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

Prepared for
SmithGroup
1675 Larimer Street
Suite 500
Denver, Colorado 80202

Prepared by
Curtis D. Rowe, PE, PTOE
Kimley-Horn and Associates, Inc
6200 South Syracuse Way
Suite 300
Greenwood Village, Colorado 80111
(303) 228-2300

April 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, with approximately 435,600 square feet of hospital use (with 200 beds) and 80,000 square feet of related medical office building uses. For purposes of this study, Phase 2 of development is anticipated to be complete by 2040, which would include an additional 204,000 square feet of hospital use (100 additional beds) and 80,000 additional square feet of medical office space. 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 two 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 proposed accesses along Sorrel Avenue are anticipated to align with two future accesses on the west side of Sorrel Avenue, creating two four-leg intersections.

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 two full movement accesses along the east side of Sorrel Avenue. There is also an additional emergency only access proposed along Sorrel Avenue, south of these two full movement accesses.

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. Analysis of the existing street network, the proposed project development, and expected traffic volumes resulted in the following recommendations:

2030 Recommendations

- 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) is proposed to be constructed as a four-leg single-lane 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.
- Two full movement accesses are proposed along the east side of Sorrel Avenue, to 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.
- 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

- 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. To meet expected vehicle queues, the inner northbound left turn lane 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. When signalized, the southbound approach exiting the hospital is recommended to be improved to provide dual left turn lanes 200 feet in length.
- Each of these improvements is anticipated to operate acceptably through the 2045 horizon.

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, with approximately 435,600 square feet of hospital use (with 200 beds) and 80,000 square feet of related medical office building uses. For purposes of this study, Phase 2 of development is anticipated to be complete by 2040, which would include an additional 204,000 square feet of hospital use (100 additional beds) and 80,000 additional square feet of medical office space. 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.

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 two 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 proposed accesses along Sorrel Avenue are anticipated to align with two future accesses on the west side of Sorrel Avenue, creating two four-leg intersections.

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 two full movement accesses along the east side of Sorrel Avenue. There is also an additional emergency only access proposed along Sorrel Avenue, south of these two full movement accesses.

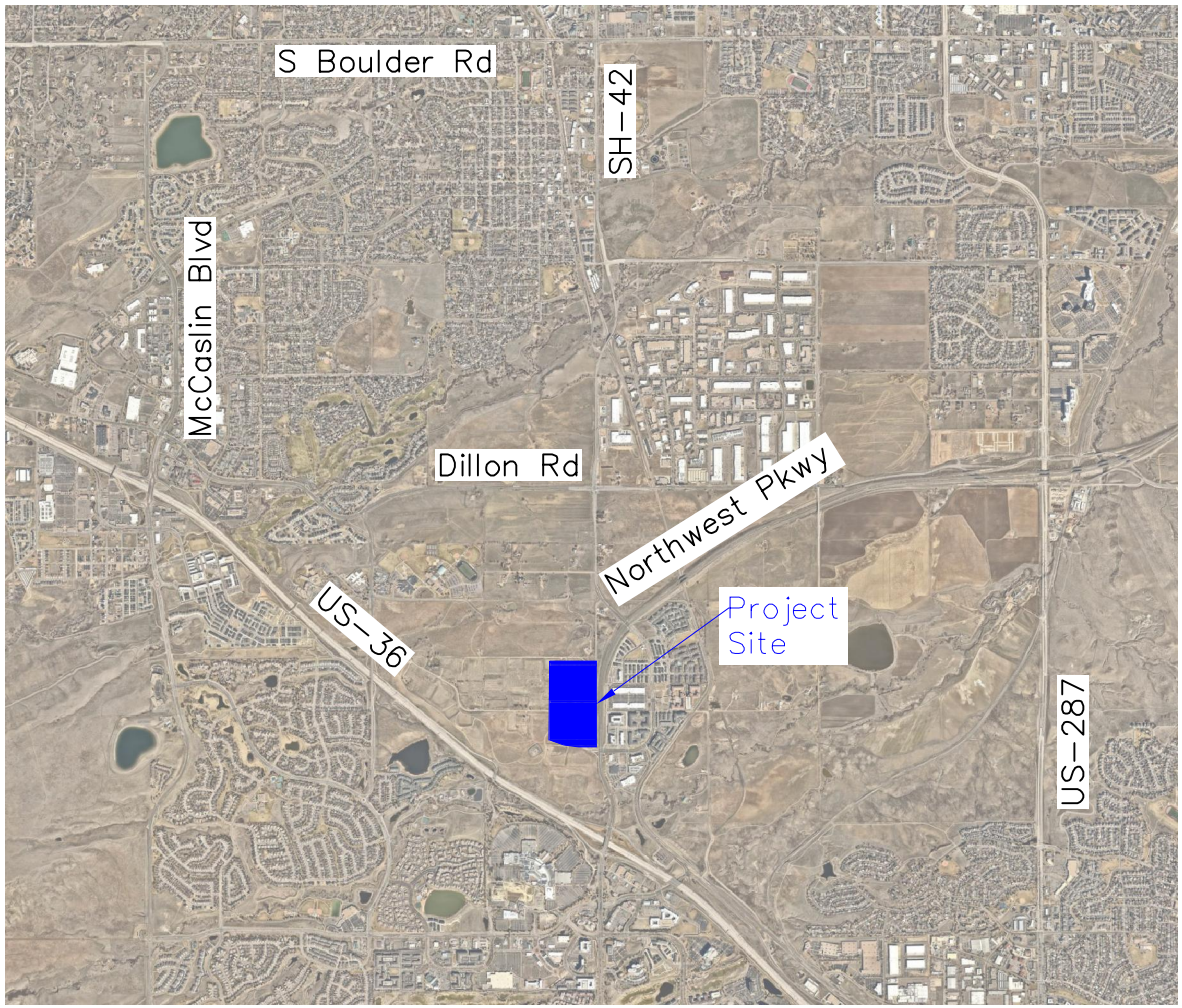


FIGURE 1
AdventHealth Louisville
Louisville, Colorado
Vicinity Map

3.0 EXISTING AND FUTURE CONDITIONS

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.

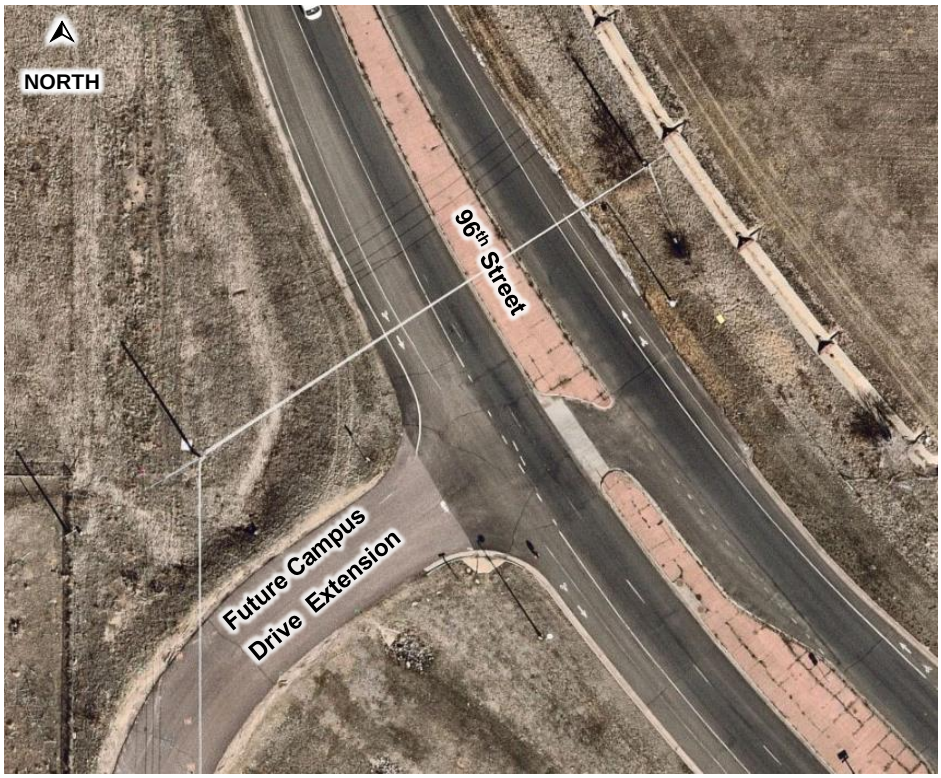
96th Street generally exists in the north/south direction, but it connects to Northwest Parkway with vehicles traveling eastbound/westbound. Two through lanes are provided in each direction nearest to the study area, which soon reduces to one through lane in each direction further to the north. The posted 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)

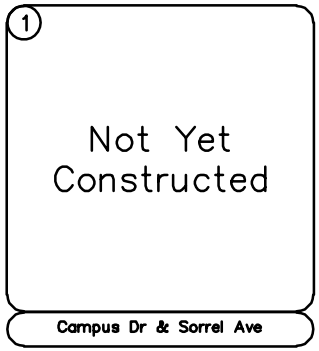
The existing signalized intersection of 96th Street/Via Varra & Northwest Parkway (#2) operates with protected-only left turn phasing on all four approaches to the intersection. Each of the four approaches provide dual left turn lanes, two through lanes, and a right turn lane, with the right turning 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.

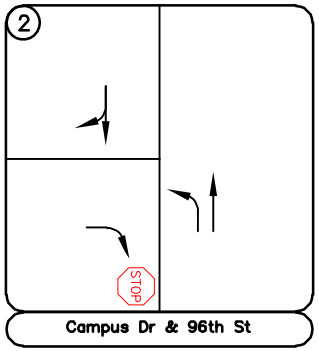
96th Street/Via Varra & Northwest Parkway (#2)

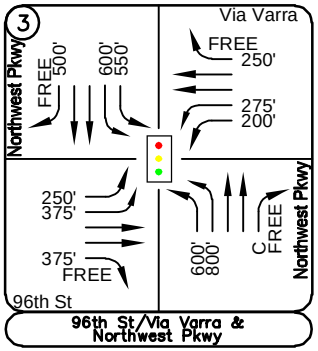
The Via Varra & Northwest Parkway (#5) intersection is signalized and operates with protected-only left turn phasing on all four approaches to the intersection. The northbound and southbound approaches to the intersection provide dual left turn lanes, two through lanes, and a right turn lane. The southbound 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.

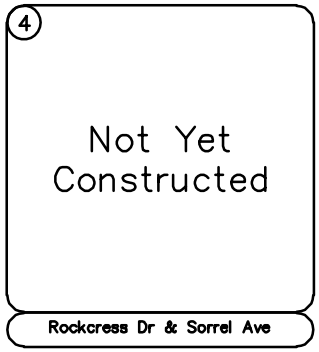
Via Varra & Northwest Parkway (#3)

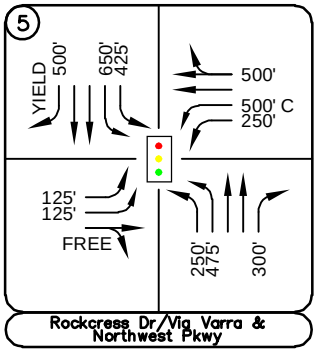
The intersection lane configuration and control for the existing study area intersections are shown in **Figure 2**.

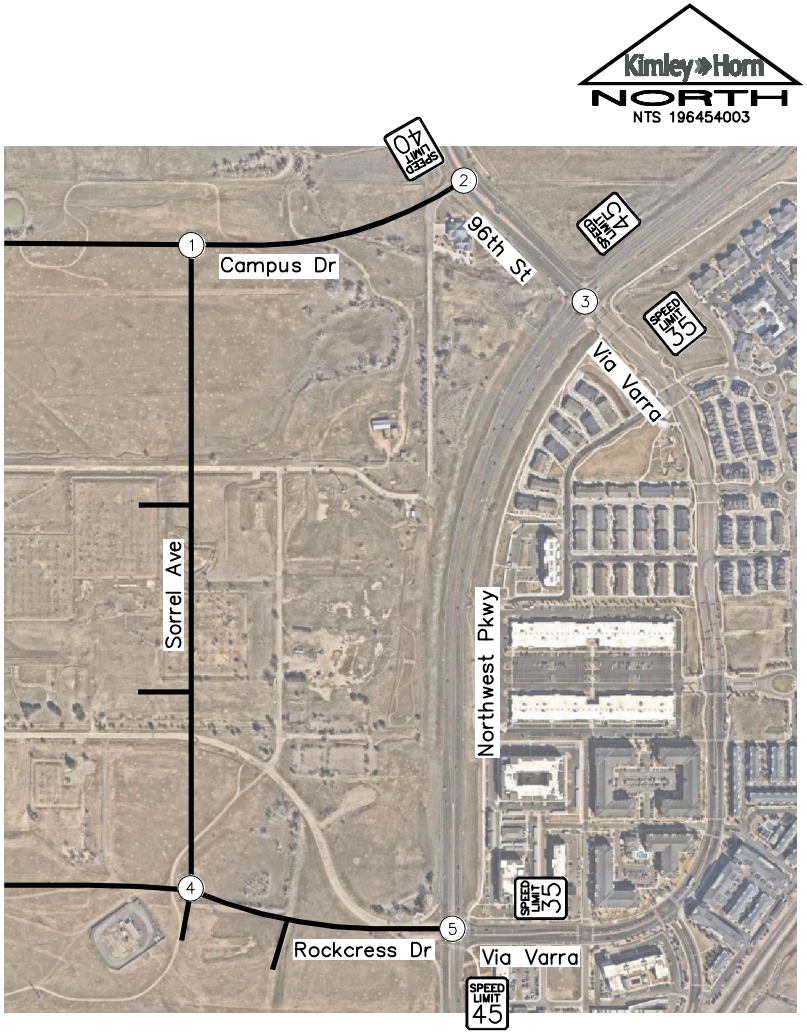


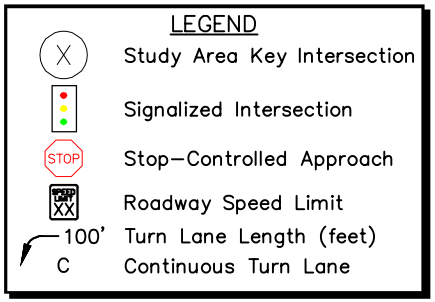












Kimley»Horn

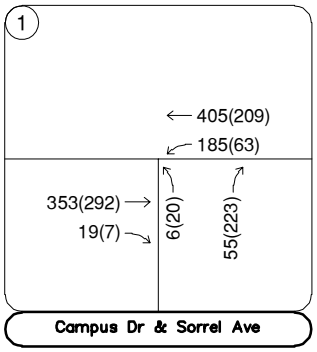
FIGURE 2
AdventHealth Louisville
Louisville, Colorado
Existing Geometry and Control

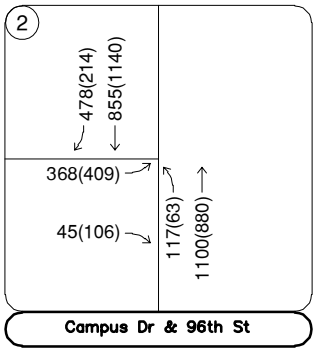
3.3 Future Traffic Volumes and Unspecified Development Traffic Growth

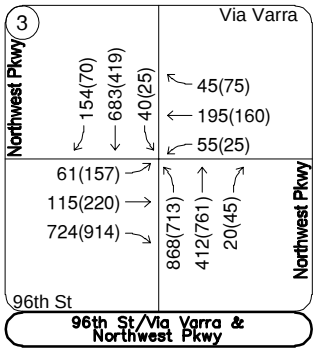
Future projected traffic volumes used in this study were based on the Redtail Ridge Traffic and Mobility Study completed by Fox Tuttle Transportation Group in July 2024. The Redtail Ridge study serves as a master study that analyzed full buildout of the entire Redtail Ridge development area, which includes 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.

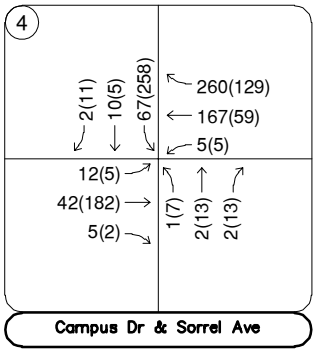
The Redtail Ridge master traffic study analyzed a 2025 short-term buildout year for some developments, with additional land uses constructed by a 2030 mid-year horizon—including full buildout of the hospital and medical office buildings—and a 2040 full buildout horizon. The 2030 and 2040 total traffic 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**.

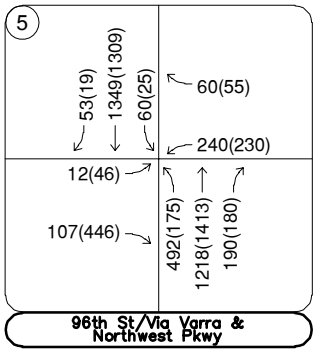
Based on communication with City staff, a twenty-year 2045 long-term horizon was also analyzed for the major external intersections, including Campus Drive & 96th Street (#1), 96th Street/Via Varra & Northwest Parkway (#2), and Rockcress Drive/Via Varra & Northwest Parkway (#3). To develop traffic projections 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.

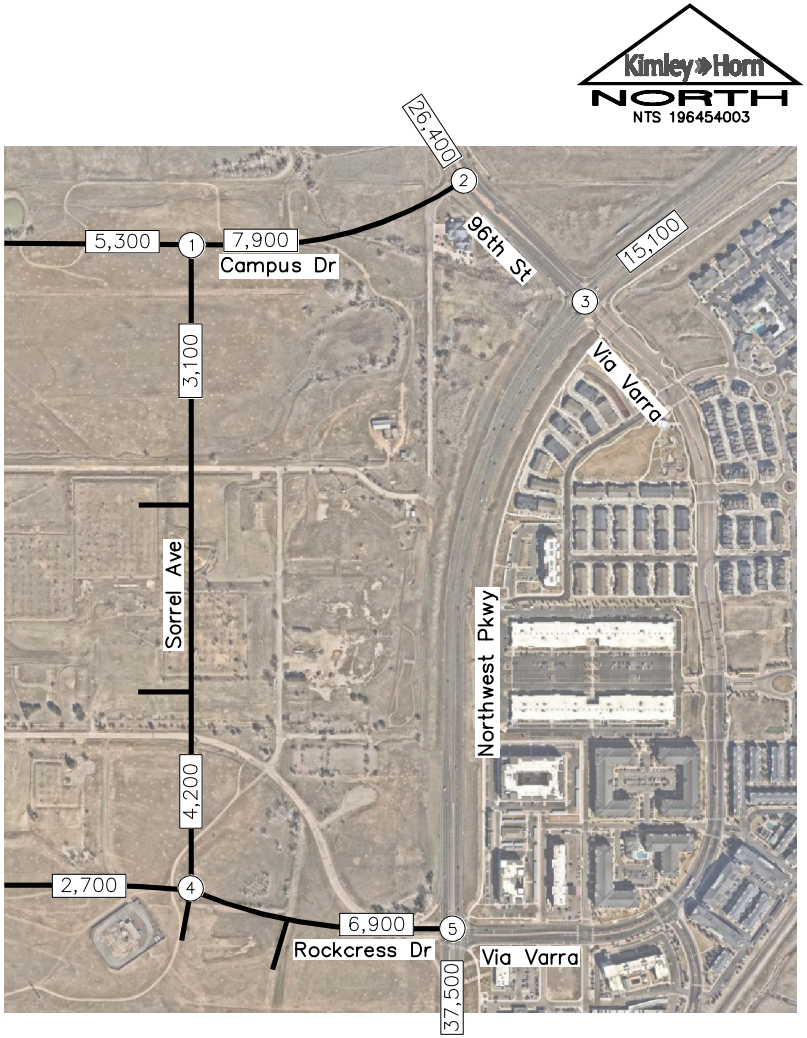










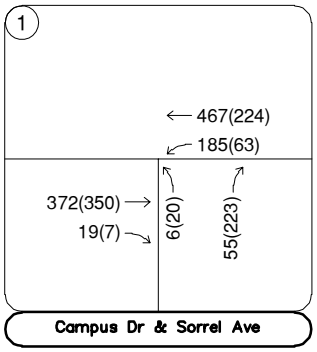


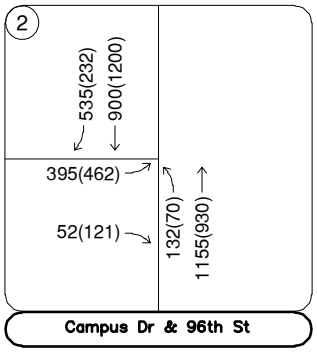
LEGEND

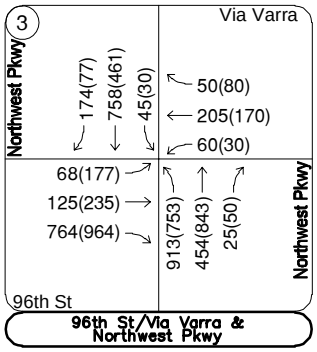
(X)	Study Area Key Intersection
XXX(XXX)	Weekday AM(PM) Peak Hour Traffic Volumes
XX,X00	Estimated Daily Traffic Volume

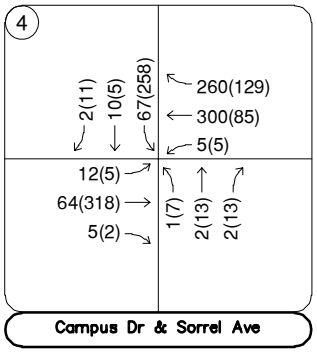
FIGURE 3
AdventHealth Louisville
Louisville, Colorado
2030 Background Traffic Volumes

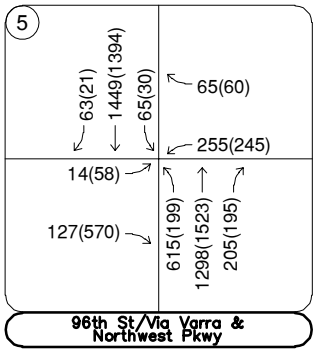
Kimley»Horn

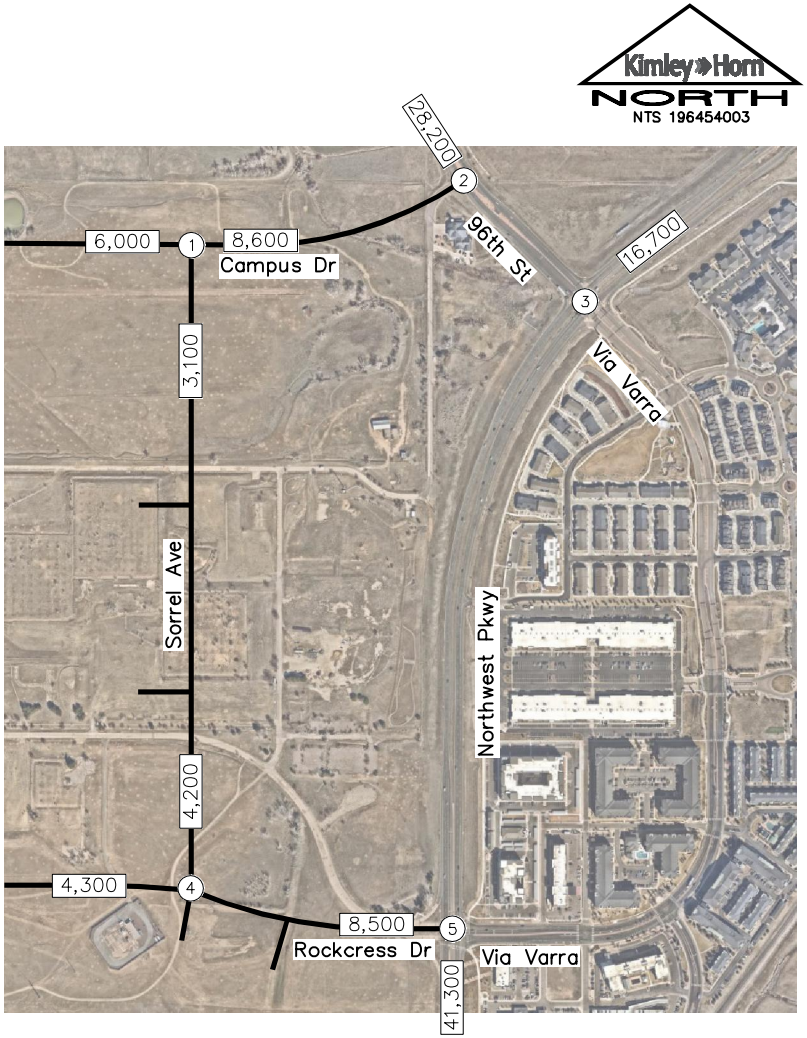










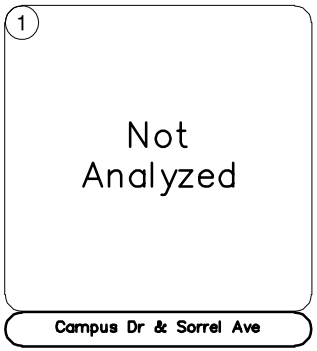


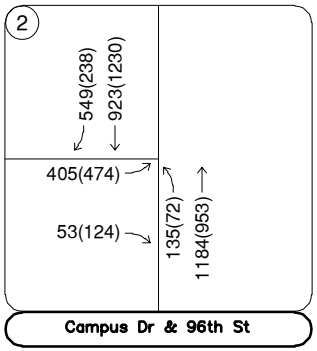
LEGEND

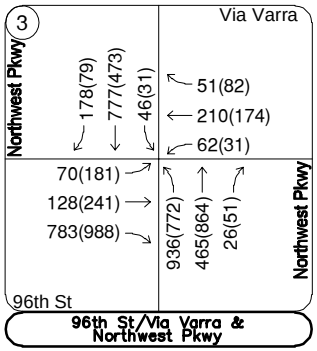
(X)	Study Area Key Intersection
XXX(XXX)	Weekday AM(PM) Peak Hour Traffic Volumes
XX,X00	Estimated Daily Traffic Volume

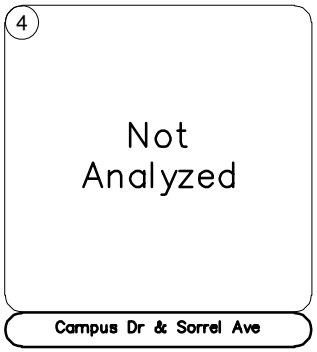
FIGURE 4
AdventHealth Louisville
Louisville, Colorado
2040 Background Traffic Volumes

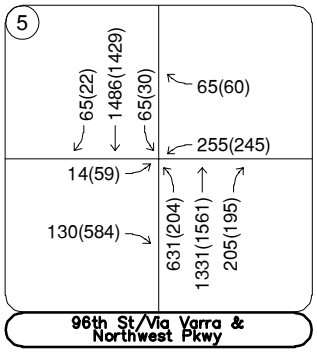
Kimley»Horn

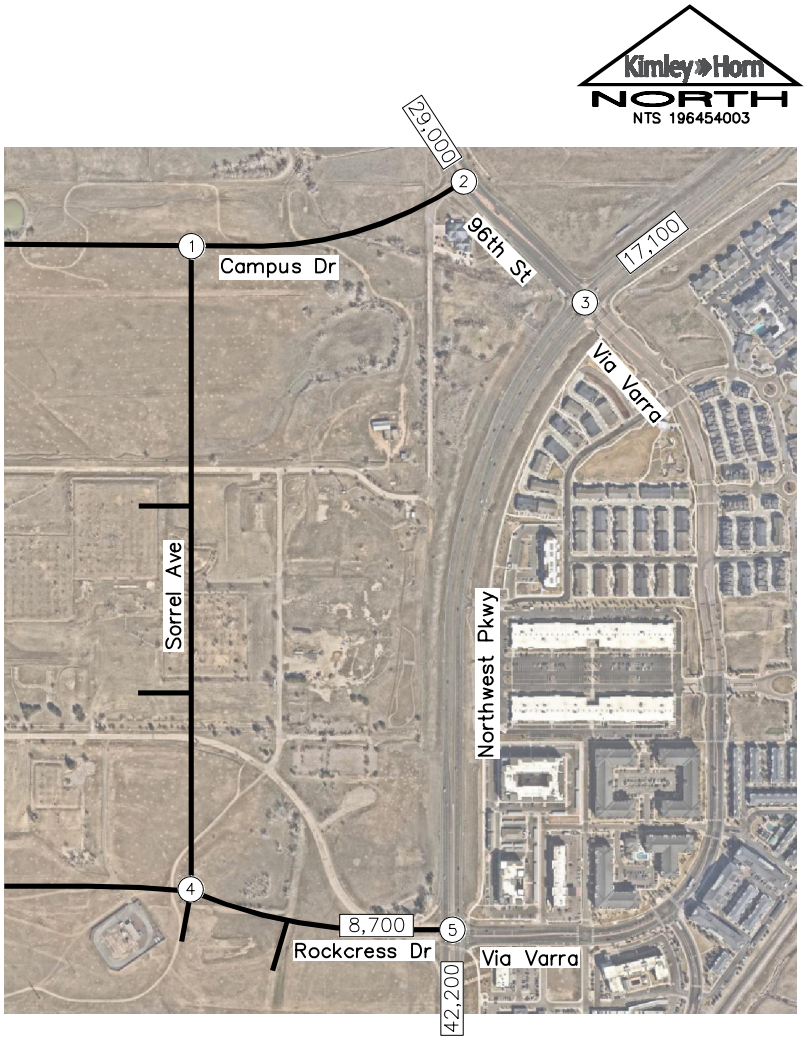












LEGEND

(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, 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. Calculations were based on the procedure and information provided in the ITE *Trip Generation Manual, 11th Edition – Volume 1: User's Guide and Handbook*, 2021. **Table 1** summarizes the estimated trip generation for the site. The trip generation worksheets are included in **Appendix D**.

