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Robert P. Jose, Chair
Freetown Planning Board
Freetown Town Offices
3 North Main Street
Assonet, MA 02702

October 13, 2022

TEC Project: T1138

RE: Proposed Industrial Warehouse Development – 31 Innovation Way
Response to Peer Review Comments

Dear Mr. Jose:

TEC, Inc., on behalf of V.M.D. Companies, LLC (VMD or the "Applicant"), is pleased to provide the enclosed responses to the Town's peer review of the Traffic Impact Assessment. The following information is supplied to address the several traffic-related peer review comments provided by Environmental Partners (EP) in their letter dated September 28, 2022. The **bold** text is from EP's letter, and the regular text is TEC's response.

Rules & Regulations of the Planning Board as Site Plan Review Authority (Section II, Parts B & C)

6. Section II. C. 2. – Sidewalks should be separated from the roadway edge by a vegetated border area of at least 5 feet to increase pedestrian safety. The current proposed sidewalk along Innovation Way is directly adjacent to the roadway, without a vegetated border area. See Capacity and Queue Analysis Comment 19 below under "Traffic Comments" for a recommendation to replace the proposed sidewalk with a shared-use path to accommodate both pedestrians and bicycles.

Applicant Response: Within the Town of Freetown, Innovation Way lies under the exclusive jurisdiction of the Massachusetts Department of Transportation (MassDOT). The Applicant has already received comments back from MassDOT's District 5 office on the Applicant's detailed plan submittal. The Applicant has introduced a 5-foot vegetated buffer between the curb line and the sidewalk as recommended. MassDOT did not request a shared use path layout. The scope of the planned sidewalk improvements are consistent with what MassDOT and the Town of Freetown recently approved for the Neon Marketplace project across Innovation Way.

Town of Freetown General and Zoning By-Laws (Article 11)

2. Article 11.23 H. Circulation – Site plans should provide clearly marked, safe circulation patterns for both vehicles and pedestrians. Sheet C-11.2 shows the WB-67 semi-truck extending into the opposite side of the double yellow line in the right-of-way in order to turn left into the site. The Applicant should consider increasing the curb radii such that the truck is not required to cross the double yellow line on Innovation Way to enter the site properly.

Applicant Response: The site designer, MBL, has adjusted the corner curb radii and the truck turning exhibits to meet MassDOT's design criteria as found in their Project Development and Design Guide, Exhibit 6-15. These will be provided within MBL's next site plan submission.

Traffic Impact Assessment (TIA) Comments

1. **The TIA indicated the posted speed limit along Innovation Way is 30-miles per hour (mph). The closest posted speed limit to the Site that EP verified is 35-mph, which is indicated by a pair of speed limit signs on both northbound and southbound directions approximately 2,200-feet north of Airport Road within Fall River.**

   Applicant Response: There is currently no Special Speed Regulation on file with MassDOT for Innovation Way. TEC's data collection vendor documented the 85th percentile speeds along Innovation Way as 40 mph (southbound) and 44 mph (northbound) in the vicinity of the project site. TEC does not propose any changes in the speed limit and will work with MBL to verify the placement of on-site infrastructure outside the minimum safe sight line triangle of 360 feet (minimum based on stopping sight distance) exiting the proposed driveway, which is based on the AASHTO criteria for 45 mph and up to (or beyond) the optimal intersection sight distance criteria of 500 feet.

2. **The TIA described the Innovation Way westbound approach to South Main Street as having two left-turn lanes and one right-turn lane. We note that the lane configuration on this approach includes one left-turn lane and two right-turn lanes.**

   Applicant Response: TEC acknowledges the discrepancy in the text for the approach geometry of Innovation Way at South Main Street. However, the capacity analyses provided in the TIA and associated comment responses did note and utilize the correct geometry.

3. **In Table 1 of the TIA (Existing Weekday Traffic Volume Summary), traffic volumes for the weekday daily, weekday morning peak hour, and weekday evening peak hour appear to be inconsistent with the collected counts and the methodology described for volume adjustments. Backups should be provided verification.**

   Applicant Response: The traffic volumes data for Innovation Way has been updated utilizing the revised COVID-19 factor as noted blow in Comment #4. The information provided in the table is based on the Average Daily Traffic (ADT) for the Wednesday Automatic Traffic Recorder (ATR). Note that the COVID factor is different for the typical day versus the peak hours (6.9% Daily, 12.2% AM Peak, and 14.1% PM Peak).

Table 1 Revised – Existing Weekday Traffic Volume Summary

Location	Weekday Traffic Volume[a]	Weekday Morning Peak Hour			Weekday Evening Peak Hour		
		Traffic Volume[b]	K Factor[c]	Directional Distribution[d]	Traffic Volume	K Factor	Directional Distribution
Innovation Way, North of Amazon Driveway	3,954	361	9.1	78.1% SB	389	9.8	53.1% NB

[a] Daily traffic expressed in vehicles per day
[b] Hourly traffic expressed in vehicles per hour
[c] Percent of daily traffic volumes which occurs during the peak hour
[d] Percent of peak-hour volume in the predominant direction of travel

4. **The methodology described in the TIA for obtaining COVID-19 traffic volume adjustments is inconsistent with the backups in the attachments, in that the TIA indicated that the traffic volume from 2019 used for comparison was grown by 0.5 percent per year from 2019 to 2022, whereas the backups use the 2019 volume with no annual growth to 2022. However, since the backups use the typical methodology recommended by MassDOT, EP takes no exception to the methodology used to calculate the COVID-19 adjustment factor. We note, however, the adjustment factor is an average for the daily volume, and the peak hour adjustment factors can vary drastically. EP recommends verifying that the 8.7 percent COVID adjustment is adequate for each of the weekday morning and evening peak hours.**

   Applicant Response: The COVID traffic adjustment factor was updated to reflect the peak hour influence. Although the peak hour factors are slightly higher, there were no measurable changes in the overall traffic volumes as a result of the COVID adjustment factor. The updated COVID adjustment factors are provided within Attachment A.

5. **TEC reviewed crash data provided by MassDOT at the study intersections between January 1, 2017 and May 31, 2022. EP notes that crash data from the MassDOT database is closed only through year 2019 and any crash data provided after is subject to change. As such, evaluating full datasets up to and including 2019 is the recommended methodology. Our independent research for the five-year period of 2015 through 2019 found different results than is reported in the TIA through 2022, which in part may be associated with the changes in traffic volumes in the area due to new developments in the recent years, in particular with the construction of Amazon Fulfillment Center. For an accurate safety analysis, we recommend reviewing local police data for the most recent closed years, if available.**

   Applicant Response: TEC reviewed the 2015-2019 crash data from MassDOT's crash portal. Of the 11 reported crashes, there were no identifiable trends that would warrant a detailed assessment. MassDOT, who owns the roadway, has not requested any supplemental analysis. The MassDOT crash data is provided within Attachment B.

6. **The crash information listed in Table 2 of the TIA (Intersection Crash History Summary) is inconsistent with backups provided in the attachments.**

   Applicant Response: See response above.

7. **TEC did not calculate crash rates at the study intersections, which are typically used to measure the safety of an intersection based on crash frequency and vehicle exposure, and to compare to MassDOT Statewide and District averages. We recommend calculating crash rates to determine if any safety mitigation needs to be considered at any of the study intersections.**

   Applicant Response: TEC calculated the crash rate for the unsignalized intersection of Innovation Way at Amazon's northerly driveway in the Town of Freetown. There are only three documented crashes at this unsignalized intersection between 2017 (opening year for the facility) and 2019. The other crashes are distributed throughout the remainder of the 0.6- mile section of Innovation Way within the Town and some appear related to the Rt. 24/79 ramp junction with the on-ramp from Innovation Way eastbound. There are no identifiable crash trends that appear to warrant a more extensive review of police department records as the crash rate is slightly higher, but similar to other unsignalized

intersections in the region and there is such a limited number of crashes. See Attachment B for the MassDOT crash rate form.

8. **The TIA stated the Applicant is committed to provide adequate sight distances to satisfy the American Association of State Highway and Transportation Officials (AASHTO) requirements for a speed of 40-mph. Consistent with standard methodology, EP recommends using the 85th percentile speed to calculate the required sight distance. Based on the collected speed data, the 85th percentile speed along Innovation Way was approximately 40 mph and 45 mph on the southbound and northbound directions, respectively.**

   Applicant Response: TEC's data collection vendor documented the speeds along Innovation Way as 40 mph southbound and 44 mph northbound in the vicinity of the project site. The site designer, MBL, will be including the sight lines on the site plan in the next submittal. TEC verified that the Freetown driveway can accommodate sight line triangles of 500 feet in each direction exiting the proposed driveway, which is based on the AASHTO intersection sight distance criteria for 45 mph. The vantage point for the driveway movement is within the State's right-of-way. The Applicant does not propose plantings or other sight distance obstructions in this area.

9. **We request that the Applicant provide sight triangles for the proposed driveways on the Site plans to indicate areas where all objects and vegetation should be removed and/or maintained below a height of 2.5 feet.**

   Applicant Response: The site designer, MBL, will provide the corresponding sight lines on the updated site plan drawings as requested. The Building 3 employee driveway location, which is on the outside of a horizontal curve will have sight lines in excess of 500 feet in both directions.

10. **The TIA states that TEC coordinated with the City of Fall River and the Town of Freetown and incorporated other planned developments into the no-build conditions. While we agree with this methodology, we identified several inconsistencies and request further clarification or revision as follows:**

    - **The TIA indicated there were several private and public development projects anticipated in the area, however only one nearby development was included.**
    - **The TIA described a development at 30-36 Innovation Way. Based on the description and the information provided in the attachments, it appears this is the Neon Marketplace development at 38 Innovation Way.**
    - **The TIA stated that TEC estimated the trips associated with the Neon Marketplace development using Institute of Transportation Engineers (ITE) Trip Generation 11th Edition, and distributed the trips along the roadway network based on existing traffic patterns; however, no backups have been provided for review. Regardless, it appears BETA provided a traffic study for the Neon Marketplace development. EP typically recommends using the trip generation and distribution from provided traffic studies for consistency.**
    - **It is our understanding that there have been modifications (May 2021) to the Neon Marketplace development that have changed the trip generation since the iteration of the traffic study that was included in the attachments (October 2020).**

We recommend that TEC coordinate with the Town to verify the most recent iteration is included.

Applicant Response: TEC has revised the traffic volumes for both the No-Build and Build conditions to reflect the above comment. Note that only one (1) specific development by others was noted to be in the general vicinity of the project that was expected to contribute noticeable traffic volume to the study area intersections. The development is the Neon Marketplace directly opposing the subject project. TEC had previously utilized the BETA traffic study as noted to project area traffic volumes; however, TEC has corrected discrepancies between the BETA study and TIA. TEC also notes that BETA Group has confirmed that the October 2020 TIA for the Neon Marketplace is the active version of the TIA and that no changes were made to the project regarding traffic for submittals completed in May 2021.

11. **From Figure 4 of the TIA, we noted several inconsistencies in the trip generation and distribution. When comparing the volumes at the four intersections through which all vehicles entering and exiting the project area must travel (Innovation Way at: (1) South Main Street, (2) Route 24 Southbound Ramps, (3) Route 24 Northbound Ramps, and (4) the southernmost intersection in Fall River at the Building 1 truck driveway) to the volumes established by using the percentages outlined in the trip distribution table and the entering and exiting volumes from the trip generation table, we note differences ranging from 6 to 13 vehicles. Further, by comparing the volumes established by using the percentages outlined in the trip distribution table and the entering and exiting volumes from the trip generation table, with the volumes established by summing the total number of entering and exiting trips from each driveway, we found discrepancies for all volumes, the greatest for the exiting volumes for the evening peak period, which shows a difference of 81 vehicle trips. These discrepancies using the different methodologies should be rectified and the volumes traveling through all intersections should be updated accordingly.**

    Applicant Response: TEC has reviewed the trip generation and distribution characteristics at each of the study area intersections and revised based on the comment above. A copy of the traffic volume progression worksheet, which includes the trip generation and distribution, has been attached to simply the review. For the simplification of the peer review, only locations in Freetown are included. Note that only passenger vehicle trips for Building 4 access/egress from the site driveway within Freetown, all other site trip, whether truck or passenger vehicles, travel through NB / SB crossing the Town Line into Fall River. A copy of the modified trip generation table utilized for these projections is provided within Attachment C.

12. **The traffic volumes in Figures 3 and 4 of the TIA (2029 No-Build and Build Conditions Peak Hour Traffic Volumes, respectively) at the intersection of Innovation Way and Amazon North Driveway on the southbound approach appear to be inconsistent with the collected counts and methodology set forth in the TIA.**

    Applicant Response: The volume discrepancy appears to have been related to the specific development by other trips. The volumes have been corrected in the attached analysis and do not result in any measurable changes in intersection capacity or delays. TEC's updated and detailed traffic data worksheet, which includes the detailed distribution percentages for the morning and evening peak hours, is provided within Attachment D.

13. **Peak hour factors (PHFs) appear to remain unchanged from the default value of 0.92 in the Synchro analysis. We recommend updating PHFs based on the collected counts for each approach for a more accurate analysis.**

    Applicant Response: The peak hour factors have been updated in the attached analysis for the existing conditions and do not result in any measurable changes in intersection capacity or delays. Based on the additional trips from other developments and background growth, as well as the site's trip generation additions, the PHF has been updated to 0.92 for all non-driveway in/out movements in both the No-Build and Build to provide a comparative analysis as is typical for locations that are expected to experience a noticeable increase in traffic in the future year condition. The updated capacity analyses are provided within Attachment E.

14. **Heavy vehicle percentages should be updated on the Synchro analysis based on the collected counts and be provided in the reports for verification.**

    Applicant Response: The heavy vehicle percentages have been updated in the attached analysis for the existing conditions and do not result in any measurable changes in intersection capacity or delays. Based on the additional trips from other developments and background growth, as well as the site's trip generation additions, the HV% has been updated to account for truck growth and truck trip generation; therefore, the HV% for the existing, no-build, and build conditions for each movement may be different. The updated capacity analyses are provided within Attachment E.

15. **The Synchro reports show inconsistent signal timings between Existing, No-Build, and Build conditions. For a fair comparison of the three analyses in evaluating the impacts of the proposed Site, signal timings should be maintained for consistency throughout the three scenarios. If any mitigation is warranted based on impacts of the proposed Site, the mitigated scenario should be provided separately.**

    Applicant Response: The signal timings were adjusted to be consistent between analysis scenarios. There is significant reserve capacity at the three signalized intersections, which all lie under the jurisdiction of MassDOT or Fall River. Innovation Way and the Route 24 interchange were designed with higher projected future-year traffic volumes when compared to what is constructed or currently proposed. The redevelopment area was originally anticipated to accommodate significant volumes of peak-hour office users, which is no longer proposed. No capacity-related mitigation is necessary or appropriate for these MassDOT-controlled intersections. The updated capacity analyses are provided within Attachment E.

16. **If the signalized intersections include an exclusive pedestrian phase, this phase should be incorporated in the signal timings and accounted for in the analysis.**

    Applicant Response: An exclusive pedestrian phase is only present at the intersection of Innovation Way at South Main Street. TEC has not witnessed any measurable pedestrian traffic at the Route 24 interchange. The use of the pedestrian phase is not expected to result in an accurate model for the intersection capacity and would not noticeably affect the signal operations or the resultant queuing based on any infrequent pedestrian phase activation. This is consistent with Synchro methodology for locations with minimum pedestrian traffic.

