TRAFFIC IMPACT STUDY

AdventHealth Louisville

City of Louisville, Colorado

Prepared for:

SmithGroup

Kimley»Horn

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

AdventHealth Louisville

City of Louisville, Colorado

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November 2025

TABLE OF CONTENTS

Appendices

LIST OF TABLES

LIST OF FIGURES

1.0 EXECUTIVE SUMMARY

AdventHealth Louisville is proposed to be located on the northwest corner of the Via Varra & Northwest Parkway intersection in Louisville, Colorado. At full buildout, the project is proposed to include a hospital and additional medical office buildings totaling approximately 800,000 square feet. By approximately the 2030 horizon, Phase 1 of the hospital and medical office buildings is expected to be complete. It is understood that Phase 1 will include an approximate 371,600 square-foot hospital (with 153 beds, 30 of which will be shelled for later use) and approximately 62,000 square feet of medical office space. To be conservative, Phase 1 traffic analysis was conducted assuming up to 200 beds would be available in the hospital while up to 80,000 square feet of medical office building uses was also assumed. For purposes of this study, full buildout of this site is expected to be complete by approximately 2040. At full buildout, it is understood the site will provide an approximately 639,600 square-foot hospital with a total of 300 beds while medical office buildings onsite are expected to total approximately 160,000 square feet. Based on coordination with the City of Louisville staff, the initial 2030 short-term Phase 1 horizon was analyzed, while the 2040 buildout horizon was also analyzed. At the request of City staff, the major intersections in the study area were also analyzed for the twenty-year 2045 long-term traffic conditions.

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 existing and future intersections were incorporated into this traffic study based on the City of Louisville, Colorado requested scope:

- Campus Drive & Sorrel Avenue (#1) – Future Intersection
- Campus Drive & 96th Street (#2)
- 96th Street/Via Varra & Northwest Parkway (#3)
- Rockcress Drive & Sorrel Avenue (#4) – Future Intersection
- Rockcress Drive/Via Varra & Northwest Parkway (#5)

In addition, the proposed full movement access on the north side of Rockcress Drive and the proposed three full movement accesses on the east side of Sorrel Avenue were also evaluated. The access along Rockcress Drive is anticipated to be located approximately 775 feet to the west

of the Rockcress Drive/Via Varra & Northwest Parkway (#5) intersection, measured center to center; a future south leg at this location is also proposed when development to the south of Rockcress Drive occurs. The two northernmost accesses on Sorrel Avenue are anticipated to align with two future accesses on the west side of Sorrel Avenue, creating two four-leg intersections. The third and southernmost access is expected to operate as a 'T'-intersection.

Regional access to the site will be provided by US-36, US-287, and Northwest Parkway, while primary access to the site will be provided by US-36, 96th Street, and Northwest Parkway. Direct access to the site will be provided by one full movement access on the north side of Rockcress Parkway to the west of Northwest Parkway, and three full movement accesses along the east side of Sorrel Avenue.

In the 2030 Phase 1 buildout, AdventHealth Louisville is expected to generate approximately 6,268 weekday daily trips, with 474 of these trips occurring during the morning peak hour and 557 of these trips occurring during the afternoon peak hour. With full buildout of the site by 2040, the project is anticipated to generate 10,632 weekday daily trips, with 772 of these trips occurring during the morning peak hour and 970 of these trips occurring during the afternoon peak hour.

Based on the analysis presented in this report, Kimley-Horn believes AdventHealth Louisville will be successfully incorporated into the existing and future roadway network. There is an existing AdventHealth hospital located at the intersection of Campus Drive and 88th Street approximately 1.25 miles to the west of this proposed site. This existing site includes approximately 400,000 square feet of hospital/medical office building uses and is approved with an expansion of an additional 350,000 square feet to include up to 750,000 square feet at full buildout. The currently proposed AdventHealth site within the Redtail Ridge development area is expected to include up to 799,600 square feet of hospital/medical office building uses. As such, this increase of 49,600 square feet of additional uses with relocation of the existing hospital with approved expansion to the new site is expected to result in approximately 658 additional weekday daily trips, with 47 more trips during the morning peak hour and 61 more trips during the afternoon peak hour compared to the traffic the existing site could generate. This results in approximately one additional vehicle every 75 seconds during the morning peak hour and one additional vehicle every minute (60 seconds) during the afternoon peak hour on the surrounding street network compared to the existing project site. This study assessed the additional improvements that could

be needed due to the additional square footage of this proposed site, and any vehicle rerouting that could occur with the site being located further to the east. Analysis of the existing street network, the proposed project development, and expected traffic volumes resulted in the following recommendations:

2030 Recommendations

All offsite transportation recommendations identified as being needed within this horizon are consistent with the findings of the master traffic study. Those improvements are already being proposed and constructed to serve the entire development area. As such, the following outlines the recommendations found to be needed by the 2030 horizon:

- The Campus Drive & Sorrel Avenue (#1) intersection is anticipated to be constructed prior to AdventHealth Louisville construction. Based on currently proposed construction plans, it will be a 'T'-roundabout controlled intersection, with eastbound Campus Drive operating with a shared through/right turn lane, westbound Campus Drive providing separate left and through lanes, and the northbound Sorrel Avenue approach providing one lane for shared left/right turning movements. R1-2 "YIELD" signs should be posted on all three approaches to the roundabout.
- The Campus Drive & 96th Street (#2) intersection is anticipated to become a signalized 'T'-intersection with full movements allowed by the 2030 horizon prior to AdventHealth construction. For purposes of this study, the eastbound Campus Drive approach was based on the proposed construction plans, which would have dual continuous eastbound left turn lanes and a separate right turn lane approximately 500 feet in length. The northbound 96th Street approach was conservatively assumed to provide a single 200-foot left turn lane and two through lanes in this horizon. However, at full buildout based on construction plans, it is anticipated to provide dual left turn lanes and three through lanes northbound. The southbound 96th Street approach should provide two through lanes and a 200-foot right turn lane.
- The 96th Street/Via Varra & Northwest Parkway (#3) intersection may require extension of the eastbound right turn lane from 375 feet to approximately 475 feet by this horizon to meet expected vehicle queues. However, if not improved, it is believed any additional vehicles can safely queue in the southernmost eastbound through lane if these queues are experienced.
- The future Rockcress Drive & Sorrel Avenue (#4) intersection is proposed to be constructed as a four-leg roundabout prior to AdventHealth construction. The eastbound, northbound, and

southbound approaches are all expected to provide one approach lane for shared left/through/right turning movements, while the westbound approach would provide a shared left/through lane and a separate right turn lane. Each approach should provide R1-2 “YIELD” signs on approach to the intersection.

- The Rockcress Drive/Via Varra & Northwest Parkway (#5) intersection is expected to be improved on the eastbound approach to the intersection with dual left turn lanes, one of which would provide 400 feet in length while the other would be a continuous turn lane. These improvements are based on the currently proposed improvement plans. Although it is understood that three southbound through lanes are eventually proposed at this intersection, it was conservatively analyzed with the existing two southbound through lanes during this horizon.

The following recommendations are specific to accesses proposed for Phase 1 of the AdventHealth Louisville Hospital Campus to be constructed by the development:

- Two full movement accesses are proposed along the east side of Sorrel Avenue that will align with two proposed accesses on the west side of Sorrel Avenue. R1-1 “STOP” signs are proposed on the eastbound and westbound approaches to Sorrel Avenue at both accesses. These accesses should operate well with one approach lane for shared left/through/right turning movements. The northbound and southbound approaches of Sorrel Avenue to both accesses are recommended to provide 150-foot left turn lanes and shared through/right turn lanes.
- A third full movement access along the east side of Sorrel Avenue is also proposed, which is anticipated to be constructed as a ‘T’-intersection. An R1-1 “STOP” sign should be constructed on the westbound approach for vehicles exiting the site. A southbound left turn lane 150 feet in length should also be provided.
- The primary access into the proposed site is anticipated to be along Rockcress Drive, approximately 775 feet to the west of Northwest Parkway, measured center to center. This intersection is anticipated to operate well under minor street stop control through the 2030 horizon with Phase 1 construction of AdventHealth Louisville. The Rockcress Access (#8) is recommended to provide a 150-foot left turn lane, one through lane, and one shared through/right turn lane along both eastbound and westbound Rockcress Drive. The northbound approach to the intersection is anticipated to operate well with one lane for shared left/through/right turning movements while the southbound approach exiting the hospital

should provide a 200-foot left turn lane and a separate through/right lane. Of note, dual southbound left turn lanes are recommended at this access at full buildout and as such, it is recommended that pavement width be provided for the future second left turn lane, but that it be striped out with chevron striping to allow only one southbound left turn lane until full buildout of the hospital site. During this horizon, R1-1 "STOP" signs should be posted on the northbound and southbound approaches.

2040 & 2045 Recommendations

The offsite transportation recommendations identified in the 2040 and 2045 horizons are also consistent with the findings of the master traffic study. All of the improvements identified herein are anticipated to result in the study intersections and surrounding street network operating acceptably in both the 2040 and 2045 horizons. The improvements already being proposed and constructed to serve the entire development area as follows:

- By the 2040 horizon, it was assumed that the Campus Drive & 96th Street (#2) intersection would provide dual northbound left turn lanes 200 feet in length while a third northbound through lane would also be provided. This third northbound through lane would provide the third required receiving lane for the proposed triple northbound left turn lanes at Northwest Parkway just to the southeast.
- The 96th Street/Via Varra & Northwest Parkway (#3) intersection is anticipated to provide triple northbound left turn lanes on Northwest Parkway and triple eastbound left turn lanes on 96th Street based on proposed improvement plans. For purposes of this study, the third northbound left turn lane was assumed to provide 600 feet in length while the third eastbound left turn was assumed to provide 250 feet in length. It should be noted the third eastbound left turn lane will require three receiving lanes on Northwest Parkway to the north of this intersection.
- The Rockcress Parkway/Via Varra & Northwest Parkway (#5) intersection should provide three southbound through lanes by this horizon.

The following identified improvements are recommended in association with development of full buildout of the AdventHealth Louisville hospital and medical campus. These improvements are in addition to improvements already being planned and constructed.

- To meet expected vehicle queues, the inner northbound left turn lane at the Rockcress Parkway/Via Varra & Northwest Parkway (#5) intersection may need to be extended from 250

feet to 375 feet to meet expected vehicle queues. It is believed this northbound left turn lane extension can be accomplished with minor median reconstruction.

- With full buildout of the AdventHealth site, the Rockcress Access (#8) is recommended to be signalized and is expected to meet warrants for signalization. When signalized, the southbound approach exiting the hospital is recommended to be improved to provide dual left turn lanes 200 feet in length, with the westernmost left turn lane also providing through movement, while a separate right turn lane should be provided.

General Recommendations

- Any onsite or offsite improvements should be incorporated into the Civil Drawings and conform to standards of the City of Louisville and the Manual on Uniform Traffic Control Devices (MUTCD) – 11th Edition, 2023.

2.0 INTRODUCTION

Kimley-Horn has prepared this report to document the results of a Traffic Impact Study for AdventHealth Louisville proposed to be located on the northwest corner of the Via Varra and Northwest Parkway intersection in the City of Louisville, Colorado. A vicinity map illustrating the project development location is shown in **Figure 1**. At full buildout, the project is proposed to include a hospital and additional medical office buildings totaling approximately 800,000 square feet. By approximately the 2030 horizon, Phase 1 of the hospital and medical office buildings is expected to be complete. It is understood that Phase 1 will include an approximate 371,600 square-foot hospital (with 153 beds, 30 of which will be shelled for later use) and approximately 62,000 square feet of medical office space. To be conservative, Phase 1 traffic analysis was conducted assuming up to 200 beds would be available in the hospital while up to 80,000 square feet of medical office building uses was also assumed. For purposes of this study, full buildout of this site is expected to be complete by approximately 2040. At full buildout, it is understood the site will provide an approximately 639,600 square-foot hospital with a total of 300 beds while medical office buildings onsite are expected to total approximately 160,000 square feet. A conceptual plan for the site is attached in **Appendix A**. Based on coordination with the City of Louisville staff, the initial 2030 short-term Phase 1 horizon was analyzed, while the 2040 buildout horizon was also analyzed. At the request of City staff, the major intersections in the study area were also analyzed for the twenty-year 2045 long-term traffic conditions.

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In addition, the proposed full movement access on the north side of Rockcress Drive and the proposed three full movement accesses on the east side of Sorrel Avenue were also evaluated. The access along Rockcress Drive is anticipated to be located approximately 775 feet to the west of the Rockcress Drive/Via Varra & Northwest Parkway (#5) intersection, measured center to center; a future south leg at this location is also proposed when development to the south of Rockcress Drive occurs. The two northernmost accesses on Sorrel Avenue are anticipated to align with two future accesses on the west side of Sorrel Avenue, creating two four-leg intersections. The third and southernmost access is expected to operate as a 'T'-intersection.

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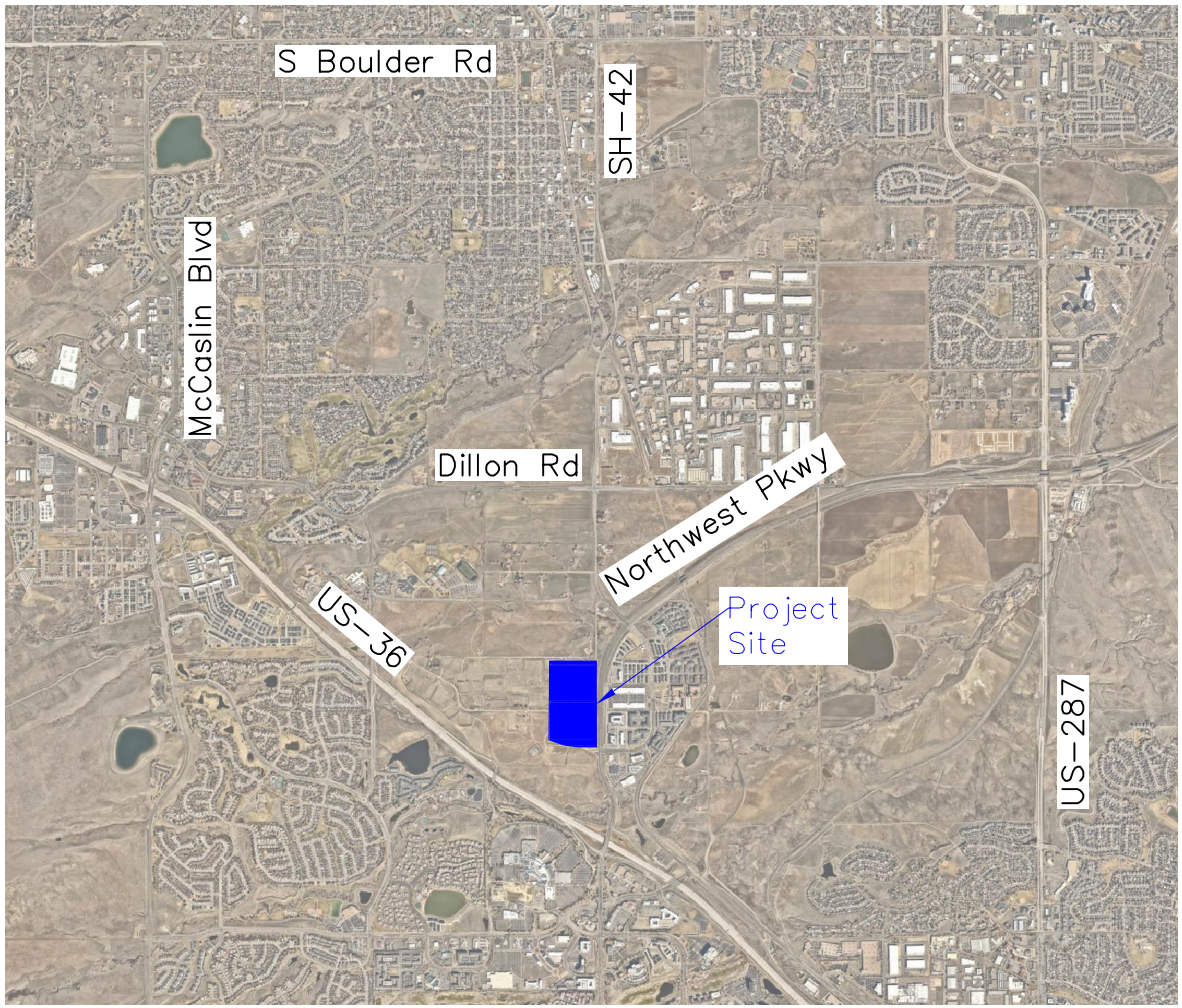


FIGURE 1
AdventHealth Louisville
Louisville, Colorado
Vicinity Map

3.1 Existing Study Area

The existing site is comprised of vacant land. The site is part of a larger future development known as Redtail Ridge, which is expected to include several other uses, including industrial/manufacturing, general office space, research/development buildings, and some local retail uses as well. The North Metro Fire Rescue Station 67 is located just to the north of the project site. The broader vicinity is generally comprised of additional vacant land, with Monarch High School to the northwest, and some additional retail/residential uses to the east and south of the site.

3.2 Existing and Proposed Roadway Network

Northwest Parkway is a divided highway that extends in the north/south direction adjacent to the study area and provides two continuous through lanes in each direction with acceleration and deceleration lanes provided at the intersections with 96th Street/Via Varra to the north and Via Varra to the south. The posted speed limit in this area is 45 miles per hour.

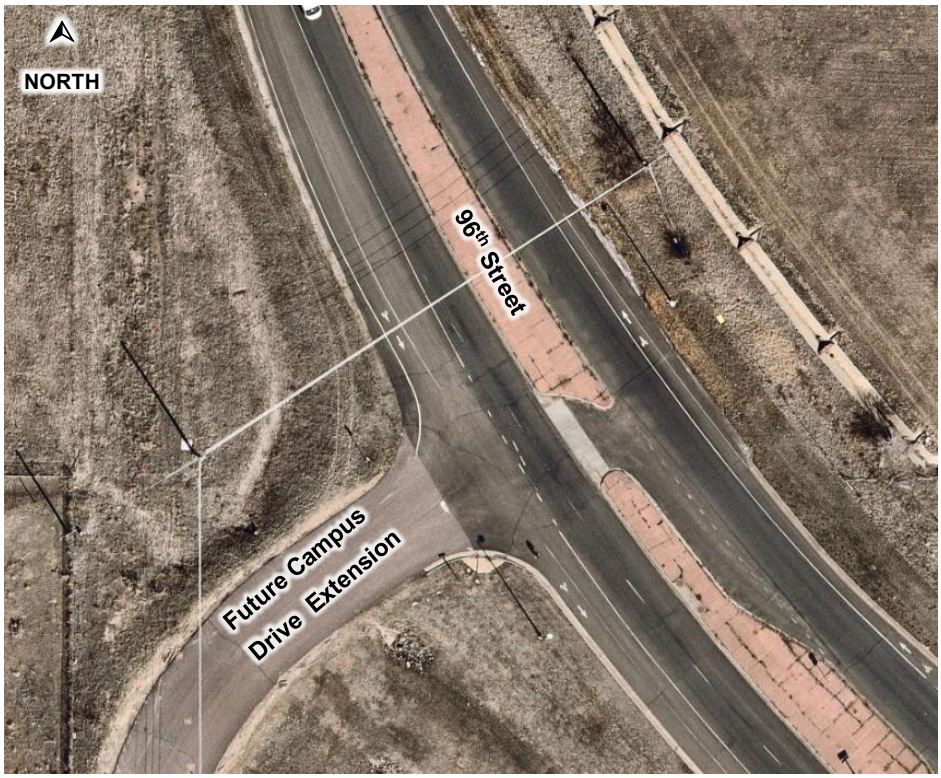
96th Street generally exists in the north/south direction, but it connects to Northwest Parkway with vehicles traveling eastbound/westbound. Two through lanes are provided in each direction nearest to the study area, which soon reduces to one through lane in each direction further to the north. The posted speed limit is 40 miles per hour within the study area. Via Varra loops from the intersection of Northwest Parkway and 96th Street/Via Varra and again connects to Northwest Parkway approximately 0.60 miles further to the south. Two through lanes are provided in each direction and the posted speed limit is 35 miles per hour.

Sorrel Avenue is proposed to be a north/south roadway with one through lane in each direction, approximately 1,150 feet to the west of Northwest Parkway. Rockcress Drive is proposed to be the west leg of the Northwest Parkway & south Via Varra (#5) intersection. Two through lanes in each direction along Rockcress Drive are anticipated to be provided between Sorrel Avenue and Northwest Parkway, and one through lane in each direction to the west of Sorrel Avenue.

Campus Drive is proposed to exist along the northern side of the project, traveling in the east/west direction. It is anticipated that two through lanes will exist to the east of Sorrel Avenue within the

study area, while just to the west of Sorrel Avenue one lane in each direction will be provided. A roundabout is proposed to be constructed at the future intersections of Campus Drive & Sorrel Avenue (#1) as well as at Rockcress Drive & Sorrel Avenue (#4). Based on current project understanding, the initial phases of other Redtail Ridge development will be constructed prior to Phase 1 of AdventHealth Louisville development. As such, for purposes of this study it is assumed that Campus Drive, Rockcress Drive, and Sorrel Avenue will be constructed prior to the 2030 short-term horizon.

The existing 'T'-intersection just to the north of the North Metro Fire Rescue Station 67 is a ¾-movement intersection. This location is proposed to become the connection point for the Campus Drive extension, which is anticipated to be completed prior to Phase 1 of AdventHealth development. When this extension is complete, it is understood this 'T'-intersection will become a full movement signalized intersection. The existing northbound 96th Street approach provides a left turn lane and one through lane while the southbound 96th Street approach provides a shared through/right turn lane. The existing minor street approach is restricted to right-out only movements. An aerial photo of the existing intersection configuration is provided below.



Future Campus Drive & 96th Street (#1)

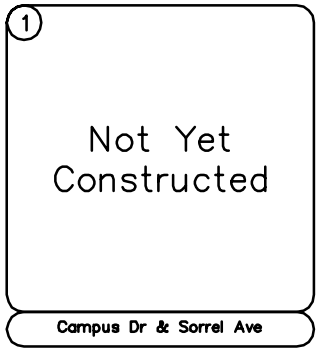
The existing signalized intersection of 96th Street/Via Varra & Northwest Parkway (#2) operates with protected-only left turn phasing on all four approaches to the intersection. Each of the four approaches provide dual left turn lanes, two through lanes, and a right turn lane, with the right turning movements operating with free turning movement in channelized right turn lanes. For purposes of this study, Northwest Parkway was identified to be the northbound/southbound approach to the intersection while 96th Street is the eastbound approach and Via Varra is the westbound approach. An aerial photo of the existing intersection configuration is provided below.

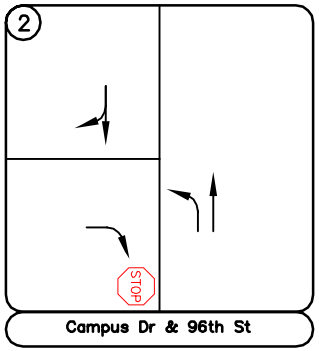
96th Street/Via Varra & Northwest Parkway (#2)

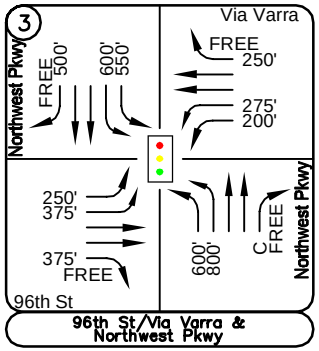
The Via Varra & Northwest Parkway (#5) intersection is signalized and operates with protected-only left turn phasing on all four approaches to the intersection. The northbound and southbound approaches to the intersection provide dual left turn lanes, two through lanes, and a right turn lane. The southbound right turning movement is channelized and operates with yield control. The eastbound approach operates with dual left turn lanes, one through lane, and a channelized right turn lane—that opens from the eastbound through lane just prior to the intersection—operates with free movement. The westbound approach provides dual left turn lanes, one through lane, and a shared through/right turn lane. An aerial photo of the existing intersection configuration is below.

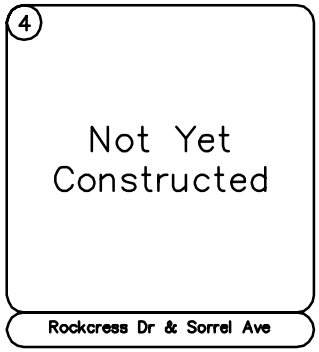
Via Varra & Northwest Parkway (#3)

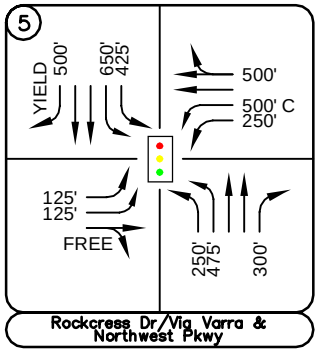
The intersection lane configuration and control for the existing study area intersections are shown in **Figure 2**.

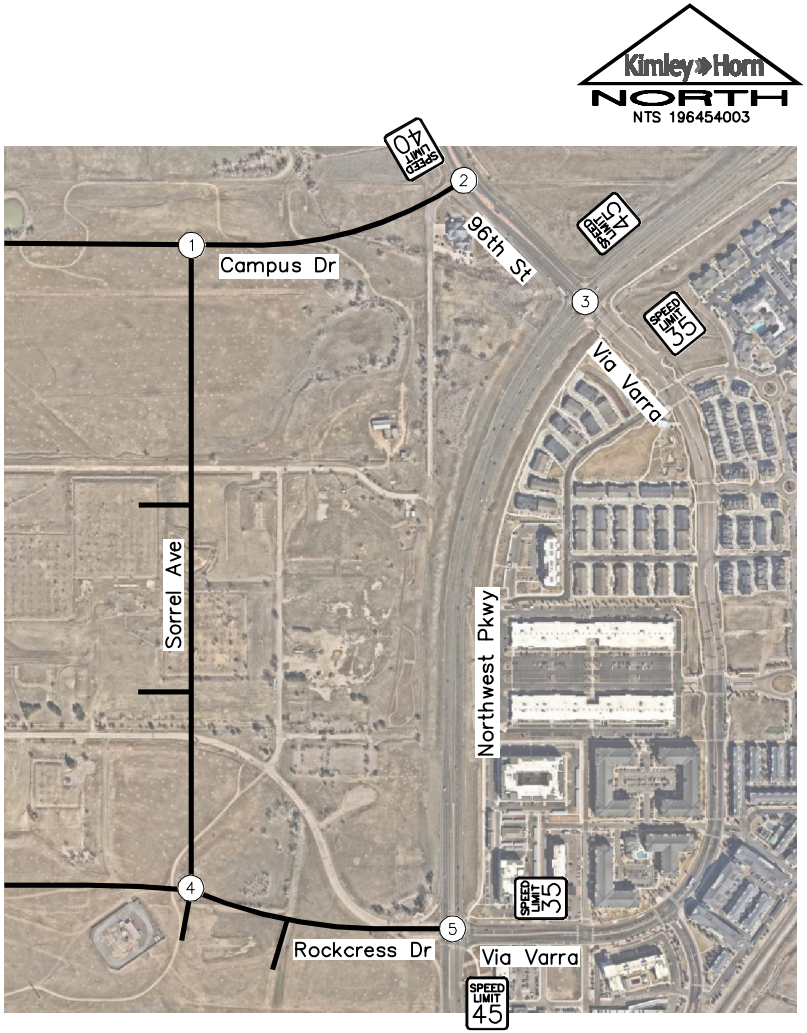












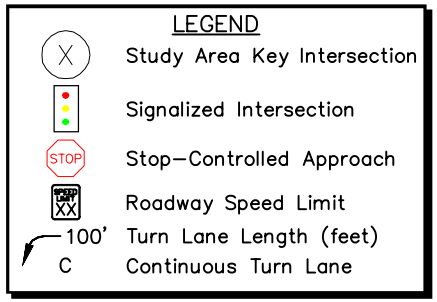


FIGURE 2
AdventHealth Louisville
Louisville, Colorado
Existing Geometry and Control

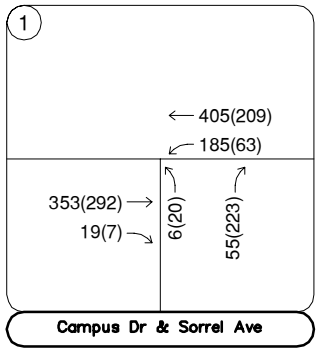
Kimley»Horn

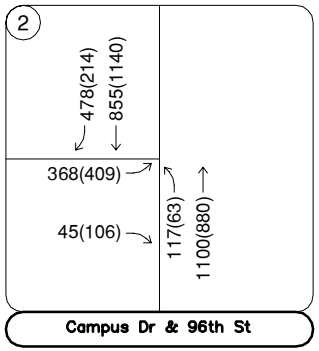
3.3 Future Traffic Volumes and Unspecified Development Traffic Growth

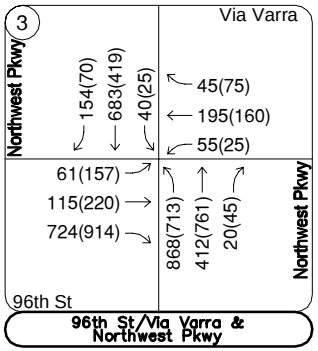
Future projected traffic volumes used in this study were based on the Redtail Ridge Traffic and Mobility Study completed by Fox Tuttle Transportation Group in July 2024. The Redtail Ridge study serves as a master study that analyzed full buildout of the entire Redtail Ridge development area, which includes additional development nearby the hospital, such as additional office uses, industrial/manufacturing buildings, research/development buildings, and some general retail uses. The master study included the entire AdventHealth parcel, which also assumed a hospital land use with adjoining medical office buildings; the hospital was assumed to house 160 beds while the medical office buildings were assumed to comprise approximately 150,000 square feet.

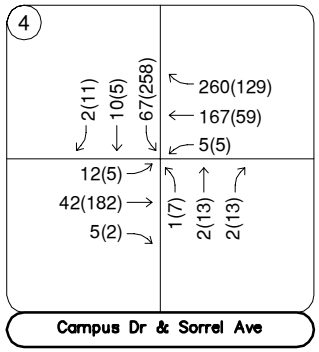
The Redtail Ridge master traffic study analyzed a 2025 short-term buildout year for some developments, with additional land uses constructed by a 2030 mid-year horizon—including full buildout of the hospital and medical office buildings—and a 2040 full buildout horizon. The 2030 and 2040 total traffic volumes from the Redtail Ridge study were used as a basis to generate traffic volumes in this study. However, because the currently proposed land use on the AdventHealth parcel is anticipated to generate more traffic than the originally studied intensities, this AdventHealth traffic study removed the traffic originally projected to be generated by this site to generate 2030 and 2040 background traffic volumes to represent the expected traffic volumes in the area if the hospital/medical office building construction did not occur. Applicable documents from the Fox Tuttle study are included in **Appendix B**.

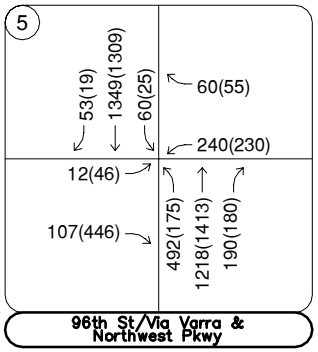
Based on communication with City staff, a twenty-year 2045 long-term horizon was also analyzed for the major external intersections, including Campus Drive & 96th Street (#1), 96th Street/Via Varra & Northwest Parkway (#2), and Rockcress Drive/Via Varra & Northwest Parkway (#3). To develop traffic projections for these intersections, the 2040 existing traffic volumes were grown by an annual growth rate of 0.50 percent per year to account for any additional future development traffic in the area. Of note, traffic volumes entering/exiting the east Via Varra legs of the Northwest Parkway intersections (#2 and #3) were not grown further, as this area is expected to be fully built out by the 2040 horizon. The calculated background traffic volumes for 2030, 2040, and 2045 are shown in **Figure 3**, **Figure 4,** and **Figure 5**, respectively.

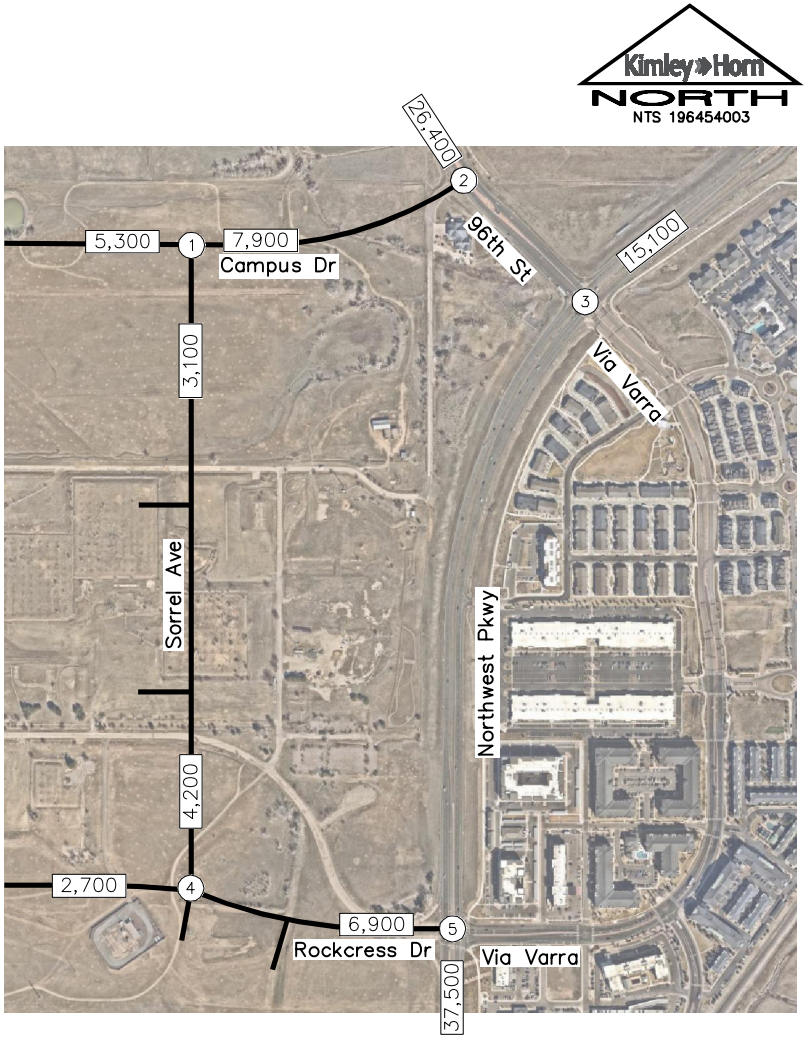












LEGEND

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

FIGURE 3
AdventHealth Louisville
Louisville, Colorado
2030 Background Traffic Volumes

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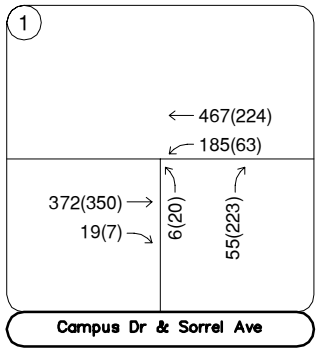
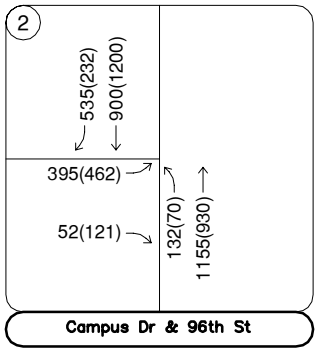
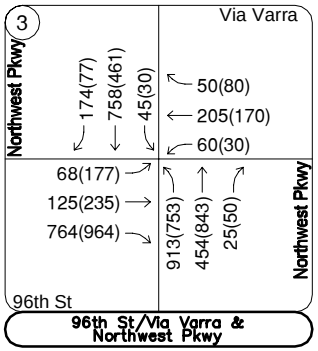
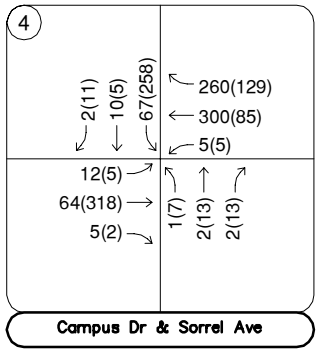
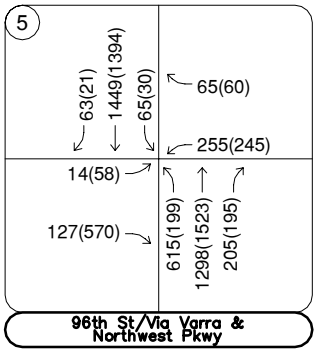
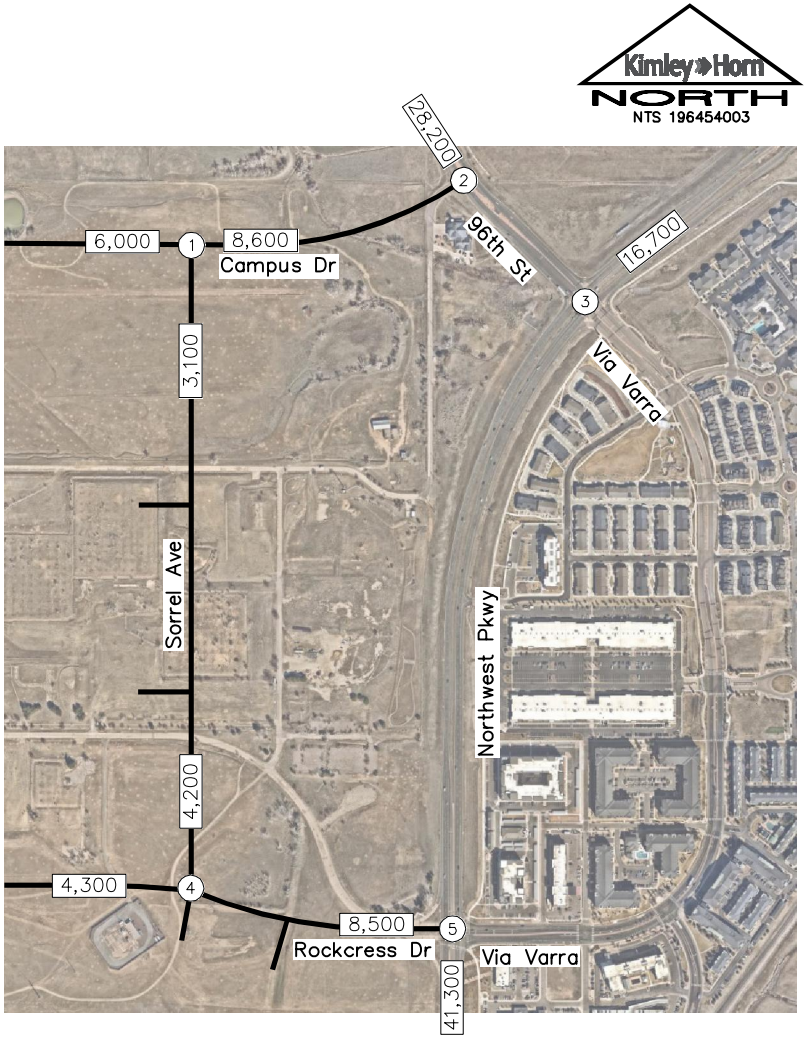










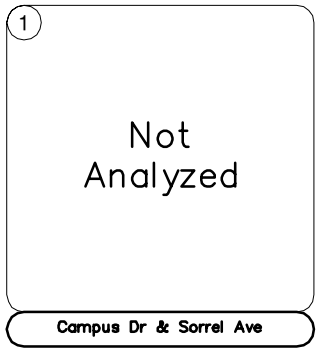


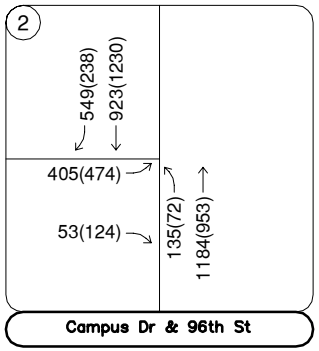
LEGEND

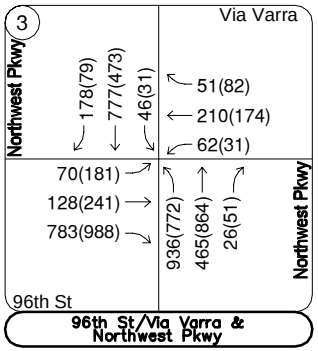
(X)	Study Area Key Intersection
XXX(XXX)	Weekday AM(PM) Peak Hour Traffic Volumes
XX,X00	Estimated Daily Traffic Volume

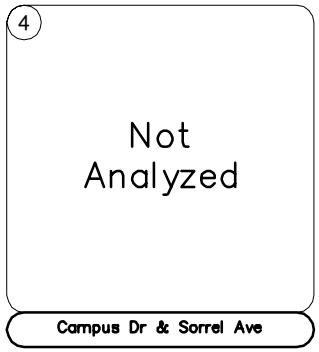
FIGURE 4
AdventHealth Louisville
Louisville, Colorado
2040 Background Traffic Volumes

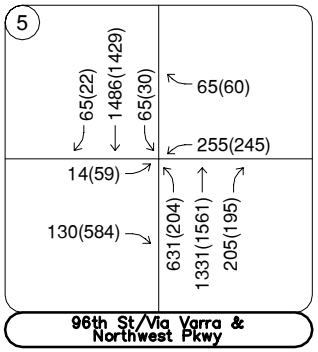
Kimley»Horn

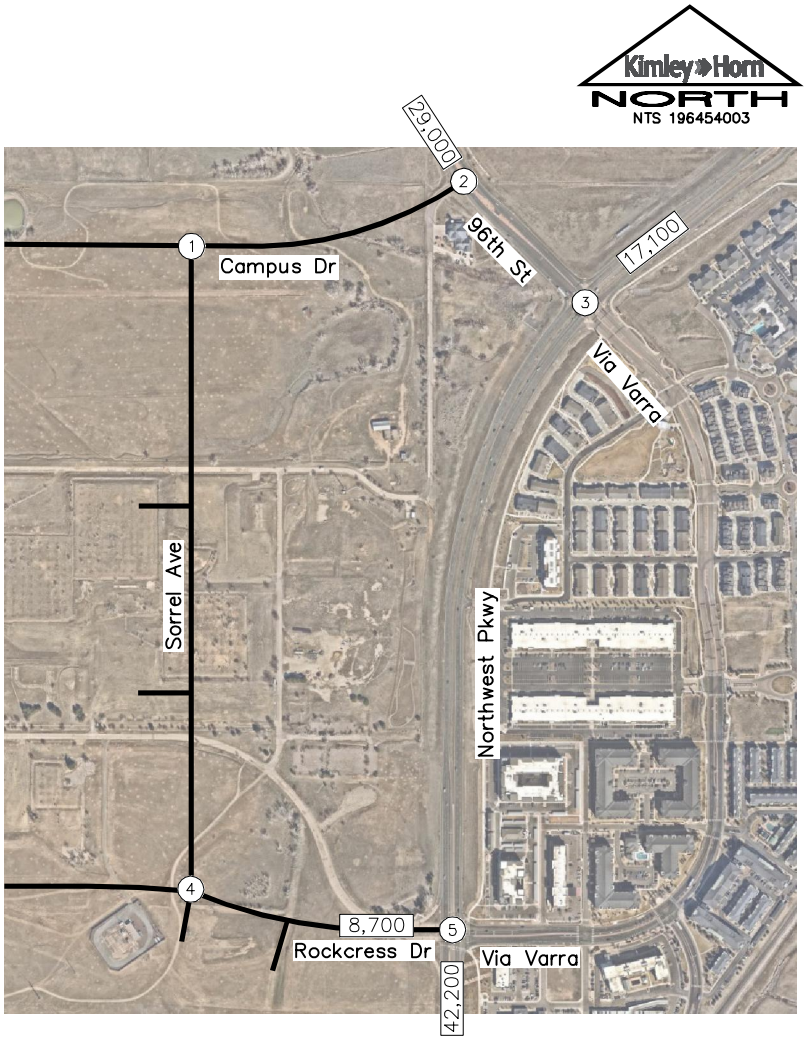












LEGEND

(X) Study Area Key Intersection

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

XX,X00 Estimated Daily Traffic Volume

FIGURE 5
AdventHealth Louisville
Louisville, Colorado
2045 Background Traffic Volumes

Kimley»Horn

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 chose to use the ITE Trip Generation Manual average rates and fitted curve equations that apply to Hospital (ITE Land Use Code 610) and Medical-Dental Office Building (ITE Land Use Code 720) and that match what was previously used in the Fox Tuttle study as best as possible for traffic associated with this development.