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

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**

4.2 Trip Distribution

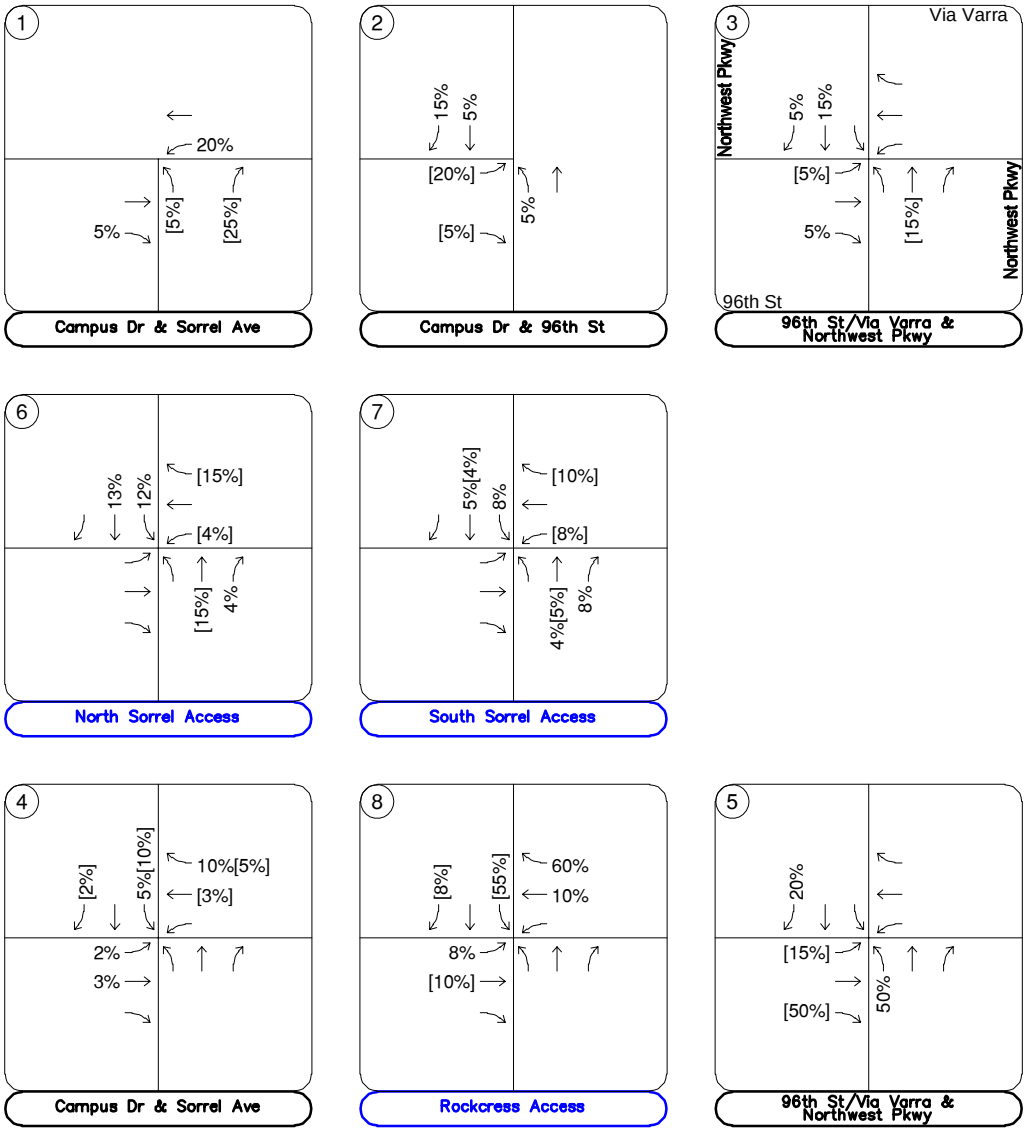
Distribution of site traffic on the street system was based on the area street system characteristics, existing traffic patterns, existing and anticipated surrounding demographic information, and the proposed access system for the project. The directional distribution of traffic is a means to quantify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

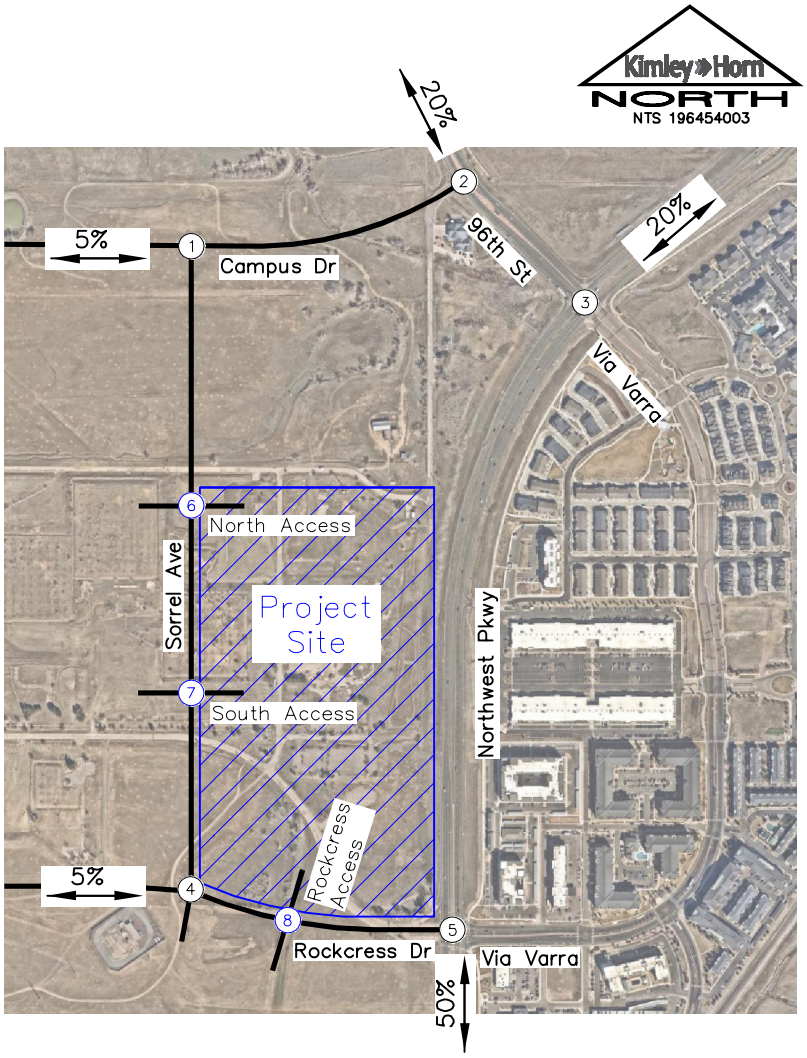
4.3 Traffic Assignment

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.



