	22.0	24.0		17.0	19.0	
Total Split (%)	13.8%	56.5%	56.5%	13.8%	56.5%	56.5%	15.9%	17.4%		12.3%	13.8%	
Yellow Time (s)	3.0	5.5	5.5	3.0	5.5	5.5	3.0	5.0		3.0	5.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	7.5	7.5	5.0	7.5	7.5	5.0	7.0		5.0	7.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	Max		None	Max	
Act Effect Green (s)	10.7	74.4	74.4	10.1	73.8	73.8	11.6	23.7	138.0	7.5	17.4	138.0
Actuated g/C Ratio	0.08	0.54	0.54	0.07	0.53	0.53	0.08	0.17	1.00	0.05	0.13	1.00
v/c Ratio	0.50	0.59	0.08	0.47	1.16	0.02	0.54	0.05	0.02	0.28	0.11	0.24
Control Delay	67.4	23.3	0.7	67.2	109.5	0.1	67.4	50.7	0.0	66.1	55.5	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	67.4	23.3	0.7	67.2	109.5	0.1	67.4	50.7	0.0	66.1	55.5	0.4
LOS	E	C	A	E	F	A	E	D	A	E	E	A
Approach Delay		26.6			106.7			53.7			13.1	
Approach LOS		C			F			D			B	

Intersection Summary

Cycle Length: 138

Actuated Cycle Length: 138

Offset: 132 (96%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Natural Cycle: 130

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.16

Intersection Signal Delay: 69.3

Intersection LOS: E

Intersection Capacity Utilization 81.9%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 1: Tutt Blvd & Woodmen Rd



























HCM 6th Signalized Intersection Summary

2025 Background AM

05/23/2022

























1: Tutt Blvd & Woodmen Rd

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	130	1088	67	114	2130	15	151	28	37	50	48	369
Future Volume (veh/h)	130	1088	67	114	2130	15	151	28	37	50	48	369
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	134	1122	69	118	2196	15	156	29	0	52	49	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	186	2220	990	169	2203	982	210	438		89	313	
Arrive On Green	0.05	0.62	0.62	0.05	0.62	0.62	0.06	0.12	0.00	0.03	0.09	0.00
Sat Flow, veh/h	3456	3554	1585	3456	3554	1585	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	134	1122	69	118	2196	15	156	29	0	52	49	0
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1728	1777	1585	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	5.3	23.9	2.4	4.6	84.9	0.5	6.1	1.0	0.0	2.1	1.8	0.0
Cycle Q Clear(g_c), s	5.3	23.9	2.4	4.6	84.9	0.5	6.1	1.0	0.0	2.1	1.8	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	186	2220	990	169	2203	982	210	438		89	313	
V/C Ratio(X)	0.72	0.51	0.07	0.70	1.00	0.02	0.74	0.07		0.59	0.16	
Avail Cap(c_a), veh/h	351	2220	990	351	2203	982	426	438		300	313	
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	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	64.3	14.2	10.2	64.6	26.1	10.1	63.7	53.5	0.0	66.5	58.2	0.0
Incr Delay (d2), s/veh	5.2	0.8	0.1	5.2	18.5	0.0	5.1	0.3	0.0	6.0	1.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	9.7	0.9	2.2	39.2	0.2	2.9	0.5	0.0	1.0	0.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	69.5	15.0	10.3	69.8	44.6	10.1	68.8	53.8	0.0	72.5	59.3	0.0
LnGrp LOS	E	B	B	E	D	B	E	D		E	E	
Approach Vol, veh/h	1325			2329			185		A		101	
Approach Delay, s/veh	20.3			45.6			66.5				66.1	
Approach LOS	C			D			E				E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.7	93.7	8.5	24.0	12.4	93.0	13.4	19.1				
Change Period (Y+Rc), s	5.0	7.5	5.0	7.0	5.0	7.5	5.0	7.0				
Max Green Setting (Gmax), s	14.0	70.5	12.0	17.0	14.0	70.5	17.0	12.0				
Max Q Clear Time (g_c+I1), s	6.6	25.9	4.1	3.0	7.3	86.9	8.1	3.8				
Green Ext Time (p_c), s	0.2	11.4	0.1	0.1	0.2	0.0	0.3	0.1				
Intersection Summary												
HCM 6th Ctrl Delay	38.6											
HCM 6th LOS	D											
Notes												

Timings
1: Tutt Blvd & Woodmen Rd

2025 Background PM

05/23/2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	234	1984	62	39	1722	21	352	82	104	33	36	232
Future Volume (vph)	234	1984	62	39	1722	21	352	82	104	33	36	232
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Free
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6			Free			Free
Detector Phase	5	2	2	1	6	6	7	4		3	8	
Switch Phase												
Minimum Initial (s)	4.0	20.0	20.0	4.0	20.0	20.0	4.0	4.0		4.0	4.0	
Minimum Split (s)	9.0	27.5	27.5	9.0	27.5	27.5	9.0	24.0		9.0	19.0	
Total Split (s)	19.0	78.0	78.0	19.0	78.0	78.0	22.0	24.0		17.0	19.0	
Total Split (%)	13.8%	56.5%	56.5%	13.8%	56.5%	56.5%	15.9%	17.4%		12.3%	13.8%	
Yellow Time (s)	3.0	5.5	5.5	3.0	5.5	5.5	3.0	5.0		3.0	5.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	7.5	7.5	5.0	7.5	7.5	5.0	7.0		5.0	7.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	Max		None	Max	
Act Effect Green (s)	13.5	79.5	79.5	7.1	71.0	71.0	17.0	24.2	138.0	6.9	12.0	138.0
Actuated g/C Ratio	0.10	0.58	0.58	0.05	0.51	0.51	0.12	0.18	1.00	0.05	0.09	1.00
v/c Ratio	0.76	1.06	0.07	0.24	1.03	0.03	0.91	0.14	0.07	0.21	0.13	0.16
Control Delay	75.6	67.0	0.6	65.6	61.9	0.0	85.5	50.6	0.1	65.4	59.3	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	75.6	67.0	0.6	65.6	61.9	0.0	85.5	50.6	0.1	65.4	59.3	0.2
LOS	E	E	A	E	E	A	F	D	A	E	E	A
Approach Delay		66.1			61.3			63.7			14.4	
Approach LOS		E			E			E			B	

Intersection Summary

Cycle Length: 138

Actuated Cycle Length: 138

Offset: 132 (96%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Natural Cycle: 140

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.06

Intersection Signal Delay: 60.9

Intersection LOS: E

Intersection Capacity Utilization 91.1%

ICU Level of Service F

Analysis Period (min) 15

Splits and Phases: 1: Tutt Blvd & Woodmen Rd



























HCM 6th Signalized Intersection Summary

2025 Background PM

1: Tutt Blvd & Woodmen Rd

05/23/2022

























												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	234	1984	62	39	1722	21	352	82	104	33	36	232
Future Volume (veh/h)	234	1984	62	39	1722	21	352	82	104	33	36	232
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	254	2157	67	42	1872	23	383	89	0	36	39	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	305	2094	934	80	1863	831	426	670		75	309	
Arrive On Green	0.09	0.59	0.59	0.02	0.52	0.52	0.12	0.19	0.00	0.02	0.09	0.00
Sat Flow, veh/h	3456	3554	1585	3456	3554	1585	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	254	2157	67	42	1872	23	383	89	0	36	39	0
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1728	1777	1585	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	10.0	81.3	2.5	1.7	72.3	1.0	15.1	2.9	0.0	1.4	1.4	0.0
Cycle Q Clear(g_c), s	10.0	81.3	2.5	1.7	72.3	1.0	15.1	2.9	0.0	1.4	1.4	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	305	2094	934	80	1863	831	426	670		75	309	
V/C Ratio(X)	0.83	1.03	0.07	0.52	1.00	0.03	0.90	0.13		0.48	0.13	
Avail Cap(c_a), veh/h	351	2094	934	351	1863	831	426	670		300	309	
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	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	61.9	28.4	12.2	66.6	32.8	15.9	59.7	46.6	0.0	66.7	58.2	0.0
Incr Delay (d2), s/veh	14.2	27.9	0.1	5.2	22.0	0.1	21.6	0.4	0.0	4.7	0.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.0	40.9	0.9	0.8	35.8	0.4	7.9	1.3	0.0	0.7	0.7	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	76.1	56.3	12.3	71.9	54.9	15.9	81.3	47.0	0.0	71.4	59.0	0.0
LnGrp LOS	E	F	B	E	F	B	F	D		E	E	
Approach Vol, veh/h	2478			1937			472		A		75	
Approach Delay, s/veh	57.1			54.8			74.8				65.0	
Approach LOS	E			D			E				E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.2	88.8	8.0	33.0	17.2	79.8	22.0	19.0				
Change Period (Y+Rc), s	5.0	7.5	5.0	7.0	5.0	7.5	5.0	7.0				
Max Green Setting (Gmax), s	14.0	70.5	12.0	17.0	14.0	70.5	17.0	12.0				
Max Q Clear Time (g_c+I1), s	3.7	83.3	3.4	4.9	12.0	74.3	17.1	3.4				
Green Ext Time (p_c), s	0.0	0.0	0.0	0.3	0.2	0.0	0.0	0.1				
Intersection Summary												
HCM 6th Ctrl Delay	58.0											
HCM 6th LOS	E											

Timings

1: Tutt Blvd & Woodmen Rd

2025 Total AM

05/24/2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	130	1088	72	115	2130	15	167	28	42	50	48	369
Future Volume (vph)	130	1088	72	115	2130	15	167	28	42	50	48	369
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Free
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6			Free			Free
Detector Phase	5	2	2	1	6	6	7	4		3	8	
Switch Phase												
Minimum Initial (s)	4.0	20.0	20.0	4.0	20.0	20.0	4.0	4.0		4.0	4.0	
Minimum Split (s)	9.0	27.5	27.5	9.0	27.5	27.5	9.0	24.0		9.0	19.0	
Total Split (s)	19.0	78.0	78.0	19.0	78.0	78.0	22.0	24.0		17.0	19.0	
Total Split (%)	13.8%	56.5%	56.5%	13.8%	56.5%	56.5%	15.9%	17.4%		12.3%	13.8%	
Yellow Time (s)	3.0	5.5	5.5	3.0	5.5	5.5	3.0	5.0		3.0	5.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	7.5	7.5	5.0	7.5	7.5	5.0	7.0		5.0	7.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	Max		None	Max	
Act Effect Green (s)	10.7	74.4	74.4	10.1	73.8	73.8	12.2	23.7	138.0	7.5	16.8	138.0
Actuated g/C Ratio	0.08	0.54	0.54	0.07	0.53	0.53	0.09	0.17	1.00	0.05	0.12	1.00
v/c Ratio	0.50	0.59	0.08	0.47	1.16	0.02	0.57	0.05	0.03	0.28	0.11	0.24
Control Delay	67.4	23.3	1.0	67.3	109.5	0.1	67.5	50.7	0.0	66.1	56.2	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	67.4	23.3	1.0	67.3	109.5	0.1	67.5	50.7	0.0	66.1	56.2	0.4
LOS	E	C	A	E	F	A	E	D	A	E	E	A
Approach Delay		26.5			106.7			53.6			13.1	
Approach LOS		C			F			D			B	

Intersection Summary

Cycle Length: 138

Actuated Cycle Length: 138

Offset: 132 (96%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Natural Cycle: 130

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.16

Intersection Signal Delay: 69.2

Intersection LOS: E

Intersection Capacity Utilization 82.4%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 1: Tutt Blvd & Woodmen Rd



























HCM 6th Signalized Intersection Summary

2025 Total AM

1: Tutt Blvd & Woodmen Rd

05/24/2022

























												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	130	1088	72	115	2130	15	167	28	42	50	48	369
Future Volume (veh/h)	130	1088	72	115	2130	15	167	28	42	50	48	369
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	134	1122	74	119	2196	15	172	29	0	52	49	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	186	2206	984	170	2189	977	227	451		89	309	
Arrive On Green	0.05	0.62	0.62	0.05	0.62	0.62	0.07	0.13	0.00	0.03	0.09	0.00
Sat Flow, veh/h	3456	3554	1585	3456	3554	1585	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	134	1122	74	119	2196	15	172	29	0	52	49	0
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1728	1777	1585	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	5.3	24.2	2.6	4.7	85.0	0.5	6.8	1.0	0.0	2.1	1.8	0.0
Cycle Q Clear(g_c), s	5.3	24.2	2.6	4.7	85.0	0.5	6.8	1.0	0.0	2.1	1.8	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	186	2206	984	170	2189	977	227	451		89	309	
V/C Ratio(X)	0.72	0.51	0.08	0.70	1.00	0.02	0.76	0.06		0.59	0.16	
Avail Cap(c_a), veh/h	351	2206	984	351	2189	977	426	451		300	309	
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	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	64.3	14.5	10.4	64.6	26.5	10.3	63.4	53.0	0.0	66.5	58.3	0.0
Incr Delay (d2), s/veh	5.2	0.8	0.1	5.2	20.0	0.0	5.1	0.3	0.0	6.0	1.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	9.8	0.9	2.2	39.8	0.2	3.1	0.5	0.0	1.0	0.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	69.5	15.3	10.6	69.8	46.4	10.3	68.5	53.3	0.0	72.5	59.4	0.0
LnGrp LOS	E	B	B	E	F	B	E	D		E	E	
Approach Vol, veh/h	1330			2330			201			A		
Approach Delay, s/veh	20.5			47.4			66.3			66.1		
Approach LOS	C			D			E			E		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.8	93.2	8.5	24.5	12.4	92.5	14.1	19.0				
Change Period (Y+Rc), s	5.0	7.5	5.0	7.0	5.0	7.5	5.0	7.0				
Max Green Setting (Gmax), s	14.0	70.5	12.0	17.0	14.0	70.5	17.0	12.0				
Max Q Clear Time (g_c+I1), s	6.7	26.2	4.1	3.0	7.3	87.0	8.8	3.8				
Green Ext Time (p_c), s	0.2	11.4	0.1	0.1	0.2	0.0	0.3	0.1				
Intersection Summary												
HCM 6th Ctrl Delay	39.8											
HCM 6th LOS	D											

Timings

1: Tutt Blvd & Woodmen Rd

2025 Total PM

05/24/2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	234	1984	75	43	1722	21	360	82	106	33	36	232
Future Volume (vph)	234	1984	75	43	1722	21	360	82	106	33	36	232
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Free
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6			Free			Free
Detector Phase	5	2	2	1	6	6	7	4		3	8	
Switch Phase												
Minimum Initial (s)	4.0	20.0	20.0	4.0	20.0	20.0	4.0	4.0		4.0	4.0	
Minimum Split (s)	9.0	27.5	27.5	9.0	27.5	27.5	9.0	24.0		9.0	19.0	
Total Split (s)	19.0	78.0	78.0	19.0	78.0	78.0	22.0	24.0		17.0	19.0	
Total Split (%)	13.8%	56.5%	56.5%	13.8%	56.5%	56.5%	15.9%	17.4%		12.3%	13.8%	
Yellow Time (s)	3.0	5.5	5.5	3.0	5.5	5.5	3.0	5.0		3.0	5.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	7.5	7.5	5.0	7.5	7.5	5.0	7.0		5.0	7.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	Max		None	Max	
Act Effect Green (s)	13.5	79.3	79.3	7.3	71.0	71.0	17.0	24.2	138.0	6.9	12.0	138.0
Actuated g/C Ratio	0.10	0.57	0.57	0.05	0.51	0.51	0.12	0.18	1.00	0.05	0.09	1.00
v/c Ratio	0.76	1.06	0.09	0.26	1.03	0.03	0.93	0.14	0.07	0.21	0.13	0.16
Control Delay	75.6	68.0	1.2	65.8	61.9	0.0	88.4	50.6	0.1	65.4	59.3	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	75.6	68.0	1.2	65.8	61.9	0.0	88.4	50.6	0.1	65.4	59.3	0.2
LOS	E	E	A	E	E	A	F	D	A	E	E	A
Approach Delay		66.5			61.3			65.7			14.4	
Approach LOS		E			E			E			B	

Intersection Summary

Cycle Length: 138

Actuated Cycle Length: 138

Offset: 132 (96%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Natural Cycle: 140

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.06

Intersection Signal Delay: 61.3

Intersection LOS: E

Intersection Capacity Utilization 91.4%

ICU Level of Service F

Analysis Period (min) 15

Splits and Phases: 1: Tutt Blvd & Woodmen Rd



























HCM 6th Signalized Intersection Summary

2025 Total PM

1: Tutt Blvd & Woodmen Rd

05/24/2022

























												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	234	1984	75	43	1722	21	360	82	106	33	36	232
Future Volume (veh/h)	234	1984	75	43	1722	21	360	82	106	33	36	232
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	254	2157	82	47	1872	23	391	89	0	36	39	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	305	2090	932	84	1863	831	426	670		75	309	
Arrive On Green	0.09	0.59	0.59	0.02	0.52	0.52	0.12	0.19	0.00	0.02	0.09	0.00
Sat Flow, veh/h	3456	3554	1585	3456	3554	1585	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	254	2157	82	47	1872	23	391	89	0	36	39	0
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1728	1777	1585	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	10.0	81.2	3.1	1.9	72.3	1.0	15.4	2.9	0.0	1.4	1.4	0.0
Cycle Q Clear(g_c), s	10.0	81.2	3.1	1.9	72.3	1.0	15.4	2.9	0.0	1.4	1.4	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	305	2090	932	84	1863	831	426	670		75	309	
V/C Ratio(X)	0.83	1.03	0.09	0.56	1.00	0.03	0.92	0.13		0.48	0.13	
Avail Cap(c_a), veh/h	351	2090	932	351	1863	831	426	670		300	309	
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	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	61.9	28.4	12.3	66.6	32.8	15.9	59.8	46.6	0.0	66.7	58.2	0.0
Incr Delay (d2), s/veh	14.2	28.5	0.2	5.8	22.0	0.1	24.8	0.4	0.0	4.7	0.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.0	41.0	1.2	0.9	35.8	0.4	8.2	1.3	0.0	0.7	0.7	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	76.1	56.9	12.5	72.4	54.9	15.9	84.6	47.0	0.0	71.4	59.0	0.0
LnGrp LOS	E	F	B	E	F	B	F	D		E	E	
Approach Vol, veh/h	2493				1942				480			
Approach Delay, s/veh	57.4				54.8				77.6			
Approach LOS	E				D				E			
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.3	88.7	8.0	33.0	17.2	79.8	22.0	19.0				
Change Period (Y+Rc), s	5.0	7.5	5.0	7.0	5.0	7.5	5.0	7.0				
Max Green Setting (Gmax), s	14.0	70.5	12.0	17.0	14.0	70.5	17.0	12.0				
Max Q Clear Time (g_c+I1), s	3.9	83.2	3.4	4.9	12.0	74.3	17.4	3.4				
Green Ext Time (p_c), s	0.1	0.0	0.0	0.3	0.2	0.0	0.0	0.1				
Intersection Summary												
HCM 6th Ctrl Delay	58.5											
HCM 6th LOS	E											
Notes												

Timings

2025 Total AM - Improved

1: Tutt Blvd & Woodmen Rd

05/24/2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	130	1088	72	115	2130	15	167	28	42	50	48	369
Future Volume (vph)	130	1088	72	115	2130	15	167	28	42	50	48	369
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Free
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6			Free			Free
Detector Phase	5	2	2	1	6	6	7	4		3	8	
Switch Phase												
Minimum Initial (s)	4.0	20.0	20.0	4.0	20.0	20.0	4.0	4.0		4.0	4.0	
Minimum Split (s)	9.0	27.5	27.5	9.0	27.5	27.5	9.0	24.0		9.0	19.0	
Total Split (s)	11.0	91.0	91.0	14.0	94.0	94.0	14.0	24.0		9.0	19.0	
Total Split (%)	8.0%	65.9%	65.9%	10.1%	68.1%	68.1%	10.1%	17.4%		6.5%	13.8%	
Yellow Time (s)	3.0	5.5	5.5	3.0	5.5	5.5	3.0	5.0		3.0	5.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	7.5	7.5	5.0	7.5	7.5	5.0	7.0		5.0	7.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	Max		None	Max	
Act Effect Green (s)	6.0	83.8	83.8	8.7	86.5	86.5	9.0	18.8	138.0	4.0	12.0	138.0
Actuated g/C Ratio	0.04	0.61	0.61	0.06	0.63	0.63	0.07	0.14	1.00	0.03	0.09	1.00
v/c Ratio	0.90	0.52	0.07	0.55	0.99	0.01	0.77	0.06	0.03	0.53	0.16	0.24
Control Delay	115.8	16.7	0.7	72.9	42.4	0.0	85.8	54.0	0.0	84.9	59.8	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	115.8	16.7	0.7	72.9	42.4	0.0	85.8	54.0	0.0	84.9	59.8	0.4
LOS	F	B	A	E	D	A	F	D	A	F	E	A
Approach Delay		25.8			43.7			66.9			15.6	
Approach LOS		C			D			E			B	