17. **Several inconsistencies were found within Table 8 of the TIA (Capacity and Queue Analysis Summary) in comparison with Synchro reports. These include the following:**

    - **The summary table should compare consistent reporting methodologies for each type of intersection (signalized vs. unsignalized) under all scenarios (i.e Synchro reporting or HCM reporting, including same version of HCM (6th vs. 2010)). It appears, at a minimum, the intersection of Innovation Way and South Main Street was summarized using different reports.**
    - **The unsignalized Synchro reports for the Build condition evening peak hours have not been included in the Attachments and therefore have not been verified with the summary table in the TIA.**
    - **Multiple inconsistencies were noted in the level-of-service (LOS) letter designations and queues in Table 8.**

    Applicant Response: The table has been updated to reflect the revised analysis results and is included in Attachment E. Because the intersection of Innovation Way at South Main Street has non-standard NEMA phasing and is constructed with a custom lane configuration (southbound approach) the signal is analyzed using HCM 2000 methodology. For consistency, all signals in the study area have been analyzed under this methodology. All unsignalized intersections in the study area have been evaluated using HCM 6th Edition methodology. Overall, there are no significant changes to the intersection delays.

18. **As summarized by TEC, based on the provided analysis, it appears the traffic operations are acceptable at the intersections located within Freetown, with the exception of the Gas Station driveway. However, based on the inconsistencies outlined herein, EP cannot corroborate the findings at this time.**

    Applicant Response: Upon review of the above comments, all locations within the Town of Freetown are not expected to experience any measurable increase in traffic impact. Innovation Way was constructed by MassDOT with considerably higher traffic volumes projected for formerly proposed office-related uses and addition reserve capacity is available for other future development. The unsignalized driveway operations in the area will remain under capacity despite the introduction of new 'through' traffic from the subject project. MassDOT has not requested any further evaluation of the private driveways are part of the Applicant's application for an access permit.

19. **The TIA stated the Applicant commits to providing on-site bicycle racks or storage area for employees. While EP takes no exception to this provision, we note that bicycle use to/from the Site and within the Site can be encouraged with the presence of safe and comfortable bicycle accommodations in the vicinity of the Site. Since the Applicant is providing sidewalk along Innovation Way, EP recommends considering replacing the proposed sidewalk with a shared-use path to accommodate both pedestrians and bicycles, which would be a relatively minimal increase in cost for an improvement with significant benefits.**

    Applicant Response: Innovation Way lies under the exclusive jurisdiction of the Massachusetts Department of Transportation (MassDOT) within the Town of Freetown. The Applicant has already received comments back from MassDOT's District 5 office.

MassDOT did not request shared use path infrastructure for Innovation Way. Additionally, the scope of the planned sidewalk improvements are consistent with what MassDOT and the Town of Freetown recently approved for the Neon Marketplace project across Innovation Way.

Please do not hesitate to contact me directly if you have any questions concerning our responses at 978-794-1792.Thank you for your consideration.

Sincerely,
TEC, Inc.
*"**T**he **E**ngineering **C**orporation"*

Samuel W. Gregorio, PE, PTOE, RSP_1
Project Manager / Senior Design Engineer

Kevin R. Dandrade, PE, PTOE
Principal

Attachment A: Updated COVID Traffic Adjustment Factors
B: MassDOT Crash Data & Crash Rate Worksheet
C: Updated Trip Generation Summary
D: Traffic Data Worksheets with Detailed Traffic Distribution
E: Updated Capacity Analysis Summary & Worksheets

Attachment A

Updated COVID Traffic Adjustment Factors

COVID-19 Adjustment

Project: Industrial/Warehouse Development - Innovation Way - Fall River, MA
Date: 1/12/2022
Analyst: TEC, Inc.
Source: MassDOT Yearly Growth Rates, MassDOT weekday Seasonal Factors
STA 601

	Seasonal
1/1/2019	1.01
1/1/2022	1.01

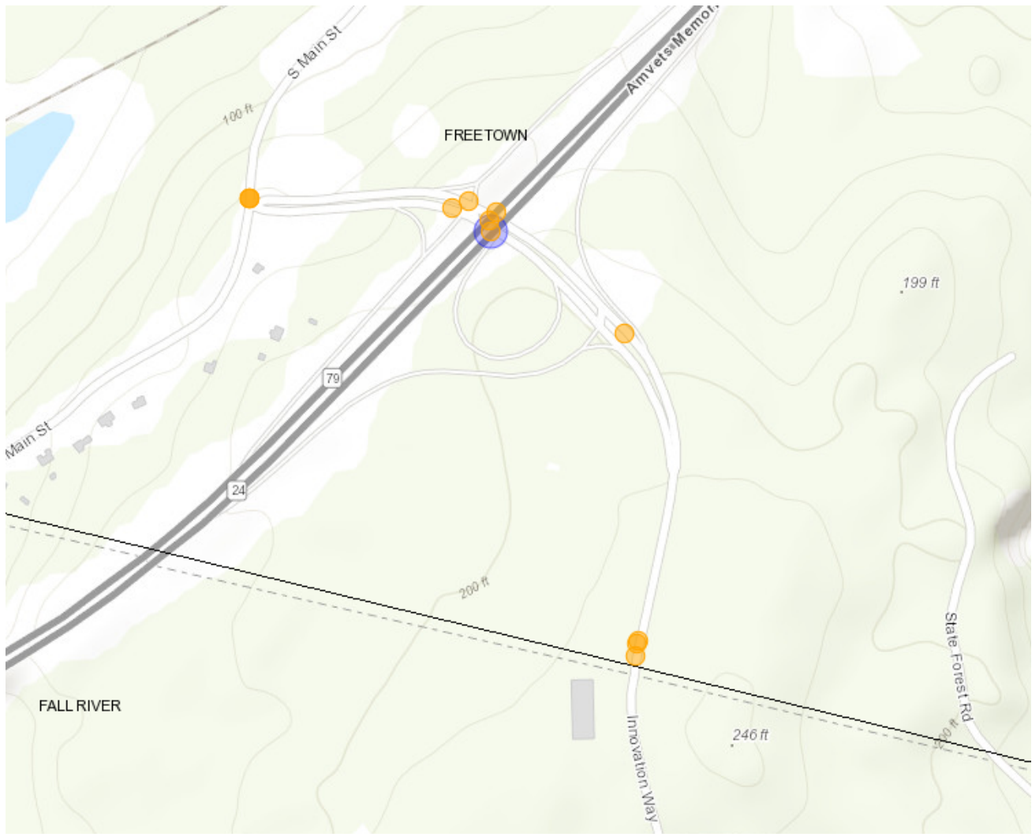
	1/9/2019	Seasonal	1/12/2022	Seasonal			
00:00 - 01:00	396	400	329	332	120.5%		
01:00 - 02:00	223	225	177	179	125.7%		
02:00 - 03:00	184	186	175	177	105.1%		
03:00 - 04:00	211	213	238	240	88.8%		
04:00 - 05:00	632	638	597	603	105.8%		
05:00 - 06:00	1627	1643	1527	1542	106.5%		
06:00 - 07:00	4036	4076	3609	3645	111.8%		**Assume**
07:00 - 08:00	5963	6023	5397	5451	110.5%	***112.2%***	**12%**
08:00 - 09:00	4980	5030	4372	4416	113.9%		
09:00 - 10:00	3647	3683	3436	3470	106.1%		
10:00 - 11:00	3340	3373	3293	3326	101.4%		
11:00 - 12:00	3328	3361	3389	3423	98.2%		
12:00 - 13:00	3503	3538	3499	3534	100.1%		
13:00 - 14:00	3623	3659	3565	3601	101.6%		
14:00 - 15:00	4474	4519	4503	4548	99.4%		
15:00 - 16:00	5716	5773	5623	5679	101.7%		
16:00 - 17:00	6227	6289	6026	6086	103.3%		**Assume**
17:00 - 18:00	5804	5862	5029	5079	115.4%	***114.1%***	**14%**
18:00 - 19:00	3637	3673	3226	3258	112.7%		
19:00 - 20:00	2376	2400	2093	2114	113.5%		
20:00 - 21:00	1884	1903	1628	1644	115.8%		
21:00 - 22:00	1419	1433	1204	1216	117.8%		
22:00 - 23:00	991	1001	910	919	108.9%		
23:00 - 24:00	811	819	727	734	111.6%		
TOTAL	*69032*	*69720*	*64572*	*65216*	*106.9%*		

Attachment B

MassDOT Crash Data & Crash Rate Worksheet

Crash Data Summary Tables
Innovation Way - Freetown, Massachusetts
01/01/2015 - 12/31/2019

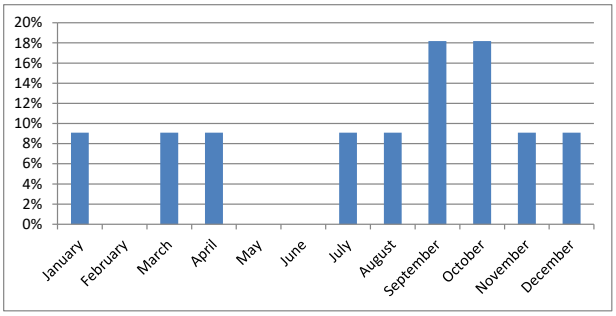
Collision Diagram	Crash Number	Crash Date	Crash Time	Ambient Light	Weather Condition	Road Surface	Number of Vehicles	Vehicle Travel Directions				Crash Severity	Number of NonFatal Injuries	Manner of Collision	Driver Contributing Codes	Detailed Narrative (from Crash Report)
								V1	V2	V3	V4					
1	4112968	11/7/2015	10:33 AM	Daylight	Clear	Dry	2	N	N			Non-fatal Injury	4	Rear-end	Failure to Keep in Proper Lane	V1: Leaving traffic lane / V2: Slowing or stopped in traffic
2	4165119	3/17/2016	7:55 AM	Daylight	Cloudy	Wet	2	S	S			Property Damage Only	0	Angled	Followed Too Closely	V1: Slowing or stopped in traffic / V2: Travelling straight ahead
3	4271137	10/22/2016	2:11 AM	Dark - Lighted	Other	Wet	1	W				Non-fatal Injury	2	Single Vehicle	Excessive Speed	V1: Travelling straight ahead
4	4351747	4/10/2017	7:16 AM	Daylight	Clear	Dry	2	E	N			Non-fatal Injury	2	Angled	Failure to Yield Right-of-Way	V1: Travelling straight ahead / V2: Travelling straight ahead
5	4369097	9/17/2016	12:48 PM	Daylight	Clear	Dry	2	N	N			Non-fatal Injury	1	Rear-end	Followed Too Closely	V1: Slowing or stopped in traffic / V2: Travelling straight ahead
6	4369234	9/21/2016	3:46 PM	Daylight	Clear	Dry	2	W	S			Property Damage Only	0	Angled	Not Reported	V1: Travelling straight ahead / V2: Turning left
7	4403549	8/4/2017	11:56 AM	Daylight	Clear	Dry	1	W				Non-fatal Injury	1	Single Vehicle	Made an Improper Turn	V1: Turning left
8	4442672	10/9/2017	1:01 PM	Daylight	Rain	Wet	2	N	E			Non-fatal Injury	1	Angled	Failure to Yield Right-of-Way	V1: Entering traffic lane / V2: Travelling straight ahead
9	4567253	7/10/2018	12:21 PM	Daylight	Clear	Dry	2	W	W			Property Damage Only	0	Angled	Not Reported	V1: Travelling straight ahead / V2: Entering traffic lane
10	4638907	12/13/2018	6:15 PM	Dark - Not Lighted	Clear	Dry	2	N	N			Non-fatal Injury	1	Rear-end	Inattention / Distracted	V1: Travelling straight ahead / V2: Travelling straight ahead
11	4648406	1/2/2019	6:23 PM	Dark - Lighted	Clear	Dry	2	S	S			Property Damage Only	0	Rear-end	Inattention / Distracted	V2: Slowing or stopped in traffic / V1: Travelling straight ahead



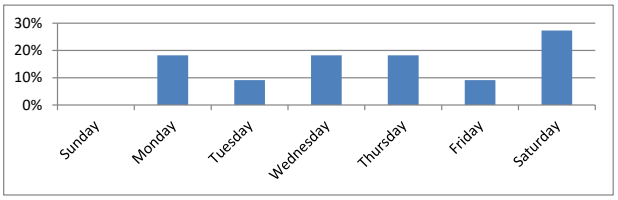
Crash Data Summary Charts
Innovation Way - Freetown, Massachusetts
01/01/2015 - 12/31/2019

Innovation Way *11*

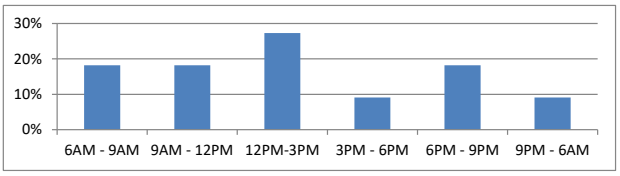
Month	#	%
January	1	9%
February	0	0%
March	1	9%
April	1	9%
May	0	0%
June	0	0%
July	1	9%
August	1	9%
September	2	18%
October	2	18%
November	1	9%
December	1	9%



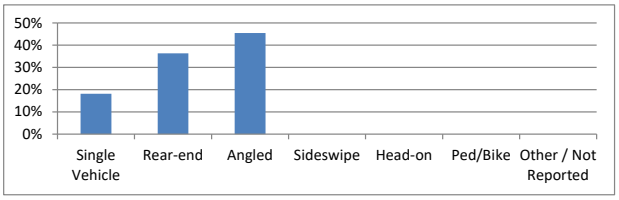
Day of Week	#	%
Sunday	0	0%
Monday	2	18%
Tuesday	1	9%
Wednesday	2	18%
Thursday	2	18%
Friday	1	9%
Saturday	3	27%



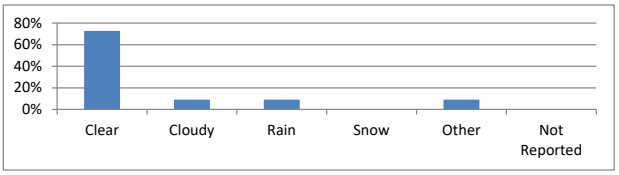
Time of Day	#	%
6AM - 9AM	2	18%
9AM - 12PM	2	18%
12PM-3PM	3	27%
3PM - 6PM	1	9%
6PM - 9PM	2	18%
9PM - 6AM	1	9%



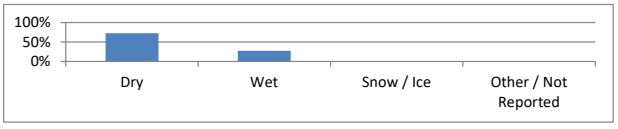
Manner of Collision	#	%
Single Vehicle	2	18%
Rear-end	4	36%
Angled	5	45%
Sideswipe	0	0%
Head-on	0	0%
Ped/Bike	0	0%
Other / Not Reported	0	0%