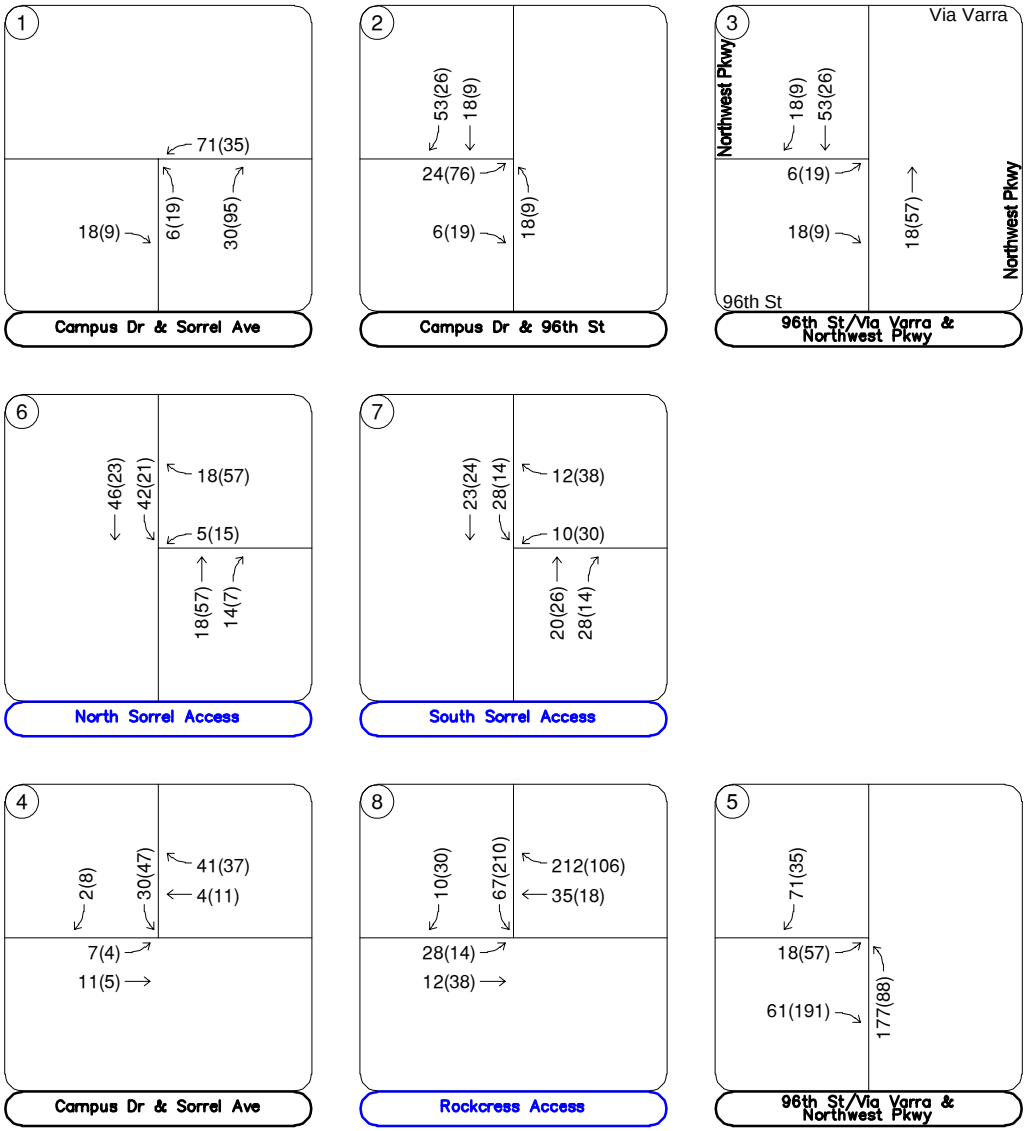


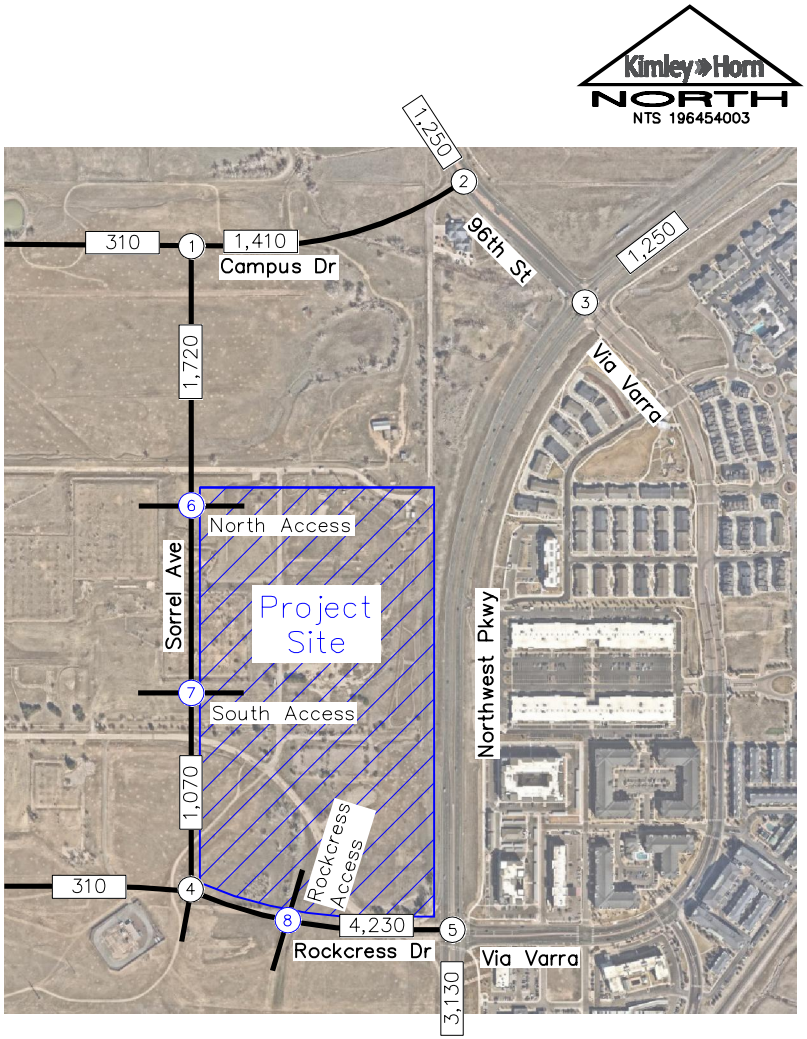
LEGEND

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



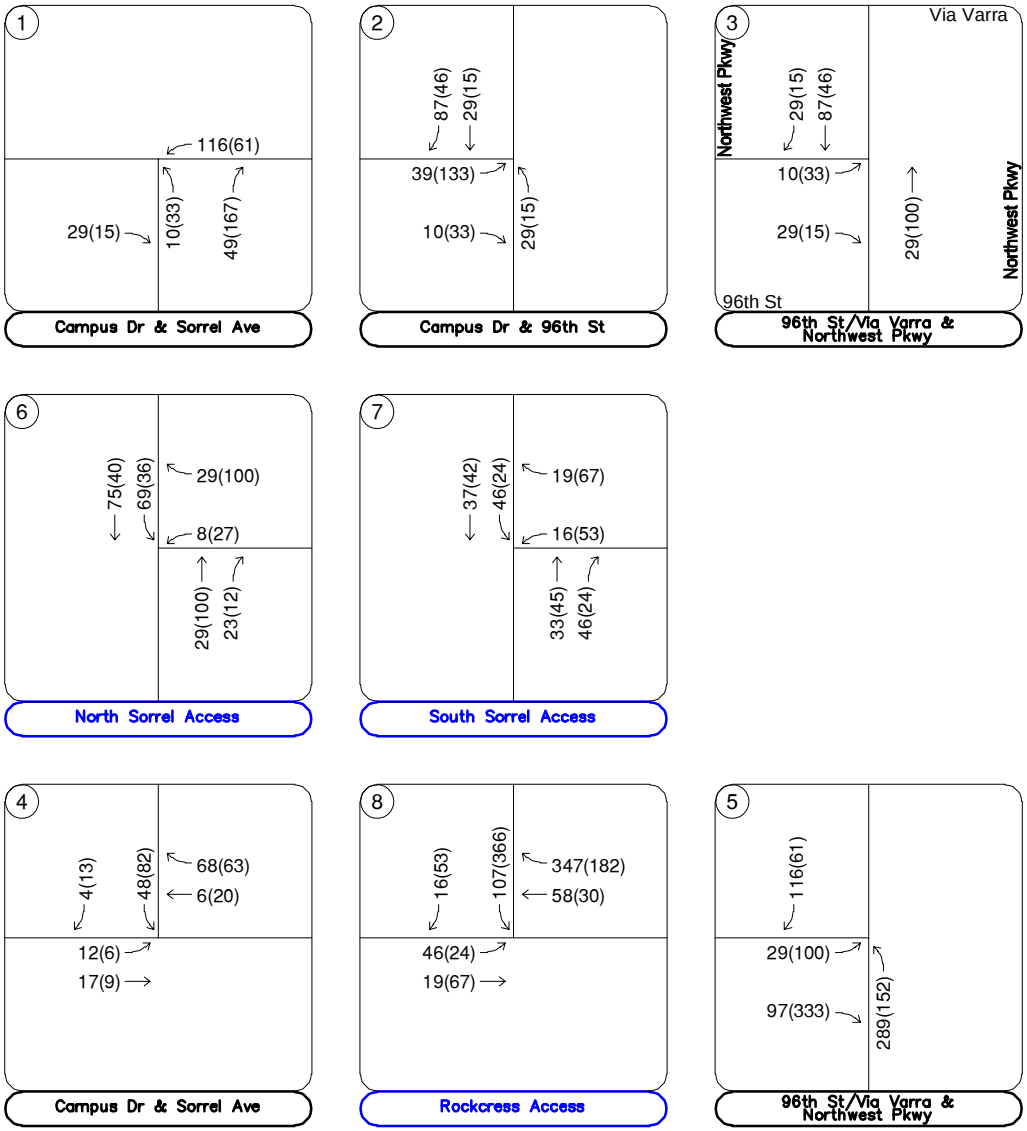


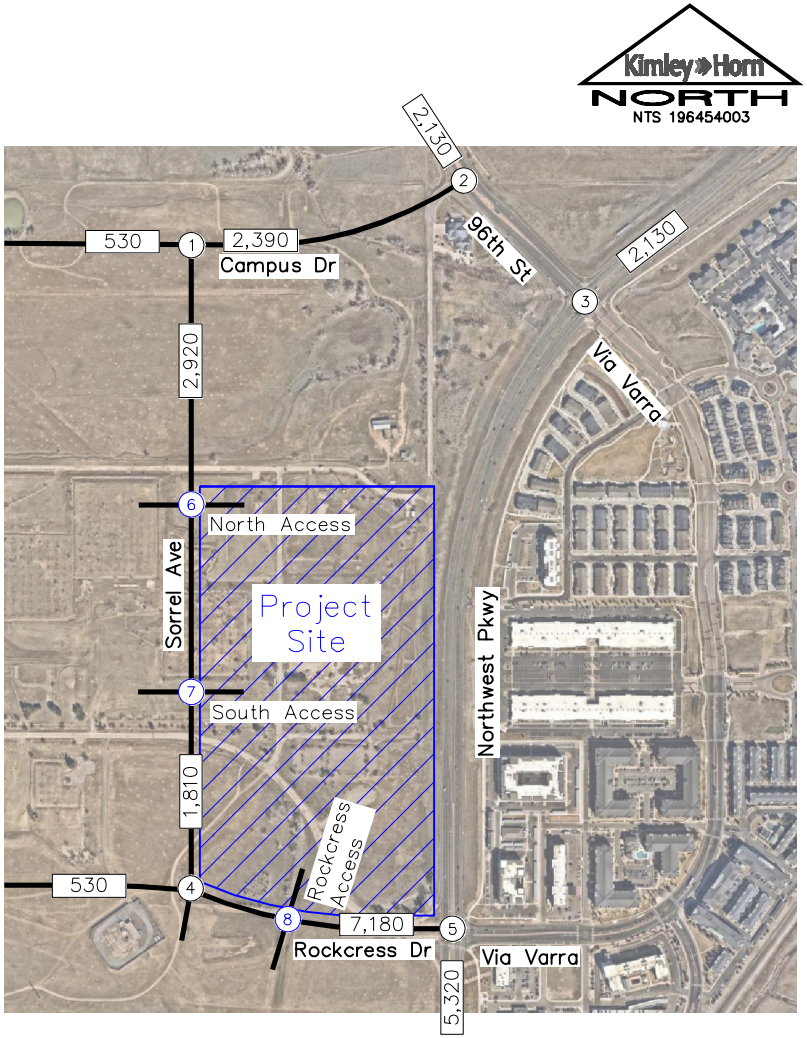
LEGEND

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



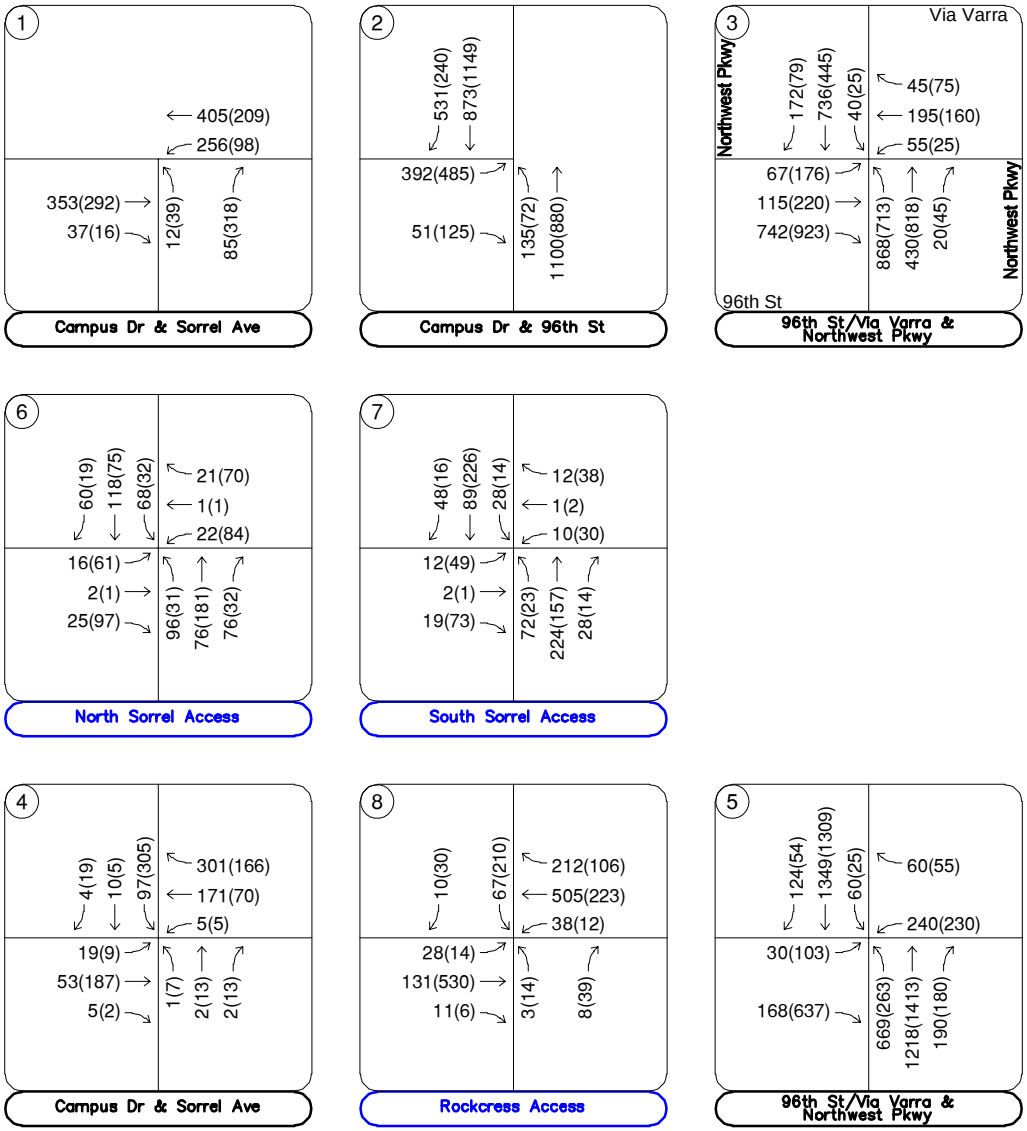


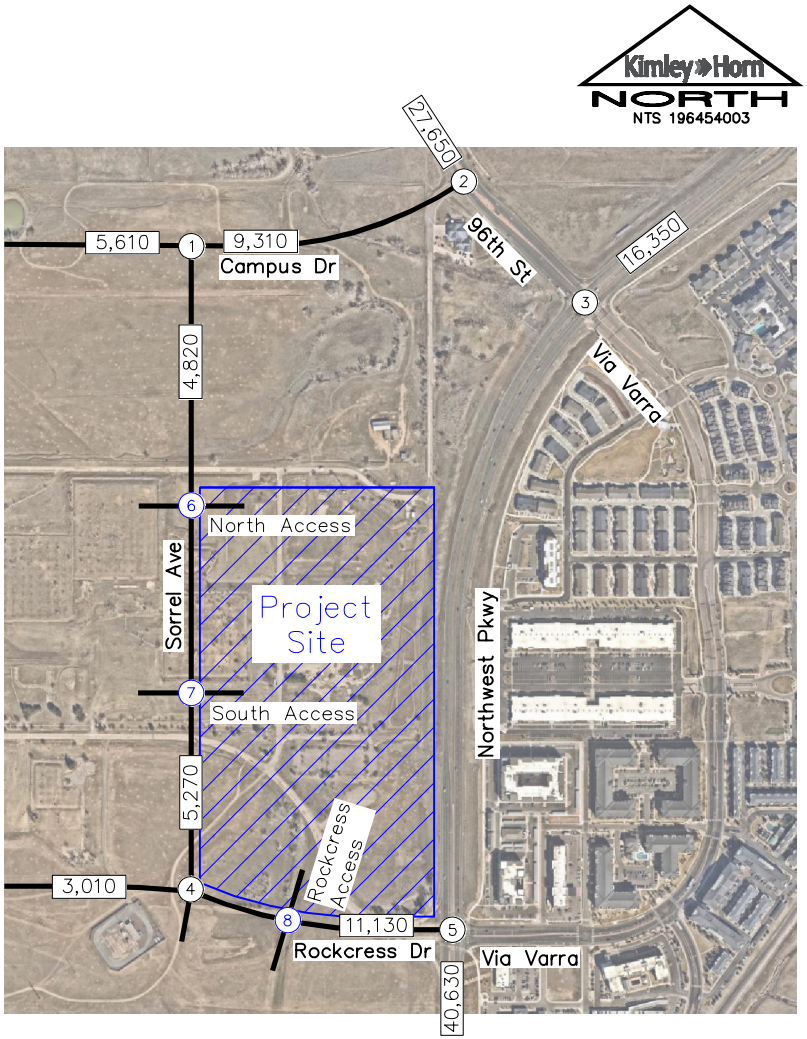
LEGEND

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



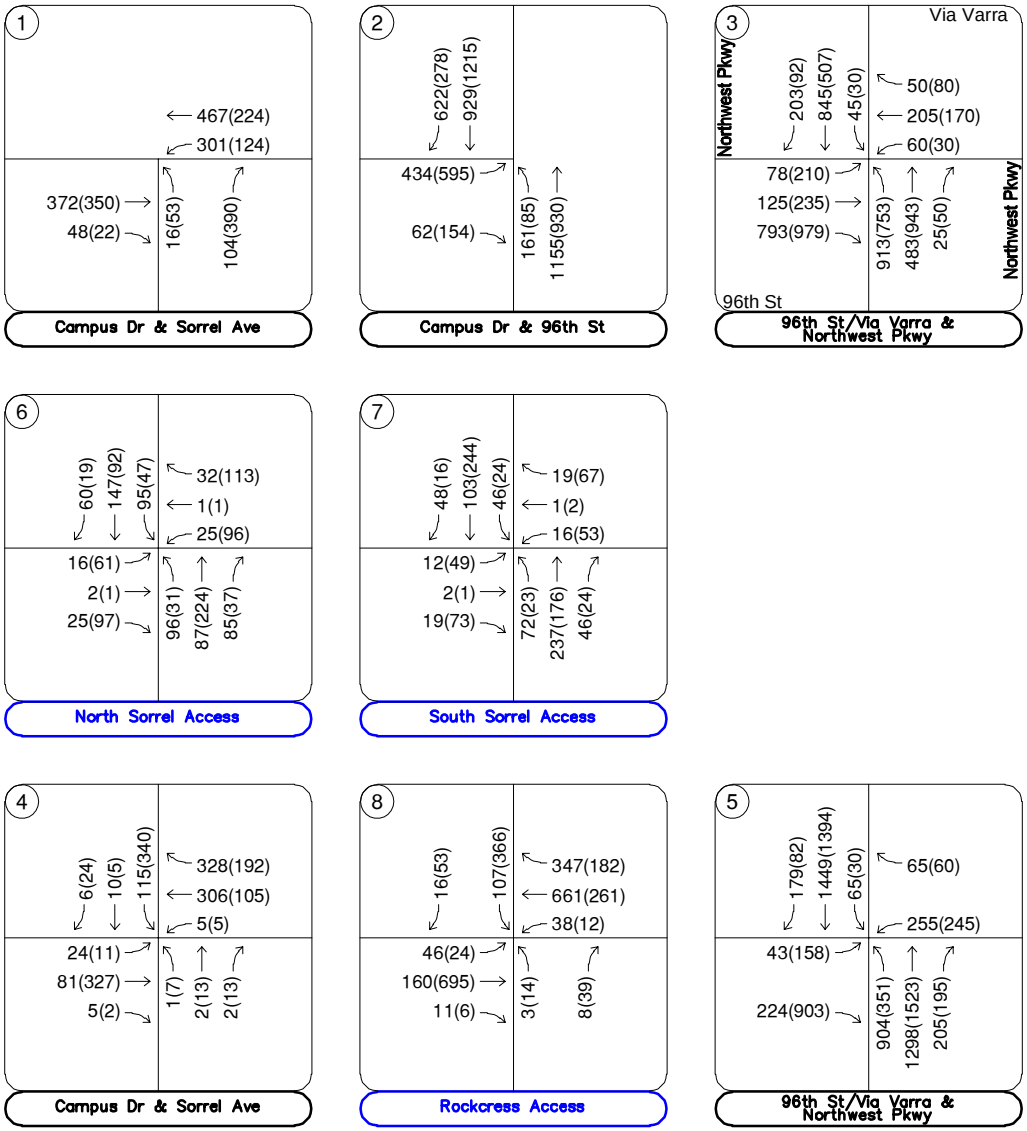


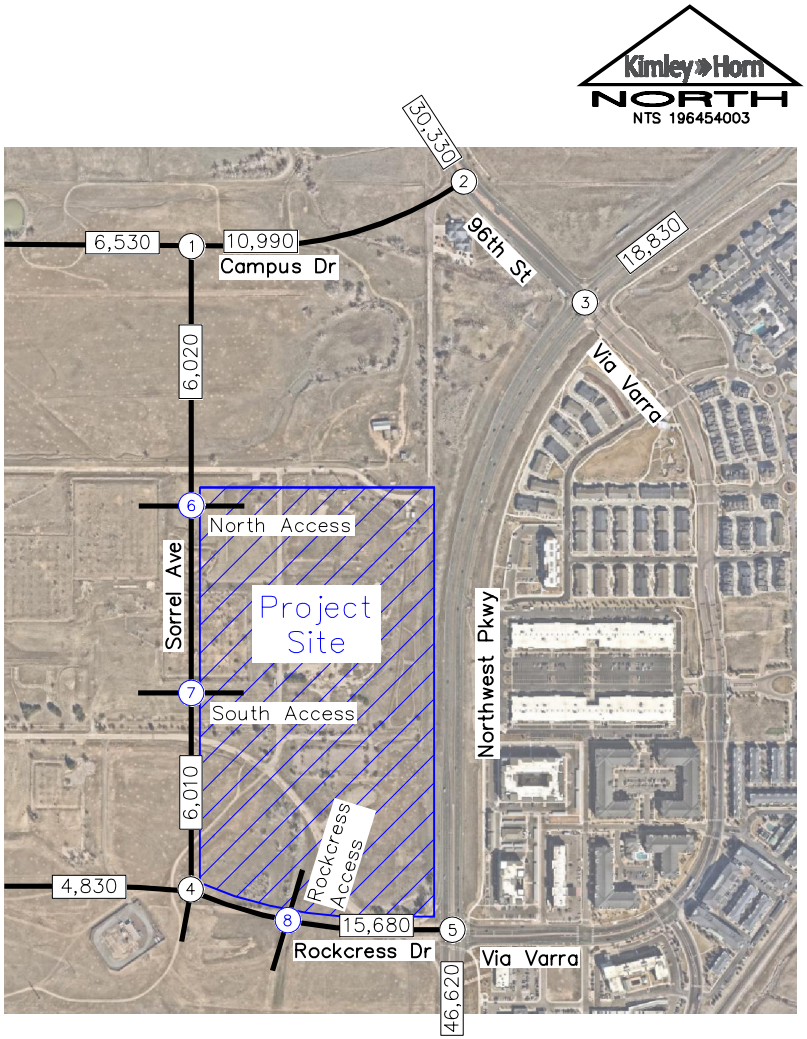
LEGEND

- 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 9
AdventHealth Louisville
Louisville, Colorado
2030 Total Traffic Volumes

Kimley»Horn



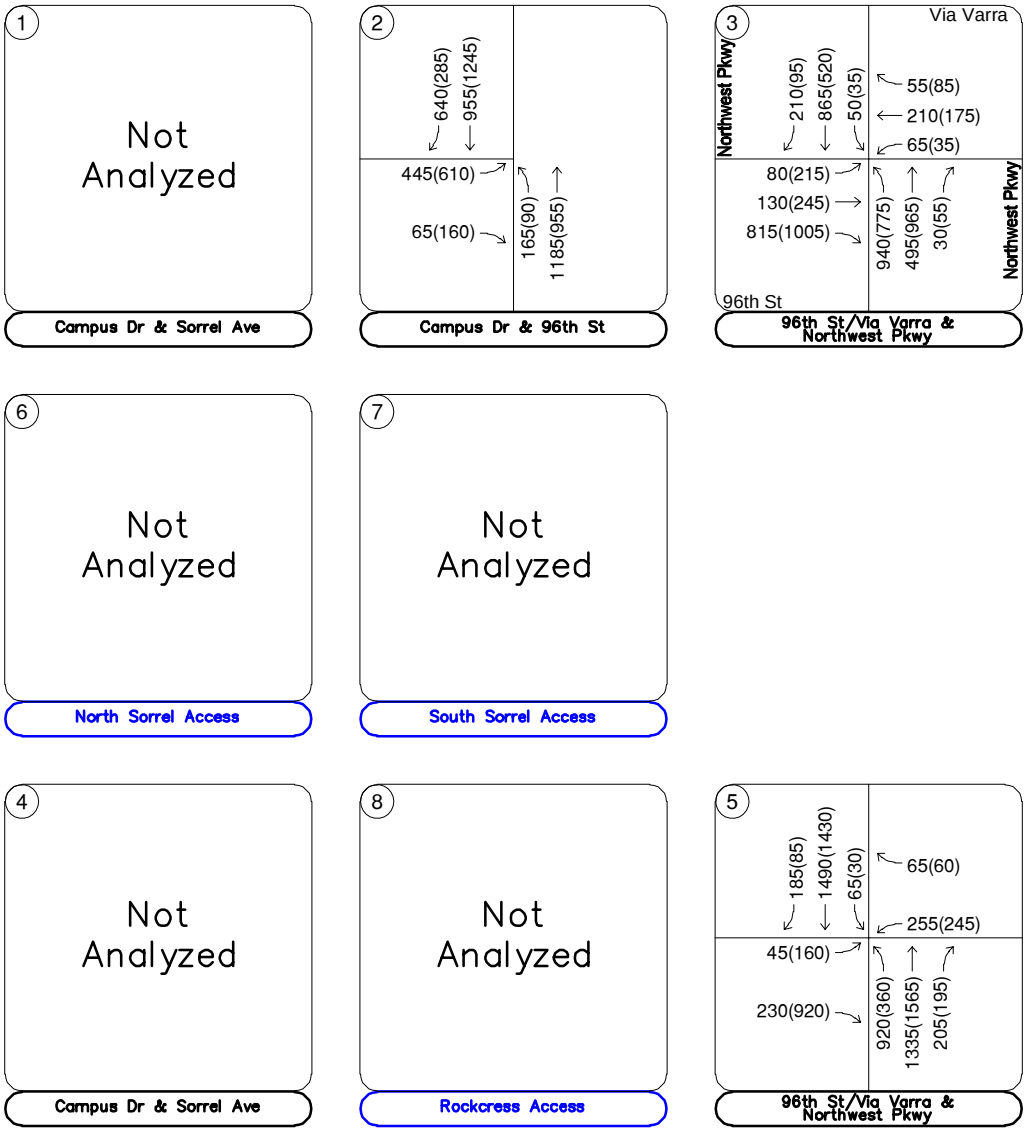


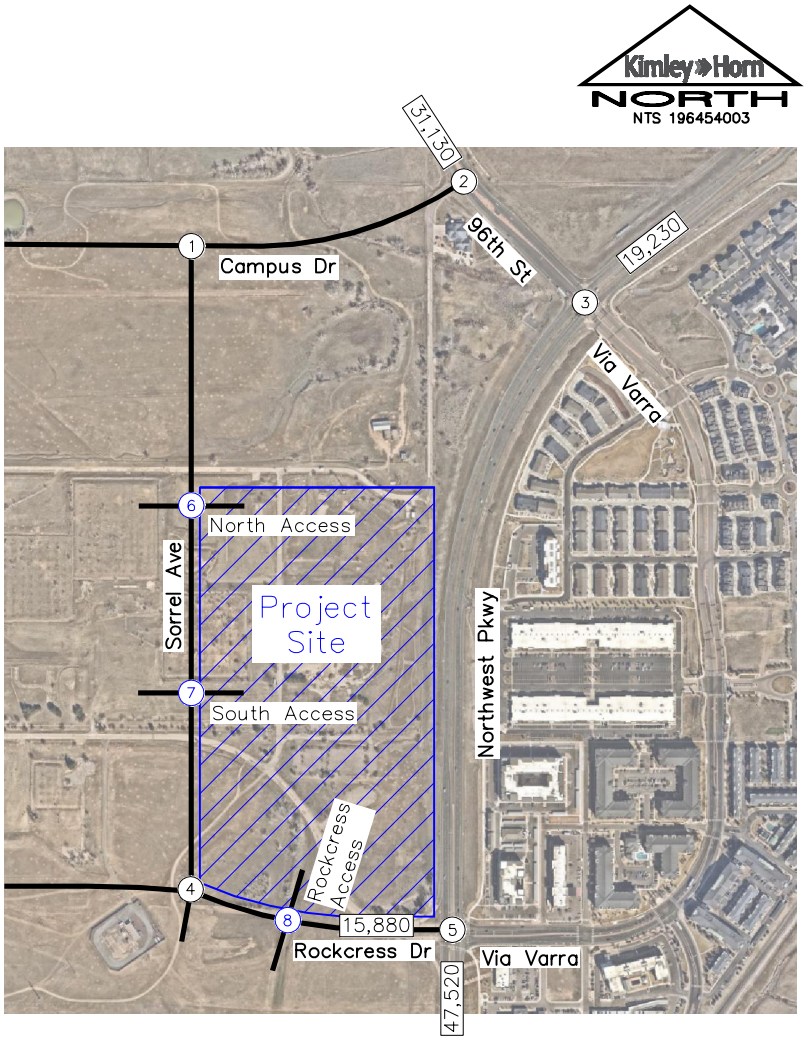
LEGEND

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 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	6.1	A	5.9	A
Eastbound Approach	8.2	A	5.5	A
Westbound Approach	5.0	A	3.8	A
Northbound Approach	5.1	A	8.1	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	6.7	A	7.4	A
Eastbound Approach	9.4	A	6.4	A
Westbound Approach	5.5	A	4.0	A
Northbound Approach	5.1	A	10.9	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	15.2	B	22.9	C
2040 Background[1]	21.5	C	22.1	C
2040 Total[1]	24.3	C	25.8	C
2045 Total[1]	29.0	C	29.3	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	5.1	A
Eastbound Approach	3.6	A	6.0	A
Westbound Approach	4.3	A	3.6	A
Northbound Approach	3.2	A	5.1	A
Southbound Approach	4.2	A	5.6	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	4.8	A	6.3	A
Eastbound Approach	4.0	A	8.6	A
Westbound Approach	4.9	A	3.7	A
Northbound Approach	3.4	A	6.3	A
Southbound Approach	5.2	A	6.3	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 B 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	28.8	C	18.2	B
2040 Background[1]	29.0	C	16.6	B
2040 Total[1]	31.8	C	29.8	C
2045 Total[1]	32.9	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. Two full movement accesses are also proposed along Sorrel Avenue, both of which are anticipated to align with future accesses to other developments to the west of Sorrel Avenue. A third access along Sorrel Avune may be desired for access into the hospital—located between Rockcress Drive and the South Sorrel Access (#7). However, if constructed, this access would be designated for emergency vehicle access only.

Sorrel Avenue Accesses (#6 and #7)

Two additional full movement accesses are proposed along the east side of Sorrel Avenue. These accesses 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.

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. 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, while maintaining a shared through/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 N. Access (#6)								
Northbound Left	7.8	A	7.5	A	7.9	A	7.5	A
Eastbound Approach	12.3	B	12.1	B	13.6	B	13.7	B
Westbound Approach	13.1	B	14.0	B	14.2	B	17.1	C
Southbound Left	7.7	A	7.8	A	7.8	A	7.9	A
Sorrel S. Access (#7)								
Northbound Left	7.7	A	7.8	A	7.7	A	7.9	A
Eastbound Approach	11.6	B	12.8	B	12.4	B	13.8	B
Westbound Approach	12.2	B	12.1	B	13.3	B	13.9	B
Southbound Left	7.9	A	7.6	A	8.0	A	7.7	A
Rockcress Access (#8) – Unsignalized								
Northbound Approach	9.5	A	12.5	B				
Eastbound Left	8.9	A	7.8	A				
Westbound Left	7.6	A	8.7	A	-	-	-	-
Southbound Left	19.5	C	26.8	D				
Southbound Through/Right	9.0	A	8.7	A				
Rockcress Access (#8) – Signalized	-	-	-	-	11.4	B	32.2	C

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	209'/247' DL	**C DL**	230'/305'	C DL
Eastbound Right	C	35'/50'	**500'**	38'/77'	500'
Northbound Left	75'	25'/25'	**200'**	101'/65'	200' **DL**
Southbound Right	DNE	50'/38'	**200'**	59'/49'	200'
96th/Via Varra & Northwest Pkwy (#3)					
Eastbound Left	250'/375' DL	44'/94' DL	250'/375' DL	35'/78' TL	**250'**/250'/375' TL
Eastbound Right	375' Free	440'/459'	**475'** Free	467'/423'	475' Free
Westbound Left	200'/275' DL	47'/26' DL	200'/275' DL	53'/34' DL	200'/275' DL
Westbound Right	250' Free	25'/25'	250' Free	25'/25'	250' Free
Northbound Left	600'/800' DL	446'/349' DL	600'/800' DL	347'/240' 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	28'/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	29'/72'	**400'/C** DL	42'/82'	400'/C DL
Eastbound Right	Free	25'/25'	Free	25'/297'	Free
Westbound Left	250'/500'C DL	138'/127'	250'/500'C DL	147'/131'	250'/500'C DL
Northbound Left	250'/475' DL	327'/208'	250'/475' DL	414'/202'	**375'**/475' DL
Northbound Right	300'	26'/30'	300'	26'/38'	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 South 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'**	70'/193'	200' **DL**

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) 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.

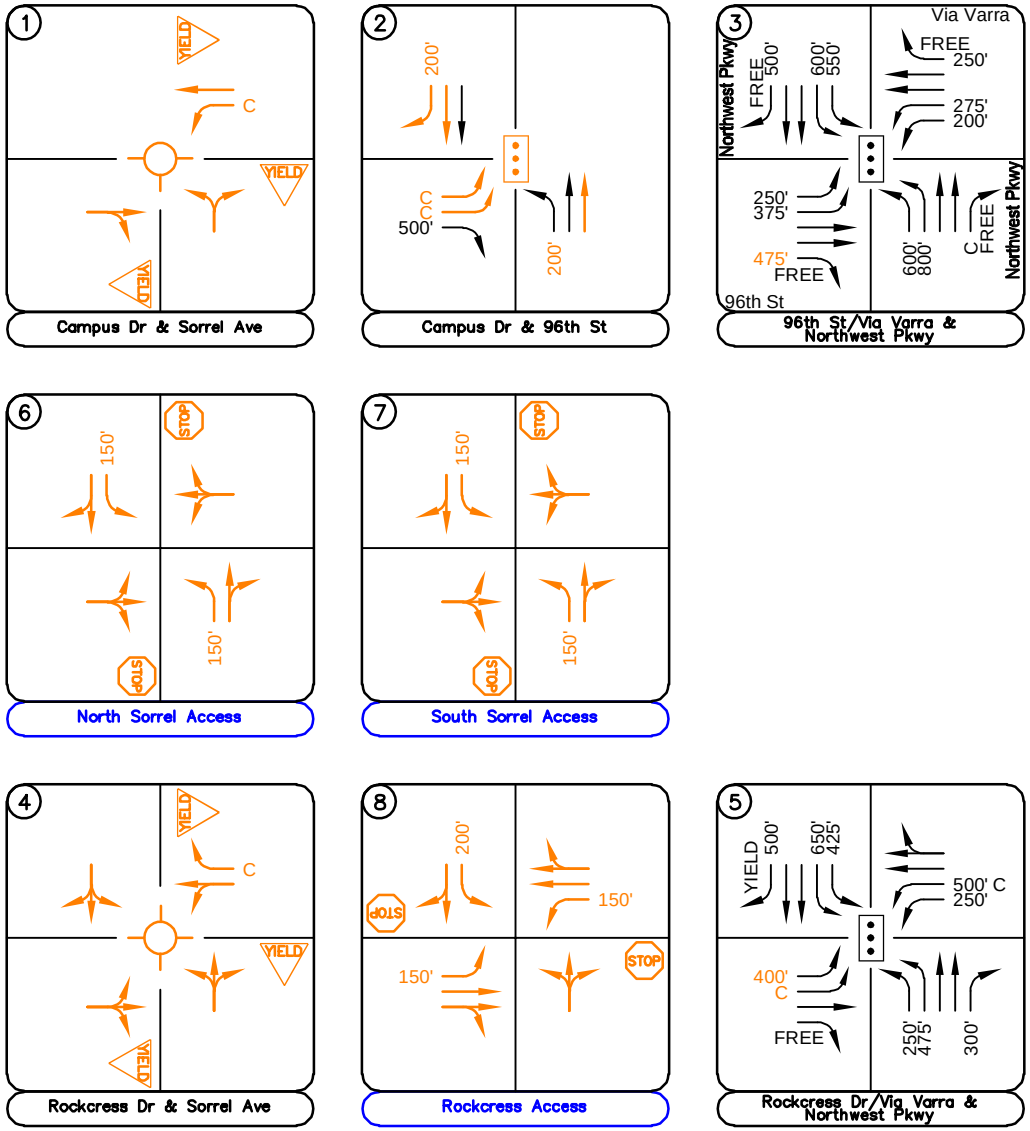
As noted previously, to be conservative it was assumed that the northbound left turning movement at Campus Drive & 96th Street (#2) would operate from a single lane in the 2030 horizon and would not be improved to dual left turn lanes until the 2040 horizon. It was also assumed that the triple northbound 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 southbound 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 southbound 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.

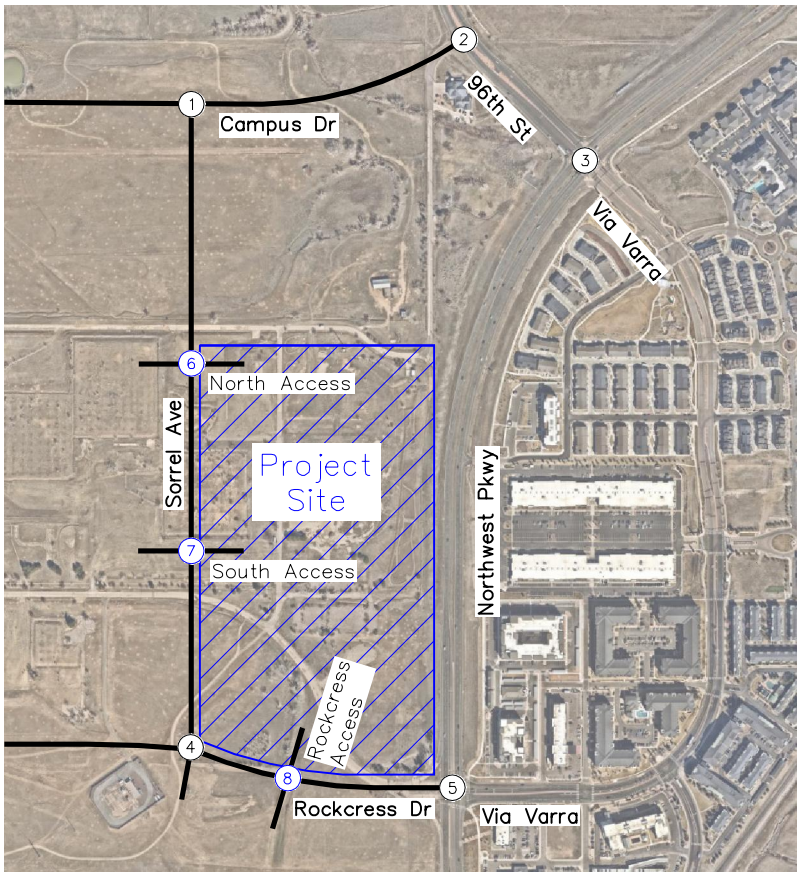
Additionally, because the Rockcress Access (#8) is proposed to operate with two-way stop control exiting the hospital in the 2030 horizon, the southbound approach is proposed to operate with only one southbound left turn lane in this horizon. By the 2040 horizon at full buildout and with signalization 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 82 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.