Intersection Summary

Cycle Length: 138

Actuated Cycle Length: 138

Offset: 132 (96%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Natural Cycle: 130

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.99

Intersection Signal Delay: 36.5

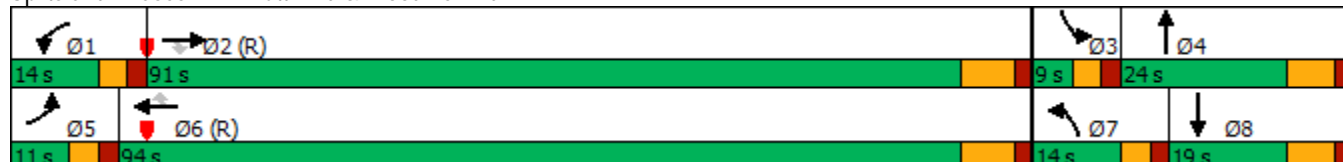
Intersection LOS: D

Intersection Capacity Utilization 82.4%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 1: Tutt Blvd & Woodmen Rd



























HCM 6th Signalized Intersection Summary

2025 Total AM - Improved

1: Tutt Blvd & Woodmen Rd

05/24/2022

























												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	130	1088	72	115	2130	15	167	28	42	50	48	369
Future Volume (veh/h)	130	1088	72	115	2130	15	167	28	42	50	48	369
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	134	1122	74	119	2196	15	172	29	0	52	49	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	150	2216	988	167	2233	996	220	445		88	309	
Arrive On Green	0.04	0.62	0.62	0.05	0.63	0.63	0.06	0.13	0.00	0.03	0.09	0.00
Sat Flow, veh/h	3456	3554	1585	3456	3554	1585	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	134	1122	74	119	2196	15	172	29	0	52	49	0
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1728	1777	1585	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	5.3	24.0	2.5	4.7	82.9	0.5	6.8	1.0	0.0	2.1	1.8	0.0
Cycle Q Clear(g_c), s	5.3	24.0	2.5	4.7	82.9	0.5	6.8	1.0	0.0	2.1	1.8	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	150	2216	988	167	2233	996	220	445		88	309	
V/C Ratio(X)	0.89	0.51	0.07	0.71	0.98	0.02	0.78	0.07		0.59	0.16	
Avail Cap(c_a), veh/h	150	2216	988	225	2233	996	225	445		100	309	
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	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	65.7	14.3	10.3	64.7	24.9	9.6	63.7	53.2	0.0	66.5	58.3	0.0
Incr Delay (d2), s/veh	43.4	0.8	0.1	6.6	15.5	0.0	16.0	0.3	0.0	7.1	1.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	9.7	0.9	2.2	37.4	0.2	3.5	0.5	0.0	1.0	0.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	109.1	15.1	10.4	71.3	40.4	9.6	79.7	53.5	0.0	73.6	59.4	0.0
LnGrp LOS	F	B	B	E	D	A	E	D		E	E	
Approach Vol, veh/h	1330			2330			201			A		
Approach Delay, s/veh	24.3			41.8			75.9			66.7		
Approach LOS	C			D			E			E		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.7	93.6	8.5	24.3	11.0	94.2	13.8	19.0				
Change Period (Y+Rc), s	5.0	7.5	5.0	7.0	5.0	7.5	5.0	7.0				
Max Green Setting (Gmax), s	9.0	83.5	4.0	17.0	6.0	86.5	9.0	12.0				
Max Q Clear Time (g_c+I1), s	6.7	26.0	4.1	3.0	7.3	84.9	8.8	3.8				
Green Ext Time (p_c), s	0.1	11.8	0.0	0.1	0.0	1.5	0.0	0.1				
Intersection Summary												
HCM 6th Ctrl Delay	38.3											
HCM 6th LOS	D											

Timings

2025 Total PM - Improved

1: Tutt Blvd & Woodmen Rd

05/24/2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	234	1984	75	43	1722	21	360	82	106	33	36	232
Future Volume (vph)	234	1984	75	43	1722	21	360	82	106	33	36	232
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Free
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6			Free			Free
Detector Phase	5	2	2	1	6	6	7	4		3	8	
Switch Phase												
Minimum Initial (s)	4.0	20.0	20.0	4.0	20.0	20.0	4.0	4.0		4.0	4.0	
Minimum Split (s)	9.0	27.5	27.5	9.0	27.5	27.5	9.0	24.0		9.0	19.0	
Total Split (s)	16.0	90.0	90.0	9.0	83.0	83.0	20.0	30.0		9.0	19.0	
Total Split (%)	11.6%	65.2%	65.2%	6.5%	60.1%	60.1%	14.5%	21.7%		6.5%	13.8%	
Yellow Time (s)	3.0	5.5	5.5	3.0	5.5	5.5	3.0	5.0		3.0	5.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	7.5	7.5	5.0	7.5	7.5	5.0	7.0		5.0	7.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	Max		None	Max	
Act Effect Green (s)	11.0	84.3	84.3	4.0	75.5	75.5	15.0	24.8	138.0	4.0	12.0	138.0
Actuated g/C Ratio	0.08	0.61	0.61	0.03	0.55	0.55	0.11	0.18	1.00	0.03	0.09	1.00
v/c Ratio	0.93	1.00	0.08	0.47	0.97	0.02	1.05	0.14	0.07	0.36	0.13	0.16
Control Delay	101.8	46.1	0.1	81.7	44.3	0.0	117.9	49.5	0.1	76.1	59.3	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	101.8	46.1	0.1	81.7	44.3	0.0	117.9	49.5	0.1	76.1	59.3	0.2
LOS	F	D	A	F	D	A	F	D	A	E	E	A
Approach Delay		50.2			44.7			84.9			15.6	
Approach LOS		D			D			F			B	

Intersection Summary

Cycle Length: 138

Actuated Cycle Length: 138

Offset: 132 (96%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Natural Cycle: 140

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.05

Intersection Signal Delay: 50.0

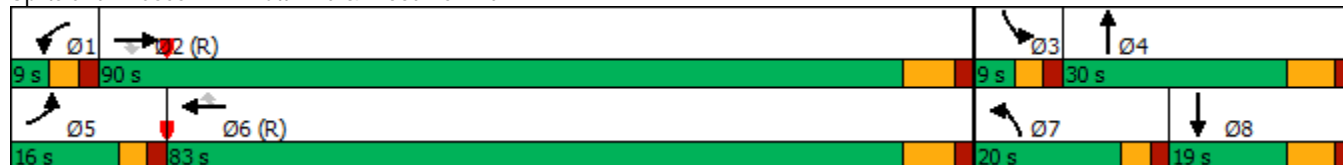
Intersection LOS: D

Intersection Capacity Utilization 91.4%

ICU Level of Service F

Analysis Period (min) 15

Splits and Phases: 1: Tutt Blvd & Woodmen Rd



























HCM 6th Signalized Intersection Summary

2025 Total PM - Improved

1: Tutt Blvd & Woodmen Rd

























05/24/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	234	1984	75	43	1722	21	360	82	106	33	36	232
Future Volume (veh/h)	234	1984	75	43	1722	21	360	82	106	33	36	232
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	254	2157	82	47	1872	23	391	89	0	36	39	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	275	2141	955	84	1944	867	376	618		75	309	
Arrive On Green	0.08	0.60	0.60	0.02	0.55	0.55	0.11	0.17	0.00	0.02	0.09	0.00
Sat Flow, veh/h	3456	3554	1585	3456	3554	1585	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	254	2157	82	47	1872	23	391	89	0	36	39	0
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1728	1777	1585	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	10.1	83.2	3.0	1.9	69.6	0.9	15.0	2.9	0.0	1.4	1.4	0.0
Cycle Q Clear(g_c), s	10.1	83.2	3.0	1.9	69.6	0.9	15.0	2.9	0.0	1.4	1.4	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	275	2141	955	84	1944	867	376	618		75	309	
V/C Ratio(X)	0.92	1.01	0.09	0.56	0.96	0.03	1.04	0.14		0.48	0.13	
Avail Cap(c_a), veh/h	275	2141	955	100	1944	867	376	618		100	309	
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	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	63.1	27.4	11.5	66.6	29.9	14.4	61.5	48.3	0.0	66.7	58.2	0.0
Incr Delay (d2), s/veh	34.3	21.2	0.2	5.8	13.3	0.1	57.5	0.5	0.0	4.7	0.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.8	39.6	1.1	0.9	32.2	0.4	9.6	1.4	0.0	0.7	0.7	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	97.4	48.6	11.7	72.4	43.3	14.4	119.0	48.8	0.0	71.4	59.0	0.0
LnGrp LOS	F	F	B	E	D	B	F	D		E	E	
Approach Vol, veh/h	2493			1942			480			75		
Approach Delay, s/veh	52.4			43.6			106.0			65.0		
Approach LOS	D			D			F			E		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.3	90.7	8.0	31.0	16.0	83.0	20.0	19.0				
Change Period (Y+Rc), s	5.0	7.5	5.0	7.0	5.0	7.5	5.0	7.0				
Max Green Setting (Gmax), s	4.0	82.5	4.0	23.0	11.0	75.5	15.0	12.0				
Max Q Clear Time (g_c+I1), s	3.9	85.2	3.4	4.9	12.1	71.6	17.0	3.4				
Green Ext Time (p_c), s	0.0	0.0	0.0	0.4	0.0	3.5	0.0	0.1				
Intersection Summary												
HCM 6th Ctrl Delay	54.3											
HCM 6th LOS	D											

Timings
1: Tutt Blvd & Woodmen Rd

2045 Background AM

05/23/2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	175	1465	90	154	2869	20	203	38	49	68	65	497
Future Volume (vph)	175	1465	90	154	2869	20	203	38	49	68	65	497
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Free
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6			Free			Free
Detector Phase	5	2	2	1	6	6	7	4		3	8	
Switch Phase												
Minimum Initial (s)	4.0	20.0	20.0	4.0	20.0	20.0	4.0	4.0		4.0	4.0	
Minimum Split (s)	9.0	27.5	27.5	9.0	27.5	27.5	9.0	24.0		9.0	19.0	
Total Split (s)	19.0	78.0	78.0	19.0	78.0	78.0	22.0	24.0		17.0	19.0	
Total Split (%)	13.8%	56.5%	56.5%	13.8%	56.5%	56.5%	15.9%	17.4%		12.3%	13.8%	
Yellow Time (s)	3.0	5.5	5.5	3.0	5.5	5.5	3.0	5.0		3.0	5.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	7.5	7.5	5.0	7.5	7.5	5.0	7.0		5.0	7.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	Max		None	Max	
Act Effect Green (s)	12.1	73.0	73.0	11.5	72.4	72.4	13.6	23.0	138.0	8.2	15.4	138.0
Actuated g/C Ratio	0.09	0.53	0.53	0.08	0.52	0.52	0.10	0.17	1.00	0.06	0.11	1.00
v/c Ratio	0.60	0.81	0.10	0.56	1.59	0.02	0.62	0.07	0.03	0.34	0.17	0.32
Control Delay	68.8	31.3	2.2	68.1	297.1	0.1	67.6	51.7	0.0	66.5	58.0	0.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	68.8	31.3	2.2	68.1	297.1	0.1	67.6	51.7	0.0	66.5	58.0	0.5
LOS	E	C	A	E	F	A	E	D	A	E	E	A
Approach Delay		33.6			283.5			54.0			13.6	
Approach LOS		C			F			D			B	

Intersection Summary

Cycle Length: 138

Actuated Cycle Length: 138

Offset: 132 (96%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.59

Intersection Signal Delay: 166.0

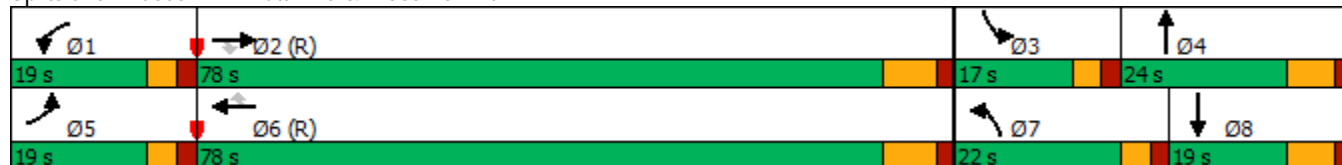
Intersection LOS: F

Intersection Capacity Utilization 103.8%

ICU Level of Service G

Analysis Period (min) 15

Splits and Phases: 1: Tutt Blvd & Woodmen Rd



























HCM 6th Signalized Intersection Summary

2045 Background AM

1: Tutt Blvd & Woodmen Rd

05/23/2022

























												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	175	1465	90	154	2869	20	203	38	49	68	65	497
Future Volume (veh/h)	175	1465	90	154	2869	20	203	38	49	68	65	497
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	180	1510	93	159	2958	21	209	39	0	70	67	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	233	2124	947	212	2102	938	265	465		113	309	
Arrive On Green	0.07	0.60	0.60	0.06	0.59	0.59	0.08	0.13	0.00	0.03	0.09	0.00
Sat Flow, veh/h	3456	3554	1585	3456	3554	1585	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	180	1510	93	159	2958	21	209	39	0	70	67	0
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1728	1777	1585	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	7.1	41.0	3.5	6.2	81.6	0.8	8.2	1.3	0.0	2.8	2.4	0.0
Cycle Q Clear(g_c), s	7.1	41.0	3.5	6.2	81.6	0.8	8.2	1.3	0.0	2.8	2.4	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	233	2124	947	212	2102	938	265	465		113	309	
V/C Ratio(X)	0.77	0.71	0.10	0.75	1.41	0.02	0.79	0.08		0.62	0.22	
Avail Cap(c_a), veh/h	351	2124	947	351	2102	938	426	465		300	309	
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	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	63.3	19.4	11.9	63.7	28.2	11.7	62.6	52.7	0.0	65.9	58.6	0.0
Incr Delay (d2), s/veh	5.9	2.1	0.2	5.3	186.1	0.0	5.2	0.4	0.0	5.4	1.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	17.1	1.3	2.9	87.2	0.3	3.8	0.6	0.0	1.3	1.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	69.2	21.5	12.1	69.0	214.3	11.7	67.9	53.1	0.0	71.4	60.2	0.0
LnGrp LOS	E	C	B	E	F	B	E	D		E	E	
Approach Vol, veh/h	1783			3138			248			A		
Approach Delay, s/veh	25.8			205.5			65.5			65.9		
Approach LOS	C			F			E			E		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	13.4	90.0	9.5	25.1	14.3	89.1	15.6	19.0				
Change Period (Y+Rc), s	5.0	7.5	5.0	7.0	5.0	7.5	5.0	7.0				
Max Green Setting (Gmax), s	14.0	70.5	12.0	17.0	14.0	70.5	17.0	12.0				
Max Q Clear Time (g_c+I1), s	8.2	43.0	4.8	3.3	9.1	83.6	10.2	4.4				
Green Ext Time (p_c), s	0.2	14.6	0.1	0.1	0.2	0.0	0.4	0.1				
Intersection Summary												
HCM 6th Ctrl Delay	135.0											
HCM 6th LOS	F											

Timings

1: Tutt Blvd & Woodmen Rd

2045 Background PM

05/23/2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	315	2672	83	52	2320	28	475	110	139	45	48	313
Future Volume (vph)	315	2672	83	52	2320	28	475	110	139	45	48	313
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Free
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6			Free			Free
Detector Phase	5	2	2	1	6	6	7	4		3	8	
Switch Phase												
Minimum Initial (s)	4.0	20.0	20.0	4.0	20.0	20.0	4.0	4.0		4.0	4.0	
Minimum Split (s)	9.0	27.5	27.5	9.0	27.5	27.5	9.0	24.0		9.0	19.0	
Total Split (s)	19.0	78.0	78.0	19.0	78.0	78.0	22.0	24.0		17.0	19.0	
Total Split (%)	13.8%	56.5%	56.5%	13.8%	56.5%	56.5%	15.9%	17.4%		12.3%	13.8%	
Yellow Time (s)	3.0	5.5	5.5	3.0	5.5	5.5	3.0	5.0		3.0	5.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	7.5	7.5	5.0	7.5	7.5	5.0	7.0		5.0	7.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	Max		None	Max	
Act Effect Green (s)	14.0	79.0	79.0	7.7	70.5	70.5	17.0	23.7	138.0	7.4	12.0	138.0
Actuated g/C Ratio	0.10	0.57	0.57	0.06	0.51	0.51	0.12	0.17	1.00	0.05	0.09	1.00
v/c Ratio	0.98	1.43	0.09	0.30	1.40	0.03	1.22	0.20	0.10	0.27	0.17	0.21
Control Delay	105.4	225.3	1.7	66.1	211.0	0.1	169.1	51.6	0.1	65.8	59.9	0.3
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	105.4	225.3	1.7	66.1	211.0	0.1	169.1	51.6	0.1	65.8	59.9	0.3
LOS	F	F	A	E	F	A	F	D	A	E	E	A
Approach Delay		206.9			205.4			118.7			14.6	
Approach LOS		F			F			F			B	

Intersection Summary

Cycle Length: 138

Actuated Cycle Length: 138

Offset: 132 (96%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.43

Intersection Signal Delay: 184.9

Intersection LOS: F

Intersection Capacity Utilization 113.7%

ICU Level of Service H

Analysis Period (min) 15

Splits and Phases: 1: Tutt Blvd & Woodmen Rd



























HCM 6th Signalized Intersection Summary

2045 Background PM

1: Tutt Blvd & Woodmen Rd

05/23/2022

























												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	315	2672	83	52	2320	28	475	110	139	45	48	313
Future Volume (veh/h)	315	2672	83	52	2320	28	475	110	139	45	48	313
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	342	2904	90	57	2522	30	516	120	0	49	52	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	351	2077	926	96	1815	810	426	660		85	309	
Arrive On Green	0.10	0.58	0.58	0.03	0.51	0.51	0.12	0.19	0.00	0.02	0.09	0.00
Sat Flow, veh/h	3456	3554	1585	3456	3554	1585	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	342	2904	90	57	2522	30	516	120	0	49	52	0
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1728	1777	1585	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	13.6	80.7	3.5	2.3	70.5	1.3	17.0	3.9	0.0	1.9	1.9	0.0
Cycle Q Clear(g_c), s	13.6	80.7	3.5	2.3	70.5	1.3	17.0	3.9	0.0	1.9	1.9	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	351	2077	926	96	1815	810	426	660		85	309	
V/C Ratio(X)	0.98	1.40	0.10	0.59	1.39	0.04	1.21	0.18		0.58	0.17	
Avail Cap(c_a), veh/h	351	2077	926	351	1815	810	426	660		300	309	
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	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	61.8	28.7	12.6	66.3	33.7	16.8	60.5	47.4	0.0	66.6	58.4	0.0
Incr Delay (d2), s/veh	41.4	182.1	0.2	5.7	178.6	0.1	115.4	0.6	0.0	6.1	1.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.0	85.2	1.3	1.1	74.5	0.5	14.3	1.8	0.0	0.9	0.9	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	103.2	210.8	12.8	72.0	212.3	16.9	175.9	48.0	0.0	72.7	59.6	0.0
LnGrp LOS	F	F	B	E	F	B	F	D		E	E	
Approach Vol, veh/h	3336			2609			636			A	101	A
Approach Delay, s/veh	194.4			207.0			151.8				65.9	
Approach LOS	F			F			F				E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.8	88.2	8.4	32.6	19.0	78.0	22.0	19.0				
Change Period (Y+Rc), s	5.0	7.5	5.0	7.0	5.0	7.5	5.0	7.0				
Max Green Setting (Gmax), s	14.0	70.5	12.0	17.0	14.0	70.5	17.0	12.0				
Max Q Clear Time (g_c+I1), s	4.3	82.7	3.9	5.9	15.6	72.5	19.0	3.9				
Green Ext Time (p_c), s	0.1	0.0	0.0	0.4	0.0	0.0	0.0	0.1				
Intersection Summary												
HCM 6th Ctrl Delay	193.3											
HCM 6th LOS	F											
Notes												
Unsignalized Delay for [NBR, SBR] is excluded from calculations of the approach delay and intersection delay.												