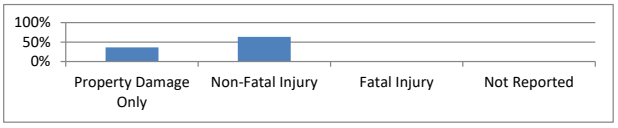
Weather Conditions	#	%
Clear	8	73%
Cloudy	1	9%
Rain	1	9%
Snow	0	0%
Other	1	9%
Not Reported	0	0%



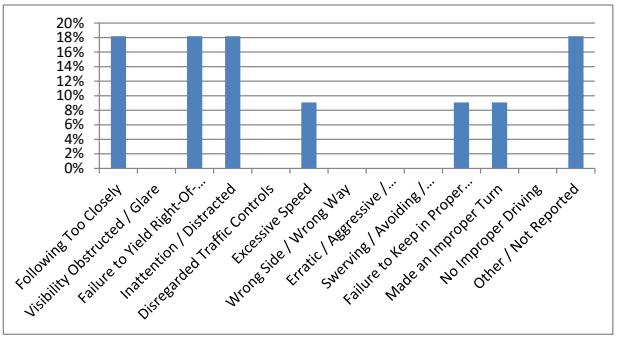
Road Surface	#	%
Dry	8	73%
Wet	3	27%
Snow / Ice	0	0%
Other / Not Reported	0	0%



Crash Severity	#	%
Property Damage Only	4	36%
Non-Fatal Injury	7	64%
Fatal Injury	0	0%
Not Reported	0	0%



Main Contributing Factor from Narrative	#	%
Following Too Closely	2	18%
Visibility Obstructed / Glare	0	0%
Failure to Yield Right-Of-Way	2	18%
Inattention / Distracted	2	18%
Disregarded Traffic Controls	0	0%
Excessive Speed	1	9%
Wrong Side / Wrong Way	0	0%
Erratic / Aggressive / Reckless Driving	0	0%
Swerving / Avoiding / Over-Steering / Over-Correcting	0	0%
Failure to Keep in Proper Lane	1	9%
Made an Improper Turn	1	9%
No Improper Driving	0	0%
Other / Not Reported	2	18%



10/11/2022

INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Freetown COUNT DATE : Jan-22

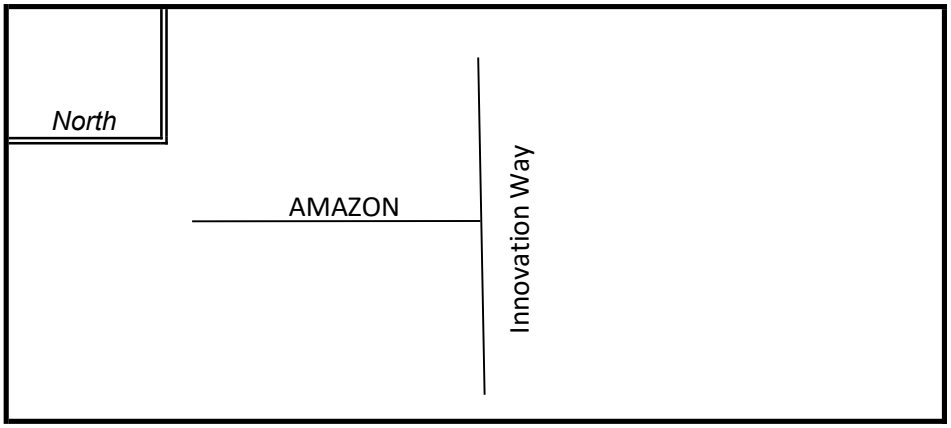
DISTRICT : 5 UNSIGNALIZED : X SIGNALIZED :

~ INTERSECTION DATA ~

MAJOR STREET : Innovation Way

MINOR STREET(S) : Amazon Warehouse Driveway (North) - Freetown

INTERSECTION DIAGRAM (Label Approaches)



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	EB	NB	SB			
PEAK HOURLY VOLUMES (AM/PM) :	36	35	249			320

" K " FACTOR : **0.087**

INTERSECTION ADT (**V**) = TOTAL DAILY APPROACH VOLUME : **3,678**

TOTAL # OF CRASHES : 3

OF YEARS : 3

AVERAGE # OF CRASHES PER YEAR (**A**) : **1.00**

CRASH RATE CALCULATION : **0.74**

RATE = $\frac{(A * 1{,}000{,}000)}{(V * 365)}$

Comments : Crash data used from 2017-2019

Project Title & Date: Innovation Way

Attachment C

Updated Trip Generation Summary

Trip Generation Summary	LUC 140 - Manufacture		TRUCKS		CARS	
Site Building 4 -	**203,397 SF**		**203,397 SF**		**203,397 SF**	
Weekday Morning Adjacent Peak Hour	134		6		128	
Enter	76%	102	56%	3		98
Exit	24%	32	44%	3		30
Weekday Evening Adjacent Peak Hour	160		6		154	
Enter	31%	50	41%	2		47
Exit	69%	110	59%	4		107
Site Building 3 -	**203,397 SF**		**203,397 SF**		**203,397 SF**	
Weekday Morning Adjacent Peak Hour	134		6		128	
Enter	76%	102	56%	3		98
Exit	24%	32	44%	3		30
Weekday Evening Adjacent Peak Hour	160		6		154	
Enter	31%	50	41%	2		47
Exit	69%	110	59%	4		107
Site Building 2 -	**203,397 SF**		**203,397 SF**		**203,397 SF**	
Weekday Morning Adjacent Peak Hour	134		6		128	
Enter	76%	102	56%	3		98
Exit	24%	32	44%	3		30
Weekday Evening Adjacent Peak Hour	160		6		154	
Enter	31%	50	41%	2		47
Exit	69%	110	59%	4		107
Site Building 1 -	**291,200 SF**		**291,200 SF**		**291,200 SF**	
Weekday Morning Adjacent Peak Hour	188		9		179	
Enter	76%	143	56%	5		138
Exit	24%	45	44%	4		41
Weekday Evening Adjacent Peak Hour	236		9		227	
Enter	31%	73	41%	4		69
Exit	69%	163	59%	5		158
TOTAL SITE BUILDING SF =	**901,391 SF**		**901,391 SF**		**901,391 SF**	
Weekday Morning Adjacent Peak Hour	590		27		563	
Enter	76%	448	76%	15		433
Exit	24%	142	24%	12		130
Weekday Evening Adjacent Peak Hour	716		27		689	
Enter	31%	222	31%	11		211
Exit	69%	494	69%	16		478

Attachment D

Traffic Data Worksheets with Detailed Traffic Distribution

31 Innovation Way - Freetown/Fall River
Traffic Impact Assessment
10/11/2022

ADJUSTMENT RATES:

COVID-19 Adjustment Rate :	12.0%	Manual Input
Annual Growth Rate :	1.0%	Formula w/ Growth
Growth Year 2022 :	0	Formula w/o Growth
Growth Year 2029 :	7	Balanced

LUC 140 - Manufacturing Warehouse (936 KSF)

	Entering	Exiting
ALL	448	142
Building 4 cars	98	30
1,2,3 w/ 4 trucks	350	112

WEEKDAY MORNING PEAK HOUR TRAFFIC VOLUMES

Intersection/Movement	January 2022 Raw Data	2022 Existing	2029 Base	Gas Station Development	2029 No-Build	Trip Generation								Site Generated	2029 Build	STATS	
						Entering %	Exiting %	Entering	Exiting	Entering %	Exiting %	Entering	Exiting			HV%	PHF
Innovation Way / South Main Street																	
Innovation Way WBL	18	**20**	21	3	**24**		4%		1		4%		4	5	**29**	22%	0.597
Innovation Way WBR	55	**62**	66	7	**73**									0	**73**	35%	
South Main Street NBT	63	**71**	76		**76**									0	**76**	8%	0.914
South Main Street NBR	65	**73**	78	7	**85**	4%		4		4%		14		18	**103**	6%	
South Main Street SBL	67	**75**	80	8	**88**									0	**88**	42%	0.872
South Main Street SBT	62	**69**	74		**74**									0	**74**	16%	
Innovation Way / Route 24 SB Ramps																	
Innovation Way EBT	83	**93**	100	15	**115**	4%		4		4%		14		18	**133**	22%	0.850
Innovation Way EBR	53	**59**	63	0	**63**									0	**63**	21%	
Innovation Way WBL	26	**29**	31	65	**96**		78%		23		78%		87	110	**206**	23%	0.758
Innovation Way WBT	71	**80**	86	10	**96**		4%		6		4%		6	12	**108**	38%	
Route 24 SB Offramp SBL	72	**81**	87	60	**147**	7%		7		7%		24		31	**178**	21%	0.848
Route 24 SB Offramp SBR	23	**26**	28	0	**28**									0	**28**	22%	
Innovation Way / Route 24 NB Ramps																	
Innovation Way EBT	99	**111**	119	75	**194**	11%		11		11%		38		49	**243**	18%	0.913
Innovation Way EBR	58	**65**	70	0	**70**									0	**70**	28%	
Innovation Way WBT	32	**36**	39	75	**114**		82%		29		82%		93	122	**236**	28%	0.750
Innovation Way WBR	31	**35**	38	125	**163**		7%		2		7%		8	10	**173**	71%	
Route 24 NB Offramp NBL	63	**71**	76	0	**76**									0	**76**	38%	0.734
Route 24 NB Offramp NBR	125	**140**	150	125	**275**	78%		77		78%		273		350	**625**	9%	
Innovation Way / N. Gas Station Dwy																	
Gas Station EBR		**0**	0	10	**10**									0	**10**	#REF!	
Innovation Way NBL		**0**	0	55	**55**									0	**55**	#REF!	0.734
Innovation Way NBT	60	**67**	72	200	**272**		89%		31		89%		101	132	**404**	18%	
Innovation Way SBT	224	**251**	269	35	**304**	89%		88		89%		311		399	**703**	13%	0.764
Innovation Way SBR		**0**	0	165	**165**									0	**165**	#REF!	
Innovation Way / Site Driveway																	
Site Dwy WBL		**0**	0		**0**		11%		4					4	**4**	#REF!	
Site Dwy WBR		**0**	0		**0**		89%		31					31	**31**	#REF!	
Innovation Way NBT	60	**67**	72	255	**327**						89%		101	101	**428**	18%	0.734
Innovation Way NBR		**0**	0		**0**	11%		10						10	**10**	#REF!	
Innovation Way SBL		**0**	0		**0**	89%		88						88	**88**	#REF!	0.764
Innovation Way SBT	224	**251**	269	45	**314**					89%		311		311	**625**	13%	
Innovation Way / S. Gas Station Dwy																	
Gas Station EBL		**0**	0	200	**200**									0	**200**	#REF!	
Gas Station EBR		**0**	0	60	**60**									0	**60**	#REF!	
Innovation Way NBL		**0**	0	15	**15**									0	**15**	#REF!	0.734
Innovation Way NBT	60	**67**	72	55	**127**	11%		10			89%		101	111	**238**	18%	
Innovation Way SBT	224	**251**	269	10	**279**		11%		4	89%		311		315	**594**	13%	0.764
Innovation Way SBR		**0**	0	35	**35**									0	**35**	#REF!	
Innovation Way / Amazon North Driveway																	
Amazon Dwy EBL	31	**35**	38		**38**									0	**38**	48%	0.727
Amazon Dwy EBR	1	**1**	1		**1**									0	**1**	0%	
Innovation Way NBL	3	**3**	3		**3**									0	**3**	33%	0.533
Innovation Way NBT	29	**32**	34	70	**104**	11%		10			89%		101	111	**215**	45%	
Innovation Way SBT	104	**116**	124	70	**194**		11%		4	89%		311		315	**509**	13%	0.764
Innovation Way SBR	119	**133**	143		**143**									0	**143**	13%	

31 Innovation Way - Freetown/Fall River
Traffic Impact Assessment
10/11/2022

ADJUSTMENT RATES:

COVID-19 Adjustment Rate :	**14.0%**
Annual Growth Rate :	**1.0%**
Growth Year 2022 :	**0**
Growth Year 2029 :	**7**

Manual Input
Formula w/ Growth
Formula w/o Growth
Balanced

LUC 140 - Manufacturing Warehouse (936 KSF)

	Entering	Exiting
ALL	222	494
Building 4 cars	**47**	**107**

	Entering	Exiting
1,2,3 w/ 4 trucks	**175**	**387**

WEEKDAY EVENING PEAK HOUR TRAFFIC VOLUMES

Intersection/Movement	January 2022 Raw Data	2022 Existing	2029 Base	Gas Station Development	2029 No-Build	Trip Generation: Entering %	Exiting %	Entering	Exiting	Entering %	Exiting %	Entering	Exiting	Site Generated	2029 Build	STATS: HV%	PHF
Innovation Way / South Main Street																	
Innovation Way WBL	74	**84**	90	6	**96**		4%		4		4%		15	19	**115**	3%	0.868
Innovation Way WBR	51	**58**	62	4	**66**									0	**66**	41%	
South Main Street NBT	69	**79**	85		**85**									0	**85**	1%	0.852
South Main Street NBR	40	**46**	49	2	**51**	4%		2		4%		7		9	**60**	10%	
South Main Street SBL	95	**108**	116	3	**119**									0	**119**	32%	0.620
South Main Street SBT	91	**104**	112		**112**									0	**112**	1%	
Innovation Way / Route 24 SB Ramps																	
Innovation Way EBT	54	**62**	66	5	**71**	4%		2		4%		7		9	**80**	39%	0.603
Innovation Way EBR	80	**91**	98	0	**98**									0	**98**	16%	
Innovation Way WBL	56	**64**	69	80	**149**		78%		83		78%		302	385	**534**	21%	0.720
Innovation Way WBT	62	**71**	76	10	**86**		4%		20		4%		20	40	**126**	24%	
Route 24 SB Offramp SBL	39	**44**	47	85	**132**	7%		3		7%		12		15	**147**	54%	0.862
Route 24 SB Offramp SBR	61	**70**	75	0	**75**									0	**75**	13%	
Innovation Way / Route 24 NB Ramps																	
Innovation Way EBT	44	**50**	54	85	**139**	11%		5		11%		19		24	**163**	23%	0.784
Innovation Way EBR	25	**29**	31	0	**31**									0	**31**	28%	
Innovation Way WBT	114	**130**	139	90	**229**		82%		103		82%		322	425	**654**	2%	0.525
Innovation Way WBR	75	**86**	92	80	**172**		7%		7		7%		27	34	**206**	7%	
Route 24 NB Offramp NBL	42	**48**	51	0	**51**									0	**51**	24%	0.766
Route 24 NB Offramp NBR	102	**116**	124	80	**204**	78%		37		78%		136		173	**377**	4%	
Innovation Way / N. Gas Station Dwy																	
Gas Station EBR		**0**	0	10	**10**									0	**10**	#DIV/0!	
Innovation Way NBL		**0**	0	20	**20**									0	**20**	#DIV/0!	
Innovation Way NBT	187	**213**	228	170	**398**		89%		110		89%		349	459	**857**	0%	
Innovation Way SBT	146	**166**	178	45	**223**	89%		42		89%		155		197	**420**	0%	
Innovation Way SBR		**0**	0	120	**120**									0	**120**	#DIV/0!	
Innovation Way / Site Driveway																	
Site Dwy WBL		**0**	0		**0**		11%		13					13	**13**	#DIV/0!	
Site Dwy WBR		**0**	0		**0**		89%		110					110	**110**	#DIV/0!	
Innovation Way NBT	187	**213**	228	271	**499**						89%		349	349	**848**	0%	
Innovation Way NBR		**0**	0		**0**	11%		5						5	**5**	#DIV/0!	
Innovation Way SBL		**0**	0		**0**	89%		42						42	**42**	#DIV/0!	
Innovation Way SBT	146	**166**	178	55	**233**					89%		155		155	**388**	0%	
Innovation Way / S. Gas Station Dwy																	
Gas Station EBL		**0**	0	170	**170**									0	**170**	#DIV/0!	
Gas Station EBR		**0**	0	52	**52**									0	**52**	#DIV/0!	
Innovation Way NBL		**0**	0	46	**46**									0	**46**	#DIV/0!	
Innovation Way NBT	187	**213**	228	20	**248**	11%		5			89%		349	354	**602**	0%	
Innovation Way SBT	146	**166**	178	10	**188**		11%		13	89%		155		168	**356**	0%	
Innovation Way SBR		**0**	0	45	**45**									0	**45**	#DIV/0!	
Innovation Way / Amazon North Driveway																	
Amazon Dwy EBL	103	**117**	125		**125**									0	**125**	7%	0.447
Amazon Dwy EBR	6	**7**	8		**8**									0	**8**	50%	
Innovation Way NBL	4	**5**	5		**5**									0	**5**	0%	0.710
Innovation Way NBT	84	**96**	103	66	**169**	11%		5			89%		349	354	**523**	0%	
Innovation Way SBT	80	**91**	98	62	**160**		11%		13	89%		155		168	**328**	8%	0.720
Innovation Way SBR	64	**73**	78		**78**									0	**78**	14%	