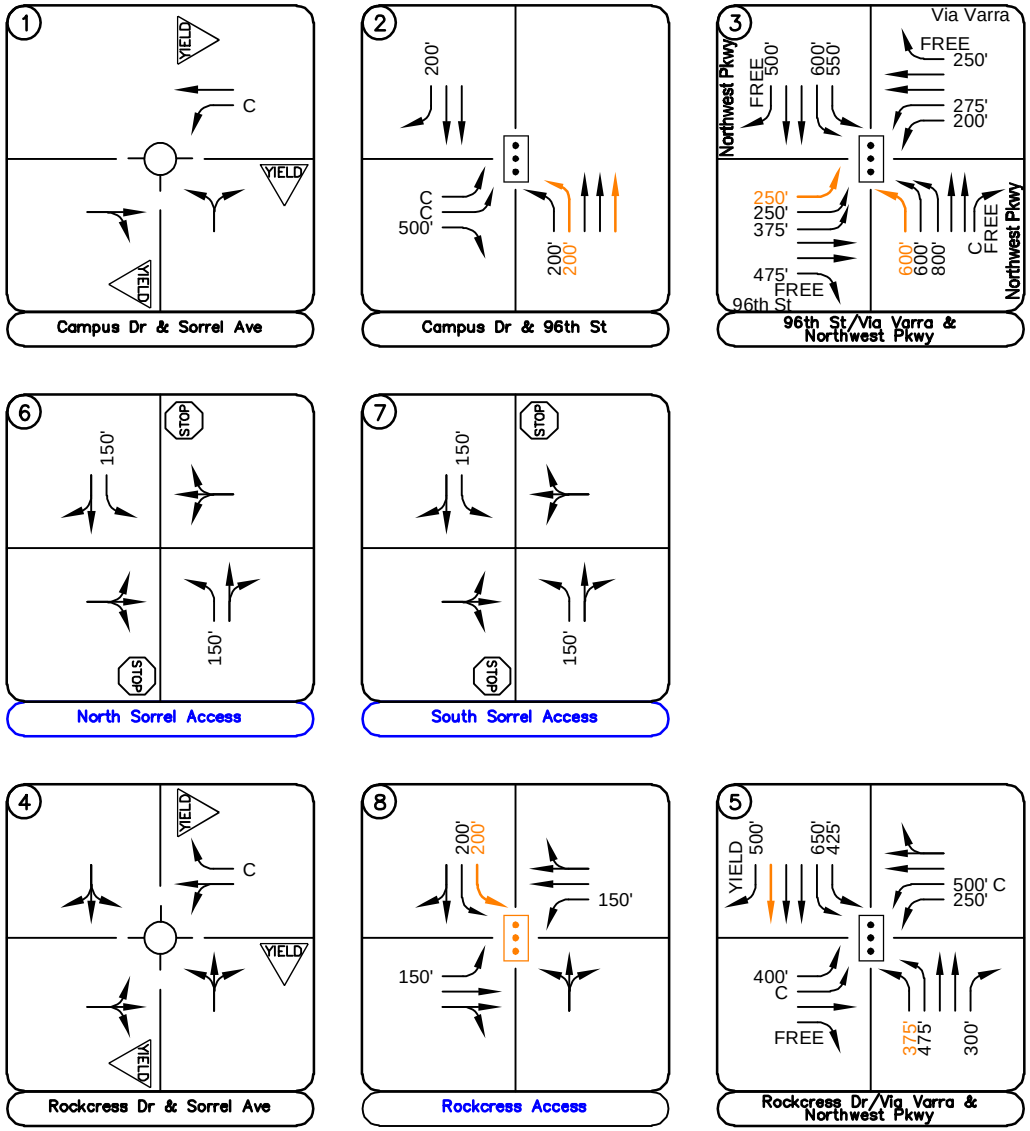


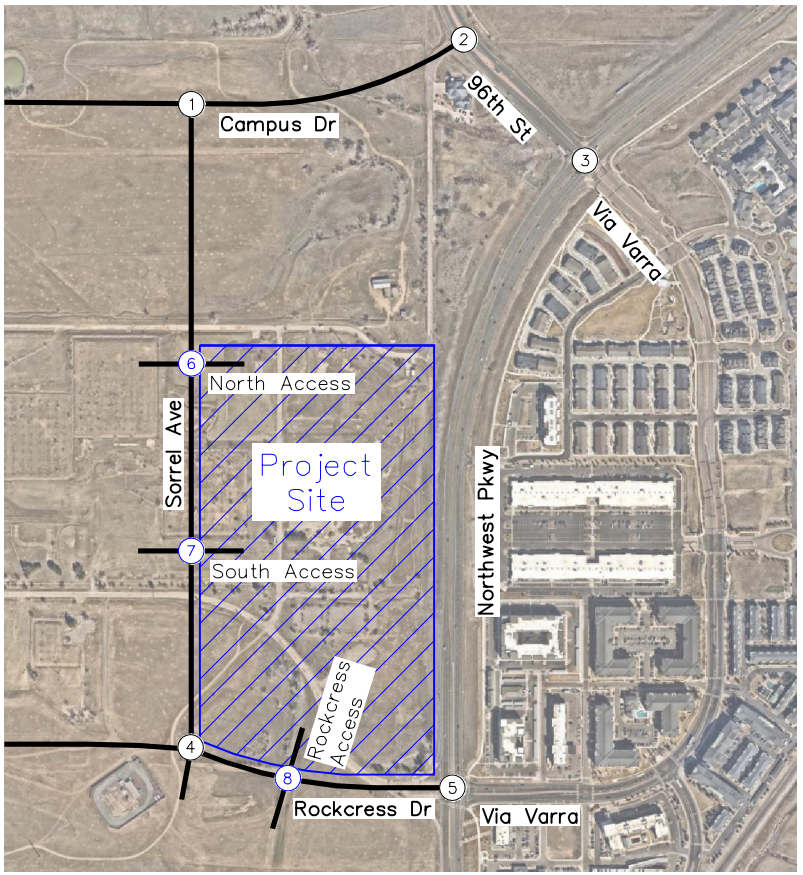


LEGEND

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

FIGURE 12
AdventHealth Louisville
Louisville, Colorado
2030 Recommended Geometry and Control





LEGEND

Study Area Key Intersection	Stop–Controlled Approach
Roundabout	Recommended Improvement
Yield–Controlled Approach	100' Turn Lane Length (feet)
Signalized Intersection	C Continuous Turn Lane

Kimley»Horn NORTH
NTS 196454003

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. Analysis of the existing street network, the proposed project development, and expected traffic volumes resulted in the following recommendations:

2030 Recommendations

- 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) is proposed to be constructed as a four-leg single-lane 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.
- Two full movement accesses are proposed along the east side of Sorrel Avenue, to 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.
- 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

- 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

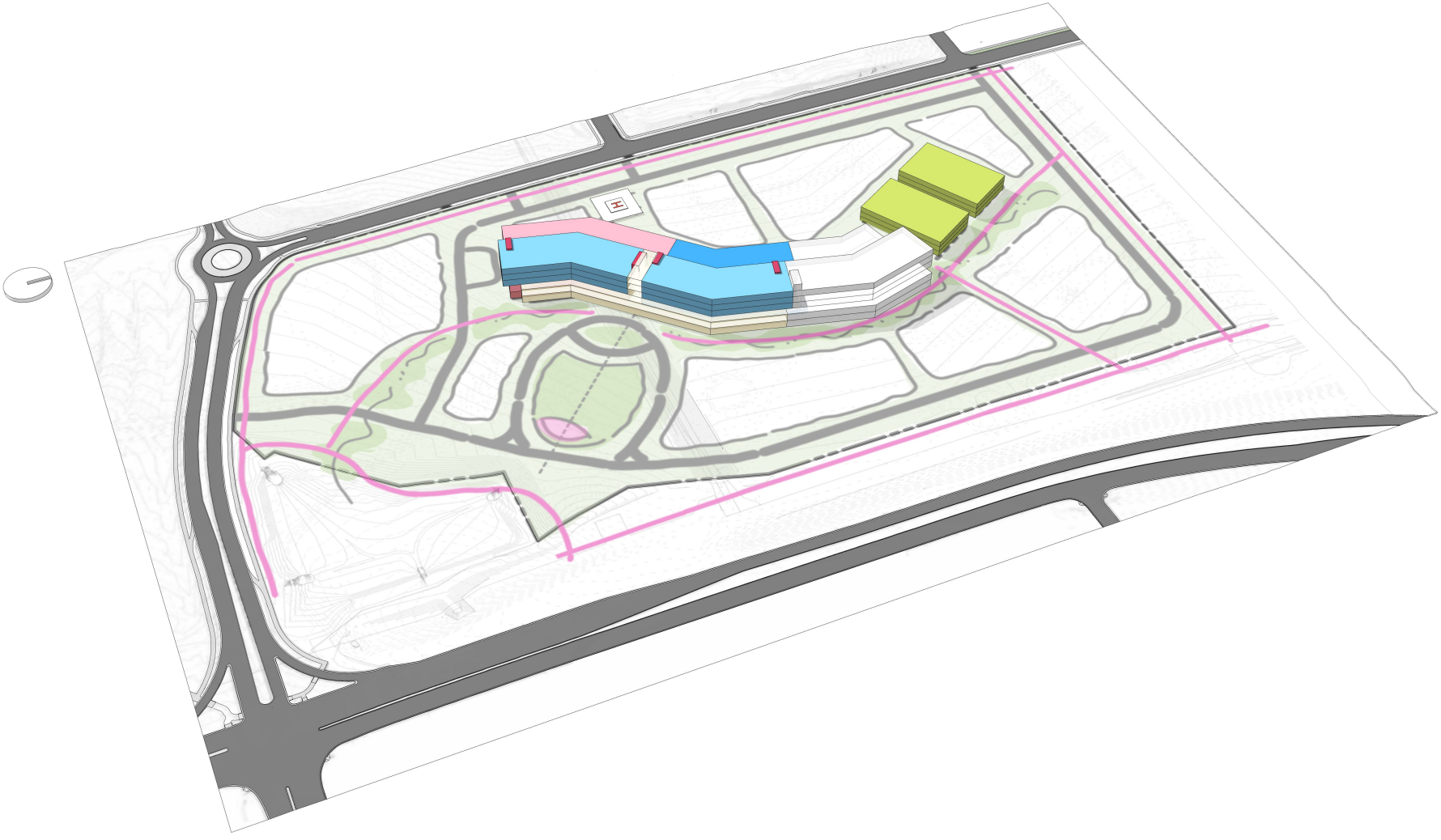
through lane would also be provided. This third northbound through lane would provide the third required receiving lane for the proposed triple northbound left turn lanes at Northwest Parkway just to the southeast.

- 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. To meet expected vehicle queues, the inner northbound left turn lane 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. When signalized, the southbound approach exiting the hospital is recommended to be improved to provide dual left turn lanes 200 feet in length.
- Each of these improvements is anticipated to operate acceptably through the 2045 horizon.

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



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.

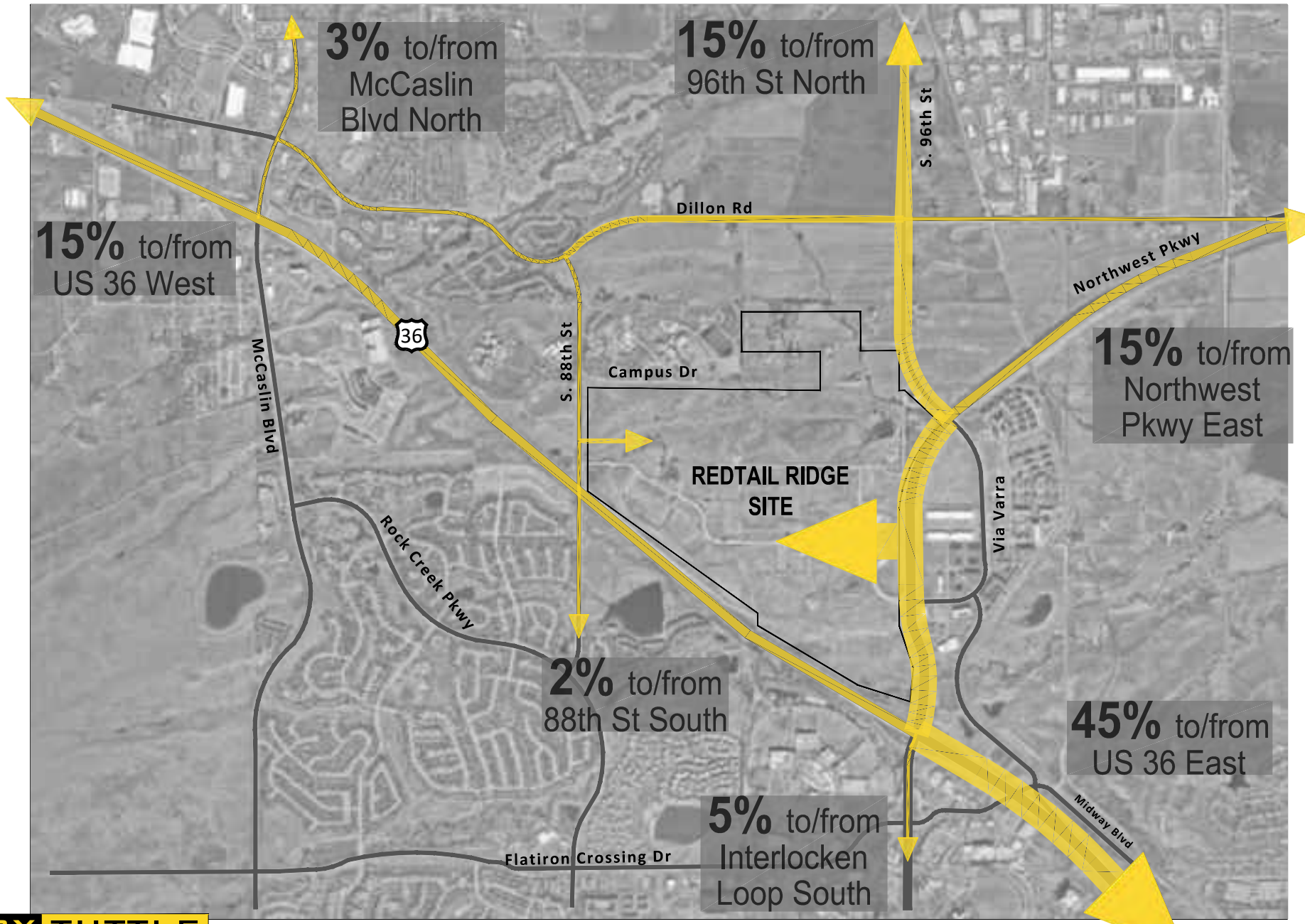
Table 11. Trip Generation Summary

	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

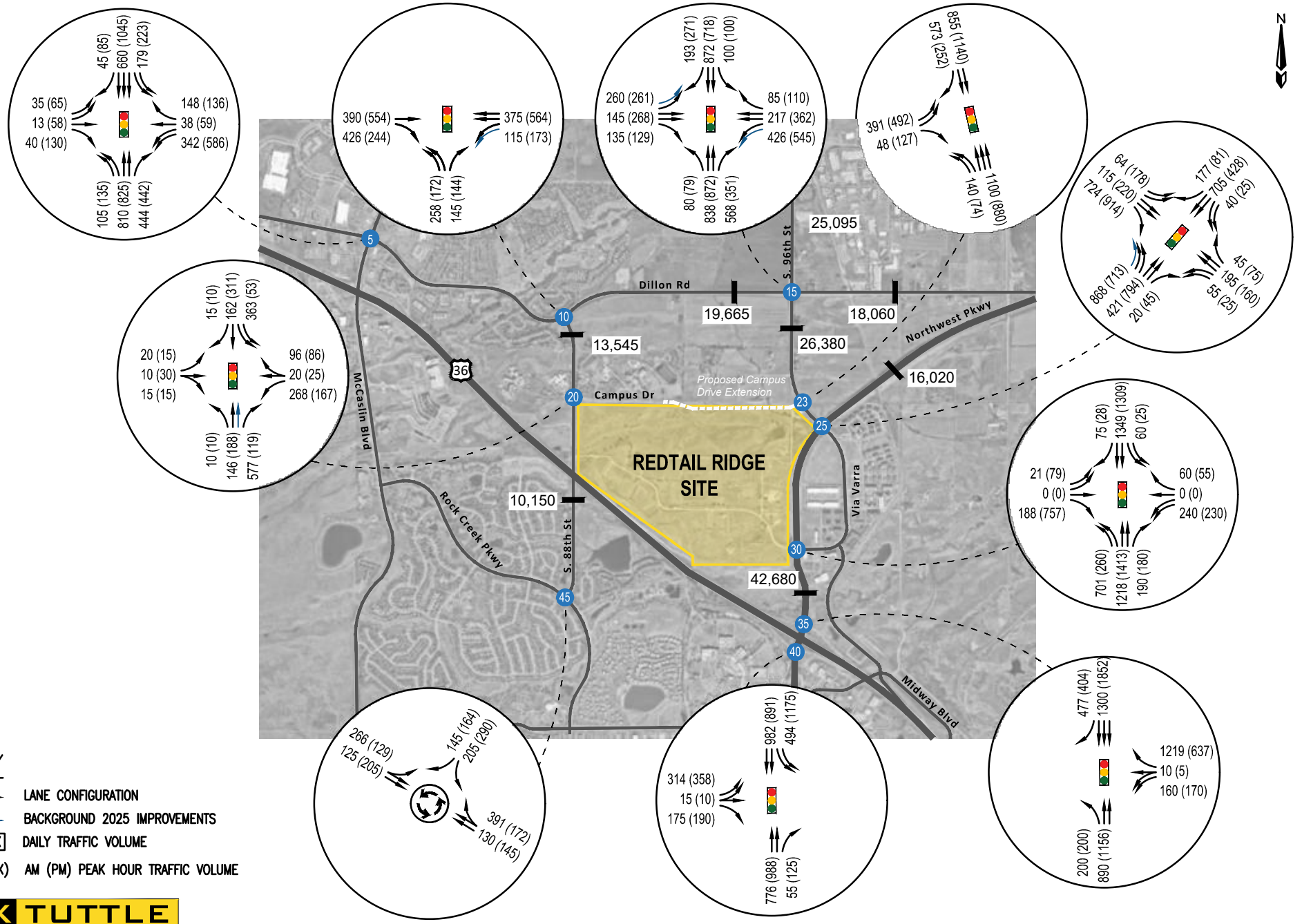
To develop the trip distribution for the proposed development, available traffic count and travel pattern data was reviewed. The proposed land uses for the project site were also taken into consideration which suggests that traffic generated to/from the project site is expected to utilize the regional 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