Timings

1: Tutt Blvd & Woodmen Rd

2045 Total AM

05/24/2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	175	1465	95	155	2869	20	219	38	54	68	65	497
Future Volume (vph)	175	1465	95	155	2869	20	219	38	54	68	65	497
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Free
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6			Free			Free
Detector Phase	5	2	2	1	6	6	7	4		3	8	
Switch Phase												
Minimum Initial (s)	4.0	20.0	20.0	4.0	20.0	20.0	4.0	4.0		4.0	4.0	
Minimum Split (s)	9.0	27.5	27.5	9.0	27.5	27.5	9.0	24.0		9.0	19.0	
Total Split (s)	13.0	88.0	88.0	16.0	91.0	91.0	15.0	24.0		10.0	19.0	
Total Split (%)	9.4%	63.8%	63.8%	11.6%	65.9%	65.9%	10.9%	17.4%		7.2%	13.8%	
Yellow Time (s)	3.0	5.5	5.5	3.0	5.5	5.5	3.0	5.0		3.0	5.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	7.5	7.5	5.0	7.5	7.5	5.0	7.0		5.0	7.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	Max		None	Max	
Act Effect Green (s)	8.0	81.1	81.1	10.4	83.5	83.5	10.0	19.0	138.0	5.0	12.0	138.0
Actuated g/C Ratio	0.06	0.59	0.59	0.08	0.61	0.61	0.07	0.14	1.00	0.04	0.09	1.00
v/c Ratio	0.90	0.51	0.10	0.62	0.96	0.02	0.91	0.08	0.04	0.56	0.22	0.32
Control Delay	106.9	17.5	1.9	72.8	35.5	0.1	101.2	54.2	0.0	83.0	60.6	0.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	106.9	17.5	1.9	72.8	35.5	0.1	101.2	54.2	0.0	83.0	60.6	0.5
LOS	F	B	A	E	D	A	F	D	A	F	E	A
Approach Delay		25.6			37.1			77.9			15.6	
Approach LOS		C			D			E			B	

Intersection Summary

Cycle Length: 138

Actuated Cycle Length: 138

Offset: 132 (96%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Natural Cycle: 120

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.96

Intersection Signal Delay: 33.5

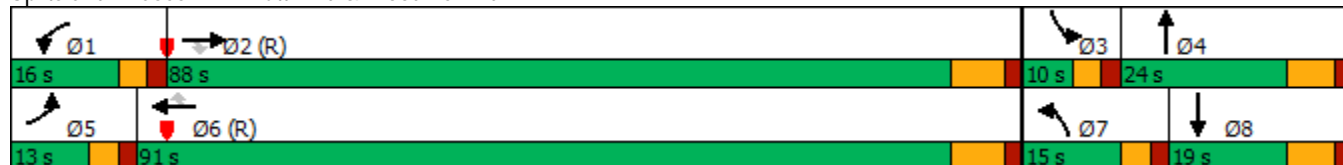
Intersection LOS: C

Intersection Capacity Utilization 89.6%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 1: Tutt Blvd & Woodmen Rd



























HCM 6th Signalized Intersection Summary

2045 Total AM

1: Tutt Blvd & Woodmen Rd

05/24/2022

























												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	175	1465	95	155	2869	20	219	38	54	68	65	497
Future Volume (veh/h)	175	1465	95	155	2869	20	219	38	54	68	65	497
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	180	1510	98	160	2958	21	226	39	0	70	67	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	200	3075	955	210	3090	959	250	452		111	309	
Arrive On Green	0.06	0.60	0.60	0.06	0.61	0.61	0.07	0.13	0.00	0.03	0.09	0.00
Sat Flow, veh/h	3456	5106	1585	3456	5106	1585	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	180	1510	98	160	2958	21	226	39	0	70	67	0
Grp Sat Flow(s),veh/h/ln	1728	1702	1585	1728	1702	1585	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	7.1	23.0	3.6	6.3	75.0	0.7	9.0	1.3	0.0	2.8	2.4	0.0
Cycle Q Clear(g_c), s	7.1	23.0	3.6	6.3	75.0	0.7	9.0	1.3	0.0	2.8	2.4	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	200	3075	955	210	3090	959	250	452		111	309	
V/C Ratio(X)	0.90	0.49	0.10	0.76	0.96	0.02	0.90	0.09		0.63	0.22	
Avail Cap(c_a), veh/h	200	3075	955	275	3090	959	250	452		125	309	
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	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	64.6	15.5	11.6	63.8	25.6	10.9	63.5	53.1	0.0	66.0	58.6	0.0
Incr Delay (d2), s/veh	37.0	0.6	0.2	8.7	8.9	0.0	32.4	0.4	0.0	8.1	1.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.2	9.0	1.3	3.0	31.3	0.3	5.1	0.6	0.0	1.3	1.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	101.6	16.1	11.9	72.5	34.5	10.9	95.9	53.5	0.0	74.1	60.2	0.0
LnGrp LOS	F	B	B	E	C	B	F	D		E	E	
Approach Vol, veh/h	1788			3139			265			A		
Approach Delay, s/veh	24.4			36.3			89.7			67.3		
Approach LOS	C			D			F			E		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	13.4	90.6	9.4	24.6	13.0	91.0	15.0	19.0				
Change Period (Y+Rc), s	5.0	7.5	5.0	7.0	5.0	7.5	5.0	7.0				
Max Green Setting (Gmax), s	11.0	80.5	5.0	17.0	8.0	83.5	10.0	12.0				
Max Q Clear Time (g_c+I1), s	8.3	25.0	4.8	3.3	9.1	77.0	11.0	4.4				
Green Ext Time (p_c), s	0.1	18.3	0.0	0.1	0.0	6.3	0.0	0.1				
Intersection Summary												
HCM 6th Ctrl Delay	35.8											
HCM 6th LOS	D											

Timings

1: Tutt Blvd & Woodmen Rd

2045 Total PM

05/24/2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	315	2672	96	56	2320	28	483	110	141	45	48	313
Future Volume (vph)	315	2672	96	56	2320	28	483	110	141	45	48	313
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Free
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6			Free			Free
Detector Phase	5	2	2	1	6	6	7	4		3	8	
Switch Phase												
Minimum Initial (s)	4.0	20.0	20.0	4.0	20.0	20.0	4.0	4.0		4.0	4.0	
Minimum Split (s)	9.0	27.5	27.5	9.0	27.5	27.5	9.0	24.0		9.0	18.0	
Total Split (s)	19.0	88.0	88.0	9.0	78.0	78.0	23.0	30.0		11.0	18.0	
Total Split (%)	13.8%	63.8%	63.8%	6.5%	56.5%	56.5%	16.7%	21.7%		8.0%	13.0%	
Yellow Time (s)	3.0	5.5	5.5	3.0	5.5	5.5	3.0	5.0		3.0	5.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	7.5	7.5	5.0	7.5	7.5	5.0	7.0		5.0	7.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	Max		None	Max	
Act Effect Green (s)	14.0	82.3	82.3	4.0	70.5	70.5	18.0	25.2	138.0	5.9	11.0	138.0
Actuated g/C Ratio	0.10	0.60	0.60	0.03	0.51	0.51	0.13	0.18	1.00	0.04	0.08	1.00
v/c Ratio	0.98	0.96	0.10	0.62	0.97	0.03	1.17	0.19	0.10	0.33	0.18	0.21
Control Delay	105.4	35.9	0.7	91.6	44.9	0.1	150.7	49.8	0.1	70.4	61.1	0.3
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	105.4	35.9	0.7	91.6	44.9	0.1	150.7	49.8	0.1	70.4	61.1	0.3
LOS	F	D	A	F	D	A	F	D	A	E	E	A
Approach Delay		41.9			45.5			106.7			15.3	
Approach LOS		D			D			F			B	

Intersection Summary

Cycle Length: 138

Actuated Cycle Length: 138

Offset: 132 (96%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Natural Cycle: 140

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.17

Intersection Signal Delay: 48.8

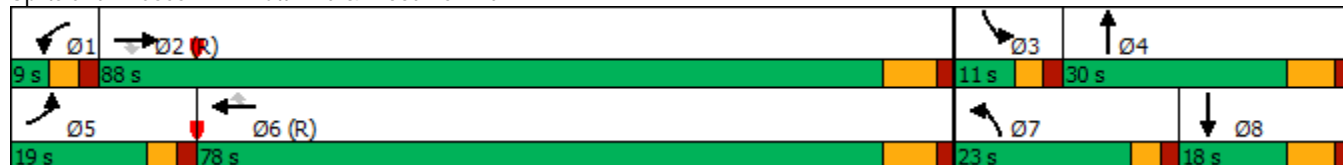
Intersection LOS: D

Intersection Capacity Utilization 91.7%

ICU Level of Service F

Analysis Period (min) 15

Splits and Phases: 1: Tutt Blvd & Woodmen Rd































HCM 6th Signalized Intersection Summary





2045 Total PM





1: Tutt Blvd & Woodmen Rd





05/24/2022

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (veh/h)	315	2672	96	56	2320	28	483	110	141	45	48	313	
Future Volume (veh/h)	315	2672	96	56	2320	28	483	110	141	45	48	313	
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	342	2904	104	61	2522	30	525	120	0	49	52	0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2	
Cap, veh/h	351	2979	925	100	2609	810	451	660		85	283		
Arrive On Green	0.10	0.58	0.58	0.03	0.51	0.51	0.13	0.19	0.00	0.02	0.08	0.00	
Sat Flow, veh/h	3456	5106	1585	3456	5106	1585	3456	3554	1585	3456	3554	1585	
Grp Volume(v), veh/h	342	2904	104	61	2522	30	525	120	0	49	52	0	
Grp Sat Flow(s),veh/h/ln	1728	1702	1585	1728	1702	1585	1728	1777	1585	1728	1777	1585	
Q Serve(g_s), s	13.6	75.8	4.0	2.4	65.9	1.3	18.0	3.9	0.0	1.9	1.9	0.0	
Cycle Q Clear(g_c), s	13.6	75.8	4.0	2.4	65.9	1.3	18.0	3.9	0.0	1.9	1.9	0.0	
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00	
Lane Grp Cap(c), veh/h	351	2979	925	100	2609	810	451	660		85	283		
V/C Ratio(X)	0.98	0.97	0.11	0.61	0.97	0.04	1.16	0.18		0.58	0.18		
Avail Cap(c_a), veh/h	351	2979	925	100	2609	810	451	660		150	283		
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	0.00	1.00	1.00	0.00	
Uniform Delay (d), s/veh	61.8	27.8	12.8	66.2	32.6	16.8	60.0	47.4	0.0	66.6	59.3	0.0	
Incr Delay (d2), s/veh	41.4	11.6	0.2	10.4	11.4	0.1	95.9	0.6	0.0	6.1	1.4	0.0	
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),veh/ln	8.0	32.6	1.5	1.2	29.1	0.5	13.9	1.8	0.0	0.9	0.9	0.0	
Unsig. Movement Delay, s/veh													
LnGrp Delay(d),s/veh	103.2	39.3	13.1	76.6	44.0	16.9	155.9	48.0	0.0	72.7	60.7	0.0	
LnGrp LOS	F	D	B	E	D	B	F	D		E	E		
Approach Vol, veh/h	3350				2613		645		A		101		A
Approach Delay, s/veh	45.0				44.5		135.9				66.5		
Approach LOS	D				D		F				E		
Timer - Assigned Phs	1	2	3	4	5	6	7	8					
Phs Duration (G+Y+Rc), s	9.0	88.0	8.4	32.6	19.0	78.0	23.0	18.0					
Change Period (Y+Rc), s	5.0	7.5	5.0	7.0	5.0	7.5	5.0	7.0					
Max Green Setting (Gmax), s	4.0	80.5	6.0	23.0	14.0	70.5	18.0	11.0					
Max Q Clear Time (g_c+I1), s	4.4	77.8	3.9	5.9	15.6	67.9	20.0	3.9					
Green Ext Time (p_c), s	0.0	2.7	0.0	0.6	0.0	2.5	0.0	0.1					
Intersection Summary													
HCM 6th Ctrl Delay	53.9												
HCM 6th LOS	D												
Notes													
User approved pedestrian interval to be less than phase max green.													
Unsignalized Delay for [NBR, SBR] is excluded from calculations of the approach delay and intersection delay.													

Intersection						
Int Delay, s/veh	2.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	5	71	182	9	37	150
Future Vol, veh/h	5	71	182	9	37	150
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	100	-
Veh in Median Storage, #	1	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	6	81	207	10	42	170
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	381	109	0	0	217	0
Stage 1	212	-	-	-	-	-
Stage 2	169	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	594	924	-	-	1350	-
Stage 1	803	-	-	-	-	-
Stage 2	843	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	576	924	-	-	1350	-
Mov Cap-2 Maneuver	632	-	-	-	-	-
Stage 1	803	-	-	-	-	-
Stage 2	817	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	9.4	0		1.5		
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1		SBL	SBT	
Capacity (veh/h)	-	- 897		1350	-	
HCM Lane V/C Ratio	-	- 0.096		0.031	-	
HCM Control Delay (s)	-	- 9.4		7.8	-	
HCM Lane LOS	-	- A		A	-	
HCM 95th %tile Q(veh)	-	- 0.3		0.1	-	

Intersection						
Int Delay, s/veh	2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	11	51	123	11	61	266
Future Vol, veh/h	11	51	123	11	61	266
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	100	-
Veh in Median Storage, #	1	-	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	12	54	129	12	64	280
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	403	71	0	0	141	0
Stage 1	135	-	-	-	-	-
Stage 2	268	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	575	977	-	-	1440	-
Stage 1	877	-	-	-	-	-
Stage 2	753	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	550	977	-	-	1440	-
Mov Cap-2 Maneuver	604	-	-	-	-	-
Stage 1	877	-	-	-	-	-
Stage 2	720	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	9.4	0		1.4		
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	881	1440	-	
HCM Lane V/C Ratio	-	-	0.074	0.045	-	
HCM Control Delay (s)	-	-	9.4	7.6	-	
HCM Lane LOS	-	-	A	A	-	
HCM 95th %tile Q(veh)	-	-	0.2	0.1	-	

Intersection						
Int Delay, s/veh	2.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	5	74	190	9	39	157
Future Vol, veh/h	5	74	190	9	39	157
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	100	-
Veh in Median Storage, #	1	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	6	84	216	10	44	178
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	398	113	0	0	226	0
Stage 1	221	-	-	-	-	-
Stage 2	177	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	580	918	-	-	1340	-
Stage 1	795	-	-	-	-	-
Stage 2	836	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	561	918	-	-	1340	-
Mov Cap-2 Maneuver	622	-	-	-	-	-
Stage 1	795	-	-	-	-	-
Stage 2	808	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	9.5	0		1.5		
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1		SBL	SBT	
Capacity (veh/h)	-	-		891	1340	
HCM Lane V/C Ratio	-	-		0.101	0.033	
HCM Control Delay (s)	-	-		9.5	7.8	
HCM Lane LOS	-	-		A	A	
HCM 95th %tile Q(veh)	-	-		0.3	0.1	

Intersection						
Int Delay, s/veh	2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	12	53	129	12	64	278
Future Vol, veh/h	12	53	129	12	64	278
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	100	-
Veh in Median Storage, #	1	-	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	13	56	136	13	67	293

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	424	75	0
Stage 1	143	-	-
Stage 2	281	-	-
Critical Hdwy	6.84	6.94	-
Critical Hdwy Stg 1	5.84	-	-
Critical Hdwy Stg 2	5.84	-	-
Follow-up Hdwy	3.52	3.32	-
Pot Cap-1 Maneuver	558	971	-
Stage 1	869	-	-
Stage 2	741	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	532	971	-
Mov Cap-2 Maneuver	590	-	-
Stage 1	869	-	-
Stage 2	706	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.5	0	1.4
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	868	1430
HCM Lane V/C Ratio	-	-	0.079	0.047
HCM Control Delay (s)	-	-	9.5	7.6
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0.3	0.1

HCM 6th TWSC
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Intersection												
Int Delay, s/veh	3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Traffic Vol, veh/h	20	5	20	5	1	74	6	190	9	39	157	6
Future Vol, veh/h	20	5	20	5	1	74	6	190	9	39	157	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	100	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	88	92	88	92	88	88	88	88	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	22	5	22	6	1	84	7	216	10	44	178	7

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	393	510	93	415	508	113	185	0	0	226	0	0
Stage 1	270	270	-	235	235	-	-	-	-	-	-	-
Stage 2	123	240	-	180	273	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	541	465	946	522	466	918	1387	-	-	1340	-	-
Stage 1	713	685	-	747	709	-	-	-	-	-	-	-
Stage 2	868	706	-	804	683	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	477	447	946	491	448	918	1387	-	-	1340	-	-
Mov Cap-2 Maneuver	548	505	-	564	513	-	-	-	-	-	-	-
Stage 1	709	662	-	743	705	-	-	-	-	-	-	-
Stage 2	783	702	-	753	660	-	-	-	-	-	-	-





Approach	EB		WB		NB		SB	
HCM Control Delay, s	10.8		9.6		0.2		1.5	
HCM LOS	B		A					





Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1387	-	-	666	875	1340	-
HCM Lane V/C Ratio	0.005	-	-	0.073	0.104	0.033	-
HCM Control Delay (s)	7.6	-	-	10.8	9.6	7.8	-
HCM Lane LOS	A	-	-	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0.3	0.1	-

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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	11	2	11	12	4	53	17	129	12	64	278	17
Future Vol, veh/h	11	2	11	12	4	53	17	129	12	64	278	17
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	100	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	95	92	95	92	95	95	95	95	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	12	2	12	13	4	56	18	136	13	67	293	18
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	542	621	156	461	624	75	311	0	0	149	0	0
Stage 1	436	436	-	179	179	-	-	-	-	-	-	-
Stage 2	106	185	-	282	445	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	423	402	862	484	400	971	1246	-	-	1430	-	-
Stage 1	569	578	-	805	750	-	-	-	-	-	-	-
Stage 2	888	746	-	701	573	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	377	378	862	454	376	971	1246	-	-	1430	-	-
Mov Cap-2 Maneuver	457	444	-	523	441	-	-	-	-	-	-	-
Stage 1	561	551	-	794	740	-	-	-	-	-	-	-
Stage 2	820	736	-	656	546	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	11.5		10		0.9		1.4					
HCM LOS	B		B									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1246	-	-	581	796	1430	-	-				
HCM Lane V/C Ratio	0.015	-	-	0.045	0.091	0.047	-	-				
HCM Control Delay (s)	7.9	-	-	11.5	10	7.6	-	-				
HCM Lane LOS	A	-	-	B	B	A	-	-				
HCM 95th %tile Q(veh)	0	-	-	0.1	0.3	0.1	-	-				

Intersection						
Int Delay, s/veh	2.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	7	100	256	13	52	211
Future Vol, veh/h	7	100	256	13	52	211
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	100	-
Veh in Median Storage, #	1	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	8	114	291	15	59	240
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	537	153	0	0	306	0
Stage 1	299	-	-	-	-	-
Stage 2	238	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	474	866	-	-	1252	-
Stage 1	726	-	-	-	-	-
Stage 2	779	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	452	866	-	-	1252	-
Mov Cap-2 Maneuver	541	-	-	-	-	-
Stage 1	726	-	-	-	-	-
Stage 2	742	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	10.1	0	1.6			
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	833	1252	-	
HCM Lane V/C Ratio	-	-	0.146	0.047	-	
HCM Control Delay (s)	-	-	10.1	8	-	
HCM Lane LOS	-	-	B	A	-	
HCM 95th %tile Q(veh)	-	-	0.5	0.1	-	