In the 2030 Phase 1 buildout assuming 200 hospital beds and 80,000 square feet of medical office building uses, AdventHealth Louisville is expected to generate approximately 6,268 weekday daily trips, with 474 of these trips occurring during the morning peak hour and 557 of these trips occurring during the afternoon peak hour. With full buildout of the site by 2040, the project is anticipated to generate 10,632 weekday daily trips, with 772 of these trips occurring during the morning peak hour and 970 of these trips occurring during the afternoon peak hour.

There is an existing AdventHealth hospital in Louisville at the Campus Drive and 88th Street intersection approximately 1.25 miles to the west of the proposed site. This existing site includes approximately 400,000 square feet of hospital/medical office building uses and is approved with an expansion of an additional 350,000 square feet to include up to 750,000 total square feet at full buildout. Thus, a traffic generation comparison is provided to assess the net difference in trips between the proposed site with approximately 799,600 total square feet at full buildout within the Redtail Ridge development area versus the 750,000 total square feet that could be constructed at the existing hospital site. To provide a uniform comparison between these two sites, the traffic generation of the proposed site with the 799,600 square feet of hospital/medical office building uses was prorated to the up to 750,000 total square feet of the existing site, assuming that approximately 93.8 percent (750,000 / 799,600 square feet = 93.8 percent) of the traffic

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

generation of the proposed site within Redtail Ridge would have been generated if the existing hospital site were to be developed to the full 750,000 square feet that is already approved to be constructed there. As such, the currently proposed hospital site located within the Redtail Ridge development area could generate approximately 658 additional weekday daily trips, with 47 additional trips during the morning peak hour and 61 additional trips during afternoon peak hour. This results in approximately one additional vehicle every 75 seconds during the morning peak hour and one additional vehicle every minute (60 seconds) during the afternoon peak hour on the surrounding street network compared to the existing project site.

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 and traffic comparison for the site. The trip generation worksheets are included in **Appendix D**.

Table 1 – AdventHealth Louisville Traffic Generation

Land Use and Size	Weekday Vehicle Trips						
	Daily	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
2030 – Phase 1 Development							
Hospital (ITE 610) – 200 Beds	3,810	220	86	306	95	193	289
Medical/Dental Office Building (ITE 720) – 80,000 Square Feet	2,458	133	35	168	81	188	268
Total Phase 1 Trips	**6,268**	**353**	**121**	**474**	**176**	**381**	**557**
2040 – Full Buildout Development							
Hospital (ITE 610) – 300 Beds	5,716	330	128	458	143	290	433
Medical/Dental Office Building (ITE 720) – 160,000 Square Feet	4,916	248	66	314	161	376	537
Full Buildout Total Project Trips	**10,632**	**578**	**194**	**772**	**304**	**666**	**970**
Existing AdventHealth Hospital Site – Estimated Traffic Generation at 750,000 SF Buildout							
Hospital (ITE 610) – 281 Beds	5,362	310	120	430	134	272	406
Medical/Dental Office Building (ITE 720) – 150,100 Square Feet	4,612	233	62	295	151	352	503
Total Trips	**9,974**	**543**	**182**	**725**	**285**	**624**	**909**
Net Difference in Trips	***+658***	***+35***	***+12***	***+47***	***+19***	***+42***	***+61***

4.2 Trip Distribution

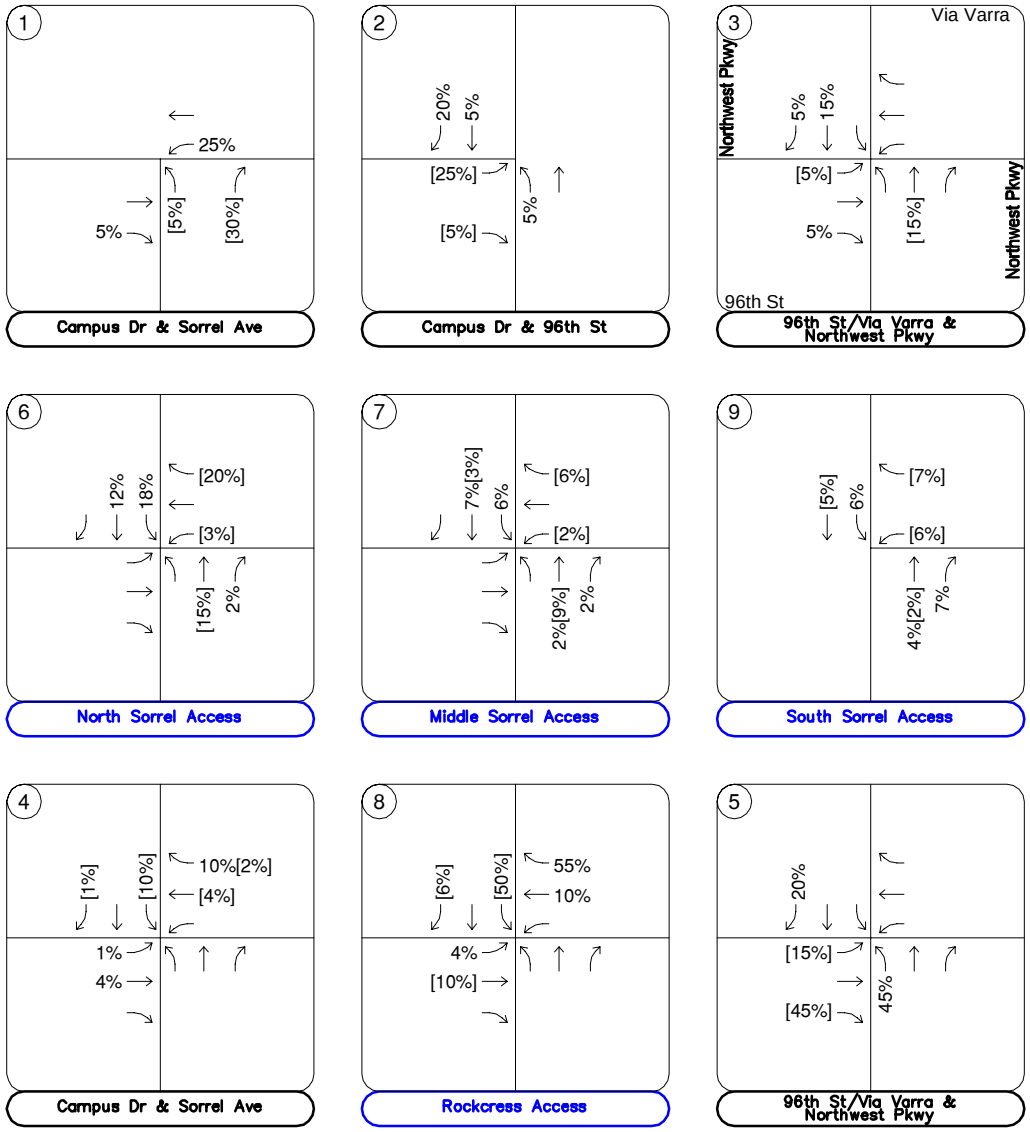
Distribution of site traffic on the street system was based on the area street system characteristics, existing traffic patterns, existing and anticipated surrounding demographic information, and the proposed access system for the project. The directional distribution of traffic is a means to quantify 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**.

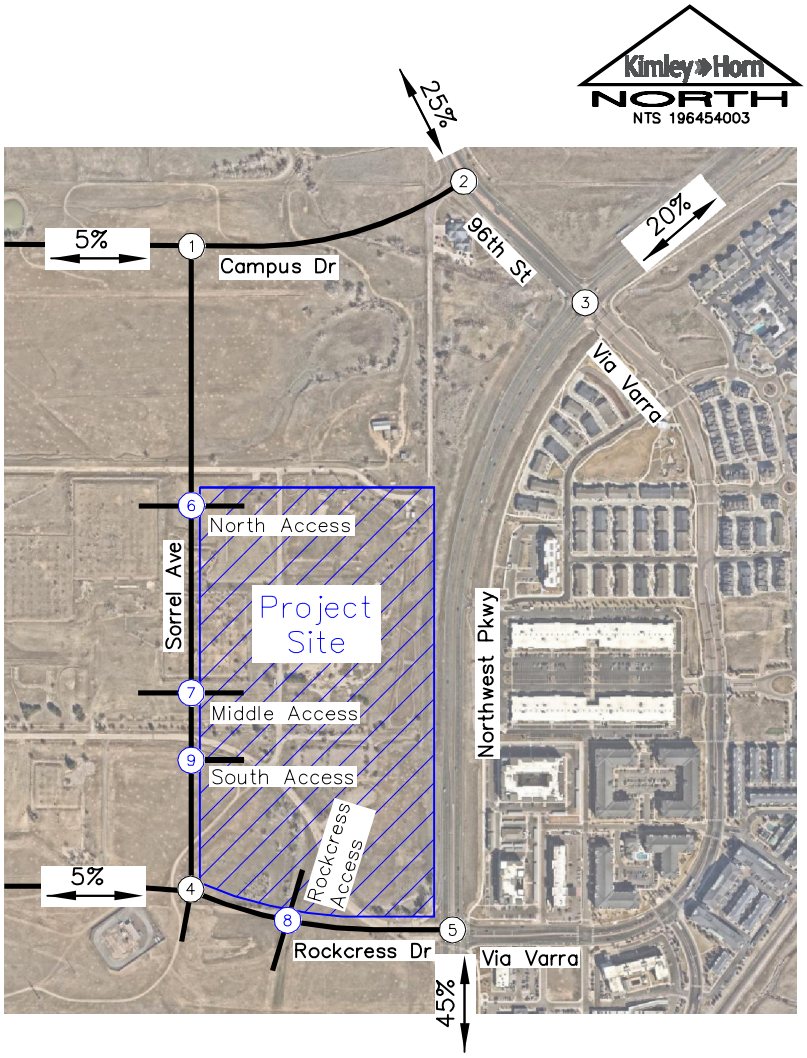
4.3 Traffic Assignment

The project's traffic assignment was obtained by applying the project trip distribution to the estimated traffic generation of the development shown in **Table 1**. Traffic assignment for the 2030 short-term Phase 1 horizon is shown in **Figure 7**, while 2040 full buildout traffic assignment is provided in **Figure 8**.

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 2030 Phase 1, 2040 buildout, and long-term 2045 twenty-year planning horizon. These total traffic volumes for the study area are illustrated for the 2030, 2040, and 2045 horizon years in **Figure 9**, **Figure 10**, and **Figure 11** respectively.



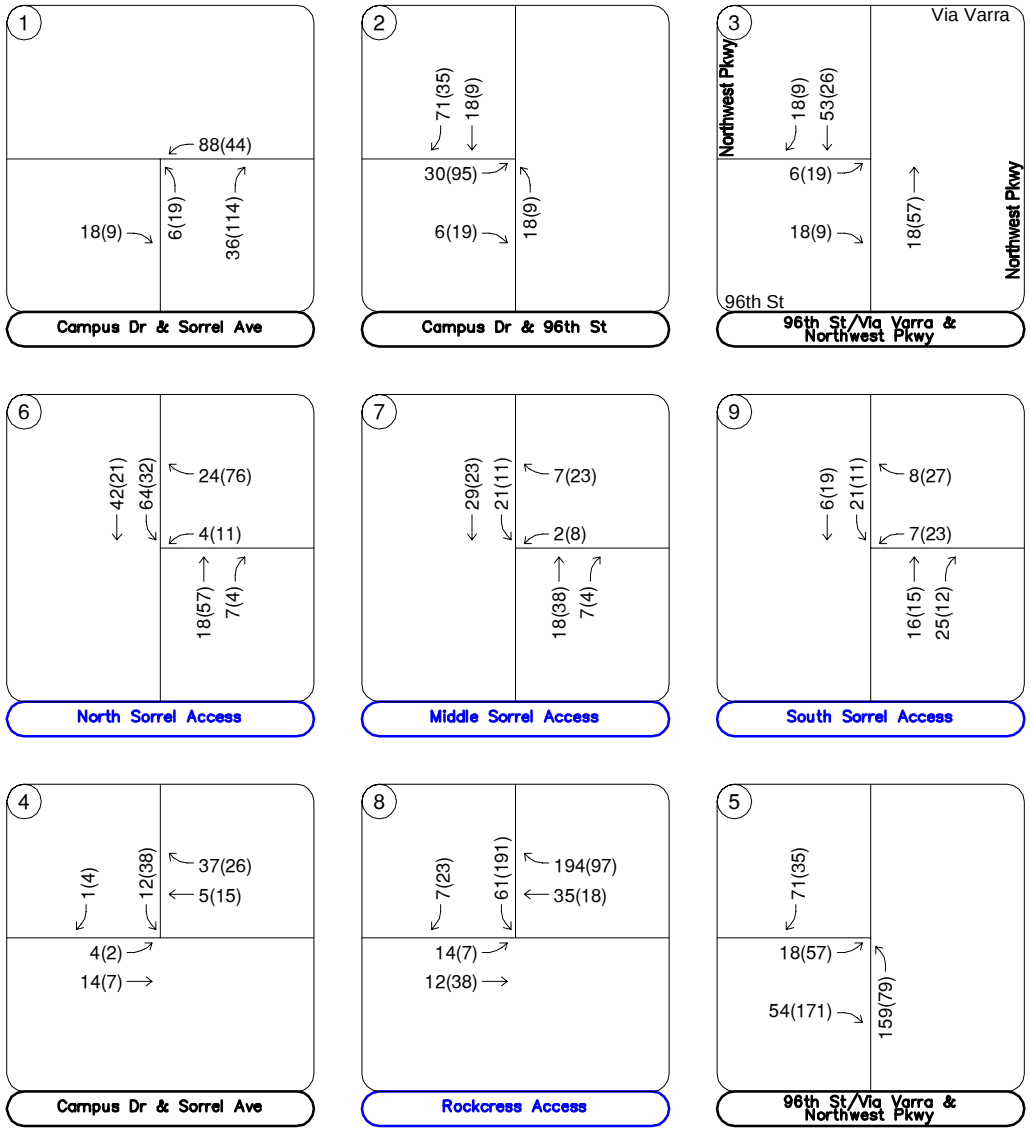


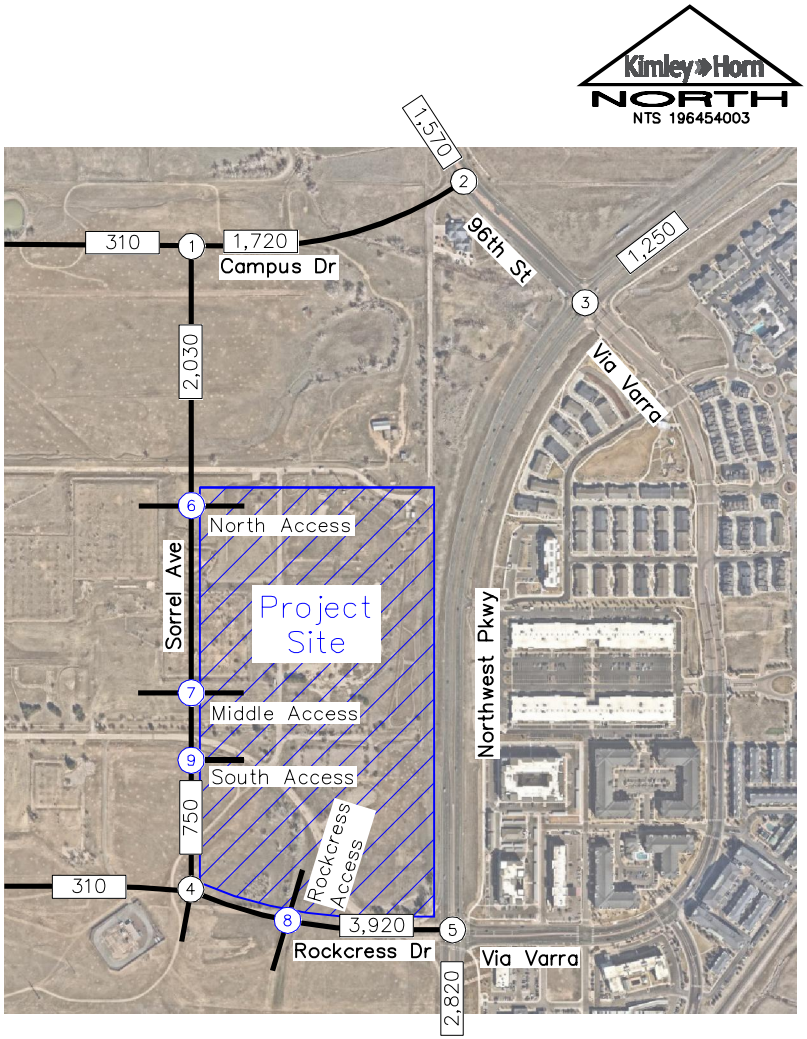
LEGEND

X	Study Area Key Intersection
X	Project Access Intersection
XX%	External Trip Distribution Percentage
XX%[XX%]	Entering[Exiting] Trip Distribution Percentage

FIGURE 6
AdventHealth Louisville
Louisville, Colorado
Project Trip Distribution

Kimley»Horn



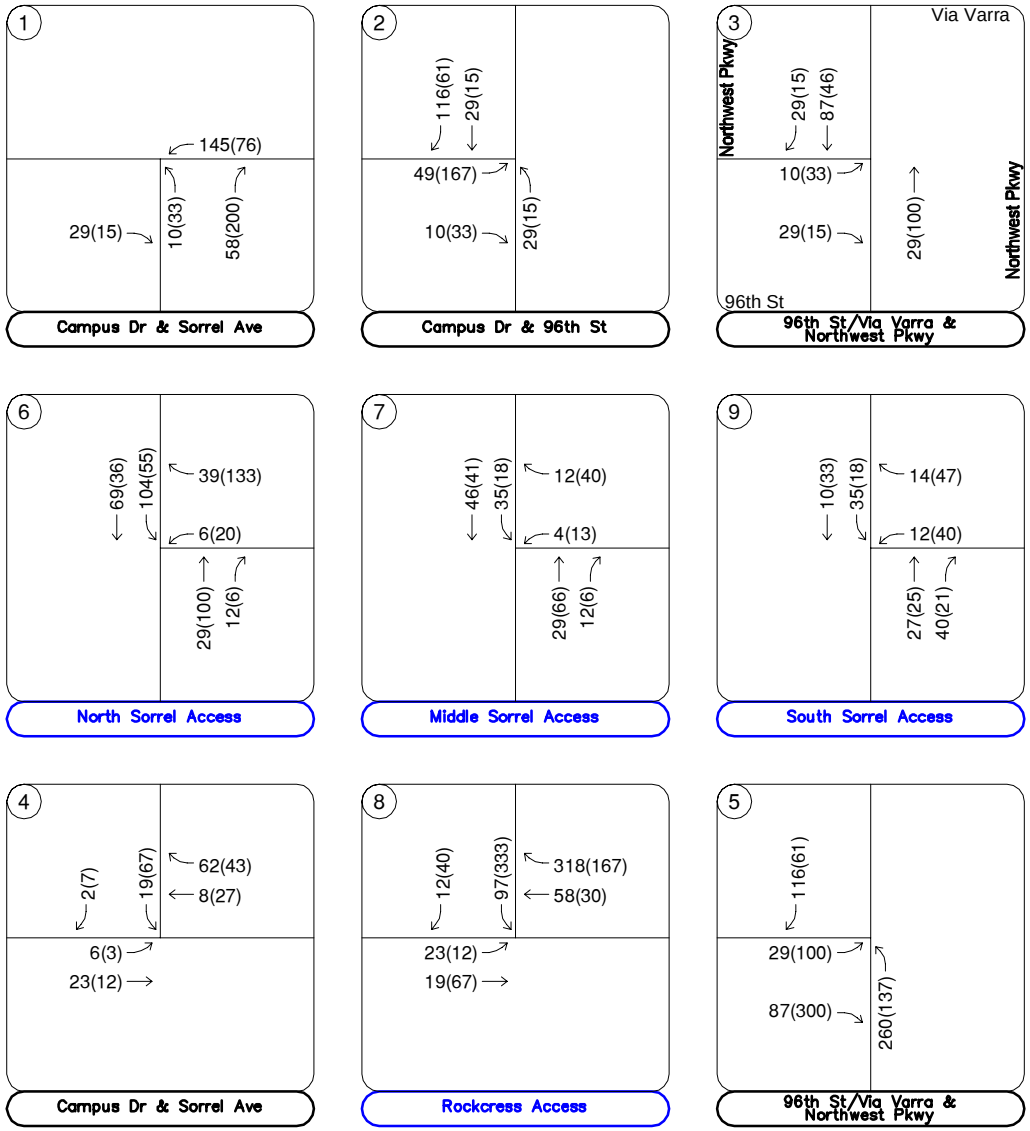


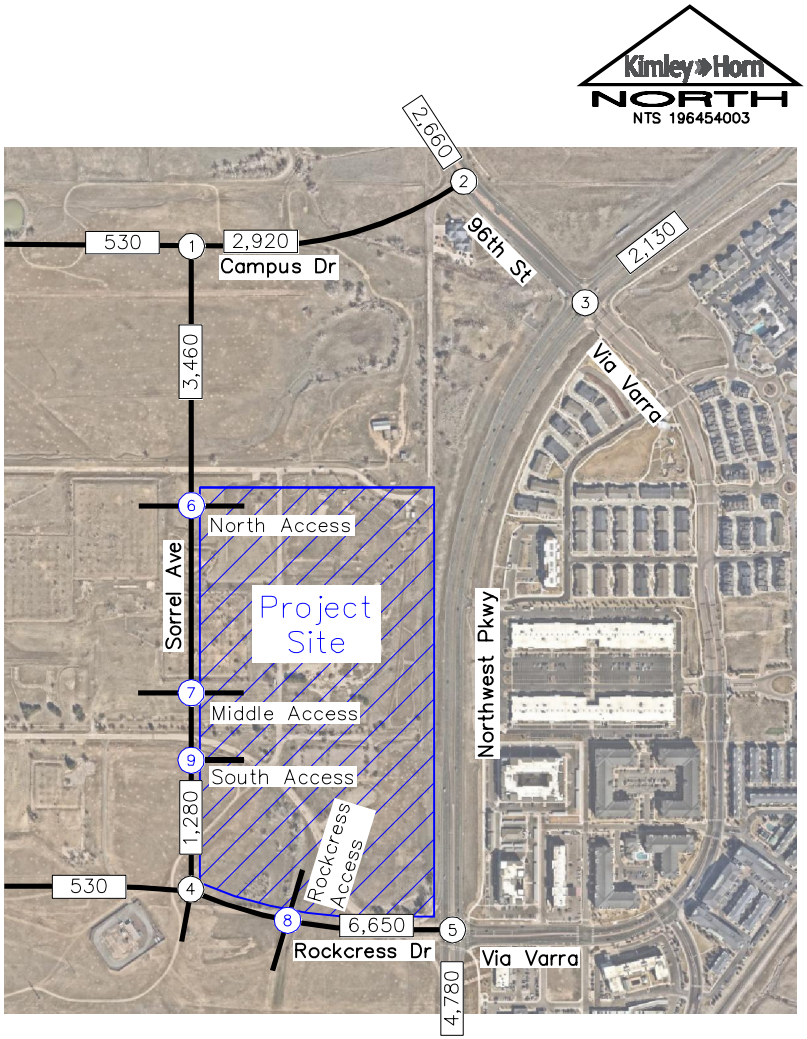
LEGEND

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

FIGURE 7
AdventHealth Louisville
Louisville, Colorado
2030 Project Traffic Assignment

Kimley»Horn



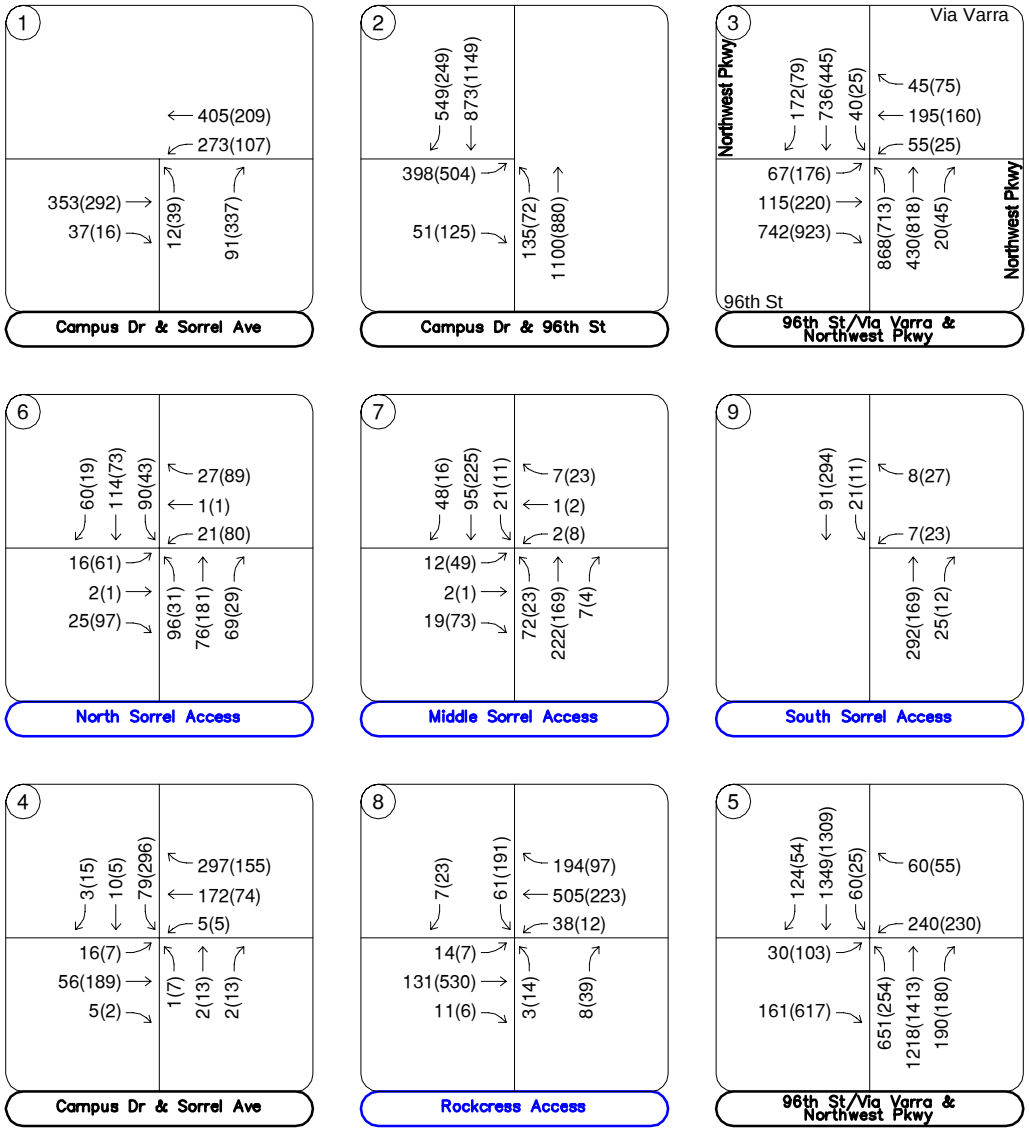


LEGEND

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

FIGURE 8
AdventHealth Louisville
Louisville, Colorado
2040 Project Traffic Assignment

Kimley»Horn



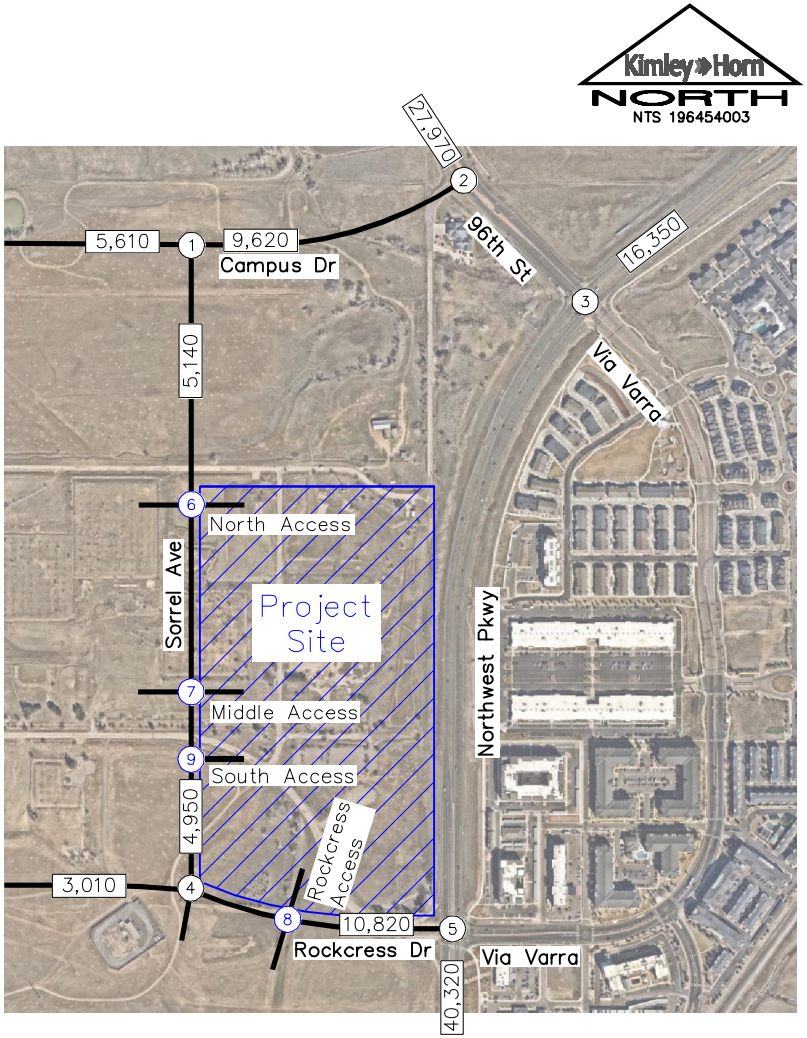
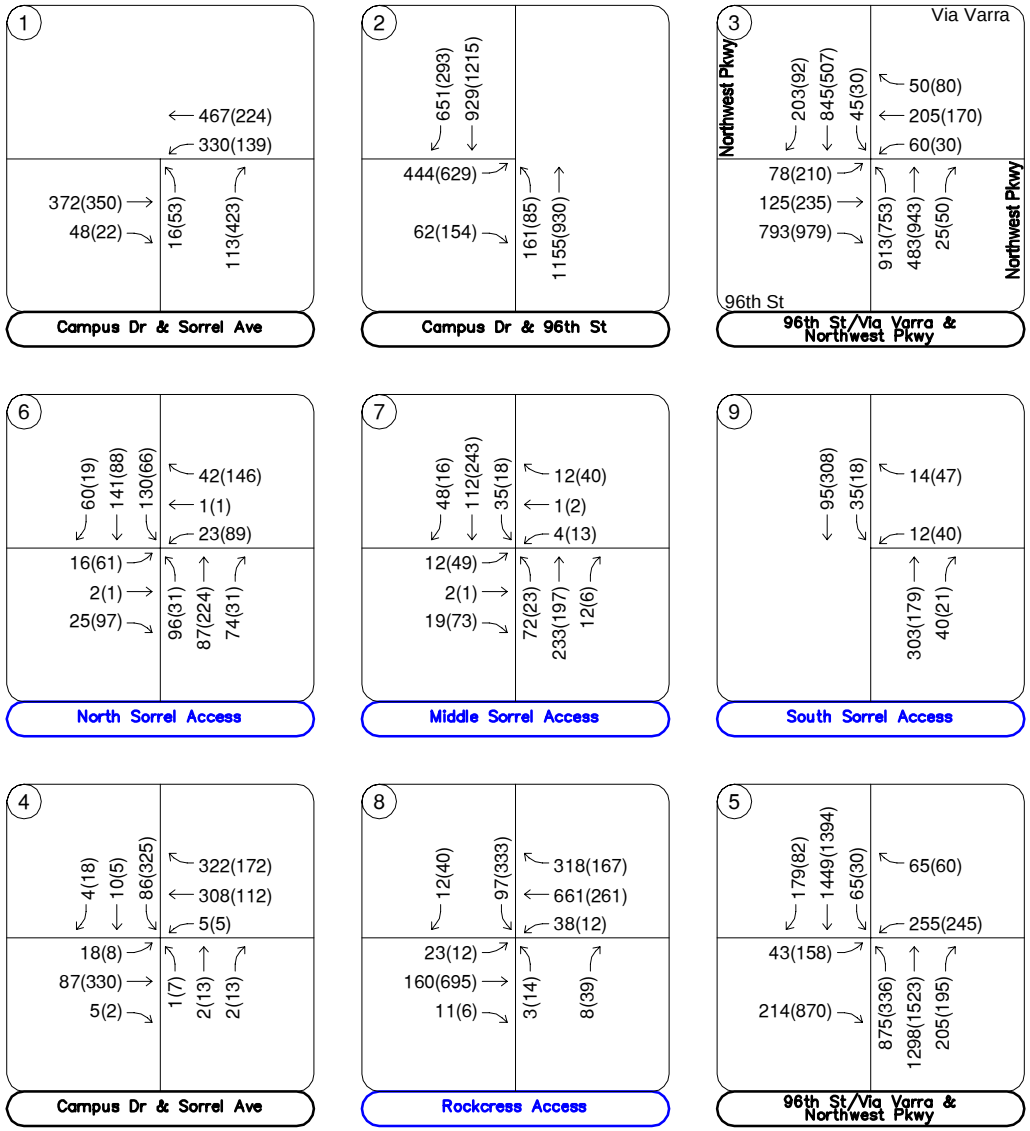
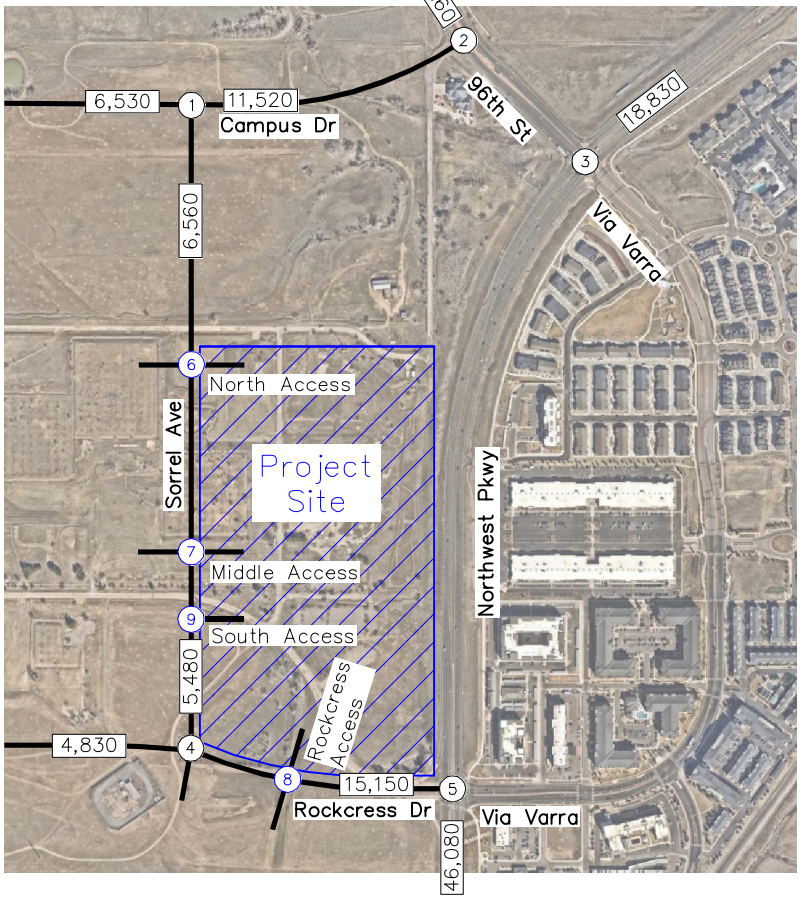


FIGURE 9
AdventHealth Louisville
Louisville, Colorado
2030 Total Traffic Volumes

Kimley»Horn





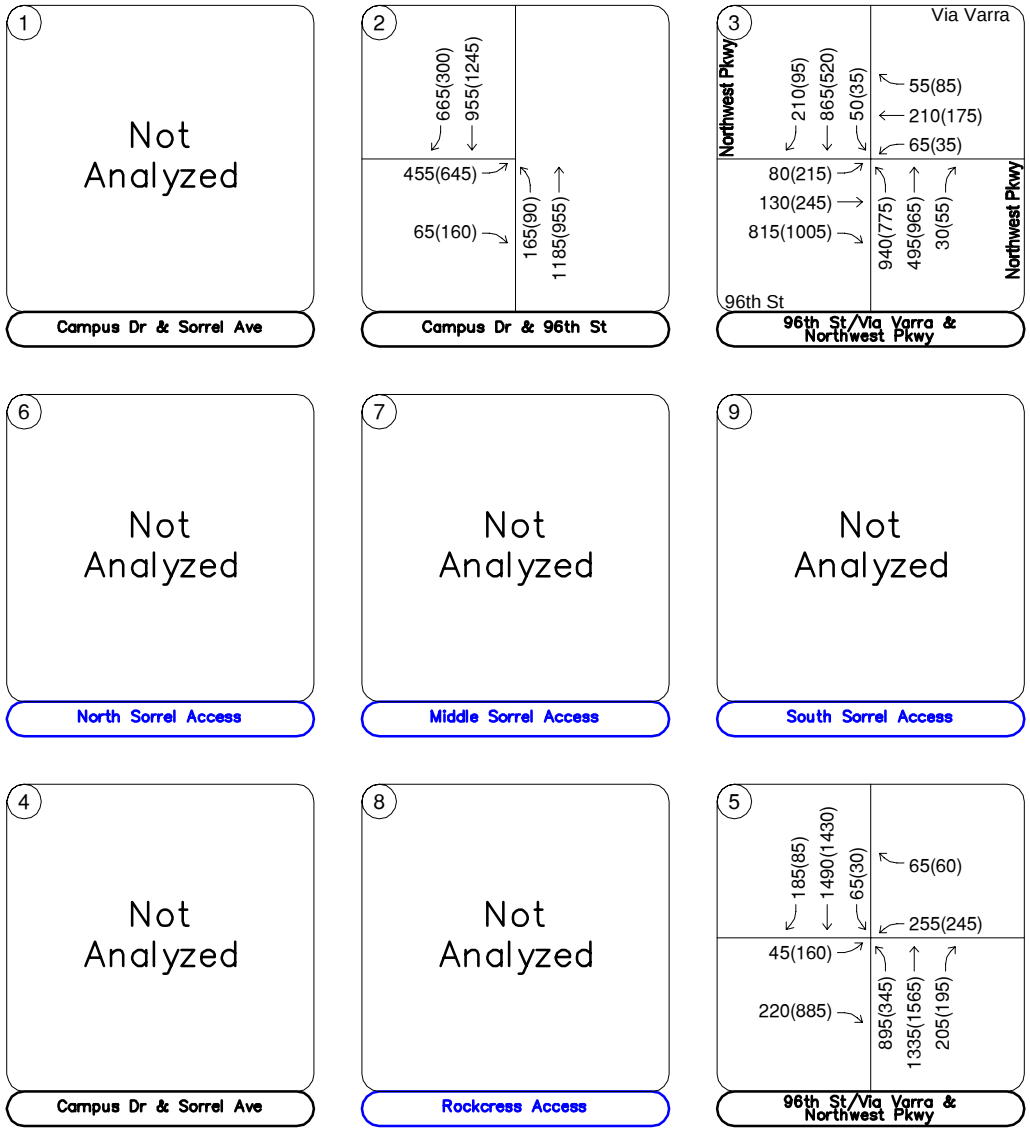
Kimley»Horn NORTH
NTS 196454003

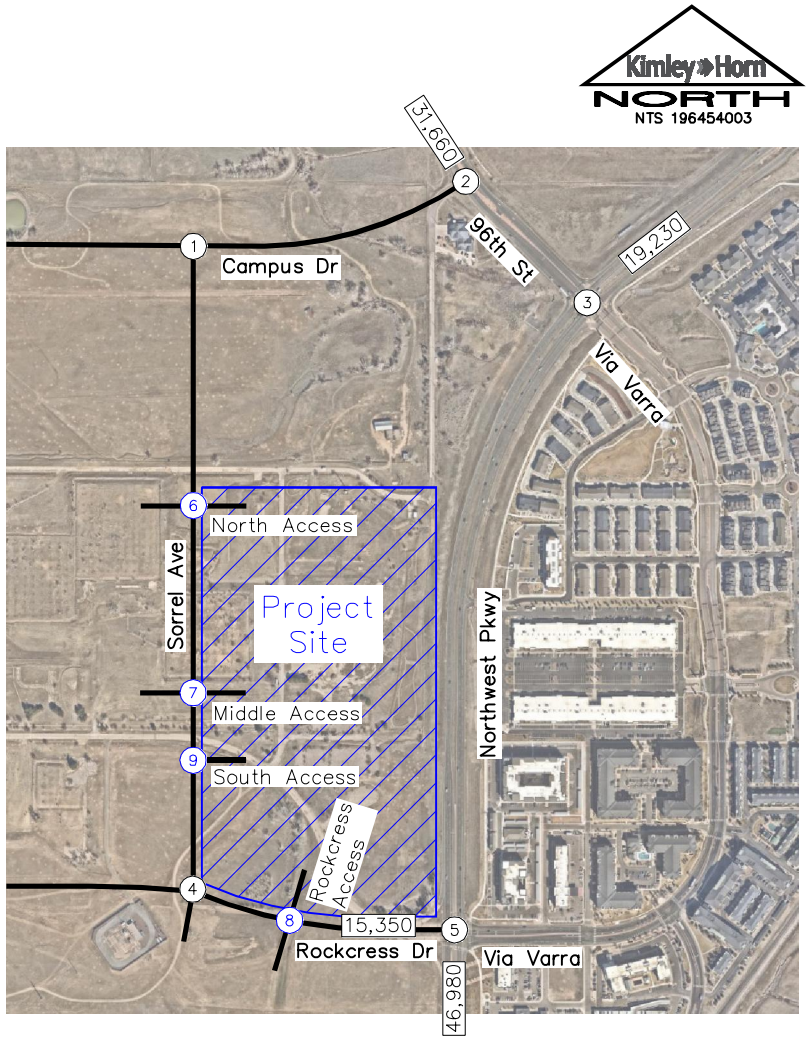
LEGEND

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

FIGURE 10
AdventHealth Louisville
Louisville, Colorado
2040 Total Traffic Volumes

Kimley»Horn





LEGEND

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

FIGURE 11
AdventHealth Louisville
Louisville, Colorado
2045 Total Traffic Volumes

Kimley»Horn

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 2030, 2040, and 2045 development horizons at the identified key intersections. The acknowledged source for determining overall capacity is 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, Seventh Edition, Transportation Research Board, 2022.

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 whole intersection. 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*, Seventh Edition, Washington DC, 2022.

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 E**. The existing year analysis is based on the lane geometry and intersection control shown in **Figure 2**. Synchro traffic analysis software was used to analyze the signalized and unsignalized key intersections for HCM level of service.

Campus Drive & Sorrel Avenue (#1)

The Campus Drive & Sorrel Avenue (#1) intersection is proposed to be a 'T'-intersection operating with roundabout control. Based on current improvement plans, it is understood that eastbound Campus Drive will provide one shared through/right turn lane, northbound Sorrel Avenue will provide a shared left/right turn lane, while westbound Sorrel Avenue will provide one left turn lane and a separate through lane. The intersection is anticipated to operate acceptably at LOS A in this configuration through the 2040 horizon with the addition of project traffic. **Table 3** provides the results of the LOS analysis conducted at this intersection.

Table 3 – Campus Drive & Sorrel Avenue (#1) LOS Results

Scenario	AM Peak Hour		PM Peak Hour	
	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
2030 Background – Overall	5.7	A	5.1	A
Eastbound Approach	7.0	A	5.1	A
Westbound Approach	4.9	A	3.8	A
Northbound Approach	4.6	A	6.4	A
2030 Total – Overall	6.2	A	6.1	A
Eastbound Approach	8.4	A	5.5	A
Westbound Approach	5.0	A	3.8	A
Northbound Approach	5.1	A	8.4	A
2040 Background – Overall	6.0	A	5.4	A
Eastbound Approach	7.3	A	5.7	A
Westbound Approach	5.3	A	3.9	A
Northbound Approach	4.7	A	7.0	A
2040 Total – Overall	6.9	A	7.9	A
Eastbound Approach	10.0	A	6.5	A
Westbound Approach	5.5	A	4.0	A
Northbound Approach	5.6	A	11.9	B

Campus Drive & 96th Street (#2)

The future Campus Drive & 96th Street 'T'-intersection is understood to be signalized by the 2030 horizon with development of other land uses in the overall Redtail Ridge area. Based on proposed construction from the improvement plans, it is understood that dual northbound left turn lanes and three through lanes will be provided at full buildout along 96th Street. However, to be conservative in this study, it was assumed that by 2030, the northbound approach would provide one left turn lane and two through lanes. The eastbound Campus Drive approach is proposed to provide dual left turn lanes and a right turn lane, while southbound 96th Street is proposed to provide two through lanes and a right turn lane. By the 2040 horizon, it was assumed that the improvement plans for dual northbound left turn lanes and three northbound through lanes would be provided. **Table 4** provides the results of the LOS analysis conducted at this intersection with these improvements. As shown, the intersection is anticipated to operate acceptably at LOS C or better during the studied peak hours throughout 2045 with the anticipated improvements.