Attachment E

Updated Capacity Analysis Summary & Worksheets

Table 2 – Revised Intersection Capacity and Queue Analysis Summary

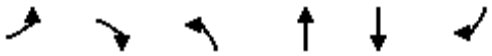
Intersection / Lane Group	2022 Base Year - Existing Conditions				2029 Future Year - No Build				2029 Future Year - Build			
	V/C[a]	Delay[b]	LOS[c]	Queue[d]	V/C	Delay	LOS	Queue	V/C	Delay	LOS	Queue
Innovation Way @ Amazon Driveway North												
Weekday Morning Peak Period												
Amazon Driveway EBL	0.08	11.9	B	<25	0.10	12.7	B	<25	0.19	21.4	C	<25
Amazon Driveway EBR	0.01	9.2	A	<25	0.01	9.3	A	<25	0.01	10.6	B	<25
Innovation Way NBL	0.01	8.5	A	<25	0.01	8.6	A	<25	0.01	10.1	B	<25
Weekday Evening Peak Period												
Amazon Driveway EBL	0.38	13.3	B	45	0.44	15.0	C	55	0.76	40.0	E	153
Amazon Driveway EBR	0.02	9.7	A	<25	0.02	9.7	A	<25	0.03	10.4	B	<25
Innovation Way NBL	0.01	7.7	A	<25	0.01	7.7	A	<25	0.01	8.2	A	<25
Innovation Way / Gas Station Driveway South												
Weekday Morning Peak Period												
Gas Station Driveway EB	-	-	-	-	0.47	16.3	C	63	0.82	48.5	E	178
Innovation Way NBL	-	-	-	-	0.01	8.0	A	<25	0.02	9.1	A	<25
Weekday Evening Peak Period												
Gas Station Driveway EB	-	-	-	-	0.43	16.2	C	53	0.73	39.7	E	135
Innovation Way NBL	-	-	-	-	0.04	7.9	A	<25	0.05	8.4	A	<25
Innovation Way / Building 4 Employee Driveway												
Weekday Morning Peak Period												
Site Driveway WB	-	-	-	-	-	-	-	-	0.07	11.5	B	<25
Innovation Way SBL	-	-	-	-	-	-	-	-	0.09	8.6	A	<25
Weekday Evening Peak Period												
Site Driveway WB	-	-	-	-	-	-	-	-	0.31	16.9	C	33
Innovation Way SBL	-	-	-	-	-	-	-	-	0.07	10.5	B	<25
Innovation Way / Gas Station Driveway North												
Weekday Morning Peak Period												
Gas Station Driveway EB	-	-	-	-	0.02	9.9	A	<25	0.02	11.8	B	<25
Innovation Way NBL	-	-	-	-	0.06	8.6	A	<25	0.08	10.4	B	<25
Weekday Evening Peak Period												
Gas Station Driveway EB	-	-	-	-	0.01	9.4	A	<25	0.02	10.2	B	<25
Innovation Way NBL	-	-	-	-	0.02	8.1	A	<25	0.02	8.7	A	<25

Table 2 Continued – Revised Intersection Capacity and Queue Analysis Summary

Intersection / Lane Group	2022 Base Year - Existing Conditions				2029 Future Year - No Build				2029 Future Year - Build			
	V/C[a]	Delay[b]	LOS[c]	Queue[d]	V/C	Delay	LOS	Queue	V/C	Delay	LOS	Queue
Innovation Way @ Route 24 NB Ramps												
Weekday Morning Peak Period												
Innovation Way EBT	0.09	7.6	A	<25/30	0.12	7.9	A	31/85	0.15	7.8	A	38/61
Innovation Way WBT	0.02	2.7	A	<25/<25	0.05	2.8	A	<25/<25	0.11	3.0	A	<25/27
Innovation Way WBR	0.05	0.1	A	<25/<25	0.13	0.2	A	<25/<25	0.13	0.2	A	<25/<25
Route 24 NB Ramp NBL	0.39	25.7	C	<25/27	0.32	25.4	C	<25/30	0.32	25.4	C	<25/30
Route 24 NB Ramp NBR	0.13	0.2	A	<25/<25	0.19	0.3	A	<25/<25	0.44	0.9	A	<25/<25
Intersection	**0.18**	**7.2**	**A**	**-**	**0.24**	**5.0**	**A**	**-**	**0.55**	**4.0**	**A**	**-**
Weekday Evening Peak Period												
Innovation Way EBT	0.04	0.3	A	<25/<25	0.07	0.2	A	<25/<25	0.08	0.1	A	<25/<25
Innovation Way WBT	0.09	2.2	A	<25/<25	0.09	2.2	A	<25/25	0.26	2.8	A	52/71
Innovation Way WBR	0.11	0.1	A	<25/<25	0.12	0.2	A	<25/<25	0.14	0.2	A	<25/<25
Route 24 NB Ramp NBL	0.29	35.3	D	<25/27	0.26	35.1	D	<25/29	0.26	35.1	D	<25/29
Route 24 NB Ramp NBR	0.10	0.1	A	<25/<25	0.14	0.2	A	<25/<25	0.26	0.4	A	<25/<25
Intersection	**0.13**	**3.9**	**A**	**-**	**0.16**	**2.9**	**A**	**-**	**0.31**	**2.6**	**A**	**-**
Innovation Way / Gas Station Driveway South												
Weekday Morning Peak Period												
Innovation Way EBT	0.07	4.2	A	<25/<25	0.09	4.6	A	<25/<25	0.12	6.9	A	<25/25
Innovation Way EBR	0.05	0.1	A	<25/<25	0.05	0.1	A	<25/<25	0.05	0.1	A	<25/<25
Innovation Way WBL	0.06	2.9	A	<25/<25	0.14	5.0	A	<25/33	0.33	8.1	A	45/83
Innovation Way WBT	0.06	2.7	A	<25/<25	0.06	4.5	A	<25/<25	0.07	6.8	A	<25/<25
Route 24 SB Ramp SBL	0.25	23.4	C	<25/31	0.38	23.9	C	26/50	0.36	22.2	C	32/57
Route 24 SB Ramp SBR	0.02	0.0	A	<25/<25	0.02	0.0	A	<25/<25	0.02	0.0	A	<25/<25
Intersection	**0.11**	**6.9**	**A**	**-**	**0.20**	**9.1**	**A**	**-**	**0.37**	**10.2**	**B**	**-**
Weekday Evening Peak Period												
Innovation Way EBT	0.06	2.7	A	<25/<25	0.05	17.0	B	<25/<25	0.07	22.1	C	<25/37
Innovation Way EBR	0.11	0.2	A	<25/<25	0.08	0.1	A	<25/<25	0.08	0.1	A	<25/<25
Innovation Way WBL	0.11	2.0	A	<25/<25	0.19	4.2	A	<25/42	0.64	12.7	B	197/313
Innovation Way WBT	0.04	1.7	A	<25/<25	0.04	2.6	A	<25/<25	0.06	6.6	A	<25/32
Route 24 SB Ramp SBL	0.30	35.4	D	<25/26	0.38	32.2	C	34/61	0.41	32.3	C	38/66
Route 24 SB Ramp SBR	0.06	0.1	A	<25/<25	0.06	0.1	A	<25/<25	0.06	0.1	A	<25/<25
Intersection	**0.15**	**4.3**	**A**	**-**	**0.24**	**10.3**	**B**	**-**	**0.65**	**13.3**	**B**	**-**

Table 2 Continued – Revised Intersection Capacity and Queue Analysis Summary

Intersection / Lane Group	2022 Base Year - Existing Conditions				2029 Future Year - No Build				2029 Future Year - Build			
	V/C[a]	Delay[b]	LOS[c]	Queue[d]	V/C	Delay	LOS	Queue	V/C	Delay	LOS	Queue
Innovation Way @ South Main Street												
Weekday Morning Peak Period												
Innovation Way WBL	0.46	32.2	C	<25/<25	0.39	26.2	C	<25/<25	0.42	22.0	C	<25/<25
Innovation Way WBR	0.03	54.4	D	<25/<25	0.04	42.5	D	<25/<25	0.04	15.7	B	<25/<25
South Main Street NB	0.14	7.6	A	<25/53	0.16	8.5	A	<25/62	0.17	8.9	A	<25/62
South Main Street SBL	0.51	25.5	C	27/57	0.54	25.9	C	32/64	0.54	25.9	C	32/64
South Main Street SBT	0.47	25.1	C	31/63	0.47	24.6	C	33/64	0.47	24.6	C	33/64
Intersection	**0.23**	**26.2**	**C**	**-**	**0.25**	**23.7**	**C**	**-**	**0.27**	**17.0**	**B**	**-**
Weekday Evening Peak Period												
Innovation Way WBL	0.52	33.4	C	43/87	0.57	34.6	C	51/92	0.64	44.8	D	69/119
Innovation Way WBR	0.03	17.5	B	<25/<25	0.03	22.7	C	<25/<25	0.03	55.4	E	<25/<25
South Main Street NB	0.16	11.9	B	31/77	0.17	12.5	B	36/86	0.19	12.9	B	37/92
South Main Street SBL	0.66	35.7	D	77/80	0.68	35.6	D	85/86	0.68	35.6	D	85/86
South Main Street SBT	0.59	31.7	C	90/90	0.61	31.8	C	97/97	0.61	31.8	C	97/97
Intersection	**0.33**	**27.0**	**C**	**-**	**0.35**	**27.9**	**C**	**-**	**0.37**	**33.0**	**C**	**-**



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	35	1	3	32	116	133
Future Volume (vph)	35	1	3	32	116	133
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30			30	30	
Link Distance (ft)	1100			362	552	
Travel Time (s)	25.0			8.2	12.5	
Peak Hour Factor	0.73	0.73	0.53	0.53	0.76	0.76
Heavy Vehicles (%)	48%	0%	33%	45%	13%	13%
Shared Lane Traffic (%)						
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other
Control Type: Unsignalized

Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	35	1	3	32	116	133
Future Vol, veh/h	35	1	3	32	116	133
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	73	73	53	53	76	76
Heavy Vehicles, %	48	0	33	45	13	13
Mvmt Flow	48	1	6	60	153	175

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	283	164	328	0	-	0
Stage 1	241	-	-	-	-	-
Stage 2	42	-	-	-	-	-
Critical Hdwy	7.76	6.9	4.76	-	-	-
Critical Hdwy Stg 1	6.76	-	-	-	-	-
Critical Hdwy Stg 2	6.76	-	-	-	-	-
Follow-up Hdwy	3.98	3.3	2.53	-	-	-
Pot Cap-1 Maneuver	572	858	1033	-	-	-
Stage 1	655	-	-	-	-	-
Stage 2	855	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	569	858	1033	-	-	-
Mov Cap-2 Maneuver	569	-	-	-	-	-
Stage 1	651	-	-	-	-	-
Stage 2	855	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.8	0.7	0
HCM LOS	B		

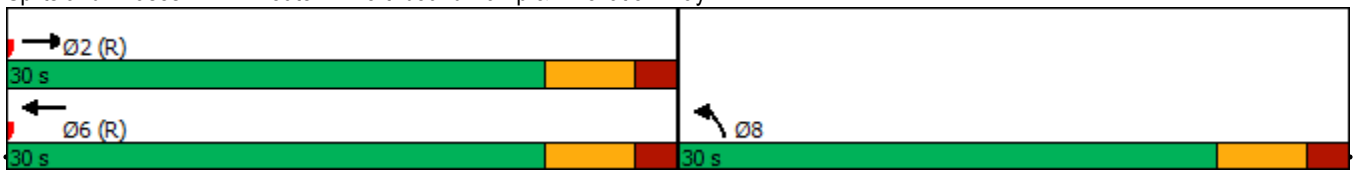
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1033	-	569	858	-	-
HCM Lane V/C Ratio	0.005	-	0.084	0.002	-	-
HCM Control Delay (s)	8.5	0	11.9	9.2	-	-
HCM Lane LOS	A	A	B	A	-	-
HCM 95th %tile Q(veh)	0	-	0.3	0	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	111	65	0	36	35	71	0	140	0	0	0
Future Volume (vph)	0	111	65	0	36	35	71	0	140	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		200	0		300	0		0
Storage Lanes	0		0	0		1	2		1	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		856			2483			1251			336	
Travel Time (s)		19.5			56.4			28.4			7.6	
Peak Hour Factor	0.91	0.91	0.91	0.75	0.75	0.75	0.73	0.73	0.73	0.92	0.92	0.92
Heavy Vehicles (%)	0%	18%	28%	0%	28%	71%	38%	0%	9%	2%	2%	2%
Shared Lane Traffic (%)												
Turn Type		NA			NA	Free	Prot		Free			
Protected Phases		2			6		8					
Permitted Phases						Free			Free			
Detector Phase		2			6		8					
Switch Phase												
Minimum Initial (s)		10.0			10.0		6.0					
Minimum Split (s)		21.0			16.0		12.0					
Total Split (s)		30.0			30.0		30.0					
Total Split (%)		50.0%			50.0%		50.0%					
Maximum Green (s)		24.0			24.0		24.0					
Yellow Time (s)		4.0			4.0		4.0					
All-Red Time (s)		2.0			2.0		2.0					
Lost Time Adjust (s)		0.0			0.0		0.0					
Total Lost Time (s)		6.0			6.0		6.0					
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)		2.0			2.0		2.0					
Recall Mode		C-Min			C-Min		None					
Walk Time (s)		7.0										
Flash Dont Walk (s)		8.0										
Pedestrian Calls (#/hr)		0										

Intersection Summary

Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 22 (37%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 40
Control Type: Actuated-Coordinated