Intersection						
Int Delay, s/veh	2.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	15	72	173	15	86	375
Future Vol, veh/h	15	72	173	15	86	375
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	100	-
Veh in Median Storage, #	1	-	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	16	76	182	16	91	395
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	570	99	0	0	198	0
Stage 1	190	-	-	-	-	-
Stage 2	380	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	452	937	-	-	1372	-
Stage 1	823	-	-	-	-	-
Stage 2	661	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	422	937	-	-	1372	-
Mov Cap-2 Maneuver	505	-	-	-	-	-
Stage 1	823	-	-	-	-	-
Stage 2	617	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	10	0		1.5		
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1		SBL	SBT	
Capacity (veh/h)	-	- 817		1372	-	
HCM Lane V/C Ratio	-	- 0.112		0.066	-	
HCM Control Delay (s)	-	- 10		7.8	-	
HCM Lane LOS	-	- B		A	-	
HCM 95th %tile Q(veh)	-	- 0.4		0.2	-	

HCM 6th TWSC
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Intersection												
Int Delay, s/veh	3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Traffic Vol, veh/h	20	5	20	7	1	100	6	256	13	52	211	6
Future Vol, veh/h	20	5	20	7	1	100	6	256	13	52	211	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	100	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	88	92	88	92	88	88	88	88	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	22	5	22	8	1	114	7	291	15	59	240	7

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	522	682	124	554	678	153	247	0	0	306	0	0
Stage 1	362	362	-	313	313	-	-	-	-	-	-	-
Stage 2	160	320	-	241	365	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	438	371	904	415	373	866	1316	-	-	1252	-	-
Stage 1	629	624	-	672	656	-	-	-	-	-	-	-
Stage 2	826	651	-	741	622	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	365	352	904	385	354	866	1316	-	-	1252	-	-
Mov Cap-2 Maneuver	458	431	-	483	442	-	-	-	-	-	-	-
Stage 1	626	595	-	669	653	-	-	-	-	-	-	-
Stage 2	713	648	-	683	593	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	11.8		10.2		0.2		1.6	
HCM LOS	B		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1316	-	-	581	817	1252	-
HCM Lane V/C Ratio	0.005	-	-	0.084	0.15	0.047	-
HCM Control Delay (s)	7.7	-	-	11.8	10.2	8	-
HCM Lane LOS	A	-	-	B	B	A	-
HCM 95th %tile Q(veh)	0	-	-	0.3	0.5	0.1	-

HCM 6th TWSC
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Intersection												
Int Delay, s/veh	2.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Traffic Vol, veh/h	11	2	11	15	4	72	17	173	15	86	375	17
Future Vol, veh/h	11	2	11	15	4	72	17	173	15	86	375	17
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	100	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	95	92	95	92	95	95	95	95	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	12	2	12	16	4	76	18	182	16	91	395	18








Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	715	820	207	607	821	99	413	0	0	198	0	0
Stage 1	586	586	-	226	226	-	-	-	-	-	-	-
Stage 2	129	234	-	381	595	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	318	308	799	380	308	937	1142	-	-	1372	-	-
Stage 1	463	495	-	756	716	-	-	-	-	-	-	-
Stage 2	861	710	-	613	491	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	272	283	799	350	283	937	1142	-	-	1372	-	-
Mov Cap-2 Maneuver	364	364	-	438	363	-	-	-	-	-	-	-
Stage 1	456	462	-	744	705	-	-	-	-	-	-	-
Stage 2	774	699	-	561	459	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	12.8		10.6		0.7		1.4	
HCM LOS	B		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1142	-	-	485	744	1372	-
HCM Lane V/C Ratio	0.016	-	-	0.054	0.129	0.066	-
HCM Control Delay (s)	8.2	-	-	12.8	10.6	7.8	-
HCM Lane LOS	A	-	-	B	B	A	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0.4	0.2	-

HCM 6th TWSC
3: Templeton Gap Rd & Stone Mesa Pt

2022 Existing AM
05/23/2022

Intersection												
Int Delay, s/veh	5.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	27	1	7	56	102	2	159	20	67	158	14
Future Vol, veh/h	10	27	1	7	56	102	2	159	20	67	158	14
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	150	-	-	200	-	-	150	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	83	83	83	83	83	83	83	83	83	83	83	83
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	12	33	1	8	67	123	2	192	24	81	190	17
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	664	581	199	586	577	204	207	0	0	216	0	0
Stage 1	361	361	-	208	208	-	-	-	-	-	-	-
Stage 2	303	220	-	378	369	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	374	425	842	422	427	837	1364	-	-	1354	-	-
Stage 1	657	626	-	794	730	-	-	-	-	-	-	-
Stage 2	706	721	-	644	621	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	271	399	842	380	401	837	1364	-	-	1354	-	-
Mov Cap-2 Maneuver	365	461	-	465	472	-	-	-	-	-	-	-
Stage 1	656	588	-	793	729	-	-	-	-	-	-	-
Stage 2	546	720	-	571	584	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	14.2		12.7		0.1		2.2					
HCM LOS	B		B									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1WBLn2	SBL	SBT	SBR					
Capacity (veh/h)	1364	-	-	436	465	657	1354	-	-			
HCM Lane V/C Ratio	0.002	-	-	0.105	0.018	0.29	0.06	-	-			
HCM Control Delay (s)	7.6	-	-	14.2	12.9	12.7	7.8	-	-			
HCM Lane LOS	A	-	-	B	B	B	A	-	-			
HCM 95th %tile Q(veh)	0	-	-	0.3	0.1	1.2	0.2	-	-			

HCM 6th TWSC
3: Templeton Gap Rd & Stone Mesa Pt

2022 Existing PM
05/23/2022

Intersection												
Int Delay, s/veh	3.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔		↔	↔		↔	↔		↔	↔	
Traffic Vol, veh/h	5	55	5	21	32	58	0	288	15	56	199	10
Future Vol, veh/h	5	55	5	21	32	58	0	288	15	56	199	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	150	-	-	200	-	-	150	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	59	5	23	34	62	0	310	16	60	214	11

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	706	666	220	690	663	318	225	0	0	326	0	0
Stage 1	340	340	-	318	318	-	-	-	-	-	-	-
Stage 2	366	326	-	372	345	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	351	380	820	359	382	723	1344	-	-	1234	-	-
Stage 1	675	639	-	693	654	-	-	-	-	-	-	-
Stage 2	653	648	-	648	636	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	291	361	820	308	363	723	1344	-	-	1234	-	-
Mov Cap-2 Maneuver	391	437	-	418	452	-	-	-	-	-	-	-
Stage 1	675	608	-	693	654	-	-	-	-	-	-	-
Stage 2	565	648	-	553	605	-	-	-	-	-	-	-








Approach	EB		WB		NB		SB	
HCM Control Delay, s	14.5		12.6		0		1.7	
HCM LOS	B		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1344	-	-	449 418 596	1234	-	-
HCM Lane V/C Ratio	-	-	-	0.156 0.054 0.162	0.049	-	-
HCM Control Delay (s)	0	-	-	14.5 14.1 12.2	8.1	-	-
HCM Lane LOS	A	-	-	B B B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.5 0.2 0.6	0.2	-	-

HCM 6th TWSC
3: Templeton Gap Rd & Stone Mesa Pt

2025 Background AM








05/23/2022

Intersection												
Int Delay, s/veh	5.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	28	1	7	59	107	2	166	21	70	165	15
Future Vol, veh/h	10	28	1	7	59	107	2	166	21	70	165	15
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	150	-	-	200	-	-	150	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	83	83	83	83	83	83	83	83	83	83	83	83
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	12	34	1	8	71	129	2	200	25	84	199	18
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	693	605	208	611	602	213	217	0	0	225	0	0
Stage 1	376	376	-	217	217	-	-	-	-	-	-	-
Stage 2	317	229	-	394	385	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	358	412	832	406	414	827	1353	-	-	1344	-	-
Stage 1	645	616	-	785	723	-	-	-	-	-	-	-
Stage 2	694	715	-	631	611	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	254	386	832	364	388	827	1353	-	-	1344	-	-
Mov Cap-2 Maneuver	348	450	-	452	462	-	-	-	-	-	-	-
Stage 1	644	578	-	784	722	-	-	-	-	-	-	-
Stage 2	527	714	-	556	573	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	14.6		13.1		0.1		2.2					
HCM LOS	B		B									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1WBLn2	SBL	SBT	SBR					
Capacity (veh/h)	1353	-	-	423	452	646	1344	-	-			
HCM Lane V/C Ratio	0.002	-	-	0.111	0.019	0.31	0.063	-	-			
HCM Control Delay (s)	7.7	-	-	14.6	13.1	13.1	7.9	-	-			
HCM Lane LOS	A	-	-	B	B	B	A	-	-			
HCM 95th %tile Q(veh)	0	-	-	0.4	0.1	1.3	0.2	-	-			

HCM 6th TWSC
3: Templeton Gap Rd & Stone Mesa Pt








2025 Background PM

05/23/2022

Intersection												
Int Delay, s/veh	3.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	58	5	22	33	61	0	301	16	59	208	10
Future Vol, veh/h	5	58	5	22	33	61	0	301	16	59	208	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	150	-	-	200	-	-	150	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	62	5	24	35	66	0	324	17	63	224	11
Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	739	697	230	722	694	333	235	0	0	341	0	0
Stage 1	356	356	-	333	333	-	-	-	-	-	-	-
Stage 2	383	341	-	389	361	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	333	365	809	342	366	709	1332	-	-	1218	-	-
Stage 1	661	629	-	681	644	-	-	-	-	-	-	-
Stage 2	640	639	-	635	626	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	272	346	809	290	347	709	1332	-	-	1218	-	-
Mov Cap-2 Maneuver	374	425	-	403	440	-	-	-	-	-	-	-
Stage 1	661	596	-	681	644	-	-	-	-	-	-	-
Stage 2	549	639	-	536	593	-	-	-	-	-	-	-
Approach	EB		WB			NB			SB			
HCM Control Delay, s	14.9		12.9			0			1.7			
HCM LOS	B		B									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1WBLn2	SBL	SBT	SBR					
Capacity (veh/h)	1332	-	-	436	403	584	1218	-	-			
HCM Lane V/C Ratio	-	-	-	0.168	0.059	0.173	0.052	-	-			
HCM Control Delay (s)	0	-	-	14.9	14.5	12.5	8.1	-	-			
HCM Lane LOS	A	-	-	B	B	B	A	-	-			
HCM 95th %tile Q(veh)	0	-	-	0.6	0.2	0.6	0.2	-	-			

HCM 6th TWSC
3: Templeton Gap Rd & Stone Mesa Pt

2025 Total AM
05/24/2022

Intersection												
Int Delay, s/veh	5.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	33	1	7	60	107	2	166	21	70	165	15
Future Vol, veh/h	10	33	1	7	60	107	2	166	21	70	165	15
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	150	-	-	200	-	-	150	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	83	83	83	83	83	83	83	83	83	83	83	83
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	12	40	1	8	72	129	2	200	25	84	199	18
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	693	605	208	614	602	213	217	0	0	225	0	0
Stage 1	376	376	-	217	217	-	-	-	-	-	-	-
Stage 2	317	229	-	397	385	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	358	412	832	404	414	827	1353	-	-	1344	-	-
Stage 1	645	616	-	785	723	-	-	-	-	-	-	-
Stage 2	694	715	-	629	611	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	253	386	832	358	388	827	1353	-	-	1344	-	-
Mov Cap-2 Maneuver	347	450	-	446	462	-	-	-	-	-	-	-
Stage 1	644	578	-	784	722	-	-	-	-	-	-	-
Stage 2	526	714	-	548	573	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	14.6		13.1		0.1		2.2					
HCM LOS	B		B									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1WBLn2	SBL	SBT	SBR					
Capacity (veh/h)	1353	-	-	426	446	644	1344	-	-			
HCM Lane V/C Ratio	0.002	-	-	0.124	0.019	0.312	0.063	-	-			
HCM Control Delay (s)	7.7	-	-	14.6	13.2	13.1	7.9	-	-			
HCM Lane LOS	A	-	-	B	B	B	A	-	-			
HCM 95th %tile Q(veh)	0	-	-	0.4	0.1	1.3	0.2	-	-			

HCM 6th TWSC
3: Templeton Gap Rd & Stone Mesa Pt








2025 Total PM
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Intersection												
Int Delay, s/veh	3.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↕	↕		↕	↕		↕	↕	
Traffic Vol, veh/h	5	60	5	22	37	61	0	301	16	59	208	10
Future Vol, veh/h	5	60	5	22	37	61	0	301	16	59	208	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	150	-	-	200	-	-	150	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	65	5	24	40	66	0	324	17	63	224	11

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	742	697	230	724	694	333	235	0	0	341	0	0
Stage 1	356	356	-	333	333	-	-	-	-	-	-	-
Stage 2	386	341	-	391	361	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	332	365	809	341	366	709	1332	-	-	1218	-	-
Stage 1	661	629	-	681	644	-	-	-	-	-	-	-
Stage 2	637	639	-	633	626	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	270	346	809	288	347	709	1332	-	-	1218	-	-
Mov Cap-2 Maneuver	371	425	-	400	440	-	-	-	-	-	-	-
Stage 1	661	596	-	681	644	-	-	-	-	-	-	-
Stage 2	542	639	-	532	593	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	15		13		0		1.7	
HCM LOS	C		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1332	-	-	435 400 576	1218	-	-
HCM Lane V/C Ratio	-	-	-	0.173 0.059 0.183	0.052	-	-
HCM Control Delay (s)	0	-	-	15 14.6 12.6	8.1	-	-
HCM Lane LOS	A	-	-	C B B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.6 0.2 0.7	0.2	-	-

Intersection												
Int Delay, s/veh	6.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	14	38	1	10	79	144	3	224	28	94	223	20
Future Vol, veh/h	14	38	1	10	79	144	3	224	28	94	223	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	150	-	-	200	-	-	150	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	83	83	83	83	83	83	83	83	83	83	83	83
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	17	46	1	12	95	173	4	270	34	113	269	24
Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	936	819	281	826	814	287	293	0	0	304	0	0
Stage 1	507	507	-	295	295	-	-	-	-	-	-	-
Stage 2	429	312	-	531	519	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	245	310	758	291	312	752	1269	-	-	1257	-	-
Stage 1	548	539	-	713	669	-	-	-	-	-	-	-
Stage 2	604	658	-	532	533	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	142	281	758	244	283	752	1269	-	-	1257	-	-
Mov Cap-2 Maneuver	226	363	-	346	378	-	-	-	-	-	-	-
Stage 1	546	490	-	711	667	-	-	-	-	-	-	-
Stage 2	397	656	-	438	485	-	-	-	-	-	-	-
Approach	EB		WB			NB			SB			
HCM Control Delay, s	19.3		17.2			0.1			2.3			
HCM LOS	C		C									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1WBLn2	SBL	SBT	SBR					
Capacity (veh/h)	1269	-	-	316	346	557	1257	-	-			
HCM Lane V/C Ratio	0.003	-	-	0.202	0.035	0.482	0.09	-	-			
HCM Control Delay (s)	7.8	-	-	19.3	15.8	17.3	8.1	-	-			
HCM Lane LOS	A	-	-	C	C	C	A	-	-			
HCM 95th %tile Q(veh)	0	-	-	0.7	0.1	2.6	0.3	-	-			

Intersection												
Int Delay, s/veh	4.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	7	77	7	30	45	82	0	406	21	79	280	14
Future Vol, veh/h	7	77	7	30	45	82	0	406	21	79	280	14
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	150	-	-	200	-	-	150	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	8	83	8	32	48	88	0	437	23	85	301	15
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	996	939	309	973	935	449	316	0	0	460	0	0
Stage 1	479	479	-	449	449	-	-	-	-	-	-	-
Stage 2	517	460	-	524	486	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	223	264	731	231	265	610	1244	-	-	1101	-	-
Stage 1	568	555	-	589	572	-	-	-	-	-	-	-
Stage 2	541	566	-	537	551	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	161	244	731	175	245	610	1244	-	-	1101	-	-
Mov Cap-2 Maneuver	260	338	-	297	357	-	-	-	-	-	-	-
Stage 1	568	512	-	589	572	-	-	-	-	-	-	-
Stage 2	424	566	-	411	509	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	19.6		15.8		0		1.8					
HCM LOS	C		C									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1WBLn2	SBL	SBT	SBR					
Capacity (veh/h)	1244	-	-	344	297	488	1101	-	-			
HCM Lane V/C Ratio	-	-	-	0.284	0.109	0.28	0.077	-	-			
HCM Control Delay (s)	0	-	-	19.6	18.6	15.2	8.5	-	-			
HCM Lane LOS	A	-	-	C	C	C	A	-	-			
HCM 95th %tile Q(veh)	0	-	-	1.1	0.4	1.1	0.2	-	-			

HCM 6th TWSC
3: Templeton Gap Rd & Stone Mesa Pt

2045 Total AM
05/24/2022

Intersection												
Int Delay, s/veh	6.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↕	↕		↕	↕		↕	↕	
Traffic Vol, veh/h	14	43	1	10	80	144	3	224	28	94	223	20
Future Vol, veh/h	14	43	1	10	80	144	3	224	28	94	223	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	150	-	-	200	-	-	150	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	83	83	83	83	83	83	83	83	83	83	83	83
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	17	52	1	12	96	173	4	270	34	113	269	24

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	937	819	281	829	814	287	293	0	0	304	0	0
Stage 1	507	507	-	295	295	-	-	-	-	-	-	-
Stage 2	430	312	-	534	519	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	245	310	758	290	312	752	1269	-	-	1257	-	-
Stage 1	548	539	-	713	669	-	-	-	-	-	-	-
Stage 2	603	658	-	530	533	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	141	281	758	240	283	752	1269	-	-	1257	-	-
Mov Cap-2 Maneuver	225	363	-	341	378	-	-	-	-	-	-	-
Stage 1	546	490	-	711	667	-	-	-	-	-	-	-
Stage 2	396	656	-	431	485	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	19.4		17.3		0.1		2.3	
HCM LOS	C		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1269	-	-	319 341 556	1257	-	-
HCM Lane V/C Ratio	0.003	-	-	0.219 0.035 0.485	0.09	-	-
HCM Control Delay (s)	7.8	-	-	19.4 15.9 17.4	8.1	-	-
HCM Lane LOS	A	-	-	C C C	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.8 0.1 2.6	0.3	-	-

HCM 6th TWSC
3: Templeton Gap Rd & Stone Mesa Pt

2045 Total PM
05/24/2022

Intersection												
Int Delay, s/veh	4.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↕	↕		↕	↕		↕	↕	
Traffic Vol, veh/h	7	79	7	30	49	82	0	406	21	79	280	14
Future Vol, veh/h	7	79	7	30	49	82	0	406	21	79	280	14
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	150	-	-	200	-	-	150	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	8	85	8	32	53	88	0	437	23	85	301	15






























Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	998	939	309	974	935	449	316	0	0	460	0	0
Stage 1	479	479	-	449	449	-	-	-	-	-	-	-
Stage 2	519	460	-	525	486	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	223	264	731	231	265	610	1244	-	-	1101	-	-
Stage 1	568	555	-	589	572	-	-	-	-	-	-	-
Stage 2	540	566	-	536	551	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	159	244	731	174	245	610	1244	-	-	1101	-	-
Mov Cap-2 Maneuver	257	338	-	295	357	-	-	-	-	-	-	-
Stage 1	568	512	-	589	572	-	-	-	-	-	-	-
Stage 2	419	566	-	408	509	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	19.7		16.1		0		1.8	
HCM LOS	C		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1244	-	-	344 295 482	1101	-	-
HCM Lane V/C Ratio	-	-	-	0.291 0.109 0.292	0.077	-	-
HCM Control Delay (s)	0	-	-	19.7 18.7 15.5	8.5	-	-
HCM Lane LOS	A	-	-	C C C	A	-	-
HCM 95th %tile Q(veh)	0	-	-	1.2 0.4 1.2	0.2	-	-