Table 4 – Campus Drive & 96th Street (#2) LOS Results

Scenario	AM Peak Hour		PM Peak Hour	
	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
2030 Background	14.3	B	21.2	C
2030 Total	15.4	B	23.2	C
2040 Background[1]	21.5	C	22.1	C
2040 Total[1]	25.3	C	26.3	C
2045 Total[1]	25.9	C	26.6	C

[1]Dual NBL Turn Lanes and Three NBT Lanes

96th Street/Via Varra & Northwest Parkway (#3)

The 96th Street/Via Varra & Northwest Parkway (#3) intersection is signalized and operates with protected-only left turn phasing on all four approaches to the intersection. According to currently proposed improvement plans for this intersection, it is understood that the northbound dual left turn lanes on Northwest Parkway and dual eastbound left turn lanes on 96th Street will both be improved to provide triple left turn lanes. As such, this would require three receiving lanes on both westbound 96th Street to the west of Northwest Parkway as well as northbound Northwest Parkway to the north of 96th Street. However, to be conservative, it was assumed that this improvement would not be completed until the 2040 full buildout horizon to assess the intersection operation under 2030 Phase 1 conditions if no improvements are completed by 2030. As such, the intersection operates well at LOS C with the existing configuration in 2030 and continues to operate acceptably at LOS C in 2040 and 2045 with the proposed improvements. **Table 5** provides the results of the LOS analysis conducted at this intersection.

Table 5 – 96th Street/Via Varra & Northwest Parkway (#3) LOS Results

Scenario	AM Peak Hour		PM Peak Hour	
	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
2030 Background	29.0	C	29.3	C
2030 Total	29.9	C	29.6	C
2040 Background[1]	28.5	C	22.3	C
2040 Total[1]	29.3	C	22.4	C
2045 Total[1]	29.7	C	22.7	C

[1]Dual NBL Turn Lanes and Three NBT Lanes

Rockcress Drive & Sorrel Avenue (#4)

The Rockress Drive & Sorrel Avenue (#4) intersection is proposed to be constructed a four-leg single-lane roundabout. The northbound, southbound, and eastbound approaches would all provide one lane for shared turning movements while the westbound approach would provide one left/through lane and a right turn only lane. The south leg of the roundabout is anticipated to serve as an access into a future development to the south of Rockcress Drive. In this proposed configuration, the intersection is anticipated to operate at an acceptable level of service A through the 2040 horizon with the addition of project traffic. **Table 6** provides the results of the LOS analysis at this intersection.

Table 6 – Rockcress & Sorrel Avenue (#4) LOS Results

Scenario	AM Peak Hour		PM Peak Hour	
	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
2030 Background – Overall	4.0	A	4.7	A
Eastbound Approach	3.3	A	5.5	A
Westbound Approach	4.1	A	3.3	A
Northbound Approach	3.0	A	4.8	A
Southbound Approach	3.9	A	5.0	A
2030 Total – Overall	4.2	A	5.0	A
Eastbound Approach	3.5	A	6.0	A
Westbound Approach	4.3	A	3.5	A
Northbound Approach	3.2	A	5.0	A
Southbound Approach	4.0	A	5.4	A
2040 Background – Overall	4.4	A	5.5	A
Eastbound Approach	3.5	A	7.3	A
Westbound Approach	4.5	A	3.4	A
Northbound Approach	3.1	A	5.6	A
Southbound Approach	4.5	A	5.2	A
2040 Total – Overall	4.7	A	6.2	A
Eastbound Approach	3.8	A	8.4	A
Westbound Approach	4.8	A	3.6	A
Northbound Approach	3.3	A	6.2	A
Southbound Approach	4.9	A	6.1	A

Rockcress Drive/Via Varra & Northwest Parkway (#5)

The Rockcress Drive/Via Varra & Northwest Parkway (#5) intersection is signalized and operates with protected-only left turn phasing on all four approaches to the intersection. Based on currently proposed improvement plans and the results of the Fox Tuttle study, it is understood that the southbound Northwest Parkway approach to this intersection will provide three through lanes in the future. The results of this analysis further confirm that this improvement is anticipated to be needed in the future. However, to be conservative, it was assumed that the intersection would remain in its current configuration through the 2030 horizon and that the third southbound through lane would not be implemented until the 2040 horizon. In 2030, the intersection is anticipated to operate acceptably at LOS C or better during the peak hours with the existing configuration and control. Based on these proposed improvements, the intersection is anticipated to operate at an acceptable level of service through the 2045 horizon with the addition of project traffic. **Table 7** provides the results of the LOS analysis conducted at this intersection.

Table 7 – Rockcress Drive/Via Varra & Northwest Parkway (#5) LOS Results

Scenario	AM Peak Hour		PM Peak Hour	
	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
2030 Background	19.9	B	16.2	B
2030 Total	27.7	C	18.2	B
2040 Background[1]	29.0	C	16.6	B
2040 Total[1]	30.4	C	29.8	C
2045 Total[1]	31.4	C	31.1	C

[1]Three SBT lanes

Project Accesses

With completion of the project, a full movement access is proposed along the north side of Rockcress Drive, approximately 775 feet west of the Rockcress Drive/Via Varra & Northwest Parkway (#5) intersection, measured center to center. Three full movement accesses are also proposed along Sorrel Avenue, the two northernmost of which are anticipated to align with future accesses to other developments to the west of Sorrel Avenue. A third access along Sorrel Avenue is proposed into the hospital—located between Rockcress Drive and the Middle Sorrel Access (#7). This third southernmost access is expected to operate as a 'T'-intersection.

Sorrel Avenue Accesses (#6, #7, and #9)

The two northernmost full movement accesses (#6 and #7) proposed along the east side of Sorrel Avenue are anticipated to align with two accesses to the west of Sorrel Avenue that will serve other developments. At both access intersection locations, the northbound and southbound approaches are recommended to provide a left turn lane and a shared through/right turn lane, while the eastbound/westbound minor street access approaches would operate with stop control and one lane for shared left/through/right turning movements. R1-1 "STOP" signs should be posted on the minor street eastbound/westbound approaches to Sorrel Avenue at both access locations. Additionally, the third and southernmost access is expected to operate as a 'T'-intersection with an R1-1 "STOP" sign also posted on the westbound approach for vehicles exiting the site. A southbound left turn lane is also recommended at this intersection.

Rockcress Drive Access (#8)

The Rockcress Drive Access (#8) is anticipated to align with a future south leg for a development south of Rockcress Drive. This access is anticipated to serve as a primary entrance to the development. In the 2030 Phase 1 horizon, the intersection movements are anticipated to operate acceptably under stop control; only with full buildout traffic volumes by the 2040 horizon is a signal anticipated to be needed at this intersection. A signal warrant analysis was completed for this intersection, which is included in **Appendix E**. As such, this access is proposed to operate under stop control with R1-1 "STOP" signs on the exiting access approaches to the intersection. During this horizon, the eastbound and westbound Rockcress Drive approaches to this access intersection are recommended to provide a left turn lane, one through lane, and a shared through/right turn lane. The northbound approach is anticipated to require only one lane for shared

left/through/right turning movements. The southbound approach exiting the hospital would be recommended to provide a left turn lane and a shared through/right turn lane during this horizon.

By the 2040 horizon and full buildout of the AdventHealth site, signalization is recommended at this access location. When full buildout is complete and signalization occurs, the southbound approach would be recommended to provide dual left turn lanes, with the westernmost left turn lane also providing through movement, and a separate right turn lane. Because this improvement is anticipated to be needed at full buildout, it would be recommended that the pavement width be allocated during Phase 1 development to allow for eventual dual southbound left turn lanes. To be conservative, this intersection was analyzed with split phase operations on the northbound/southbound approaches to the intersection because of the difference in approach lane configurations.

Table 8 provides the results of the level of service for these accesses. As shown in the table, the project access intersections are anticipated to operate at an acceptable level of service through the 2040 horizon.

Table 8 – Project Access Level of Service Results

Intersection	2030 Total				2040 Total			
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
	Delay (sec/ veh)	LOS	Delay (sec/ veh)	LOS	Delay (sec/ veh)	LOS	Delay (sec/ veh)	LOS
Sorrel North Access (#6)								
Northbound Left	7.8	A	7.5	A	7.9	A	7.5	A
Eastbound Approach	12.8	B	12.5	B	14.6	B	14.8	B
Westbound Approach	13.1	B	14.1	B	14.2	B	17.8	C
Southbound Left	7.7	A	7.8	A	7.9	A	8.0	A
Sorrel Middle Access (#7)								
Northbound Left	7.7	A	7.8	A	7.7	A	7.9	A
Eastbound Approach	11.5	B	12.7	B	12.1	B	13.6	B
Westbound Approach	11.0	B	10.8	B	11.4	B	11.4	B
Southbound Left	7.8	A	7.6	A	7.9	A	7.7	A
Rockcress Access (#8) – Unsignalized								
Northbound Approach	9.4	A	12.3	B				
Eastbound Left	8.8	A	7.8	A				
Westbound Left	7.6	A	8.7	A	-	-	-	-
Southbound Left	17.6	C	23.0	C				
Southbound Through/Right	8.9	A	8.7	A				
Rockcress Access (#8) – Signalized	-	-	-	-	12.1	B	29.5	C
Sorrel South Access (#9)								
Westbound Approach	10.6	B	10.6	B	11.0	B	11.2	B
Southbound Left	8.0	A	7.6	A	8.1	A	7.7	A

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 9** with calculations provided within the level of service operational sheets of **Appendix E** for unsignalized intersections and Error! Reference source not found. for s ignalized intersections. Of note, vehicle queues were assumed to be a minimum of 25 feet (approximately one vehicle).

Table 9 – Turn Lane Queuing Analysis Results

Intersection Turn Lane	Existing Turn Lane Length	2030 Calculated Queue (AM/PM)	2030 Recommended Length	2040/2045* Calculated Queue (AM/PM)	2040/2045* Recommended Length
Campus & 96th (#2)					
Eastbound Left	DNE	214'/260' DL	**C DL**	239'/330'	C DL
Eastbound Right	C	36'/51'	**500'**	39'/79'	500'
Northbound Left	75'	25'/25'	**200'**	103'/67'	200' **DL**
Southbound Right	DNE	52'/39'	**200'**	60'/51'	200'
96th/Via Varra & Northwest Pkwy (#3)					
Eastbound Left	250'/375' DL	45'/95' DL	250'/375' DL	36'/79' TL	**250'**/250'/375' TL
Eastbound Right	375' Free	450'/468'	**475'** Free	475'/430'	475' Free
Westbound Left	200'/275' DL	47'/27' DL	200'/275' DL	54'/34' DL	200'/275' DL
Westbound Right	250' Free	25'/25'	250' Free	25'/25'	250' Free
Northbound Left	600'/800' DL	477'/355' DL	600'/800' DL	352'/244' TL	**600'**/600'/800' TL
Northbound Right	C Free	25'/25'	C Free	25'/25'	C Free
Southbound Left	550'/600' DL	25'/25' DL	550'/600' DL	29'/25' DL	550'/600' DL
Southbound Right	500' Free	25'/25'	500' Free	25'/25'	500' Free
Rockcress/Via Varra & Northwest Pkwy (#5)					
Eastbound Left	125' DL	30'/73'	**400'/C** DL	42'/87'	400'/C DL
Eastbound Right	Free	25'/25'	Free	25'/284'	Free
Westbound Left	250'/500'C DL	141'/129'	250'/500'C DL	150'/133'	250'/500'C DL
Northbound Left	250'/475' DL	324'/202'	250'/475' DL	421'/197'	**375'**/475' DL
Northbound Right	300'	26'/30'	300'	26'/39'	300'
Southbound Left	425'/650' DL	42'/25'	425'/650' DL	42'/25'	425'/650' DL
Southbound Right	500' Yield	25'/25'	500' Yield	25'/25'	500' Yield
Sorrel North Access (#6)					
Northbound Left	DNE	25'/25'	**150'**	25'/25'	150'
Southbound Left	DNE	25'/25'	**150'**	25'/25'	150'
Sorrel Middle Access (#7)					
Northbound Left	DNE	25'/25'	**150'**	25'/25'	150'
Southbound Left	DNE	25'/25'	**150'**	25'/25'	150'
Rockcress Access (#8)					
Eastbound Left	DNE	25'/25'	**150'**	36'/25'	150'
Westbound Left	DNE	25'/25'	**150'**	25'/25'	150'
Southbound Left	DNE	25'/100'	**200'**	84'/184'	200' **DL**
Sorrel South Access (#9)					
Southbound Left	DNE	25'/25'	**150'**	25'/25'	150'

DNE = Does Not Exist; C = Continuous Turn Lane; DL = Dual Left Turn Lanes; TL = Triple Left Turn Lanes; **Blue** Text = Recommendation; * = 2040 horizon year used for internal intersections (#6, 7, 8, 9) while 2045 horizon year is used for major external intersections (#2, 3, 5)

All queues are anticipated to remain within the existing or recommended turn lane lengths through 2045. The recommended turn lane lengths provided in this table are generally based on the currently proposed construction improvement plans at the major external intersections of Campus Drive & 96th Street (#2), 96th Street/Via Varra & Northwest Parkway (#3), and Rockcress Parkway/Via Varra & Northwest Parkway (#5), where available, while the internal intersection turn

lane recommendations at the project accesses are based on a minimum assumed turn lane length of 150 feet, with additional storage provided to meet expected vehicle queues.

As noted previously, to be conservative it was assumed that the northbound left turning movement at Campus Drive & 96th Street (#2) would operate from a single lane in the 2030 horizon and would not be improved to dual left turn lanes until the 2040 horizon. It was also assumed that the triple northbound left turn lanes on Northwest Parkway and triple eastbound left turn lanes on 96th Street at the 96th Street/Via Varra & Northwest Parkway (#3) would not be implemented until the 2040 horizon. There is approximately 725 feet of spacing between the Campus Drive extension and Northwest Parkway along 96th Street available for left turn lane storage. Based on the proposed dual northbound left turn lanes at Campus Drive & 96th Street (#2) intersection providing 200 feet of storage and the triple southeast-bound left turn lanes at 96th Street/Via Varra & Northwest Parkway (#3) providing 250 to 375 feet of storage, there is space for a shared taper length of approximately 150 feet for these back-to-back left turn lanes. Vehicle queues are easily accommodated the left turn lanes at both of these locations, with the northbound dual left turn lanes at Campus Drive & 96th Street (#2) expected to have 95th percentile queues approximately 100 feet or less through the 2045 horizon, while the southeast-bound triple left turn lanes at 96th Street/Via Varra & Northwest Parkway (#3) are expected to experience 95th percentile queues under 80 feet through the 2045 horizon.

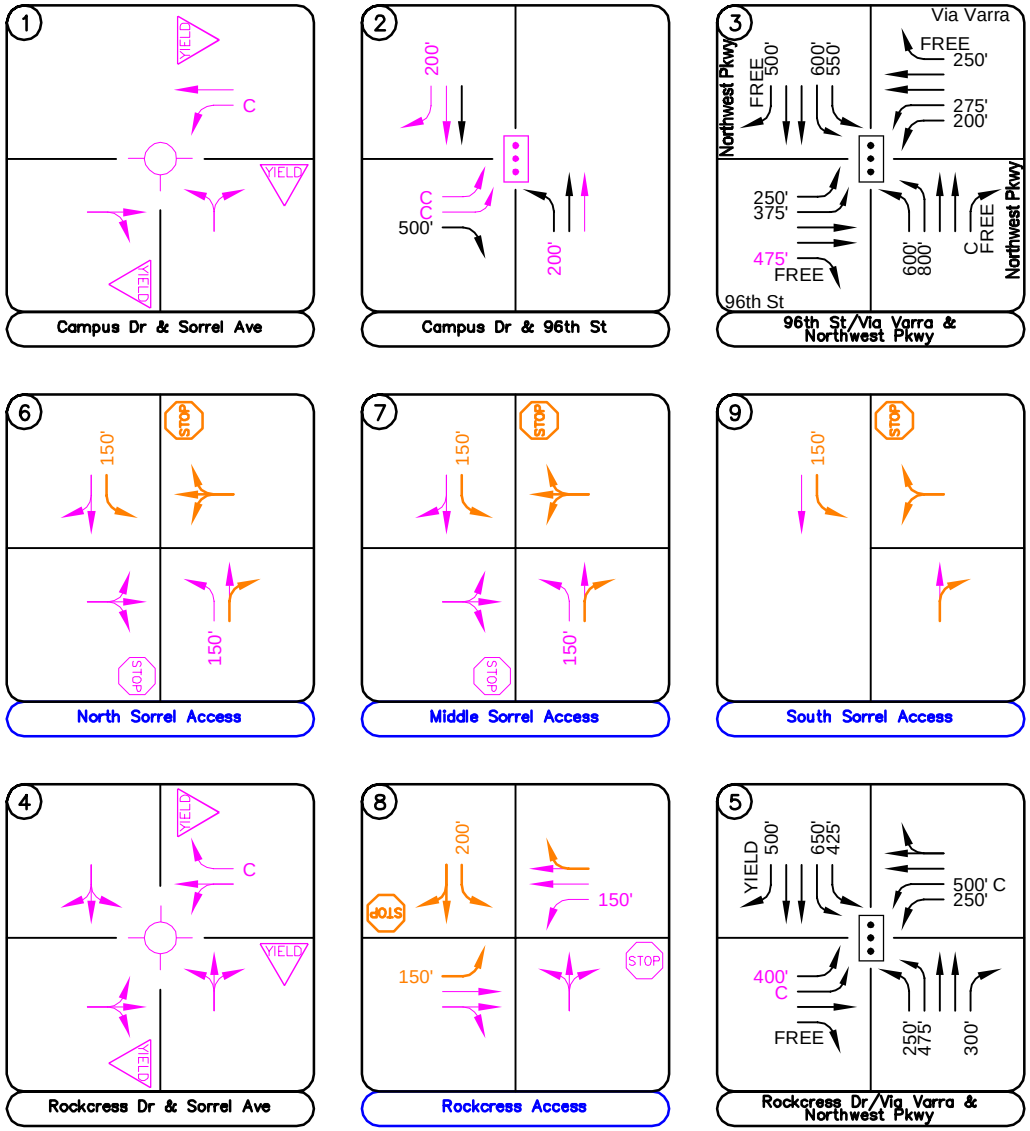
Additionally, because the Rockcress Access (#8) is proposed to operate with two-way stop control exiting the hospital in the 2030 horizon, the southbound approach is proposed to operate with only one southbound left turn lane in this horizon. By the 2040 horizon at full buildout and with signalization of this access, the dual left turn lanes, each proposed as 200 feet in length, should be provided. Because dual southbound left turn lanes are anticipated to be needed at full buildout at the Rockcress Access (#8), it would be recommended that pavement width be provided to allow for these dual left turn lanes, and that in the 2030 short-term horizon the second left turn lane be striped out with chevron striping to restrict its use until the intersection is signalized.

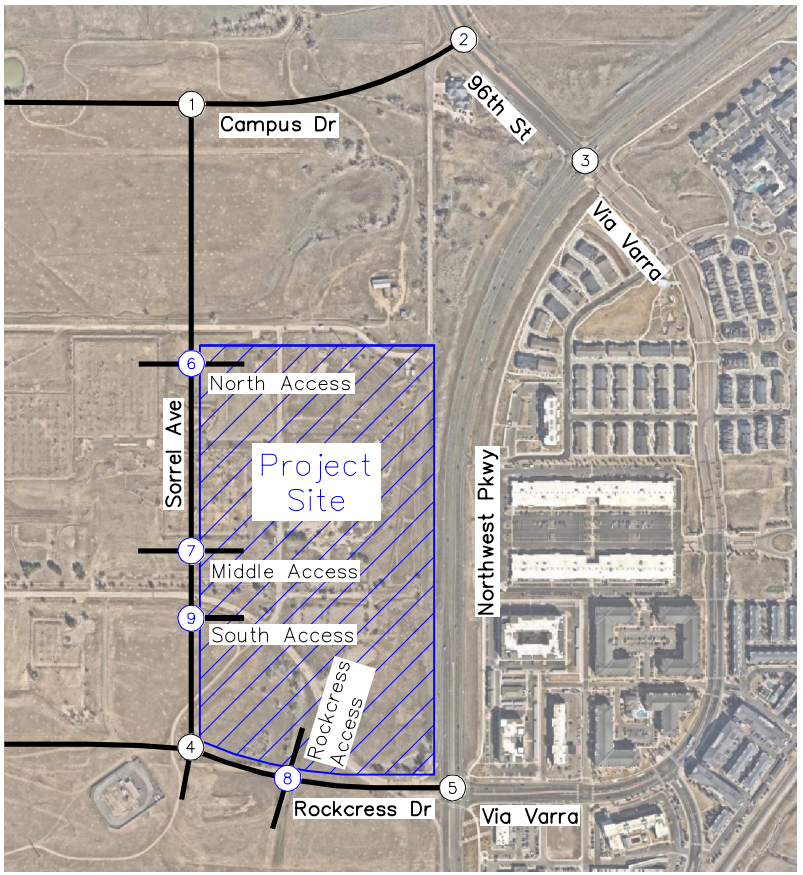
Rockcress Drive is proposed to provide two through lanes eastbound and westbound between Sorrel Avenue and Northwest Parkway. The second eastbound through lane is anticipated to become a forced left turn only lane at the Rockcress Drive/Via Varra & Northwest Parkway (#5) intersection, while a second left turn lane 400 feet in length will also be provided. There is

anticipated to be approximately 700 feet of spacing available for left turn lane storage. The westbound left turn lane at the Rockcress Access (#8) is proposed to provide 150 feet in length. This leaves 150 feet of additional length available between the Rockcress Access (#8) and Northwest Parkway available for a shared taper length for these back-to-back left turn lanes. The 95th percentile queue in the eastbound dual left turn lanes at Rockcress Drive/Via Varra & Northwest Parkway (#5) is expected to be approximately 87 feet or less through the 2045 horizon, while the westbound left turn queue at the Rockcress Access (#8) is anticipated to be 25 feet or less. As such, the provided left turn storage and taper length for these turn lanes are expected to easily accommodate projected traffic volumes through the 2045 horizon.

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 12** and **Figure 13** for the 2030 and 2040 horizons, respectively. Of note, the recommendations provided in **Figure 13** are anticipated to be needed by the 2040 horizon but are expected to provide acceptable operations through the 2045 horizon. These recommendations are distinguished by improvements expected to be needed due to the hospital site versus improvements that would be expected to be constructed by others as part of the master Redtail Ridge development.



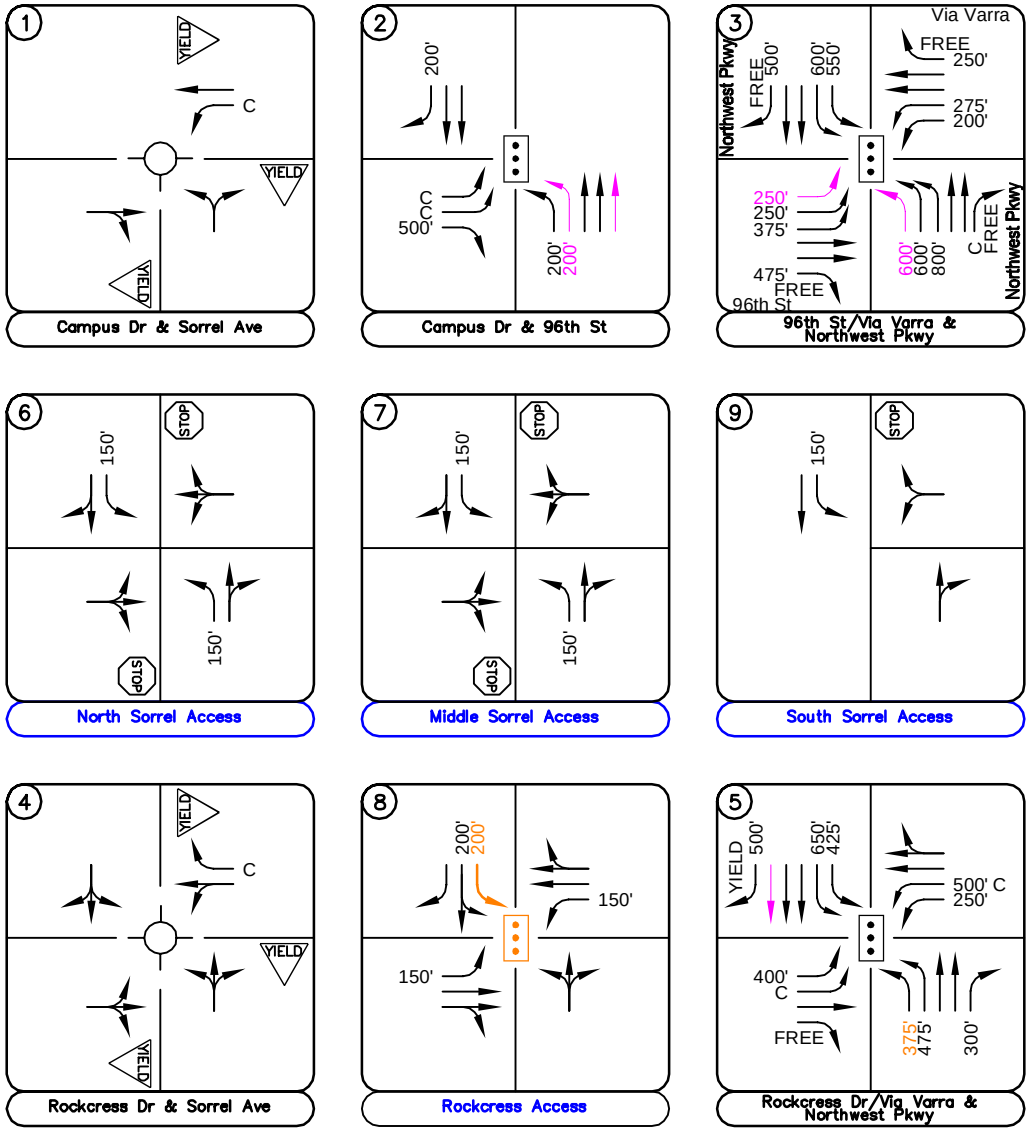


LEGEND

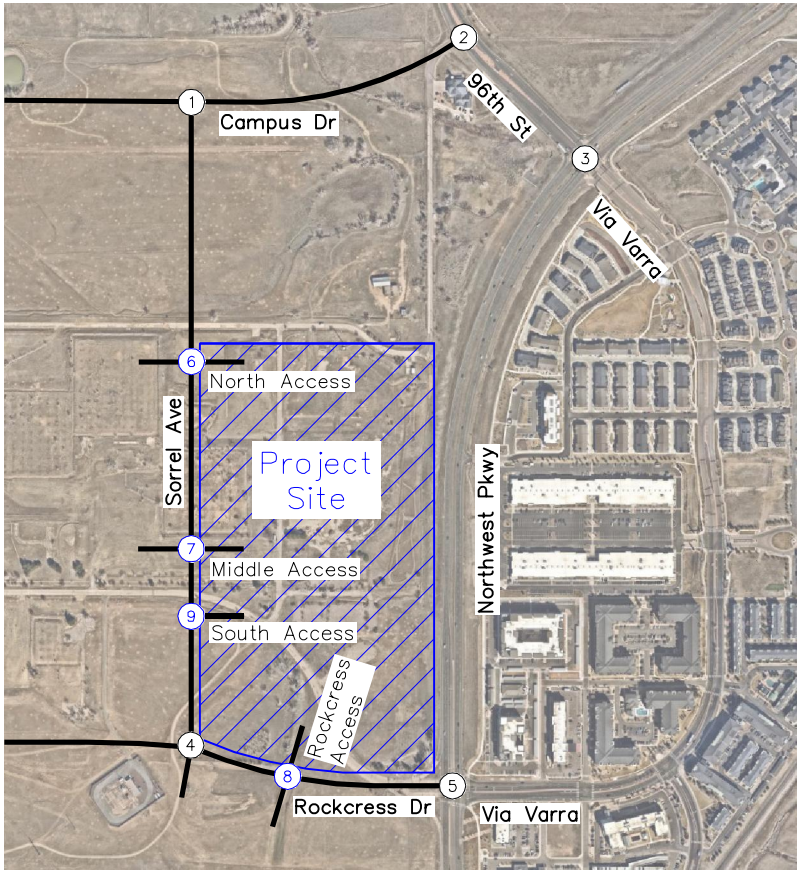
- X — Study Area Key Intersection
- Roundabout
- YIELD — Yield–Controlled Approach
- Signalized Intersection
- STOP — Stop–Controlled Approach
- Hospital–Specific Improvement
- Improvement by Others
- 100' — Turn Lane Length (feet)
- C — Continuous Turn Lane

FIGURE 12

AdventHealth Louisville
Louisville, Colorado
2030 Recommended Geometry and Control



Kimley»Horn
NORTH
NTS 196454003



LEGEND

- X — Study Area Key Intersection
- Roundabout
- YIELD — Yield–Controlled Approach
- Signalized Intersection
- STOP — Stop–Controlled Approach
- Hospital–Specific Improvement
- Improvement by Others
- 100' — Turn Lane Length (feet)
- C — Continuous Turn Lane

FIGURE 13
AdventHealth Louisville
Louisville, Colorado
2040 Recommended Geometry and Control

Kimley»Horn

6.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the analysis presented in this report, Kimley-Horn believes AdventHealth Louisville will be successfully incorporated into the existing and future roadway network. There is an existing AdventHealth hospital located at the intersection of Campus Drive and 88th Street approximately 1.25 miles to the west of this proposed site. This existing site includes approximately 400,000 square feet of hospital/medical office building uses and is approved with an expansion of an additional 350,000 square feet to include up to 750,000 square feet at full buildout. The currently proposed AdventHealth site within the Redtail Ridge development area is expected to include up to 799,600 square feet of hospital/medical office building uses. As such, this increase of 49,600 square feet of additional uses with relocation of the existing hospital with approved expansion to the new site is expected to result in approximately 658 additional weekday daily trips, with 47 more trips during the morning peak hour and 61 more trips during the afternoon peak hour compared to the traffic the existing site could generate. This results in approximately one additional vehicle every 75 seconds during the morning peak hour and one additional vehicle every minute (60 seconds) during the afternoon peak hour on the surrounding street network compared to the existing project site. This study assessed the additional improvements that could be needed due to the additional square footage of this proposed site, and any vehicle rerouting that could occur with the site being located further to the east. Analysis of the existing street network, the proposed project development, and expected traffic volumes resulted in the following recommendations:

2030 Recommendations

All offsite transportation recommendations identified as being needed within this horizon are consistent with the findings of the master traffic study. Those improvements are already being proposed and constructed to serve the entire development area. As such, the following outlines the recommendations found to be needed by the 2030 horizon:

- The Campus Drive & Sorrel Avenue (#1) intersection is anticipated to be constructed prior to AdventHealth Louisville construction. Based on currently proposed construction plans, it will be a 'T'-roundabout controlled intersection, with eastbound Campus Drive operating with a shared through/right turn lane, westbound Campus Drive providing separate left and through lanes, and the northbound Sorrel Avenue approach providing one lane for shared left/right

turning movements. R1-2 “YIELD” signs should be posted on all three approaches to the roundabout.

- The Campus Drive & 96th Street (#2) intersection is anticipated to become a signalized ‘T’-intersection with full movements allowed by the 2030 horizon prior to AdventHealth construction. For purposes of this study, the eastbound Campus Drive approach was based on the proposed construction plans, which would have dual continuous eastbound left turn lanes and a separate right turn lane approximately 500 feet in length. The northbound 96th Street approach was conservatively assumed to provide a single 200-foot left turn lane and two through lanes in this horizon. However, at full buildout based on construction plans, it is anticipated to provide dual left turn lanes and three through lanes northbound. The southbound 96th Street approach should provide two through lanes and a 200-foot right turn lane.
- The 96th Street/Via Varra & Northwest Parkway (#3) intersection may require extension of the eastbound right turn lane from 375 feet to approximately 475 feet by this horizon to meet expected vehicle queues. However, if not improved, it is believed any additional vehicles can safely queue in the southernmost eastbound through lane if these queues are experienced.
- The future Rockcress Drive & Sorrel Avenue (#4) intersection is proposed to be constructed as a four-leg roundabout prior to AdventHealth construction. The eastbound, northbound, and southbound approaches are all expected to provide one approach lane for shared left/through/right turning movements, while the westbound approach would provide a shared left/through lane and a separate right turn lane. Each approach should provide R1-2 “YIELD” signs on approach to the intersection.
- The Rockcress Drive/Via Varra & Northwest Parkway (#5) intersection is expected to be improved on the eastbound approach to the intersection with dual left turn lanes, one of which would provide 400 feet in length while the other would be a continuous turn lane. These improvements are based on the currently proposed improvement plans. Although it is understood that three southbound through lanes are eventually proposed at this intersection, it was conservatively analyzed with the existing two southbound through lanes during this horizon.

The following recommendations are specific to accesses proposed for Phase 1 of the AdventHealth Louisville Hospital Campus to be constructed by the development:

- Two full movement accesses are proposed along the east side of Sorrel Avenue that will align with two proposed accesses on the west side of Sorrel Avenue. R1-1 “STOP” signs are proposed on the eastbound and westbound approaches to Sorrel Avenue at both accesses. These accesses should operate well with one approach lane for shared left/through/right turning movements. The northbound and southbound approaches of Sorrel Avenue to both accesses are recommended to provide 150-foot left turn lanes and shared through/right turn lanes.
- A third full movement access along the east side of Sorrel Avenue is also proposed, which is anticipated to be constructed as a ‘T’-intersection. An R1-1 “STOP” sign should be constructed on the westbound approach for vehicles exiting the site. A southbound left turn lane 150 feet in length should also be provided.
- The primary access into the proposed site is anticipated to be along Rockcress Drive, approximately 775 feet to the west of Northwest Parkway, measured center to center. This intersection is anticipated to operate well under minor street stop control through the 2030 horizon with Phase 1 construction of AdventHealth Louisville. The Rockcress Access (#8) is recommended to provide a 150-foot left turn lane, one through lane, and one shared through/right turn lane along both eastbound and westbound Rockcress Drive. The northbound approach to the intersection is anticipated to operate well with one lane for shared left/through/right turning movements while the southbound approach exiting the hospital should provide a 200-foot left turn lane and a separate through/right lane. Of note, dual southbound left turn lanes are recommended at this access at full buildout and as such, it is recommended that pavement width be provided for the future second left turn lane, but that it be striped out with chevron striping to allow only one southbound left turn lane until full buildout of the hospital site. During this horizon, R1-1 “STOP” signs should be posted on the northbound and southbound approaches.

2040 & 2045 Recommendations

The offsite transportation recommendations identified in the 2040 and 2045 horizons are also consistent with the findings of the master traffic study. All of the improvements identified herein are anticipated to result in the study intersections and surrounding street network operating acceptably in both the 2040 and 2045 horizons. The improvements already being proposed and constructed to serve the entire development area as follows:

- By the 2040 horizon, it was assumed that the Campus Drive & 96th Street (#2) intersection would provide dual northbound left turn lanes 200 feet in length while a third northbound through lane would also be provided. This third northbound through lane would provide the third required receiving lane for the proposed triple northbound left turn lanes at Northwest Parkway just to the southeast.
- The 96th Street/Via Varra & Northwest Parkway (#3) intersection is anticipated to provide triple northbound left turn lanes on Northwest Parkway and triple eastbound left turn lanes on 96th Street based on proposed improvement plans. For purposes of this study, the third northbound left turn lane was assumed to provide 600 feet in length while the third eastbound left turn was assumed to provide 250 feet in length. It should be noted the third eastbound left turn lane will require three receiving lanes on Northwest Parkway to the north of this intersection.
- The Rockcress Parkway/Via Varra & Northwest Parkway (#5) intersection should provide three southbound through lanes by this horizon.

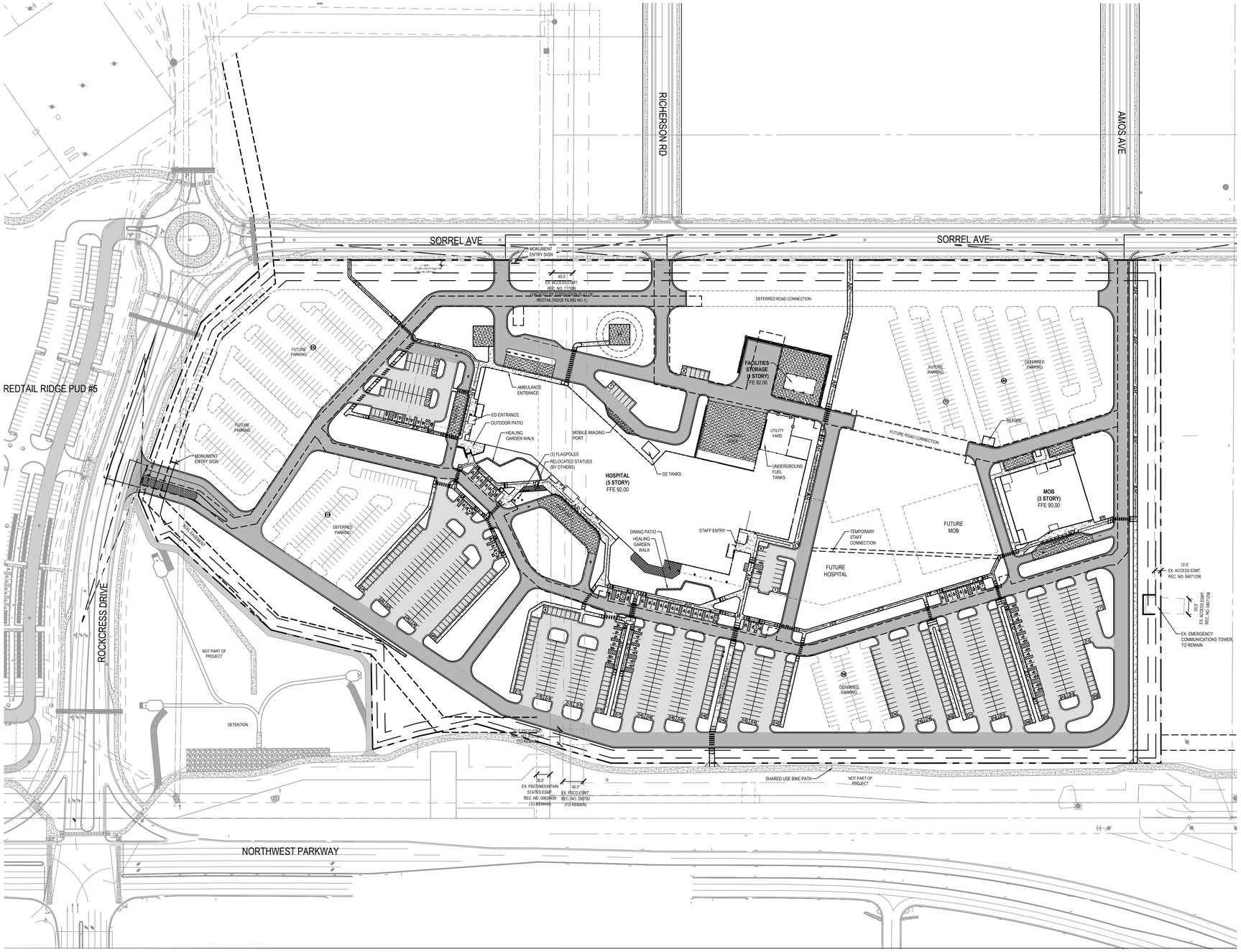
The following identified improvements are recommended in association with development of full buildout of the AdventHealth Louisville hospital and medical campus. These improvements are in addition to improvements already being planned and constructed.

- To meet expected vehicle queues, the inner northbound left turn lane at the Rockcress Parkway/Via Varra & Northwest Parkway (#5) intersection may need to be extended from 250 feet to 375 feet to meet expected vehicle queues. It is believed this northbound left turn lane extension can be accomplished with minor median reconstruction.
- With full buildout of the AdventHealth site, the Rockcress Access (#8) is recommended to be signalized and is expected to meet warrants for signalization. When signalized, the southbound approach exiting the hospital is recommended to be improved to provide dual left turn lanes 200 feet in length, with the westernmost left turn lane also providing through movement, while a separate right turn lane should be provided.

General Recommendations

- Any onsite or offsite improvements should be incorporated into the Civil Drawings and conform to standards of the City of Louisville and the Manual on Uniform Traffic Control Devices (MUTCD) – 11th Edition, 2023.

Appendix A: Conceptual Site Plan



LEGEND:

- PROPERTY LINE
- MATCHLINE
- HEAVY DUTY ASPHALT
- STANDARD DUTY ASPHALT
- HEAVY DUTY CONCRETE PAVEMENT (SEE SITE AMENITIES SHEET LS101–LS102)
- STANDARD CONCRETE PAVEMENT (SEE SITE AMENITIES SHEET LS101–LS102)
- CONCRETE UNIT PAVERS (SEE SITE AMENITIES SHEET LS101–LS102)
- EV PARKING SPACE (CHARGER INSTALLED)
- EV–READY PARKING SPACE
- EV–CAPABLE PARKING SPACE
- EV–CAPABLE LIGHT PARKING SPACE
- FUTURE BUILDING FOOTPRINT
- CURB & GUTTER
- FUTURE/DEFERRED CURB
- PARKING COUNT
- BUILDING/PARKING SETBACK LINE
- EX. EASEMENT LINE
- ACCESSIBLE ROUTE

NOTES

1. ALL ACCESSIBLE ROUTES, GENERAL SITE AND BUILDING ELEMENTS, RAMPS, CURB RAMPS, STRIPING AND PAVEMENT MARKINGS SHALL CONFORM TO ADA STANDARDS FOR ACCESSIBLE DESIGN, LATEST EDITION.
2. ALL DIMENSIONS ARE TO THE FLOWLINE UNLESS OTHERWISE NOTED
3. ALL CURB RADII TO BE 3' UNLESS OTHERWISE STATED IN PLANS.
4. ALL INTERNAL DRIVES TO BE PRIVATE.

811 Know what's **below.** **Call** before you dig.

Plot Date:

REDTAIL RIDGE PUD #6

PLANNED UNIT DEVELOPMENT AND SPECIAL REVIEW USE
LOT # 1, BLOCK 2, REDTAIL RIDGE PUD #6
CITY OF LOUISVILLE, COUNTY OF BOULDER, COLORADO
CASE #

SMITHGROUP
1675 LARIMER STREET
SUITE 500
DENVER, CO 80202
303.832.3272
smithgroup.com

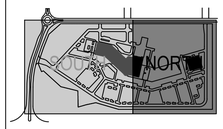
Kimley»Horn
6200 SOUTH SYRACUSE WAY
SUITE 300
GREENWOOD VILLAGE, CO 80111
303.228.2300
kimley-horn.com

ISSUED FOR	DATE
1st PUD SUBMITTAL	17NOV2025

SEALS AND SIGNATURES

NOT FOR CONSTRUCTION

KEYPLAN



PROJECT NORTH

SCALE

GRAPHIC SCALE IN FEET
0 50 100 200

SHEET TITLE

OVERALL SITE PLAN - 100 SCALE

PUD SHEET NUMBER	SG SHEET NUMBER
02 of 37	CS-100

PROJECT NUMBER

Appendix B: Fox Tuttle Study Documents

Redtail Ridge

Traffic and Mobility Study

Updated Date: July 30, 2024

COLORADO LICENSED
CASSANDRA R. SLADE
44414
PROFESSIONAL ENGINEER

Submitted To:
Sterling Bay
5910 Pacific Center Blvd, Suite 200
San Diego, CA 92121

Submitted By:
Fox Tuttle Transportation Group, LLC
1580 Logan Street, 6th Floor
Denver, CO 80203

FOX TUTTLE

2.0 Project Description

A concept showing the preliminary proposed internal roadway network, proposed access to the external network, and the development areas is provided in **Figure 2.**

Figure 2. Proposed Land Use and Internal Roadways

While subject to change, the proposed land use type/size and estimated timeframe for when each phase will be completed and fully occupied is summarized below in **Table 1**:

Table 1. Summary of Land Uses and Sizes by Phase

Land Use Type	Phase 1 By Year 2025	Phase 2 By Year 2030	Phase 3 By Year 2035	Total
Industrial	509,260 sq. ft.	118,800 sq. ft.	-	*628,060 sq. ft.*
Life Science & Amenity Bldg.	300,000 sq. ft.	-	-	*300,000 sq. ft.*
Good Manufacturing Practice (GMP)	598,940 sq. ft.	-	-	*598,940 sq. ft.*
General Office	-	90,000 sq. ft.	270,000 sq. ft.	*360,000 sq. ft.*
Research and Development Center	-	264,000 sq. ft.	-	*264,000 sq. ft.*
Retail Services	-	14,000 sq. ft.	-	*14,000 sq. ft.*
Hospital	-	285,000 sq. ft.	-	*285,000 sq. ft.*
Medical/Dental Office	-	150,000 sq. ft.	-	*150,000 sq. ft.*
Total	**1,408,200 sq. ft.**	**921,800 sq. ft.**	**270,000 sq. ft.**	***2,600,000 sq. ft.***

The Redtail Ridge project will include two (2) new east-west roadway connections between 88th Street and 96th Street/Northwest Parkway. The first phase, prior to Year 2025, will include the extension of Campus Drive from the current dead end near Monarch High School (approximately 2,200 feet east of S. 88th Street) to 96th Street. This new connection will serve traffic generated by the proposed development, as well as existing traffic currently traveling along 88th Street and Dillon Road. The existing intersection of 88th Street/Campus Drive is full-movement and signalized. With the Campus Drive extension, a new full-movement signalized intersection is proposed on S. 96th Street at the northeast corner of the site, which will be near where Old 96th Street/Disc Drive currently intersects as a 3/4 movement access.