Splits and Phases: 14: Route 24 Northbound Ramp & Innovation Way



Lane Group	EBT	WBT	WBR	NBL	NBR
Lane Group Flow (vph)	193	48	47	97	192
v/c Ratio	0.09	0.02	0.05	0.33	0.13
Control Delay	6.2	3.4	0.1	26.9	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	6.2	3.4	0.1	26.9	0.2
Queue Length 50th (ft)	16	2	0	17	0
Queue Length 95th (ft)	30	5	0	27	0
Internal Link Dist (ft)	776	2403			
Turn Bay Length (ft)			200		300
Base Capacity (vph)	2100	2093	944	1014	1482
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.09	0.02	0.05	0.10	0.13

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	111	65	0	36	35	71	0	140	0	0	0
Future Volume (vph)	0	111	65	0	36	35	71	0	140	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0	4.0	6.0		4.0			
Lane Util. Factor		0.95			0.95	1.00	0.97		1.00			
Frt		0.94			1.00	0.85	1.00		0.85			
Flt Protected		1.00			1.00	1.00	0.95		1.00			
Satd. Flow (prot)		2803			2820	944	2537		1482			
Flt Permitted		1.00			1.00	1.00	0.95		1.00			
Satd. Flow (perm)		2803			2820	944	2537		1482			
Peak-hour factor, PHF	0.91	0.91	0.91	0.75	0.75	0.75	0.73	0.73	0.73	0.92	0.92	0.92
Adj. Flow (vph)	0	122	71	0	48	47	97	0	192	0	0	0
RTOR Reduction (vph)	0	21	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	172	0	0	48	47	97	0	192	0	0	0
Heavy Vehicles (%)	0%	18%	28%	0%	28%	71%	38%	0%	9%	2%	2%	2%
Turn Type		NA			NA	Free	Prot		Free			
Protected Phases		2			6		8					
Permitted Phases						Free			Free			
Actuated Green, G (s)		42.1			42.1	60.0	5.9		60.0			
Effective Green, g (s)		42.1			42.1	60.0	5.9		60.0			
Actuated g/C Ratio		0.70			0.70	1.00	0.10		1.00			
Clearance Time (s)		6.0			6.0		6.0					
Vehicle Extension (s)		2.0			2.0		2.0					
Lane Grp Cap (vph)		1966			1978	944	249		1482			
v/s Ratio Prot		0.06			0.02		c0.04					
v/s Ratio Perm						0.05			c0.13			
v/c Ratio		0.09			0.02	0.05	0.39		0.13			
Uniform Delay, d1		2.8			2.7	0.0	25.4		0.0			
Progression Factor		2.65			1.00	1.00	1.00		1.00			
Incremental Delay, d2		0.1			0.0	0.1	0.4		0.2			
Delay (s)		7.6			2.7	0.1	25.7		0.2			
Level of Service		A			A	A	C		A			
Approach Delay (s)		7.6			1.4			8.8			0.0	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	7.2	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.18		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	20.0%	ICU Level of Service	A
Analysis Period (min)	15		

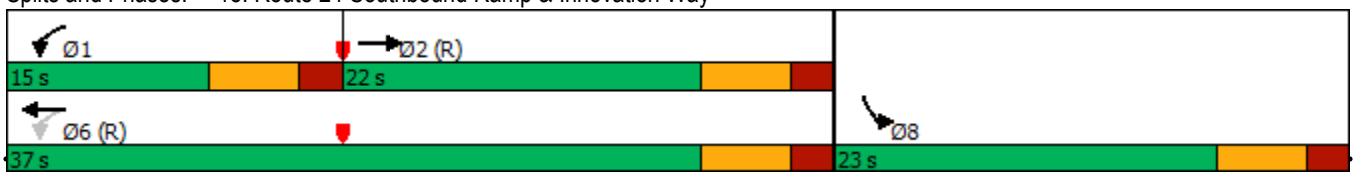
c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	93	59	29	80	0	0	0	0	81	0	26
Future Volume (vph)	0	93	59	29	80	0	0	0	0	81	0	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		500	300		0	0		0	600		0
Storage Lanes	0		1	1		0	0		0	1		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		920			856			388			1004	
Travel Time (s)		20.9			19.5			8.8			22.8	
Peak Hour Factor	0.85	0.85	0.85	0.76	0.76	0.76	0.92	0.92	0.92	0.85	0.85	0.85
Heavy Vehicles (%)	0%	22%	21%	23%	38%	0%	2%	2%	2%	21%	0%	22%
Shared Lane Traffic (%)												
Turn Type		NA	Free	pm+pt	NA					Prot		Free
Protected Phases		2		1	6					8		
Permitted Phases			Free	6								Free
Detector Phase		2		1	6					8		
Switch Phase												
Minimum Initial (s)		10.0		7.0	10.0					10.0		
Minimum Split (s)		16.0		13.0	16.0					21.0		
Total Split (s)		22.0		15.0	37.0					23.0		
Total Split (%)		36.7%		25.0%	61.7%					38.3%		
Maximum Green (s)		16.0		9.0	31.0					17.0		
Yellow Time (s)		4.0		4.0	4.0					4.0		
All-Red Time (s)		2.0		2.0	2.0					2.0		
Lost Time Adjust (s)		0.0		0.0	0.0					0.0		
Total Lost Time (s)		6.0		6.0	6.0					6.0		
Lead/Lag		Lag		Lead								
Lead-Lag Optimize?		Yes		Yes								
Vehicle Extension (s)		2.0		2.0	2.0					2.0		
Recall Mode		C-Min		None	C-Min					None		
Walk Time (s)										7.0		
Flash Dont Walk (s)										8.0		
Pedestrian Calls (#/hr)										0		

Intersection Summary

Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBTL, Start of Green, Master Intersection
Natural Cycle: 50
Control Type: Actuated-Coordinated

Splits and Phases: 15: Route 24 Southbound Ramp & Innovation Way



Lane Group	EBT	EBR	WBL	WBT	SBL	SBR
Lane Group Flow (vph)	109	69	38	105	95	31
v/c Ratio	0.06	0.05	0.06	0.06	0.20	0.02
Control Delay	5.0	0.1	3.4	3.2	22.8	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	5.0	0.1	3.4	3.2	22.8	0.0
Queue Length 50th (ft)	5	0	3	4	15	0
Queue Length 95th (ft)	16	0	7	7	31	0
Internal Link Dist (ft)	840			776		
Turn Bay Length (ft)		500	300		600	
Base Capacity (vph)	1834	1335	694	1848	819	1324
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	0.06	0.05	0.05	0.06	0.12	0.02

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	93	59	29	80	0	0	0	0	81	0	26
Future Volume (vph)	0	93	59	29	80	0	0	0	0	81	0	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	4.0	6.0	6.0					6.0		4.0
Lane Util. Factor		0.95	1.00	1.00	0.95					0.97		1.00
Frt		1.00	0.85	1.00	1.00					1.00		0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (prot)		2959	1335	1467	2616					2894		1324
Flt Permitted		1.00	1.00	0.57	1.00					0.95		1.00
Satd. Flow (perm)		2959	1335	885	2616					2894		1324
Peak-hour factor, PHF	0.85	0.85	0.85	0.76	0.76	0.76	0.92	0.92	0.92	0.85	0.85	0.85
Adj. Flow (vph)	0	109	69	38	105	0	0	0	0	95	0	31
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	109	69	38	105	0	0	0	0	95	0	31
Heavy Vehicles (%)	0%	22%	21%	23%	38%	0%	2%	2%	2%	21%	0%	22%
Turn Type		NA	Free	pm+pt	NA					Prot		Free
Protected Phases		2		1	6					8		
Permitted Phases			Free	6								Free
Actuated Green, G (s)		31.2	60.0	40.0	40.0					8.0		60.0
Effective Green, g (s)		31.2	60.0	40.0	40.0					8.0		60.0
Actuated g/C Ratio		0.52	1.00	0.67	0.67					0.13		1.00
Clearance Time (s)		6.0		6.0	6.0					6.0		
Vehicle Extension (s)		2.0		2.0	2.0					2.0		
Lane Grp Cap (vph)		1538	1335	617	1744					385		1324
v/s Ratio Prot		c0.04		0.00	0.04					c0.03		
v/s Ratio Perm			c0.05	0.04								0.02
v/c Ratio		0.07	0.05	0.06	0.06					0.25		0.02
Uniform Delay, d1		7.2	0.0	3.7	3.5					23.3		0.0
Progression Factor		0.58	1.00	0.78	0.75					1.00		1.00
Incremental Delay, d2		0.1	0.1	0.0	0.1					0.1		0.0
Delay (s)		4.2	0.1	2.9	2.7					23.4		0.0
Level of Service		A	A	A	A					C		A
Approach Delay (s)		2.6			2.7			0.0			17.7	
Approach LOS		A			A			A			B	

Intersection Summary			
HCM 2000 Control Delay	6.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.11		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	20.0%	ICU Level of Service	A
Analysis Period (min)	15		

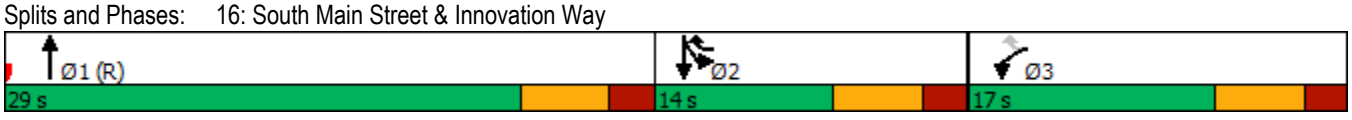
c Critical Lane Group

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	20	62	71	73	75	69
Future Volume (vph)	20	62	71	73	75	69
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150	0		0	400	
Storage Lanes	1	2		0	1	
Taper Length (ft)	25				25	
Right Turn on Red		Yes		Yes		
Link Speed (mph)	30		30			30
Link Distance (ft)	920		357			952
Travel Time (s)	20.9		8.1			21.6
Peak Hour Factor	0.60	0.60	0.91	0.91	0.87	0.87
Heavy Vehicles (%)	22%	35%	8%	6%	42%	16%
Shared Lane Traffic (%)					10%	
Turn Type	Prot	pm+ov	NA		Split	NA
Protected Phases	3	2	1		2	2
Permitted Phases		3				
Detector Phase	3	2	1		2	2
Switch Phase						
Minimum Initial (s)	6.0	7.0	10.0		7.0	7.0
Minimum Split (s)	12.0	13.0	16.0		13.0	13.0
Total Split (s)	17.0	14.0	29.0		14.0	14.0
Total Split (%)	28.3%	23.3%	48.3%		23.3%	23.3%
Maximum Green (s)	11.0	8.0	23.0		8.0	8.0
Yellow Time (s)	4.0	4.0	4.0		4.0	4.0
All-Red Time (s)	2.0	2.0	2.0		2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0		6.0	6.0
Lead/Lag		Lag	Lead		Lag	Lag
Lead-Lag Optimize?		Yes	Yes		Yes	Yes
Vehicle Extension (s)	2.0	2.0	2.0		2.0	2.0
Recall Mode	None	None	C-Min		None	None

Intersection Summary

Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 20 (33%), Referenced to phase 1:NBT, Start of Green
Natural Cycle: 45
Control Type: Actuated-Coordinated

Splits and Phases: 16: South Main Street & Innovation Way



Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	33	103	158	77	88
v/c Ratio	0.20	0.18	0.15	0.43	0.39
Control Delay	29.5	8.4	6.1	30.4	27.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	29.5	8.4	6.1	30.4	27.8
Queue Length 50th (ft)	11	0	8	27	31
Queue Length 95th (ft)	20	14	53	57	63
Internal Link Dist (ft)	840		277		872
Turn Bay Length (ft)	150			400	
Base Capacity (vph)	271	590	1073	186	233
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.12	0.17	0.15	0.41	0.38

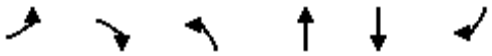
Intersection Summary

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	20	62	71	73	75	69
Future Volume (vph)	20	62	71	73	75	69
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0		6.0	6.0
Lane Util. Factor	1.00	0.88	1.00		0.95	0.95
Frt	1.00	0.85	0.93		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	0.99
Satd. Flow (prot)	1480	2105	1655		1208	1513
Flt Permitted	0.95	1.00	1.00		0.95	0.99
Satd. Flow (perm)	1480	2105	1655		1208	1513
Peak-hour factor, PHF	0.60	0.60	0.91	0.91	0.87	0.87
Adj. Flow (vph)	33	103	78	80	86	79
RTOR Reduction (vph)	0	85	38	0	0	0
Lane Group Flow (vph)	33	18	120	0	77	88
Heavy Vehicles (%)	22%	35%	8%	6%	42%	16%
Turn Type	Prot	pm+ov	NA		Split	NA
Protected Phases	3	2	1		2	2
Permitted Phases		3				
Actuated Green, G (s)	2.9	10.4	31.6		7.5	7.5
Effective Green, g (s)	2.9	10.4	31.6		7.5	7.5
Actuated g/C Ratio	0.05	0.17	0.53		0.12	0.12
Clearance Time (s)	6.0	6.0	6.0		6.0	6.0
Vehicle Extension (s)	2.0	2.0	2.0		2.0	2.0
Lane Grp Cap (vph)	71	575	871		151	189
v/s Ratio Prot	c0.02	0.00	c0.07		c0.06	0.06
v/s Ratio Perm		0.00				
v/c Ratio	0.46	0.03	0.14		0.51	0.47
Uniform Delay, d1	27.8	20.6	7.2		24.5	24.4
Progression Factor	1.10	2.64	1.00		1.00	1.00
Incremental Delay, d2	1.7	0.0	0.3		1.0	0.7
Delay (s)	32.2	54.4	7.6		25.5	25.1
Level of Service	C	D	A		C	C
Approach Delay (s)	49.0		7.6			25.3
Approach LOS	D		A			C

Intersection Summary

HCM 2000 Control Delay	26.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.23		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	34.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	117	7	5	96	91	73
Future Volume (vph)	117	7	5	96	91	73
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30			30	30	
Link Distance (ft)	1100			362	552	
Travel Time (s)	25.0			8.2	12.5	
Peak Hour Factor	0.45	0.45	0.71	0.71	0.72	0.72
Heavy Vehicles (%)	7%	50%	0%	0%	8%	14%
Shared Lane Traffic (%)						
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other
Control Type: Unsignalized

Intersection	
Int Delay, s/veh	5.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	117	7	5	96	91	73
Future Vol, veh/h	117	7	5	96	91	73
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	45	45	71	71	72	72
Heavy Vehicles, %	7	50	0	0	8	14
Mvmt Flow	260	16	7	135	126	101

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	259	114	227	0	-	0
Stage 1	177	-	-	-	-	-
Stage 2	82	-	-	-	-	-
Critical Hdwy	6.94	7.9	4.1	-	-	-
Critical Hdwy Stg 1	5.94	-	-	-	-	-
Critical Hdwy Stg 2	5.94	-	-	-	-	-
Follow-up Hdwy	3.57	3.8	2.2	-	-	-
Pot Cap-1 Maneuver	694	783	1353	-	-	-
Stage 1	821	-	-	-	-	-
Stage 2	917	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	690	783	1353	-	-	-
Mov Cap-2 Maneuver	690	-	-	-	-	-
Stage 1	816	-	-	-	-	-
Stage 2	917	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.1	0.4	0
HCM LOS	B		