Timings 4: Tutt Blvd & Dublin Blvd

2022 Existing AM
05/23/2022

											
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  	 	 			 	
Traffic Volume (vph)	221	388	165	146	1010	344	206	75	76	171	208
Future Volume (vph)	221	388	165	146	1010	344	206	75	76	171	208
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Prot	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6	7	4		3	8	
Permitted Phases	2		2	6				4	8		8
Detector Phase	5	2	2	1	6	7	4	4	3	8	8
Switch Phase											
Minimum Initial (s)	4.0	20.0	20.0	4.0	20.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	9.0	26.0	26.0	9.0	26.0	9.0	20.0	20.0	9.0	20.0	20.0
Total Split (s)	15.0	30.0	30.0	15.0	30.0	15.0	20.0	20.0	15.0	20.0	20.0
Total Split (%)	18.8%	37.5%	37.5%	18.8%	37.5%	18.8%	25.0%	25.0%	18.8%	25.0%	25.0%
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	6.0	5.0	6.0	5.0	6.0	6.0	5.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max	None	Max	Max	None	Max	Max
Act Effect Green (s)	35.9	25.2	25.2	34.1	24.3	10.0	18.3	18.3	22.8	14.0	14.0
Actuated g/C Ratio	0.45	0.32	0.32	0.43	0.30	0.12	0.23	0.23	0.28	0.18	0.18
v/c Ratio	0.73	0.25	0.28	0.31	0.72	0.83	0.27	0.16	0.20	0.29	0.48
Control Delay	29.8	21.2	4.7	13.1	27.8	52.7	28.1	0.7	18.1	30.1	8.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.8	21.2	4.7	13.1	27.8	52.7	28.1	0.7	18.1	30.1	8.4
LOS	C	C	A	B	C	D	C	A	B	C	A
Approach Delay		20.1			26.1		38.4			18.2	
Approach LOS		C			C		D			B	

Intersection Summary

Cycle Length: 80

Actuated Cycle Length: 80

Offset: 11 (14%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 70

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.83

Intersection Signal Delay: 25.9

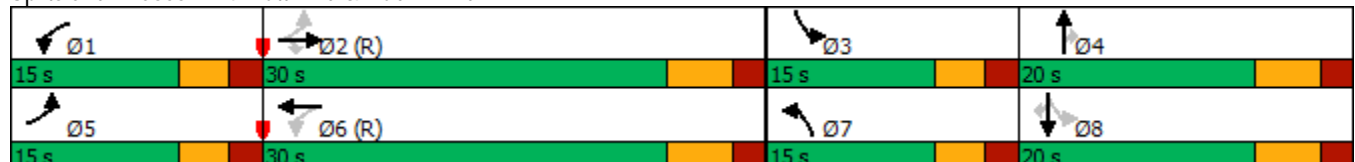
Intersection LOS: C

Intersection Capacity Utilization 65.9%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 4: Tutt Blvd & Dublin Blvd

































HCM 6th Signalized Intersection Summary

4: Tutt Blvd & Dublin Blvd

2022 Existing AM






























05/23/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  		 	 			 	
Traffic Volume (veh/h)	221	388	165	146	1010	55	344	206	75	76	171	208
Future Volume (veh/h)	221	388	165	146	1010	55	344	206	75	76	171	208
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	230	404	172	152	1052	31	358	215	78	79	178	113
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	358	1761	547	474	1603	47	432	885	395	371	622	277
Arrive On Green	0.11	0.34	0.34	0.08	0.31	0.31	0.13	0.25	0.25	0.05	0.17	0.17
Sat Flow, veh/h	1781	5106	1585	1781	5097	150	3456	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	230	404	172	152	702	381	358	215	78	79	178	113
Grp Sat Flow(s),veh/h/ln	1781	1702	1585	1781	1702	1843	1728	1777	1585	1781	1777	1585
Q Serve(g_s), s	6.8	4.5	6.4	4.5	14.3	14.3	8.1	3.9	3.1	2.9	3.5	5.1
Cycle Q Clear(g_c), s	6.8	4.5	6.4	4.5	14.3	14.3	8.1	3.9	3.1	2.9	3.5	5.1
Prop In Lane	1.00		1.00	1.00		0.08	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	358	1761	547	474	1070	580	432	885	395	371	622	277
V/C Ratio(X)	0.64	0.23	0.31	0.32	0.66	0.66	0.83	0.24	0.20	0.21	0.29	0.41
Avail Cap(c_a), veh/h	383	1761	547	554	1070	580	432	885	395	503	622	277
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	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	17.5	18.6	19.3	16.1	23.7	23.7	34.2	24.0	23.7	25.1	28.7	29.3
Incr Delay (d2), s/veh	3.3	0.3	1.5	0.4	3.1	5.7	12.7	0.7	1.1	0.3	1.2	4.4
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	2.9	1.8	2.5	1.8	5.9	6.8	4.1	1.7	1.3	1.2	1.5	2.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	20.8	18.9	20.8	16.5	26.8	29.4	46.8	24.7	24.8	25.4	29.8	33.7
LnGrp LOS	C	B	C	B	C	C	D	C	C	C	C	C
Approach Vol, veh/h		806			1235			651			370	
Approach Delay, s/veh		19.9			26.4			36.9			30.1	
Approach LOS		B			C			D			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.4	33.6	9.1	25.9	13.8	31.2	15.0	20.0				
Change Period (Y+Rc), s	5.0	6.0	5.0	6.0	5.0	6.0	5.0	6.0				
Max Green Setting (Gmax), s	10.0	24.0	10.0	14.0	10.0	24.0	10.0	14.0				
Max Q Clear Time (g_c+I1), s	6.5	8.4	4.9	5.9	8.8	16.3	10.1	7.1				
Green Ext Time (p_c), s	0.1	3.0	0.1	0.9	0.1	4.1	0.0	0.8				
Intersection Summary												
HCM 6th Ctrl Delay				27.3								
HCM 6th LOS				C								

Timings 4: Tutt Blvd & Dublin Blvd

2022 Existing PM

05/23/2022

											
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  	 	 			 	
Traffic Volume (vph)	260	901	270	214	756	336	265	205	72	265	274
Future Volume (vph)	260	901	270	214	756	336	265	205	72	265	274
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Prot	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6	7	4		3	8	
Permitted Phases	2		2	6				4	8		8
Detector Phase	5	2	2	1	6	7	4	4	3	8	8
Switch Phase											
Minimum Initial (s)	4.0	20.0	20.0	4.0	20.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	9.0	26.0	26.0	9.0	26.0	9.0	20.0	20.0	9.0	20.0	20.0
Total Split (s)	15.0	30.0	30.0	15.0	30.0	15.0	20.0	20.0	15.0	20.0	20.0
Total Split (%)	18.8%	37.5%	37.5%	18.8%	37.5%	18.8%	25.0%	25.0%	18.8%	25.0%	25.0%
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	6.0	5.0	6.0	5.0	6.0	6.0	5.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max	None	Max	Max	None	Max	Max
Act Effect Green (s)	35.3	24.5	24.5	34.7	24.2	10.0	18.4	18.4	22.7	14.0	14.0
Actuated g/C Ratio	0.44	0.31	0.31	0.43	0.30	0.12	0.23	0.23	0.28	0.18	0.18
v/c Ratio	0.73	0.60	0.41	0.67	0.53	0.81	0.34	0.40	0.20	0.44	0.56
Control Delay	26.4	25.6	5.0	23.1	24.5	50.2	28.7	7.1	18.1	32.1	9.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.4	25.6	5.0	23.1	24.5	50.2	28.7	7.1	18.1	32.1	9.5
LOS	C	C	A	C	C	D	C	A	B	C	A
Approach Delay		21.9			24.2		32.2			20.3	
Approach LOS		C			C		C			C	

Intersection Summary

Cycle Length: 80

Actuated Cycle Length: 80

Offset: 11 (14%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 70

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.81

Intersection Signal Delay: 24.4

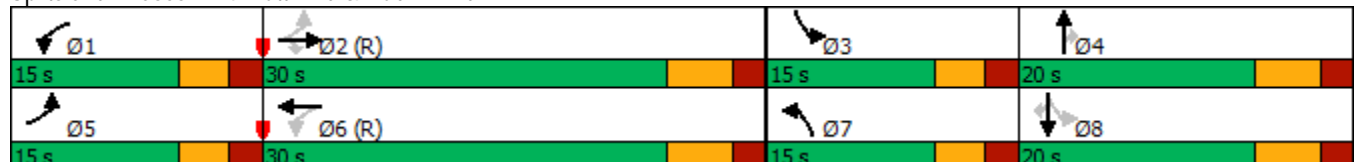
Intersection LOS: C

Intersection Capacity Utilization 66.3%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 4: Tutt Blvd & Dublin Blvd

































HCM 6th Signalized Intersection Summary

4: Tutt Blvd & Dublin Blvd

2022 Existing PM

05/23/2022






























												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  		 	 			 	
Traffic Volume (veh/h)	260	901	270	214	756	40	336	265	205	72	265	274
Future Volume (veh/h)	260	901	270	214	756	40	336	265	205	72	265	274
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	268	929	139	221	779	20	346	273	108	74	273	148
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	433	1626	505	372	1547	40	425	888	396	351	622	277
Arrive On Green	0.13	0.32	0.32	0.11	0.30	0.30	0.12	0.25	0.25	0.05	0.17	0.17
Sat Flow, veh/h	1781	5106	1585	1781	5120	131	3456	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	268	929	139	221	518	281	346	273	108	74	273	148
Grp Sat Flow(s),veh/h/ln	1781	1702	1585	1781	1702	1847	1728	1777	1585	1781	1777	1585
Q Serve(g_s), s	8.1	12.1	5.2	6.7	10.0	10.0	7.8	5.0	4.4	2.7	5.5	6.8
Cycle Q Clear(g_c), s	8.1	12.1	5.2	6.7	10.0	10.0	7.8	5.0	4.4	2.7	5.5	6.8
Prop In Lane	1.00		1.00	1.00		0.07	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	433	1626	505	372	1028	558	425	888	396	351	622	277
V/C Ratio(X)	0.62	0.57	0.28	0.59	0.50	0.50	0.81	0.31	0.27	0.21	0.44	0.53
Avail Cap(c_a), veh/h	433	1626	505	401	1028	558	432	888	396	488	622	277
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	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	16.5	22.7	20.4	17.1	23.0	23.0	34.2	24.4	24.1	25.2	29.5	30.0
Incr Delay (d2), s/veh	2.7	1.5	1.4	2.1	1.8	3.2	11.3	0.9	1.7	0.3	2.2	7.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.4	4.9	2.1	2.8	4.1	4.7	3.9	2.2	1.8	1.1	2.5	3.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	19.2	24.2	21.7	19.2	24.7	26.2	45.5	25.3	25.8	25.5	31.7	37.2
LnGrp LOS	B	C	C	B	C	C	D	C	C	C	C	D
Approach Vol, veh/h		1336			1020			727			495	
Approach Delay, s/veh		22.9			23.9			35.0			32.4	
Approach LOS		C			C			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	13.7	31.5	8.8	26.0	15.0	30.2	14.8	20.0				
Change Period (Y+Rc), s	5.0	6.0	5.0	6.0	5.0	6.0	5.0	6.0				
Max Green Setting (Gmax), s	10.0	24.0	10.0	14.0	10.0	24.0	10.0	14.0				
Max Q Clear Time (g_c+I1), s	8.7	14.1	4.7	7.0	10.1	12.0	9.8	8.8				
Green Ext Time (p_c), s	0.1	4.8	0.1	1.2	0.0	4.1	0.0	1.0				
Intersection Summary												
HCM 6th Ctrl Delay			27.0									
HCM 6th LOS			C									

Timings

4: Tutt Blvd & Dublin Blvd

2025 Background AM

05/23/2022

											
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  	 	 			 	
Traffic Volume (vph)	231	406	173	153	1056	360	215	78	79	179	218
Future Volume (vph)	231	406	173	153	1056	360	215	78	79	179	218
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Prot	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6	7	4		3	8	
Permitted Phases	2		2	6				4	8		8
Detector Phase	5	2	2	1	6	7	4	4	3	8	8
Switch Phase											
Minimum Initial (s)	4.0	20.0	20.0	4.0	20.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	9.0	26.0	26.0	9.0	26.0	9.0	20.0	20.0	9.0	20.0	20.0
Total Split (s)	15.0	30.0	30.0	15.0	30.0	15.0	20.0	20.0	15.0	20.0	20.0
Total Split (%)	18.8%	37.5%	37.5%	18.8%	37.5%	18.8%	25.0%	25.0%	18.8%	25.0%	25.0%
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	6.0	5.0	6.0	5.0	6.0	6.0	5.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max	None	Max	Max	None	Max	Max
Act Effect Green (s)	35.9	25.2	25.2	34.1	24.3	10.0	18.3	18.3	22.9	14.0	14.0
Actuated g/C Ratio	0.45	0.32	0.32	0.43	0.30	0.12	0.23	0.23	0.29	0.18	0.18
v/c Ratio	0.76	0.26	0.29	0.33	0.75	0.87	0.28	0.16	0.21	0.30	0.49
Control Delay	32.6	21.3	5.0	13.3	28.8	57.2	28.3	0.7	18.2	30.3	8.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	32.6	21.3	5.0	13.3	28.8	57.2	28.3	0.7	18.2	30.3	8.4
LOS	C	C	A	B	C	E	C	A	B	C	A
Approach Delay		21.1			26.9		41.0			18.3	
Approach LOS		C			C		D			B	

Intersection Summary

Cycle Length: 80

Actuated Cycle Length: 80

Offset: 11 (14%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 70

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.87

Intersection Signal Delay: 27.0

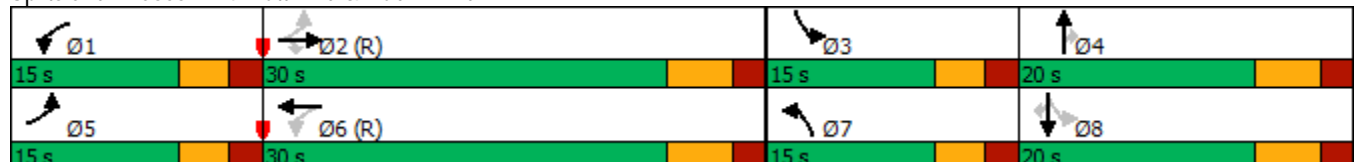
Intersection LOS: C

Intersection Capacity Utilization 68.0%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 4: Tutt Blvd & Dublin Blvd

































HCM 6th Signalized Intersection Summary

4: Tutt Blvd & Dublin Blvd

2025 Background AM

05/23/2022































												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  		 	 			 	
Traffic Volume (veh/h)	231	406	173	153	1056	58	360	215	78	79	179	218
Future Volume (veh/h)	231	406	173	153	1056	58	360	215	78	79	179	218
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	241	423	180	159	1100	30	375	224	81	82	186	113
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	355	1744	541	469	1583	43	432	878	392	372	622	277
Arrive On Green	0.12	0.34	0.34	0.08	0.31	0.31	0.13	0.25	0.25	0.05	0.17	0.17
Sat Flow, veh/h	1781	5106	1585	1781	5110	139	3456	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	241	423	180	159	733	397	375	224	81	82	186	113
Grp Sat Flow(s),veh/h/ln	1781	1702	1585	1781	1702	1845	1728	1777	1585	1781	1777	1585
Q Serve(g_s), s	7.2	4.8	6.7	4.8	15.1	15.2	8.5	4.1	3.2	3.0	3.6	5.1
Cycle Q Clear(g_c), s	7.2	4.8	6.7	4.8	15.1	15.2	8.5	4.1	3.2	3.0	3.6	5.1
Prop In Lane	1.00		1.00	1.00		0.08	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	355	1744	541	469	1055	572	432	878	392	372	622	277
V/C Ratio(X)	0.68	0.24	0.33	0.34	0.69	0.70	0.87	0.26	0.21	0.22	0.30	0.41
Avail Cap(c_a), veh/h	373	1744	541	543	1055	572	432	878	392	501	622	277
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	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	17.9	18.9	19.6	16.2	24.3	24.3	34.4	24.2	23.9	25.0	28.7	29.3
Incr Delay (d2), s/veh	4.6	0.3	1.6	0.4	3.8	6.8	16.9	0.7	1.2	0.3	1.2	4.4
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	3.2	1.9	2.6	1.9	6.4	7.4	4.5	1.7	1.3	1.3	1.6	2.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.6	19.2	21.2	16.6	28.1	31.1	51.3	24.9	25.1	25.3	30.0	33.7
LnGrp LOS	C	B	C	B	C	C	D	C	C	C	C	C
Approach Vol, veh/h		844			1289			680			381	
Approach Delay, s/veh		20.6			27.6			39.5			30.1	
Approach LOS		C			C			D			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.7	33.3	9.2	25.8	14.2	30.8	15.0	20.0				
Change Period (Y+Rc), s	5.0	6.0	5.0	6.0	5.0	6.0	5.0	6.0				
Max Green Setting (Gmax), s	10.0	24.0	10.0	14.0	10.0	24.0	10.0	14.0				
Max Q Clear Time (g_c+I1), s	6.8	8.7	5.0	6.1	9.2	17.2	10.5	7.1				
Green Ext Time (p_c), s	0.1	3.1	0.1	1.0	0.1	3.9	0.0	0.8				
Intersection Summary												
HCM 6th Ctrl Delay			28.6									
HCM 6th LOS			C									

Timings

4: Tutt Blvd & Dublin Blvd

2025 Background PM

05/23/2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		  			  	 	 			 		
Traffic Volume (vph)	272	942	282	224	791	351	277	214	75	277	287	
Future Volume (vph)	272	942	282	224	791	351	277	214	75	277	287	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Prot	NA	Perm	pm+pt	NA	Perm	
Protected Phases	5	2		1	6	7	4		3	8		
Permitted Phases	2		2	6				4	8		8	
Detector Phase	5	2	2	1	6	7	4	4	3	8	8	
Switch Phase												
Minimum Initial (s)	4.0	20.0	20.0	4.0	20.0	4.0	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	9.0	26.0	26.0	9.0	26.0	9.0	20.0	20.0	9.0	20.0	20.0	
Total Split (s)	15.0	30.0	30.0	15.0	30.0	15.0	20.0	20.0	15.0	20.0	20.0	
Total Split (%)	18.8%	37.5%	37.5%	18.8%	37.5%	18.8%	25.0%	25.0%	18.8%	25.0%	25.0%	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	6.0	6.0	5.0	6.0	5.0	6.0	6.0	5.0	6.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	C-Max	C-Max	None	C-Max	None	Max	Max	None	Max	Max	
Act Effct Green (s)	35.2	24.4	24.4	34.8	24.1	10.0	18.4	18.4	22.7	14.0	14.0	
Actuated g/C Ratio	0.44	0.30	0.30	0.44	0.30	0.12	0.23	0.23	0.28	0.18	0.18	
v/c Ratio	0.79	0.63	0.43	0.71	0.56	0.84	0.35	0.41	0.21	0.46	0.59	
Control Delay	31.0	26.2	5.0	27.0	24.9	53.7	28.9	7.1	18.2	32.4	11.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	31.0	26.2	5.0	27.0	24.9	53.7	28.9	7.1	18.2	32.4	11.2	
LOS	C	C	A	C	C	D	C	A	B	C	B	
Approach Delay		23.1			25.4		33.7			21.2		
Approach LOS		C			C		C			C		

Intersection Summary

Cycle Length: 80

Actuated Cycle Length: 80

Offset: 11 (14%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 70

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.84

Intersection Signal Delay: 25.6

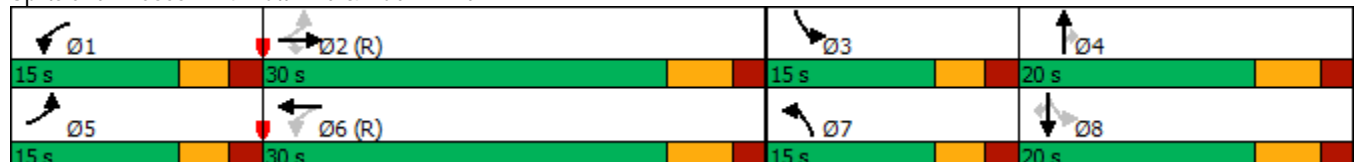
Intersection LOS: C

Intersection Capacity Utilization 67.7%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 4: Tutt Blvd & Dublin Blvd

