The first phase will also include construction of Rockcress Drive from Northwest Parkway to midway in the project site, which will be extended to S. 88th Street within the second phase (prior to Year 2030). This will be an additional east-west connection through the area. The existing intersection on Northwest

As shown in **Table 11**, with the assumptions listed above, the project site is expected to generate approximately 6,663 daily, 758 AM peak hour, and 803 PM peak hour external trips by Year 2025. At full build out the project site is expected to generate approximately 21,285 daily, 1,908 AM peak hour, and 2,149 PM peak hour external trips.

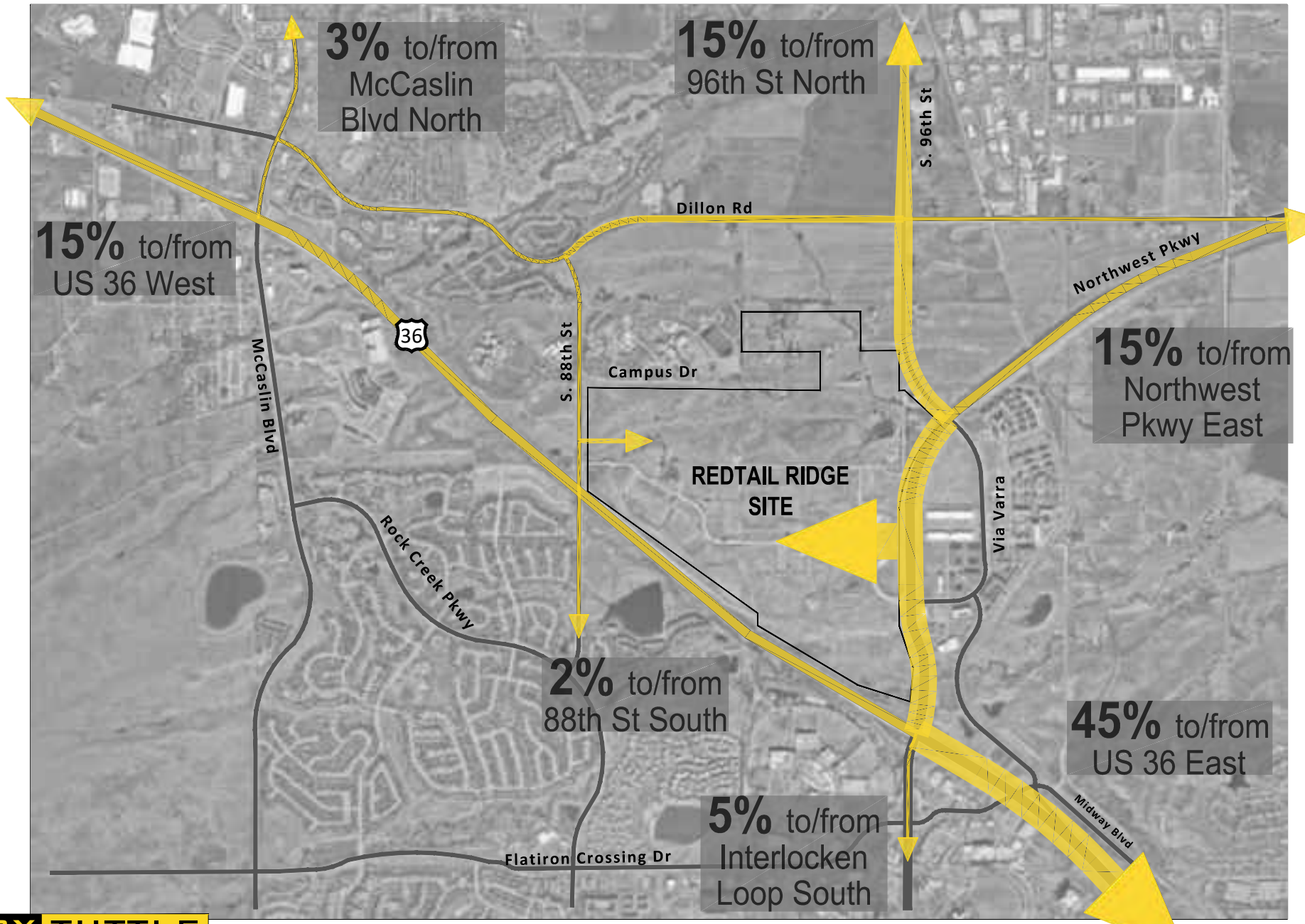
Table 11. Trip Generation Summary

	Land Use	Size	Unit	Non-SOV	Internal Capture	Net Reduction Factor	Average Weekday Trips Rate	Average Weekday Trips Total	Weekday AM Peak Hour Trips Rate	Weekday AM Peak Hour Trips Total	Weekday AM Peak Hour Trips In	Weekday AM Peak Hour Trips Out	Weekday PM Peak Hour Trips Rate	Weekday PM Peak Hour Trips Total	Weekday PM Peak Hour Trips In	Weekday PM Peak Hour Trips Out
Phase 1 (2025)	#130 Industrial Park	509.26	KSF	**12%**	**3%**	85%	*	1,868	0.4	174	141	33	0.4	174	37	137
	#760 Research and Development Center (Life Science + Amenity)	300.0	KSF	**12%**	**3%**	85%	**	2,695	1.03	264	216	48	0.98	251	40	211
	#140 Manufacturing (GMP)	598.94	KSF	**12%**	**3%**	85%	*****	2,100	******	320	243	77	0.74	378	117	261
		######	**KSF**			**Subtotal**		**6,663**		**758**	**600**	**158**		**803**	**194**	**609**
Phase 2 (2030)	#820 Shopping Center	14.0	KSF	**12%**	**75%**	22%	37.75	116	0.94	3	2	1	3.81	12	6	6
	#130 Industrial Park	118.8	KSF	**12%**	**3%**	85%	*	877	0.4	41	33	8	0.40	41	9	32
	#710 General Office Building	90	KSF	**12%**	**3%**	85%	**	818	***	95	82	13	****	88	14	74
	#760 Research and Development Center	264.00	KSF	**12%**	**3%**	85%	**	2,397	1.03	232	190	42	0.98	221	35	186
	#610 Hospital	160.0	BEDS	**12%**	**3%**	85%	22.32	3,048	1.79	244	176	68	1.69	231	76	155
	#720 Medical-Dental Office Bldg	150.0	KSF	**12%**	**3%**	85%	36.00	4,609	***	296	234	62	3.93	503	151	352
		921.80	**KSF**			**Subtotal**		**12,037**		**911**	**717**	**194**		**1,096**	**291**	**805**
Ph 3 (2040)	#710 General Office Building	270.0	KSF	**12%**	**3%**	85%	**	2,374	***	239	206	33	****	250	40	210
		270.00	**KSF**			**Subtotal**		**2,585**		**239**	**206**	**33**		**250**	**40**	**210**
						Full Buildout Total		**21,285**		**1,908**	**1,523**	**385**		**2,149**	**525**	**1,624**

* ITE Equation: EXP(0.52*LN(X) *** ITE Equation: (0.94*X+ 26.49) ***** ITE Equation 3.77*X+201.98
** ITE Equation: EXP(0.97*LN(X **** ITE Equation EXP(0.95*LN(X) ****** ITE Equation 0.61*X+9.54

7.6 Trip Distribution and Assignment

To develop the trip distribution for the proposed development, available traffic count and travel pattern data was reviewed. The proposed land uses for the project site were also taken into consideration which suggests that traffic generated to/from the project site is expected to utilize the regional transportation system, with a smaller percent of the trips generated by the local system. Therefore, most vehicles are expected to use the regional routes (such as US 36, Northwest Parkway, and S. 96th Street to the north) and few vehicles are expected to use local roads. Travel routes/patterns were reviewed to determine how vehicles are expected to access the site and what route is likely to be fastest for vehicles to use to



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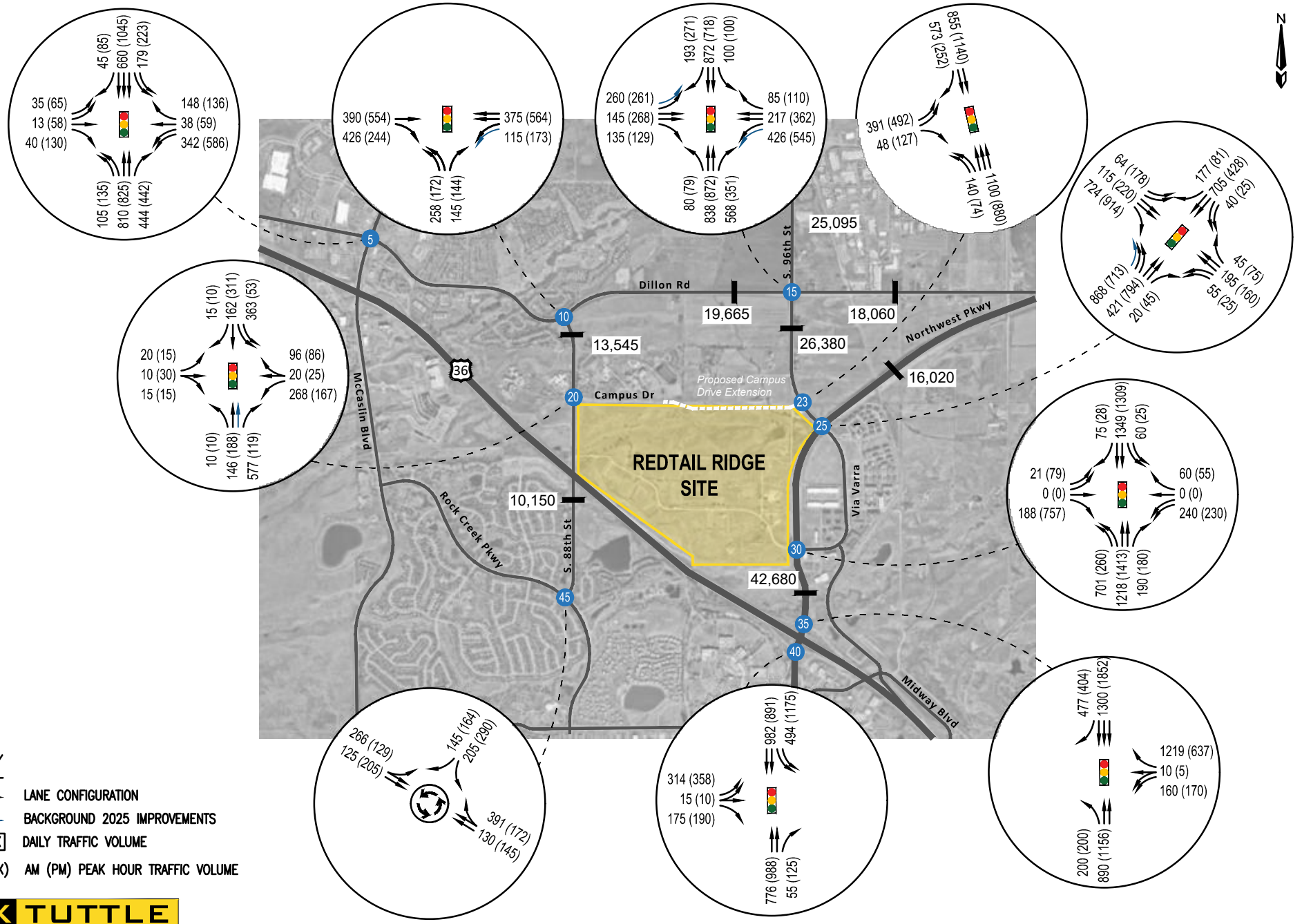
REDTAIL RIDGE TRAFFIC AND MOBILITY STUDY
TRIP DISTRIBUTION

FT Project #	19055	Original Scale	NTS	Date	02/15/2023	Drawn by	MAR	Figure #	18



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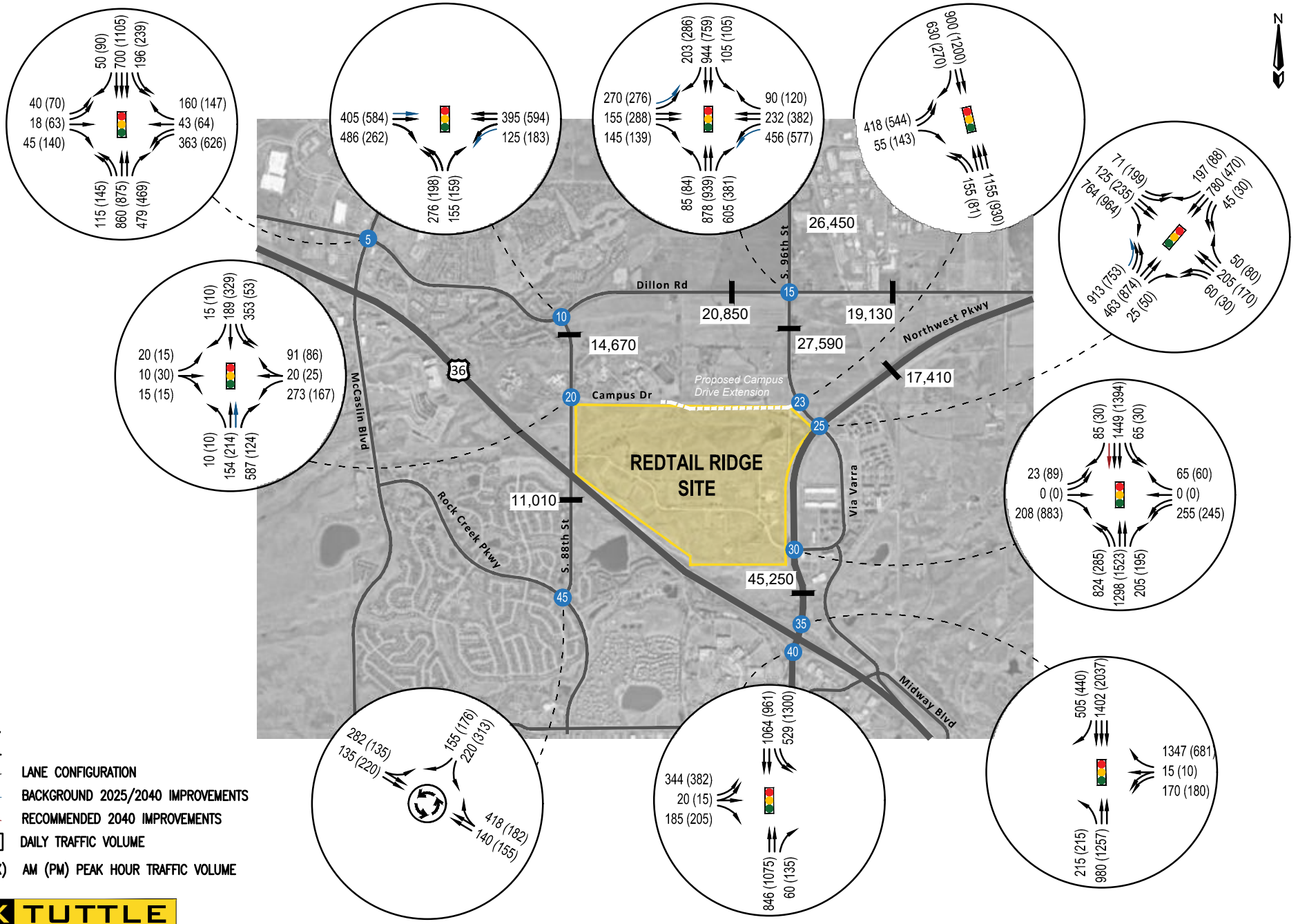
REDTAIL RIDGE TRAFFIC AND MOBILITY STUDY

YEAR 2030 BACKGROUND + REDTAIL RIDGE (PHASE 1 & 2) TRAFFIC VOLUMES

FT Project #	19055	Original Scale	NTS	Date	10/04/2023	Drawn by	SKK	Figure #	23



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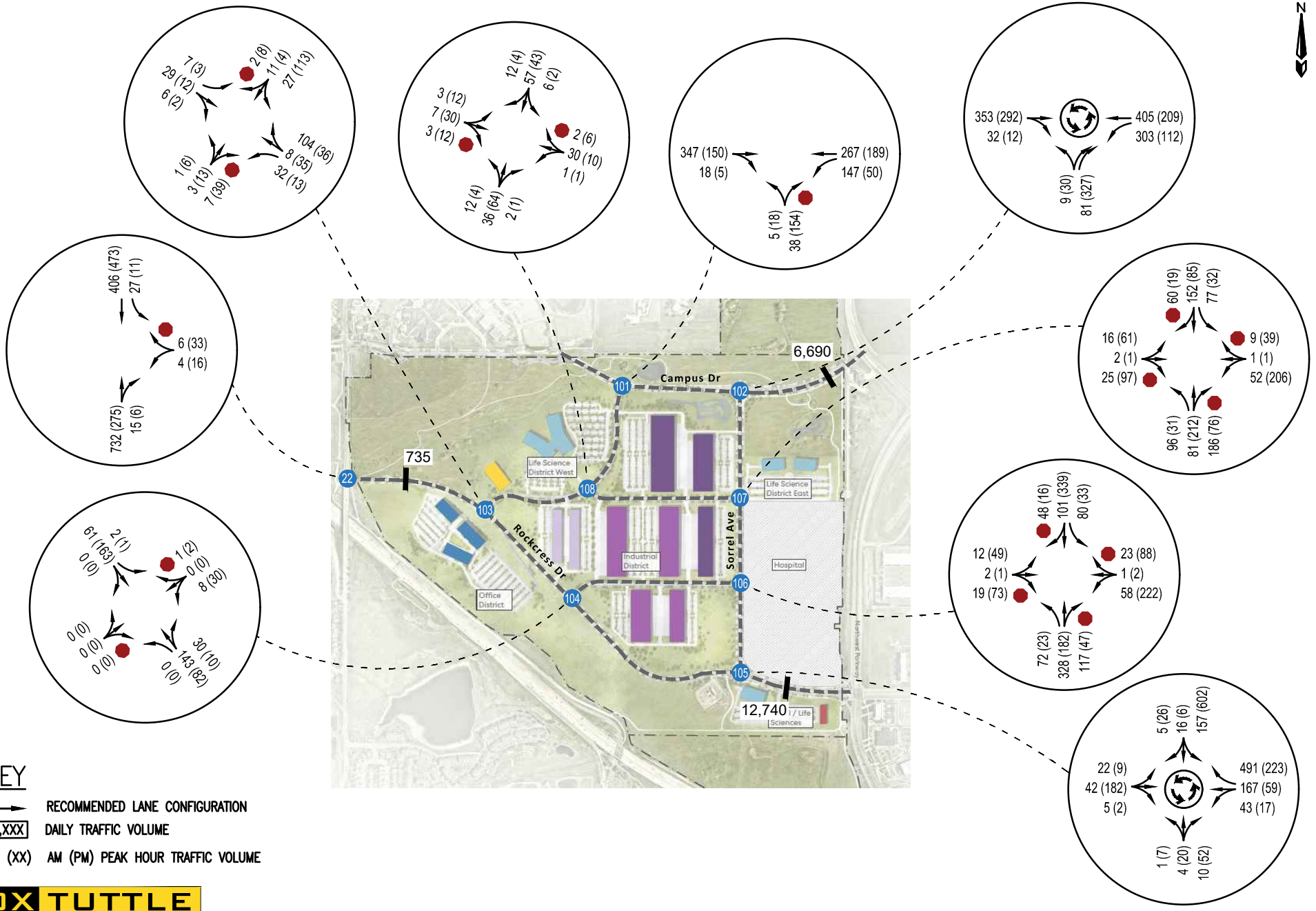
REDTAIL RIDGE TRAFFIC AND MOBILITY STUDY

YEAR 2040 BACKGROUND + REDTAIL RIDGE (FULL BUILDOUT) TRAFFIC VOLUMES

FT Project #	19055	Original Scale	NTS	Date	10/04/2023	Drawn by	SKK	Figure #	24



KEY

→ RECOMMENDED LANE CONFIGURATION

X,XXX DAILY TRAFFIC VOLUME

XX (XX) AM (PM) PEAK HOUR TRAFFIC VOLUME

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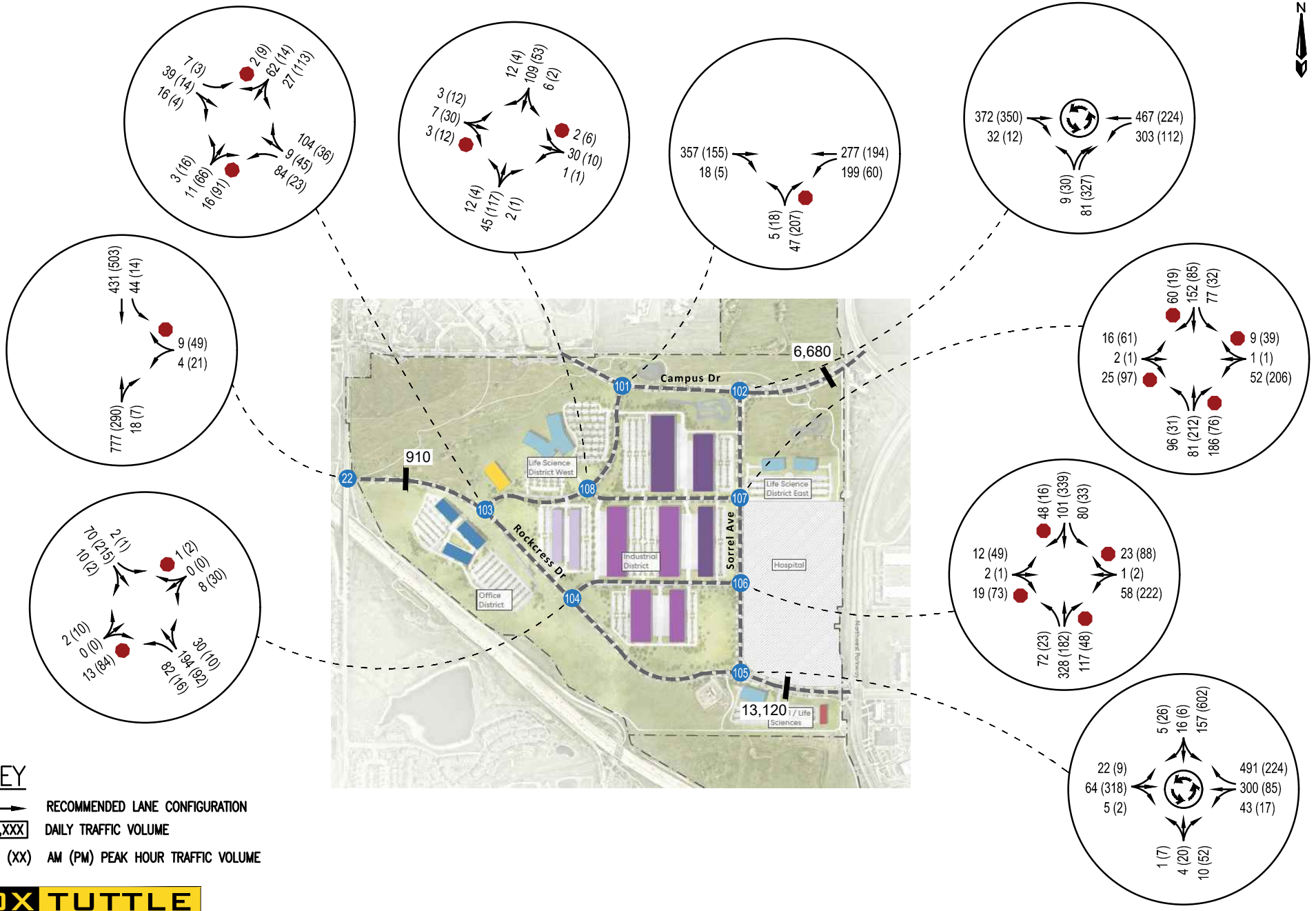
REDTAIL RIDGE TRAFFIC AND MOBILITY STUDY

YEAR 2030 BACKGROUND + REDTAIL RIDGE (PHASE 1 & 2) TRAFFIC VOLUMES [INTERNAL INTERSECTIONS]

FT Project #	19055	Original Scale	NTS	Date	07/17/2024	Drawn by	SKK	Figure #	26



KEY

- → RECOMMENDED LANE CONFIGURATION
- [X,XXX] DAILY TRAFFIC VOLUME
- XX (XX) AM (PM) PEAK HOUR TRAFFIC VOLUME

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REDTAIL RIDGE TRAFFIC AND MOBILITY STUDY

YEAR 2040 BACKGROUND + REDTAIL RIDGE (FULL BUILDOUT) TRAFFIC VOLUMES [INTERNAL INTERSECTIONS]

FT Project #	19055	Original Scale	NTS	Date	07/17/2024	Drawn by	SKK	Figure #	27

Appendix C: Trip Generation Worksheets

AdventHealth Louisville Trip Generation - 2030 Horizon

Land Use	Size	Unit	Non-SOV	Internal Capture	Net Reduction Factor	Average Weekday Trips		Weekday AM Peak Hour Trips				Weekday PM Peak Hour Trips			
						Rate	Total	Rate	Total	In	Out	Rate	Total	In	Out
Hospital (ITE 610)	200	Beds	12%	3%	85%	22.32	3,810	1.79	306	220	86	1.69	289	95	193
Medical-Dental Office Bldg (ITE 720)	80	KSF	12%	3%	85%	36.00	2,458	*	168	133	35	3.93	268	81	188
					TOTAL		**6,269**		**474**	**353**	**121**		**557**	**176**	**381**

* ITE Equation Ln(T) = (0.90 Ln(X) + 1.34)

AdventHealth Louisville Trip Generation - Full Buildout (2040 Horizon)

Land Use	Size	Unit	Non-SOV	Internal Capture	Net Reduction Factor	Average Weekday Trips		Weekday AM Peak Hour Trips				Weekday PM Peak Hour Trips			
						Rate	Total	Rate	Total	In	Out	Rate	Total	In	Out
Hospital (ITE 610)	300	Beds	12%	3%	85%	22.32	5,716	1.79	458	330	128	1.69	433	143	290
Medical-Dental Office Bldg (ITE 720)	160	KSF	12%	3%	85%	36.00	4,917	*	314	248	66	3.93	537	161	376
					TOTAL		**10,632**		**772**	**578**	**194**		**970**	**304**	**666**

* ITE Equation Ln(T) = (0.90 Ln(X) + 1.34)

These methods of trip generation calculations are consistent with the methods used in the Redtail Ridge Master Traffic Study. To be consistent with that study, as the hospital site is within the master study area, the rates/equations and trip generation adjustments used in the master study are used in this analysis.

Appendix D: Intersection Analysis Worksheets

Intersection	
Intersection Delay, s/veh	5.7
Intersection LOS	A

Approach	EB	WB	NB
Entry Lanes	1	2	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	405	641	67
Demand Flow Rate, veh/h	413	654	68
Vehicles Circulating, veh/h	205	7	392
Vehicles Exiting, veh/h	456	453	226
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	7.0	4.9	4.6
Approach LOS	A	A	A

Lane	Left	Left	Right	Left
Designated Moves	TR	L	TR	LR
Assumed Moves	TR	L	TR	LR
RT Channelized				
Lane Util	1.000	0.313	0.687	1.000
Follow-Up Headway, s	2.609	2.535	2.535	2.609
Critical Headway, s	4.976	4.544	4.544	4.976
A (Intercept)	1380	1420	1420	1380
B (Slope)	1.02e-3	9.101e-4	9.101e-4	1.02e-3
Entry Flow, veh/h	413	205	449	68
Cap Entry Lane, veh/h	1120	1411	1411	925
Entry HV Adj Factor	0.981	0.980	0.980	0.985
Flow Entry, veh/h	405	201	440	67
Cap Entry, veh/h	1099	1384	1383	912
V/C Ratio	0.369	0.145	0.318	0.074
Control Delay, s/veh	7.0	3.8	5.4	4.6
LOS	A	A	A	A
95th %tile Queue, veh	2	1	1	0

Intersection	
Intersection Delay, s/veh	5.1
Intersection LOS	A

Approach	EB	WB	NB
Entry Lanes	1	2	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	325	295	264
Demand Flow Rate, veh/h	331	301	269
Vehicles Circulating, veh/h	69	22	323
Vehicles Exiting, veh/h	254	570	77
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	5.1	3.8	6.4
Approach LOS	A	A	A

Lane	Left	Left	Right	Left
Designated Moves	TR	L	TR	LR
Assumed Moves	TR	L	TR	LR
RT Channelized				
Lane Util	1.000	0.229	0.771	1.000
Follow-Up Headway, s	2.609	2.535	2.535	2.609
Critical Headway, s	4.976	4.544	4.544	4.976
A (Intercept)	1380	1420	1420	1380
B (Slope)	1.02e-3	9.101e-4	9.101e-4	1.02e-3
Entry Flow, veh/h	331	69	232	269
Cap Entry Lane, veh/h	1286	1392	1392	993
Entry HV Adj Factor	0.981	0.986	0.980	0.981
Flow Entry, veh/h	325	68	227	264
Cap Entry, veh/h	1261	1372	1365	974
V/C Ratio	0.257	0.050	0.167	0.271
Control Delay, s/veh	5.1	3.0	4.0	6.4
LOS	A	A	A	A
95th %tile Queue, veh	1	0	1	1

Intersection	
Intersection Delay, s/veh	6.2
Intersection LOS	A

Approach	EB	WB	NB
Entry Lanes	1	2	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	424	737	112
Demand Flow Rate, veh/h	433	752	114
Vehicles Circulating, veh/h	303	13	392
Vehicles Exiting, veh/h	462	493	344
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	8.4	5.0	5.1
Approach LOS	A	A	A

Lane	Left	Left	Right	Left
Designated Moves	TR	L	TR	LR
Assumed Moves	TR	L	TR	LR
RT Channelized				
Lane Util	1.000	0.403	0.597	1.000
Follow-Up Headway, s	2.609	2.535	2.535	2.609
Critical Headway, s	4.976	4.544	4.544	4.976
A (Intercept)	1380	1420	1420	1380
B (Slope)	1.02e-3	9.101e-4	9.101e-4	1.02e-3
Entry Flow, veh/h	433	303	449	114
Cap Entry Lane, veh/h	1013	1403	1403	925
Entry HV Adj Factor	0.980	0.980	0.980	0.982
Flow Entry, veh/h	424	297	440	112
Cap Entry, veh/h	993	1376	1376	909
V/C Ratio	0.427	0.216	0.320	0.123
Control Delay, s/veh	8.4	4.4	5.4	5.1
LOS	A	A	A	A
95th %tile Queue, veh	2	1	1	0

Intersection	
Intersection Delay, s/veh	6.1
Intersection LOS	A

Approach	EB	WB	NB
Entry Lanes	1	2	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	334	343	408
Demand Flow Rate, veh/h	340	350	416
Vehicles Circulating, veh/h	118	43	323
Vehicles Exiting, veh/h	275	696	135
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	5.5	3.8	8.4
Approach LOS	A	A	A

Lane	Left	Left	Right	Left
Designated Moves	TR	L	TR	LR
Assumed Moves	TR	L	TR	LR
RT Channelized				
Lane Util	1.000	0.337	0.663	1.000
Follow-Up Headway, s	2.609	2.535	2.535	2.609
Critical Headway, s	4.976	4.544	4.544	4.976
A (Intercept)	1380	1420	1420	1380
B (Slope)	1.02e-3	9.101e-4	9.101e-4	1.02e-3
Entry Flow, veh/h	340	118	232	416
Cap Entry Lane, veh/h	1223	1366	1366	993
Entry HV Adj Factor	0.981	0.983	0.980	0.981
Flow Entry, veh/h	334	116	227	408
Cap Entry, veh/h	1201	1342	1339	973
V/C Ratio	0.278	0.086	0.170	0.419
Control Delay, s/veh	5.5	3.4	4.1	8.4
LOS	A	A	A	A
95th %tile Queue, veh	1	0	1	2

Intersection	
Intersection Delay, s/veh	6.0
Intersection LOS	A

Approach	EB	WB	NB
Entry Lanes	1	2	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	425	709	67
Demand Flow Rate, veh/h	433	723	68
Vehicles Circulating, veh/h	205	7	412
Vehicles Exiting, veh/h	525	473	226
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	7.3	5.3	4.7
Approach LOS	A	A	A

Lane	Left	Left	Right	Left
Designated Moves	TR	L	TR	LR
Assumed Moves	TR	L	TR	LR
RT Channelized				
Lane Util	1.000	0.284	0.716	1.000
Follow-Up Headway, s	2.609	2.535	2.535	2.609
Critical Headway, s	4.976	4.544	4.544	4.976
A (Intercept)	1380	1420	1420	1380
B (Slope)	1.02e-3	9.101e-4	9.101e-4	1.02e-3
Entry Flow, veh/h	433	205	518	68
Cap Entry Lane, veh/h	1120	1411	1411	906
Entry HV Adj Factor	0.981	0.980	0.980	0.985
Flow Entry, veh/h	425	201	508	67
Cap Entry, veh/h	1099	1384	1383	893
V/C Ratio	0.387	0.145	0.367	0.075
Control Delay, s/veh	7.3	3.8	5.9	4.7
LOS	A	A	A	A
95th %tile Queue, veh	2	1	2	0

Intersection	
Intersection Delay, s/veh	5.4
Intersection LOS	A

Approach	EB	WB	NB
Entry Lanes	1	2	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	388	311	264
Demand Flow Rate, veh/h	396	317	269
Vehicles Circulating, veh/h	69	22	388
Vehicles Exiting, veh/h	270	635	77
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	5.7	3.9	7.0
Approach LOS	A	A	A

Lane	Left	Left	Right	Left
Designated Moves	TR	L	TR	LR
Assumed Moves	TR	L	TR	LR
RT Channelized				
Lane Util	1.000	0.218	0.782	1.000
Follow-Up Headway, s	2.609	2.535	2.535	2.609
Critical Headway, s	4.976	4.544	4.544	4.976
A (Intercept)	1380	1420	1420	1380
B (Slope)	1.02e-3	9.101e-4	9.101e-4	1.02e-3
Entry Flow, veh/h	396	69	248	269
Cap Entry Lane, veh/h	1286	1392	1392	929
Entry HV Adj Factor	0.981	0.986	0.980	0.981
Flow Entry, veh/h	388	68	243	264
Cap Entry, veh/h	1261	1372	1365	912
V/C Ratio	0.308	0.050	0.178	0.290
Control Delay, s/veh	5.7	3.0	4.1	7.0
LOS	A	A	A	A
95th %tile Queue, veh	1	0	1	1

Intersection	
Intersection Delay, s/veh	6.9
Intersection LOS	A

Approach	EB	WB	NB
Entry Lanes	1	2	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	456	867	140
Demand Flow Rate, veh/h	465	884	142
Vehicles Circulating, veh/h	366	17	412
Vehicles Exiting, veh/h	535	537	419
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	10.0	5.5	5.6
Approach LOS	A	A	A

Lane	Left	Left	Right	Left
Designated Moves	TR	L	TR	LR
Assumed Moves	TR	L	TR	LR
RT Channelized				
Lane Util	1.000	0.414	0.586	1.000
Follow-Up Headway, s	2.609	2.535	2.535	2.609
Critical Headway, s	4.976	4.544	4.544	4.976
A (Intercept)	1380	1420	1420	1380
B (Slope)	1.02e-3	9.101e-4	9.101e-4	1.02e-3
Entry Flow, veh/h	465	366	518	142
Cap Entry Lane, veh/h	950	1398	1398	906
Entry HV Adj Factor	0.980	0.981	0.980	0.986
Flow Entry, veh/h	456	359	508	140
Cap Entry, veh/h	931	1372	1371	894
V/C Ratio	0.489	0.262	0.370	0.157
Control Delay, s/veh	10.0	4.9	6.0	5.6
LOS	A	A	A	A
95th %tile Queue, veh	3	1	2	1

Intersection	
Intersection Delay, s/veh	7.9
Intersection LOS	A

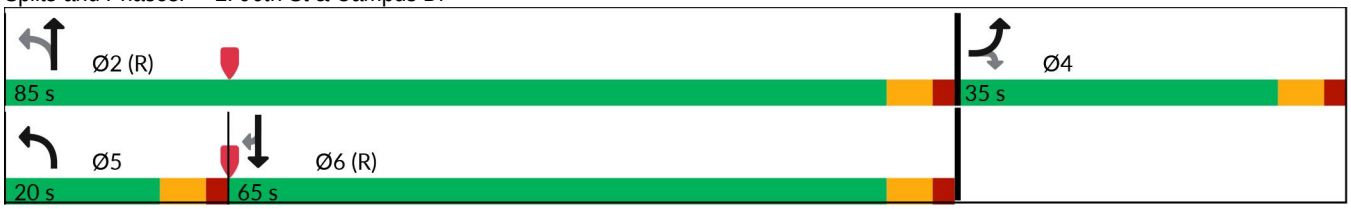
Approach	EB	WB	NB
Entry Lanes	1	2	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	404	394	518
Demand Flow Rate, veh/h	412	402	528
Vehicles Circulating, veh/h	154	59	388
Vehicles Exiting, veh/h	307	857	178
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	6.5	4.0	11.9
Approach LOS	A	A	B

Lane	Left	Left	Right	Left
Designated Moves	TR	L	TR	LR
Assumed Moves	TR	L	TR	LR
RT Channelized				
Lane Util	1.000	0.383	0.617	1.000
Follow-Up Headway, s	2.609	2.535	2.535	2.609
Critical Headway, s	4.976	4.544	4.544	4.976
A (Intercept)	1380	1420	1420	1380
B (Slope)	1.02e-3	9.101e-4	9.101e-4	1.02e-3
Entry Flow, veh/h	412	154	248	528
Cap Entry Lane, veh/h	1179	1346	1346	929
Entry HV Adj Factor	0.982	0.981	0.980	0.981
Flow Entry, veh/h	404	151	243	518
Cap Entry, veh/h	1158	1320	1319	911
V/C Ratio	0.349	0.114	0.184	0.568
Control Delay, s/veh	6.5	3.7	4.3	11.9
LOS	A	A	A	B
95th %tile Queue, veh	2	0	1	4

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	368	45	117	1100	855	478
Future Volume (vph)	368	45	117	1100	855	478
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases		4	2			6
Detector Phase	4	4	5	2	6	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	11.0	24.0	24.0	24.0
Total Split (s)	35.0	35.0	20.0	85.0	65.0	65.0
Total Split (%)	29.2%	29.2%	16.7%	70.8%	54.2%	54.2%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	C-Max	C-Max	C-Max

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 69 (58%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated

Splits and Phases: 2: 96th St & Campus Dr



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	368	45	117	1100	855	478
Future Volume (veh/h)	368	45	117	1100	855	478
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	400	49	127	1196	929	520
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	486	223	336	2699	2375	1059
Arrive On Green	0.14	0.14	0.04	0.76	0.67	0.67
Sat Flow, veh/h	3456	1585	1781	3647	3647	1585
Grp Volume(v), veh/h	400	49	127	1196	929	520
Grp Sat Flow(s),veh/h/ln	1728	1585	1781	1777	1777	1585
Q Serve(g_s), s	13.5	3.3	2.5	14.6	14.1	19.4
Cycle Q Clear(g_c), s	13.5	3.3	2.5	14.6	14.1	19.4
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	486	223	336	2699	2375	1059
V/C Ratio(X)	0.82	0.22	0.38	0.44	0.39	0.49
Avail Cap(c_a), veh/h	835	383	470	2699	2375	1059
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.62	0.62	1.00	1.00
Uniform Delay (d), s/veh	50.1	45.7	6.5	5.2	8.9	9.8
Incr Delay (d2), s/veh	3.6	0.5	0.4	0.3	0.5	1.6
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.1	3.1	0.9	4.7	5.3	6.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	53.7	46.2	6.9	5.6	9.4	11.4
LnGrp LOS	D	D	A	A	A	B
Approach Vol, veh/h	449			1323	1449	
Approach Delay, s/veh	52.9			5.7	10.1	
Approach LOS	D			A	B	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		97.1		22.9	10.9	86.2
Change Period (Y+Rc), s		6.0		6.0	6.0	6.0
Max Green Setting (Gmax), s		79.0		29.0	14.0	59.0
Max Q Clear Time (g_c+I1), s		16.6		15.5	4.5	21.4
Green Ext Time (p_c), s		12.7		1.4	0.2	11.3

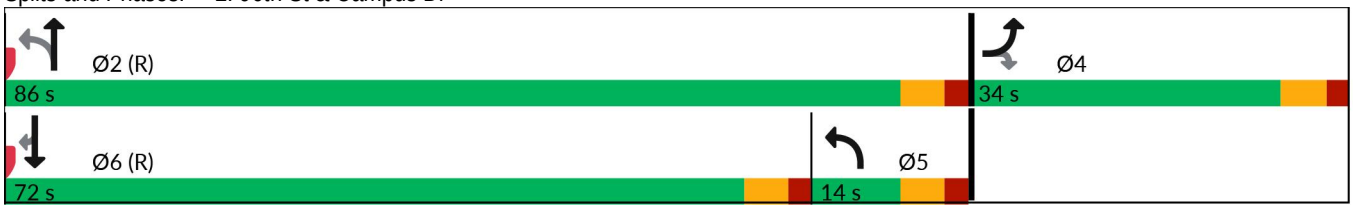
Intersection Summary	
HCM 7th Control Delay, s/veh	14.3
HCM 7th LOS	B

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	409	106	63	880	1140	214
Future Volume (vph)	409	106	63	880	1140	214
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases		4	2			6
Detector Phase	4	4	5	2	6	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	11.0	24.0	24.0	24.0
Total Split (s)	34.0	34.0	14.0	86.0	72.0	72.0
Total Split (%)	28.3%	28.3%	11.7%	71.7%	60.0%	60.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag			Lag		Lead	Lead
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	C-Max	C-Max	C-Max

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 53 (44%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated

Splits and Phases: 2: 96th St & Campus Dr



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	409	106	63	880	1140	214
Future Volume (veh/h)	409	106	63	880	1140	214
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	445	115	68	957	1239	233
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	536	246	423	2648	1955	872
Arrive On Green	0.15	0.15	0.15	0.75	0.55	0.55
Sat Flow, veh/h	3456	1585	1781	3647	3647	1585
Grp Volume(v), veh/h	445	115	68	957	1239	233
Grp Sat Flow(s),veh/h/ln	1728	1585	1781	1777	1777	1585
Q Serve(g_s), s	15.0	7.9	0.0	11.3	28.9	9.3
Cycle Q Clear(g_c), s	15.0	7.9	0.0	11.3	28.9	9.3
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	536	246	423	2648	1955	872
V/C Ratio(X)	0.83	0.47	0.16	0.36	0.63	0.27
Avail Cap(c_a), veh/h	806	370	423	2648	1955	872
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.68	0.68	1.00	1.00
Uniform Delay (d), s/veh	49.2	46.2	23.4	5.3	18.7	14.2
Incr Delay (d2), s/veh	4.6	1.4	0.1	0.3	1.6	0.8
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.8	7.2	1.3	3.8	11.9	3.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	53.8	47.6	23.5	5.6	20.2	15.0
LnGrp LOS	D	D	C	A	C	B
Approach Vol, veh/h	560			1025	1472	
Approach Delay, s/veh	52.5			6.8	19.4	
Approach LOS	D			A	B	