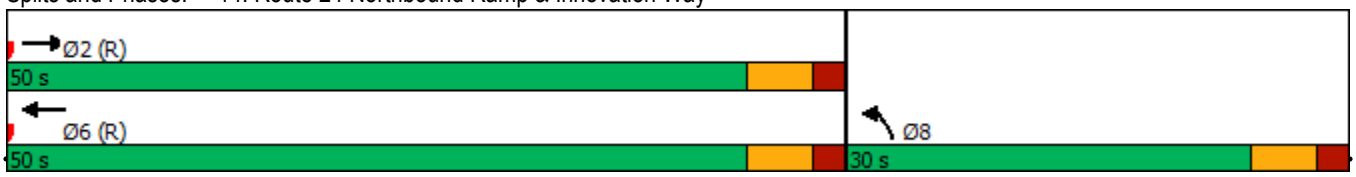
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1353	-	690	783	-	-
HCM Lane V/C Ratio	0.005	-	0.377	0.02	-	-
HCM Control Delay (s)	7.7	0	13.3	9.7	-	-
HCM Lane LOS	A	A	B	A	-	-
HCM 95th %tile Q(veh)	0	-	1.8	0.1	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	50	29	0	130	86	48	0	116	0	0	0
Future Volume (vph)	0	50	29	0	130	86	48	0	116	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		200	0		300	0		0
Storage Lanes	0		0	0		1	2		1	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		856			2483			1251			336	
Travel Time (s)		19.5			56.4			28.4			7.6	
Peak Hour Factor	0.78	0.78	0.78	0.53	0.53	0.53	0.77	0.77	0.77	0.92	0.92	0.92
Heavy Vehicles (%)	0%	23%	28%	0%	2%	7%	24%	0%	4%	2%	2%	2%
Shared Lane Traffic (%)												
Turn Type		NA			NA	Free	Prot		Free			
Protected Phases		2			6		8					
Permitted Phases						Free			Free			
Detector Phase		2			6		8					
Switch Phase												
Minimum Initial (s)		10.0			10.0		10.0					
Minimum Split (s)		21.0			16.0		16.0					
Total Split (s)		50.0			50.0		30.0					
Total Split (%)		62.5%			62.5%		37.5%					
Maximum Green (s)		44.0			44.0		24.0					
Yellow Time (s)		4.0			4.0		4.0					
All-Red Time (s)		2.0			2.0		2.0					
Lost Time Adjust (s)		0.0			0.0		0.0					
Total Lost Time (s)		6.0			6.0		6.0					
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)		2.0			2.0		2.0					
Recall Mode		C-Min			C-Min		None					
Walk Time (s)		7.0										
Flash Dont Walk (s)		8.0										
Pedestrian Calls (#/hr)		0										

Intersection Summary

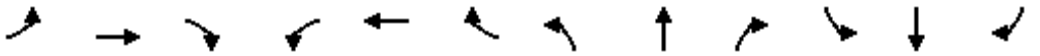
Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 35 (44%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 40
Control Type: Actuated-Coordinated

Splits and Phases: 14: Route 24 Northbound Ramp & Innovation Way



Lane Group	EBT	WBT	WBR	NBL	NBR
Lane Group Flow (vph)	101	245	162	62	151
v/c Ratio	0.04	0.08	0.11	0.18	0.10
Control Delay	0.3	2.6	0.1	32.8	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	0.3	2.6	0.1	32.8	0.1
Queue Length 50th (ft)	0	15	0	14	0
Queue Length 95th (ft)	0	13	0	27	0
Internal Link Dist (ft)	776	2403			
Turn Bay Length (ft)			200		300
Base Capacity (vph)	2288	2955	1509	847	1553
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.04	0.08	0.11	0.07	0.10

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	50	29	0	130	86	48	0	116	0	0	0
Future Volume (vph)	0	50	29	0	130	86	48	0	116	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0	4.0	6.0		4.0			
Lane Util. Factor		0.95			0.95	1.00	0.97		1.00			
Frt		0.95			1.00	0.85	1.00		0.85			
Flt Protected		1.00			1.00	1.00	0.95		1.00			
Satd. Flow (prot)		2733			3539	1509	2824		1553			
Flt Permitted		1.00			1.00	1.00	0.95		1.00			
Satd. Flow (perm)		2733			3539	1509	2824		1553			
Peak-hour factor, PHF	0.78	0.78	0.78	0.53	0.53	0.53	0.77	0.77	0.77	0.92	0.92	0.92
Adj. Flow (vph)	0	64	37	0	245	162	62	0	151	0	0	0
RTOR Reduction (vph)	0	8	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	93	0	0	245	162	62	0	151	0	0	0
Heavy Vehicles (%)	0%	23%	28%	0%	2%	7%	24%	0%	4%	2%	2%	2%
Turn Type		NA			NA	Free	Prot		Free			
Protected Phases		2			6		8					
Permitted Phases						Free			Free			
Actuated Green, G (s)		62.0			62.0	80.0	6.0		80.0			
Effective Green, g (s)		62.0			62.0	80.0	6.0		80.0			
Actuated g/C Ratio		0.78			0.78	1.00	0.08		1.00			
Clearance Time (s)		6.0			6.0		6.0					
Vehicle Extension (s)		2.0			2.0		2.0					
Lane Grp Cap (vph)		2118			2742	1509	211		1553			
v/s Ratio Prot		0.03			0.07		c0.02					
v/s Ratio Perm						c0.11			0.10			
v/c Ratio		0.04			0.09	0.11	0.29		0.10			
Uniform Delay, d1		2.1			2.2	0.0	35.0		0.0			
Progression Factor		0.12			1.00	1.00	1.00		1.00			
Incremental Delay, d2		0.0			0.1	0.1	0.3		0.1			
Delay (s)		0.3			2.2	0.1	35.3		0.1			
Level of Service		A			A	A	D		A			
Approach Delay (s)		0.3			1.4			10.4			0.0	
Approach LOS		A			A			B			A	

Intersection Summary			
HCM 2000 Control Delay	3.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.13		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	20.0%	ICU Level of Service	A
Analysis Period (min)	15		

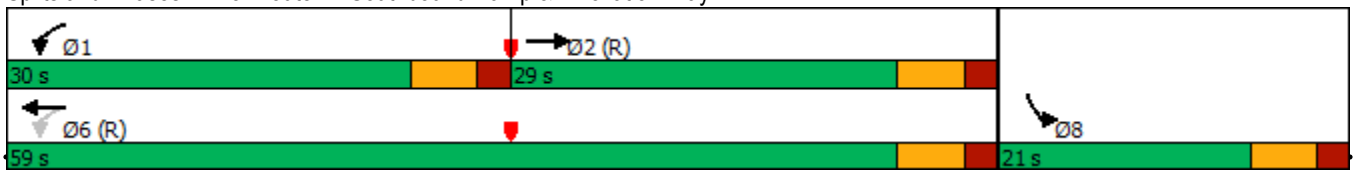
c Critical Lane Group

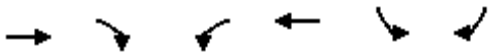
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	62	91	64	71	0	0	0	0	44	0	70
Future Volume (vph)	0	62	91	64	71	0	0	0	0	44	0	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		500	300		0	0		0	600		0
Storage Lanes	0		1	1		0	0		0	1		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		920			856			388			1004	
Travel Time (s)		20.9			19.5			8.8			22.8	
Peak Hour Factor	0.60	0.60	0.60	0.72	0.72	0.72	0.92	0.92	0.92	0.86	0.86	0.86
Heavy Vehicles (%)	0%	39%	16%	21%	24%	0%	2%	2%	2%	54%	0%	13%
Shared Lane Traffic (%)												
Turn Type		NA	Free	pm+pt	NA					Prot		Free
Protected Phases		2		1	6					8		
Permitted Phases			Free	6								Free
Detector Phase		2		1	6					8		
Switch Phase												
Minimum Initial (s)		10.0		7.0	10.0					10.0		
Minimum Split (s)		16.0		13.0	16.0					21.0		
Total Split (s)		29.0		30.0	59.0					21.0		
Total Split (%)		36.3%		37.5%	73.8%					26.3%		
Maximum Green (s)		23.0		24.0	53.0					15.0		
Yellow Time (s)		4.0		4.0	4.0					4.0		
All-Red Time (s)		2.0		2.0	2.0					2.0		
Lost Time Adjust (s)		0.0		0.0	0.0					0.0		
Total Lost Time (s)		6.0		6.0	6.0					6.0		
Lead/Lag		Lag		Lead								
Lead-Lag Optimize?		Yes		Yes								
Vehicle Extension (s)		2.0		2.0	2.0					2.0		
Recall Mode		C-Min		None	C-Min					None		
Walk Time (s)										7.0		
Flash Dont Walk (s)										8.0		
Pedestrian Calls (#/hr)										0		

Intersection Summary

Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBTL, Start of Green, Master Intersection
Natural Cycle: 50
Control Type: Actuated-Coordinated

Splits and Phases: 15: Route 24 Southbound Ramp & Innovation Way





Lane Group	EBT	EBR	WBL	WBT	SBL	SBR
Lane Group Flow (vph)	103	152	89	99	51	81
v/c Ratio	0.06	0.11	0.11	0.04	0.18	0.06
Control Delay	3.4	0.2	2.6	2.2	33.1	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	3.4	0.2	2.6	2.2	33.1	0.1
Queue Length 50th (ft)	3	0	8	4	11	0
Queue Length 95th (ft)	8	0	13	7	26	0
Internal Link Dist (ft)	840			776		
Turn Bay Length (ft)		500	300		600	
Base Capacity (vph)	1790	1392	934	2430	426	1429
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	0.06	0.11	0.10	0.04	0.12	0.06

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	62	91	64	71	0	0	0	0	44	0	70
Future Volume (vph)	0	62	91	64	71	0	0	0	0	44	0	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	4.0	6.0	6.0					6.0		4.0
Lane Util. Factor		0.95	1.00	1.00	0.95					0.97		1.00
Frt		1.00	0.85	1.00	1.00					1.00		0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (prot)		2597	1392	1492	2911					2274		1429
Flt Permitted		1.00	1.00	0.61	1.00					0.95		1.00
Satd. Flow (perm)		2597	1392	964	2911					2274		1429
Peak-hour factor, PHF	0.60	0.60	0.60	0.72	0.72	0.72	0.92	0.92	0.92	0.86	0.86	0.86
Adj. Flow (vph)	0	103	152	89	99	0	0	0	0	51	0	81
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	103	152	89	99	0	0	0	0	51	0	81
Heavy Vehicles (%)	0%	39%	16%	21%	24%	0%	2%	2%	2%	54%	0%	13%
Turn Type		NA	Free	pm+pt	NA					Prot		Free
Protected Phases		2		1	6					8		
Permitted Phases			Free	6								Free
Actuated Green, G (s)		50.3	80.0	62.0	62.0					6.0		80.0
Effective Green, g (s)		50.3	80.0	62.0	62.0					6.0		80.0
Actuated g/C Ratio		0.63	1.00	0.78	0.78					0.08		1.00
Clearance Time (s)		6.0		6.0	6.0					6.0		
Vehicle Extension (s)		2.0		2.0	2.0					2.0		
Lane Grp Cap (vph)		1632	1392	784	2256					170		1429
v/s Ratio Prot		0.04		0.01	0.03					c0.02		
v/s Ratio Perm			c0.11	0.08								0.06
v/c Ratio		0.06	0.11	0.11	0.04					0.30		0.06
Uniform Delay, d1		5.7	0.0	2.4	2.1					35.0		0.0
Progression Factor		0.47	1.00	0.82	0.80					1.00		1.00
Incremental Delay, d2		0.1	0.2	0.0	0.0					0.4		0.1
Delay (s)		2.7	0.2	2.0	1.7					35.4		0.1
Level of Service		A	A	A	A					D		A
Approach Delay (s)		1.2			1.8			0.0			13.7	
Approach LOS		A			A			A			B	

Intersection Summary

HCM 2000 Control Delay	4.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.15		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	21.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	84	58	79	46	108	104
Future Volume (vph)	84	58	79	46	108	104
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150	0		0	400	
Storage Lanes	1	2		0	1	
Taper Length (ft)	25				25	
Right Turn on Red		Yes		Yes		
Link Speed (mph)	30		30			30
Link Distance (ft)	920		357			952
Travel Time (s)	20.9		8.1			21.6
Peak Hour Factor	0.87	0.87	0.85	0.85	0.62	0.62
Heavy Vehicles (%)	3%	41%	1%	10%	32%	1%
Shared Lane Traffic (%)					10%	
Turn Type	Prot	pm+ov	NA		Split	NA
Protected Phases	3	2	1		2	2
Permitted Phases		3				
Detector Phase	3	2	1		2	2
Switch Phase						
Minimum Initial (s)	10.0	7.0	10.0		7.0	7.0
Minimum Split (s)	16.0	13.0	16.0		13.0	13.0
Total Split (s)	17.0	45.0	18.0		45.0	45.0
Total Split (%)	21.3%	56.3%	22.5%		56.3%	56.3%
Maximum Green (s)	11.0	39.0	12.0		39.0	39.0
Yellow Time (s)	4.0	4.0	4.0		4.0	4.0
All-Red Time (s)	2.0	2.0	2.0		2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0		6.0	6.0
Lead/Lag		Lag	Lead		Lag	Lag
Lead-Lag Optimize?		Yes	Yes		Yes	Yes
Vehicle Extension (s)	2.0	2.0	2.0		2.0	2.0
Recall Mode	None	None	C-Min		None	None

Intersection Summary

Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 9 (11%), Referenced to phase 1:NBT, Start of Green
Natural Cycle: 45
Control Type: Actuated-Coordinated

Splits and Phases: 16: South Main Street & Innovation Way

Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	97	67	147	157	185
v/c Ratio	0.42	0.09	0.17	0.67	0.59
Control Delay	36.4	3.0	12.4	42.9	36.4
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	36.4	3.0	12.4	42.9	36.4
Queue Length 50th (ft)	43	0	31	77	90
Queue Length 95th (ft)	87	8	77	80	89
Internal Link Dist (ft)	840		277		872
Turn Bay Length (ft)	150			400	
Base Capacity (vph)	247	1026	881	633	842
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.39	0.07	0.17	0.25	0.22

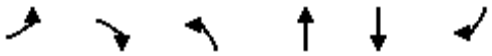
Intersection Summary

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	84	58	79	46	108	104
Future Volume (vph)	84	58	79	46	108	104
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0		6.0	6.0
Lane Util. Factor	1.00	0.88	1.00		0.95	0.95
Frt	1.00	0.85	0.95		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1752	2016	1731		1299	1730
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1752	2016	1731		1299	1730
Peak-hour factor, PHF	0.87	0.87	0.85	0.85	0.62	0.62
Adj. Flow (vph)	97	67	93	54	174	168
RTOR Reduction (vph)	0	48	16	0	0	0
Lane Group Flow (vph)	97	19	131	0	157	185
Heavy Vehicles (%)	3%	41%	1%	10%	32%	1%
Turn Type	Prot	pm+ov	NA		Split	NA
Protected Phases	3	2	1		2	2
Permitted Phases		3				
Actuated Green, G (s)	8.6	23.2	38.8		14.6	14.6
Effective Green, g (s)	8.6	23.2	38.8		14.6	14.6
Actuated g/C Ratio	0.11	0.29	0.48		0.18	0.18
Clearance Time (s)	6.0	6.0	6.0		6.0	6.0
Vehicle Extension (s)	2.0	2.0	2.0		2.0	2.0
Lane Grp Cap (vph)	188	735	839		237	315
v/s Ratio Prot	c0.06	0.00	c0.08		c0.12	0.11
v/s Ratio Perm		0.00				
v/c Ratio	0.52	0.03	0.16		0.66	0.59
Uniform Delay, d1	33.7	20.3	11.5		30.4	29.9
Progression Factor	0.96	0.86	1.00		1.00	1.00
Incremental Delay, d2	1.0	0.0	0.4		5.3	1.8
Delay (s)	33.4	17.5	11.9		35.7	31.7
Level of Service	C	B	B		D	C
Approach Delay (s)	26.9		11.9			33.6
Approach LOS	C		B			C