FOX TUTTLE
TRANSPORTATION GROUP

REDTAIL RIDGE TRAFFIC AND MOBILITY STUDY
TRIP DISTRIBUTION

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

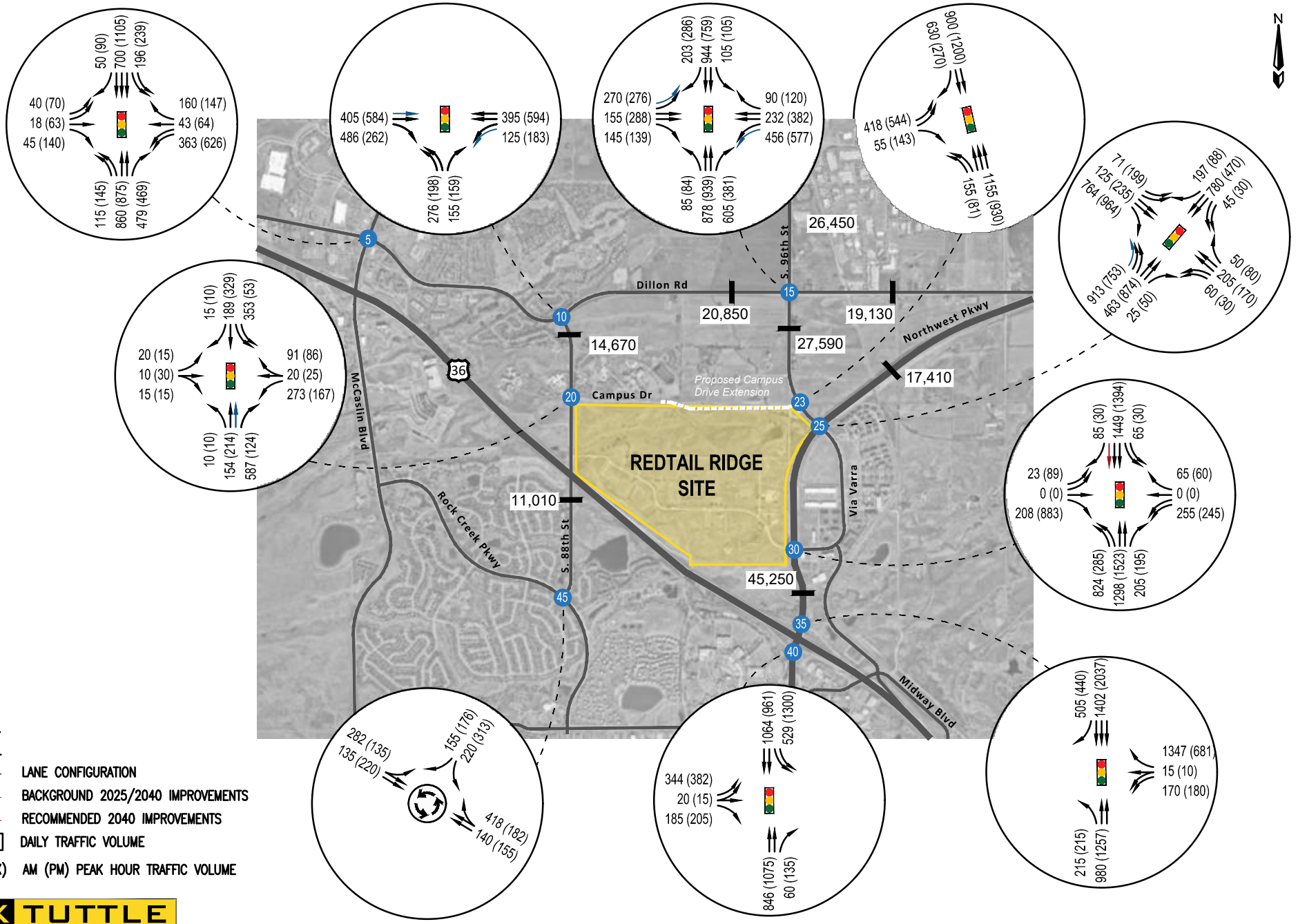


FOX TUTTLE
TRANSPORTATION GROUP

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

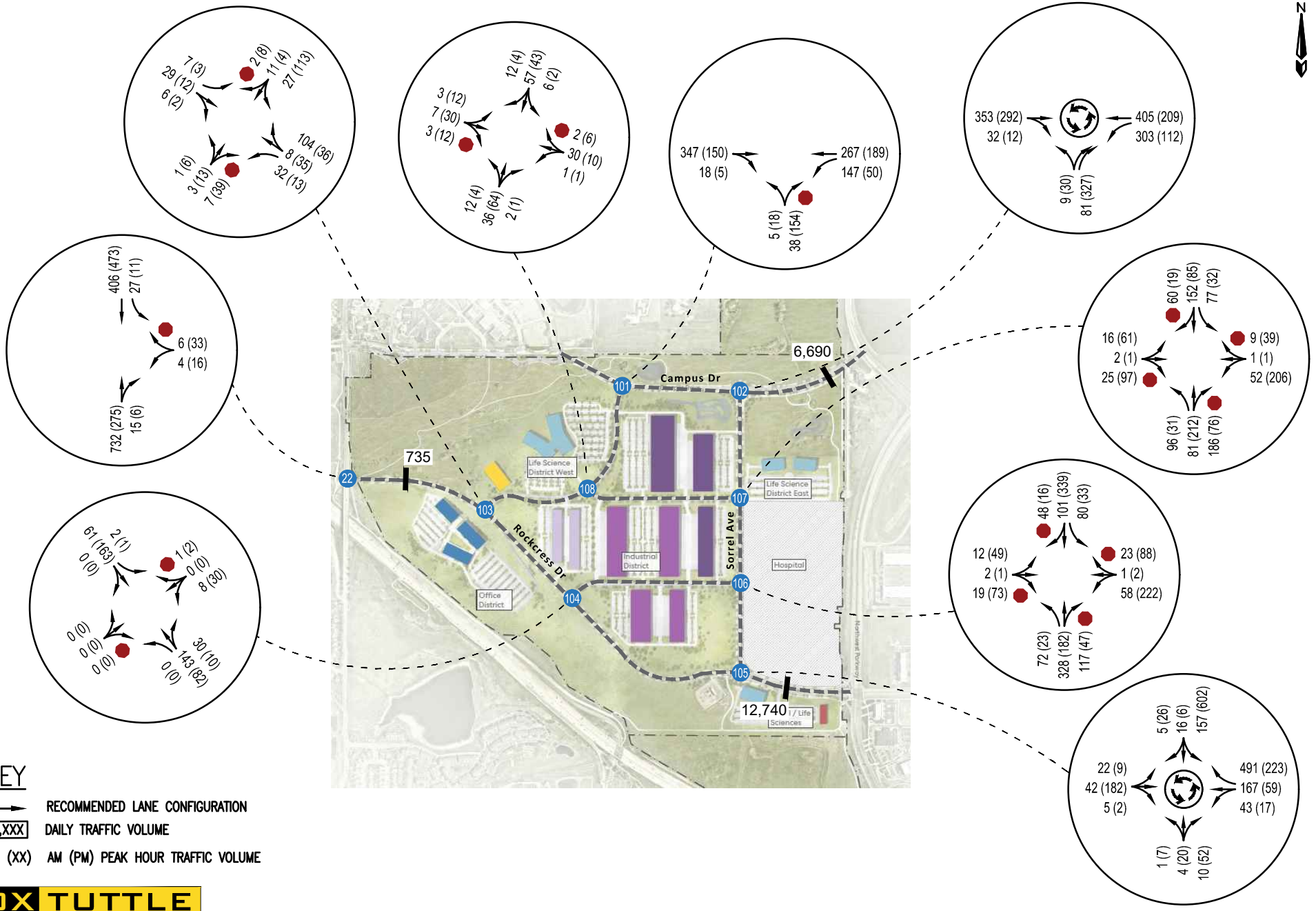


FOX TUTTLE
TRANSPORTATION GROUP

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

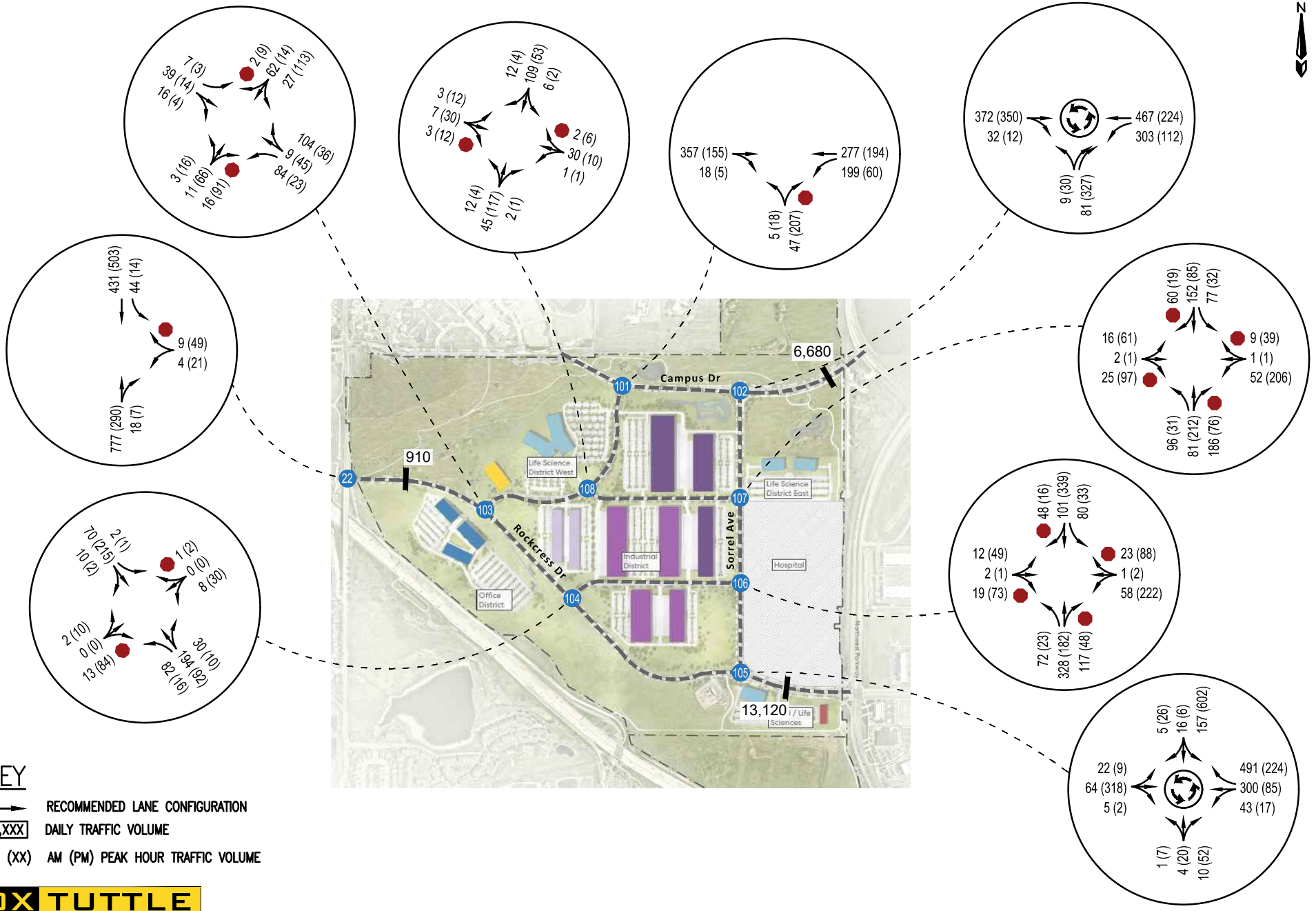
XX (XX) AM (PM) PEAK HOUR TRAFFIC VOLUME

FOX TUTTLE TRANSPORTATION GROUP

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

FOX TUTTLE
TRANSPORTATION GROUP

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	6.1
Intersection LOS	A

Approach	EB	WB	NB
Entry Lanes	1	2	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	424	718	105
Demand Flow Rate, veh/h	433	733	107
Vehicles Circulating, veh/h	284	13	392
Vehicles Exiting, veh/h	462	486	325
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	8.2	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	0.387	0.613	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	284	449	107
Cap Entry Lane, veh/h	1033	1403	1403	925
Entry HV Adj Factor	0.980	0.979	0.980	0.981
Flow Entry, veh/h	424	278	440	105
Cap Entry, veh/h	1012	1374	1376	908
V/C Ratio	0.419	0.202	0.320	0.116
Control Delay, s/veh	8.2	4.3	5.4	5.1
LOS	A	A	A	A
95th %tile Queue, veh	2	1	1	0

Intersection	
Intersection Delay, s/veh	5.9
Intersection LOS	A

Approach	EB	WB	NB
Entry Lanes	1	2	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	334	334	388
Demand Flow Rate, veh/h	340	341	396
Vehicles Circulating, veh/h	109	43	323
Vehicles Exiting, veh/h	275	676	126
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	8.1
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	0.320	0.680	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	109	232	396
Cap Entry Lane, veh/h	1235	1366	1366	993
Entry HV Adj Factor	0.981	0.982	0.980	0.980
Flow Entry, veh/h	334	107	227	388
Cap Entry, veh/h	1212	1341	1339	973
V/C Ratio	0.275	0.080	0.170	0.399
Control Delay, s/veh	5.5	3.3	4.1	8.1
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	6.7
Intersection LOS	A

Approach	EB	WB	NB
Entry Lanes	1	2	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	456	835	130
Demand Flow Rate, veh/h	465	852	132
Vehicles Circulating, veh/h	334	17	412
Vehicles Exiting, veh/h	535	527	387
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	9.4	5.5	5.4
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	0.392	0.608	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	334	518	132
Cap Entry Lane, veh/h	982	1398	1398	906
Entry HV Adj Factor	0.980	0.979	0.980	0.985
Flow Entry, veh/h	456	327	508	130
Cap Entry, veh/h	962	1369	1371	893
V/C Ratio	0.474	0.239	0.370	0.146
Control Delay, s/veh	9.4	4.6	6.0	5.4
LOS	A	A	A	A
95th %tile Queue, veh	3	1	2	1

Intersection	
Intersection Delay, s/veh	7.4
Intersection LOS	A

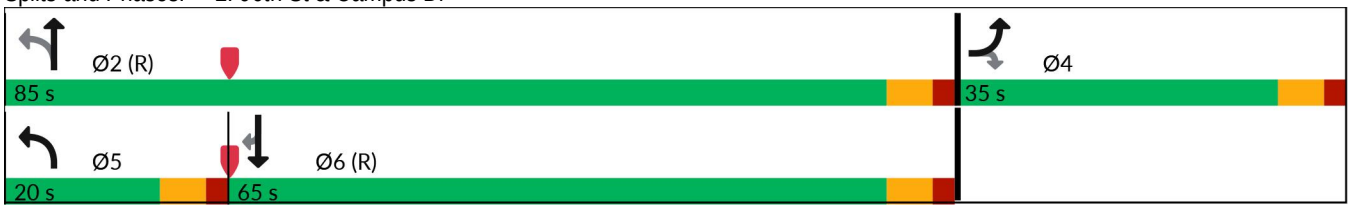
Approach	EB	WB	NB
Entry Lanes	1	2	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	404	378	482
Demand Flow Rate, veh/h	412	386	491
Vehicles Circulating, veh/h	138	59	388
Vehicles Exiting, veh/h	307	820	162
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	6.4	4.0	10.9
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	0.358	0.642	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	138	248	491
Cap Entry Lane, veh/h	1199	1346	1346	929
Entry HV Adj Factor	0.982	0.978	0.980	0.982
Flow Entry, veh/h	404	135	243	482
Cap Entry, veh/h	1177	1317	1319	912
V/C Ratio	0.344	0.103	0.184	0.529
Control Delay, s/veh	6.4	3.6	4.3	10.9
LOS	A	A	A	B
95th %tile Queue, veh	2	0	1	3

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

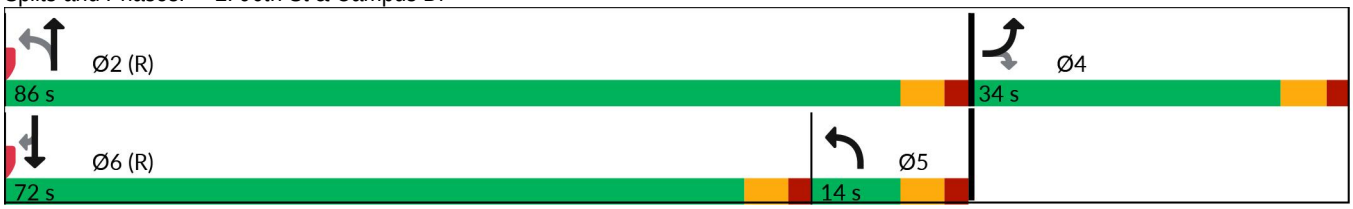
Intersection Summary	
HCM 7th Control Delay, s/veh	14.3
HCM 7th LOS	B

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	

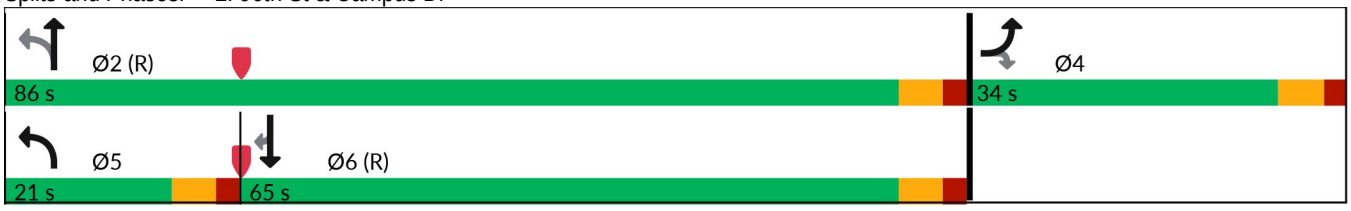
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		95.4		24.6	23.4	72.0
Change Period (Y+Rc), s		6.0		6.0	6.0	6.0
Max Green Setting (Gmax), s		80.0		28.0	8.0	66.0
Max Q Clear Time (g_c+I1), s		13.3		17.0	2.0	30.9
Green Ext Time (p_c), s		9.0		1.6	0.1	13.3

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)	392	51	135	1100	873	531
Future Volume (vph)	392	51	135	1100	873	531
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)	392	51	135	1100	873	531
Future Volume (veh/h)	392	51	135	1100	873	531
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	426	55	147	1196	949	577
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	512	235	320	2672	2339	1043
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	426	55	147	1196	949	577
Grp Sat Flow(s),veh/h/ln	1728	1585	1781	1777	1777	1585
Q Serve(g_s), s	14.4	3.7	3.0	15.1	14.9	23.5
Cycle Q Clear(g_c), s	14.4	3.7	3.0	15.1	14.9	23.5
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	512	235	320	2672	2339	1043
V/C Ratio(X)	0.83	0.23	0.46	0.45	0.41	0.55
Avail Cap(c_a), veh/h	806	370	465	2672	2339	1043
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	49.7	45.1	7.3	5.6	9.6	11.0
Incr Delay (d2), s/veh	4.3	0.5	0.6	0.3	0.5	2.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.5	3.4	1.1	5.0	5.7	8.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	54.0	45.6	7.9	5.9	10.1	13.1
LnGrp LOS	D	D	A	A	B	B
Approach Vol, veh/h	481			1343	1526	
Approach Delay, s/veh	53.0			6.1	11.2	
Approach LOS	D			A	B	

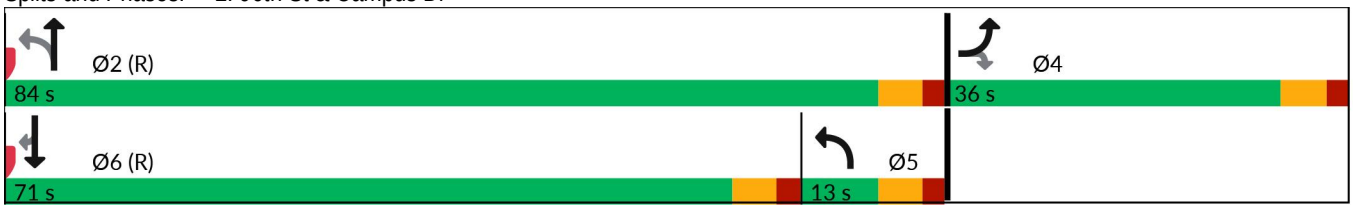
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		96.2		23.8	11.2	85.0
Change Period (Y+Rc), s		6.0		6.0	6.0	6.0
Max Green Setting (Gmax), s		80.0		28.0	15.0	59.0
Max Q Clear Time (g_c+I1), s		17.1		16.4	5.0	25.5
Green Ext Time (p_c), s		12.7		1.4	0.2	11.7

Intersection Summary	
HCM 7th Control Delay, s/veh	15.2
HCM 7th LOS	B

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	485	125	72	880	1149	240
Future Volume (vph)	485	125	72	880	1149	240
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)	485	125	72	880	1149	240
Future Volume (veh/h)	485	125	72	880	1149	240
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	527	136	78	957	1249	261
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	622	285	384	2559	1925	859
Arrive On Green	0.18	0.18	0.13	0.72	0.54	0.54
Sat Flow, veh/h	3456	1585	1781	3647	3647	1585
Grp Volume(v), veh/h	527	136	78	957	1249	261
Grp Sat Flow(s),veh/h/ln	1728	1585	1781	1777	1777	1585
Q Serve(g_s), s	17.7	9.2	0.0	12.4	29.8	10.8
Cycle Q Clear(g_c), s	17.7	9.2	0.0	12.4	29.8	10.8
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	622	285	384	2559	1925	859
V/C Ratio(X)	0.85	0.48	0.20	0.37	0.65	0.30
Avail Cap(c_a), veh/h	864	396	384	2559	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	47.6	44.1	27.4	6.4	19.4	15.1
Incr Delay (d2), s/veh	5.8	1.2	0.2	0.3	1.7	0.9
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.1	8.3	1.7	4.3	12.4	4.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	53.4	45.4	27.6	6.7	21.1	16.0
LnGrp LOS	D	D	C	A	C	B
Approach Vol, veh/h	663			1035	1510	
Approach Delay, s/veh	51.7			8.3	20.3	
Approach LOS	D			A	C	

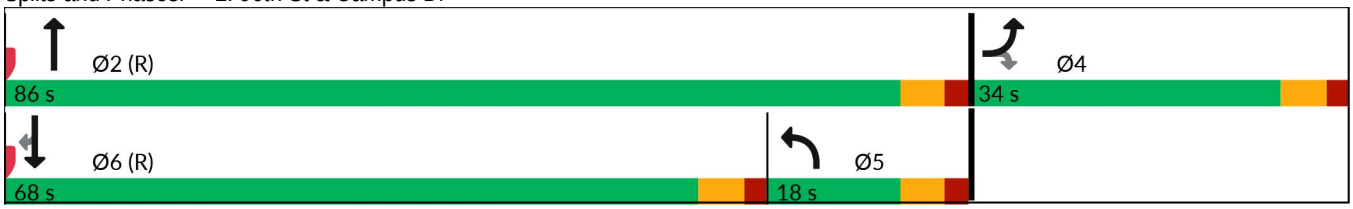
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		92.4		27.6	21.4	71.0
Change Period (Y+Rc), s		6.0		6.0	6.0	6.0
Max Green Setting (Gmax), s		78.0		30.0	7.0	65.0
Max Q Clear Time (g_c+I1), s		14.4		19.7	2.0	31.8
Green Ext Time (p_c), s		9.0		1.9	0.1	13.4

Intersection Summary		
HCM 7th Control Delay, s/veh		22.9
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	

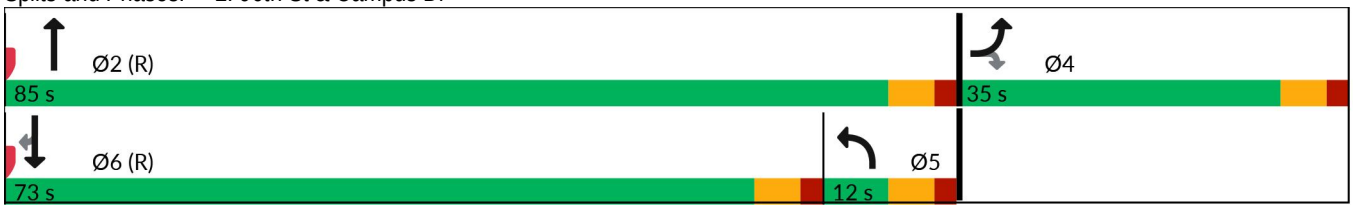
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		96.1		23.9	28.1	68.0
Change Period (Y+Rc), s		6.0		6.0	6.0	6.0
Max Green Setting (Gmax), s		80.0		28.0	12.0	62.0
Max Q Clear Time (g_c+I1), s		11.7		16.5	6.2	35.7
Green Ext Time (p_c), s		13.2		1.4	0.2	11.0

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	

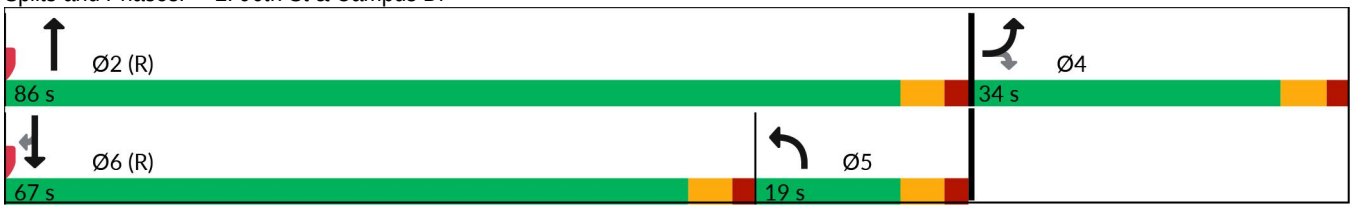
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		93.3		26.7	20.3	73.0
Change Period (Y+Rc), s		6.0		6.0	6.0	6.0
Max Green Setting (Gmax), s		79.0		29.0	6.0	67.0
Max Q Clear Time (g_c+I1), s		10.1		18.9	4.4	32.7
Green Ext Time (p_c), s		9.5		1.8	0.0	14.3

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)	434	62	161	1155	929	622
Future Volume (vph)	434	62	161	1155	929	622
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)	434	62	161	1155	929	622
Future Volume (veh/h)	434	62	161	1155	929	622
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	472	67	175	1255	1010	676
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	559	256	622	3770	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	472	67	175	1255	1010	676
Grp Sat Flow(s),veh/h/ln	1728	1585	1728	1702	1777	1585
Q Serve(g_s), s	15.9	4.4	5.2	10.2	23.4	43.9
Cycle Q Clear(g_c), s	15.9	4.4	5.2	10.2	23.4	43.9
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	559	256	622	3770	1806	806
V/C Ratio(X)	0.84	0.26	0.28	0.33	0.56	0.84
Avail Cap(c_a), veh/h	806	370	622	3770	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	48.8	44.0	42.5	5.4	20.3	25.3
Incr Delay (d2), s/veh	5.7	0.5	0.2	0.2	1.3	10.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.3	4.1	2.3	3.3	9.8	18.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	54.5	44.6	42.7	5.6	21.5	35.5
LnGrp LOS	D	D	D	A	C	D
Approach Vol, veh/h	539			1430	1686	
Approach Delay, s/veh	53.3			10.2	27.1	
Approach LOS	D			B	C	

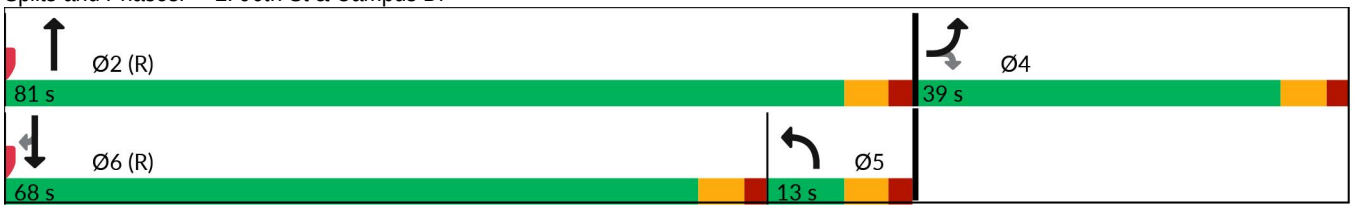
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		94.6		25.4	27.6	67.0
Change Period (Y+Rc), s		6.0		6.0	6.0	6.0
Max Green Setting (Gmax), s		80.0		28.0	13.0	61.0
Max Q Clear Time (g_c+I1), s		12.2		17.9	7.2	45.9
Green Ext Time (p_c), s		13.2		1.5	0.3	8.8

Intersection Summary	
HCM 7th Control Delay, s/veh	24.3
HCM 7th LOS	C

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	595	154	85	930	1215	278
Future Volume (vph)	595	154	85	930	1215	278
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)	595	154	85	930	1215	278
Future Volume (veh/h)	595	154	85	930	1215	278
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	647	167	92	1011	1321	302
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	747	343	405	3492	1836	819
Arrive On Green	0.22	0.22	0.12	0.68	0.52	0.52
Sat Flow, veh/h	3456	1585	3456	5274	3647	1585
Grp Volume(v), veh/h	647	167	92	1011	1321	302
Grp Sat Flow(s),veh/h/ln	1728	1585	1728	1702	1777	1585
Q Serve(g_s), s	21.7	11.1	2.9	9.4	34.3	13.7
Cycle Q Clear(g_c), s	21.7	11.1	2.9	9.4	34.3	13.7
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	747	343	405	3492	1836	819
V/C Ratio(X)	0.87	0.49	0.23	0.29	0.72	0.37
Avail Cap(c_a), veh/h	950	436	405	3492	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	45.4	41.2	48.0	7.5	22.3	17.3
Incr Delay (d2), s/veh	7.0	1.1	0.2	0.2	2.5	1.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.0	10.0	1.3	3.3	14.5	5.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	52.3	42.3	48.3	7.6	24.8	18.6
LnGrp LOS	D	D	D	A	C	B
Approach Vol, veh/h	814			1103	1623	
Approach Delay, s/veh	50.3			11.0	23.6	
Approach LOS	D			B	C	

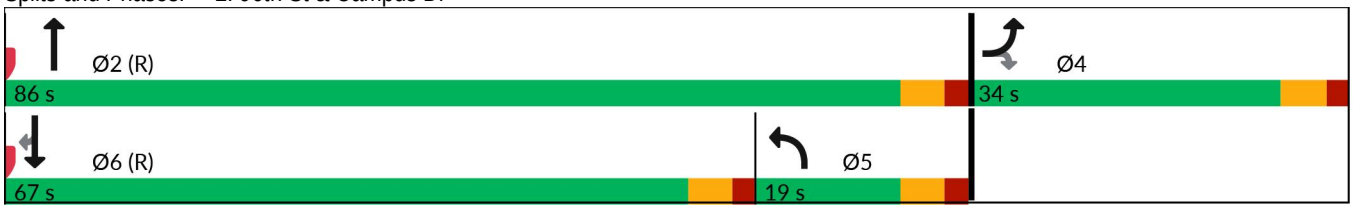
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		88.1		31.9	20.1	68.0
Change Period (Y+Rc), s		6.0		6.0	6.0	6.0
Max Green Setting (Gmax), s		75.0		33.0	7.0	62.0
Max Q Clear Time (g_c+I1), s		11.4		23.7	4.9	36.3
Green Ext Time (p_c), s		9.5		2.3	0.0	13.0