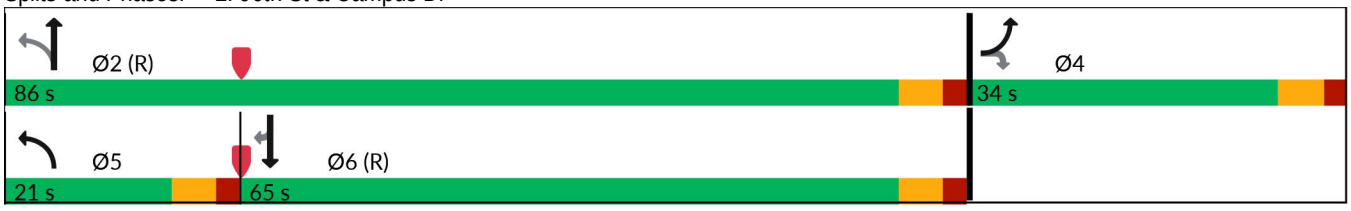
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		95.4		24.6	23.4	72.0
Change Period (Y+Rc), s		6.0		6.0	6.0	6.0
Max Green Setting (Gmax), s		80.0		28.0	8.0	66.0
Max Q Clear Time (g_c+I1), s		13.3		17.0	2.0	30.9
Green Ext Time (p_c), s		9.0		1.6	0.1	13.3

Intersection Summary	
HCM 7th Control Delay, s/veh	21.2
HCM 7th LOS	C

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	398	51	135	1100	873	549
Future Volume (vph)	398	51	135	1100	873	549
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases		4	2			6
Detector Phase	4	4	5	2	6	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	11.0	24.0	24.0	24.0
Total Split (s)	34.0	34.0	21.0	86.0	65.0	65.0
Total Split (%)	28.3%	28.3%	17.5%	71.7%	54.2%	54.2%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	C-Max	C-Max	C-Max

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 73 (61%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated

Splits and Phases: 2: 96th St & Campus Dr



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	398	51	135	1100	873	549
Future Volume (veh/h)	398	51	135	1100	873	549
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	433	55	147	1196	949	597
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	519	238	316	2665	2331	1040
Arrive On Green	0.15	0.15	0.04	0.75	0.66	0.66
Sat Flow, veh/h	3456	1585	1781	3647	3647	1585
Grp Volume(v), veh/h	433	55	147	1196	949	597
Grp Sat Flow(s),veh/h/ln	1728	1585	1781	1777	1777	1585
Q Serve(g_s), s	14.6	3.7	3.1	15.2	15.0	24.9
Cycle Q Clear(g_c), s	14.6	3.7	3.1	15.2	15.0	24.9
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	519	238	316	2665	2331	1040
V/C Ratio(X)	0.83	0.23	0.47	0.45	0.41	0.57
Avail Cap(c_a), veh/h	806	370	460	2665	2331	1040
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.62	0.62	1.00	1.00
Uniform Delay (d), s/veh	49.5	44.9	7.4	5.7	9.7	11.4
Incr Delay (d2), s/veh	4.5	0.5	0.7	0.3	0.5	2.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.6	3.4	1.1	5.0	5.7	8.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	54.1	45.4	8.1	6.0	10.2	13.7
LnGrp LOS	D	D	A	A	B	B
Approach Vol, veh/h	488			1343	1546	
Approach Delay, s/veh	53.1			6.2	11.6	
Approach LOS	D			A	B	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		96.0		24.0	11.3	84.7
Change Period (Y+Rc), s		6.0		6.0	6.0	6.0
Max Green Setting (Gmax), s		80.0		28.0	15.0	59.0
Max Q Clear Time (g_c+I1), s		17.2		16.6	5.1	26.9
Green Ext Time (p_c), s		12.7		1.4	0.2	11.7

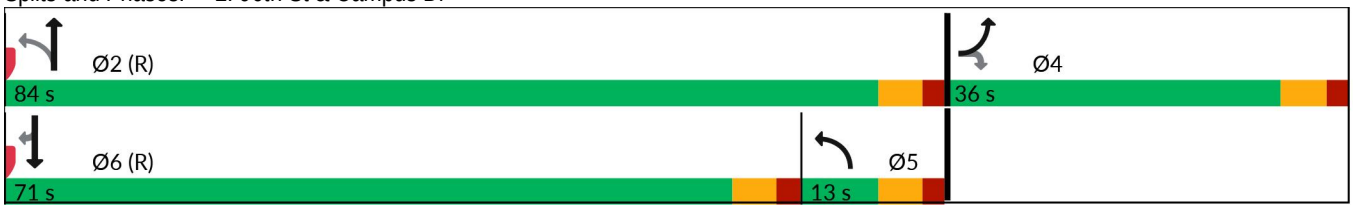
Intersection Summary		
HCM 7th Control Delay, s/veh	15.4	
HCM 7th LOS	B	

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	504	125	72	880	1149	249
Future Volume (vph)	504	125	72	880	1149	249
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases		4	2			6
Detector Phase	4	4	5	2	6	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	11.0	24.0	24.0	24.0
Total Split (s)	36.0	36.0	13.0	84.0	71.0	71.0
Total Split (%)	30.0%	30.0%	10.8%	70.0%	59.2%	59.2%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag			Lag		Lead	Lead
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	C-Max	C-Max	C-Max

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 56 (47%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated

Splits and Phases: 2: 96th St & Campus Dr



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	504	125	72	880	1149	249
Future Volume (veh/h)	504	125	72	880	1149	249
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	548	136	78	957	1249	271
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	642	295	373	2538	1925	859
Arrive On Green	0.19	0.19	0.12	0.71	0.54	0.54
Sat Flow, veh/h	3456	1585	1781	3647	3647	1585
Grp Volume(v), veh/h	548	136	78	957	1249	271
Grp Sat Flow(s),veh/h/ln	1728	1585	1781	1777	1777	1585
Q Serve(g_s), s	18.4	9.2	0.0	12.6	29.8	11.3
Cycle Q Clear(g_c), s	18.4	9.2	0.0	12.6	29.8	11.3
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	642	295	373	2538	1925	859
V/C Ratio(X)	0.85	0.46	0.21	0.38	0.65	0.32
Avail Cap(c_a), veh/h	864	396	373	2538	1925	859
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.67	0.67	1.00	1.00
Uniform Delay (d), s/veh	47.3	43.5	28.0	6.7	19.4	15.2
Incr Delay (d2), s/veh	6.3	1.1	0.2	0.3	1.7	1.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.5	8.3	1.8	4.5	12.4	4.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	53.6	44.6	28.2	7.0	21.1	16.2
LnGrp LOS	D	D	C	A	C	B
Approach Vol, veh/h	684			1035	1520	
Approach Delay, s/veh	51.8			8.6	20.3	
Approach LOS	D			A	C	

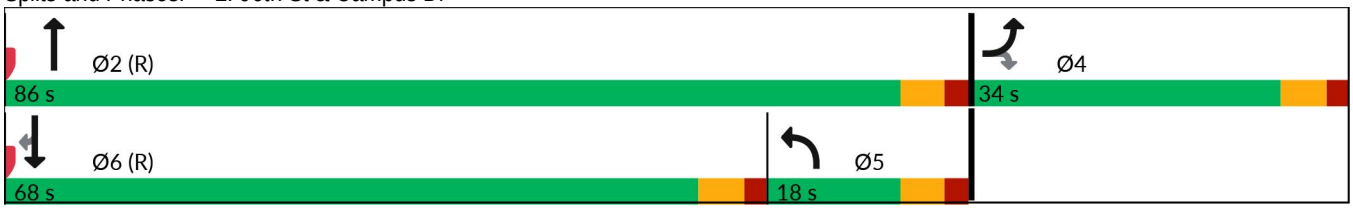
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		91.7		28.3	20.7	71.0
Change Period (Y+Rc), s		6.0		6.0	6.0	6.0
Max Green Setting (Gmax), s		78.0		30.0	7.0	65.0
Max Q Clear Time (g_c+I1), s		14.6		20.4	2.0	31.8
Green Ext Time (p_c), s		9.0		1.9	0.1	13.4

Intersection Summary	
HCM 7th Control Delay, s/veh	23.2
HCM 7th LOS	C

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	395	52	132	1155	900	535
Future Volume (vph)	395	52	132	1155	900	535
Turn Type	Prot	Perm	Prot	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Detector Phase	4	4	5	2	6	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	11.0	24.0	24.0	24.0
Total Split (s)	34.0	34.0	18.0	86.0	68.0	68.0
Total Split (%)	28.3%	28.3%	15.0%	71.7%	56.7%	56.7%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag			Lag		Lead	Lead
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	C-Max	C-Max	C-Max

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 66 (55%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated

Splits and Phases: 2: 96th St & Campus Dr



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	395	52	132	1155	900	535
Future Volume (veh/h)	395	52	132	1155	900	535
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	429	57	143	1255	978	582
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	515	236	637	3835	1836	819
Arrive On Green	0.15	0.15	0.18	0.75	0.52	0.52
Sat Flow, veh/h	3456	1585	3456	5274	3647	1585
Grp Volume(v), veh/h	429	57	143	1255	978	582
Grp Sat Flow(s),veh/h/ln	1728	1585	1728	1702	1777	1585
Q Serve(g_s), s	14.5	3.8	4.2	9.7	22.0	33.7
Cycle Q Clear(g_c), s	14.5	3.8	4.2	9.7	22.0	33.7
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	515	236	637	3835	1836	819
V/C Ratio(X)	0.83	0.24	0.22	0.33	0.53	0.71
Avail Cap(c_a), veh/h	806	370	637	3835	1836	819
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.70	0.70	1.00	1.00
Uniform Delay (d), s/veh	49.6	45.1	41.6	4.9	19.3	22.1
Incr Delay (d2), s/veh	4.4	0.5	0.1	0.2	1.1	5.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.6	3.5	1.8	3.1	9.2	13.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	54.0	45.6	41.8	5.1	20.5	27.3
LnGrp LOS	D	D	D	A	C	C
Approach Vol, veh/h	486			1398	1560	
Approach Delay, s/veh	53.0			8.8	23.0	
Approach LOS	D			A	C	

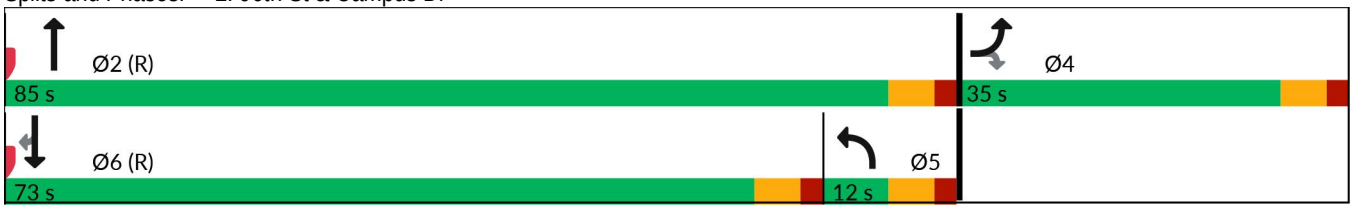
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		96.1		23.9	28.1	68.0
Change Period (Y+Rc), s		6.0		6.0	6.0	6.0
Max Green Setting (Gmax), s		80.0		28.0	12.0	62.0
Max Q Clear Time (g_c+I1), s		11.7		16.5	6.2	35.7
Green Ext Time (p_c), s		13.2		1.4	0.2	11.0

Intersection Summary	
HCM 7th Control Delay, s/veh	21.5
HCM 7th LOS	C

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	462	121	70	930	1200	232
Future Volume (vph)	462	121	70	930	1200	232
Turn Type	Prot	Perm	Prot	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Detector Phase	4	4	5	2	6	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	11.0	24.0	24.0	24.0
Total Split (s)	35.0	35.0	12.0	85.0	73.0	73.0
Total Split (%)	29.2%	29.2%	10.0%	70.8%	60.8%	60.8%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag			Lag		Lead	Lead
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	C-Max	C-Max	C-Max

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 36 (30%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated

Splits and Phases: 2: 96th St & Campus Dr



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	462	121	70	930	1200	232
Future Volume (veh/h)	462	121	70	930	1200	232
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	502	132	76	1011	1304	252
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	595	273	413	3716	1984	885
Arrive On Green	0.17	0.17	0.12	0.73	0.56	0.56
Sat Flow, veh/h	3456	1585	3456	5274	3647	1585
Grp Volume(v), veh/h	502	132	76	1011	1304	252
Grp Sat Flow(s),veh/h/ln	1728	1585	1728	1702	1777	1585
Q Serve(g_s), s	16.9	9.0	2.4	8.1	30.7	10.0
Cycle Q Clear(g_c), s	16.9	9.0	2.4	8.1	30.7	10.0
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	595	273	413	3716	1984	885
V/C Ratio(X)	0.84	0.48	0.18	0.27	0.66	0.28
Avail Cap(c_a), veh/h	835	383	413	3716	1984	885
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.81	0.81	1.00	1.00
Uniform Delay (d), s/veh	48.1	44.8	47.6	5.5	18.5	13.9
Incr Delay (d2), s/veh	5.7	1.3	0.2	0.1	1.7	0.8
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.7	8.1	1.0	2.7	12.6	3.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	53.8	46.2	47.7	5.7	20.2	14.7
LnGrp LOS	D	D	D	A	C	B
Approach Vol, veh/h	634			1087	1556	
Approach Delay, s/veh	52.2			8.6	19.3	
Approach LOS	D			A	B	

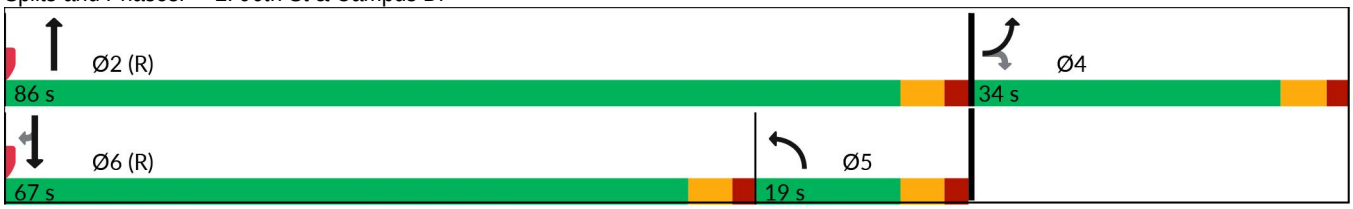
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		93.3		26.7	20.3	73.0
Change Period (Y+Rc), s		6.0		6.0	6.0	6.0
Max Green Setting (Gmax), s		79.0		29.0	6.0	67.0
Max Q Clear Time (g_c+I1), s		10.1		18.9	4.4	32.7
Green Ext Time (p_c), s		9.5		1.8	0.0	14.3

Intersection Summary	
HCM 7th Control Delay, s/veh	22.1
HCM 7th LOS	C

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	444	62	161	1155	929	651
Future Volume (vph)	444	62	161	1155	929	651
Turn Type	Prot	Perm	Prot	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Detector Phase	4	4	5	2	6	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	11.0	24.0	24.0	24.0
Total Split (s)	34.0	34.0	19.0	86.0	67.0	67.0
Total Split (%)	28.3%	28.3%	15.8%	71.7%	55.8%	55.8%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag			Lag		Lead	Lead
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	C-Max	C-Max	C-Max

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 60 (50%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated

Splits and Phases: 2: 96th St & Campus Dr



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	444	62	161	1155	929	651
Future Volume (veh/h)	444	62	161	1155	929	651
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	483	67	175	1255	1010	708
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	570	261	611	3754	1806	806
Arrive On Green	0.16	0.16	0.18	0.74	0.51	0.51
Sat Flow, veh/h	3456	1585	3456	5274	3647	1585
Grp Volume(v), veh/h	483	67	175	1255	1010	708
Grp Sat Flow(s),veh/h/ln	1728	1585	1728	1702	1777	1585
Q Serve(g_s), s	16.3	4.4	5.3	10.4	23.4	47.6
Cycle Q Clear(g_c), s	16.3	4.4	5.3	10.4	23.4	47.6
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	570	261	611	3754	1806	806
V/C Ratio(X)	0.85	0.26	0.29	0.33	0.56	0.88
Avail Cap(c_a), veh/h	806	370	611	3754	1806	806
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.72	0.72	1.00	1.00
Uniform Delay (d), s/veh	48.6	43.7	42.8	5.6	20.3	26.2
Incr Delay (d2), s/veh	6.0	0.5	0.2	0.2	1.3	13.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.5	4.1	2.3	3.3	9.8	20.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	54.7	44.2	43.0	5.8	21.5	39.3
LnGrp LOS	D	D	D	A	C	D
Approach Vol, veh/h	550			1430	1718	
Approach Delay, s/veh	53.4			10.3	28.8	
Approach LOS	D			B	C	

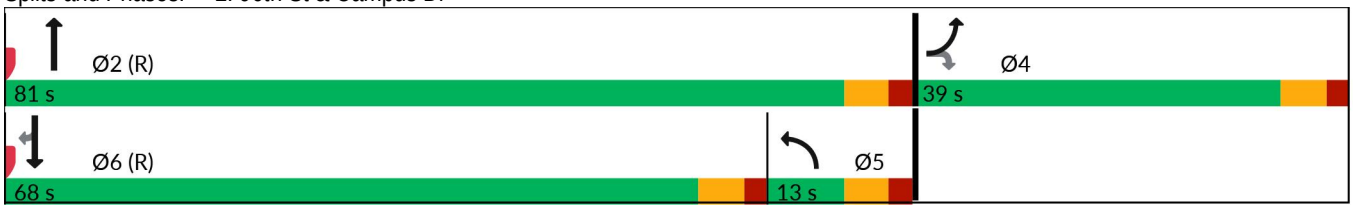
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		94.2		25.8	27.2	67.0
Change Period (Y+Rc), s		6.0		6.0	6.0	6.0
Max Green Setting (Gmax), s		80.0		28.0	13.0	61.0
Max Q Clear Time (g_c+I1), s		12.4		18.3	7.3	49.6
Green Ext Time (p_c), s		13.2		1.5	0.3	7.3

Intersection Summary	
HCM 7th Control Delay, s/veh	25.3
HCM 7th LOS	C

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	629	154	85	930	1215	293
Future Volume (vph)	629	154	85	930	1215	293
Turn Type	Prot	Perm	Prot	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Detector Phase	4	4	5	2	6	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	11.0	24.0	24.0	24.0
Total Split (s)	39.0	39.0	13.0	81.0	68.0	68.0
Total Split (%)	32.5%	32.5%	10.8%	67.5%	56.7%	56.7%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag			Lag		Lead	Lead
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	C-Max	C-Max	C-Max

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 47 (39%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated

Splits and Phases: 2: 96th St & Campus Dr



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	629	154	85	930	1215	293
Future Volume (veh/h)	629	154	85	930	1215	293
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	684	167	92	1011	1321	318
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	781	358	371	3441	1836	819
Arrive On Green	0.23	0.23	0.11	0.67	0.52	0.52
Sat Flow, veh/h	3456	1585	3456	5274	3647	1585
Grp Volume(v), veh/h	684	167	92	1011	1321	318
Grp Sat Flow(s),veh/h/ln	1728	1585	1728	1702	1777	1585
Q Serve(g_s), s	22.9	10.9	2.9	9.7	34.3	14.6
Cycle Q Clear(g_c), s	22.9	10.9	2.9	9.7	34.3	14.6
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	781	358	371	3441	1836	819
V/C Ratio(X)	0.88	0.47	0.25	0.29	0.72	0.39
Avail Cap(c_a), veh/h	950	436	371	3441	1836	819
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.74	0.74	1.00	1.00
Uniform Delay (d), s/veh	44.8	40.2	49.1	8.0	22.3	17.5
Incr Delay (d2), s/veh	7.9	0.9	0.3	0.2	2.5	1.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.6	10.0	1.3	3.4	14.5	5.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	52.8	41.1	49.4	8.1	24.8	18.9
LnGrp LOS	D	D	D	A	C	B
Approach Vol, veh/h	851			1103	1639	
Approach Delay, s/veh	50.5			11.6	23.6	
Approach LOS	D			B	C	

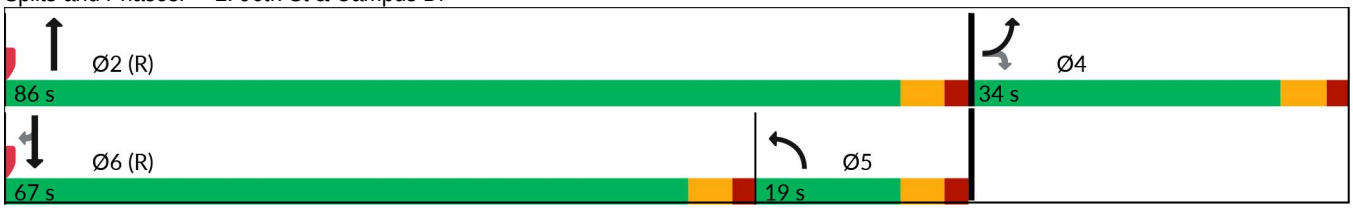
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		86.9		33.1	18.9	68.0
Change Period (Y+Rc), s		6.0		6.0	6.0	6.0
Max Green Setting (Gmax), s		75.0		33.0	7.0	62.0
Max Q Clear Time (g_c+I1), s		11.7		24.9	4.9	36.3
Green Ext Time (p_c), s		9.5		2.2	0.0	13.1

Intersection Summary		
HCM 7th Control Delay, s/veh	26.3	
HCM 7th LOS	C	

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	455	65	165	1185	955	665
Future Volume (vph)	455	65	165	1185	955	665
Turn Type	Prot	Perm	Prot	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Detector Phase	4	4	5	2	6	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	11.0	24.0	24.0	24.0
Total Split (s)	34.0	34.0	19.0	86.0	67.0	67.0
Total Split (%)	28.3%	28.3%	15.8%	71.7%	55.8%	55.8%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag			Lag		Lead	Lead
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	C-Max	C-Max	C-Max

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 60 (50%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated

Splits and Phases: 2: 96th St & Campus Dr



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	455	65	165	1185	955	665
Future Volume (veh/h)	455	65	165	1185	955	665
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	495	71	179	1288	1038	723
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	582	267	599	3736	1806	806
Arrive On Green	0.17	0.17	0.17	0.73	0.51	0.51
Sat Flow, veh/h	3456	1585	3456	5274	3647	1585
Grp Volume(v), veh/h	495	71	179	1288	1038	723
Grp Sat Flow(s),veh/h/ln	1728	1585	1728	1702	1777	1585
Q Serve(g_s), s	16.7	4.7	5.4	10.9	24.3	49.5
Cycle Q Clear(g_c), s	16.7	4.7	5.4	10.9	24.3	49.5
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	582	267	599	3736	1806	806
V/C Ratio(X)	0.85	0.27	0.30	0.34	0.57	0.90
Avail Cap(c_a), veh/h	806	370	599	3736	1806	806
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.70	0.70	1.00	1.00
Uniform Delay (d), s/veh	48.4	43.4	43.2	5.8	20.5	26.7
Incr Delay (d2), s/veh	6.4	0.5	0.2	0.2	1.3	14.8
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.7	4.4	2.3	3.5	10.2	21.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	54.8	44.0	43.4	6.0	21.8	41.5
LnGrp LOS	D	D	D	A	C	D
Approach Vol, veh/h	566			1467	1761	
Approach Delay, s/veh	53.4			10.5	29.9	
Approach LOS	D			B	C	

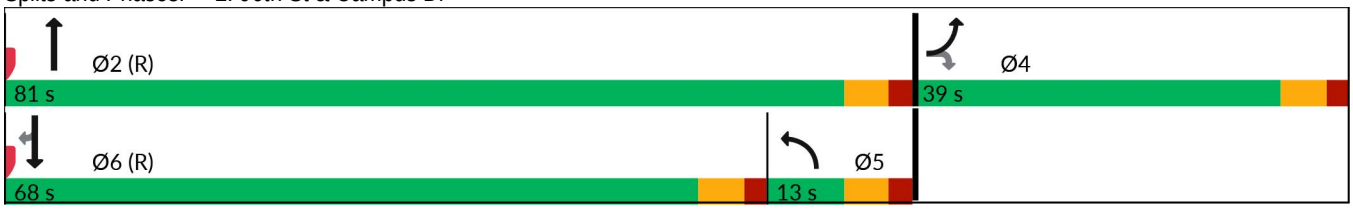
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		93.8		26.2	26.8	67.0
Change Period (Y+Rc), s		6.0		6.0	6.0	6.0
Max Green Setting (Gmax), s		80.0		28.0	13.0	61.0
Max Q Clear Time (g_c+I1), s		12.9		18.7	7.4	51.5
Green Ext Time (p_c), s		13.8		1.5	0.3	6.5

Intersection Summary	
HCM 7th Control Delay, s/veh	25.9
HCM 7th LOS	C

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	645	160	90	955	1245	300
Future Volume (vph)	645	160	90	955	1245	300
Turn Type	Prot	Perm	Prot	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Detector Phase	4	4	5	2	6	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	11.0	24.0	24.0	24.0
Total Split (s)	39.0	39.0	13.0	81.0	68.0	68.0
Total Split (%)	32.5%	32.5%	10.8%	67.5%	56.7%	56.7%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag			Lag		Lead	Lead
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	C-Max	C-Max	C-Max

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 47 (39%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated

Splits and Phases: 2: 96th St & Campus Dr



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	645	160	90	955	1245	300
Future Volume (veh/h)	645	160	90	955	1245	300
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	701	174	98	1038	1353	326
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	797	366	355	3418	1836	819
Arrive On Green	0.23	0.23	0.10	0.67	0.52	0.52
Sat Flow, veh/h	3456	1585	3456	5274	3647	1585
Grp Volume(v), veh/h	701	174	98	1038	1353	326
Grp Sat Flow(s),veh/h/ln	1728	1585	1728	1702	1777	1585
Q Serve(g_s), s	23.5	11.4	3.1	10.1	35.7	15.0
Cycle Q Clear(g_c), s	23.5	11.4	3.1	10.1	35.7	15.0
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	797	366	355	3418	1836	819
V/C Ratio(X)	0.88	0.48	0.28	0.30	0.74	0.40
Avail Cap(c_a), veh/h	950	436	355	3418	1836	819
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.72	0.72	1.00	1.00
Uniform Delay (d), s/veh	44.5	39.9	49.7	8.2	22.6	17.6
Incr Delay (d2), s/veh	8.4	1.0	0.3	0.2	2.7	1.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.9	10.4	1.4	3.6	15.1	5.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	52.9	40.9	50.0	8.4	25.3	19.1
LnGrp LOS	D	D	D	A	C	B
Approach Vol, veh/h	875			1136	1679	
Approach Delay, s/veh	50.5			12.0	24.1	
Approach LOS	D			B	C	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		86.3		33.7	18.3	68.0
Change Period (Y+Rc), s		6.0		6.0	6.0	6.0
Max Green Setting (Gmax), s		75.0		33.0	7.0	62.0
Max Q Clear Time (g_c+I1), s		12.1		25.5	5.1	37.7
Green Ext Time (p_c), s		9.8		2.2	0.0	13.1

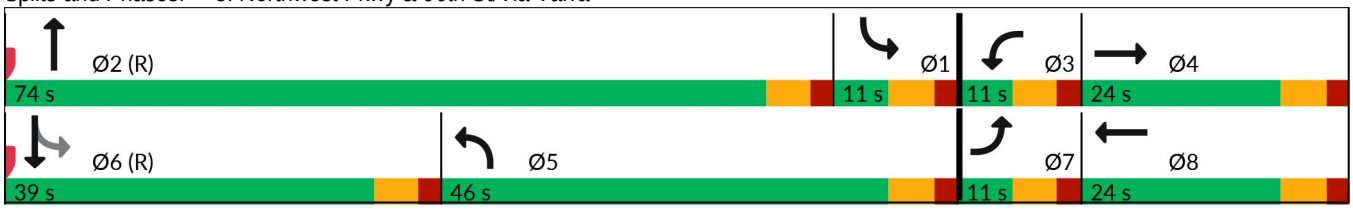
Intersection Summary		
HCM 7th Control Delay, s/veh	26.6	
HCM 7th LOS	C	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	61	115	724	55	195	45	868	412	20	40	683	154
Future Volume (vph)	61	115	724	55	195	45	868	412	20	40	683	154
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free	pm+pt	NA	Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			Free	6		Free
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	11.0	24.0		11.0	24.0		11.0	24.0		11.0	24.0	
Total Split (s)	11.0	24.0		11.0	24.0		46.0	74.0		11.0	39.0	
Total Split (%)	9.2%	20.0%		9.2%	20.0%		38.3%	61.7%		9.2%	32.5%	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lag	Lead		Lag	Lead	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green, Master Intersection
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 3: Northwest Pkwy & 96th St/Via Varra



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	61	115	724	55	195	45	868	412	20	40	683	154
Future Volume (veh/h)	61	115	724	55	195	45	868	412	20	40	683	154
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	66	125	0	60	212	0	943	448	0	43	742	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	128	293		125	289		1405	2014		1004	977	
Arrive On Green	0.04	0.08	0.00	0.04	0.08	0.00	0.68	0.95	0.00	0.11	0.28	0.00
Sat Flow, veh/h	3456	3554	1585	3456	3554	1585	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	66	125	0	60	212	0	943	448	0	43	742	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	2.2	4.0	0.0	2.0	7.0	0.0	19.3	1.0	0.0	0.0	23.0	0.0
Cycle Q Clear(g_c), s	2.2	4.0	0.0	2.0	7.0	0.0	19.3	1.0	0.0	0.0	23.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	128	293		125	289		1405	2014		1004	977	
V/C Ratio(X)	0.52	0.43		0.48	0.73		0.67	0.22		0.04	0.76	
Avail Cap(c_a), veh/h	144	533		144	533		1405	2014		1004	977	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.67	1.67	1.67	1.00	1.00	1.00
Upstream Filter(I)	0.92	0.92	0.00	1.00	1.00	0.00	0.83	0.83	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	56.7	52.4	0.0	56.7	53.8	0.0	14.5	1.4	0.0	23.5	39.9	0.0
Incr Delay (d2), s/veh	2.9	0.9	0.0	2.9	3.6	0.0	1.0	0.2	0.0	0.0	5.5	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	1.8	0.0	0.9	3.3	0.0	5.3	0.4	0.0	0.4	10.7	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	59.7	53.3	0.0	59.6	57.4	0.0	15.6	1.6	0.0	23.5	45.4	0.0
LnGrp LOS	E	D		E	E		B	A		C	D	
Approach Vol, veh/h		191			272			1391			785	
Approach Delay, s/veh		55.5			57.9			11.1			44.2	
Approach LOS		E			E			B			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	19.8	74.0	10.3	15.9	54.8	39.0	10.4	15.8
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	5.0	68.0	5.0	18.0	40.0	33.0	5.0	18.0
Max Q Clear Time (g_c+I1), s	2.0	3.0	4.0	6.0	21.3	25.0	4.2	9.0
Green Ext Time (p_c), s	0.0	3.4	0.0	0.5	3.7	3.1	0.0	0.8

Intersection Summary	
HCM 7th Control Delay, s/veh	29.0
HCM 7th LOS	C

Notes

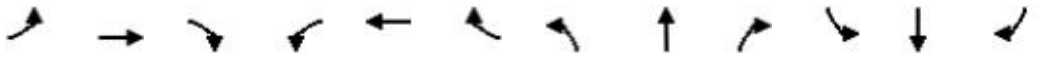
Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	157	220	914	25	160	75	713	761	45	25	419	70
Future Volume (vph)	157	220	914	25	160	75	713	761	45	25	419	70
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free	pm+pt	NA	Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			Free	6		Free
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	11.0	24.0		11.0	24.0		11.0	24.0		11.0	24.0	
Total Split (s)	18.0	31.0		11.0	24.0		45.0	67.0		11.0	33.0	
Total Split (%)	15.0%	25.8%		9.2%	20.0%		37.5%	55.8%		9.2%	27.5%	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Lead/Lag	Lag	Lag		Lead	Lead		Lag	Lead		Lag	Lead	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green, Master Intersection
Natural Cycle: 80
Control Type: Actuated-Coordinated

Splits and Phases: 3: Northwest Pkwy & 96th St/Via Varra



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	157	220	914	25	160	75	713	761	45	25	419	70
Future Volume (veh/h)	157	220	914	25	160	75	713	761	45	25	419	70
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
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	171	239	0	27	174	0	775	827	0	27	455	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	230	398		85	249		1515	1806		805	800	
Arrive On Green	0.07	0.11	0.00	0.02	0.07	0.00	0.58	0.68	0.00	0.16	0.22	0.00
Sat Flow, veh/h	3456	3554	1585	3456	3554	1585	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	171	239	0	27	174	0	775	827	0	27	455	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	5.8	7.7	0.0	0.9	5.7	0.0	16.0	13.1	0.0	0.0	13.7	0.0
Cycle Q Clear(g_c), s	5.8	7.7	0.0	0.9	5.7	0.0	16.0	13.1	0.0	0.0	13.7	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	230	398		85	249		1515	1806		805	800	
V/C Ratio(X)	0.74	0.60		0.32	0.70		0.51	0.46		0.03	0.57	
Avail Cap(c_a), veh/h	346	740		144	533		1515	1806		805	800	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.33	1.33	1.33	1.00	1.00	1.00
Upstream Filter(I)	0.83	0.83	0.00	1.00	1.00	0.00	0.76	0.76	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	55.0	50.7	0.0	57.5	54.6	0.0	17.4	11.7	0.0	32.6	41.3	0.0
Incr Delay (d2), s/veh	3.9	1.2	0.0	2.1	3.5	0.0	0.2	0.6	0.0	0.0	2.9	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	3.5	0.0	0.4	2.7	0.0	5.6	4.5	0.0	0.3	6.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	58.9	51.9	0.0	59.6	58.1	0.0	17.6	12.3	0.0	32.6	44.3	0.0
LnGrp LOS	E	D		E	E		B	B		C	D	
Approach Vol, veh/h		410			201			1602			482	
Approach Delay, s/veh		54.9			58.3			14.9			43.6	
Approach LOS		D			E			B			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	24.6	67.0	9.0	19.4	58.6	33.0	14.0	14.4
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	5.0	61.0	5.0	25.0	39.0	27.0	12.0	18.0
Max Q Clear Time (g_c+I1), s	2.0	15.1	2.9	9.7	18.0	15.7	7.8	7.7
Green Ext Time (p_c), s	0.0	7.1	0.0	1.2	3.0	2.3	0.2	0.7

Intersection Summary	
HCM 7th Control Delay, s/veh	29.3
HCM 7th LOS	C

Notes

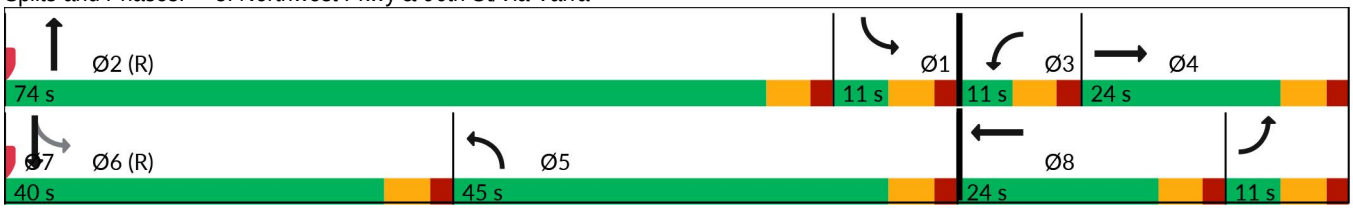
Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

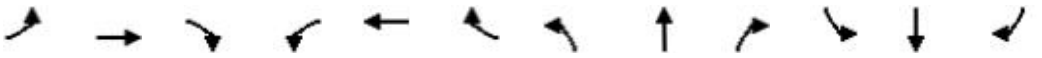
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	67	115	742	55	195	45	868	430	20	40	736	172
Future Volume (vph)	67	115	742	55	195	45	868	430	20	40	736	172
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free	pm+pt	NA	Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			Free	6		Free
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	11.0	24.0		11.0	24.0		11.0	24.0		11.0	24.0	
Total Split (s)	11.0	24.0		11.0	24.0		45.0	74.0		11.0	40.0	
Total Split (%)	9.2%	20.0%		9.2%	20.0%		37.5%	61.7%		9.2%	33.3%	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Lead/Lag	Lag	Lag		Lead	Lead		Lag	Lead		Lag	Lead	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green, Master Intersection
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 3: Northwest Pkwy & 96th St/Via Varra





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	67	115	742	55	195	45	868	430	20	40	736	172
Future Volume (veh/h)	67	115	742	55	195	45	868	430	20	40	736	172
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
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	73	125	0	60	212	0	943	467	0	43	800	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	131	296		125	289		1373	2014		1006	1007	
Arrive On Green	0.04	0.08	0.00	0.04	0.08	0.00	0.66	0.95	0.00	0.11	0.28	0.00
Sat Flow, veh/h	3456	3554	1585	3456	3554	1585	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	73	125	0	60	212	0	943	467	0	43	800	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	2.5	4.0	0.0	2.0	7.0	0.0	20.3	1.1	0.0	0.0	25.0	0.0
Cycle Q Clear(g_c), s	2.5	4.0	0.0	2.0	7.0	0.0	20.3	1.1	0.0	0.0	25.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	131	296		125	289		1373	2014		1006	1007	
V/C Ratio(X)	0.56	0.42		0.48	0.73		0.69	0.23		0.04	0.79	
Avail Cap(c_a), veh/h	144	533		144	533		1373	2014		1006	1007	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.67	1.67	1.67	1.00	1.00	1.00
Upstream Filter(I)	0.91	0.91	0.00	1.00	1.00	0.00	0.83	0.83	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	56.7	52.2	0.0	56.7	53.8	0.0	15.6	1.4	0.0	23.0	39.8	0.0
Incr Delay (d2), s/veh	3.5	0.9	0.0	2.9	3.6	0.0	1.2	0.2	0.0	0.0	6.5	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	1.8	0.0	0.9	3.3	0.0	5.8	0.4	0.0	0.4	11.7	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	60.2	53.1	0.0	59.6	57.4	0.0	16.8	1.6	0.0	23.0	46.2	0.0
LnGrp LOS	E	D		E	E		B	A		C	D	
Approach Vol, veh/h		198			272			1410			843	
Approach Delay, s/veh		55.7			57.9			11.8			45.0	
Approach LOS		E			E			B			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	19.7	74.0	10.3	16.0	53.7	40.0	10.6	15.8
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	5.0	68.0	5.0	18.0	39.0	34.0	5.0	18.0
Max Q Clear Time (g_c+I1), s	2.0	3.1	4.0	6.0	22.3	27.0	4.5	9.0
Green Ext Time (p_c), s	0.0	3.6	0.0	0.5	3.6	3.1	0.0	0.8

Intersection Summary	
HCM 7th Control Delay, s/veh	29.9
HCM 7th LOS	C

Notes

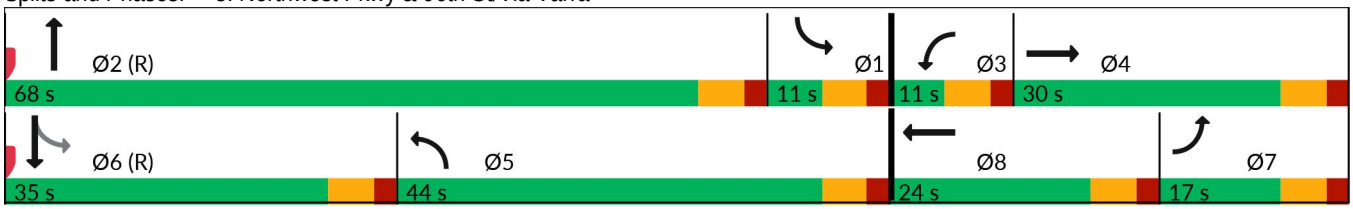
Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

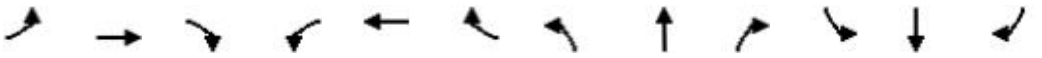
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	176	220	923	25	160	75	713	818	45	25	445	79
Future Volume (vph)	176	220	923	25	160	75	713	818	45	25	445	79
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free	pm+pt	NA	Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			Free	6		Free
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	11.0	24.0		11.0	24.0		11.0	24.0		11.0	24.0	
Total Split (s)	17.0	30.0		11.0	24.0		44.0	68.0		11.0	35.0	
Total Split (%)	14.2%	25.0%		9.2%	20.0%		36.7%	56.7%		9.2%	29.2%	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Lead/Lag	Lag	Lag		Lead	Lead		Lag	Lead		Lag	Lead	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green, Master Intersection
Natural Cycle: 80
Control Type: Actuated-Coordinated

Splits and Phases: 3: Northwest Pkwy & 96th St/Via Varra





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	176	220	923	25	160	75	713	818	45	25	445	79
Future Volume (veh/h)	176	220	923	25	160	75	713	818	45	25	445	79
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
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	191	239	0	27	174	0	775	889	0	27	484	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	249	417		85	249		1439	1836		759	859	
Arrive On Green	0.07	0.12	0.00	0.02	0.07	0.00	0.55	0.69	0.00	0.14	0.24	0.00
Sat Flow, veh/h	3456	3554	1585	3456	3554	1585	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	191	239	0	27	174	0	775	889	0	27	484	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	6.5	7.6	0.0	0.9	5.7	0.0	17.1	14.1	0.0	0.0	14.3	0.0
Cycle Q Clear(g_c), s	6.5	7.6	0.0	0.9	5.7	0.0	17.1	14.1	0.0	0.0	14.3	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	249	417		85	249		1439	1836		759	859	
V/C Ratio(X)	0.77	0.57		0.32	0.70		0.54	0.48		0.04	0.56	
Avail Cap(c_a), veh/h	317	711		144	533		1439	1836		759	859	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.33	1.33	1.33	1.00	1.00	1.00
Upstream Filter(I)	0.81	0.81	0.00	1.00	1.00	0.00	0.74	0.74	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	54.7	50.1	0.0	57.5	54.6	0.0	19.5	11.3	0.0	33.1	39.9	0.0
Incr Delay (d2), s/veh	6.8	1.0	0.0	2.1	3.5	0.0	0.3	0.7	0.0	0.0	2.7	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.1	3.5	0.0	0.4	2.7	0.0	6.2	4.7	0.0	0.3	6.6	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	61.5	51.1	0.0	59.6	58.1	0.0	19.8	12.0	0.0	33.1	42.6	0.0
LnGrp LOS	E	D		E	E		B	B		C	D	
Approach Vol, veh/h		430			201			1664			511	
Approach Delay, s/veh		55.8			58.3			15.6			42.1	
Approach LOS		E			E			B			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	23.0	68.0	9.0	20.1	56.0	35.0	14.6	14.4
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	5.0	62.0	5.0	24.0	38.0	29.0	11.0	18.0
Max Q Clear Time (g_c+I1), s	2.0	16.1	2.9	9.6	19.1	16.3	8.5	7.7
Green Ext Time (p_c), s	0.0	7.9	0.0	1.2	2.9	2.6	0.1	0.7

Intersection Summary	
HCM 7th Control Delay, s/veh	29.6
HCM 7th LOS	C

Notes

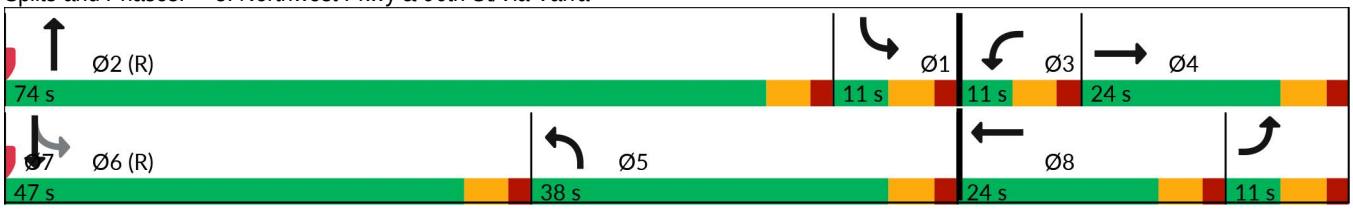
Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

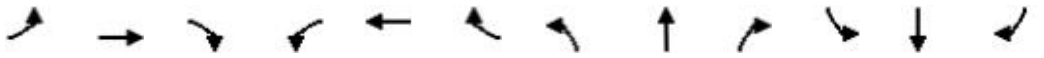
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	68	125	764	60	205	50	913	454	25	45	758	174
Future Volume (vph)	68	125	764	60	205	50	913	454	25	45	758	174
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free	pm+pt	NA	Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			Free	6		Free
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	11.0	24.0		11.0	24.0		11.0	24.0		11.0	24.0	
Total Split (s)	11.0	24.0		11.0	24.0		38.0	74.0		11.0	47.0	
Total Split (%)	9.2%	20.0%		9.2%	20.0%		31.7%	61.7%		9.2%	39.2%	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Lead/Lag	Lag	Lag		Lead	Lead		Lag	Lead		Lag	Lead	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green, Master Intersection
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 3: Northwest Pkwy & 96th St/Via Varra