Intersection Summary

HCM 2000 Control Delay	27.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.33		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	37.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	38	1	3	104	194	143
Future Volume (vph)	38	1	3	104	194	143
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30			30	30	
Link Distance (ft)	1100			362	552	
Travel Time (s)	25.0			8.2	12.5	
Peak Hour Factor	0.73	0.73	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	42%	0%	33%	13%	7%	11%
Shared Lane Traffic (%)						
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other
Control Type: Unsignalized

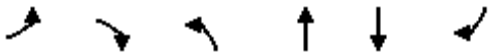
Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	38	1	3	104	194	143
Future Vol, veh/h	38	1	3	104	194	143
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	73	73	92	92	92	92
Heavy Vehicles, %	42	0	33	13	7	11
Mvmt Flow	52	1	3	113	211	155

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	352	183	366	0	-	0
Stage 1	289	-	-	-	-	-
Stage 2	63	-	-	-	-	-
Critical Hdwy	7.64	6.9	4.76	-	-	-
Critical Hdwy Stg 1	6.64	-	-	-	-	-
Critical Hdwy Stg 2	6.64	-	-	-	-	-
Follow-up Hdwy	3.92	3.3	2.53	-	-	-
Pot Cap-1 Maneuver	524	834	995	-	-	-
Stage 1	628	-	-	-	-	-
Stage 2	846	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	522	834	995	-	-	-
Mov Cap-2 Maneuver	522	-	-	-	-	-
Stage 1	626	-	-	-	-	-
Stage 2	846	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.6	0.2	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	995	-	522	834	-	-
HCM Lane V/C Ratio	0.003	-	0.1	0.002	-	-
HCM Control Delay (s)	8.6	0	12.7	9.3	-	-
HCM Lane LOS	A	A	B	A	-	-
HCM 95th %tile Q(veh)	0	-	0.3	0	-	-



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	200	60	15	127	279	35
Future Volume (vph)	200	60	15	127	279	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30			30	30	
Link Distance (ft)	1059			552	469	
Travel Time (s)	24.1			12.5	10.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	30%	11%	2%
Shared Lane Traffic (%)						
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other
Control Type: Unsignalized

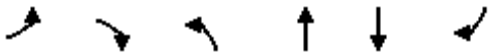
Intersection	
Int Delay, s/veh	6.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	200	60	15	127	279	35
Future Vol, veh/h	200	60	15	127	279	35
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	30	11	2
Mvmt Flow	217	65	16	138	303	38

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	423	171	341	0	-	0
Stage 1	322	-	-	-	-	-
Stage 2	101	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	559	843	1215	-	-	-
Stage 1	707	-	-	-	-	-
Stage 2	912	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	551	843	1215	-	-	-
Mov Cap-2 Maneuver	551	-	-	-	-	-
Stage 1	697	-	-	-	-	-
Stage 2	912	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	16.3	0.8	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1215	-	599	-	-
HCM Lane V/C Ratio	0.013	-	0.472	-	-
HCM Control Delay (s)	8	0	16.3	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0	-	2.5	-	-



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	10	55	272	304	165
Future Volume (vph)	0	10	55	272	304	165
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30			30	30	
Link Distance (ft)	1076			424	2483	
Travel Time (s)	24.5			9.6	56.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	14%	10%	2%
Shared Lane Traffic (%)						
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other
Control Type: Unsignalized

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	10	55	272	304	165
Future Vol, veh/h	0	10	55	272	304	165
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	14	10	2
Mvmt Flow	0	11	60	296	330	179

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	255	509	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	4.14	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	0	744	1052	-	-	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	744	1052	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.9	1.6	0
HCM LOS	A		

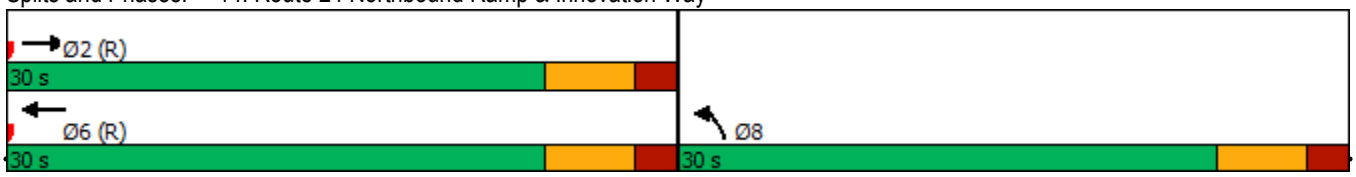
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1052	-	744	-	-
HCM Lane V/C Ratio	0.057	-	0.015	-	-
HCM Control Delay (s)	8.6	0.2	9.9	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.2	-	0	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	194	70	0	114	163	76	0	275	0	0	0
Future Volume (vph)	0	194	70	0	114	163	76	0	275	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		200	0		300	0		0
Storage Lanes	0		0	0		1	2		1	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		856			2483			1251			336	
Travel Time (s)		19.5			56.4			28.4			7.6	
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
Heavy Vehicles (%)	0%	10%	24%	0%	9%	15%	34%	0%	4%	0%	0%	0%
Shared Lane Traffic (%)												
Turn Type		NA			NA	Free	Prot		Free			
Protected Phases		2			6		8					
Permitted Phases						Free			Free			
Detector Phase		2			6		8					
Switch Phase												
Minimum Initial (s)		10.0			10.0		10.0					
Minimum Split (s)		21.0			16.0		16.0					
Total Split (s)		30.0			30.0		30.0					
Total Split (%)		50.0%			50.0%		50.0%					
Maximum Green (s)		24.0			24.0		24.0					
Yellow Time (s)		4.0			4.0		4.0					
All-Red Time (s)		2.0			2.0		2.0					
Lost Time Adjust (s)		0.0			0.0		0.0					
Total Lost Time (s)		6.0			6.0		6.0					
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)		2.0			2.0		2.0					
Recall Mode		C-Min			C-Min		None					
Walk Time (s)		7.0										
Flash Dont Walk (s)		8.0										
Pedestrian Calls (#/hr)		0										

Intersection Summary

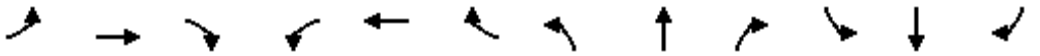
Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 22 (37%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 40
Control Type: Actuated-Coordinated

Splits and Phases: 14: Route 24 Northbound Ramp & Innovation Way



Lane Group	EBT	WBT	WBR	NBL	NBR
Lane Group Flow (vph)	287	124	177	83	299
v/c Ratio	0.12	0.05	0.13	0.19	0.19
Control Delay	7.2	3.7	0.2	22.9	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	7.2	3.7	0.2	22.9	0.3
Queue Length 50th (ft)	31	7	0	13	0
Queue Length 95th (ft)	52	15	0	30	0
Internal Link Dist (ft)	776	2403			
Turn Bay Length (ft)			200		300
Base Capacity (vph)	2394	2583	1404	1045	1553
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.12	0.05	0.13	0.08	0.19

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	194	70	0	114	163	76	0	275	0	0	0
Future Volume (vph)	0	194	70	0	114	163	76	0	275	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0	4.0	6.0		4.0			
Lane Util. Factor		0.95			0.95	1.00	0.97		1.00			
Frt		0.96			1.00	0.85	1.00		0.85			
Flt Protected		1.00			1.00	1.00	0.95		1.00			
Satd. Flow (prot)		3049			3312	1404	2613		1553			
Flt Permitted		1.00			1.00	1.00	0.95		1.00			
Satd. Flow (perm)		3049			3312	1404	2613		1553			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	211	76	0	124	177	83	0	299	0	0	0
RTOR Reduction (vph)	0	23	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	264	0	0	124	177	83	0	299	0	0	0
Heavy Vehicles (%)	0%	10%	24%	0%	9%	15%	34%	0%	4%	0%	0%	0%
Turn Type		NA			NA	Free	Prot		Free			
Protected Phases		2			6		8					
Permitted Phases						Free			Free			
Actuated Green, G (s)		42.0			42.0	60.0	6.0		60.0			
Effective Green, g (s)		42.0			42.0	60.0	6.0		60.0			
Actuated g/C Ratio		0.70			0.70	1.00	0.10		1.00			
Clearance Time (s)		6.0			6.0		6.0					
Vehicle Extension (s)		2.0			2.0		2.0					
Lane Grp Cap (vph)		2134			2318	1404	261		1553			
v/s Ratio Prot		0.09			0.04		0.03					
v/s Ratio Perm						0.13			c0.19			
v/c Ratio		0.12			0.05	0.13	0.32		0.19			
Uniform Delay, d1		3.0			2.8	0.0	25.1		0.0			
Progression Factor		2.63			1.00	1.00	1.00		1.00			
Incremental Delay, d2		0.1			0.0	0.2	0.3		0.3			
Delay (s)		7.9			2.8	0.2	25.4		0.3			
Level of Service		A			A	A	C		A			
Approach Delay (s)		7.9			1.3			5.7			0.0	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	5.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.24		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	20.0%	ICU Level of Service	A
Analysis Period (min)	15		

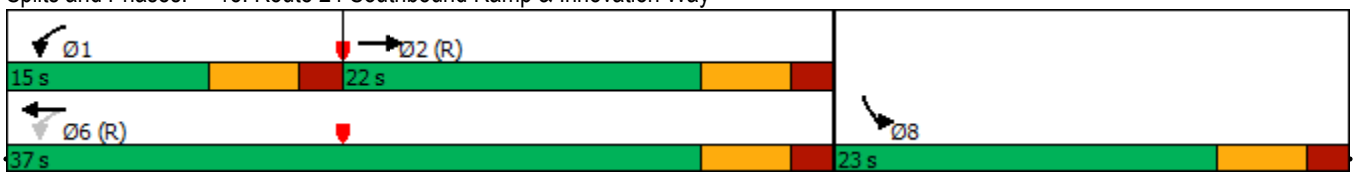
c Critical Lane Group

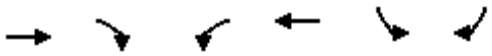
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	115	63	96	96	0	0	0	0	147	0	28
Future Volume (vph)	0	115	63	96	96	0	0	0	0	147	0	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		500	300		0	0		0	600		0
Storage Lanes	0		1	1		0	0		0	1		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		920			856			388			1004	
Travel Time (s)		20.9			19.5			8.8			22.8	
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
Heavy Vehicles (%)	0%	17%	19%	6%	30%	0%	0%	0%	0%	11%	0%	18%
Shared Lane Traffic (%)												
Turn Type		NA	Free	pm+pt	NA					Prot		Free
Protected Phases		2		1	6					8		
Permitted Phases			Free	6								Free
Detector Phase		2		1	6					8		
Switch Phase												
Minimum Initial (s)		10.0		7.0	10.0					10.0		
Minimum Split (s)		16.0		13.0	16.0					21.0		
Total Split (s)		22.0		15.0	37.0					23.0		
Total Split (%)		36.7%		25.0%	61.7%					38.3%		
Maximum Green (s)		16.0		9.0	31.0					17.0		
Yellow Time (s)		4.0		4.0	4.0					4.0		
All-Red Time (s)		2.0		2.0	2.0					2.0		
Lost Time Adjust (s)		0.0		0.0	0.0					0.0		
Total Lost Time (s)		6.0		6.0	6.0					6.0		
Lead/Lag		Lag		Lead								
Lead-Lag Optimize?		Yes		Yes								
Vehicle Extension (s)		2.0		2.0	2.0					2.0		
Recall Mode		C-Min		None	C-Min					None		
Walk Time (s)										7.0		
Flash Dont Walk (s)										8.0		
Pedestrian Calls (#/hr)										0		

Intersection Summary

Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBTL, Start of Green, Master Intersection
Natural Cycle: 50
Control Type: Actuated-Coordinated

Splits and Phases: 15: Route 24 Southbound Ramp & Innovation Way





Lane Group	EBT	EBR	WBL	WBT	SBL	SBR
Lane Group Flow (vph)	125	68	104	104	160	30
v/c Ratio	0.08	0.05	0.14	0.05	0.30	0.02
Control Delay	5.5	0.1	6.1	5.4	23.8	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	5.5	0.1	6.1	5.4	23.8	0.0
Queue Length 50th (ft)	8	0	15	7	26	0
Queue Length 95th (ft)	19	0	33	16	50	0
Internal Link Dist (ft)	840			776		
Turn Bay Length (ft)		500	300		600	
Base Capacity (vph)	1640	1357	789	1962	893	1369
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	0.08	0.05	0.13	0.05	0.18	0.02

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	115	63	96	96	0	0	0	0	147	0	28
Future Volume (vph)	0	115	63	96	96	0	0	0	0	147	0	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	4.0	6.0	6.0					6.0		4.0
Lane Util. Factor		0.95	1.00	1.00	0.95					0.97		1.00
Frt		1.00	0.85	1.00	1.00					1.00		0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (prot)		3085	1357	1703	2777					3155		1369
Flt Permitted		1.00	1.00	0.56	1.00					0.95		1.00
Satd. Flow (perm)		3085	1357	995	2777					3155		1369
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	125	68	104	104	0	0	0	0	160	0	30
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	125	68	104	104	0	0	0	0	160	0	30
Heavy Vehicles (%)	0%	17%	19%	6%	30%	0%	0%	0%	0%	11%	0%	18%
Turn Type		NA	Free	pm+pt	NA					Prot		Free
Protected Phases		2		1	6					8		
Permitted Phases			Free	6								Free
Actuated Green, G (s)		28.3	60.0	40.0	40.0					8.0		60.0
Effective Green, g (s)		28.3	60.0	40.0	40.0					8.0		60.0
Actuated g/C Ratio		0.47	1.00	0.67	0.67					0.13		1.00
Clearance Time (s)		6.0		6.0	6.0					6.0		
Vehicle Extension (s)		2.0		2.0	2.0					2.0		
Lane Grp Cap (vph)		1455	1357	730	1851					420		1369
v/s Ratio Prot		0.04		c0.01	0.04					c0.05		
v/s Ratio Perm			0.05	c0.08								0.02
v/c Ratio		0.09	0.05	0.14	0.06					0.38		0.02
Uniform Delay, d1		8.7	0.0	3.9	3.5					23.7		0.0
Progression Factor		0.51	1.00	1.29	1.27					1.00		1.00
Incremental Delay, d2		0.1	0.1	0.0	0.1					0.2		0.0
Delay (s)		4.6	0.1	5.0	4.5					23.9		0.0
Level of Service		A	A	A	A					C		A
Approach Delay (s)		3.0			4.7			0.0			20.2	
Approach LOS		A			A			A			C	