Intersection Summary	
HCM 7th Control Delay, s/veh	25.8
HCM 7th LOS	C

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	445	65	165	1185	955	640
Future Volume (vph)	445	65	165	1185	955	640
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)	445	65	165	1185	955	640
Future Volume (veh/h)	445	65	165	1185	955	640
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	484	71	179	1288	1038	696
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	571	262	610	3752	1806	806
Arrive On Green	0.17	0.17	0.18	0.73	0.51	0.51
Sat Flow, veh/h	3456	1585	3456	5274	3647	1585
Grp Volume(v), veh/h	484	71	179	1288	1038	696
Grp Sat Flow(s),veh/h/ln	1728	1585	1728	1702	1777	1585
Q Serve(g_s), s	16.3	4.7	5.4	10.7	24.3	46.2
Cycle Q Clear(g_c), s	16.3	4.7	5.4	10.7	24.3	46.2
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	571	262	610	3752	1806	806
V/C Ratio(X)	0.85	0.27	0.29	0.34	0.57	0.86
Avail Cap(c_a), veh/h	806	370	610	3752	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	48.6	43.8	42.9	5.6	20.5	25.9
Incr Delay (d2), s/veh	6.0	0.6	0.2	0.2	1.3	11.9
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	4.4	2.3	3.5	10.2	19.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	54.6	44.3	43.1	5.8	21.8	37.7
LnGrp LOS	D	D	D	A	C	D
Approach Vol, veh/h	555			1467	1734	
Approach Delay, s/veh	53.3			10.4	28.2	
Approach LOS	D			B	C	

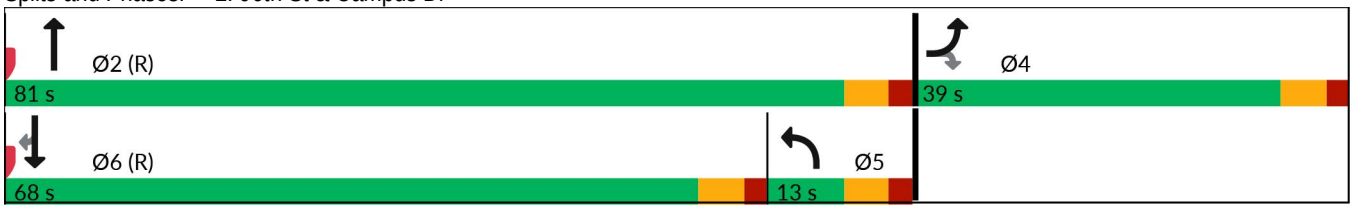
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		94.2		25.8	27.2	67.0
Change Period (Y+Rc), s		6.0		6.0	6.0	6.0
Max Green Setting (Gmax), s		80.0		28.0	13.0	61.0
Max Q Clear Time (g_c+I1), s		12.7		18.3	7.4	48.2
Green Ext Time (p_c), s		13.8		1.5	0.3	8.1

Intersection Summary		
HCM 7th Control Delay, s/veh	25.0	
HCM 7th LOS	C	

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	610	160	90	955	1245	285
Future Volume (vph)	610	160	90	955	1245	285
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)	610	160	90	955	1245	285
Future Volume (veh/h)	610	160	90	955	1245	285
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	663	174	98	1038	1353	310
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	763	350	389	3469	1836	819
Arrive On Green	0.22	0.22	0.11	0.68	0.52	0.52
Sat Flow, veh/h	3456	1585	3456	5274	3647	1585
Grp Volume(v), veh/h	663	174	98	1038	1353	310
Grp Sat Flow(s),veh/h/ln	1728	1585	1728	1702	1777	1585
Q Serve(g_s), s	22.2	11.5	3.1	9.8	35.7	14.1
Cycle Q Clear(g_c), s	22.2	11.5	3.1	9.8	35.7	14.1
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	763	350	389	3469	1836	819
V/C Ratio(X)	0.87	0.50	0.25	0.30	0.74	0.38
Avail Cap(c_a), veh/h	950	436	389	3469	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	45.1	40.9	48.6	7.7	22.6	17.4
Incr Delay (d2), s/veh	7.4	1.1	0.2	0.2	2.7	1.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.3	10.4	1.4	3.4	15.1	5.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	52.4	42.0	48.9	7.9	25.3	18.8
LnGrp LOS	D	D	D	A	C	B
Approach Vol, veh/h	837			1136	1663	
Approach Delay, s/veh	50.3			11.4	24.1	
Approach LOS	D			B	C	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		87.5		32.5	19.5	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		11.8		24.2	5.1	37.7
Green Ext Time (p_c), s		9.8		2.3	0.0	13.0

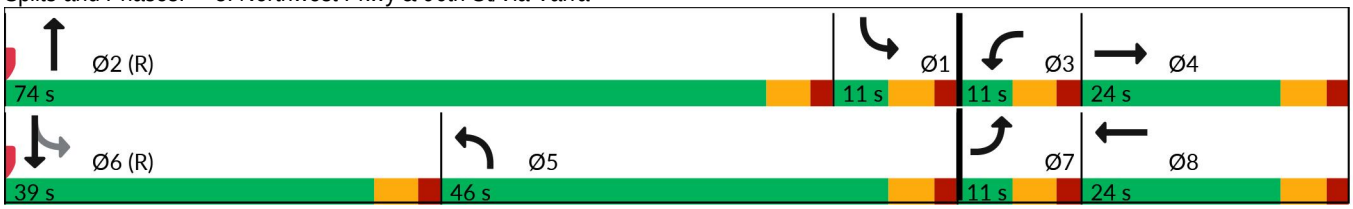
Intersection Summary	
HCM 7th Control Delay, s/veh	26.2
HCM 7th LOS	C

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

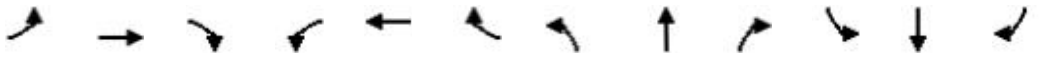
Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

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

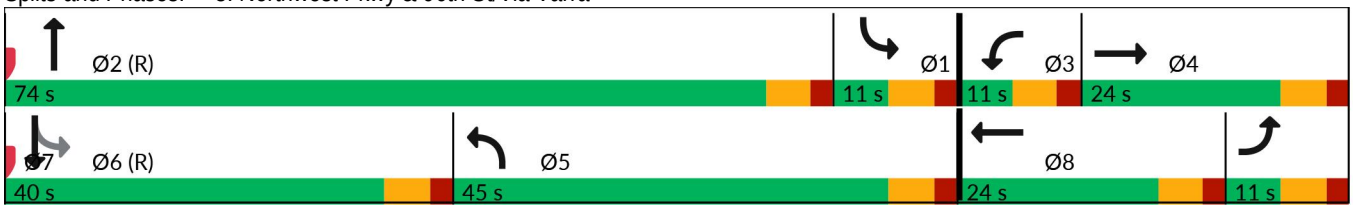
Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

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

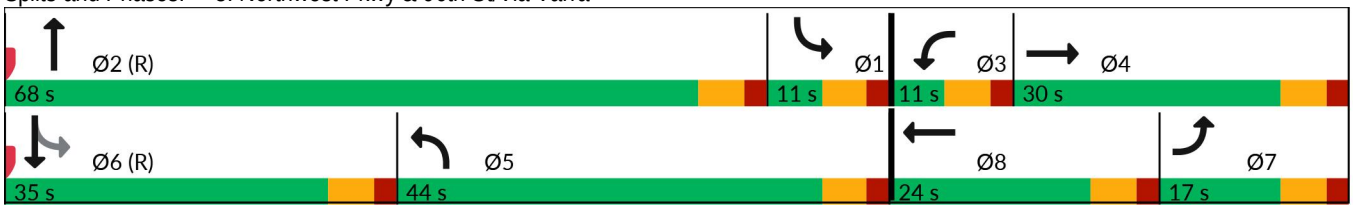
Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

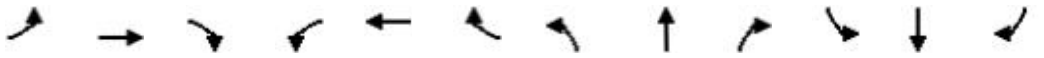
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	176	220	923	25	160	75	713	818	45	25	445	79
Future Volume (vph)	176	220	923	25	160	75	713	818	45	25	445	79
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free	pm+pt	NA	Free
Protected Phases	7	4		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)	0.82	0.82	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	6.9	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	61.6	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

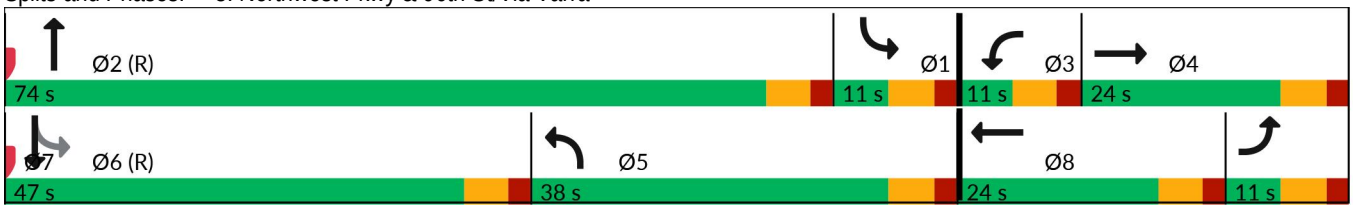
Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

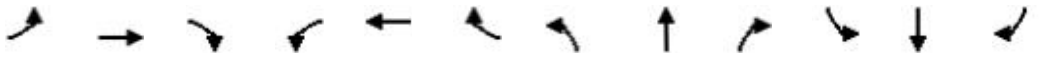
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	68	125	764	60	205	50	913	454	25	45	758	174
Future Volume (vph)	68	125	764	60	205	50	913	454	25	45	758	174
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free	pm+pt	NA	Free
Protected Phases	7	4		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

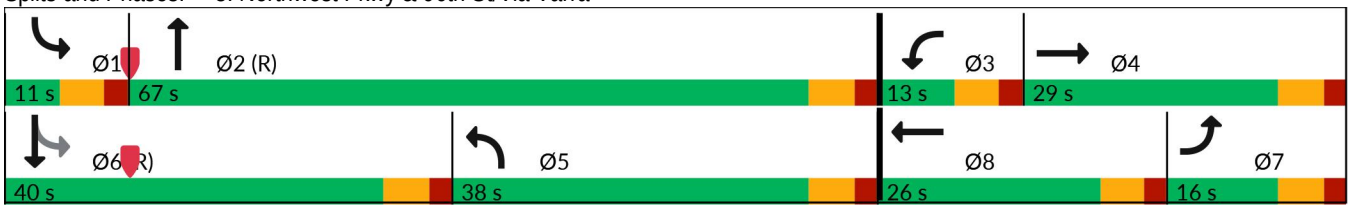
Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

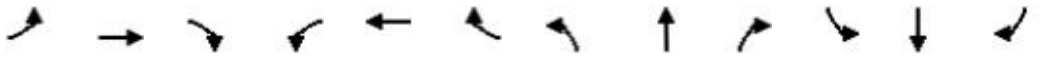
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	177	235	964	30	170	80	753	843	50	30	461	77
Future Volume (vph)	177	235	964	30	170	80	753	843	50	30	461	77
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free	pm+pt	NA	Free
Protected Phases	7	4		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

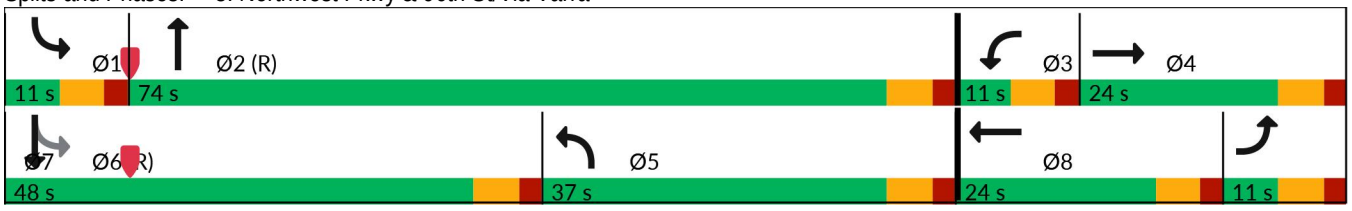
Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

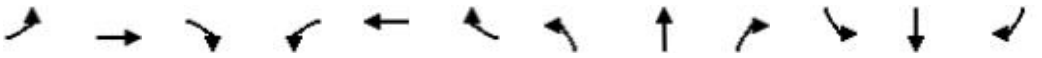
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	78	125	793	60	205	50	913	483	25	45	845	203
Future Volume (vph)	78	125	793	60	205	50	913	483	25	45	845	203
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free	pm+pt	NA	Free
Protected Phases	7	4		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)	0.87	0.87	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	0.9	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	52.9	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

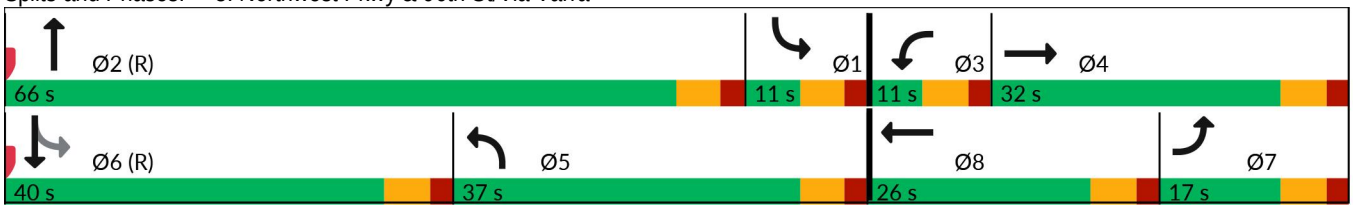
Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

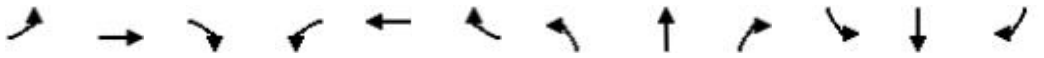
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	210	235	979	30	170	80	753	943	50	30	507	92
Future Volume (vph)	210	235	979	30	170	80	753	943	50	30	507	92
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free	pm+pt	NA	Free
Protected Phases	7	4		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)	0.73	0.73	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	1.4	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

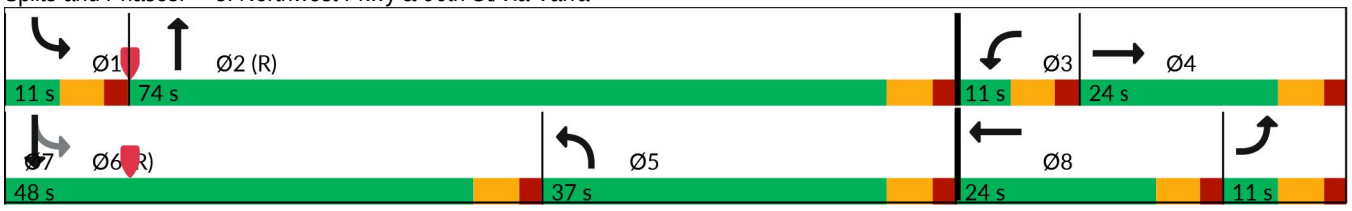
Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

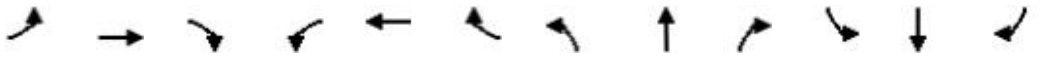
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	80	130	815	65	210	55	940	495	30	50	865	210
Future Volume (vph)	80	130	815	65	210	55	940	495	30	50	865	210
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free	pm+pt	NA	Free
Protected Phases	7	4		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

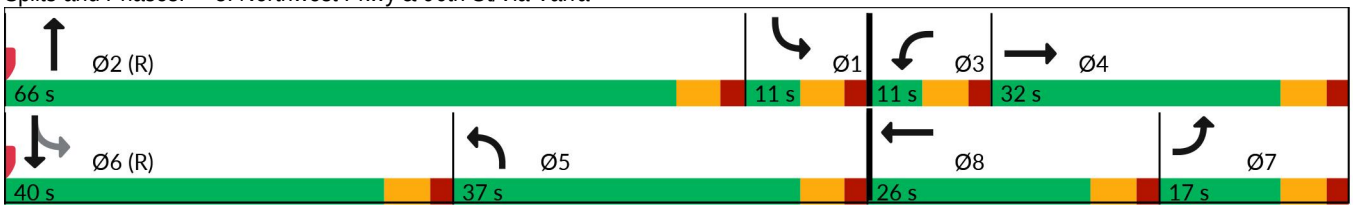
Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

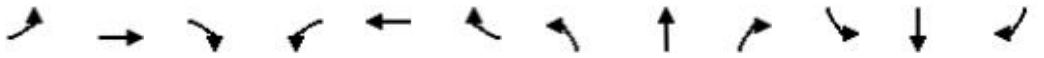
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	215	245	1005	35	175	85	775	965	55	35	520	95
Future Volume (vph)	215	245	1005	35	175	85	775	965	55	35	520	95
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free	pm+pt	NA	Free
Protected Phases	7	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)	0.71	0.71	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	57.4	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	84	518	5	120
Demand Flow Rate, veh/h	85	529	5	122
Vehicles Circulating, veh/h	123	24	187	196
Vehicles Exiting, veh/h	195	168	21	357
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	3.6	4.3	3.2	4.2
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	0.369	0.631	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	85	195	334	5	122
Cap Entry Lane, veh/h	1217	1389	1389	1140	1130
Entry HV Adj Factor	0.986	0.981	0.979	0.992	0.982
Flow Entry, veh/h	84	191	327	5	120
Cap Entry, veh/h	1201	1363	1360	1131	1109
V/C Ratio	0.070	0.140	0.240	0.004	0.108
Control Delay, s/veh	3.6	3.8	4.7	3.2	4.2
LOS	A	A	A	A	A
95th %tile Queue, veh	0	0	1	0	0

Intersection	
Intersection Delay, s/veh	5.1
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	261	36	358
Demand Flow Rate, veh/h	219	267	36	365
Vehicles Circulating, veh/h	349	32	556	91
Vehicles Exiting, veh/h	107	560	12	208
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	3.6	5.1	5.6
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	0.311	0.689	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	83	184	36	365
Cap Entry Lane, veh/h	967	1379	1379	783	1258
Entry HV Adj Factor	0.981	0.982	0.978	0.992	0.981
Flow Entry, veh/h	215	81	180	36	358
Cap Entry, veh/h	949	1354	1349	777	1233
V/C Ratio	0.227	0.060	0.133	0.046	0.290
Control Delay, s/veh	6.0	3.1	3.7	5.1	5.6
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	4.8
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	119	695	5	143
Demand Flow Rate, veh/h	122	709	5	146
Vehicles Circulating, veh/h	144	30	245	346
Vehicles Exiting, veh/h	348	220	21	393
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	4.0	4.9	3.4	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	0.487	0.513	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	345	364	5	146
Cap Entry Lane, veh/h	1191	1382	1382	1075	970
Entry HV Adj Factor	0.977	0.981	0.981	0.992	0.978
Flow Entry, veh/h	119	338	357	5	143
Cap Entry, veh/h	1164	1355	1355	1066	948
V/C Ratio	0.102	0.250	0.263	0.005	0.151
Control Delay, s/veh	4.0	4.8	4.9	3.4	5.2
LOS	A	A	A	A	A
95th %tile Queue, veh	0	1	1	0	1

Intersection	
Intersection Delay, s/veh	6.3
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	369	328	36	401
Demand Flow Rate, veh/h	376	334	36	409
Vehicles Circulating, veh/h	387	34	751	129
Vehicles Exiting, veh/h	151	753	12	239
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	8.6	3.7	6.3	6.3
Approach LOS	A	A	A	A

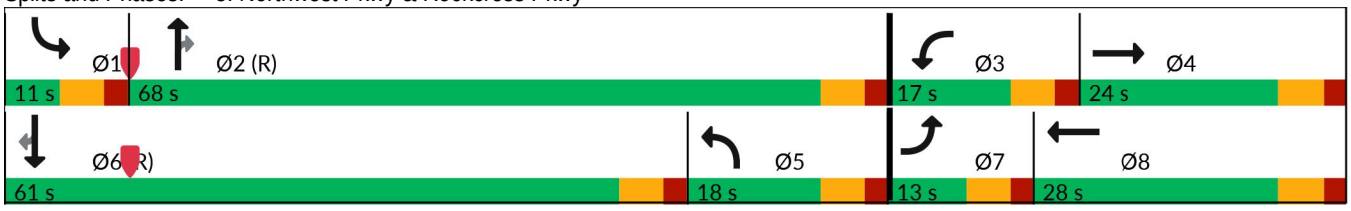
Lane	Left	Left	Right	Left	Left
Designated Moves	LTR	LT	R	LTR	LTR
Assumed Moves	LTR	LT	R	LTR	LTR
RT Channelized					
Lane Util	1.000	0.362	0.638	1.000	1.000
Follow-Up Headway, s	2.609	2.535	2.535	2.609	2.609
Critical Headway, s	4.976	4.544	4.544	4.976	4.976
A (Intercept)	1380	1420	1420	1380	1380
B (Slope)	1.02e-3	9.101e-4	9.101e-4	1.02e-3	1.02e-3
Entry Flow, veh/h	376	121	213	36	409
Cap Entry Lane, veh/h	930	1377	1377	641	1210
Entry HV Adj Factor	0.981	0.981	0.981	0.992	0.980
Flow Entry, veh/h	369	119	209	36	401
Cap Entry, veh/h	912	1351	1351	637	1186
V/C Ratio	0.404	0.088	0.155	0.056	0.338
Control Delay, s/veh	8.6	3.4	3.9	6.3	6.3
LOS	A	A	A	A	A
95th %tile Queue, veh	2	0	1	0	2

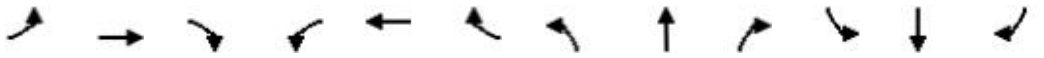
Lane Group	EBL	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR	Ø4
Lane Configurations											
Traffic Volume (vph)	12	107	240	0	492	1218	190	60	1349	53	
Future Volume (vph)	12	107	240	0	492	1218	190	60	1349	53	
Turn Type	Prot	Free	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	
Protected Phases	7		3	8	5	2		1	6		4
Permitted 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

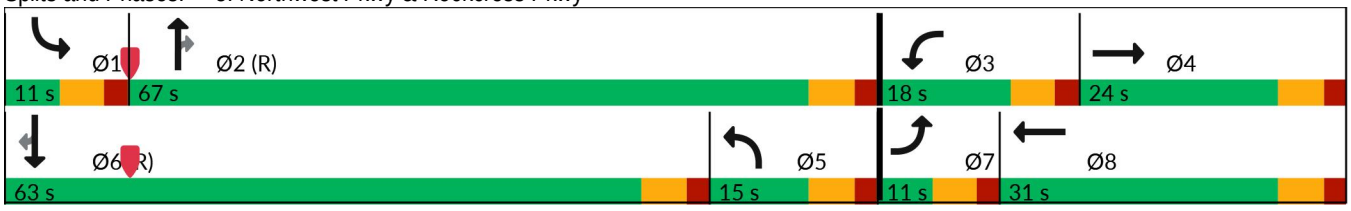
Unsignalized Delay for [EBR, SBR] is excluded from calculations of the approach delay and intersection delay.

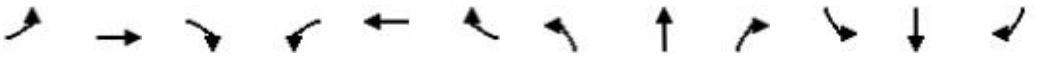
Lane Group	EBL	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR	Ø4
Lane Configurations											
Traffic Volume (vph)	46	446	230	0	175	1413	180	25	1309	19	
Future Volume (vph)	46	446	230	0	175	1413	180	25	1309	19	
Turn Type	Prot	Free	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	
Protected Phases	7		3	8	5	2		1	6		4
Permitted 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

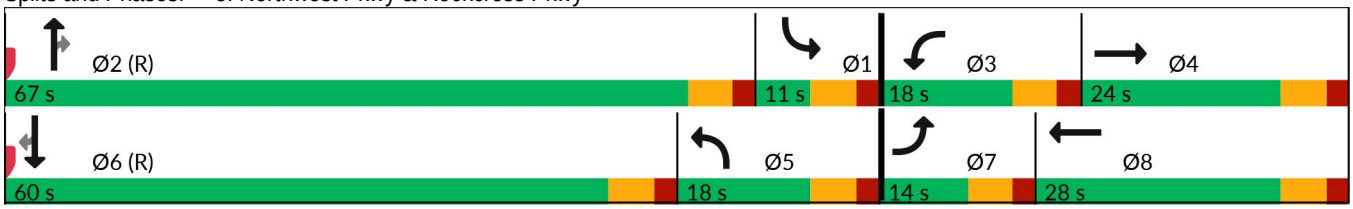
Unsignalized Delay for [EBR, SBR] is excluded from calculations of the approach delay and intersection delay.