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	68	125	764	60	205	50	913	454	25	45	758	174
Future Volume (veh/h)	68	125	764	60	205	50	913	454	25	45	758	174
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
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	74	136	0	65	223	0	992	493	0	49	824	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	192	305		127	301		1685	2014		1084	1214	
Arrive On Green	0.04	0.09	0.00	0.04	0.08	0.00	0.56	0.95	0.00	0.11	0.34	0.00
Sat Flow, veh/h	5023	3554	1585	3456	3554	1585	5023	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	74	136	0	65	223	0	992	493	0	49	824	0
Grp Sat Flow(s),veh/h/ln	1674	1777	1585	1728	1777	1585	1674	1777	1585	1728	1777	1585
Q Serve(g_s), s	1.7	4.4	0.0	2.2	7.4	0.0	15.5	1.2	0.0	0.0	23.8	0.0
Cycle Q Clear(g_c), s	1.7	4.4	0.0	2.2	7.4	0.0	15.5	1.2	0.0	0.0	23.8	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	192	305		127	301		1685	2014		1084	1214	
V/C Ratio(X)	0.39	0.45		0.51	0.74		0.59	0.24		0.05	0.68	
Avail Cap(c_a), veh/h	209	533		144	533		1685	2014		1084	1214	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.67	1.67	1.67	1.00	1.00	1.00
Upstream Filter(I)	0.89	0.89	0.00	1.00	1.00	0.00	0.81	0.81	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	56.3	52.1	0.0	56.7	53.6	0.0	20.9	1.4	0.0	19.2	33.9	0.0
Incr Delay (d2), s/veh	1.1	0.9	0.0	3.1	3.6	0.0	0.4	0.2	0.0	0.0	3.1	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	0.8	2.0	0.0	1.0	3.4	0.0	4.9	0.4	0.0	0.4	10.7	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	57.5	53.0	0.0	59.8	57.2	0.0	21.4	1.7	0.0	19.2	36.9	0.0
LnGrp LOS	E	D		E	E		C	A		B	D	
Approach Vol, veh/h		210			288			1485			873	
Approach Delay, s/veh		54.6			57.8			14.8			35.9	
Approach LOS		D			E			B			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	19.3	74.0	10.4	16.3	46.3	47.0	10.6	16.2
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	5.0	68.0	5.0	18.0	32.0	41.0	5.0	18.0
Max Q Clear Time (g_c+I1), s	2.0	3.2	4.2	6.4	17.5	25.8	3.7	9.4
Green Ext Time (p_c), s	0.0	3.8	0.0	0.5	3.6	5.1	0.0	0.8

Intersection Summary	
HCM 7th Control Delay, s/veh	28.5
HCM 7th LOS	C

Notes

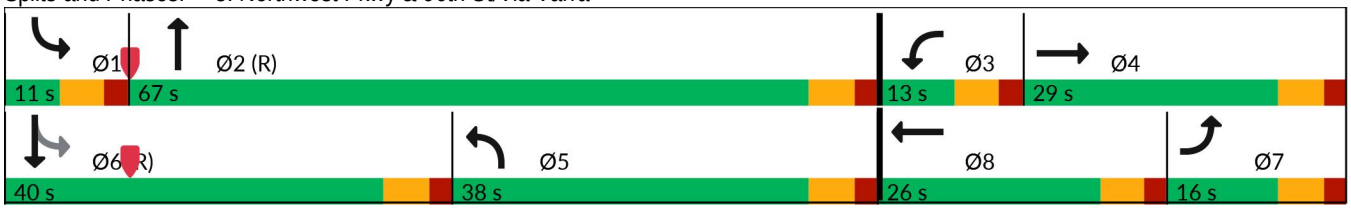
Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

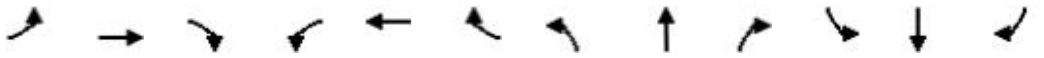
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	177	235	964	30	170	80	753	843	50	30	461	77
Future Volume (vph)	177	235	964	30	170	80	753	843	50	30	461	77
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free	pm+pt	NA	Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			Free	6		Free
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	11.0	24.0		11.0	24.0		11.0	24.0		11.0	24.0	
Total Split (s)	16.0	29.0		13.0	26.0		38.0	67.0		11.0	40.0	
Total Split (%)	13.3%	24.2%		10.8%	21.7%		31.7%	55.8%		9.2%	33.3%	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Lead/Lag	Lag	Lag		Lead	Lead		Lag	Lag		Lead	Lead	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green, Master Intersection
Natural Cycle: 75
Control Type: Actuated-Coordinated

Splits and Phases: 3: Northwest Pkwy & 96th St/Via Varra





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	177	235	964	30	170	80	753	843	50	30	461	77
Future Volume (veh/h)	177	235	964	30	170	80	753	843	50	30	461	77
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
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	192	255	0	33	185	0	818	916	0	33	501	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	280	363		96	263		1943	2283		459	1007	
Arrive On Green	0.06	0.10	0.00	0.03	0.07	0.00	0.77	1.00	0.00	0.03	0.28	0.00
Sat Flow, veh/h	5023	3554	1585	3456	3554	1585	5023	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	192	255	0	33	185	0	818	916	0	33	501	0
Grp Sat Flow(s),veh/h/ln	1674	1777	1585	1728	1777	1585	1674	1777	1585	1728	1777	1585
Q Serve(g_s), s	4.5	8.3	0.0	1.1	6.1	0.0	6.6	0.0	0.0	0.9	14.1	0.0
Cycle Q Clear(g_c), s	4.5	8.3	0.0	1.1	6.1	0.0	6.6	0.0	0.0	0.9	14.1	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	280	363		96	263		1943	2283		459	1007	
V/C Ratio(X)	0.69	0.70		0.34	0.70		0.42	0.40		0.07	0.50	
Avail Cap(c_a), veh/h	419	681		202	592		1943	2283		507	1007	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	0.81	0.81	0.00	1.00	1.00	0.00	0.71	0.71	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	55.6	52.1	0.0	57.3	54.3	0.0	9.1	0.0	0.0	34.1	35.9	0.0
Incr Delay (d2), s/veh	2.4	2.0	0.0	2.1	3.4	0.0	0.1	0.4	0.0	0.1	1.8	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	2.0	3.8	0.0	0.5	2.9	0.0	1.9	0.1	0.0	0.4	6.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	58.0	54.1	0.0	59.4	57.7	0.0	9.2	0.4	0.0	34.2	37.6	0.0
LnGrp LOS	E	D		E	E		A	A		C	D	
Approach Vol, veh/h		447			218			1734			534	
Approach Delay, s/veh		55.8			57.9			4.5			37.4	
Approach LOS		E			E			A			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.3	83.1	9.3	18.2	52.4	40.0	12.7	14.9
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	5.0	61.0	7.0	23.0	32.0	34.0	10.0	20.0
Max Q Clear Time (g_c+I1), s	2.9	2.0	3.1	10.3	8.6	16.1	6.5	8.1
Green Ext Time (p_c), s	0.0	8.4	0.0	1.2	3.3	3.1	0.2	0.8

Intersection Summary	
HCM 7th Control Delay, s/veh	22.3
HCM 7th LOS	C

Notes

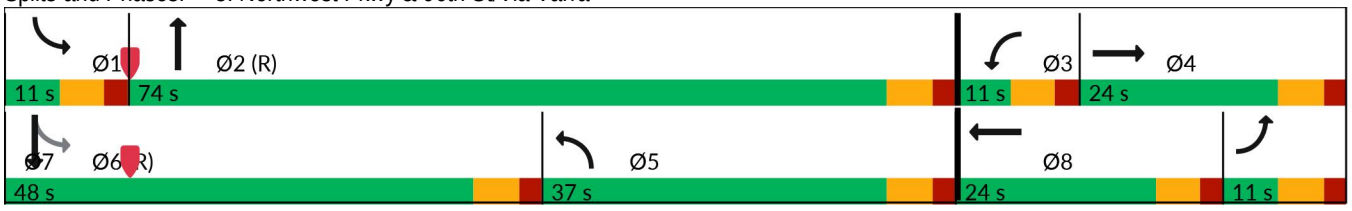
Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

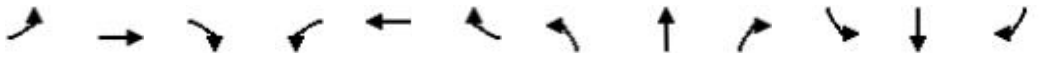
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	78	125	793	60	205	50	913	483	25	45	845	203
Future Volume (vph)	78	125	793	60	205	50	913	483	25	45	845	203
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free	pm+pt	NA	Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			Free	6		Free
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	11.0	24.0		11.0	24.0		11.0	24.0		11.0	24.0	
Total Split (s)	11.0	24.0		11.0	24.0		37.0	74.0		11.0	48.0	
Total Split (%)	9.2%	20.0%		9.2%	20.0%		30.8%	61.7%		9.2%	40.0%	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Lead/Lag	Lag	Lag		Lead	Lead		Lag	Lag		Lead	Lead	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green, Master Intersection
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 3: Northwest Pkwy & 96th St/Via Varra





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	78	125	793	60	205	50	913	483	25	45	845	203
Future Volume (veh/h)	78	125	793	60	205	50	913	483	25	45	845	203
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
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	85	136	0	65	223	0	992	525	0	49	918	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	197	309		127	301		1638	2283		690	1244	
Arrive On Green	0.04	0.09	0.00	0.04	0.08	0.00	0.54	1.00	0.00	0.03	0.35	0.00
Sat Flow, veh/h	5023	3554	1585	3456	3554	1585	5023	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	85	136	0	65	223	0	992	525	0	49	918	0
Grp Sat Flow(s),veh/h/ln	1674	1777	1585	1728	1777	1585	1674	1777	1585	1728	1777	1585
Q Serve(g_s), s	2.0	4.4	0.0	2.2	7.4	0.0	16.1	0.0	0.0	1.2	27.2	0.0
Cycle Q Clear(g_c), s	2.0	4.4	0.0	2.2	7.4	0.0	16.1	0.0	0.0	1.2	27.2	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	197	309		127	301		1638	2283		690	1244	
V/C Ratio(X)	0.43	0.44		0.51	0.74		0.61	0.23		0.07	0.74	
Avail Cap(c_a), veh/h	209	533		144	533		1638	2283		718	1244	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.67	1.67	1.67	1.00	1.00	1.00
Upstream Filter(I)	0.86	0.86	0.00	1.00	1.00	0.00	0.80	0.80	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	56.3	52.0	0.0	56.7	53.6	0.0	22.1	0.0	0.0	28.4	34.2	0.0
Incr Delay (d2), s/veh	1.3	0.8	0.0	3.1	3.6	0.0	0.5	0.2	0.0	0.0	3.9	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	2.0	0.0	1.0	3.4	0.0	5.2	0.1	0.0	0.5	12.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	57.6	52.8	0.0	59.8	57.2	0.0	22.6	0.2	0.0	28.5	38.1	0.0
LnGrp LOS	E	D		E	E		C	A		C	D	
Approach Vol, veh/h		221			288			1517			967	
Approach Delay, s/veh		54.7			57.8			14.8			37.6	
Approach LOS		D			E			B			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.0	83.1	10.4	16.4	45.1	48.0	10.7	16.2
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	5.0	68.0	5.0	18.0	31.0	42.0	5.0	18.0
Max Q Clear Time (g_c+I1), s	3.2	2.0	4.2	6.4	18.1	29.2	4.0	9.4
Green Ext Time (p_c), s	0.0	4.1	0.0	0.5	3.5	5.3	0.0	0.8

Intersection Summary	
HCM 7th Control Delay, s/veh	29.3
HCM 7th LOS	C

Notes

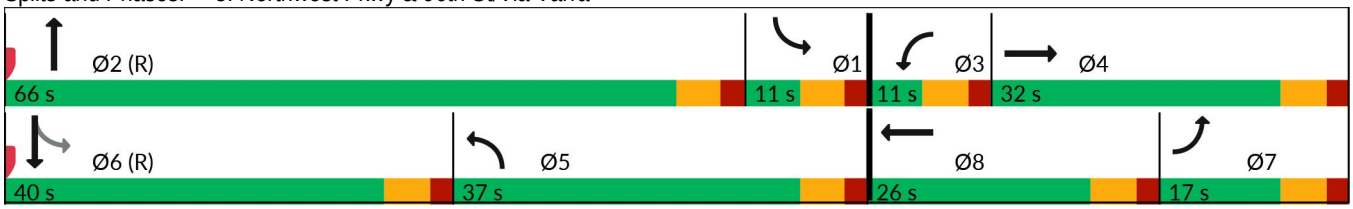
Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	210	235	979	30	170	80	753	943	50	30	507	92
Future Volume (vph)	210	235	979	30	170	80	753	943	50	30	507	92
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free	pm+pt	NA	Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			Free	6		Free
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	11.0	24.0		11.0	24.0		11.0	24.0		11.0	24.0	
Total Split (s)	17.0	32.0		11.0	26.0		37.0	66.0		11.0	40.0	
Total Split (%)	14.2%	26.7%		9.2%	21.7%		30.8%	55.0%		9.2%	33.3%	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Lead/Lag	Lag	Lag		Lead	Lead		Lag	Lead		Lag	Lead	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green, Master Intersection
Natural Cycle: 75
Control Type: Actuated-Coordinated

Splits and Phases: 3: Northwest Pkwy & 96th St/Via Varra



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	210	235	979	30	170	80	753	943	50	30	507	92
Future Volume (veh/h)	210	235	979	30	170	80	753	943	50	30	507	92
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
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	228	255	0	33	185	0	818	1025	0	33	551	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	318	390		96	263		1905	1777		984	1007	
Arrive On Green	0.06	0.11	0.00	0.03	0.07	0.00	0.76	1.00	0.00	0.16	0.28	0.00
Sat Flow, veh/h	5023	3554	1585	3456	3554	1585	5023	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	228	255	0	33	185	0	818	1025	0	33	551	0
Grp Sat Flow(s),veh/h/ln	1674	1777	1585	1728	1777	1585	1674	1777	1585	1728	1777	1585
Q Serve(g_s), s	5.3	8.3	0.0	1.1	6.1	0.0	7.0	0.0	0.0	0.0	15.8	0.0
Cycle Q Clear(g_c), s	5.3	8.3	0.0	1.1	6.1	0.0	7.0	0.0	0.0	0.0	15.8	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	318	390		96	263		1905	1777		984	1007	
V/C Ratio(X)	0.72	0.65		0.34	0.70		0.43	0.58		0.03	0.55	
Avail Cap(c_a), veh/h	460	770		144	592		1905	1777		984	1007	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	0.72	0.72	0.00	1.00	1.00	0.00	0.68	0.68	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	55.1	51.2	0.0	57.3	54.3	0.0	9.8	0.0	0.0	19.0	36.5	0.0
Incr Delay (d2), s/veh	2.2	1.3	0.0	2.1	3.4	0.0	0.1	0.9	0.0	0.0	2.1	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	2.3	3.8	0.0	0.5	2.9	0.0	2.0	0.2	0.0	0.3	7.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	57.3	52.6	0.0	59.4	57.7	0.0	9.9	0.9	0.0	19.0	38.6	0.0
LnGrp LOS	E	D		E	E		A	A		B	D	
Approach Vol, veh/h		483			218			1843			584	
Approach Delay, s/veh		54.8			57.9			4.9			37.5	
Approach LOS		D			E			A			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	25.5	66.0	9.3	19.2	51.5	40.0	13.6	14.9
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	5.0	60.0	5.0	26.0	31.0	34.0	11.0	20.0
Max Q Clear Time (g_c+I1), s	2.0	2.0	3.1	10.3	9.0	17.8	7.3	8.1
Green Ext Time (p_c), s	0.0	9.9	0.0	1.4	3.3	3.4	0.3	0.8

Intersection Summary	
HCM 7th Control Delay, s/veh	22.4
HCM 7th LOS	C

Notes

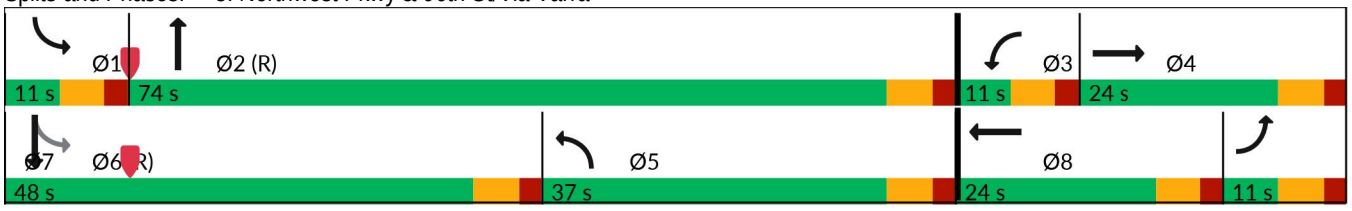
Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

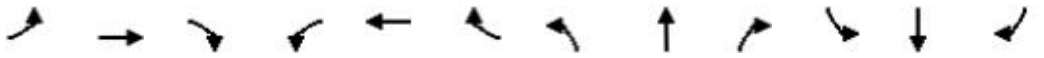
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	80	130	815	65	210	55	940	495	30	50	865	210
Future Volume (vph)	80	130	815	65	210	55	940	495	30	50	865	210
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free	pm+pt	NA	Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			Free	6		Free
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	11.0	24.0		11.0	24.0		11.0	24.0		11.0	24.0	
Total Split (s)	11.0	24.0		11.0	24.0		37.0	74.0		11.0	48.0	
Total Split (%)	9.2%	20.0%		9.2%	20.0%		30.8%	61.7%		9.2%	40.0%	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Lead/Lag	Lag	Lag		Lead	Lead		Lag	Lag		Lead	Lead	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green, Master Intersection
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 3: Northwest Pkwy & 96th St/Via Varra





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	80	130	815	65	210	55	940	495	30	50	865	210
Future Volume (veh/h)	80	130	815	65	210	55	940	495	30	50	865	210
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
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	87	141	0	71	228	0	1022	538	0	54	940	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	198	312		130	306		1630	2273		686	1244	
Arrive On Green	0.04	0.09	0.00	0.04	0.09	0.00	0.54	1.00	0.00	0.03	0.35	0.00
Sat Flow, veh/h	5023	3554	1585	3456	3554	1585	5023	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	87	141	0	71	228	0	1022	538	0	54	940	0
Grp Sat Flow(s),veh/h/ln	1674	1777	1585	1728	1777	1585	1674	1777	1585	1728	1777	1585
Q Serve(g_s), s	2.0	4.5	0.0	2.4	7.5	0.0	16.9	0.0	0.0	1.3	28.1	0.0
Cycle Q Clear(g_c), s	2.0	4.5	0.0	2.4	7.5	0.0	16.9	0.0	0.0	1.3	28.1	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	198	312		130	306		1630	2273		686	1244	
V/C Ratio(X)	0.44	0.45		0.54	0.74		0.63	0.24		0.08	0.76	
Avail Cap(c_a), veh/h	209	533		144	533		1630	2273		710	1244	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.67	1.67	1.67	1.00	1.00	1.00
Upstream Filter(I)	0.85	0.85	0.00	1.00	1.00	0.00	0.78	0.78	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	56.3	52.0	0.0	56.7	53.5	0.0	22.5	0.0	0.0	28.5	34.5	0.0
Incr Delay (d2), s/veh	1.3	0.9	0.0	3.5	3.6	0.0	0.6	0.2	0.0	0.0	4.3	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	2.1	0.0	1.1	3.5	0.0	5.5	0.1	0.0	0.5	12.7	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	57.6	52.9	0.0	60.2	57.1	0.0	23.0	0.2	0.0	28.5	38.8	0.0
LnGrp LOS	E	D		E	E		C	A		C	D	
Approach Vol, veh/h		228			299			1560			994	
Approach Delay, s/veh		54.7			57.9			15.2			38.2	
Approach LOS		D			E			B			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.2	82.8	10.5	16.5	44.9	48.0	10.7	16.3
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	5.0	68.0	5.0	18.0	31.0	42.0	5.0	18.0
Max Q Clear Time (g_c+I1), s	3.3	2.0	4.4	6.5	18.9	30.1	4.0	9.5
Green Ext Time (p_c), s	0.0	4.2	0.0	0.5	3.5	5.2	0.0	0.8

Intersection Summary	
HCM 7th Control Delay, s/veh	29.7
HCM 7th LOS	C

Notes

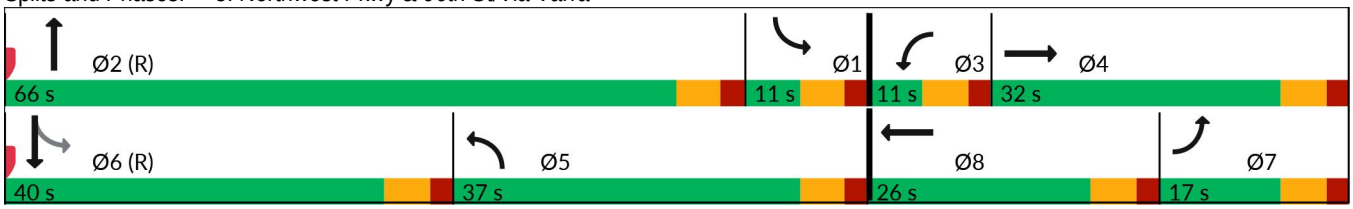
Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

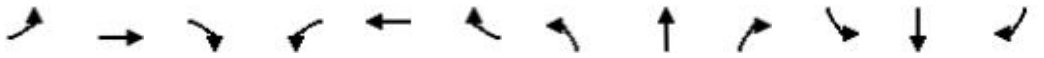
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	215	245	1005	35	175	85	775	965	55	35	520	95
Future Volume (vph)	215	245	1005	35	175	85	775	965	55	35	520	95
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free	pm+pt	NA	Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			Free	6		Free
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	11.0	24.0		11.0	24.0		11.0	24.0		11.0	24.0	
Total Split (s)	17.0	32.0		11.0	26.0		37.0	66.0		11.0	40.0	
Total Split (%)	14.2%	26.7%		9.2%	21.7%		30.8%	55.0%		9.2%	33.3%	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Lead/Lag	Lag	Lag		Lead	Lead		Lag	Lead		Lag	Lead	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green, Master Intersection
Natural Cycle: 75
Control Type: Actuated-Coordinated

Splits and Phases: 3: Northwest Pkwy & 96th St/Via Varra





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	215	245	1005	35	175	85	775	965	55	35	520	95
Future Volume (veh/h)	215	245	1005	35	175	85	775	965	55	35	520	95
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
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	234	266	0	38	190	0	842	1049	0	38	565	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	324	392		103	269		1891	1777		968	1007	
Arrive On Green	0.06	0.11	0.00	0.03	0.08	0.00	0.75	1.00	0.00	0.16	0.28	0.00
Sat Flow, veh/h	5023	3554	1585	3456	3554	1585	5023	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	234	266	0	38	190	0	842	1049	0	38	565	0
Grp Sat Flow(s),veh/h/ln	1674	1777	1585	1728	1777	1585	1674	1777	1585	1728	1777	1585
Q Serve(g_s), s	5.5	8.6	0.0	1.3	6.3	0.0	7.5	0.0	0.0	0.0	16.3	0.0
Cycle Q Clear(g_c), s	5.5	8.6	0.0	1.3	6.3	0.0	7.5	0.0	0.0	0.0	16.3	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	324	392		103	269		1891	1777		968	1007	
V/C Ratio(X)	0.72	0.68		0.37	0.71		0.45	0.59		0.04	0.56	
Avail Cap(c_a), veh/h	460	770		144	592		1891	1777		968	1007	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	0.70	0.70	0.00	1.00	1.00	0.00	0.65	0.65	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	55.1	51.3	0.0	57.1	54.2	0.0	10.2	0.0	0.0	19.3	36.6	0.0
Incr Delay (d2), s/veh	2.3	1.5	0.0	2.2	3.4	0.0	0.1	0.9	0.0	0.0	2.3	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	3.9	0.0	0.6	2.9	0.0	2.1	0.2	0.0	0.3	7.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	57.3	52.8	0.0	59.3	57.6	0.0	10.3	0.9	0.0	19.3	38.9	0.0
LnGrp LOS	E	D		E	E		B	A		B	D	
Approach Vol, veh/h		500			228			1891			603	
Approach Delay, s/veh		54.9			57.9			5.1			37.7	
Approach LOS		D			E			A			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	25.2	66.0	9.6	19.2	51.2	40.0	13.8	15.1
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	5.0	60.0	5.0	26.0	31.0	34.0	11.0	20.0
Max Q Clear Time (g_c+I1), s	2.0	2.0	3.3	10.6	9.5	18.3	7.5	8.3
Green Ext Time (p_c), s	0.0	10.2	0.0	1.4	3.4	3.4	0.3	0.8

Intersection Summary	
HCM 7th Control Delay, s/veh	22.7
HCM 7th LOS	C

Notes

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

Intersection	
Intersection Delay, s/veh	4.0
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	2	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	64	470	5	86
Demand Flow Rate, veh/h	65	480	5	87
Vehicles Circulating, veh/h	90	16	134	192
Vehicles Exiting, veh/h	189	123	21	304
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	3.3	4.1	3.0	3.9
Approach LOS	A	A	A	A

Lane	Left	Left	Right	Left	Left
Designated Moves	LTR	LT	R	LTR	LTR
Assumed Moves	LTR	LT	R	LTR	LTR
RT Channelized					
Lane Util	1.000	0.398	0.602	1.000	1.000
Follow-Up Headway, s	2.609	2.535	2.535	2.609	2.609
Critical Headway, s	4.976	4.544	4.544	4.976	4.976
A (Intercept)	1380	1420	1420	1380	1380
B (Slope)	1.02e-3	9.101e-4	9.101e-4	1.02e-3	1.02e-3
Entry Flow, veh/h	65	191	289	5	87
Cap Entry Lane, veh/h	1259	1400	1400	1204	1134
Entry HV Adj Factor	0.986	0.981	0.979	0.992	0.986
Flow Entry, veh/h	64	187	283	5	86
Cap Entry, veh/h	1241	1373	1371	1194	1119
V/C Ratio	0.052	0.136	0.206	0.004	0.077
Control Delay, s/veh	3.3	3.7	4.3	3.0	3.9
LOS	A	A	A	A	A
95th %tile Queue, veh	0	0	1	0	0

Intersection	
Intersection Delay, s/veh	4.7
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	2	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	205	209	36	297
Demand Flow Rate, veh/h	209	213	36	303
Vehicles Circulating, veh/h	296	27	493	78
Vehicles Exiting, veh/h	85	502	12	162
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	5.5	3.3	4.8	5.0
Approach LOS	A	A	A	A

Lane	Left	Left	Right	Left	Left
Designated Moves	LTR	LT	R	LTR	LTR
Assumed Moves	LTR	LT	R	LTR	LTR
RT Channelized					
Lane Util	1.000	0.329	0.671	1.000	1.000
Follow-Up Headway, s	2.609	2.535	2.535	2.609	2.609
Critical Headway, s	4.976	4.544	4.544	4.976	4.976
A (Intercept)	1380	1420	1420	1380	1380
B (Slope)	1.02e-3	9.101e-4	9.101e-4	1.02e-3	1.02e-3
Entry Flow, veh/h	209	70	143	36	303
Cap Entry Lane, veh/h	1020	1386	1386	835	1274
Entry HV Adj Factor	0.981	0.982	0.979	0.992	0.980
Flow Entry, veh/h	205	69	140	36	297
Cap Entry, veh/h	1001	1360	1357	828	1249
V/C Ratio	0.205	0.051	0.103	0.043	0.238
Control Delay, s/veh	5.5	3.0	3.5	4.8	5.0
LOS	A	A	A	A	A
95th %tile Queue, veh	1	0	0	0	1

Intersection	
Intersection Delay, s/veh	4.2
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	2	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	83	515	5	100
Demand Flow Rate, veh/h	84	525	5	102
Vehicles Circulating, veh/h	104	20	167	197
Vehicles Exiting, veh/h	195	152	21	348
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	3.5	4.3	3.2	4.0
Approach LOS	A	A	A	A

Lane	Left	Left	Right	Left	Left
Designated Moves	LTR	LT	R	LTR	LTR
Assumed Moves	LTR	LT	R	LTR	LTR
RT Channelized					
Lane Util	1.000	0.373	0.627	1.000	1.000
Follow-Up Headway, s	2.609	2.535	2.535	2.609	2.609
Critical Headway, s	4.976	4.544	4.544	4.976	4.976
A (Intercept)	1380	1420	1420	1380	1380
B (Slope)	1.02e-3	9.101e-4	9.101e-4	1.02e-3	1.02e-3
Entry Flow, veh/h	84	196	329	5	102
Cap Entry Lane, veh/h	1241	1395	1395	1164	1129
Entry HV Adj Factor	0.986	0.981	0.982	0.992	0.978
Flow Entry, veh/h	83	192	323	5	100
Cap Entry, veh/h	1223	1368	1369	1155	1104
V/C Ratio	0.068	0.141	0.236	0.004	0.090
Control Delay, s/veh	3.5	3.8	4.6	3.2	4.0
LOS	A	A	A	A	A
95th %tile Queue, veh	0	0	1	0	0

Intersection	
Intersection Delay, s/veh	5.0
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	2	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	215	253	36	343
Demand Flow Rate, veh/h	219	258	36	349
Vehicles Circulating, veh/h	338	30	545	95
Vehicles Exiting, veh/h	106	551	12	193
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	6.0	3.5	5.0	5.4
Approach LOS	A	A	A	A

Lane	Left	Left	Right	Left	Left
Designated Moves	LTR	LT	R	LTR	LTR
Assumed Moves	LTR	LT	R	LTR	LTR
RT Channelized					
Lane Util	1.000	0.337	0.663	1.000	1.000
Follow-Up Headway, s	2.609	2.535	2.535	2.609	2.609
Critical Headway, s	4.976	4.544	4.544	4.976	4.976
A (Intercept)	1380	1420	1420	1380	1380
B (Slope)	1.02e-3	9.101e-4	9.101e-4	1.02e-3	1.02e-3
Entry Flow, veh/h	219	87	171	36	349
Cap Entry Lane, veh/h	978	1382	1382	791	1252
Entry HV Adj Factor	0.981	0.982	0.982	0.992	0.983
Flow Entry, veh/h	215	85	168	36	343
Cap Entry, veh/h	959	1356	1358	785	1231
V/C Ratio	0.224	0.063	0.124	0.045	0.279
Control Delay, s/veh	6.0	3.1	3.6	5.0	5.4
LOS	A	A	A	A	A
95th %tile Queue, veh	1	0	0	0	1

Intersection	
Intersection Delay, s/veh	4.4
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	2	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	88	614	5	86
Demand Flow Rate, veh/h	89	627	5	87
Vehicles Circulating, veh/h	90	16	158	339
Vehicles Exiting, veh/h	336	147	21	304
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	3.5	4.5	3.1	4.5
Approach LOS	A	A	A	A

Lane	Left	Left	Right	Left	Left
Designated Moves	LTR	LT	R	LTR	LTR
Assumed Moves	LTR	LT	R	LTR	LTR
RT Channelized					
Lane Util	1.000	0.539	0.461	1.000	1.000
Follow-Up Headway, s	2.609	2.535	2.535	2.609	2.609
Critical Headway, s	4.976	4.544	4.544	4.976	4.976
A (Intercept)	1380	1420	1420	1380	1380
B (Slope)	1.02e-3	9.101e-4	9.101e-4	1.02e-3	1.02e-3
Entry Flow, veh/h	89	338	289	5	87
Cap Entry Lane, veh/h	1259	1400	1400	1174	977
Entry HV Adj Factor	0.984	0.981	0.979	0.992	0.986
Flow Entry, veh/h	88	331	283	5	86
Cap Entry, veh/h	1239	1373	1371	1165	963
V/C Ratio	0.071	0.241	0.206	0.004	0.089
Control Delay, s/veh	3.5	4.7	4.3	3.1	4.5
LOS	A	A	A	A	A
95th %tile Queue, veh	0	1	1	0	0

Intersection	
Intersection Delay, s/veh	5.5
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	2	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	353	237	36	297
Demand Flow Rate, veh/h	360	242	36	303
Vehicles Circulating, veh/h	296	27	644	107
Vehicles Exiting, veh/h	114	653	12	162
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	7.3	3.4	5.6	5.2
Approach LOS	A	A	A	A

Lane	Left	Left	Right	Left	Left
Designated Moves	LTR	LT	R	LTR	LTR
Assumed Moves	LTR	LT	R	LTR	LTR
RT Channelized					
Lane Util	1.000	0.409	0.591	1.000	1.000
Follow-Up Headway, s	2.609	2.535	2.535	2.609	2.609
Critical Headway, s	4.976	4.544	4.544	4.976	4.976
A (Intercept)	1380	1420	1420	1380	1380
B (Slope)	1.02e-3	9.101e-4	9.101e-4	1.02e-3	1.02e-3
Entry Flow, veh/h	360	99	143	36	303
Cap Entry Lane, veh/h	1020	1386	1386	715	1237
Entry HV Adj Factor	0.981	0.981	0.979	0.992	0.980
Flow Entry, veh/h	353	97	140	36	297
Cap Entry, veh/h	1001	1360	1357	710	1212
V/C Ratio	0.353	0.071	0.103	0.050	0.245
Control Delay, s/veh	7.3	3.2	3.5	5.6	5.2
LOS	A	A	A	A	A
95th %tile Queue, veh	2	0	0	0	1

Intersection	
Intersection Delay, s/veh	4.7
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	2	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	120	690	5	108
Demand Flow Rate, veh/h	122	704	5	110
Vehicles Circulating, veh/h	111	23	212	348
Vehicles Exiting, veh/h	347	194	21	379
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	3.8	4.8	3.3	4.9
Approach LOS	A	A	A	A

Lane	Left	Left	Right	Left	Left
Designated Moves	LTR	LT	R	LTR	LTR
Assumed Moves	LTR	LT	R	LTR	LTR
RT Channelized					
Lane Util	1.000	0.493	0.507	1.000	1.000
Follow-Up Headway, s	2.609	2.535	2.535	2.609	2.609
Critical Headway, s	4.976	4.544	4.544	4.976	4.976
A (Intercept)	1380	1420	1420	1380	1380
B (Slope)	1.02e-3	9.101e-4	9.101e-4	1.02e-3	1.02e-3
Entry Flow, veh/h	122	347	357	5	110
Cap Entry Lane, veh/h	1232	1391	1391	1112	968
Entry HV Adj Factor	0.984	0.981	0.980	0.992	0.980
Flow Entry, veh/h	120	340	350	5	108
Cap Entry, veh/h	1213	1364	1363	1103	948
V/C Ratio	0.099	0.250	0.257	0.004	0.114
Control Delay, s/veh	3.8	4.8	4.8	3.3	4.9
LOS	A	A	A	A	A
95th %tile Queue, veh	0	1	1	0	0

Intersection	
Intersection Delay, s/veh	6.2
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	2	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	370	314	36	378
Demand Flow Rate, veh/h	377	320	36	385
Vehicles Circulating, veh/h	370	31	735	137
Vehicles Exiting, veh/h	152	740	12	214
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	8.4	3.6	6.2	6.1
Approach LOS	A	A	A	A

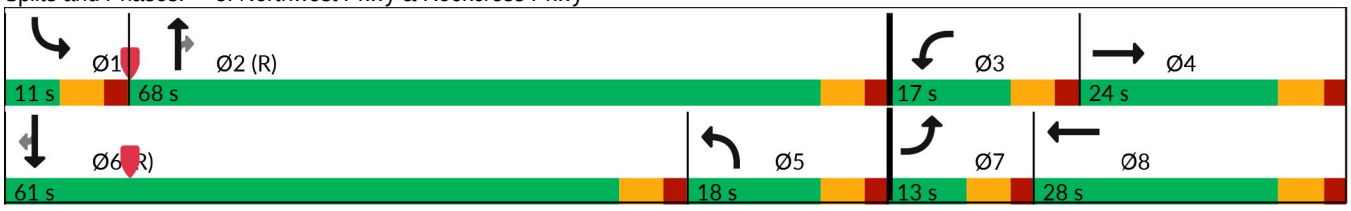
Lane	Left	Left	Right	Left	Left
Designated Moves	LTR	LT	R	LTR	LTR
Assumed Moves	LTR	LT	R	LTR	LTR
RT Channelized					
Lane Util	1.000	0.403	0.597	1.000	1.000
Follow-Up Headway, s	2.609	2.535	2.535	2.609	2.609
Critical Headway, s	4.976	4.544	4.544	4.976	4.976
A (Intercept)	1380	1420	1420	1380	1380
B (Slope)	1.02e-3	9.101e-4	9.101e-4	1.02e-3	1.02e-3
Entry Flow, veh/h	377	129	191	36	385
Cap Entry Lane, veh/h	946	1381	1381	652	1200
Entry HV Adj Factor	0.981	0.981	0.979	0.992	0.982
Flow Entry, veh/h	370	127	187	36	378
Cap Entry, veh/h	928	1355	1352	647	1178
V/C Ratio	0.398	0.093	0.138	0.055	0.321
Control Delay, s/veh	8.4	3.4	3.8	6.2	6.1
LOS	A	A	A	A	A
95th %tile Queue, veh	2	0	0	0	1

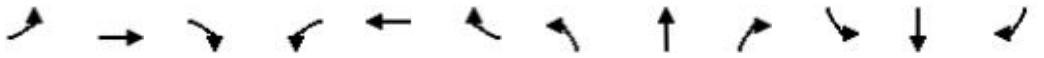
Lane Group	EBL	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR	Ø4
Lane Configurations											
Traffic Volume (vph)	12	107	240	0	492	1218	190	60	1349	53	
Future Volume (vph)	12	107	240	0	492	1218	190	60	1349	53	
Turn Type	Prot	Free	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	
Protected Phases	7		3	8	5	2		1	6		4
Permitted Phases		Free					2			6	
Detector Phase	7		3	8	5	2	2	1	6	6	
Switch Phase											
Minimum Initial (s)	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0		11.0	24.0	11.0	24.0	24.0	11.0	24.0	24.0	24.0
Total Split (s)	13.0		17.0	28.0	18.0	68.0	68.0	11.0	61.0	61.0	24.0
Total Split (%)	10.8%		14.2%	23.3%	15.0%	56.7%	56.7%	9.2%	50.8%	50.8%	20%
Yellow Time (s)	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Lead/Lag	Lead		Lead	Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lag
Lead-Lag Optimize?	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None		None	None	None	C-Max	C-Max	None	C-Max	C-Max	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 70 (58%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 110
Control Type: Actuated-Coordinated

Splits and Phases: 5: Northwest Pkwy & Rockcress Pkwy





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	0	107	240	0	60	492	1218	190	60	1349	53
Future Volume (veh/h)	12	0	107	240	0	60	492	1218	190	60	1349	53
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
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	13	0	0	261	0	65	535	1324	207	65	1466	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	51	2		314	104	93	927	2451	1093	127	1629	
Arrive On Green	0.01	0.00	0.00	0.09	0.00	0.06	0.27	0.69	0.69	0.07	0.92	0.00
Sat Flow, veh/h	3456	1870	1585	3456	1777	1585	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	13	0	0	261	0	65	535	1324	207	65	1466	0
Grp Sat Flow(s),veh/h/ln	1728	1870	1585	1728	1777	1585	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	0.4	0.0	0.0	8.9	0.0	4.8	16.1	22.1	5.6	2.2	23.6	0.0
Cycle Q Clear(g_c), s	0.4	0.0	0.0	8.9	0.0	4.8	16.1	22.1	5.6	2.2	23.6	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	51	2		314	104	93	927	2451	1093	127	1629	
V/C Ratio(X)	0.26	0.00		0.83	0.00	0.70	0.58	0.54	0.19	0.51	0.90	
Avail Cap(c_a), veh/h	202	281		317	326	291	927	2451	1093	144	1629	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	0.83	0.83	0.00
Uniform Delay (d), s/veh	58.5	0.0	0.0	53.6	0.0	55.4	38.0	9.2	6.6	54.5	3.7	0.0
Incr Delay (d2), s/veh	2.6	0.0	0.0	16.6	0.0	9.0	0.9	0.9	0.4	2.6	7.1	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	0.2	0.0	0.0	4.6	0.0	2.2	6.9	8.2	1.9	1.0	3.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	61.1	0.0	0.0	70.3	0.0	64.5	38.9	10.1	7.0	57.1	10.8	0.0
LnGrp LOS	E			E		E	D	B	A	E	B	
Approach Vol, veh/h		13			326			2066			1531	
Approach Delay, s/veh		61.1			69.1			17.2			12.8	
Approach LOS		E			E			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.4	88.8	16.9	3.9	38.2	61.0	7.8	13.1
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	5.0	62.0	11.0	18.0	12.0	55.0	7.0	22.0
Max Q Clear Time (g_c+I1), s	4.2	24.1	10.9	0.0	18.1	25.6	2.4	6.8
Green Ext Time (p_c), s	0.0	14.8	0.0	0.0	0.0	14.1	0.0	0.2

Intersection Summary	
HCM 7th Control Delay, s/veh	19.9
HCM 7th LOS	B

Notes

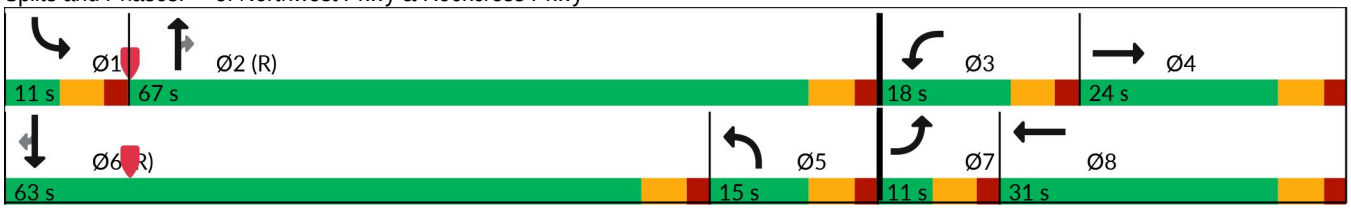
Unsignalized Delay for [EBR, SBR] is excluded from calculations of the approach delay and intersection delay.

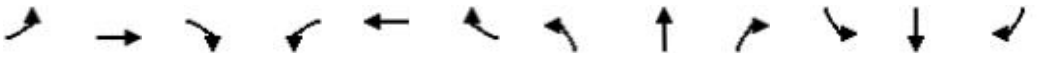
Lane Group	EBL	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR	Ø4
Lane Configurations											
Traffic Volume (vph)	46	446	230	0	175	1413	180	25	1309	19	
Future Volume (vph)	46	446	230	0	175	1413	180	25	1309	19	
Turn Type	Prot	Free	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	
Protected Phases	7		3	8	5	2		1	6		4
Permitted Phases		Free					2			6	
Detector Phase	7		3	8	5	2	2	1	6	6	
Switch Phase											
Minimum Initial (s)	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0		11.0	24.0	11.0	24.0	24.0	11.0	24.0	24.0	24.0
Total Split (s)	11.0		18.0	31.0	15.0	67.0	67.0	11.0	63.0	63.0	24.0
Total Split (%)	9.2%		15.0%	25.8%	12.5%	55.8%	55.8%	9.2%	52.5%	52.5%	20%
Yellow Time (s)	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Lead/Lag	Lead		Lead	Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lag
Lead-Lag Optimize?	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None		None	None	None	C-Max	C-Max	None	C-Max	C-Max	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 61 (51%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 5: Northwest Pkwy & Rockcress Pkwy





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	46	0	446	230	0	55	175	1413	180	25	1309	19
Future Volume (veh/h)	46	0	446	230	0	55	175	1413	180	25	1309	19
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
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	50	0	0	250	0	60	190	1536	196	27	1423	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	117	2		307	99	88	814	2437	1087	85	1688	
Arrive On Green	0.03	0.00	0.00	0.09	0.00	0.06	0.24	0.69	0.69	0.05	0.95	0.00
Sat Flow, veh/h	3456	1870	1585	3456	1777	1585	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	50	0	0	250	0	60	190	1536	196	27	1423	0
Grp Sat Flow(s),veh/h/ln	1728	1870	1585	1728	1777	1585	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	1.7	0.0	0.0	8.5	0.0	4.5	5.3	28.7	5.3	0.9	12.1	0.0
Cycle Q Clear(g_c), s	1.7	0.0	0.0	8.5	0.0	4.5	5.3	28.7	5.3	0.9	12.1	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	117	2		307	99	88	814	2437	1087	85	1688	
V/C Ratio(X)	0.43	0.00		0.81	0.00	0.68	0.23	0.63	0.18	0.32	0.84	
Avail Cap(c_a), veh/h	144	281		346	370	330	814	2437	1087	144	1688	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	0.82	0.82	0.00
Uniform Delay (d), s/veh	56.8	0.0	0.0	53.7	0.0	55.6	37.1	10.4	6.8	56.1	1.9	0.0
Incr Delay (d2), s/veh	2.5	0.0	0.0	12.7	0.0	8.8	0.1	1.2	0.4	1.7	4.4	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	0.8	0.0	0.0	4.2	0.0	2.0	2.3	10.7	1.8	0.4	2.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	59.3	0.0	0.0	66.4	0.0	64.4	37.3	11.7	7.1	57.8	6.3	0.0
LnGrp LOS	E			E		E	D	B	A	E	A	
Approach Vol, veh/h		50			310			1922			1450	
Approach Delay, s/veh		59.3			66.0			13.7			7.3	
Approach LOS		E			E			B			A	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.0	88.3	16.7	6.1	34.3	63.0	10.1	12.7
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	5.0	61.0	12.0	18.0	9.0	57.0	5.0	25.0
Max Q Clear Time (g_c+I1), s	2.9	30.7	10.5	0.0	7.3	14.1	3.7	6.5
Green Ext Time (p_c), s	0.0	16.3	0.1	0.0	0.1	15.8	0.0	0.2

Intersection Summary	
HCM 7th Control Delay, s/veh	16.2
HCM 7th LOS	B

Notes

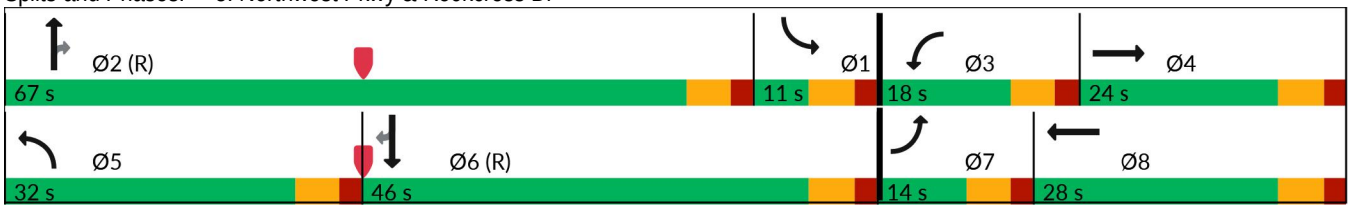
Unsignalized Delay for [EBR, SBR] is excluded from calculations of the approach delay and intersection delay.