HCM 6th Signalized Intersection Summary

4: Tutt Blvd & Dublin Blvd






























2025 Background PM

05/23/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  		 	 			 	
Traffic Volume (veh/h)	272	942	282	224	791	42	351	277	214	75	277	287
Future Volume (veh/h)	272	942	282	224	791	42	351	277	214	75	277	287
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	280	971	152	231	815	22	362	286	118	77	286	162
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	422	1594	495	366	1534	41	432	889	397	350	622	277
Arrive On Green	0.13	0.31	0.31	0.11	0.30	0.30	0.13	0.25	0.25	0.05	0.17	0.17
Sat Flow, veh/h	1781	5106	1585	1781	5112	138	3456	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	280	971	152	231	542	295	362	286	118	77	286	162
Grp Sat Flow(s),veh/h/ln	1781	1702	1585	1781	1702	1846	1728	1777	1585	1781	1777	1585
Q Serve(g_s), s	8.6	12.9	5.8	7.0	10.6	10.6	8.2	5.2	4.8	2.8	5.8	7.5
Cycle Q Clear(g_c), s	8.6	12.9	5.8	7.0	10.6	10.6	8.2	5.2	4.8	2.8	5.8	7.5
Prop In Lane	1.00		1.00	1.00		0.07	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	422	1594	495	366	1021	554	432	889	397	350	622	277
V/C Ratio(X)	0.66	0.61	0.31	0.63	0.53	0.53	0.84	0.32	0.30	0.22	0.46	0.58
Avail Cap(c_a), veh/h	422	1594	495	388	1021	554	432	889	397	484	622	277
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	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	16.9	23.4	20.9	17.5	23.3	23.3	34.2	24.5	24.3	25.1	29.6	30.3
Incr Delay (d2), s/veh	3.9	1.7	1.6	3.0	2.0	3.6	13.6	1.0	1.9	0.3	2.4	8.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	5.2	2.3	3.0	4.4	5.0	4.2	2.3	2.0	1.2	2.6	3.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	20.8	25.1	22.5	20.5	25.3	27.0	47.8	25.4	26.2	25.4	32.0	39.0
LnGrp LOS	C	C	C	C	C	C	D	C	C	C	C	D
Approach Vol, veh/h		1403			1068			766			525	
Approach Delay, s/veh		24.0			24.7			36.1			33.2	
Approach LOS		C			C			D			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	14.0	31.0	9.0	26.0	15.0	30.0	15.0	20.0				
Change Period (Y+Rc), s	5.0	6.0	5.0	6.0	5.0	6.0	5.0	6.0				
Max Green Setting (Gmax), s	10.0	24.0	10.0	14.0	10.0	24.0	10.0	14.0				
Max Q Clear Time (g_c+l1), s	9.0	14.9	4.8	7.2	10.6	12.6	10.2	9.5				
Green Ext Time (p_c), s	0.1	4.7	0.1	1.2	0.0	4.2	0.0	1.0				
Intersection Summary												
HCM 6th Ctrl Delay				27.9								
HCM 6th LOS				C								

Timings 4: Tutt Blvd & Dublin Blvd

2025 Total AM
05/24/2022

											
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  	 	 			 	
Traffic Volume (vph)	236	406	173	153	1056	360	216	78	81	181	234
Future Volume (vph)	236	406	173	153	1056	360	216	78	81	181	234
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Prot	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6	7	4		3	8	
Permitted Phases	2		2	6				4	8		8
Detector Phase	5	2	2	1	6	7	4	4	3	8	8
Switch Phase											
Minimum Initial (s)	4.0	20.0	20.0	4.0	20.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	9.0	26.0	26.0	9.0	26.0	9.0	20.0	20.0	9.0	20.0	20.0
Total Split (s)	15.0	30.0	30.0	15.0	30.0	15.0	20.0	20.0	15.0	20.0	20.0
Total Split (%)	18.8%	37.5%	37.5%	18.8%	37.5%	18.8%	25.0%	25.0%	18.8%	25.0%	25.0%
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	6.0	5.0	6.0	5.0	6.0	6.0	5.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max	None	Max	Max	None	Max	Max
Act Effect Green (s)	35.9	25.2	25.2	34.1	24.2	10.0	18.2	18.2	22.9	14.0	14.0
Actuated g/C Ratio	0.45	0.32	0.32	0.43	0.30	0.12	0.23	0.23	0.29	0.18	0.18
v/c Ratio	0.78	0.26	0.29	0.33	0.76	0.87	0.28	0.16	0.22	0.31	0.51
Control Delay	33.8	21.3	5.0	13.3	28.8	57.2	28.3	0.7	18.3	30.3	8.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.8	21.3	5.0	13.3	28.8	57.2	28.3	0.7	18.3	30.3	8.5
LOS	C	C	A	B	C	E	C	A	B	C	A
Approach Delay		21.5			27.0		41.0			18.1	
Approach LOS		C			C		D			B	

Intersection Summary

Cycle Length: 80

Actuated Cycle Length: 80

Offset: 11 (14%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 70

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.87

Intersection Signal Delay: 27.0

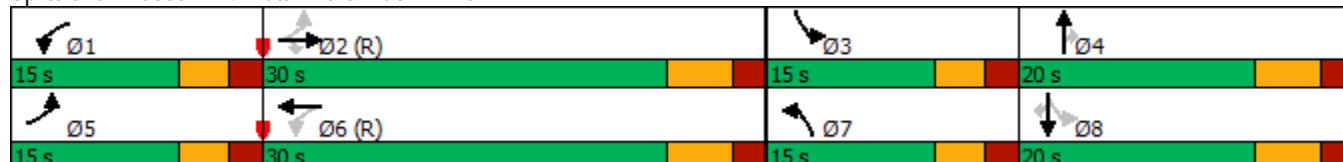
Intersection LOS: C

Intersection Capacity Utilization 68.4%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 4: Tutt Blvd & Dublin Blvd

































HCM 6th Signalized Intersection Summary

2025 Total AM

4: Tutt Blvd & Dublin Blvd






























05/24/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  		 	 			 	
Traffic Volume (veh/h)	236	406	173	153	1056	59	360	216	78	81	181	234
Future Volume (veh/h)	236	406	173	153	1056	59	360	216	78	81	181	234
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	246	423	180	159	1100	30	375	225	81	84	189	124
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	358	1743	541	469	1573	43	432	874	390	374	622	277
Arrive On Green	0.12	0.34	0.34	0.08	0.31	0.31	0.13	0.25	0.25	0.05	0.17	0.17
Sat Flow, veh/h	1781	5106	1585	1781	5110	139	3456	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	246	423	180	159	733	397	375	225	81	84	189	124
Grp Sat Flow(s),veh/h/ln	1781	1702	1585	1781	1702	1845	1728	1777	1585	1781	1777	1585
Q Serve(g_s), s	7.4	4.8	6.7	4.8	15.2	15.2	8.5	4.1	3.2	3.1	3.7	5.6
Cycle Q Clear(g_c), s	7.4	4.8	6.7	4.8	15.2	15.2	8.5	4.1	3.2	3.1	3.7	5.6
Prop In Lane	1.00		1.00	1.00		0.08	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	358	1743	541	469	1048	568	432	874	390	374	622	277
V/C Ratio(X)	0.69	0.24	0.33	0.34	0.70	0.70	0.87	0.26	0.21	0.22	0.30	0.45
Avail Cap(c_a), veh/h	371	1743	541	543	1048	568	432	874	390	500	622	277
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	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	18.0	18.9	19.6	16.3	24.4	24.4	34.4	24.3	24.0	25.0	28.8	29.5
Incr Delay (d2), s/veh	5.0	0.3	1.6	0.4	3.9	7.0	16.9	0.7	1.2	0.3	1.3	5.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	1.9	2.6	1.9	6.4	7.4	4.5	1.8	1.3	1.3	1.6	2.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.1	19.2	21.2	16.7	28.3	31.5	51.3	25.0	25.2	25.3	30.0	34.7
LnGrp LOS	C	B	C	B	C	C	D	C	C	C	C	C
Approach Vol, veh/h		849			1289			681			397	
Approach Delay, s/veh		20.8			27.9			39.5			30.5	
Approach LOS		C			C			D			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.7	33.3	9.3	25.7	14.4	30.6	15.0	20.0				
Change Period (Y+Rc), s	5.0	6.0	5.0	6.0	5.0	6.0	5.0	6.0				
Max Green Setting (Gmax), s	10.0	24.0	10.0	14.0	10.0	24.0	10.0	14.0				
Max Q Clear Time (g_c+I1), s	6.8	8.7	5.1	6.1	9.4	17.2	10.5	7.6				
Green Ext Time (p_c), s	0.1	3.1	0.1	1.0	0.1	3.9	0.0	0.8				
Intersection Summary												
HCM 6th Ctrl Delay				28.8								
HCM 6th LOS				C								

Timings

4: Tutt Blvd & Dublin Blvd

2025 Total PM
05/24/2022

											
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  	 	 			 	
Traffic Volume (vph)	285	942	282	224	791	351	279	214	76	278	295
Future Volume (vph)	285	942	282	224	791	351	279	214	76	278	295
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Prot	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6	7	4		3	8	
Permitted Phases	2		2	6				4	8		8
Detector Phase	5	2	2	1	6	7	4	4	3	8	8
Switch Phase											
Minimum Initial (s)	4.0	20.0	20.0	4.0	20.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	9.0	26.0	26.0	9.0	26.0	9.0	20.0	20.0	9.0	20.0	20.0
Total Split (s)	15.0	30.0	30.0	15.0	30.0	15.0	20.0	20.0	15.0	20.0	20.0
Total Split (%)	18.8%	37.5%	37.5%	18.8%	37.5%	18.8%	25.0%	25.0%	18.8%	25.0%	25.0%
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	6.0	5.0	6.0	5.0	6.0	6.0	5.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max	None	Max	Max	None	Max	Max
Act Effect Green (s)	35.4	24.4	24.4	34.6	24.0	10.0	18.3	18.3	22.8	14.0	14.0
Actuated g/C Ratio	0.44	0.30	0.30	0.43	0.30	0.12	0.23	0.23	0.28	0.18	0.18
v/c Ratio	0.83	0.63	0.43	0.72	0.57	0.84	0.36	0.41	0.21	0.46	0.61
Control Delay	34.7	26.2	5.0	27.0	25.0	53.7	28.9	7.1	18.2	32.4	11.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.7	26.2	5.0	27.0	25.0	53.7	28.9	7.1	18.2	32.4	11.9
LOS	C	C	A	C	C	D	C	A	B	C	B
Approach Delay		23.8			25.4		33.7			21.5	
Approach LOS		C			C		C			C	

Intersection Summary

Cycle Length: 80

Actuated Cycle Length: 80

Offset: 11 (14%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 70

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.84

Intersection Signal Delay: 25.9

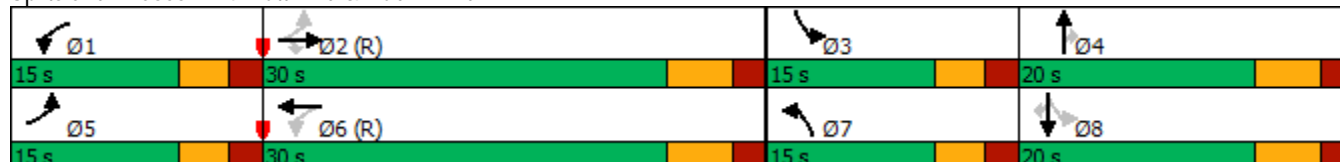
Intersection LOS: C

Intersection Capacity Utilization 68.5%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 4: Tutt Blvd & Dublin Blvd

































HCM 6th Signalized Intersection Summary

4: Tutt Blvd & Dublin Blvd

2025 Total PM

05/24/2022































												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  		 	 			 	
Traffic Volume (veh/h)	285	942	282	224	791	44	351	279	214	76	278	295
Future Volume (veh/h)	285	942	282	224	791	44	351	279	214	76	278	295
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	294	971	147	231	815	22	362	288	111	78	287	155
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	422	1594	495	367	1534	41	432	887	396	352	622	277
Arrive On Green	0.13	0.31	0.31	0.11	0.30	0.30	0.13	0.25	0.25	0.05	0.17	0.17
Sat Flow, veh/h	1781	5106	1585	1781	5112	138	3456	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	294	971	147	231	542	295	362	288	111	78	287	155
Grp Sat Flow(s),veh/h/ln	1781	1702	1585	1781	1702	1846	1728	1777	1585	1781	1777	1585
Q Serve(g_s), s	9.1	12.9	5.6	7.0	10.6	10.6	8.2	5.3	4.5	2.8	5.8	7.2
Cycle Q Clear(g_c), s	9.1	12.9	5.6	7.0	10.6	10.6	8.2	5.3	4.5	2.8	5.8	7.2
Prop In Lane	1.00		1.00	1.00		0.07	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	422	1594	495	367	1021	554	432	887	396	352	622	277
V/C Ratio(X)	0.70	0.61	0.30	0.63	0.53	0.53	0.84	0.32	0.28	0.22	0.46	0.56
Avail Cap(c_a), veh/h	422	1594	495	389	1021	554	432	887	396	485	622	277
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	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	17.1	23.4	20.9	17.5	23.3	23.3	34.2	24.5	24.2	25.1	29.6	30.2
Incr Delay (d2), s/veh	4.9	1.7	1.5	3.0	2.0	3.6	13.6	1.0	1.8	0.3	2.5	7.9
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	4.0	5.2	2.2	3.0	4.4	5.0	4.2	2.3	1.8	1.2	2.6	3.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.1	25.1	22.4	20.5	25.3	27.0	47.8	25.5	26.0	25.4	32.1	38.1
LnGrp LOS	C	C	C	C	C	C	D	C	C	C	C	D
Approach Vol, veh/h		1412			1068			761			520	
Approach Delay, s/veh		24.2			24.7			36.2			32.9	
Approach LOS		C			C			D			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	14.0	31.0	9.0	26.0	15.0	30.0	15.0	20.0				
Change Period (Y+Rc), s	5.0	6.0	5.0	6.0	5.0	6.0	5.0	6.0				
Max Green Setting (Gmax), s	10.0	24.0	10.0	14.0	10.0	24.0	10.0	14.0				
Max Q Clear Time (g_c+I1), s	9.0	14.9	4.8	7.3	11.1	12.6	10.2	9.2				
Green Ext Time (p_c), s	0.1	4.7	0.1	1.2	0.0	4.2	0.0	1.0				
Intersection Summary												
HCM 6th Ctrl Delay			28.0									
HCM 6th LOS			C									

Timings

4: Tutt Blvd & Dublin Blvd

2045 Background AM

05/23/2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		  			  	 	 			 		
Traffic Volume (vph)	311	546	232	206	1422	484	290	106	107	241	293	
Future Volume (vph)	311	546	232	206	1422	484	290	106	107	241	293	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Prot	NA	Perm	pm+pt	NA	Perm	
Protected Phases	5	2		1	6	7	4		3	8		
Permitted Phases	2		2	6				4	8		8	
Detector Phase	5	2	2	1	6	7	4	4	3	8	8	
Switch Phase												
Minimum Initial (s)	4.0	20.0	20.0	4.0	20.0	4.0	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	9.0	26.0	26.0	9.0	26.0	9.0	20.0	20.0	9.0	20.0	20.0	
Total Split (s)	15.0	30.0	30.0	15.0	30.0	15.0	20.0	20.0	15.0	20.0	20.0	
Total Split (%)	18.8%	37.5%	37.5%	18.8%	37.5%	18.8%	25.0%	25.0%	18.8%	25.0%	25.0%	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	6.0	6.0	5.0	6.0	5.0	6.0	6.0	5.0	6.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	C-Max	C-Max	None	C-Max	None	Max	Max	None	Max	Max	
Act Effct Green (s)	35.6	24.6	24.6	34.4	24.0	10.0	17.7	17.7	23.5	14.0	14.0	
Actuated g/C Ratio	0.44	0.31	0.31	0.43	0.30	0.12	0.22	0.22	0.29	0.18	0.18	
v/c Ratio	1.01	0.36	0.37	0.48	1.03	1.17	0.39	0.23	0.29	0.41	0.63	
Control Delay	74.1	22.6	4.9	15.6	59.2	134.5	29.8	2.2	19.1	31.6	13.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	74.1	22.6	4.9	15.6	59.2	134.5	29.8	2.2	19.1	31.6	13.9	
LOS	E	C	A	B	E	F	C	A	B	C	B	
Approach Delay		33.5			54.0		84.1			21.4		
Approach LOS		C			D		F			C		

Intersection Summary

Cycle Length: 80

Actuated Cycle Length: 80

Offset: 11 (14%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.17

Intersection Signal Delay: 50.1

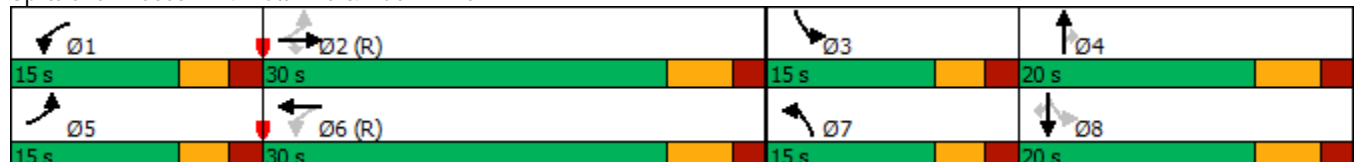
Intersection LOS: D

Intersection Capacity Utilization 85.2%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 4: Tutt Blvd & Dublin Blvd


























HCM 6th Signalized Intersection Summary

4: Tutt Blvd & Dublin Blvd

2045 Background AM

05/23/2022























												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	311	546	232	206	1422	77	484	290	106	107	241	293
Future Volume (veh/h)	311	546	232	206	1422	77	484	290	106	107	241	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	324	569	242	215	1481	38	504	302	110	111	251	154
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	318	1625	505	437	1536	39	432	818	365	369	622	277
Arrive On Green	0.13	0.32	0.32	0.11	0.30	0.30	0.13	0.23	0.23	0.07	0.17	0.17
Sat Flow, veh/h	1781	5106	1585	1781	5119	131	3456	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	324	569	242	215	985	534	504	302	110	111	251	154
Grp Sat Flow(s),veh/h/ln	1781	1702	1585	1781	1702	1847	1728	1777	1585	1781	1777	1585
Q Serve(g_s), s	10.0	6.8	9.8	6.5	22.8	22.8	10.0	5.7	4.6	4.0	5.0	7.1
Cycle Q Clear(g_c), s	10.0	6.8	9.8	6.5	22.8	22.8	10.0	5.7	4.6	4.0	5.0	7.1
Prop In Lane	1.00		1.00	1.00		0.07	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	318	1625	505	437	1021	554	432	818	365	369	622	277
V/C Ratio(X)	1.02	0.35	0.48	0.49	0.96	0.96	1.17	0.37	0.30	0.30	0.40	0.56
Avail Cap(c_a), veh/h	318	1625	505	469	1021	554	432	818	365	467	622	277
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	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	19.7	20.9	21.9	16.3	27.6	27.6	35.0	25.9	25.5	24.3	29.3	30.2
Incr Delay (d2), s/veh	55.5	0.6	3.2	0.9	20.8	30.4	97.5	1.3	2.1	0.5	1.9	7.8
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	8.7	2.7	4.0	2.6	11.7	14.2	9.9	2.5	1.9	1.7	2.3	3.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	75.2	21.5	25.2	17.1	48.3	57.9	132.5	27.2	27.6	24.8	31.2	38.0
LnGrp LOS	F	C	C	B	D	E	F	C	C	C	C	D
Approach Vol, veh/h		1135			1734			916			516	
Approach Delay, s/veh		37.6			47.4			85.2			31.9	
Approach LOS		D			D			F			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	13.5	31.5	10.6	24.4	15.0	30.0	15.0	20.0				
Change Period (Y+Rc), s	5.0	6.0	5.0	6.0	5.0	6.0	5.0	6.0				
Max Green Setting (Gmax), s	10.0	24.0	10.0	14.0	10.0	24.0	10.0	14.0				
Max Q Clear Time (g_c+I1), s	8.5	11.8	6.0	7.7	12.0	24.8	12.0	9.1				
Green Ext Time (p_c), s	0.1	3.8	0.1	1.2	0.0	0.0	0.0	0.9				
Intersection Summary												
HCM 6th Ctrl Delay			51.0									
HCM 6th LOS			D									