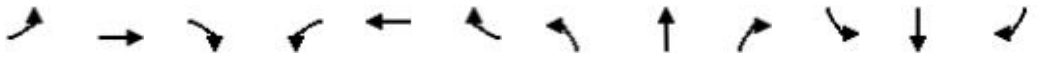
Lane Group	EBL	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR	Ø4
Lane Configurations											
Traffic Volume (vph)	30	168	240	0	669	1218	190	60	1349	124	
Future Volume (vph)	30	168	240	0	669	1218	190	60	1349	124	
Turn Type	Prot	Free	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	
Protected Phases	7		3	8	5	2		1	6		4
Permitted 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	18.0	67.0	67.0	11.0	60.0	60.0	24.0
Total Split (%)	11.7%		15.0%	23.3%	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	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: 66 (55%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 130
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)	30	0	168	240	0	60	669	1218	190	60	1349	124
Future Volume (veh/h)	30	0	168	240	0	60	669	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	727	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	910	1806	806	709	1599	
Arrive On Green	0.03	0.00	0.00	0.09	0.00	0.06	0.26	0.51	0.51	0.41	0.90	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	727	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	23.5	35.0	5.4	1.4	28.3	0.0
Cycle Q Clear(g_c), s	1.1	0.0	0.0	8.9	0.0	4.8	23.5	35.0	5.4	1.4	28.3	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	96	2		317	104	93	910	1806	806	709	1599	
V/C Ratio(X)	0.34	0.00		0.82	0.00	0.70	0.80	0.73	0.26	0.09	0.92	
Avail Cap(c_a), veh/h	230	281		346	326	291	910	1806	806	709	1599	
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	41.2	23.1	6.2	28.5	4.7	0.0
Incr Delay (d2), s/veh	2.1	0.0	0.0	13.9	0.0	9.0	5.1	2.7	0.8	0.0	8.1	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	0.5	0.0	0.0	4.5	0.0	2.2	10.6	14.9	3.2	0.6	4.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	59.4	0.0	0.0	67.4	0.0	64.5	46.3	25.8	7.0	28.6	12.8	0.0
LnGrp LOS	E			E		E	D	C	A	C	B	
Approach Vol, veh/h		33			326			2258			1531	
Approach Delay, s/veh		59.4			66.8			30.7			13.4	
Approach LOS		E			E			C			B	

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	37.6	60.0	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	12.0	54.0	8.0	22.0
Max Q Clear Time (g_c+I1), s	3.4	37.0	10.9	0.0	25.5	30.3	3.1	6.8
Green Ext Time (p_c), s	0.0	12.1	0.1	0.0	0.0	12.6	0.0	0.2

Intersection Summary	
HCM 7th Control Delay, s/veh	27.4
HCM 7th LOS	C

Notes

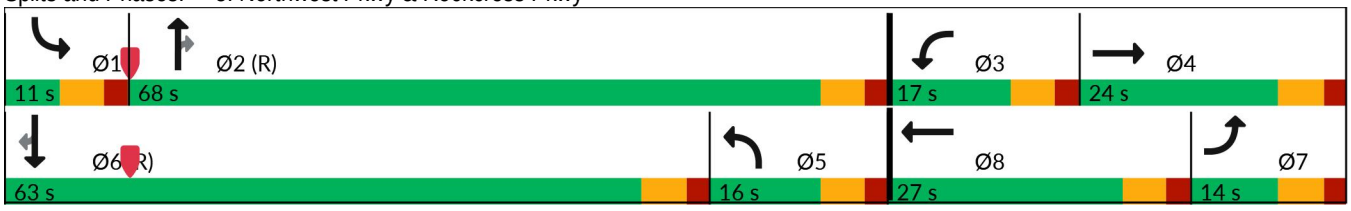
Unsignalized Delay for [EBR, SBR] is excluded from calculations of the approach delay and intersection delay.

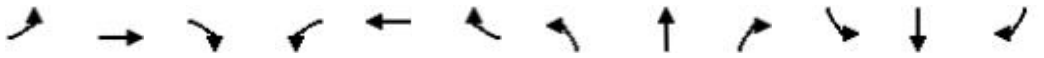
Lane Group	EBL	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR	Ø4
Lane Configurations											
Traffic Volume (vph)	103	637	230	0	263	1413	180	25	1309	54	
Future Volume (vph)	103	637	230	0	263	1413	180	25	1309	54	
Turn Type	Prot	Free	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	
Protected Phases	7		3	8	5	2		1	6		4
Permitted 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 Pkwy





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	103	0	637	230	0	55	263	1413	180	25	1309	54
Future Volume (veh/h)	103	0	637	230	0	55	263	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	286	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	286	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	8.4	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	8.4	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	0.37	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	39.6	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	3.6	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	39.9	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			2018			1450	
Approach Delay, s/veh		61.0			68.2			16.1			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	10.4	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

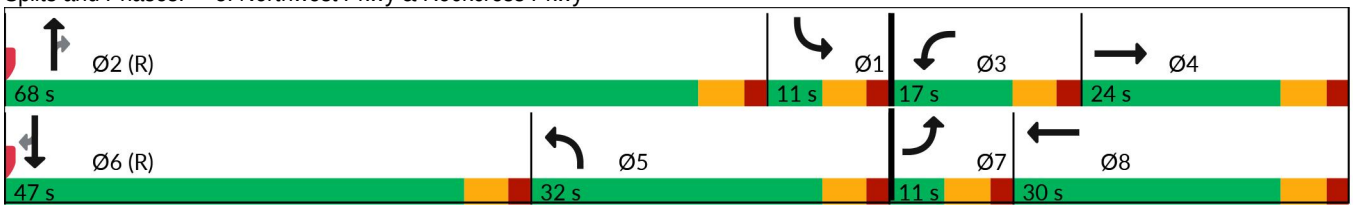
Unsignalized Delay for [EBR, SBR] is excluded from calculations of the approach delay and intersection delay.

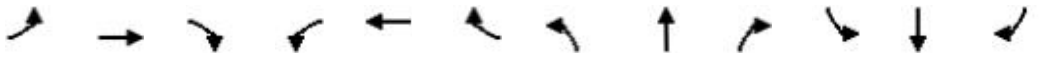
Lane Group	EBL	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR	Ø4
Lane Configurations											
Traffic Volume (vph)	14	127	255	0	615	1298	205	65	1449	63	
Future Volume (vph)	14	127	255	0	615	1298	205	65	1449	63	
Turn Type	Prot	Free	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	
Protected Phases	7		3	8	5	2		1	6		4
Permitted 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

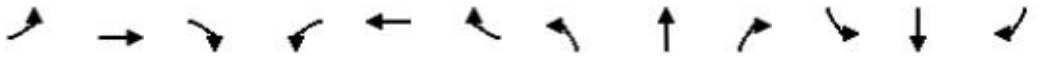
Unsignalized Delay for [EBR, SBR] is excluded from calculations of the approach delay and intersection delay.

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

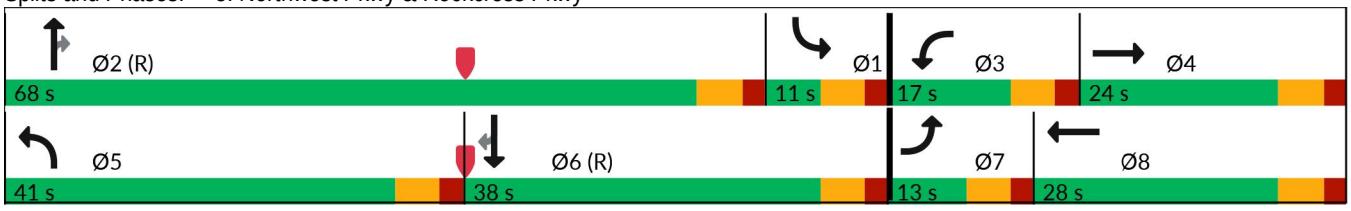
Unsignalized Delay for [EBR, SBR] is excluded from calculations of the approach delay and intersection delay.

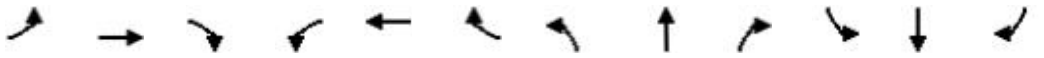
Lane Group	EBL	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR	Ø4
Lane Configurations											
Traffic Volume (vph)	43	224	255	0	904	1298	205	65	1449	179	
Future Volume (vph)	43	224	255	0	904	1298	205	65	1449	179	
Turn Type	Prot	Free	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	
Protected Phases	7		3	8	5	2		1	6		4
Permitted 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 Pkwy





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	43	0	224	255	0	65	904	1298	205	65	1449	179
Future Volume (veh/h)	43	0	224	255	0	65	904	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	983	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	1008	1836	819	649	2107	
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	983	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	33.8	38.2	5.7	1.6	16.9	0.0
Cycle Q Clear(g_c), s	1.6	0.0	0.0	9.5	0.0	5.3	33.8	38.2	5.7	1.6	16.9	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	114	7		317	111	99	1008	1836	819	649	2107	
V/C Ratio(X)	0.41	0.00		0.87	0.00	0.71	0.98	0.77	0.27	0.11	0.75	
Avail Cap(c_a), veh/h	202	281		317	326	291	1008	1836	819	649	2107	
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	42.1	23.2	5.9	30.9	7.6	0.0
Incr Delay (d2), s/veh	2.4	0.0	0.0	22.7	0.0	9.1	22.4	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	17.4	16.3	3.4	0.7	3.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	59.2	0.0	0.0	76.5	0.0	64.3	64.5	26.4	6.8	31.0	9.5	0.0
LnGrp LOS	E			E		E	E	C	A	C	A	
Approach Vol, veh/h		47			348			2617			1646	
Approach Delay, s/veh		59.2			74.0			39.0			10.5	
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	40.2	11.5	0.0	35.8	18.9	3.6	7.3
Green Ext Time (p_c), s	0.0	12.3	0.0	0.0	0.0	8.8	0.0	0.2

Intersection Summary	
HCM 7th Control Delay, s/veh	31.8
HCM 7th LOS	C

Notes

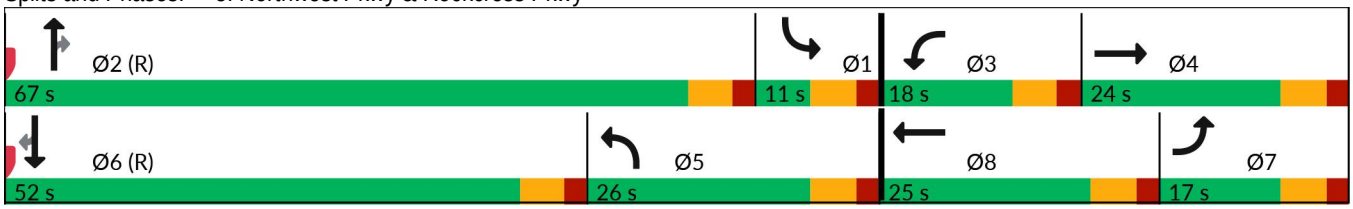
Unsignalized Delay for [EBR, SBR] is excluded from calculations of the approach delay and intersection delay.

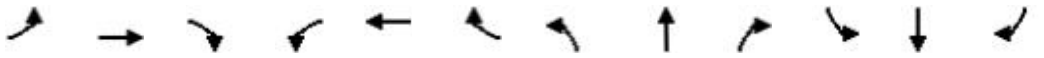
Lane Group	EBL	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR	Ø4
Lane Configurations											
Traffic Volume (vph)	158	903	245	0	351	1523	195	30	1394	82	
Future Volume (vph)	158	903	245	0	351	1523	195	30	1394	82	
Turn Type	Prot	Free	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	
Protected Phases	7		3	8	5	2		1	6		4
Permitted 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 Pkwy





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	158	0	903	245	0	60	351	1523	195	30	1394	82
Future Volume (veh/h)	158	0	903	245	0	60	351	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	382	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	382	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	10.6	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	10.6	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	0.38	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)	0.88	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	33.9	27.1	6.2	33.6	11.0	0.0
Incr Delay (d2), s/veh	5.5	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	4.5	23.1	3.3	0.3	4.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	60.5	0.0	0.0	67.9	0.0	64.7	34.1	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			2249			1548	
Approach Delay, s/veh		60.5			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	12.6	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

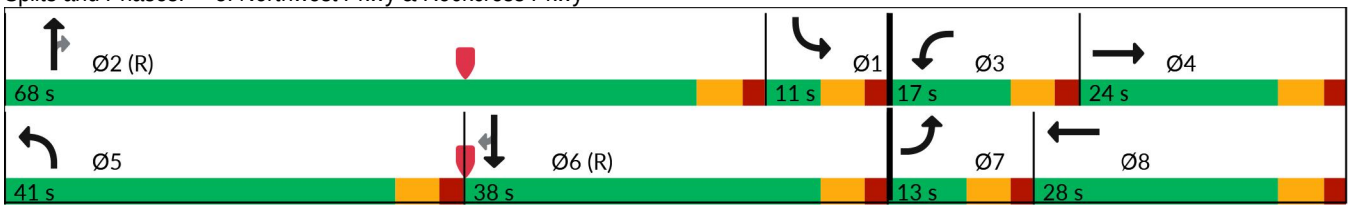
Unsignalized Delay for [EBR, SBR] is excluded from calculations of the approach delay and intersection delay.

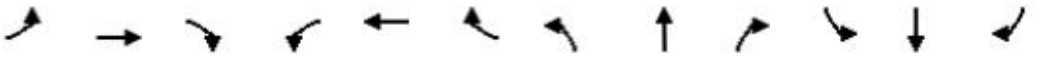
Lane Group	EBL	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR	Ø4
Lane Configurations											
Traffic Volume (vph)	45	230	255	0	920	1335	205	65	1490	185	
Future Volume (vph)	45	230	255	0	920	1335	205	65	1490	185	
Turn Type	Prot	Free	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	
Protected Phases	7		3	8	5	2		1	6		4
Permitted 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: 130
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)	45	0	230	255	0	65	920	1335	205	65	1490	185
Future Volume (veh/h)	45	0	230	255	0	65	920	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	1000	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	1000	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	34.6	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	34.6	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	0.99	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	42.4	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	26.4	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	18.3	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	68.7	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			2674			1691	
Approach Delay, s/veh		59.3			74.0			41.0			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	36.6	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	32.9
HCM 7th LOS	C

Notes

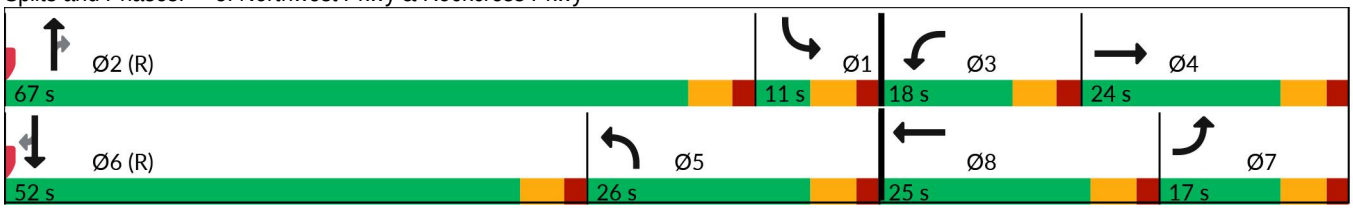
Unsignalized Delay for [EBR, SBR] is excluded from calculations of the approach delay and intersection delay.

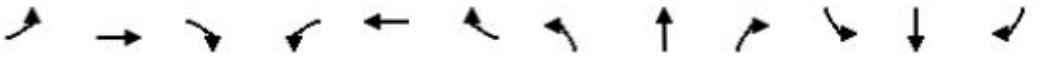
Lane Group	EBL	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR	Ø4
Lane Configurations											
Traffic Volume (vph)	160	920	245	0	360	1565	195	30	1430	85	
Future Volume (vph)	160	920	245	0	360	1565	195	30	1430	85	
Turn Type	Prot	Free	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	
Protected Phases	7		3	8	5	2		1	6		4
Permitted 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 Pkwy





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	160	0	920	245	0	60	360	1565	195	30	1430	85
Future Volume (veh/h)	160	0	920	245	0	60	360	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	391	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	391	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	10.9	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	10.9	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	0.39	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)	0.87	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	34.0	27.8	6.2	33.7	11.2	0.0
Incr Delay (d2), s/veh	5.6	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	4.6	24.8	3.3	0.3	4.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	60.6	0.0	0.0	67.9	0.0	64.7	34.3	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			2304			1587	
Approach Delay, s/veh		60.6			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	12.9	23.8	7.9	6.8
Green Ext Time (p_c), s	0.0	4.2	0.1	0.0	0.9	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	4.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	16	2	25	22	1	21	96	76	76	68	118	60
Future Vol, veh/h	16	2	25	22	1	21	96	76	76	68	118	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	24	1	23	104	83	83	74	128	65

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	601	683	161	610	674	124	193	0	0	165	0	0
Stage 1	309	309	-	333	333	-	-	-	-	-	-	-
Stage 2	292	374	-	277	341	-	-	-	-	-	-	-
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	412	372	884	407	376	927	1380	-	-	1413	-	-
Stage 1	701	660	-	681	644	-	-	-	-	-	-	-
Stage 2	716	618	-	729	638	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	351	326	884	343	330	927	1380	-	-	1413	-	-
Mov Cap-2 Maneuver	351	326	-	343	330	-	-	-	-	-	-	-
Stage 1	665	625	-	629	595	-	-	-	-	-	-	-
Stage 2	644	571	-	668	605	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	12.33	13.14	3.03	2.13
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1380	-	-	538	490	1413	-	-
HCM Lane V/C Ratio	0.076	-	-	0.087	0.098	0.052	-	-
HCM Control Delay (s/veh)	7.8	-	-	12.3	13.1	7.7	-	-
HCM Lane LOS	A	-	-	B	B	A	-	-
HCM 95th %tile Q(veh)	0.2	-	-	0.3	0.3	0.2	-	-

Intersection	
Int Delay, s/veh	6.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	61	1	97	84	1	70	31	181	32	32	75	19
Future Vol, veh/h	61	1	97	84	1	70	31	181	32	32	75	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	91	1	76	34	197	35	35	82	21

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	426	460	92	433	453	214	102	0	0	232	0	0
Stage 1	161	161	-	282	282	-	-	-	-	-	-	-
Stage 2	265	299	-	152	172	-	-	-	-	-	-	-
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	539	498	966	533	502	826	1490	-	-	1336	-	-
Stage 1	841	764	-	725	678	-	-	-	-	-	-	-
Stage 2	741	666	-	851	757	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	465	474	966	451	478	826	1490	-	-	1336	-	-
Mov Cap-2 Maneuver	465	474	-	451	478	-	-	-	-	-	-	-
Stage 1	819	745	-	709	663	-	-	-	-	-	-	-
Stage 2	656	651	-	737	737	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	12.09	14	0.95	1.97
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1490	-	-	680	567	1336	-	-
HCM Lane V/C Ratio	0.023	-	-	0.254	0.297	0.026	-	-
HCM Control Delay (s/veh)	7.5	-	-	12.1	14	7.8	-	-
HCM Lane LOS	A	-	-	B	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	1	1.2	0.1	-	-

Intersection	
Int Delay, s/veh	4.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	16	2	25	25	1	32	96	87	85	95	147	60
Future Vol, veh/h	16	2	25	25	1	32	96	87	85	95	147	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	27	1	35	104	95	92	103	160	65

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	703	795	192	717	781	141	225	0	0	187	0	0
Stage 1	399	399	-	349	349	-	-	-	-	-	-	-
Stage 2	304	396	-	367	432	-	-	-	-	-	-	-
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	352	320	849	345	326	907	1344	-	-	1387	-	-
Stage 1	627	602	-	667	633	-	-	-	-	-	-	-
Stage 2	706	604	-	652	583	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	288	274	849	283	279	907	1344	-	-	1387	-	-
Mov Cap-2 Maneuver	288	274	-	283	279	-	-	-	-	-	-	-
Stage 1	580	557	-	615	584	-	-	-	-	-	-	-
Stage 2	625	557	-	582	539	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	13.58	14.16	2.83	2.45
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1344	-	-	466	456	1387	-	-
HCM Lane V/C Ratio	0.078	-	-	0.1	0.138	0.074	-	-
HCM Control Delay (s/veh)	7.9	-	-	13.6	14.2	7.8	-	-
HCM Lane LOS	A	-	-	B	B	A	-	-
HCM 95th %tile Q(veh)	0.3	-	-	0.3	0.5	0.2	-	-

Intersection	
Int Delay, s/veh	7.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	61	1	97	96	1	113	31	224	37	47	92	19
Future Vol, veh/h	61	1	97	96	1	113	31	224	37	47	92	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	104	1	123	34	243	40	51	100	21

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	524	564	110	534	554	264	121	0	0	284	0	0
Stage 1	213	213	-	331	331	-	-	-	-	-	-	-
Stage 2	311	351	-	203	223	-	-	-	-	-	-	-
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	464	435	943	457	441	775	1467	-	-	1279	-	-
Stage 1	790	727	-	682	645	-	-	-	-	-	-	-
Stage 2	699	632	-	799	719	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	365	408	943	380	413	775	1467	-	-	1279	-	-
Mov Cap-2 Maneuver	365	408	-	380	413	-	-	-	-	-	-	-
Stage 1	758	698	-	667	630	-	-	-	-	-	-	-
Stage 2	574	618	-	680	690	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	13.74	17.08	0.8	2.36
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1467	-	-	584	524	1279	-	-
HCM Lane V/C Ratio	0.023	-	-	0.296	0.436	0.04	-	-
HCM Control Delay (s/veh)	7.5	-	-	13.7	17.1	7.9	-	-
HCM Lane LOS	A	-	-	B	C	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	1.2	2.2	0.1	-	-

Intersection	
Int Delay, s/veh	2.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	12	2	19	10	1	12	72	224	28	28	89	48
Future Vol, veh/h	12	2	19	10	1	12	72	224	28	28	89	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	11	1	13	78	243	30	30	97	52

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	584	614	123	574	625	259	149	0	0	274	0	0
Stage 1	184	184	-	415	415	-	-	-	-	-	-	-
Stage 2	401	430	-	159	210	-	-	-	-	-	-	-
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	423	407	928	430	401	780	1433	-	-	1289	-	-
Stage 1	818	748	-	615	592	-	-	-	-	-	-	-
Stage 2	626	583	-	843	729	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	383	376	928	386	370	780	1433	-	-	1289	-	-
Mov Cap-2 Maneuver	383	376	-	386	370	-	-	-	-	-	-	-
Stage 1	799	730	-	581	560	-	-	-	-	-	-	-
Stage 2	581	551	-	803	711	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	11.65	12.23	1.7	1.33
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1433	-	-	578	523	1289	-	-
HCM Lane V/C Ratio	0.055	-	-	0.062	0.048	0.024	-	-
HCM Control Delay (s/veh)	7.7	-	-	11.6	12.2	7.9	-	-
HCM Lane LOS	A	-	-	B	B	A	-	-
HCM 95th %tile Q(veh)	0.2	-	-	0.2	0.2	0.1	-	-

Intersection	
Int Delay, s/veh	4.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	49	1	73	30	2	38	23	157	14	14	226	16
Future Vol, veh/h	49	1	73	30	2	38	23	157	14	14	226	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	33	2	41	25	171	15	15	246	17

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	507	521	254	505	522	178	263	0	0	186	0	0
Stage 1	285	285	-	228	228	-	-	-	-	-	-	-
Stage 2	222	236	-	277	293	-	-	-	-	-	-	-
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	476	460	784	478	459	865	1301	-	-	1389	-	-
Stage 1	722	676	-	774	715	-	-	-	-	-	-	-
Stage 2	781	710	-	730	670	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	438	446	784	415	446	865	1301	-	-	1389	-	-
Mov Cap-2 Maneuver	438	446	-	415	446	-	-	-	-	-	-	-
Stage 1	714	668	-	760	701	-	-	-	-	-	-	-
Stage 2	727	696	-	648	663	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	12.82	12.14	0.93	0.42
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1301	-	-	594	580	1389	-	-
HCM Lane V/C Ratio	0.019	-	-	0.225	0.131	0.011	-	-
HCM Control Delay (s/veh)	7.8	-	-	12.8	12.1	7.6	-	-
HCM Lane LOS	A	-	-	B	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.9	0.4	0	-	-

Intersection	
Int Delay, s/veh	2.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	12	2	19	16	1	19	72	237	46	46	103	48
Future Vol, veh/h	12	2	19	16	1	19	72	237	46	46	103	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	17	1	21	78	258	50	50	112	52

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	653	702	138	652	703	283	164	0	0	308	0	0
Stage 1	238	238	-	439	439	-	-	-	-	-	-	-
Stage 2	415	464	-	213	264	-	-	-	-	-	-	-
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	381	362	910	381	362	756	1414	-	-	1253	-	-
Stage 1	765	708	-	597	578	-	-	-	-	-	-	-
Stage 2	615	563	-	789	690	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	335	329	910	336	328	756	1414	-	-	1253	-	-
Mov Cap-2 Maneuver	335	329	-	336	328	-	-	-	-	-	-	-
Stage 1	735	680	-	564	546	-	-	-	-	-	-	-
Stage 2	564	532	-	738	662	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	12.35	13.26	1.56	1.87
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1414	-	-	525	475	1253	-	-
HCM Lane V/C Ratio	0.055	-	-	0.068	0.082	0.04	-	-
HCM Control Delay (s/veh)	7.7	-	-	12.4	13.3	8	-	-
HCM Lane LOS	A	-	-	B	B	A	-	-
HCM 95th %tile Q(veh)	0.2	-	-	0.2	0.3	0.1	-	-

Intersection	
Int Delay, s/veh	5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	49	1	73	53	2	67	23	176	24	24	244	16
Future Vol, veh/h	49	1	73	53	2	67	23	176	24	24	244	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	58	2	73	25	191	26	26	265	17

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	568	593	274	572	589	204	283	0	0	217	0	0
Stage 1	326	326	-	254	254	-	-	-	-	-	-	-
Stage 2	242	267	-	318	335	-	-	-	-	-	-	-
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	433	418	765	431	421	836	1280	-	-	1352	-	-
Stage 1	686	648	-	750	697	-	-	-	-	-	-	-
Stage 2	761	688	-	693	643	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	378	402	765	370	404	836	1280	-	-	1352	-	-
Mov Cap-2 Maneuver	378	402	-	370	404	-	-	-	-	-	-	-
Stage 1	673	636	-	735	683	-	-	-	-	-	-	-
Stage 2	679	674	-	608	630	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	13.83	13.94	0.81	0.65
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1280	-	-	541	535	1352	-	-
HCM Lane V/C Ratio	0.02	-	-	0.247	0.248	0.019	-	-
HCM Control Delay (s/veh)	7.9	-	-	13.8	13.9	7.7	-	-
HCM Lane LOS	A	-	-	B	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	1	1	0.1	-	-

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	28	131	11	38	505	212	3	0	8	67	0	10
Future Vol, veh/h	28	131	11	38	505	212	3	0	8	67	0	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	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	30	142	12	41	549	230	3	0	9	73	0	11