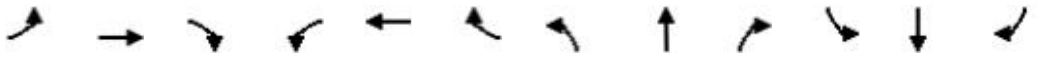
Lane Group	EBL	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR	Ø4
Lane Configurations											
Traffic Volume (vph)	30	161	240	0	651	1218	190	60	1349	124	
Future Volume (vph)	30	161	240	0	651	1218	190	60	1349	124	
Turn Type	Prot	Free	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	
Protected Phases	7		3	8	5	2		1	6		4
Permitted Phases		Free					2			6	
Detector Phase	7		3	8	5	2	2	1	6	6	
Switch Phase											
Minimum Initial (s)	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0		11.0	24.0	11.0	24.0	24.0	11.0	24.0	24.0	24.0
Total Split (s)	14.0		18.0	28.0	32.0	67.0	67.0	11.0	46.0	46.0	24.0
Total Split (%)	11.7%		15.0%	23.3%	26.7%	55.8%	55.8%	9.2%	38.3%	38.3%	20%
Yellow Time (s)	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Lead/Lag	Lead		Lead	Lag	Lead	Lead	Lead	Lag	Lag	Lag	Lag
Lead-Lag Optimize?	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None		None	None	None	C-Max	C-Max	None	C-Max	C-Max	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 66 (55%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 140
Control Type: Actuated-Coordinated

Splits and Phases: 5: Northwest Pkwy & Rockcress Dr





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	0	161	240	0	60	651	1218	190	60	1349	124
Future Volume (veh/h)	30	0	161	240	0	60	651	1218	190	60	1349	124
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
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	33	0	0	261	0	65	708	1324	207	65	1466	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	96	2		317	104	93	749	1806	806	709	1765	
Arrive On Green	0.03	0.00	0.00	0.09	0.00	0.06	0.22	0.51	0.51	0.41	0.99	0.00
Sat Flow, veh/h	3456	1870	1585	3456	1777	1585	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	33	0	0	261	0	65	708	1324	207	65	1466	0
Grp Sat Flow(s),veh/h/ln	1728	1870	1585	1728	1777	1585	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	1.1	0.0	0.0	8.9	0.0	4.8	24.2	35.0	5.4	1.4	1.8	0.0
Cycle Q Clear(g_c), s	1.1	0.0	0.0	8.9	0.0	4.8	24.2	35.0	5.4	1.4	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	96	2		317	104	93	749	1806	806	709	1765	
V/C Ratio(X)	0.34	0.00		0.82	0.00	0.70	0.95	0.73	0.26	0.09	0.83	
Avail Cap(c_a), veh/h	230	281		346	326	291	749	1806	806	709	1765	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	0.79	0.79	0.00
Uniform Delay (d), s/veh	57.3	0.0	0.0	53.5	0.0	55.4	46.3	23.1	6.2	28.5	0.2	0.0
Incr Delay (d2), s/veh	2.1	0.0	0.0	13.9	0.0	9.0	20.7	2.7	0.8	0.0	3.8	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	0.5	0.0	0.0	4.5	0.0	2.2	12.5	14.9	3.2	0.6	1.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	59.4	0.0	0.0	67.4	0.0	64.5	67.0	25.8	7.0	28.6	4.0	0.0
LnGrp LOS	E			E		E	E	C	A	C	A	
Approach Vol, veh/h		33			326			2239			1531	
Approach Delay, s/veh		59.4			66.8			37.1			5.0	
Approach LOS		E			E			D			A	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	30.6	67.0	17.0	5.4	32.0	65.6	9.3	13.1
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	5.0	61.0	12.0	18.0	26.0	40.0	8.0	22.0
Max Q Clear Time (g_c+I1), s	3.4	37.0	10.9	0.0	26.2	3.8	3.1	6.8
Green Ext Time (p_c), s	0.0	12.1	0.1	0.0	0.0	15.5	0.0	0.2

Intersection Summary	
HCM 7th Control Delay, s/veh	27.7
HCM 7th LOS	C

Notes

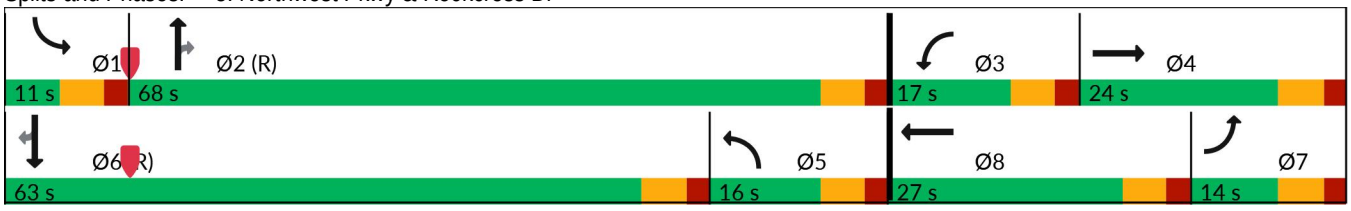
Unsignalized Delay for [EBR, SBR] is excluded from calculations of the approach delay and intersection delay.

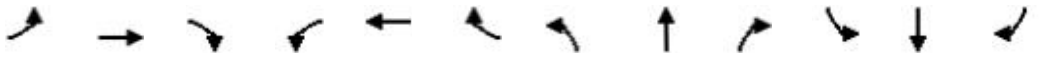
Lane Group	EBL	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR	Ø4
Lane Configurations											
Traffic Volume (vph)	103	617	230	0	254	1413	180	25	1309	54	
Future Volume (vph)	103	617	230	0	254	1413	180	25	1309	54	
Turn Type	Prot	Free	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	
Protected Phases	7		3	8	5	2		1	6		4
Permitted Phases		Free					2			6	
Detector Phase	7		3	8	5	2	2	1	6	6	
Switch Phase											
Minimum Initial (s)	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0		11.0	24.0	11.0	24.0	24.0	11.0	24.0	24.0	24.0
Total Split (s)	14.0		17.0	27.0	16.0	68.0	68.0	11.0	63.0	63.0	24.0
Total Split (%)	11.7%		14.2%	22.5%	13.3%	56.7%	56.7%	9.2%	52.5%	52.5%	20%
Yellow Time (s)	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Lead/Lag	Lag		Lead	Lead	Lag	Lag	Lag	Lead	Lead	Lead	Lag
Lead-Lag Optimize?	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None		None	None	None	C-Max	C-Max	None	C-Max	C-Max	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 61 (51%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 5: Northwest Pkwy & Rockcress Dr





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	103	0	617	230	0	55	254	1413	180	25	1309	54
Future Volume (veh/h)	103	0	617	230	0	55	254	1413	180	25	1309	54
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
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	112	0	0	250	0	60	276	1536	196	27	1423	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	165	28		305	98	88	766	2388	1065	85	1688	
Arrive On Green	0.05	0.00	0.00	0.09	0.00	0.06	0.22	0.67	0.67	0.05	0.95	0.00
Sat Flow, veh/h	3456	1870	1585	3456	1777	1585	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	112	0	0	250	0	60	276	1536	196	27	1423	0
Grp Sat Flow(s),veh/h/ln	1728	1870	1585	1728	1777	1585	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	3.8	0.0	0.0	8.5	0.0	4.5	8.1	30.0	5.6	0.9	12.1	0.0
Cycle Q Clear(g_c), s	3.8	0.0	0.0	8.5	0.0	4.5	8.1	30.0	5.6	0.9	12.1	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	165	28		305	98	88	766	2388	1065	85	1688	
V/C Ratio(X)	0.68	0.00		0.82	0.00	0.68	0.36	0.64	0.18	0.32	0.84	
Avail Cap(c_a), veh/h	230	281		317	311	277	766	2388	1065	144	1688	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	0.81	0.81	0.00
Uniform Delay (d), s/veh	56.2	0.0	0.0	53.8	0.0	55.6	39.5	11.4	7.4	56.1	1.9	0.0
Incr Delay (d2), s/veh	4.8	0.0	0.0	15.3	0.0	9.0	0.3	1.3	0.4	1.7	4.4	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	1.8	0.0	0.0	4.4	0.0	2.0	3.5	11.3	1.9	0.4	2.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	61.0	0.0	0.0	69.0	0.0	64.6	39.8	12.7	7.7	57.7	6.2	0.0
LnGrp LOS	E			E		E	D	B	A	E	A	
Approach Vol, veh/h		112			310			2008			1450	
Approach Delay, s/veh		61.0			68.2			16.0			7.2	
Approach LOS		E			E			B			A	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.0	86.6	16.6	7.8	32.6	63.0	11.7	12.7
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	5.0	62.0	11.0	18.0	10.0	57.0	8.0	21.0
Max Q Clear Time (g_c+I1), s	2.9	32.0	10.5	0.0	10.1	14.1	5.8	6.5
Green Ext Time (p_c), s	0.0	16.2	0.0	0.0	0.0	15.8	0.1	0.2

Intersection Summary	
HCM 7th Control Delay, s/veh	18.2
HCM 7th LOS	B

Notes

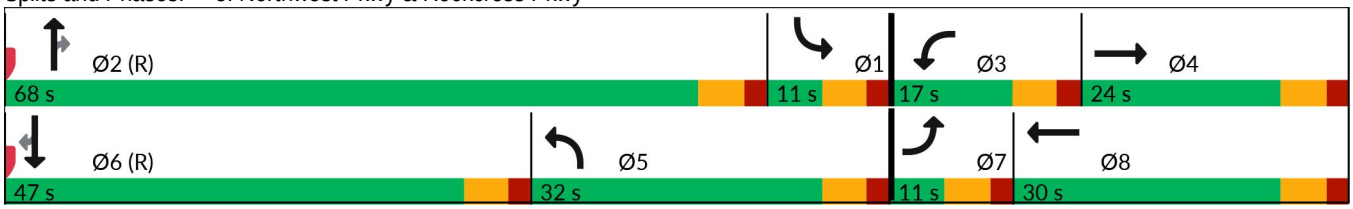
Unsignalized Delay for [EBR, SBR] is excluded from calculations of the approach delay and intersection delay.

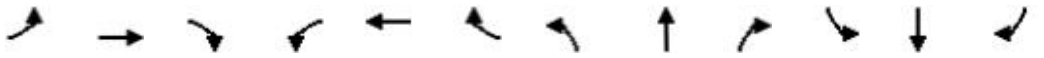
Lane Group	EBL	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR	Ø4
Lane Configurations											
Traffic Volume (vph)	14	127	255	0	615	1298	205	65	1449	63	
Future Volume (vph)	14	127	255	0	615	1298	205	65	1449	63	
Turn Type	Prot	Free	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	
Protected Phases	7		3	8	5	2		1	6		4
Permitted Phases		Free					2			6	
Detector Phase	7		3	8	5	2	2	1	6	6	
Switch Phase											
Minimum Initial (s)	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0		11.0	24.0	11.0	24.0	24.0	11.0	24.0	24.0	24.0
Total Split (s)	11.0		17.0	30.0	32.0	68.0	68.0	11.0	47.0	47.0	24.0
Total Split (%)	9.2%		14.2%	25.0%	26.7%	56.7%	56.7%	9.2%	39.2%	39.2%	20%
Yellow Time (s)	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Lead/Lag	Lead		Lead	Lag	Lag	Lead	Lead	Lag	Lead	Lead	Lag
Lead-Lag Optimize?	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None		None	None	None	C-Max	C-Max	None	C-Max	C-Max	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 69 (58%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 5: Northwest Pkwy & Rockcress Pkwy





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	14	0	127	255	0	65	615	1298	205	65	1449	63
Future Volume (veh/h)	14	0	127	255	0	65	615	1298	205	65	1449	63
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
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	15	0	0	277	0	71	668	1411	223	71	1575	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	57	2		317	112	100	1310	1836	819	705	1745	
Arrive On Green	0.02	0.00	0.00	0.09	0.00	0.06	0.38	0.52	0.52	0.41	0.68	0.00
Sat Flow, veh/h	3456	1870	1585	3456	1777	1585	3456	3554	1585	3456	5106	1585
Grp Volume(v), veh/h	15	0	0	277	0	71	668	1411	223	71	1575	0
Grp Sat Flow(s),veh/h/ln	1728	1870	1585	1728	1777	1585	1728	1777	1585	1728	1702	1585
Q Serve(g_s), s	0.5	0.0	0.0	9.5	0.0	5.3	17.9	38.2	5.7	1.5	30.6	0.0
Cycle Q Clear(g_c), s	0.5	0.0	0.0	9.5	0.0	5.3	17.9	38.2	5.7	1.5	30.6	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	57	2		317	112	100	1310	1836	819	705	1745	
V/C Ratio(X)	0.26	0.00		0.87	0.00	0.71	0.51	0.77	0.27	0.10	0.90	
Avail Cap(c_a), veh/h	144	281		317	355	317	1310	1836	819	705	1745	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	0.82	0.82	0.00
Uniform Delay (d), s/veh	58.3	0.0	0.0	53.8	0.0	55.2	28.7	23.2	5.9	28.7	17.4	0.0
Incr Delay (d2), s/veh	2.5	0.0	0.0	22.7	0.0	9.0	0.3	3.2	0.8	0.1	6.8	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	0.2	0.0	0.0	5.1	0.0	2.4	7.4	16.3	3.4	0.6	7.6	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	60.8	0.0	0.0	76.5	0.0	64.2	29.0	26.4	6.8	28.8	24.2	0.0
LnGrp LOS	E			E		E	C	C	A	C	C	
Approach Vol, veh/h		15			348			2302			1646	
Approach Delay, s/veh		60.8			74.0			25.3			24.4	
Approach LOS		E			E			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	30.5	68.0	17.0	4.5	51.5	47.0	8.0	13.5
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	5.0	62.0	11.0	18.0	26.0	41.0	5.0	24.0
Max Q Clear Time (g_c+I1), s	3.5	40.2	11.5	0.0	19.9	32.6	2.5	7.3
Green Ext Time (p_c), s	0.0	12.3	0.0	0.0	1.5	6.2	0.0	0.3

Intersection Summary	
HCM 7th Control Delay, s/veh	29.0
HCM 7th LOS	C

Notes

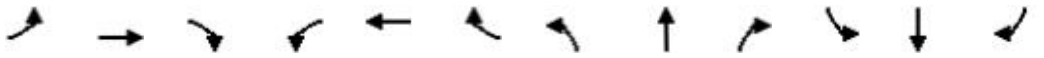
Unsignalized Delay for [EBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR	Ø4
Lane Configurations											
Traffic Volume (vph)	58	570	245	0	199	1523	195	30	1394	21	
Future Volume (vph)	58	570	245	0	199	1523	195	30	1394	21	
Turn Type	Prot	Free	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	
Protected Phases	7		3	8	5	2		1	6		4
Permitted Phases		Free					2			6	
Detector Phase	7		3	8	5	2	2	1	6	6	
Switch Phase											
Minimum Initial (s)	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0		11.0	24.0	11.0	24.0	24.0	11.0	24.0	24.0	24.0
Total Split (s)	11.0		18.0	31.0	18.0	67.0	67.0	11.0	60.0	60.0	24.0
Total Split (%)	9.2%		15.0%	25.8%	15.0%	55.8%	55.8%	9.2%	50.0%	50.0%	20%
Yellow Time (s)	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Lead/Lag	Lead		Lead	Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lag
Lead-Lag Optimize?	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None		None	None	None	C-Max	C-Max	None	C-Max	C-Max	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 51 (43%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated

Splits and Phases: 5: Northwest Pkwy & Rockcress Pkwy



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	58	0	570	245	0	60	199	1523	195	30	1394	21
Future Volume (veh/h)	58	0	570	245	0	60	199	1523	195	30	1394	21
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	63	0	0	266	0	65	216	1655	212	33	1515	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	126	5		322	105	94	879	2405	1073	96	2298	
Arrive On Green	0.04	0.00	0.00	0.09	0.00	0.06	0.25	0.68	0.68	0.06	0.90	0.00
Sat Flow, veh/h	3456	1870	1585	3456	1777	1585	3456	3554	1585	3456	5106	1585
Grp Volume(v), veh/h	63	0	0	266	0	65	216	1655	212	33	1515	0
Grp Sat Flow(s),veh/h/ln	1728	1870	1585	1728	1777	1585	1728	1777	1585	1728	1702	1585
Q Serve(g_s), s	2.1	0.0	0.0	9.1	0.0	4.8	6.0	33.8	6.0	1.1	8.8	0.0
Cycle Q Clear(g_c), s	2.1	0.0	0.0	9.1	0.0	4.8	6.0	33.8	6.0	1.1	8.8	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	126	5		322	105	94	879	2405	1073	96	2298	
V/C Ratio(X)	0.50	0.00		0.83	0.00	0.70	0.25	0.69	0.20	0.34	0.66	
Avail Cap(c_a), veh/h	144	281		346	370	330	879	2405	1073	144	2298	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	0.80	0.80	0.00
Uniform Delay (d), s/veh	56.7	0.0	0.0	53.5	0.0	55.4	35.6	11.7	7.2	55.6	3.7	0.0
Incr Delay (d2), s/veh	3.0	0.0	0.0	14.4	0.0	8.9	0.1	1.6	0.4	1.7	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	1.0	0.0	0.0	4.6	0.0	2.2	2.5	12.8	2.0	0.5	1.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	59.7	0.0	0.0	67.9	0.0	64.3	35.7	13.4	7.7	57.3	4.9	0.0
LnGrp LOS	E			E		E	D	B	A	E	A	
Approach Vol, veh/h		63			331			2083			1548	
Approach Delay, s/veh		59.7			67.2			15.1			6.1	
Approach LOS		E			E			B			A	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.3	87.2	17.2	6.3	36.5	60.0	10.4	13.1
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	5.0	61.0	12.0	18.0	12.0	54.0	5.0	25.0
Max Q Clear Time (g_c+I1), s	3.1	35.8	11.1	0.0	8.0	10.8	4.1	6.8
Green Ext Time (p_c), s	0.0	16.0	0.1	0.0	0.3	16.4	0.0	0.3

Intersection Summary	
HCM 7th Control Delay, s/veh	16.6
HCM 7th LOS	B

Notes

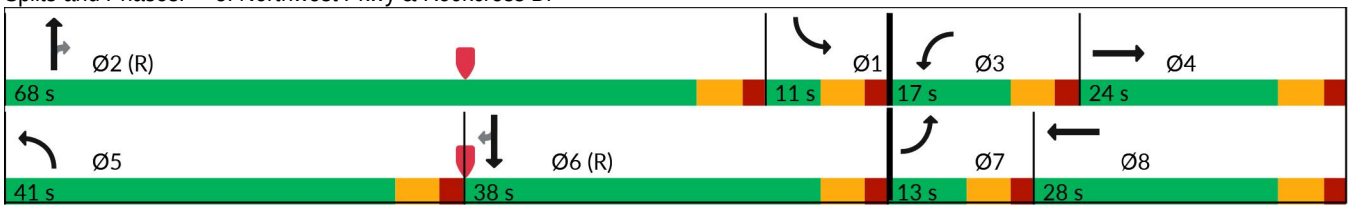
Unsignalized Delay for [EBR, SBR] is excluded from calculations of the approach delay and intersection delay.

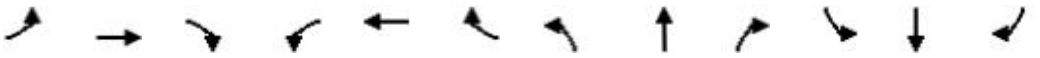
Lane Group	EBL	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR	Ø4
Lane Configurations											
Traffic Volume (vph)	43	214	255	0	875	1298	205	65	1449	179	
Future Volume (vph)	43	214	255	0	875	1298	205	65	1449	179	
Turn Type	Prot	Free	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	
Protected Phases	7		3	8	5	2		1	6		4
Permitted Phases		Free					2			6	
Detector Phase	7		3	8	5	2	2	1	6	6	
Switch Phase											
Minimum Initial (s)	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0		11.0	24.0	11.0	24.0	24.0	11.0	24.0	24.0	24.0
Total Split (s)	13.0		17.0	28.0	41.0	68.0	68.0	11.0	38.0	38.0	24.0
Total Split (%)	10.8%		14.2%	23.3%	34.2%	56.7%	56.7%	9.2%	31.7%	31.7%	20%
Yellow Time (s)	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Lead/Lag	Lead		Lead	Lag	Lead	Lead	Lead	Lag	Lag	Lag	Lag
Lead-Lag Optimize?	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None		None	None	None	C-Max	C-Max	None	C-Max	C-Max	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 58 (48%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 120
Control Type: Actuated-Coordinated

Splits and Phases: 5: Northwest Pkwy & Rockcress Dr





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	43	0	214	255	0	65	875	1298	205	65	1449	179
Future Volume (veh/h)	43	0	214	255	0	65	875	1298	205	65	1449	179
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
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	47	0	0	277	0	71	951	1411	223	71	1575	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	114	7		317	111	99	999	1836	819	649	2121	
Arrive On Green	0.03	0.00	0.00	0.09	0.00	0.06	0.29	0.52	0.52	0.38	0.83	0.00
Sat Flow, veh/h	3456	1870	1585	3456	1777	1585	3456	3554	1585	3456	5106	1585
Grp Volume(v), veh/h	47	0	0	277	0	71	951	1411	223	71	1575	0
Grp Sat Flow(s),veh/h/ln	1728	1870	1585	1728	1777	1585	1728	1777	1585	1728	1702	1585
Q Serve(g_s), s	1.6	0.0	0.0	9.5	0.0	5.3	32.4	38.2	5.7	1.6	16.4	0.0
Cycle Q Clear(g_c), s	1.6	0.0	0.0	9.5	0.0	5.3	32.4	38.2	5.7	1.6	16.4	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	114	7		317	111	99	999	1836	819	649	2121	
V/C Ratio(X)	0.41	0.00		0.87	0.00	0.71	0.95	0.77	0.27	0.11	0.74	
Avail Cap(c_a), veh/h	202	281		317	326	291	1008	1836	819	649	2121	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	0.99	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	0.77	0.77	0.00
Uniform Delay (d), s/veh	56.9	0.0	0.0	53.8	0.0	55.2	41.8	23.2	5.9	30.9	7.3	0.0
Incr Delay (d2), s/veh	2.4	0.0	0.0	22.7	0.0	9.1	17.8	3.2	0.8	0.1	1.9	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	0.0	5.1	0.0	2.4	16.1	16.3	3.4	0.7	3.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	59.2	0.0	0.0	76.5	0.0	64.3	59.7	26.4	6.8	31.0	9.2	0.0
LnGrp LOS	E			E		E	E	C	A	C	A	
Approach Vol, veh/h		47			348			2585			1646	
Approach Delay, s/veh		59.2			74.0			37.0			10.1	
Approach LOS		E			E			D			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	28.5	68.0	17.0	6.5	40.7	55.8	10.0	13.5
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	5.0	62.0	11.0	18.0	35.0	32.0	7.0	22.0
Max Q Clear Time (g_c+I1), s	3.6	40.2	11.5	0.0	34.4	18.4	3.6	7.3
Green Ext Time (p_c), s	0.0	12.3	0.0	0.0	0.3	9.0	0.0	0.2

Intersection Summary	
HCM 7th Control Delay, s/veh	30.4
HCM 7th LOS	C

Notes

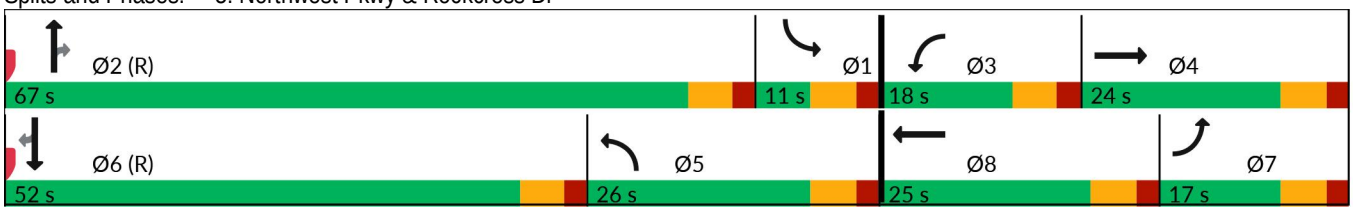
Unsignalized Delay for [EBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR	Ø4
Lane Configurations											
Traffic Volume (vph)	158	870	245	0	336	1523	195	30	1394	82	
Future Volume (vph)	158	870	245	0	336	1523	195	30	1394	82	
Turn Type	Prot	Free	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	
Protected Phases	7		3	8	5	2		1	6		4
Permitted Phases		Free					2			6	
Detector Phase	7		3	8	5	2	2	1	6	6	
Switch Phase											
Minimum Initial (s)	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0		11.0	24.0	11.0	24.0	24.0	11.0	24.0	24.0	24.0
Total Split (s)	17.0		18.0	25.0	26.0	67.0	67.0	11.0	52.0	52.0	24.0
Total Split (%)	14.2%		15.0%	20.8%	21.7%	55.8%	55.8%	9.2%	43.3%	43.3%	20%
Yellow Time (s)	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Lead/Lag	Lag		Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag
Lead-Lag Optimize?	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None		None	None	None	C-Max	C-Max	None	C-Max	C-Max	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 60 (50%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated

Splits and Phases: 5: Northwest Pkwy & Rockcress Dr



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	158	0	870	245	0	60	336	1523	195	30	1394	82
Future Volume (veh/h)	158	0	870	245	0	60	336	1523	195	30	1394	82
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
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	172	0	0	266	0	65	365	1655	212	33	1515	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	230	60		322	104	93	1008	1806	806	576	1957	
Arrive On Green	0.07	0.00	0.00	0.09	0.00	0.06	0.29	0.51	0.51	0.33	0.77	0.00
Sat Flow, veh/h	3456	1870	1585	3456	1777	1585	3456	3554	1585	3456	5106	1585
Grp Volume(v), veh/h	172	0	0	266	0	65	365	1655	212	33	1515	0
Grp Sat Flow(s),veh/h/ln	1728	1870	1585	1728	1777	1585	1728	1777	1585	1728	1702	1585
Q Serve(g_s), s	5.9	0.0	0.0	9.1	0.0	4.8	10.0	51.4	5.5	0.8	20.4	0.0
Cycle Q Clear(g_c), s	5.9	0.0	0.0	9.1	0.0	4.8	10.0	51.4	5.5	0.8	20.4	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	230	60		322	104	93	1008	1806	806	576	1957	
V/C Ratio(X)	0.75	0.00		0.83	0.00	0.70	0.36	0.92	0.26	0.06	0.77	
Avail Cap(c_a), veh/h	317	281		346	281	251	1008	1806	806	576	1957	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	0.86	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	0.79	0.79	0.00
Uniform Delay (d), s/veh	55.0	0.0	0.0	53.5	0.0	55.5	33.7	27.1	6.2	33.6	11.0	0.0
Incr Delay (d2), s/veh	5.4	0.0	0.0	14.4	0.0	9.2	0.2	8.8	0.8	0.0	2.4	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	2.7	0.0	0.0	4.6	0.0	2.2	4.3	23.1	3.3	0.3	4.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	60.4	0.0	0.0	67.9	0.0	64.7	33.9	36.0	7.0	33.6	13.4	0.0
LnGrp LOS	E			E		E	C	D	A	C	B	
Approach Vol, veh/h		172			331			2232			1548	
Approach Delay, s/veh		60.4			67.3			32.9			13.9	
Approach LOS		E			E			C			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	26.0	67.0	17.2	9.8	41.0	52.0	14.0	13.0
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	5.0	61.0	12.0	18.0	20.0	46.0	11.0	19.0
Max Q Clear Time (g_c+I1), s	2.8	53.4	11.1	0.0	12.0	22.4	7.9	6.8
Green Ext Time (p_c), s	0.0	6.2	0.1	0.0	0.8	12.5	0.1	0.2

Intersection Summary	
HCM 7th Control Delay, s/veh	29.8
HCM 7th LOS	C

Notes

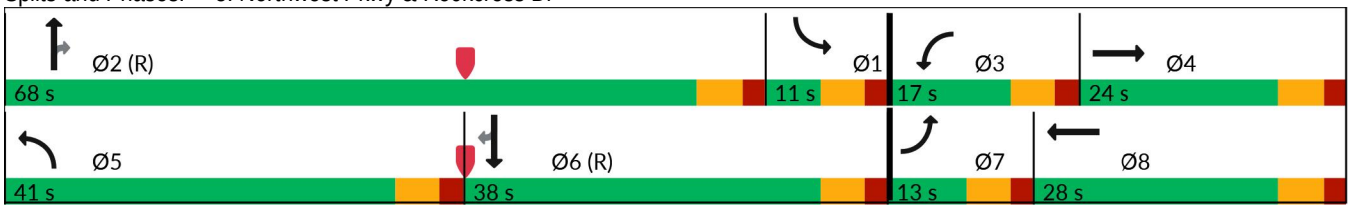
Unsignalized Delay for [EBR, SBR] is excluded from calculations of the approach delay and intersection delay.

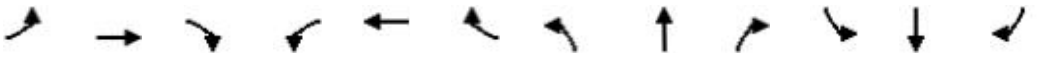
Lane Group	EBL	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR	Ø4
Lane Configurations											
Traffic Volume (vph)	45	220	255	0	895	1335	205	65	1490	185	
Future Volume (vph)	45	220	255	0	895	1335	205	65	1490	185	
Turn Type	Prot	Free	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	
Protected Phases	7		3	8	5	2		1	6		4
Permitted Phases		Free					2			6	
Detector Phase	7		3	8	5	2	2	1	6	6	
Switch Phase											
Minimum Initial (s)	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0		11.0	24.0	11.0	24.0	24.0	11.0	24.0	24.0	24.0
Total Split (s)	13.0		17.0	28.0	41.0	68.0	68.0	11.0	38.0	38.0	24.0
Total Split (%)	10.8%		14.2%	23.3%	34.2%	56.7%	56.7%	9.2%	31.7%	31.7%	20%
Yellow Time (s)	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Lead/Lag	Lead		Lead	Lag	Lead	Lead	Lead	Lag	Lag	Lag	Lag
Lead-Lag Optimize?	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None		None	None	None	C-Max	C-Max	None	C-Max	C-Max	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 58 (48%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 120
Control Type: Actuated-Coordinated

Splits and Phases: 5: Northwest Pkwy & Rockcress Dr





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	45	0	220	255	0	65	895	1335	205	65	1490	185
Future Volume (veh/h)	45	0	220	255	0	65	895	1335	205	65	1490	185
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
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	49	0	0	277	0	71	973	1451	223	71	1620	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	116	9		317	111	99	1008	1836	819	647	2104	
Arrive On Green	0.03	0.00	0.00	0.09	0.00	0.06	0.29	0.52	0.52	0.37	0.82	0.00
Sat Flow, veh/h	3456	1870	1585	3456	1777	1585	3456	3554	1585	3456	5106	1585
Grp Volume(v), veh/h	49	0	0	277	0	71	973	1451	223	71	1620	0
Grp Sat Flow(s),veh/h/ln	1728	1870	1585	1728	1777	1585	1728	1777	1585	1728	1702	1585
Q Serve(g_s), s	1.7	0.0	0.0	9.5	0.0	5.3	33.3	40.0	5.7	1.6	18.3	0.0
Cycle Q Clear(g_c), s	1.7	0.0	0.0	9.5	0.0	5.3	33.3	40.0	5.7	1.6	18.3	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	116	9		317	111	99	1008	1836	819	647	2104	
V/C Ratio(X)	0.42	0.00		0.87	0.00	0.71	0.97	0.79	0.27	0.11	0.77	
Avail Cap(c_a), veh/h	202	281		317	326	291	1008	1836	819	647	2104	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	0.99	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	0.74	0.74	0.00
Uniform Delay (d), s/veh	56.8	0.0	0.0	53.8	0.0	55.2	41.9	23.7	5.9	31.0	7.8	0.0
Incr Delay (d2), s/veh	2.4	0.0	0.0	22.7	0.0	9.1	20.4	3.6	0.8	0.1	2.1	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	0.8	0.0	0.0	5.1	0.0	2.4	16.9	17.1	3.4	0.7	3.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	59.3	0.0	0.0	76.5	0.0	64.3	62.3	27.2	6.8	31.1	9.9	0.0
LnGrp LOS	E			E		E	E	C	A	C	A	
Approach Vol, veh/h		49			348			2647			1691	
Approach Delay, s/veh		59.3			74.0			38.4			10.8	
Approach LOS		E			E			D			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	28.5	68.0	17.0	6.5	41.0	55.5	10.0	13.5
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	5.0	62.0	11.0	18.0	35.0	32.0	7.0	22.0
Max Q Clear Time (g_c+I1), s	3.6	42.0	11.5	0.0	35.3	20.3	3.7	7.3
Green Ext Time (p_c), s	0.0	12.0	0.0	0.0	0.0	8.2	0.0	0.2

Intersection Summary	
HCM 7th Control Delay, s/veh	31.4
HCM 7th LOS	C

Notes

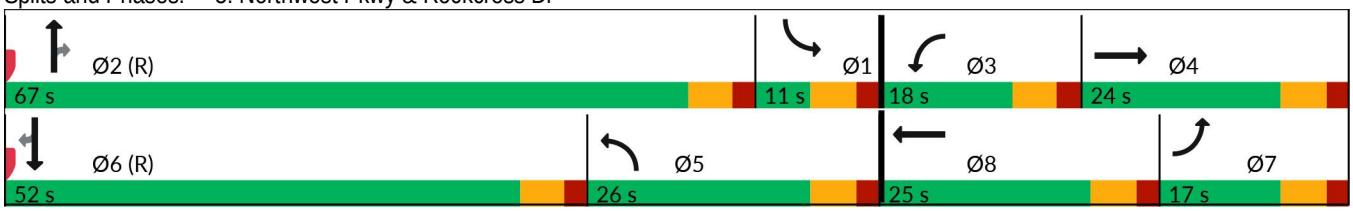
Unsignalized Delay for [EBR, SBR] is excluded from calculations of the approach delay and intersection delay.

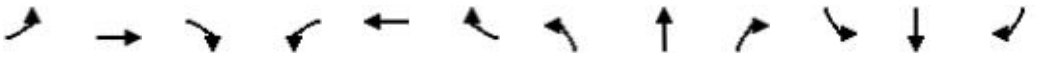
Lane Group	EBL	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR	Ø4
Lane Configurations											
Traffic Volume (vph)	160	885	245	0	345	1565	195	30	1430	85	
Future Volume (vph)	160	885	245	0	345	1565	195	30	1430	85	
Turn Type	Prot	Free	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	
Protected Phases	7		3	8	5	2		1	6		4
Permitted Phases		Free					2			6	
Detector Phase	7		3	8	5	2	2	1	6	6	
Switch Phase											
Minimum Initial (s)	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0		11.0	24.0	11.0	24.0	24.0	11.0	24.0	24.0	24.0
Total Split (s)	17.0		18.0	25.0	26.0	67.0	67.0	11.0	52.0	52.0	24.0
Total Split (%)	14.2%		15.0%	20.8%	21.7%	55.8%	55.8%	9.2%	43.3%	43.3%	20%
Yellow Time (s)	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Lead/Lag	Lag		Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag
Lead-Lag Optimize?	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None		None	None	None	C-Max	C-Max	None	C-Max	C-Max	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 60 (50%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated

Splits and Phases: 5: Northwest Pkwy & Rockcress Dr





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	160	0	885	245	0	60	345	1565	195	30	1430	85
Future Volume (veh/h)	160	0	885	245	0	60	345	1565	195	30	1430	85
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
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	174	0	0	266	0	65	375	1701	212	33	1554	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	232	61		322	104	93	1006	1806	806	574	1957	
Arrive On Green	0.07	0.00	0.00	0.09	0.00	0.06	0.29	0.51	0.51	0.33	0.77	0.00
Sat Flow, veh/h	3456	1870	1585	3456	1777	1585	3456	3554	1585	3456	5106	1585
Grp Volume(v), veh/h	174	0	0	266	0	65	375	1701	212	33	1554	0
Grp Sat Flow(s),veh/h/ln	1728	1870	1585	1728	1777	1585	1728	1777	1585	1728	1702	1585
Q Serve(g_s), s	5.9	0.0	0.0	9.1	0.0	4.8	10.4	54.2	5.5	0.8	21.8	0.0
Cycle Q Clear(g_c), s	5.9	0.0	0.0	9.1	0.0	4.8	10.4	54.2	5.5	0.8	21.8	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	232	61		322	104	93	1006	1806	806	574	1957	
V/C Ratio(X)	0.75	0.00		0.83	0.00	0.70	0.37	0.94	0.26	0.06	0.79	
Avail Cap(c_a), veh/h	317	281		346	281	251	1006	1806	806	574	1957	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	0.88	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	0.78	0.78	0.00
Uniform Delay (d), s/veh	55.0	0.0	0.0	53.5	0.0	55.5	33.8	27.8	6.2	33.7	11.2	0.0
Incr Delay (d2), s/veh	5.7	0.0	0.0	14.4	0.0	9.2	0.2	11.3	0.8	0.0	2.7	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	0.0	0.0	4.6	0.0	2.2	4.4	24.8	3.3	0.3	4.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	60.7	0.0	0.0	67.9	0.0	64.7	34.1	39.1	7.0	33.7	13.9	0.0
LnGrp LOS	E			E		E	C	D	A	C	B	
Approach Vol, veh/h		174			331			2288			1587	
Approach Delay, s/veh		60.7			67.3			35.3			14.3	
Approach LOS		E			E			D			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	25.9	67.0	17.2	9.9	40.9	52.0	14.1	13.0
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	5.0	61.0	12.0	18.0	20.0	46.0	11.0	19.0
Max Q Clear Time (g_c+I1), s	2.8	56.2	11.1	0.0	12.4	23.8	7.9	6.8
Green Ext Time (p_c), s	0.0	4.2	0.1	0.0	0.8	12.4	0.1	0.2

Intersection Summary	
HCM 7th Control Delay, s/veh	31.1
HCM 7th LOS	C

Notes

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

Intersection	
Int Delay, s/veh	4.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	16	2	25	21	1	27	96	76	69	90	114	60
Future Vol, veh/h	16	2	25	21	1	27	96	76	69	90	114	60
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	-	-	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	17	2	27	23	1	29	104	83	75	98	124	65

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	644	718	157	649	714	120	189	0	0	158	0	0
Stage 1	352	352	-	329	329	-	-	-	-	-	-	-
Stage 2	292	366	-	321	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	386	355	889	383	357	931	1385	-	-	1422	-	-
Stage 1	665	631	-	684	647	-	-	-	-	-	-	-
Stage 2	716	622	-	691	611	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	321	305	889	317	307	931	1385	-	-	1422	-	-
Mov Cap-2 Maneuver	321	305	-	317	307	-	-	-	-	-	-	-
Stage 1	619	588	-	633	598	-	-	-	-	-	-	-
Stage 2	640	576	-	622	569	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	12.79	13.09	3.11	2.63
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1385	-	-	509	498	1422	-	-
HCM Lane V/C Ratio	0.075	-	-	0.092	0.107	0.069	-	-
HCM Ctrl Dly (s/v)	7.8	-	-	12.8	13.1	7.7	-	-
HCM Lane LOS	A	-	-	B	B	A	-	-
HCM 95th %tile Q(veh)	0.2	-	-	0.3	0.4	0.2	-	-

Intersection	
Int Delay, s/veh	7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	61	1	97	80	1	89	31	181	29	43	73	19
Future Vol, veh/h	61	1	97	80	1	89	31	181	29	43	73	19
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	-	-	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	66	1	105	87	1	97	34	197	32	47	79	21

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	448	479	90	453	473	213	100	0	0	228	0	0
Stage 1	183	183	-	280	280	-	-	-	-	-	-	-
Stage 2	265	296	-	173	193	-	-	-	-	-	-	-
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	521	486	968	517	489	828	1493	-	-	1340	-	-
Stage 1	819	748	-	727	679	-	-	-	-	-	-	-
Stage 2	741	668	-	828	740	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	433	458	968	433	462	828	1493	-	-	1340	-	-
Mov Cap-2 Maneuver	433	458	-	433	462	-	-	-	-	-	-	-
Stage 1	790	722	-	710	664	-	-	-	-	-	-	-
Stage 2	638	653	-	711	715	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	12.47	14.13	0.96	2.48
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1493	-	-	654	578	1340	-	-
HCM Lane V/C Ratio	0.023	-	-	0.264	0.32	0.035	-	-
HCM Ctrl Dly (s/v)	7.5	-	-	12.5	14.1	7.8	-	-
HCM Lane LOS	A	-	-	B	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	1.1	1.4	0.1	-	-

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	16	2	25	23	1	42	96	87	74	130	141	60
Future Vol, veh/h	16	2	25	23	1	42	96	87	74	130	141	60
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	-	-	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	17	2	27	25	1	46	104	95	80	141	153	65

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	772	852	186	780	845	135	218	0	0	175	0	0
Stage 1	468	468	-	343	343	-	-	-	-	-	-	-
Stage 2	304	384	-	437	501	-	-	-	-	-	-	-
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	316	297	856	312	300	914	1351	-	-	1401	-	-
Stage 1	575	561	-	672	637	-	-	-	-	-	-	-
Stage 2	706	612	-	598	543	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	249	246	856	249	249	914	1351	-	-	1401	-	-
Mov Cap-2 Maneuver	249	246	-	249	249	-	-	-	-	-	-	-
Stage 1	517	504	-	620	588	-	-	-	-	-	-	-
Stage 2	617	564	-	519	488	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	14.57	14.17	2.95	3.09
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1351	-	-	423	464	1401	-	-
HCM Lane V/C Ratio	0.077	-	-	0.111	0.155	0.101	-	-
HCM Ctrl Dly (s/v)	7.9	-	-	14.6	14.2	7.9	-	-
HCM Lane LOS	A	-	-	B	B	A	-	-
HCM 95th %tile Q(veh)	0.3	-	-	0.4	0.5	0.3	-	-

Intersection	
Int Delay, s/veh	8.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	61	1	97	89	1	146	31	224	31	66	88	19
Future Vol, veh/h	61	1	97	89	1	146	31	224	31	66	88	19
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	-	-	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	66	1	105	97	1	159	34	243	34	72	96	21