Timings

4: Tutt Blvd & Dublin Blvd

2045 Background PM

05/23/2022

											
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	366	1269	380	301	1065	473	373	289	101	373	386
Future Volume (vph)	366	1269	380	301	1065	473	373	289	101	373	386
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Prot	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6	7	4		3	8	
Permitted Phases	2		2	6				4	8		8
Detector Phase	5	2	2	1	6	7	4	4	3	8	8
Switch Phase											
Minimum Initial (s)	4.0	20.0	20.0	4.0	20.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	9.0	26.0	26.0	9.0	26.0	9.0	20.0	20.0	9.0	20.0	20.0
Total Split (s)	15.0	30.0	30.0	15.0	30.0	15.0	20.0	20.0	15.0	20.0	20.0
Total Split (%)	18.8%	37.5%	37.5%	18.8%	37.5%	18.8%	25.0%	25.0%	18.8%	25.0%	25.0%
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	6.0	5.0	6.0	5.0	6.0	6.0	5.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max	None	Max	Max	None	Max	Max
Act Effect Green (s)	35.0	24.0	24.0	35.0	24.0	10.0	17.9	17.9	23.3	14.0	14.0
Actuated g/C Ratio	0.44	0.30	0.30	0.44	0.30	0.12	0.22	0.22	0.29	0.18	0.18
v/c Ratio	1.17	0.86	0.53	0.96	0.76	1.14	0.49	0.51	0.28	0.62	0.82
Control Delay	126.5	33.4	5.9	62.2	29.1	121.2	31.0	7.4	19.1	35.6	27.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	126.5	33.4	5.9	62.2	29.1	121.2	31.0	7.4	19.1	35.6	27.6
LOS	F	C	A	E	C	F	C	A	B	D	C
Approach Delay		45.1			36.1		62.6			30.1	
Approach LOS		D			D		E			C	

Intersection Summary

Cycle Length: 80

Actuated Cycle Length: 80

Offset: 11 (14%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.17

Intersection Signal Delay: 44.0

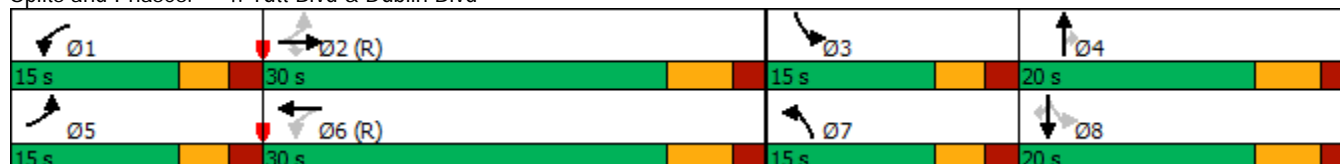
Intersection LOS: D

Intersection Capacity Utilization 84.2%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 4: Tutt Blvd & Dublin Blvd

































HCM 6th Signalized Intersection Summary

4: Tutt Blvd & Dublin Blvd

2045 Background PM

05/23/2022






























												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  		 	 			 	
Traffic Volume (veh/h)	366	1269	380	301	1065	56	473	373	289	101	373	386
Future Volume (veh/h)	366	1269	380	301	1065	56	473	373	289	101	373	386
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	377	1308	196	310	1098	29	488	385	154	104	385	202
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	367	1532	476	333	1535	41	432	832	371	329	622	277
Arrive On Green	0.13	0.30	0.30	0.13	0.30	0.30	0.13	0.23	0.23	0.07	0.18	0.18
Sat Flow, veh/h	1781	5106	1585	1781	5115	135	3456	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	377	1308	196	310	731	396	488	385	154	104	385	202
Grp Sat Flow(s),veh/h/ln	1781	1702	1585	1781	1702	1846	1728	1777	1585	1781	1777	1585
Q Serve(g_s), s	10.0	19.3	7.9	9.7	15.3	15.3	10.0	7.4	6.6	3.8	8.0	9.6
Cycle Q Clear(g_c), s	10.0	19.3	7.9	9.7	15.3	15.3	10.0	7.4	6.6	3.8	8.0	9.6
Prop In Lane	1.00		1.00	1.00		0.07	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	367	1532	476	333	1021	554	432	832	371	329	622	277
V/C Ratio(X)	1.03	0.85	0.41	0.93	0.72	0.72	1.13	0.46	0.41	0.32	0.62	0.73
Avail Cap(c_a), veh/h	367	1532	476	333	1021	554	432	832	371	435	622	277
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	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	21.8	26.3	22.4	19.5	25.0	25.0	35.0	26.3	26.0	24.5	30.5	31.2
Incr Delay (d2), s/veh	54.2	6.3	2.6	31.9	4.3	7.7	83.7	1.8	3.4	0.5	4.6	15.4
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	10.1	8.3	3.2	6.6	6.5	7.6	9.1	3.3	2.8	1.6	3.7	4.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	76.0	32.6	25.0	51.3	29.2	32.7	118.7	28.2	29.4	25.1	35.1	46.6
LnGrp LOS	F	C	C	D	C	C	F	C	C	C	D	D
Approach Vol, veh/h		1881			1437			1027			691	
Approach Delay, s/veh		40.5			35.0			71.4			37.0	
Approach LOS		D			C			E			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	15.0	30.0	10.3	24.7	15.0	30.0	15.0	20.0				
Change Period (Y+Rc), s	5.0	6.0	5.0	6.0	5.0	6.0	5.0	6.0				
Max Green Setting (Gmax), s	10.0	24.0	10.0	14.0	10.0	24.0	10.0	14.0				
Max Q Clear Time (g_c+l1), s	11.7	21.3	5.8	9.4	12.0	17.3	12.0	11.6				
Green Ext Time (p_c), s	0.0	2.1	0.1	1.3	0.0	3.8	0.0	0.8				
Intersection Summary												
HCM 6th Ctrl Delay			44.7									
HCM 6th LOS			D									

Timings

4: Tutt Blvd & Dublin Blvd

2045 Total AM

05/24/2022

											
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  	 	 			 	
Traffic Volume (vph)	316	546	232	206	1422	484	291	106	109	243	309
Future Volume (vph)	316	546	232	206	1422	484	291	106	109	243	309
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Prot	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6	7	4		3	8	
Permitted Phases	2		2	6				4	8		8
Detector Phase	5	2	2	1	6	7	4	4	3	8	8
Switch Phase											
Minimum Initial (s)	4.0	20.0	20.0	4.0	20.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	9.0	26.0	26.0	9.0	26.0	9.0	20.0	20.0	9.0	20.0	20.0
Total Split (s)	15.0	30.0	30.0	15.0	30.0	15.0	20.0	20.0	15.0	20.0	20.0
Total Split (%)	18.8%	37.5%	37.5%	18.8%	37.5%	18.8%	25.0%	25.0%	18.8%	25.0%	25.0%
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	6.0	5.0	6.0	5.0	6.0	6.0	5.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max	None	Max	Max	None	Max	Max
Act Effect Green (s)	35.6	24.6	24.6	34.4	24.0	10.0	17.7	17.7	23.5	14.0	14.0
Actuated g/C Ratio	0.44	0.31	0.31	0.43	0.30	0.12	0.22	0.22	0.29	0.18	0.18
v/c Ratio	1.02	0.36	0.37	0.48	1.03	1.17	0.39	0.23	0.30	0.41	0.67
Control Delay	78.2	22.6	4.9	15.6	59.2	134.5	29.9	2.2	19.2	31.6	15.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	78.2	22.6	4.9	15.6	59.2	134.5	29.9	2.2	19.2	31.6	15.8
LOS	E	C	A	B	E	F	C	A	B	C	B
Approach Delay		34.9			53.9		84.1			22.2	
Approach LOS		C			D		F			C	

Intersection Summary

Cycle Length: 80

Actuated Cycle Length: 80

Offset: 11 (14%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.17

Intersection Signal Delay: 50.4









Intersection LOS: D

Intersection Capacity Utilization 85.6%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 4: Tutt Blvd & Dublin Blvd































			
Ø1	Ø2 (R)	Ø3	Ø4
15 s	30 s	15 s	20 s
			
Ø5	Ø6 (R)	Ø7	Ø8
15 s	30 s	15 s	20 s

HCM 6th Signalized Intersection Summary

4: Tutt Blvd & Dublin Blvd






























2045 Total AM

05/24/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  		 	 			 	
Traffic Volume (veh/h)	316	546	232	206	1422	78	484	291	106	109	243	309
Future Volume (veh/h)	316	546	232	206	1422	78	484	291	106	109	243	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	329	569	242	215	1481	40	504	303	110	114	253	166
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	318	1625	505	437	1533	41	432	812	362	370	622	277
Arrive On Green	0.13	0.32	0.32	0.11	0.30	0.30	0.13	0.23	0.23	0.07	0.17	0.17
Sat Flow, veh/h	1781	5106	1585	1781	5112	138	3456	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	329	569	242	215	986	535	504	303	110	114	253	166
Grp Sat Flow(s),veh/h/ln	1781	1702	1585	1781	1702	1846	1728	1777	1585	1781	1777	1585
Q Serve(g_s), s	10.0	6.8	9.8	6.5	22.8	22.8	10.0	5.8	4.6	4.1	5.1	7.7
Cycle Q Clear(g_c), s	10.0	6.8	9.8	6.5	22.8	22.8	10.0	5.8	4.6	4.1	5.1	7.7
Prop In Lane	1.00		1.00	1.00		0.07	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	318	1625	505	437	1021	554	432	812	362	370	622	277
V/C Ratio(X)	1.04	0.35	0.48	0.49	0.97	0.97	1.17	0.37	0.30	0.31	0.41	0.60
Avail Cap(c_a), veh/h	318	1625	505	469	1021	554	432	812	362	465	622	277
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	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	19.7	20.9	21.9	16.3	27.6	27.6	35.0	26.0	25.6	24.3	29.3	30.4
Incr Delay (d2), s/veh	60.1	0.6	3.2	0.9	21.0	30.7	97.5	1.3	2.2	0.5	2.0	9.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.1	2.7	4.0	2.6	11.8	14.3	9.9	2.5	1.9	1.7	2.3	3.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	79.8	21.5	25.2	17.1	48.6	58.3	132.5	27.3	27.7	24.8	31.3	39.6
LnGrp LOS	F	C	C	B	D	E	F	C	C	C	C	D
Approach Vol, veh/h		1140			1736			917			533	
Approach Delay, s/veh		39.1			47.7			85.2			32.5	
Approach LOS		D			D			F			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	13.5	31.5	10.7	24.3	15.0	30.0	15.0	20.0				
Change Period (Y+Rc), s	5.0	6.0	5.0	6.0	5.0	6.0	5.0	6.0				
Max Green Setting (Gmax), s	10.0	24.0	10.0	14.0	10.0	24.0	10.0	14.0				
Max Q Clear Time (g_c+I1), s	8.5	11.8	6.1	7.8	12.0	24.8	12.0	9.7				
Green Ext Time (p_c), s	0.1	3.8	0.1	1.2	0.0	0.0	0.0	0.9				
Intersection Summary												
HCM 6th Ctrl Delay			51.5									
HCM 6th LOS			D									

Timings 4: Tutt Blvd & Dublin Blvd

2045 Total PM
05/24/2022

											
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  	 	 			 	
Traffic Volume (vph)	379	1269	380	301	1065	473	375	289	102	374	394
Future Volume (vph)	379	1269	380	301	1065	473	375	289	102	374	394
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Prot	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6	7	4		3	8	
Permitted Phases	2		2	6				4	8		8
Detector Phase	5	2	2	1	6	7	4	4	3	8	8
Switch Phase											
Minimum Initial (s)	4.0	20.0	20.0	4.0	20.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	9.0	26.0	26.0	9.0	26.0	9.0	20.0	20.0	9.0	20.0	20.0
Total Split (s)	15.0	30.0	30.0	15.0	30.0	15.0	20.0	20.0	15.0	20.0	20.0
Total Split (%)	18.8%	37.5%	37.5%	18.8%	37.5%	18.8%	25.0%	25.0%	18.8%	25.0%	25.0%
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	6.0	5.0	6.0	5.0	6.0	6.0	5.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max	None	Max	Max	None	Max	Max
Act Effect Green (s)	35.0	24.0	24.0	35.0	24.0	10.0	17.8	17.8	23.4	14.0	14.0
Actuated g/C Ratio	0.44	0.30	0.30	0.44	0.30	0.12	0.22	0.22	0.29	0.18	0.18
v/c Ratio	1.21	0.86	0.53	0.96	0.76	1.14	0.49	0.51	0.29	0.62	0.84
Control Delay	143.1	33.4	5.9	62.2	29.1	121.2	31.1	7.4	19.2	35.6	29.4
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	143.1	33.4	5.9	62.2	29.1	121.2	31.1	7.4	19.2	35.6	29.4
LOS	F	C	A	E	C	F	C	A	B	D	C
Approach Delay		48.8			36.1		62.6			30.8	
Approach LOS		D			D		E			C	

Intersection Summary

Cycle Length: 80

Actuated Cycle Length: 80

Offset: 11 (14%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.21

Intersection Signal Delay: 45.5

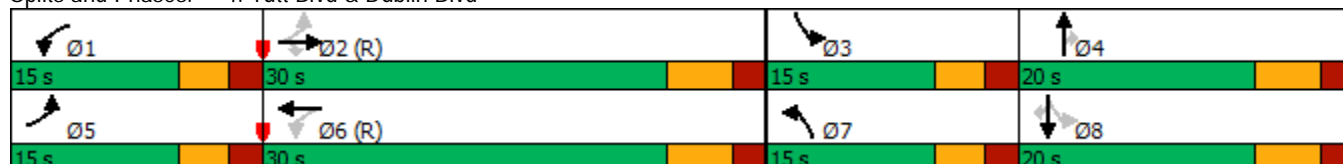
Intersection LOS: D

Intersection Capacity Utilization 85.0%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 4: Tutt Blvd & Dublin Blvd

































HCM 6th Signalized Intersection Summary

2045 Total PM

4: Tutt Blvd & Dublin Blvd

05/24/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  		 	 			 	
Traffic Volume (veh/h)	379	1269	380	301	1065	58	473	375	289	102	374	394
Future Volume (veh/h)	379	1269	380	301	1065	58	473	375	289	102	374	394
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	391	1308	196	310	1098	30	488	387	149	105	386	200
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	367	1532	476	333	1533	42	432	830	370	330	622	277
Arrive On Green	0.13	0.30	0.30	0.13	0.30	0.30	0.13	0.23	0.23	0.07	0.17	0.17
Sat Flow, veh/h	1781	5106	1585	1781	5110	140	3456	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	391	1308	196	310	731	397	488	387	149	105	386	200
Grp Sat Flow(s),veh/h/ln	1781	1702	1585	1781	1702	1845	1728	1777	1585	1781	1777	1585
Q Serve(g_s), s	10.0	19.3	7.9	9.7	15.3	15.3	10.0	7.5	6.4	3.8	8.0	9.5
Cycle Q Clear(g_c), s	10.0	19.3	7.9	9.7	15.3	15.3	10.0	7.5	6.4	3.8	8.0	9.5
Prop In Lane	1.00		1.00	1.00		0.08	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	367	1532	476	333	1021	554	432	830	370	330	622	277
V/C Ratio(X)	1.07	0.85	0.41	0.93	0.72	0.72	1.13	0.47	0.40	0.32	0.62	0.72
Avail Cap(c_a), veh/h	367	1532	476	333	1021	554	432	830	370	434	622	277
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	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	21.8	26.3	22.4	19.5	25.0	25.0	35.0	26.4	25.9	24.5	30.5	31.2
Incr Delay (d2), s/veh	65.7	6.3	2.6	31.9	4.3	7.8	83.7	1.9	3.2	0.5	4.6	15.0
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	11.3	8.3	3.2	6.6	6.5	7.6	9.1	3.3	0.3	1.6	3.7	4.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	87.4	32.6	25.0	51.3	29.3	32.7	118.7	28.2	29.2	25.1	35.2	46.1
LnGrp LOS	F	C	C	D	C	C	F	C	C	C	D	D
Approach Vol, veh/h		1895			1438			1024			691	
Approach Delay, s/veh		43.1			35.0			71.5			36.8	
Approach LOS		D			C			E			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	15.0	30.0	10.3	24.7	15.0	30.0	15.0	20.0				
Change Period (Y+Rc), s	5.0	6.0	5.0	6.0	5.0	6.0	5.0	6.0				
Max Green Setting (Gmax), s	10.0	24.0	10.0	14.0	10.0	24.0	10.0	14.0				
Max Q Clear Time (g_c+l1), s	11.7	21.3	5.8	9.5	12.0	17.3	12.0	11.5				
Green Ext Time (p_c), s	0.0	2.1	0.1	1.3	0.0	3.8	0.0	0.8				
Intersection Summary												
HCM 6th Ctrl Delay			45.7									
HCM 6th LOS			D									

APPENDIX E

Signal Timings

Intersection 556 at Woodmen Rd and Tutt Blvd - Timing table

Page 1	Phases											
	1	2	3	4	5	6	7	8	9	10	11	12
Min Green	4	20	4	4	4	20	4	4	0	0	0	0
Passage Time I	2.0	4.0	2.0	2.0	2.0	4.0	2.0	2.0	0.0	0.0	0.0	0.0
Passage Time II	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Green I	15	60	15	15	15	60	20	15	0	0	0	0
Max Green II	0	0	0	0	14	0	0	0	0	0	0	0
Yellow Clearance	3.0	5.5	3.0	5.0	3.0	5.5	3.0	5.0	0.0	0.0	0.0	0.0
Red Clearance	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	0.0	0.0	0.0
Added Initial	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Added Initial	0	0	0	0	0	0	0	0	0	0	0	0
Time Before Reduction	0	0	0	0	0	0	0	0	0	0	0	0
Cars Before Reduction	0	0	0	0	0	0	0	0	0	0	0	0
Time To Reduce	0	0	0	0	0	0	0	0	0	0	0	0
Min Passage	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Green Time	0	0	0	0	0	0	0	0	0	0	0	0
Red Revert Time	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Walk Time	0	7	0	7	0	7	0	7	0	0	0	0
Pedestrian Clearance	0	25	0	34	0	25	0	34	0	0	0	0
Handicap Walk	0	0	0	0	0	0	0	0	0	0	0	0
Handicap Ped Clearance	0	0	0	0	0	0	0	0	0	0	0	0
Woodmen Rd	X	X			X	X						
Tutt Blvd			X	X			X	X				
Compass Direction	W	E	S	N	E	W	N	S				
Through, Turn or XPed	Left,prt	Thru	Left,prt	Thru	Left,prt	Thru	Left,prt	Thru				

Intersection 556 at Woodmen Rd and Tutt Blvd - Sequence table

Page 1	Ring 1 Phases				Ring 2 Phases				Ring 3 Phases			
	1	2	3	4	5	6	7	8	9	10	11	12
State 1	Vehicle				Vehicle							
Barrier 1												
State 2		V & P				V & P						
Barrier 2	XXXXXXXXXXXXXXXXXXXXXX				XXXXXXXXXXXXXXXXXXXXXX							
State 3			Vehicle				Vehicle					
Barrier 3												
State 4				V & P				V & P				
Barrier 4	XXXXXXXXXXXXXXXXXXXXXX				XXXXXXXXXXXXXXXXXXXXXX							
State 5												
Barrier 5												
State 6												
Barrier 6												
State 7												
Barrier 7												
State 8												
Barrier 8												
State 9												
Barrier 9												
State 10												
Barrier 10												
State 11												
Barrier 11												
State 12												
Barrier 12												