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	779	0	0	154	0	0	566	1071	77	879	962	390
Stage 1	-	-	-	-	-	-	209	209	-	747	747	-
Stage 2	-	-	-	-	-	-	357	862	-	132	215	-
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	952	-	-	1424	-	-	*615	275	968	344	325	907
Stage 1	-	-	-	-	-	-	*773	728	-	498	507	-
Stage 2	-	-	-	-	-	-	*900	443	-	858	723	-
Platoon blocked, %	0	-	-		-	-	0	0		0	0	0
Mov Cap-1 Maneuver	952	-	-	1424	-	-	*571	259	968	320	305	907
Mov Cap-2 Maneuver	-	-	-	-	-	-	*571	259	-	320	305	-
Stage 1	-	-	-	-	-	-	*749	704	-	483	492	-
Stage 2	-	-	-	-	-	-	*864	430	-	823	700	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	1.47	0.38	9.49	18.15
HCM LOS			A	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	814	952	-	-	1424	-	-	320	907
HCM Lane V/C Ratio	0.015	0.032	-	-	0.029	-	-	0.227	0.012
HCM Control Delay (s/veh)	9.5	8.9	-	-	7.6	-	-	19.5	9
HCM Lane LOS	A	A	-	-	A	-	-	C	A
HCM 95th %tile Q(veh)	0	0.1	-	-	0.1	-	-	0.9	0

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

Intersection	
Int Delay, s/veh	5.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	14	530	6	12	223	106	14	0	39	210	0	30
Future Vol, veh/h	14	530	6	12	223	106	14	0	39	210	0	30
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	576	7	13	242	115	15	0	42	228	0	33

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	358	0	0	583	0	0	757	993	291	645	939	179
Stage 1	-	-	-	-	-	-	610	610	-	326	326	-
Stage 2	-	-	-	-	-	-	147	384	-	318	613	-
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	1288	-	-	988	-	-	*347	269	705	422	291	999
Stage 1	-	-	-	-	-	-	*448	483	-	767	713	-
Stage 2	-	-	-	-	-	-	*968	671	-	667	481	-
Platoon blocked, %	0	-	-		-	-	0	0		0	0	0
Mov Cap-1 Maneuver	1288	-	-	988	-	-	*327	263	705	387	284	999
Mov Cap-2 Maneuver	-	-	-	-	-	-	*327	263	-	387	284	-
Stage 1	-	-	-	-	-	-	*443	477	-	757	704	-
Stage 2	-	-	-	-	-	-	*924	662	-	620	476	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0.2	0.31	12.46	24.58
HCM LOS			B	C

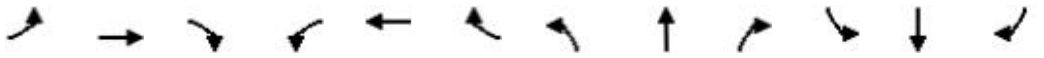
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	540	1288	-	-	988	-	-	387	999
HCM Lane V/C Ratio	0.107	0.012	-	-	0.013	-	-	0.59	0.033
HCM Control Delay (s/veh)	12.5	7.8	-	-	8.7	-	-	26.8	8.7
HCM Lane LOS	B	A	-	-	A	-	-	D	A
HCM 95th %tile Q(veh)	0.4	0	-	-	0	-	-	3.6	0.1

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

Lane Group	EBL	EBT	WBL	WBT	NBT	SBL	SBT
Lane Configurations							
Traffic Volume (vph)	46	160	38	661	0	107	0
Future Volume (vph)	46	160	38	661	0	107	0
Turn Type	pm+pt	NA	pm+pt	NA	NA	Split	NA
Protected Phases	5	2	1	6	4	8	8
Permitted Phases	2		6				
Detector Phase	5	2	1	6	4	8	8
Switch Phase							
Minimum Initial (s)	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
Total Split (s)	11.0	61.0	11.0	61.0	24.0	24.0	24.0
Total Split (%)	9.2%	50.8%	9.2%	50.8%	20.0%	20.0%	20.0%
Yellow Time (s)	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
Lost Time Adjust (s)	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
Lead/Lag	Lead	Lag	Lead	Lag			
Lead-Lag Optimize?	Yes	Yes	Yes	Yes			
Recall Mode	None	C-Max	None	C-Max	Max	Max	Max

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 104 (87%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 85
Control Type: Actuated-Coordinated

Splits and Phases: 8: Rockcress Pkwy & Rockcress Access



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	46	160	11	38	661	347	3	0	8	107	0	16
Future Volume (veh/h)	46	160	11	38	661	347	3	0	8	107	0	16
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	174	12	41	718	377	3	0	9	116	0	17
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	330	1583	108	642	1050	551	61	0	183	518	0	238
Arrive On Green	0.03	0.47	0.47	0.06	0.93	0.93	0.15	0.00	0.15	0.15	0.00	0.15
Sat Flow, veh/h	1781	3375	231	1781	2253	1181	407	0	1222	3456	0	1585
Grp Volume(v), veh/h	50	91	95	41	566	529	12	0	0	116	0	17
Grp Sat Flow(s),veh/h/ln	1781	1777	1829	1781	1777	1658	1630	0	0	1728	0	1585
Q Serve(g_s), s	1.7	3.4	3.5	1.4	7.1	7.2	0.8	0.0	0.0	3.5	0.0	1.1
Cycle Q Clear(g_c), s	1.7	3.4	3.5	1.4	7.1	7.2	0.8	0.0	0.0	3.5	0.0	1.1
Prop In Lane	1.00		0.13	1.00		0.71	0.25		0.75	1.00		1.00
Lane Grp Cap(c), veh/h	330	833	858	642	828	773	244	0	0	518	0	238
V/C Ratio(X)	0.15	0.11	0.11	0.06	0.68	0.68	0.05	0.00	0.00	0.22	0.00	0.07
Avail Cap(c_a), veh/h	344	833	858	661	828	773	244	0	0	518	0	238
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	0.64	0.64	0.64	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	15.7	17.8	17.8	15.1	2.4	2.4	43.7	0.0	0.0	44.9	0.0	43.8
Incr Delay (d2), s/veh	0.2	0.3	0.3	0.0	2.9	3.2	0.4	0.0	0.0	1.0	0.0	0.6
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	1.5	1.5	0.6	1.8	1.7	0.3	0.0	0.0	1.6	0.0	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	15.9	18.1	18.1	15.1	5.3	5.6	44.1	0.0	0.0	45.9	0.0	44.4
LnGrp LOS	B	B	B	B	A	A	D			D		D
Approach Vol, veh/h		236			1136			12			133	
Approach Delay, s/veh		17.6			5.8			44.1			45.7	
Approach LOS		B			A			D			D	

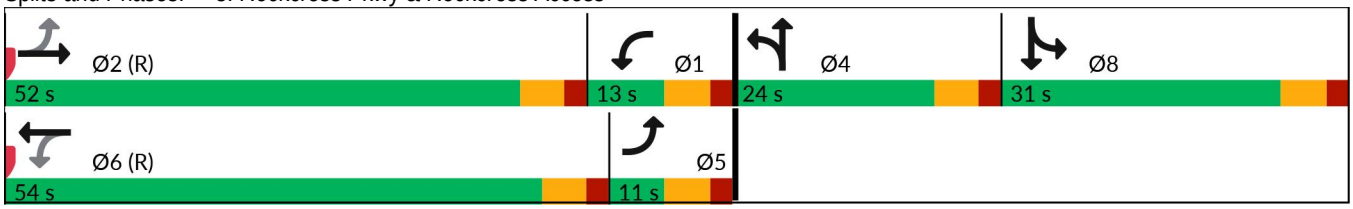
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.7	62.3		24.0	10.1	61.9		24.0				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	5.0	55.0		18.0	5.0	55.0		18.0				
Max Q Clear Time (g_c+I1), s	3.4	5.5		2.8	3.7	9.2		5.5				
Green Ext Time (p_c), s	0.0	1.1		0.0	0.0	9.9		0.3				

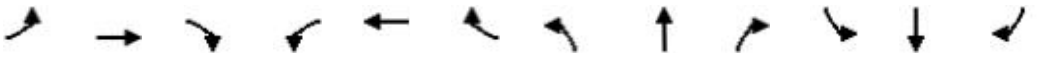
Intersection Summary		
HCM 7th Control Delay, s/veh	11.4	
HCM 7th LOS	B	

Lane Group	EBL	EBT	WBL	WBT	NBT	SBL	SBT
Lane Configurations							
Traffic Volume (vph)	24	695	12	261	0	366	0
Future Volume (vph)	24	695	12	261	0	366	0
Turn Type	pm+pt	NA	pm+pt	NA	NA	Split	NA
Protected Phases	5	2	1	6	4	8	8
Permitted Phases	2		6				
Detector Phase	5	2	1	6	4	8	8
Switch Phase							
Minimum Initial (s)	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
Total Split (s)	11.0	52.0	13.0	54.0	24.0	31.0	31.0
Total Split (%)	9.2%	43.3%	10.8%	45.0%	20.0%	25.8%	25.8%
Yellow Time (s)	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
Lost Time Adjust (s)	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
Lead/Lag	Lag	Lead	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes	Yes			
Recall Mode	None	C-Max	None	C-Max	None	None	None

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 Pkwy & Rockcress Access





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	24	695	6	12	261	182	14	0	39	366	0	53
Future Volume (veh/h)	24	695	6	12	261	182	14	0	39	366	0	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	26	755	7	13	284	198	15	0	42	398	0	58
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	758	1383	13	629	811	549	19	0	54	482	0	221
Arrive On Green	0.22	0.38	0.38	0.47	0.80	0.80	0.04	0.00	0.04	0.14	0.00	0.14
Sat Flow, veh/h	1781	3608	33	1781	2028	1372	430	0	1203	3456	0	1585
Grp Volume(v), veh/h	26	372	390	13	248	234	57	0	0	398	0	58
Grp Sat Flow(s),veh/h/ln	1781	1777	1864	1781	1777	1623	1632	0	0	1728	0	1585
Q Serve(g_s), s	0.0	19.6	19.6	0.0	4.6	4.9	4.1	0.0	0.0	13.4	0.0	3.9
Cycle Q Clear(g_c), s	0.0	19.6	19.6	0.0	4.6	4.9	4.1	0.0	0.0	13.4	0.0	3.9
Prop In Lane	1.00		0.02	1.00		0.85	0.26		0.74	1.00		1.00
Lane Grp Cap(c), veh/h	758	681	715	629	711	649	73	0	0	482	0	221
V/C Ratio(X)	0.03	0.55	0.55	0.02	0.35	0.36	0.78	0.00	0.00	0.83	0.00	0.26
Avail Cap(c_a), veh/h	758	681	715	629	711	649	245	0	0	720	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	0.80	0.80	0.80	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	12.0	28.9	28.9	12.7	7.7	7.7	56.7	0.0	0.0	50.2	0.0	46.1
Incr Delay (d2), s/veh	0.0	3.1	3.0	0.0	1.1	1.2	16.4	0.0	0.0	5.0	0.0	0.6
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	8.9	9.3	0.1	1.7	1.6	2.0	0.0	0.0	6.1	0.0	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	12.0	32.0	31.8	12.7	8.7	8.9	73.2	0.0	0.0	55.2	0.0	46.7
LnGrp LOS	B	C	C	B	A	A	E			E		D
Approach Vol, veh/h		788			495			57			456	
Approach Delay, s/veh		31.3			8.9			73.2			54.1	
Approach LOS		C			A			E			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	33.9	52.0		11.4	31.9	54.0		22.7				
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	6.9		15.4				
Green Ext Time (p_c), s	0.0	5.1		0.1	0.0	3.4		1.3				

Intersection Summary												
HCM 7th Control Delay, s/veh			32.2									
HCM 7th LOS			C									

Appendix E: Queue Analysis Worksheets

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	426	55	147	1196	949	577
v/c Ratio	0.74	0.17	0.35	0.46	0.43	0.48
Control Delay (s/veh)	55.5	11.6	3.7	1.1	13.8	2.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	55.5	11.6	3.7	1.1	13.8	2.5
Queue Length 50th (ft)	163	0	4	16	192	0
Queue Length 95th (ft)	209	35	m6	22	281	50
Internal Link Dist (ft)	1226			875	483	
Turn Bay Length (ft)	150	150	250			250
Base Capacity (vph)	801	411	486	2592	2164	1192
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	0.53	0.13	0.30	0.46	0.44	0.48

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)	527	136	78	957	1249	261
v/c Ratio	0.77	0.32	0.26	0.38	0.57	0.24
Control Delay (s/veh)	53.2	8.2	3.8	0.8	16.4	2.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	53.2	8.2	3.8	0.8	16.4	2.1
Queue Length 50th (ft)	201	0	1	8	301	0
Queue Length 95th (ft)	247	50	m4	12	417	38
Internal Link Dist (ft)	1226			875	483	
Turn Bay Length (ft)	150	150	250			250
Base Capacity (vph)	858	497	298	2480	2174	1073
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	0.61	0.27	0.26	0.39	0.57	0.24

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)	472	67	175	1255	1010	676
v/c Ratio	0.75	0.19	0.47	0.34	0.51	0.57
Control Delay (s/veh)	54.4	10.3	56.8	1.1	17.9	3.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	54.4	10.3	56.8	1.1	17.9	3.2
Queue Length 50th (ft)	180	0	73	14	241	0
Queue Length 95th (ft)	225	37	m101	19	334	57
Internal Link Dist (ft)	1226			875	483	
Turn Bay Length (ft)	150	500	400			250
Base Capacity (vph)	801	420	371	3650	1980	1183
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	0.59	0.16	0.47	0.34	0.51	0.57

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)	647	167	92	1011	1321	302
v/c Ratio	0.81	0.35	0.46	0.29	0.66	0.29
Control Delay (s/veh)	51.9	10.4	47.1	0.8	21.4	2.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	51.9	10.4	47.1	0.8	21.4	2.5
Queue Length 50th (ft)	243	15	39	8	366	2
Queue Length 95th (ft)	296	69	m63	10	485	45
Internal Link Dist (ft)	1226			875	483	
Turn Bay Length (ft)	150	500	400			250
Base Capacity (vph)	944	538	200	3394	1978	1015
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	0.69	0.31	0.46	0.30	0.67	0.30

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)	484	71	179	1288	1038	696
v/c Ratio	0.76	0.20	0.48	0.35	0.52	0.58
Control Delay (s/veh)	54.3	10.0	56.7	1.2	18.5	3.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	54.3	10.0	56.7	1.2	18.5	3.3
Queue Length 50th (ft)	185	0	75	14	252	0
Queue Length 95th (ft)	230	38	m101	20	349	59
Internal Link Dist (ft)	1226			875	483	
Turn Bay Length (ft)	150	500	400			250
Base Capacity (vph)	801	423	371	3635	1969	1189
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	0.17	0.48	0.35	0.53	0.59

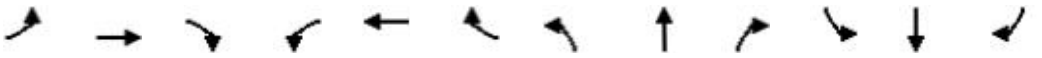
Intersection Summary

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

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	663	174	98	1038	1353	310
v/c Ratio	0.81	0.36	0.49	0.30	0.68	0.30
Control Delay (s/veh)	51.6	11.4	47.7	0.8	22.2	2.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	51.6	11.4	47.7	0.8	22.2	2.8
Queue Length 50th (ft)	250	21	41	8	385	4
Queue Length 95th (ft)	305	77	m65	10	504	49
Internal Link Dist (ft)	1226			875	483	
Turn Bay Length (ft)	150	500	400			250
Base Capacity (vph)	944	536	200	3369	1961	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	0.70	0.32	0.49	0.31	0.69	0.31

Intersection Summary

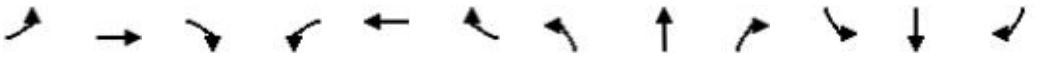
m Volume for 95th percentile queue is metered by upstream signal.



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	0.34	0.28	0.50	0.40	0.57	0.03	0.87	0.20	0.01	0.05	0.66	0.11
Control Delay (s/veh)	44.8	35.9	7.6	64.6	57.2	0.0	41.4	4.3	0.0	13.8	38.8	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)	44.8	35.9	7.6	64.6	57.2	0.0	41.4	4.3	0.0	13.8	38.8	0.1
Queue Length 50th (ft)	28	42	247	23	83	0	361	22	0	5	292	0
Queue Length 95th (ft)	44	44	440	47	121	0	446	28	m0	11	379	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

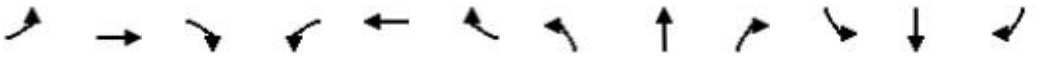
m Volume for 95th percentile queue is metered by upstream signal.



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	0.17	0.52	0.05	0.79	0.41	0.03	0.07	0.42	0.05
Control Delay (s/veh)	44.1	32.1	10.5	58.3	57.3	0.0	35.2	6.2	0.0	15.3	35.2	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	44.1	32.1	10.5	58.3	57.3	0.0	35.2	6.2	0.0	15.3	35.2	0.0
Queue Length 50th (ft)	71	78	402	10	68	0	278	63	0	3	162	0
Queue Length 95th (ft)	94	86	459	26	104	0	349	74	m0	10	231	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

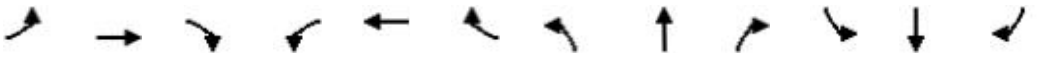
m Volume for 95th percentile queue is metered by upstream signal.



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	0.31	0.54	0.45	0.58	0.03	0.76	0.23	0.01	0.07	0.65	0.13
Control Delay (s/veh)	45.4	38.5	10.0	66.6	57.2	0.0	66.2	23.3	0.0	25.2	33.5	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)	45.4	38.5	10.0	66.6	57.2	0.0	66.2	23.3	0.0	25.2	33.5	0.1
Queue Length 50th (ft)	18	33	337	25	87	0	291	177	0	12	313	0
Queue Length 95th (ft)	34	51	464	50	126	0	337	235	m0	26	404	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

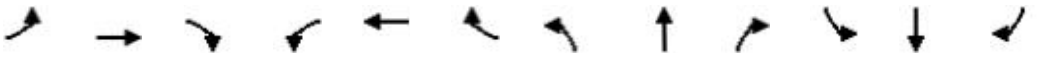
m Volume for 95th percentile queue is metered by upstream signal.



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	0.50	0.39	0.67	0.21	0.54	0.05	0.71	0.47	0.03	0.08	0.40	0.06
Control Delay (s/veh)	39.4	30.0	12.5	59.1	57.3	0.0	35.1	6.2	0.0	13.2	29.6	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	39.4	30.0	12.5	59.1	57.3	0.0	35.1	6.2	0.0	13.2	29.6	0.0
Queue Length 50th (ft)	58	86	473	12	73	0	205	83	0	4	170	0
Queue Length 95th (ft)	75	102	425	30	108	0	240	96	m0	11	240	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

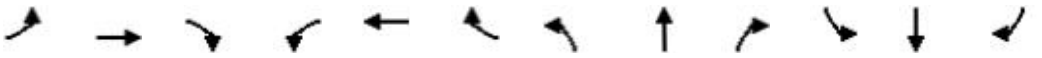
m Volume for 95th percentile queue is metered by upstream signal.



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	0.27	0.55	0.49	0.59	0.03	0.79	0.25	0.02	0.09	0.70	0.14
Control Delay (s/veh)	46.6	38.1	10.7	68.4	57.2	0.0	66.8	24.0	0.0	25.4	36.0	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)	46.6	38.1	10.7	68.4	57.2	0.0	66.8	24.0	0.0	25.4	36.0	0.1
Queue Length 50th (ft)	18	33	365	28	90	0	300	183	0	13	325	0
Queue Length 95th (ft)	35	55	467	53	128	0	347	242	m0	28	416	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	0.51	0.40	0.68	0.25	0.54	0.05	0.73	0.48	0.03	0.10	0.41	0.06
Control Delay (s/veh)	39.3	30.0	13.2	59.8	57.3	0.0	34.9	6.6	0.0	13.6	30.2	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	39.3	30.0	13.2	59.8	57.3	0.0	34.9	6.6	0.0	13.6	30.2	0.0
Queue Length 50th (ft)	58	87	476	14	75	0	212	84	0	4	176	0
Queue Length 95th (ft)	78	106	423	34	111	0	240	107	m0	12	247	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	183	261	65	727	1324	207	65	1466	135
v/c Ratio	0.17	0.11	0.57	0.17	2.11	0.53	0.17	0.45	0.67	0.12
Control Delay (s/veh)	55.7	0.1	53.6	1.0	540.4	10.8	1.4	69.1	6.2	0.3
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)	55.7	0.1	53.6	1.0	540.4	10.8	1.4	69.1	6.2	0.3
Queue Length 50th (ft)	12	0	96	0	~461	271	0	27	148	0
Queue Length 95th (ft)	29	0	138	0	#582	341	26	m47	88	m0
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	343	2459	1163	143	2188	1051
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	0.12	0.57	0.09	2.12	0.54	0.18	0.45	0.67	0.13

Intersection Summary

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

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

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

Lane Group	EBL	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	112	692	250	60	286	1536	196	27	1423	59
v/c Ratio	0.39	0.43	0.45	0.18	1.00	0.64	0.17	0.14	0.66	0.05
Control Delay (s/veh)	56.1	0.8	47.5	1.2	108.3	14.6	1.7	69.4	6.1	0.0
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)	56.1	0.8	47.5	1.2	108.3	14.6	1.7	69.4	6.1	0.0
Queue Length 50th (ft)	43	0	89	0	115	388	0	10	128	0
Queue Length 95th (ft)	72	0	127	0	#208	513	30	m19	167	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	0.44	0.45	0.09	1.00	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	243	277	71	983	1411	223	71	1575	195
v/c Ratio	0.25	0.15	0.57	0.20	0.82	0.58	0.19	0.49	0.85	0.27
Control Delay (s/veh)	55.9	1.1	52.8	1.3	42.4	11.9	1.3	44.2	19.6	1.7
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)	55.9	1.1	52.8	1.3	42.4	11.9	1.3	44.2	19.6	1.7
Queue Length 50th (ft)	19	0	103	0	357	304	0	27	147	0
Queue Length 95th (ft)	40	1	147	0	416	368	26	m44	#536	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	1190	2427	1155	143	1844	698
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	0.85	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)	172	982	266	65	382	1655	212	33	1515	89
v/c Ratio	0.50	0.62	0.44	0.20	0.73	0.69	0.18	0.23	0.56	0.09
Control Delay (s/veh)	42.5	6.7	45.6	1.4	57.7	16.2	2.3	65.6	8.7	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	42.5	6.7	45.6	1.4	57.7	16.2	2.3	65.6	8.7	0.1
Queue Length 50th (ft)	69	462	94	0	144	452	5	13	166	0
Queue Length 95th (ft)	81	283	131	0	197	587	37	m25	178	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	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	0.62	0.44	0.10	0.67	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	250	277	71	1000	1451	223	71	1620	201
v/c Ratio	0.26	0.15	0.57	0.20	0.81	0.59	0.19	0.49	0.91	0.29
Control Delay (s/veh)	55.8	1.1	52.8	1.3	40.5	12.2	1.3	44.4	23.9	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)	55.8	1.1	52.8	1.3	40.5	12.2	1.3	44.4	23.9	1.8
Queue Length 50th (ft)	20	0	103	0	358	319	0	26	155	0
Queue Length 95th (ft)	42	3	147	0	414	385	26	m42	#587	m19
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	1234	2427	1155	143	1778	684
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	0.16	0.57	0.10	0.81	0.60	0.19	0.50	0.91	0.29

Intersection Summary

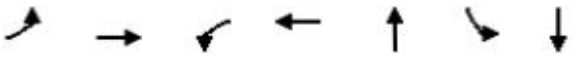
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

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	1000	266	65	391	1701	212	33	1554	92
v/c Ratio	0.51	0.63	0.44	0.20	0.75	0.71	0.18	0.23	0.58	0.09
Control Delay (s/veh)	42.8	6.9	45.5	1.4	58.2	16.9	2.4	65.2	8.7	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	42.8	6.9	45.5	1.4	58.2	16.9	2.4	65.2	8.7	0.1
Queue Length 50th (ft)	69	477	93	0	148	477	6	13	166	0
Queue Length 95th (ft)	82	297	131	0	202	620	38	m25	190	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	2656	943
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	0.63	0.44	0.10	0.68	0.72	0.19	0.23	0.59	0.10

Intersection Summary

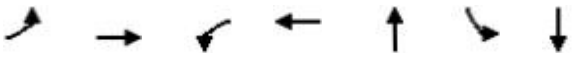
m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBL	EBT	WBL	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	50	186	41	1095	12	116	17
v/c Ratio	0.24	0.11	0.06	0.66	0.03	0.22	0.02
Control Delay (s/veh)	15.7	17.5	19.0	23.7	0.1	46.1	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	15.7	17.5	19.0	23.7	0.1	46.1	0.0
Queue Length 50th (ft)	17	40	14	205	0	41	0
Queue Length 95th (ft)	36	63	m23	281	0	70	0
Internal Link Dist (ft)		389		682	344		365
Turn Bay Length (ft)	150		150			200	
Base Capacity (vph)	203	1674	627	1654	363	514	588
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.25	0.11	0.07	0.66	0.03	0.23	0.03

Intersection Summary

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



Lane Group	EBL	EBT	WBL	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	26	762	13	482	57	398	58
v/c Ratio	0.04	0.34	0.02	0.23	0.27	0.71	0.07
Control Delay (s/veh)	9.5	14.0	3.6	0.9	3.3	54.4	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	9.5	14.0	3.6	0.9	3.3	54.4	0.1
Queue Length 50th (ft)	7	130	1	3	0	153	0
Queue Length 95th (ft)	20	250	m3	6	0	193	0
Internal Link Dist (ft)		389		682	344		365
Turn Bay Length (ft)	150		150			200	
Base Capacity (vph)	593	2181	460	2078	364	718	822
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.35	0.03	0.23	0.16	0.55	0.07

Intersection Summary

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