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	561	594	106	567	588	260	116	0	0	277	0	0
Stage 1	249	249	-	328	328	-	-	-	-	-	-	-
Stage 2	311	345	-	240	260	-	-	-	-	-	-	-
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	438	418	948	434	422	778	1472	-	-	1286	-	-
Stage 1	755	700	-	685	647	-	-	-	-	-	-	-
Stage 2	699	636	-	764	693	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	321	386	948	355	389	778	1472	-	-	1286	-	-
Mov Cap-2 Maneuver	321	386	-	355	389	-	-	-	-	-	-	-
Stage 1	712	661	-	669	632	-	-	-	-	-	-	-
Stage 2	543	622	-	640	654	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	14.79	17.76	0.81	3.04
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1472	-	-	539	535	1286	-	-
HCM Lane V/C Ratio	0.023	-	-	0.32	0.479	0.056	-	-
HCM Ctrl Dly (s/v)	7.5	-	-	14.8	17.8	8	-	-
HCM Lane LOS	A	-	-	B	C	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	1.4	2.6	0.2	-	-

Intersection	
Int Delay, s/veh	2.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	12	2	19	2	1	7	72	222	7	21	95	48
Future Vol, veh/h	12	2	19	2	1	7	72	222	7	21	95	48
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	-	-	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	2	21	2	1	8	78	241	8	23	103	52

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	573	580	129	552	603	245	155	0	0	249	0	0
Stage 1	175	175	-	402	402	-	-	-	-	-	-	-
Stage 2	398	405	-	150	201	-	-	-	-	-	-	-
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	430	425	920	445	413	794	1425	-	-	1317	-	-
Stage 1	827	754	-	625	601	-	-	-	-	-	-	-
Stage 2	628	598	-	853	735	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	395	395	920	402	384	794	1425	-	-	1317	-	-
Mov Cap-2 Maneuver	395	395	-	402	384	-	-	-	-	-	-	-
Stage 1	812	741	-	591	568	-	-	-	-	-	-	-
Stage 2	586	565	-	817	722	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	11.52	11.01	1.84	1
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1425	-	-	588	610	1317	-	-
HCM Lane V/C Ratio	0.055	-	-	0.061	0.018	0.017	-	-
HCM Ctrl Dly (s/v)	7.7	-	-	11.5	11	7.8	-	-
HCM Lane LOS	A	-	-	B	B	A	-	-
HCM 95th %tile Q(veh)	0.2	-	-	0.2	0.1	0.1	-	-

Intersection	
Int Delay, s/veh	3.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	49	1	73	8	2	23	23	169	4	11	225	16
Future Vol, veh/h	49	1	73	8	2	23	23	169	4	11	225	16
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	-	-	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	53	1	79	9	2	25	25	184	4	12	245	17

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	512	515	253	505	522	186	262	0	0	188	0	0
Stage 1	277	277	-	236	236	-	-	-	-	-	-	-
Stage 2	235	238	-	269	286	-	-	-	-	-	-	-
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	472	463	785	478	459	856	1302	-	-	1386	-	-
Stage 1	729	681	-	767	710	-	-	-	-	-	-	-
Stage 2	768	708	-	737	675	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	444	451	785	417	447	856	1302	-	-	1386	-	-
Mov Cap-2 Maneuver	444	451	-	417	447	-	-	-	-	-	-	-
Stage 1	723	675	-	753	696	-	-	-	-	-	-	-
Stage 2	729	695	-	655	669	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	12.74	10.83	0.92	0.33
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1302	-	-	598	653	1386	-	-
HCM Lane V/C Ratio	0.019	-	-	0.223	0.055	0.009	-	-
HCM Ctrl Dly (s/v)	7.8	-	-	12.7	10.8	7.6	-	-
HCM Lane LOS	A	-	-	B	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.9	0.2	0	-	-

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	12	2	19	4	1	12	72	233	12	35	112	48
Future Vol, veh/h	12	2	19	4	1	12	72	233	12	35	112	48
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	-	-	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	2	21	4	1	13	78	253	13	38	122	52

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	634	647	148	615	666	260	174	0	0	266	0	0
Stage 1	224	224	-	416	416	-	-	-	-	-	-	-
Stage 2	410	423	-	199	250	-	-	-	-	-	-	-
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	392	390	899	403	380	779	1403	-	-	1298	-	-
Stage 1	779	718	-	614	592	-	-	-	-	-	-	-
Stage 2	618	588	-	803	700	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	352	357	899	359	348	779	1403	-	-	1298	-	-
Mov Cap-2 Maneuver	352	357	-	359	348	-	-	-	-	-	-	-
Stage 1	756	697	-	580	559	-	-	-	-	-	-	-
Stage 2	573	555	-	759	679	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	12.11	11.44	1.75	1.41
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1403	-	-	543	578	1298	-	-
HCM Lane V/C Ratio	0.056	-	-	0.066	0.032	0.029	-	-
HCM Ctrl Dly (s/v)	7.7	-	-	12.1	11.4	7.9	-	-
HCM Lane LOS	A	-	-	B	B	A	-	-
HCM 95th %tile Q(veh)	0.2	-	-	0.2	0.1	0.1	-	-

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	49	1	73	13	2	40	23	197	6	18	243	16
Future Vol, veh/h	49	1	73	13	2	40	23	197	6	18	243	16
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	-	-	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	53	1	79	14	2	43	25	214	7	20	264	17

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	577	583	273	571	588	217	282	0	0	221	0	0
Stage 1	312	312	-	267	267	-	-	-	-	-	-	-
Stage 2	265	271	-	304	321	-	-	-	-	-	-	-
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	428	424	766	431	421	822	1281	-	-	1349	-	-
Stage 1	699	658	-	738	688	-	-	-	-	-	-	-
Stage 2	740	685	-	706	652	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	389	410	766	373	407	822	1281	-	-	1349	-	-
Mov Cap-2 Maneuver	389	410	-	373	407	-	-	-	-	-	-	-
Stage 1	688	648	-	724	674	-	-	-	-	-	-	-
Stage 2	685	672	-	622	642	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	13.63	11.4	0.8	0.5
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1281	-	-	550	622	1349	-	-
HCM Lane V/C Ratio	0.02	-	-	0.243	0.096	0.015	-	-
HCM Ctrl Dly (s/v)	7.9	-	-	13.6	11.4	7.7	-	-
HCM Lane LOS	A	-	-	B	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.9	0.3	0	-	-

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	14	131	11	38	505	194	3	0	8	61	0	7
Future Vol, veh/h	14	131	11	38	505	194	3	0	8	61	0	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	150	-	-	-	-	-	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	15	142	12	41	549	211	3	0	9	66	0	8

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	760	0	0	154	0	0	536	1021	77	839	922	380
Stage 1	-	-	-	-	-	-	179	179	-	737	737	-
Stage 2	-	-	-	-	-	-	357	842	-	102	185	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
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	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	970	-	-	1424	-	-	*651	297	968	371	345	921
Stage 1	-	-	-	-	-	-	*806	750	-	505	512	-
Stage 2	-	-	-	-	-	-	*900	453	-	893	746	-
Platoon blocked, %	0	-	-		-	-	0	0		0	0	0
Mov Cap-1 Maneuver	970	-	-	1424	-	-	*617	284	968	351	330	921
Mov Cap-2 Maneuver	-	-	-	-	-	-	*617	284	-	351	330	-
Stage 1	-	-	-	-	-	-	*793	738	-	491	498	-
Stage 2	-	-	-	-	-	-	*867	440	-	871	734	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0.79	0.39	9.36	16.72
HCM LOS			A	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	838	970	-	-	1424	-	-	351	921
HCM Lane V/C Ratio	0.014	0.016	-	-	0.029	-	-	0.189	0.008
HCM Ctrl Dly (s/v)	9.4	8.8	-	-	7.6	-	-	17.6	8.9
HCM Lane LOS	A	A	-	-	A	-	-	C	A
HCM 95th %tile Q(veh)	0	0	-	-	0.1	-	-	0.7	0

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

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	530	6	12	223	97	14	0	39	191	0	23
Future Vol, veh/h	7	530	6	12	223	97	14	0	39	191	0	23
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	150	-	-	-	-	-	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	8	576	7	13	242	105	15	0	42	208	0	25

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	348	0	0	583	0	0	742	968	291	624	919	174
Stage 1	-	-	-	-	-	-	595	595	-	321	321	-
Stage 2	-	-	-	-	-	-	147	374	-	303	598	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
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	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1299	-	-	988	-	-	*356	279	705	437	299	1007
Stage 1	-	-	-	-	-	-	*458	491	-	773	717	-
Stage 2	-	-	-	-	-	-	*968	678	-	681	489	-
Platoon blocked, %	0	-	-		-	-	0	0		0	0	0
Mov Cap-1 Maneuver	1299	-	-	988	-	-	*341	274	705	403	294	1007
Mov Cap-2 Maneuver	-	-	-	-	-	-	*341	274	-	403	294	-
Stage 1	-	-	-	-	-	-	*455	488	-	763	708	-
Stage 2	-	-	-	-	-	-	*931	669	-	637	486	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0.1	0.31	12.31	21.5
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	550	1299	-	-	988	-	-	403	1007
HCM Lane V/C Ratio	0.105	0.006	-	-	0.013	-	-	0.515	0.025
HCM Ctrl Dly (s/v)	12.3	7.8	-	-	8.7	-	-	23	8.7
HCM Lane LOS	B	A	-	-	A	-	-	C	A
HCM 95th %tile Q(veh)	0.3	0	-	-	0	-	-	2.9	0.1

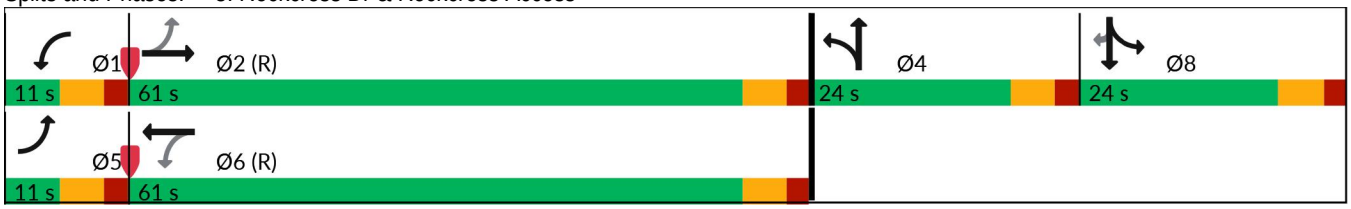
Notes	
~: Volume exceeds capacity	$: Delay exceeds 300s
+: Computation Not Defined	*: All major volume in platoon

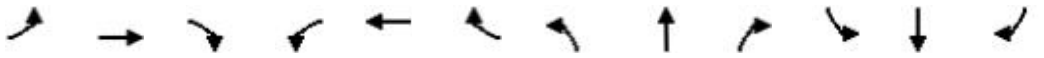
Lane Group	EBL	EBT	WBL	WBT	NBT	SBL	SBT	SBR
Lane Configurations								
Traffic Volume (vph)	23	160	38	661	0	97	0	12
Future Volume (vph)	23	160	38	661	0	97	0	12
Turn Type	pm+pt	NA	pm+pt	NA	NA	Split	NA	Perm
Protected Phases	5	2	1	6	4	8	8	
Permitted Phases	2		6					8
Detector Phase	5	2	1	6	4	8	8	8
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	24.0	11.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	11.0	61.0	11.0	61.0	24.0	24.0	24.0	24.0
Total Split (%)	9.2%	50.8%	9.2%	50.8%	20.0%	20.0%	20.0%	20.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	C-Max	None	C-Max	None	None	None	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 8 (7%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 85
Control Type: Actuated-Coordinated

Splits and Phases: 8: Rockcress Dr & Rockcress Access





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	160	11	38	661	318	3	0	8	97	0	12
Future Volume (veh/h)	23	160	11	38	661	318	3	0	8	97	0	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
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	25	174	12	41	718	346	3	0	9	105	0	13
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	414	2391	164	945	1665	802	6	0	17	167	0	74
Arrive On Green	0.02	0.71	0.71	0.03	0.72	0.72	0.01	0.00	0.01	0.05	0.00	0.05
Sat Flow, veh/h	1781	3375	231	1781	2326	1120	407	0	1222	3563	0	1585
Grp Volume(v), veh/h	25	91	95	41	548	516	12	0	0	105	0	13
Grp Sat Flow(s),veh/h/ln	1781	1777	1829	1781	1777	1669	1630	0	0	1781	0	1585
Q Serve(g_s), s	0.5	1.9	1.9	0.7	15.2	15.2	0.9	0.0	0.0	3.5	0.0	0.9
Cycle Q Clear(g_c), s	0.5	1.9	1.9	0.7	15.2	15.2	0.9	0.0	0.0	3.5	0.0	0.9
Prop In Lane	1.00		0.13	1.00		0.67	0.25		0.75	1.00		1.00
Lane Grp Cap(c), veh/h	414	1259	1296	945	1272	1195	22	0	0	167	0	74
V/C Ratio(X)	0.06	0.07	0.07	0.04	0.43	0.43	0.54	0.00	0.00	0.63	0.00	0.18
Avail Cap(c_a), veh/h	447	1259	1296	964	1272	1195	244	0	0	534	0	238
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	0.64	0.64	0.64	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	5.3	5.4	5.4	4.2	7.0	7.0	58.8	0.0	0.0	56.2	0.0	55.0
Incr Delay (d2), s/veh	0.1	0.1	0.1	0.0	0.7	0.7	18.4	0.0	0.0	3.9	0.0	1.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.7	0.7	0.2	5.5	5.1	0.5	0.0	0.0	1.7	0.0	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	5.3	5.5	5.5	4.2	7.7	7.7	77.2	0.0	0.0	60.1	0.0	56.1
LnGrp LOS	A	A	A	A	A	A	E			E		E
Approach Vol, veh/h		211			1105			12			118	
Approach Delay, s/veh		5.5			7.6			77.2			59.6	
Approach LOS		A			A			E			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.7	91.0		7.6	8.8	91.9		11.6				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	5.0	55.0		18.0	5.0	55.0		18.0				
Max Q Clear Time (g_c+I1), s	2.7	3.9		2.9	2.5	17.2		5.5				
Green Ext Time (p_c), s	0.0	1.1		0.0	0.0	9.2		0.2				

Intersection Summary		
HCM 7th Control Delay, s/veh	12.1	
HCM 7th LOS	B	

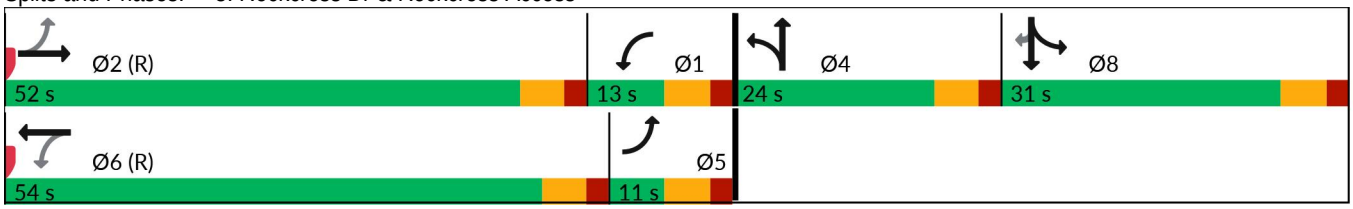
Notes

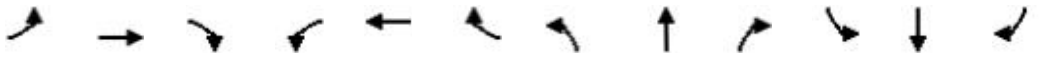
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBL	WBT	NBT	SBL	SBT	SBR
Lane Configurations								
Traffic Volume (vph)	12	695	12	261	0	333	0	40
Future Volume (vph)	12	695	12	261	0	333	0	40
Turn Type	pm+pt	NA	pm+pt	NA	NA	Split	NA	Perm
Protected Phases	5	2	1	6	4	8	8	
Permitted Phases	2		6					8
Detector Phase	5	2	1	6	4	8	8	8
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	24.0	13.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	11.0	52.0	13.0	54.0	24.0	31.0	31.0	31.0
Total Split (%)	9.2%	43.3%	10.8%	45.0%	20.0%	25.8%	25.8%	25.8%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lag	Lead	Lag	Lead				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	C-Max	None	C-Max	None	Max	Max	Max

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 16 (13%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 85
Control Type: Actuated-Coordinated

Splits and Phases: 8: Rockcress Dr & Rockcress Access





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	695	6	12	261	167	14	0	39	333	0	40
Future Volume (veh/h)	12	695	6	12	261	167	14	0	39	333	0	40
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
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	13	755	7	13	284	182	15	0	42	362	0	43
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	641	1383	13	507	841	523	19	0	54	742	0	330
Arrive On Green	0.15	0.38	0.38	0.33	0.80	0.80	0.04	0.00	0.04	0.21	0.00	0.21
Sat Flow, veh/h	1781	3608	33	1781	2103	1309	430	0	1203	3563	0	1585
Grp Volume(v), veh/h	13	372	390	13	239	227	57	0	0	362	0	43
Grp Sat Flow(s),veh/h/ln	1781	1777	1864	1781	1777	1635	1632	0	0	1781	0	1585
Q Serve(g_s), s	0.0	19.6	19.6	0.0	4.4	4.6	4.1	0.0	0.0	10.7	0.0	2.6
Cycle Q Clear(g_c), s	0.0	19.6	19.6	0.0	4.4	4.6	4.1	0.0	0.0	10.7	0.0	2.6
Prop In Lane	1.00		0.02	1.00		0.80	0.26		0.74	1.00		1.00
Lane Grp Cap(c), veh/h	641	681	715	507	711	654	73	0	0	742	0	330
V/C Ratio(X)	0.02	0.55	0.55	0.03	0.34	0.35	0.78	0.00	0.00	0.49	0.00	0.13
Avail Cap(c_a), veh/h	641	681	715	507	711	654	245	0	0	742	0	330
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.82	0.82	0.82	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	15.7	28.9	28.9	18.6	7.6	7.7	56.7	0.0	0.0	41.9	0.0	38.7
Incr Delay (d2), s/veh	0.0	3.1	3.0	0.0	1.0	1.2	16.4	0.0	0.0	2.3	0.0	0.8
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	8.9	9.3	0.2	1.6	1.6	2.0	0.0	0.0	5.0	0.0	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	15.7	32.0	31.8	18.6	8.7	8.9	73.2	0.0	0.0	44.1	0.0	39.5
LnGrp LOS	B	C	C	B	A	A	E			D		D
Approach Vol, veh/h		775			479			57			405	
Approach Delay, s/veh		31.6			9.0			73.2			43.6	
Approach LOS		C			A			E			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	25.6	52.0		11.4	23.6	54.0		31.0				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	7.0	46.0		18.0	5.0	48.0		25.0				
Max Q Clear Time (g_c+I1), s	2.0	21.6		6.1	2.0	6.6		12.7				
Green Ext Time (p_c), s	0.0	5.1		0.1	0.0	3.2		1.2				

Intersection Summary		
HCM 7th Control Delay, s/veh		29.5
HCM 7th LOS		C

Notes

User approved volume balancing among the lanes for turning movement.

Intersection	
Int Delay, s/veh	0.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	7	8	292	25	21	91
Future Vol, veh/h	7	8	292	25	21	91
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	-	-	-	150	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	8	9	317	27	23	99

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	476	331	0	0	345	0
Stage 1	331	-	-	-	-	-
Stage 2	145	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	548	711	-	-	1214	-
Stage 1	728	-	-	-	-	-
Stage 2	883	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	538	711	-	-	1214	-
Mov Cap-2 Maneuver	601	-	-	-	-	-
Stage 1	728	-	-	-	-	-
Stage 2	866	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	10.64	0	1.5
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	655	1214	-
HCM Lane V/C Ratio	-	-	0.025	0.019	-
HCM Ctrl Dly (s/v)	-	-	10.6	8	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0.1	-

Intersection	
Int Delay, s/veh	1.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	23	27	169	12	11	294
Future Vol, veh/h	23	27	169	12	11	294
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	-	-	-	150	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	25	29	184	13	12	320

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	534	190	0	0	197	0
Stage 1	190	-	-	-	-	-
Stage 2	343	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	507	852	-	-	1376	-
Stage 1	842	-	-	-	-	-
Stage 2	718	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	503	852	-	-	1376	-
Mov Cap-2 Maneuver	577	-	-	-	-	-
Stage 1	842	-	-	-	-	-
Stage 2	712	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	10.59	0	0.28
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	699	1376	-
HCM Lane V/C Ratio	-	-	0.078	0.009	-
HCM Ctrl Dly (s/v)	-	-	10.6	7.6	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.3	0	-

Intersection	
Int Delay, s/veh	1.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	12	14	303	40	35	95
Future Vol, veh/h	12	14	303	40	35	95
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	-	-	-	150	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	15	329	43	38	103

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	530	351	0	0	373	0
Stage 1	351	-	-	-	-	-
Stage 2	179	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	509	692	-	-	1186	-
Stage 1	713	-	-	-	-	-
Stage 2	852	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	493	692	-	-	1186	-
Mov Cap-2 Maneuver	570	-	-	-	-	-
Stage 1	713	-	-	-	-	-
Stage 2	824	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	10.98	0	2.19
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	630	1186	-
HCM Lane V/C Ratio	-	-	0.045	0.032	-
HCM Ctrl Dly (s/v)	-	-	11	8.1	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0.1	-

Intersection	
Int Delay, s/veh	1.8

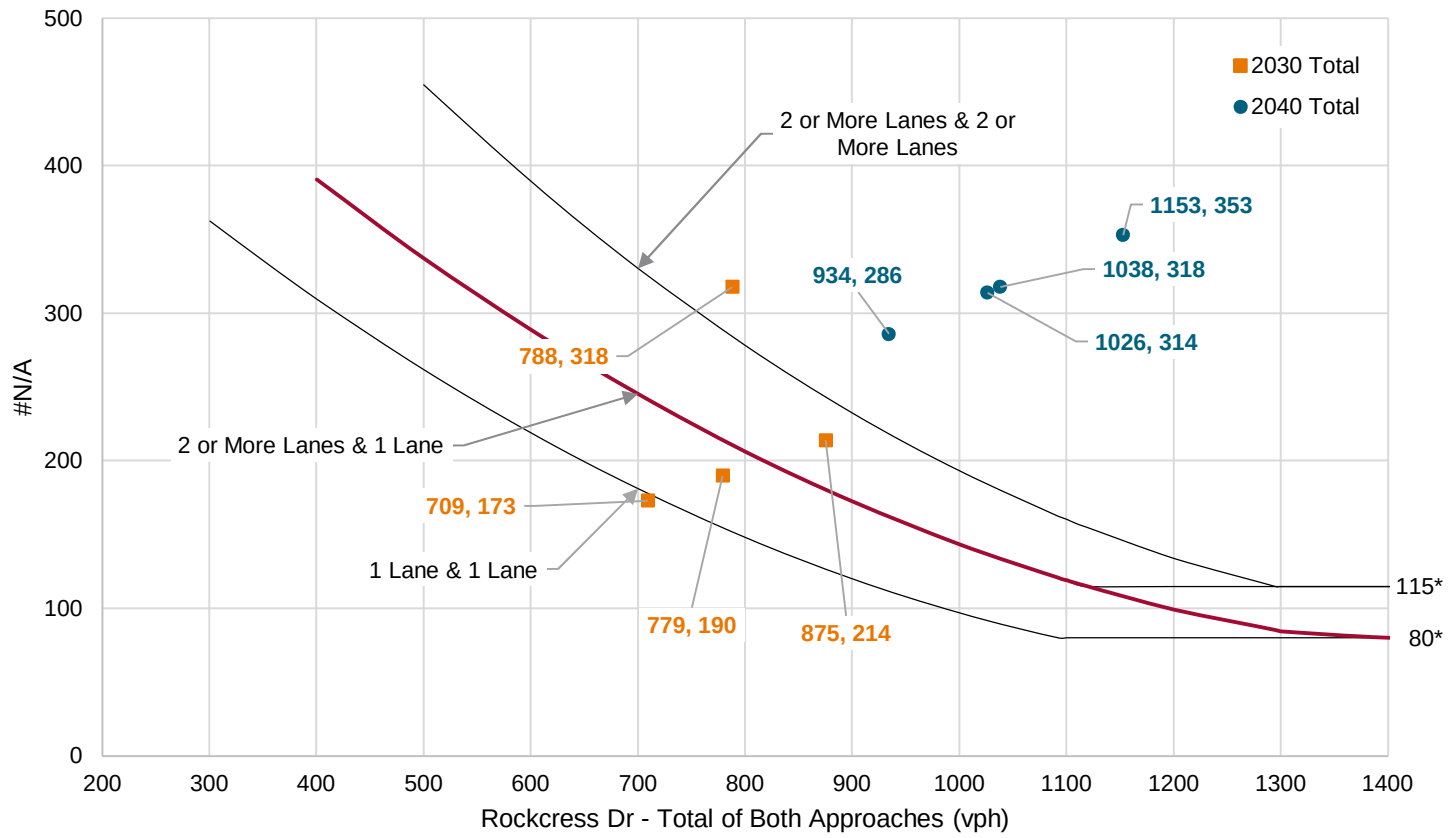
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	40	47	179	21	18	308
Future Vol, veh/h	40	47	179	21	18	308
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	150	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	43	51	195	23	20	335

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	580	206	0	0	217	0
Stage 1	206	-	-	-	-	-
Stage 2	374	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	477	835	-	-	1352	-
Stage 1	829	-	-	-	-	-
Stage 2	696	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	470	835	-	-	1352	-
Mov Cap-2 Maneuver	552	-	-	-	-	-
Stage 1	829	-	-	-	-	-
Stage 2	686	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	11.2	0	0.43
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	675	1352	-
HCM Lane V/C Ratio	-	-	0.14	0.014	-
HCM Ctrl Dly (s/v)	-	-	11.2	7.7	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.5	0	-

Appendix E: Signal Warrant Analysis Worksheet



*Note: 115 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 80 vph applies as the lower threshold volume for a minor-street approach with one lane.

Rockcress Dr & Hospital Access
Signal Warrant Analysis
Four-Hour Volume Warrant

Source: Manual on Uniform Traffic Control Devices 2023

Intersection #8

Kimley»Horn

Appendix F: Queue Analysis Worksheets

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	433	55	147	1196	949	597
v/c Ratio	0.75	0.18	0.36	0.46	0.44	0.50
Control Delay (s/veh)	55.4	11.6	3.8	1.1	14.0	2.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	55.4	11.6	3.8	1.1	14.0	2.6
Queue Length 50th (ft)	168	0	4	17	196	0
Queue Length 95th (ft)	214	36	m6	23	288	52
Internal Link Dist (ft)	1226			875	483	
Turn Bay Length (ft)	150	150	250			250
Base Capacity (vph)	801	411	484	2585	2155	1197
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.54	0.13	0.30	0.46	0.44	0.50

Intersection Summary

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

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	548	136	78	957	1249	271
v/c Ratio	0.78	0.32	0.27	0.39	0.58	0.25
Control Delay (s/veh)	53.3	8.2	4.2	0.9	16.9	2.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	53.3	8.2	4.2	0.9	16.9	2.2
Queue Length 50th (ft)	212	1	1	9	310	0
Queue Length 95th (ft)	260	51	m6	12	426	39
Internal Link Dist (ft)	1226			875	483	
Turn Bay Length (ft)	150	150	250			250
Base Capacity (vph)	858	497	294	2462	2155	1070
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.64	0.27	0.27	0.39	0.58	0.25

Intersection Summary

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

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	483	67	175	1255	1010	708
v/c Ratio	0.76	0.19	0.47	0.35	0.51	0.59
Control Delay (s/veh)	54.3	10.2	56.8	1.3	18.3	3.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	54.3	10.2	56.8	1.3	18.3	3.4
Queue Length 50th (ft)	188	0	75	14	247	0
Queue Length 95th (ft)	233	38	m103	20	342	60
Internal Link Dist (ft)	1226			875	483	
Turn Bay Length (ft)	150	500	400			250
Base Capacity (vph)	801	420	371	3636	1969	1194
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.60	0.16	0.47	0.35	0.51	0.59

Intersection Summary

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

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	684	167	92	1011	1321	318
v/c Ratio	0.82	0.34	0.46	0.30	0.68	0.31
Control Delay (s/veh)	51.9	10.2	47.2	0.9	22.3	2.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	51.9	10.2	47.2	0.9	22.3	2.7
Queue Length 50th (ft)	261	15	39	8	382	2
Queue Length 95th (ft)	321	70	m64	10	493	47
Internal Link Dist (ft)	1226			875	483	
Turn Bay Length (ft)	150	500	400			250
Base Capacity (vph)	944	538	200	3346	1945	1010
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.72	0.31	0.46	0.30	0.68	0.31

Intersection Summary

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

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	495	71	179	1288	1038	723
v/c Ratio	0.77	0.20	0.48	0.36	0.53	0.60
Control Delay (s/veh)	54.5	10.0	56.7	1.3	18.7	3.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	54.5	10.0	56.7	1.3	18.7	3.5
Queue Length 50th (ft)	192	0	76	15	259	0
Queue Length 95th (ft)	239	39	m103	20	355	60
Internal Link Dist (ft)	1226			875	483	
Turn Bay Length (ft)	150	500	400			250
Base Capacity (vph)	801	423	371	3623	1961	1199
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.62	0.17	0.48	0.36	0.53	0.60

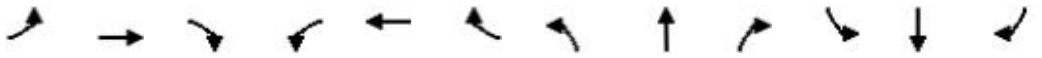
Intersection Summary

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

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	701	174	98	1038	1353	326
v/c Ratio	0.83	0.35	0.49	0.31	0.70	0.32
Control Delay (s/veh)	52.0	11.2	47.8	0.9	23.1	2.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	52.0	11.2	47.8	0.9	23.1	2.9
Queue Length 50th (ft)	268	21	42	9	401	5
Queue Length 95th (ft)	330	79	m67	11	512	51
Internal Link Dist (ft)	1226			875	483	
Turn Bay Length (ft)	150	500	400			250
Base Capacity (vph)	944	536	200	3327	1932	1006
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.74	0.32	0.49	0.31	0.70	0.32

Intersection Summary

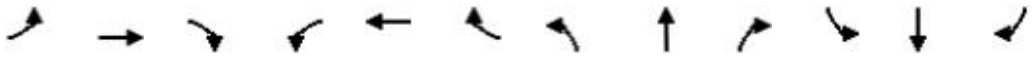
m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	73	125	807	60	212	49	943	467	22	43	800	187
v/c Ratio	0.35	0.29	0.51	0.41	0.58	0.03	0.88	0.21	0.01	0.06	0.66	0.12
Control Delay (s/veh)	45.0	36.3	7.8	64.6	57.3	0.0	66.7	13.1	0.0	13.9	38.9	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	45.0	36.3	7.8	64.6	57.3	0.0	66.7	13.1	0.0	13.9	38.9	0.2
Queue Length 50th (ft)	28	42	254	24	85	0	409	127	0	5	297	0
Queue Length 95th (ft)	45	45	450	47	123	0	477	176	m0	11	385	0
Internal Link Dist (ft)		875			991			2985			849	
Turn Bay Length (ft)	325		375	250		250	700			575		500
Base Capacity (vph)	210	530	1583	147	530	1583	1115	2233	1583	718	1206	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	0.35	0.24	0.51	0.41	0.40	0.03	0.85	0.21	0.01	0.06	0.66	0.12

Intersection Summary

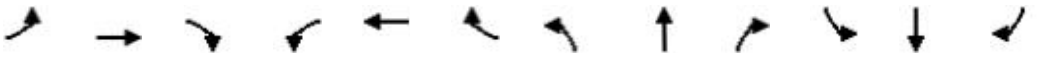
m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	191	239	1003	27	174	82	775	889	49	27	484	86
v/c Ratio	0.56	0.36	0.63	0.18	0.53	0.05	0.79	0.42	0.03	0.07	0.42	0.05
Control Delay (s/veh)	44.0	32.1	10.7	58.4	57.4	0.1	35.2	6.3	0.0	15.4	35.2	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	44.0	32.1	10.7	58.4	57.4	0.1	35.2	6.3	0.0	15.4	35.2	0.1
Queue Length 50th (ft)	71	77	416	10	70	0	282	64	0	3	164	0
Queue Length 95th (ft)	95	87	468	27	105	0	355	75	m0	10	234	0
Internal Link Dist (ft)		875			991			2985			849	
Turn Bay Length (ft)	325		375	250		250	700			575		500
Base Capacity (vph)	354	722	1583	151	530	1583	1087	2132	1583	380	1143	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	0.54	0.33	0.63	0.18	0.33	0.05	0.71	0.42	0.03	0.07	0.42	0.05

Intersection Summary

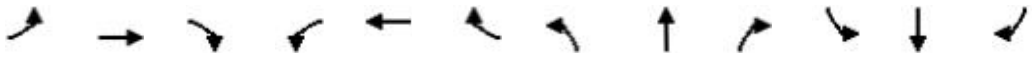
m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	85	136	862	65	223	54	992	525	27	49	918	221
v/c Ratio	0.29	0.32	0.54	0.45	0.59	0.03	0.77	0.24	0.02	0.08	0.65	0.14
Control Delay (s/veh)	45.8	39.0	10.2	66.6	57.3	0.0	66.3	23.3	0.0	25.3	33.6	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 (s/veh)	45.8	39.0	10.2	66.6	57.3	0.0	66.3	23.3	0.0	25.3	33.6	0.2
Queue Length 50th (ft)	18	32	346	26	89	0	296	180	0	12	318	0
Queue Length 95th (ft)	35	52	469	51	128	0	343	239	m0	27	411	0
Internal Link Dist (ft)		875			991			2985			849	
Turn Bay Length (ft)	325		375	250		250	700			575		500
Base Capacity (vph)	290	530	1583	143	530	1583	1289	2215	1583	619	1402	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	0.29	0.26	0.54	0.45	0.42	0.03	0.77	0.24	0.02	0.08	0.65	0.14

Intersection Summary

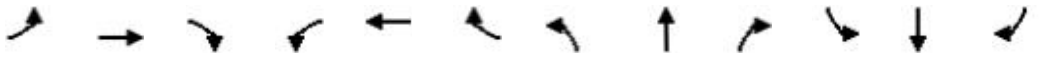
m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	228	255	1064	33	185	87	818	1025	54	33	551	100
v/c Ratio	0.51	0.40	0.67	0.22	0.54	0.05	0.72	0.48	0.03	0.09	0.40	0.06
Control Delay (s/veh)	38.7	29.7	12.8	59.1	57.3	0.1	35.1	6.2	0.0	13.2	29.7	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	38.7	29.7	12.8	59.1	57.3	0.1	35.1	6.2	0.0	13.2	29.7	0.1
Queue Length 50th (ft)	57	85	473	13	74	0	208	84	0	4	173	0
Queue Length 95th (ft)	76	103	432	31	110	0	243	98	m0	11	243	0
Internal Link Dist (ft)		875			991			2985			849	
Turn Bay Length (ft)	325		375	250		250	700			575		500
Base Capacity (vph)	483	767	1583	151	589	1583	1289	2153	1583	379	1363	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	0.47	0.33	0.67	0.22	0.31	0.05	0.63	0.48	0.03	0.09	0.40	0.06

Intersection Summary

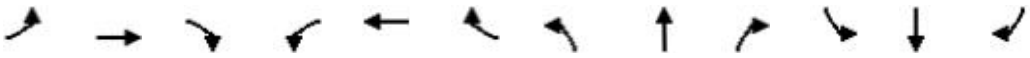
m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	87	141	886	71	228	60	1022	538	33	54	940	228
v/c Ratio	0.30	0.28	0.56	0.50	0.60	0.04	0.79	0.25	0.02	0.10	0.71	0.14
Control Delay (s/veh)	46.8	38.3	10.8	68.4	57.3	0.0	66.8	24.0	0.0	25.5	36.0	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 (s/veh)	46.8	38.3	10.8	68.4	57.3	0.0	66.8	24.0	0.0	25.5	36.0	0.2
Queue Length 50th (ft)	18	33	376	28	91	0	305	186	0	13	330	0
Queue Length 95th (ft)	36	56	475	54	131	0	352	245	m0	29	423	0
Internal Link Dist (ft)		875			991			2985			849	
Turn Bay Length (ft)	325		375	250		250	700			575		500
Base Capacity (vph)	290	551	1583	143	530	1583	1289	2138	1583	568	1327	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	0.30	0.26	0.56	0.50	0.43	0.04	0.79	0.25	0.02	0.10	0.71	0.14

Intersection Summary

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



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	234	266	1092	38	190	92	842	1049	60	38	565	103
v/c Ratio	0.52	0.41	0.69	0.25	0.55	0.06	0.73	0.49	0.04	0.10	0.42	0.07
Control Delay (s/veh)	39.1	29.9	13.5	59.8	57.3	0.1	35.0	6.6	0.0	13.6	30.2	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	39.1	29.9	13.5	59.8	57.3	0.1	35.0	6.6	0.0	13.6	30.2	0.1
Queue Length 50th (ft)	58	86	474	15	76	0	215	86	0	4	178	0
Queue Length 95th (ft)	m79	108	430	34	113	0	244	108	m0	12	251	0
Internal Link Dist (ft)		875			991			2985			849	
Turn Bay Length (ft)	325		375	250		250	700			575		500
Base Capacity (vph)	485	768	1583	152	589	1583	1289	2144	1583	362	1349	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	0.48	0.35	0.69	0.25	0.32	0.06	0.65	0.49	0.04	0.10	0.42	0.07

Intersection Summary

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

Lane Group	EBL	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	33	175	261	65	708	1324	207	65	1466	135
v/c Ratio	0.17	0.11	0.58	0.17	0.79	0.54	0.18	0.45	0.90	0.17
Control Delay (s/veh)	55.8	0.1	53.7	1.0	48.4	10.9	1.4	39.7	18.3	1.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	55.8	0.1	53.7	1.0	48.4	10.9	1.4	39.7	18.3	1.0
Queue Length 50th (ft)	12	0	98	0	268	275	0	26	598	0
Queue Length 95th (ft)	30	0	141	0	324	346	26	m42	#800	m6
Internal Link Dist (ft)				548		606			2985	
Turn Bay Length (ft)	400	50	250		375		300	525		500
Base Capacity (vph)	228	1583	458	707	892	2459	1163	143	1622	799
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.14	0.11	0.57	0.09	0.79	0.54	0.18	0.45	0.90	0.17

Intersection Summary

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

Lane Group	EBL	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	112	671	250	60	276	1536	196	27	1423	59
v/c Ratio	0.39	0.42	0.45	0.19	0.97	0.64	0.17	0.15	0.66	0.06
Control Delay (s/veh)	56.1	0.8	47.6	1.3	100.1	14.7	1.8	70.1	6.1	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	56.1	0.8	47.6	1.3	100.1	14.7	1.8	70.1	6.1	0.1
Queue Length 50th (ft)	44	0	91	0	113	395	0	10	124	0
Queue Length 95th (ft)	73	0	129	0	#202	521	30	m19	169	m0
Internal Link Dist (ft)				548		606			2985	
Turn Bay Length (ft)	400	50	250		375		300	525		500
Base Capacity (vph)	287	1583	552	683	286	2388	1131	184	2145	1034
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.39	0.42	0.45	0.09	0.97	0.64	0.17	0.15	0.66	0.06

Intersection Summary

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

Lane Group	EBL	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	47	233	277	71	951	1411	223	71	1575	195
v/c Ratio	0.25	0.15	0.57	0.21	0.84	0.58	0.19	0.50	0.82	0.27
Control Delay (s/veh)	52.4	0.8	52.8	1.3	44.5	11.9	1.4	44.3	16.8	1.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	52.4	0.8	52.8	1.3	44.5	11.9	1.4	44.3	16.8	1.6
Queue Length 50th (ft)	20	0	104	0	353	309	0	27	140	0
Queue Length 95th (ft)	31	5	150	0	414	374	26	m45	#522	23
Internal Link Dist (ft)				548		606			2985	
Turn Bay Length (ft)	400	50	250		375		300	525		500
Base Capacity (vph)	200	1583	483	707	1140	2427	1155	143	1925	720
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.24	0.15	0.57	0.10	0.83	0.58	0.19	0.50	0.82	0.27

Intersection Summary

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

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

Lane Group	EBL	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	172	946	266	65	365	1655	212	33	1515	89
v/c Ratio	0.51	0.60	0.44	0.20	0.71	0.70	0.19	0.23	0.57	0.09
Control Delay (s/veh)	64.9	8.2	45.7	1.4	56.6	16.3	2.3	65.3	8.2	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	64.9	8.2	45.7	1.4	56.6	16.3	2.3	65.3	8.2	0.2
Queue Length 50th (ft)	60	264	95	0	139	459	5	14	163	0
Queue Length 95th (ft)	89	316	133	0	192	597	38	m25	180	m0
Internal Link Dist (ft)				548		606			2985	
Turn Bay Length (ft)	400	50	250		375		300	525		500
Base Capacity (vph)	344	1583	608	637	572	2369	1123	143	2672	948
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.50	0.60	0.44	0.10	0.64	0.70	0.19	0.23	0.57	0.09

Intersection Summary

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

Lane Group	EBL	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	49	239	277	71	973	1451	223	71	1620	201
v/c Ratio	0.26	0.15	0.57	0.21	0.83	0.60	0.19	0.50	0.86	0.28
Control Delay (s/veh)	57.8	1.1	52.8	1.3	43.3	12.2	1.4	44.4	19.6	1.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	57.8	1.1	52.8	1.3	43.3	12.2	1.4	44.4	19.6	1.8
Queue Length 50th (ft)	20	0	104	0	360	324	0	27	147	0
Queue Length 95th (ft)	42	0	150	0	421	392	26	m42	#564	m20
Internal Link Dist (ft)				548		606			2985	
Turn Bay Length (ft)	400	50	250		375		300	525		500
Base Capacity (vph)	200	1583	483	707	1170	2427	1155	143	1873	710
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.25	0.15	0.57	0.10	0.83	0.60	0.19	0.50	0.86	0.28

Intersection Summary

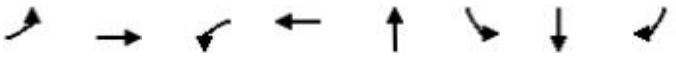
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

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

Lane Group	EBL	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	174	962	266	65	375	1701	212	33	1554	92
v/c Ratio	0.51	0.61	0.44	0.20	0.73	0.72	0.19	0.23	0.58	0.10
Control Delay (s/veh)	43.6	6.3	45.6	1.4	57.2	16.9	2.4	64.7	8.4	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	43.6	6.3	45.6	1.4	57.2	16.9	2.4	64.7	8.4	0.2
Queue Length 50th (ft)	70	138	95	0	143	485	6	14	163	0
Queue Length 95th (ft)	87	284	133	0	197	630	39	m25	193	m0
Internal Link Dist (ft)				548		606			2985	
Turn Bay Length (ft)	400	50	250		375		300	525		500
Base Capacity (vph)	346	1583	610	637	572	2367	1122	143	2664	946
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.50	0.61	0.44	0.10	0.66	0.72	0.19	0.23	0.58	0.10

Intersection Summary

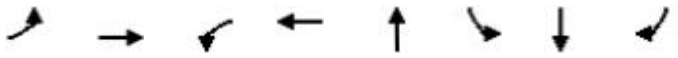
m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBL	EBT	WBL	WBT	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	25	186	41	1064	12	52	53	13
v/c Ratio	0.06	0.07	0.04	0.42	0.06	0.41	0.42	0.05
Control Delay (s/veh)	4.9	7.1	1.1	1.6	0.5	61.4	61.8	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	4.9	7.1	1.1	1.6	0.5	61.4	61.8	0.4
Queue Length 50th (ft)	3	18	1	32	0	42	43	0
Queue Length 95th (ft)	14	47	m3	47	0	84	86	0
Internal Link Dist (ft)		389		682	344		365	
Turn Bay Length (ft)	150		150			200		200
Base Capacity (vph)	402	2567	934	2559	363	252	252	353
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.07	0.04	0.42	0.03	0.21	0.21	0.04

Intersection Summary

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



Lane Group	EBL	EBT	WBL	WBT	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	13	762	13	466	57	181	181	43
v/c Ratio	0.03	0.55	0.05	0.33	0.28	0.28	0.28	0.06
Control Delay (s/veh)	16.5	30.1	8.9	7.1	3.3	29.2	29.2	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	16.5	30.1	8.9	7.1	3.3	29.2	29.2	0.2
Queue Length 50th (ft)	5	237	2	146	0	98	98	0
Queue Length 95th (ft)	16	309	m4	210	0	184	184	0
Internal Link Dist (ft)		389		682	344		365	
Turn Bay Length (ft)	150		150			200		200
Base Capacity (vph)	377	1391	271	1418	364	650	650	695
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.03	0.55	0.05	0.33	0.16	0.28	0.28	0.06

Intersection Summary

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