Intersection 556 at Woodmen Rd and Tutt Blvd - schedule table

Event Num	Enabled	Event Type	Event Parameters		Start					Duration Minutes	Stop		Repetition		Priority
			Param 1	Param 2	Mon	Day	Hour	Min	Sec		Mon	Day	Repeat	Intervals	
1	Yes	Run Plan	Plan 1	Ofst #1	1	1	06	00	00	900	12	31	Weekly	SMTWTFS	Medium
2															
3															
4															
5															
6															
7															
8															
9															
10															
11															
12															
13															
14															
15															
16															
17															
18															
19															
20															
21															
22															
23															
24															
25															

Intersection 556 at Woodmen Rd and Tutt Blvd - Coordination table

Plan 1	111	Cycle Length	138	Phases	Splits	Alternate Mins	Alternate Passages	Alternate Maxes
	123456789012	Offset 1	132					
Coordinated Phases		Offset 2	0	1	19	0	0.0	19
	2 6	Offset 3	0	2	78	0	0.0	90
Secondary Coordinated Phases		Offset 4	0	3	17	0	0.0	17
		Relative Secondary Offset	0	4	24	0	0.0	24
		Permissive Period	Auto	5	19	0	0.0	19
Extra Time Phases		Max Cycle Addition	34	6	78	0	0.0	90
		Max Cycle Subtraction	34	7	22	0	0.0	23
Additional Max Recalls		Coord Actuated Period	0	8	19	0	0.0	17
		Top Of Cycle Green Point	End	9	0	0	0.0	0
Units	Seconds	Big Bang Preempt Recvry	No	10	0	0	0.0	0
		Big Bang Ped Recovery	No	11	0	0	0.0	0
		Min Lagging Left Split	0%	12	0	0	0.0	0
Plan 2	111	Cycle Length	0	Phases	Splits	Alternate Mins	Alternate Passages	Alternate Maxes
	123456789012	Offset 1	0					
Coordinated Phases		Offset 2	0	1	0	0	0.0	0
		Offset 3	0	2	0	0	0.0	0
Secondary Coordinated Phases		Offset 4	0	3	0	0	0.0	0
		Relative Secondary Offset	0	4	0	0	0.0	0
		Permissive Period	Auto	5	0	0	0.0	0
Extra Time Phases		Max Cycle Addition	0	6	0	0	0.0	0
		Max Cycle Subtraction	0	7	0	0	0.0	0
Additional Max Recalls		Coord Actuated Period	0	8	0	0	0.0	0
		Top Of Cycle Green Point	End	9	0	0	0.0	0
Units	Seconds	Big Bang Preempt Recvry	No	10	0	0	0.0	0
		Big Bang Ped Recovery	No	11	0	0	0.0	0
		Min Lagging Left Split	0%	12	0	0	0.0	0

Intersection 564 at Dublin Blvd and Tutt Blvd - Timing table

Page 1	Phases											
	1	2	3	4	5	6	7	8	9	10	11	12
Min Green	4	20	4	4	4	20	4	4	0	0	0	0
Passage Time I	2.0	3.0	2.0	3.0	2.0	3.0	2.0	3.0	0.0	0.0	0.0	0.0
Passage Time II	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Green I	15	30	15	20	15	30	15	20	0	0	0	0
Max Green II	0	0	0	0	0	0	0	0	0	0	0	0
Yellow Clearance	3.0	4.0	3.0	4.0	3.0	4.0	3.0	4.0	0.0	0.0	0.0	0.0
Red Clearance	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	0.0	0.0	0.0
Added Initial	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Added Initial	0	0	0	0	0	0	0	0	0	0	0	0
Time Before Reduction	0	0	0	0	0	0	0	0	0	0	0	0
Cars Before Reduction	0	0	0	0	0	0	0	0	0	0	0	0
Time To Reduce	0	0	0	0	0	0	0	0	0	0	0	0
Min Passage	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Green Time	0	0	0	0	0	0	0	0	0	0	0	0
Red Revert Time	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Walk Time	0	7	0	7	0	7	0	7	0	0	0	0
Pedestrian Clearance	0	28	0	25	0	28	0	25	0	0	0	0
Handicap Walk	0	0	0	0	0	0	0	0	0	0	0	0
Handicap Ped Clearance	0	0	0	0	0	0	0	0	0	0	0	0
Dublin Blvd	X	X			X	X						
Tutt Blvd			X	X			X	X				
Compass Direction	W	E	S	N	E	W	N	S				
Through, Turn or XPed	Left,p/p	Thru	Left,p/p	Thru	Left,p/p	Thru	Left,prt	Thru				

Intersection 564 at Dublin Blvd and Tutt Blvd - Sequence table

Page 1	Ring 1 Phases				Ring 2 Phases				Ring 3 Phases			
	1	2	3	4	5	6	7	8	9	10	11	12
State 1	Vehicle				Vehicle							
Barrier 1												
State 2		V & P				V & P						
Barrier 2	XXXXXXXXXXXXXXXXXXXX				XXXXXXXXXXXXXXXXXXXX							
State 3			Vehicle				Vehicle					
Barrier 3												
State 4				V & P				V & P				
Barrier 4	XXXXXXXXXXXXXXXXXXXX				XXXXXXXXXXXXXXXXXXXX							
State 5												
Barrier 5												
State 6												
Barrier 6												
State 7												
Barrier 7												
State 8												
Barrier 8												
State 9												
Barrier 9												
State 10												
Barrier 10												
State 11												
Barrier 11												
State 12												
Barrier 12												

Intersection 564 at Dublin Blvd and Tutt Blvd - Phases control table

Page 1	Vehicle Phases		Ped Phases
	111		111
	123456789012		123456789012
Min Recalls		Ped Recalls	
Max Recalls	2 6	Handicap Ped Recalls	
Recall If Maxed		Soft Ped Recalls	
Dual Entry	4 8	Do Not Recall Ped	2 4 6 8
Do Not Skip		Allow Walk Reduction	
Simultaneous Gap Out		Hold In Walk	
Restricted Phases		Allow Ped Re-service	
Sequential Initial Timing		Rest In Walk	No
Max Timer Starts For Call			
Reduction Starts For Call			
Red To Avoid Left Turn Trap	2 6		
Rest In Red	No		

APPENDIX F













Queues Analysis Worksheets

Queues

2025 Total AM - Improved

1: Tutt Blvd & Woodmen Rd

05/24/2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	134	1122	74	119	2196	15	172	29	43	52	49	380
v/c Ratio	0.90	0.52	0.07	0.55	0.99	0.01	0.77	0.06	0.03	0.53	0.16	0.24
Control Delay	115.8	16.7	0.7	72.9	42.4	0.0	85.8	54.0	0.0	84.9	59.8	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	115.8	16.7	0.7	72.9	42.4	0.0	85.8	54.0	0.0	84.9	59.8	0.4
Queue Length 50th (ft)	62	291	0	54	963	0	79	12	0	24	21	0
Queue Length 95th (ft)	#127	348	7	88	#1197	0	#136	28	0	#50	43	0
Internal Link Dist (ft)		600			489			715			184	
Turn Bay Length (ft)	500			250		625	300		375	200		250
Base Capacity (vph)	149	2150	1005	223	2218	1033	223	481	1583	99	307	1583
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	0.90	0.52	0.07	0.53	0.99	0.01	0.77	0.06	0.03	0.53	0.16	0.24

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.













Queue shown is maximum after two cycles.

Queues

2025 Total PM - Improved

1: Tutt Blvd & Woodmen Rd

05/24/2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	254	2157	82	47	1872	23	391	89	115	36	39	252
v/c Ratio	0.93	1.00	0.08	0.47	0.97	0.02	1.05	0.14	0.07	0.36	0.13	0.16
Control Delay	101.8	46.1	0.1	81.7	44.3	0.0	117.9	49.5	0.1	76.1	59.3	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	101.8	46.1	0.1	81.7	44.3	0.0	117.9	49.5	0.1	76.1	59.3	0.2
Queue Length 50th (ft)	119	~1076	0	21	820	0	~196	36	0	16	17	0
Queue Length 95th (ft)	#203	#1209	0	44	#1023	0	#301	62	0	36	36	0
Internal Link Dist (ft)	600				489				715		184	
Turn Bay Length (ft)	500				250		625		300		375	
Base Capacity (vph)	273	2161	1025	99	1936	952	373	635	1583	99	307	1583
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	0.93	1.00	0.08	0.47	0.97	0.02	1.05	0.14	0.07	0.36	0.13	0.16

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.

Queues

2045 Total AM

1: Tutt Blvd & Woodmen Rd

05/24/2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	180	1510	98	160	2958	21	226	39	56	70	67	512
v/c Ratio	0.90	0.51	0.10	0.62	0.96	0.02	0.91	0.08	0.04	0.56	0.22	0.32
Control Delay	106.9	17.5	1.9	72.8	35.5	0.1	101.2	54.2	0.0	83.0	60.6	0.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	106.9	17.5	1.9	72.8	35.5	0.1	101.2	54.2	0.0	83.0	60.6	0.5
Queue Length 50th (ft)	84	281	0	72	872	0	105	16	0	32	30	0
Queue Length 95th (ft)	#157	320	19	111	960	0	#185	35	0	#60	55	0
Internal Link Dist (ft)	600		1357				715				184	
Turn Bay Length (ft)	500			250		625		300		375		200
Base Capacity (vph)	199	2989	976	273	3076	1001	248	486	1583	124	307	1583
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	0.90	0.51	0.10	0.59	0.96	0.02	0.91	0.08	0.04	0.56	0.22	0.32

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.













Queue shown is maximum after two cycles.

Queues

2045 Total PM

1: Tutt Blvd & Woodmen Rd

05/24/2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	342	2904	104	61	2522	30	525	120	153	49	52	340
v/c Ratio	0.98	0.96	0.10	0.62	0.97	0.03	1.17	0.19	0.10	0.33	0.18	0.21
Control Delay	105.4	35.9	0.7	91.6	44.9	0.1	150.7	49.8	0.1	70.4	61.1	0.3
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	105.4	35.9	0.7	91.6	44.9	0.1	150.7	49.8	0.1	70.4	61.1	0.3
Queue Length 50th (ft)	160	887	0	28	783	0	-289	49	0	22	23	0
Queue Length 95th (ft)	#261	#1048	8	#61	#921	0	#405	80	0	44	46	0
Internal Link Dist (ft)	600			1357			715			184		
Turn Bay Length (ft)	500			250		625	300		375	200		250
Base Capacity (vph)	348	3032	1004	99	2597	901	447	645	1583	149	282	1583
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	0.96	0.10	0.62	0.97	0.03	1.17	0.19	0.10	0.33	0.18	0.21

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.

Queues

2025 Total AM

4: Tutt Blvd & Dublin Blvd

05/24/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	246	423	180	159	1161	375	225	81	84	189	244
v/c Ratio	0.78	0.26	0.29	0.33	0.76	0.87	0.28	0.16	0.22	0.31	0.51
Control Delay	33.8	21.3	5.0	13.3	28.8	57.2	28.3	0.7	18.3	30.3	8.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.8	21.3	5.0	13.3	28.8	57.2	28.3	0.7	18.3	30.3	8.5
Queue Length 50th (ft)	67	58	0	41	189	96	51	0	27	43	0
Queue Length 95th (ft)	#179	83	43	75	239	#171	85	0	56	73	59
Internal Link Dist (ft)		233			338		358			329	
Turn Bay Length (ft)	150			225		250		350	250		300
Base Capacity (vph)	321	1599	621	512	1535	429	806	497	434	619	478
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	0.77	0.26	0.29	0.31	0.76	0.87	0.28	0.16	0.19	0.31	0.51

Intersection Summary

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

Queues

2025 Total PM

4: Tutt Blvd & Dublin Blvd

05/24/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	294	971	291	231	860	362	288	221	78	287	304
v/c Ratio	0.83	0.63	0.43	0.72	0.57	0.84	0.36	0.41	0.21	0.46	0.61
Control Delay	34.7	26.2	5.0	27.0	25.0	53.7	28.9	7.1	18.2	32.4	11.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.7	26.2	5.0	27.0	25.0	53.7	28.9	7.1	18.2	32.4	11.9
Queue Length 50th (ft)	83	152	0	63	130	92	66	0	25	68	15
Queue Length 95th (ft)	#200	196	53	#143	169	#163	106	57	53	106	88
Internal Link Dist (ft)		233			338		358			329	
Turn Bay Length (ft)	150			225		250		350	250		300
Base Capacity (vph)	356	1548	684	331	1521	429	811	533	422	619	498
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	0.83	0.63	0.43	0.70	0.57	0.84	0.36	0.41	0.18	0.46	0.61

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Queues

2025 Total AM - Optimized

4: Tutt Blvd & Dublin Blvd

05/24/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	246	423	180	159	1161	375	225	81	84	189	244
v/c Ratio	0.70	0.26	0.29	0.34	0.81	0.87	0.28	0.16	0.22	0.31	0.51
Control Delay	25.5	21.3	5.0	13.7	32.3	57.2	28.3	0.7	18.3	30.3	8.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.5	21.3	5.0	13.7	32.3	57.2	28.3	0.7	18.3	30.3	8.5
Queue Length 50th (ft)	67	58	0	41	197	96	51	0	27	43	0
Queue Length 95th (ft)	135	83	43	75	#276	#171	85	0	56	73	59
Internal Link Dist (ft)		233			338		358			329	
Turn Bay Length (ft)	150			225		250		350	250		300
Base Capacity (vph)	386	1599	621	495	1441	429	806	497	434	619	478
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	0.64	0.26	0.29	0.32	0.81	0.87	0.28	0.16	0.19	0.31	0.51

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Queues

2025 Total PM - Optimized

4: Tutt Blvd & Dublin Blvd

05/24/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	294	971	291	231	860	362	288	221	78	287	304
v/c Ratio	0.71	0.62	0.42	0.64	0.59	1.06	0.39	0.44	0.22	0.46	0.58
Control Delay	22.8	26.1	5.2	21.4	26.8	101.4	30.3	7.5	19.6	32.4	8.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	22.8	26.1	5.2	21.4	26.8	101.4	30.3	7.5	19.6	32.4	8.7
Queue Length 50th (ft)	78	150	0	59	132	~103	68	0	26	68	0
Queue Length 95th (ft)	150	204	55	115	183	#187	106	57	55	106	65
Internal Link Dist (ft)		233			338		358			329	
Turn Bay Length (ft)	150			225		250		350	250		300
Base Capacity (vph)	474	1575	691	424	1454	343	745	508	377	619	527
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	0.62	0.42	0.54	0.59	1.06	0.39	0.44	0.21	0.46	0.58

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.

Queues

2045 Total AM

4: Tutt Blvd & Dublin Blvd

05/24/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	329	569	242	215	1562	504	303	110	114	253	322
v/c Ratio	1.02	0.36	0.37	0.48	1.03	1.17	0.39	0.23	0.30	0.41	0.67
Control Delay	78.2	22.6	4.9	15.6	59.2	134.5	29.9	2.2	19.2	31.6	15.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	78.2	22.6	4.9	15.6	59.2	134.5	29.9	2.2	19.2	31.6	15.8
Queue Length 50th (ft)	~124	81	0	58	~308	~157	71	0	37	60	32
Queue Length 95th (ft)	#284	111	50	99	#402	#251	112	11	72	95	115
Internal Link Dist (ft)		233			338		358			329	
Turn Bay Length (ft)	150			225		250		350	250		300
Base Capacity (vph)	321	1562	654	461	1521	429	782	487	419	619	482
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	1.02	0.36	0.37	0.47	1.03	1.17	0.39	0.23	0.27	0.41	0.67

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.

Queues

2045 Total PM

4: Tutt Blvd & Dublin Blvd

05/24/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	391	1308	392	310	1158	488	387	298	105	386	406
v/c Ratio	1.21	0.86	0.53	0.96	0.76	1.14	0.49	0.51	0.29	0.62	0.84
Control Delay	143.1	33.4	5.9	62.2	29.1	121.2	31.1	7.4	19.2	35.6	29.4
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	143.1	33.4	5.9	62.2	29.1	121.2	31.1	7.4	19.2	35.6	29.4
Queue Length 50th (ft)	~188	224	5	97	189	~148	93	0	34	95	72
Queue Length 95th (ft)	#358	#283	67	#257	239	#241	141	65	67	140	#226
Internal Link Dist (ft)		233			338		358			329	
Turn Bay Length (ft)	150			225		250		350	250		300
Base Capacity (vph)	322	1525	739	322	1521	429	788	584	403	619	485
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	1.21	0.86	0.53	0.96	0.76	1.14	0.49	0.51	0.26	0.62	0.84

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.

APPENDIX G

Conceptual Site Plan

STONE MESA FLATS
7070 TUTT BLVD., COLORADO SPRINGS, COLORADO
NORTHWEST CORNER OF STONE MESA PT. AND TUTT BLVD.
DEVELOPMENT PLAN
TUTT & STONE MESA SUBDIVISION

SITUATED IN A PORTION OF THE NORTHWEST QUARTER OF SECTION 7, TOWNSHIP 13 SOUTH, RANGE 65 WEST
OF THE SIXTH P.M., CITY OF COLORADO SPRINGS, COUNTY OF EL PASO, STATE OF COLORADO

LEGEND

	PROPERTY LINE
	PROPOSED EASEMENT
	EXISTING EASEMENT
	SETBACK
	PROPOSED RETAINING WALL
	PROPOSED FENCE
	PROPOSED CURB AND GUTTER
	LANDSCAPE
	CONCRETE SIDEWALK
	ASPHALT PAVEMENT
	UNIT QUANTITY

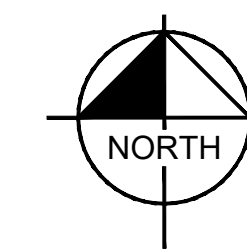
KEYNOTES

- 1 PROPOSED MAINTENANCE ACCESS ROAD
- 2 PROPOSED 5' WIDE DETACHED CONCRETE SIDEWALK PER COLORADO SPRING STANDARD DRAWING D-2
- 3 PROPOSED SITE LIGHT
- 4 PROPOSED COVERED PARKING
- 5 PROPOSED OUTDOOR POOL
- 6 PROPOSED TYPE 2 CURB AND GUTTER PER COLORADO SPRINGS STANDARD DRAWING 6B
- 7 PROPOSED TYPE 4 CURB AND GUTTER PER COLORADO SPRINGS STANDARD DRAWING 6B
- 8 PROPOSED LANDSCAPE AREA, REFERENCE LANDSCAPE PLANS (9-11)
- 9 EXISTING CURB AND GUTTER TO REMAIN
- 10 PROPOSED FIRE HYDRANT
- 11 PROPOSED 4" WIDE DIAGONAL PAVEMENT MARKINGS AT 36" ON CENTER (TYP.)
- 12 PROPOSED 4" WIDE PARKING STRIPE (TYP.)
- 13 PROPOSED TRANSFORMER LOCATION
- 14 PROPOSED BOLLARD
- 15 PROPOSED CURB RAMP PER COLORADO SPRINGS STANDARD DRAWING D-8B
- 16 PROPOSED R1-1 STOP SIGN (REF. DETAIL ON SHEET 4)
- 17 PROPOSED RETAINING WALL
- 18 PROPOSED WATER QUALITY POND
- 19 PROPOSED FIRE LANE NO PARKING SIGN (REF. DETAIL ON SHEET 4)
- 20 PROPOSED CONCRETE TRICKLE CHANNEL (WIDTH PER PLAN)
- 21 PROPOSED DUMPSTER

GENERAL NOTES

1. THE DETAILS OF THE SIGNING AND STRIPPING WILL BE ACCESSED DURING THE CONSTRUCTION PLAN REVIEW.

CITY APPROVAL:



SITE PLAN
SHEET 4 OF XX

PROJECT NAME - CITY FILE NO. AR DP XX-XXXXX

Kimley»Horn

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2 NORTH NEVADA AVENUE, SUITE 300
COLORADO SPRINGS, COLORADO 80903 (719) 453-0180

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