Intersection Summary

HCM 2000 Control Delay	9.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.20		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	24.5%	ICU Level of Service	A
Analysis Period (min)	15		

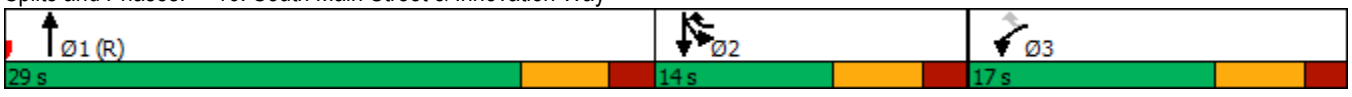
c Critical Lane Group

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	24	73	76	85	88	74
Future Volume (vph)	24	73	76	85	88	74
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150	0		0	400	
Storage Lanes	1	2		0	1	
Taper Length (ft)	25				25	
Right Turn on Red		Yes		Yes		
Link Speed (mph)	30		30			30
Link Distance (ft)	920		357			952
Travel Time (s)	20.9		8.1			21.6
Peak Hour Factor	0.60	0.60	0.91	0.91	0.87	0.87
Heavy Vehicles (%)	17%	27%	7%	5%	34%	15%
Shared Lane Traffic (%)					10%	
Turn Type	Prot	pm+ov	NA		Split	NA
Protected Phases	3	2	1		2	2
Permitted Phases		3				
Detector Phase	3	2	1		2	2
Switch Phase						
Minimum Initial (s)	10.0	7.0	10.0		7.0	7.0
Minimum Split (s)	16.0	13.0	16.0		13.0	13.0
Total Split (s)	17.0	14.0	29.0		14.0	14.0
Total Split (%)	28.3%	23.3%	48.3%		23.3%	23.3%
Maximum Green (s)	11.0	8.0	23.0		8.0	8.0
Yellow Time (s)	4.0	4.0	4.0		4.0	4.0
All-Red Time (s)	2.0	2.0	2.0		2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0		6.0	6.0
Lead/Lag		Lag	Lead		Lag	Lag
Lead-Lag Optimize?		Yes	Yes		Yes	Yes
Vehicle Extension (s)	2.0	2.0	2.0		2.0	2.0
Recall Mode	None	None	C-Min		None	None

Intersection Summary

Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 20 (33%), Referenced to phase 1:NBT, Start of Green
Natural Cycle: 45
Control Type: Actuated-Coordinated

Splits and Phases: 16: South Main Street & Innovation Way



Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	40	122	177	91	95
v/c Ratio	0.16	0.18	0.17	0.46	0.40
Control Delay	21.9	5.3	7.0	29.7	26.9
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	21.9	5.3	7.0	29.7	26.9
Queue Length 50th (ft)	10	0	9	32	33
Queue Length 95th (ft)	18	0	62	64	64
Internal Link Dist (ft)	840		277		872
Turn Bay Length (ft)	150			400	
Base Capacity (vph)	282	692	1069	208	250
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.14	0.18	0.17	0.44	0.38

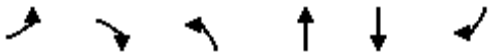
Intersection Summary

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	24	73	76	85	88	74
Future Volume (vph)	24	73	76	85	88	74
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0		6.0	6.0
Lane Util. Factor	1.00	0.88	1.00		0.95	0.95
Frt	1.00	0.85	0.93		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	0.99
Satd. Flow (prot)	1543	2238	1666		1280	1535
Flt Permitted	0.95	1.00	1.00		0.95	0.99
Satd. Flow (perm)	1543	2238	1666		1280	1535
Peak-hour factor, PHF	0.60	0.60	0.91	0.91	0.87	0.87
Adj. Flow (vph)	40	122	84	93	101	85
RTOR Reduction (vph)	0	98	47	0	0	0
Lane Group Flow (vph)	40	24	131	0	91	95
Heavy Vehicles (%)	17%	27%	7%	5%	34%	15%
Turn Type	Prot	pm+ov	NA		Split	NA
Protected Phases	3	2	1		2	2
Permitted Phases		3				
Actuated Green, G (s)	4.0	12.0	30.0		8.0	8.0
Effective Green, g (s)	4.0	12.0	30.0		8.0	8.0
Actuated g/C Ratio	0.07	0.20	0.50		0.13	0.13
Clearance Time (s)	6.0	6.0	6.0		6.0	6.0
Vehicle Extension (s)	2.0	2.0	2.0		2.0	2.0
Lane Grp Cap (vph)	102	671	833		170	204
v/s Ratio Prot	c0.03	0.00	c0.08		c0.07	0.06
v/s Ratio Perm		0.01				
v/c Ratio	0.39	0.04	0.16		0.54	0.47
Uniform Delay, d1	26.8	19.3	8.1		24.3	24.0
Progression Factor	0.94	2.20	1.00		1.00	1.00
Incremental Delay, d2	0.9	0.0	0.4		1.6	0.6
Delay (s)	26.2	42.5	8.5		25.9	24.6
Level of Service	C	D	A		C	C
Approach Delay (s)	38.5		8.5			25.2
Approach LOS	D		A			C

Intersection Summary

HCM 2000 Control Delay	23.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.25		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	38.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	125	8	5	169	160	78
Future Volume (vph)	125	8	5	169	160	78
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30			30	30	
Link Distance (ft)	1100			362	552	
Travel Time (s)	25.0			8.2	12.5	
Peak Hour Factor	0.45	0.45	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	6%	38%	0%	0%	4%	13%
Shared Lane Traffic (%)						
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other
Control Type: Unsignalized

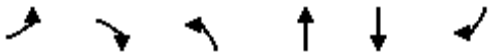
Intersection	
Int Delay, s/veh	5.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	125	8	5	169	160	78
Future Vol, veh/h	125	8	5	169	160	78
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	45	45	92	92	92	92
Heavy Vehicles, %	6	38	0	0	4	13
Mvmt Flow	278	18	5	184	174	85

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	319	130	259	0	-	0
Stage 1	217	-	-	-	-	-
Stage 2	102	-	-	-	-	-
Critical Hdwy	6.92	7.66	4.1	-	-	-
Critical Hdwy Stg 1	5.92	-	-	-	-	-
Critical Hdwy Stg 2	5.92	-	-	-	-	-
Follow-up Hdwy	3.56	3.68	2.2	-	-	-
Pot Cap-1 Maneuver	639	792	1317	-	-	-
Stage 1	786	-	-	-	-	-
Stage 2	899	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	636	792	1317	-	-	-
Mov Cap-2 Maneuver	636	-	-	-	-	-
Stage 1	783	-	-	-	-	-
Stage 2	899	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	14.7	0.2	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1317	-	636	792	-	-
HCM Lane V/C Ratio	0.004	-	0.437	0.022	-	-
HCM Control Delay (s)	7.7	0	15	9.7	-	-
HCM Lane LOS	A	A	C	A	-	-
HCM 95th %tile Q(veh)	0	-	2.2	0.1	-	-



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	170	52	46	248	188	45
Future Volume (vph)	170	52	46	248	188	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30			30	30	
Link Distance (ft)	1059			552	469	
Travel Time (s)	24.1			12.5	10.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	6%	9%	2%
Shared Lane Traffic (%)						
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other
Control Type: Unsignalized

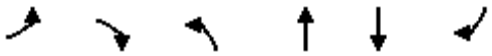
Intersection	
Int Delay, s/veh	5.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	170	52	46	248	188	45
Future Vol, veh/h	170	52	46	248	188	45
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	6	9	2
Mvmt Flow	185	57	50	270	204	49

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	464	127	253	0	-	0
Stage 1	229	-	-	-	-	-
Stage 2	235	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	527	900	1309	-	-	-
Stage 1	787	-	-	-	-	-
Stage 2	782	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	503	900	1309	-	-	-
Mov Cap-2 Maneuver	503	-	-	-	-	-
Stage 1	752	-	-	-	-	-
Stage 2	782	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	16.2	1.3	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1309	-	561	-	-
HCM Lane V/C Ratio	0.038	-	0.43	-	-
HCM Control Delay (s)	7.9	0.1	16.2	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0.1	-	2.1	-	-



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	10	20	398	223	120
Future Volume (vph)	0	10	20	398	223	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30			30	30	
Link Distance (ft)	1076			424	2483	
Travel Time (s)	24.5			9.6	56.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	4%	7%	2%
Shared Lane Traffic (%)						
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other
Control Type: Unsignalized

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	10	20	398	223	120
Future Vol, veh/h	0	10	20	398	223	120
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	4	7	2
Mvmt Flow	0	11	22	433	242	130

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	186	372	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	4.14	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	0	824	1183	-	-	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	824	1183	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.4	0.5	0
HCM LOS	A		

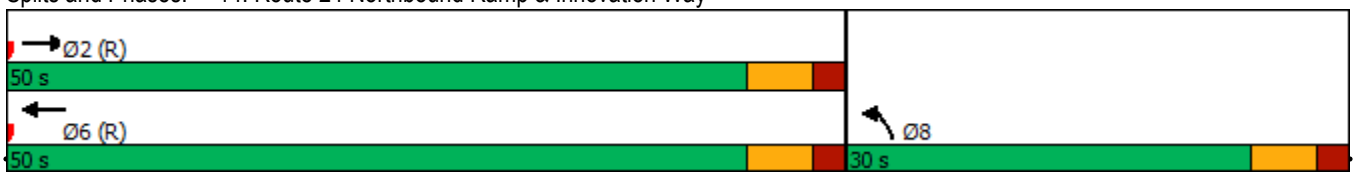
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1183	-	824	-	-
HCM Lane V/C Ratio	0.018	-	0.013	-	-
HCM Control Delay (s)	8.1	0.1	9.4	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	139	31	0	229	172	51	0	204	0	0	0
Future Volume (vph)	0	139	31	0	229	172	51	0	204	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		200	0		300	0		0
Storage Lanes	0		0	0		1	2		1	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		856			2483			1251			336	
Travel Time (s)		19.5			56.4			28.4			7.6	
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
Heavy Vehicles (%)	0%	8%	26%	0%	1%	3%	22%	0%	2%	2%	2%	2%
Shared Lane Traffic (%)												
Turn Type		NA			NA	Free	Prot		Free			
Protected Phases		2			6		8					
Permitted Phases						Free			Free			
Detector Phase		2			6		8					
Switch Phase												
Minimum Initial (s)		10.0			10.0		10.0					
Minimum Split (s)		21.0			16.0		16.0					
Total Split (s)		50.0			50.0		30.0					
Total Split (%)		62.5%			62.5%		37.5%					
Maximum Green (s)		44.0			44.0		24.0					
Yellow Time (s)		4.0			4.0		4.0					
All-Red Time (s)		2.0			2.0		2.0					
Lost Time Adjust (s)		0.0			0.0		0.0					
Total Lost Time (s)		6.0			6.0		6.0					
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)		2.0			2.0		2.0					
Recall Mode		C-Min			C-Min		None					
Walk Time (s)		7.0										
Flash Dont Walk (s)		8.0										
Pedestrian Calls (#/hr)		0										

Intersection Summary

Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 35 (44%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 40
Control Type: Actuated-Coordinated

Splits and Phases: 14: Route 24 Northbound Ramp & Innovation Way



Lane Group	EBT	WBT	WBR	NBL	NBR
Lane Group Flow (vph)	185	249	187	55	222
v/c Ratio	0.07	0.08	0.12	0.15	0.14
Control Delay	0.2	2.6	0.2	32.5	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	0.2	2.6	0.2	32.5	0.2
Queue Length 50th (ft)	0	15	0	12	0
Queue Length 95th (ft)	1	25	0	29	0
Internal Link Dist (ft)	776	2403			
Turn Bay Length (ft)			200		300
Base Capacity (vph)	2637	2984	1568	861	1583
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.07	0.08	0.12	0.06	0.14

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	139	31	0	229	172	51	0	204	0	0	0
Future Volume (vph)	0	139	31	0	229	172	51	0	204	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0	4.0	6.0		4.0			
Lane Util. Factor		0.95			0.95	1.00	0.97		1.00			
Frt		0.97			1.00	0.85	1.00		0.85			
Flt Protected		1.00			1.00	1.00	0.95		1.00			
Satd. Flow (prot)		3154			3574	1568	2870		1583			
Flt Permitted		1.00			1.00	1.00	0.95		1.00			
Satd. Flow (perm)		3154			3574	1568	2870		1583			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	151	34	0	249	187	55	0	222	0	0	0
RTOR Reduction (vph)	0	8	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	177	0	0	249	187	55	0	222	0	0	0
Heavy Vehicles (%)	0%	8%	26%	0%	1%	3%	22%	0%	2%	2%	2%	2%
Turn Type		NA			NA	Free	Prot		Free			
Protected Phases		2			6		8					
Permitted Phases						Free			Free			
Actuated Green, G (s)		62.0			62.0	80.0	6.0		80.0			
Effective Green, g (s)		62.0			62.0	80.0	6.0		80.0			
Actuated g/C Ratio		0.78			0.78	1.00	0.08		1.00			
Clearance Time (s)		6.0			6.0		6.0					
Vehicle Extension (s)		2.0			2.0		2.0					
Lane Grp Cap (vph)		2444			2769	1568	215		1583			
v/s Ratio Prot		0.06			0.07		0.02					
v/s Ratio Perm						0.12			c0.14			
v/c Ratio		0.07			0.09	0.12	0.26		0.14			
Uniform Delay, d1		2.1			2.2	0.0	34.9		0.0			
Progression Factor		0.08			1.00	1.00	1.00		1.00			
Incremental Delay, d2		0.1			0.1	0.2	0.2		0.2			
Delay (s)		0.2			2.2	0.2	35.1		0.2			
Level of Service		A			A	A	D		A			
Approach Delay (s)		0.2			1.3			7.1			0.0	
Approach LOS		A			A			A			A	

Intersection Summary

HCM 2000 Control Delay	2.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.16		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	20.0%	ICU Level of Service	A
Analysis Period (min)	15		

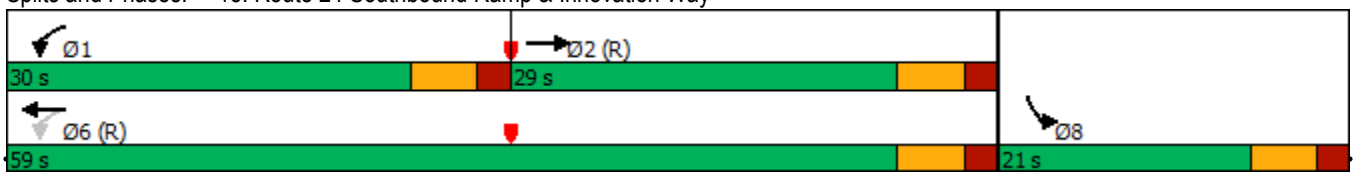
c Critical Lane Group

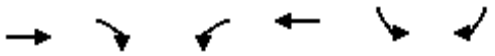
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	71	98	149	86	0	0	0	0	132	0	75
Future Volume (vph)	0	71	98	149	86	0	0	0	0	132	0	75
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		500	300		0	0		0	600		0
Storage Lanes	0		1	1		0	0		0	1		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		920			856			388			1004	
Travel Time (s)		20.9			19.5			8.8			22.8	
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
Heavy Vehicles (%)	0%	32%	14%	9%	19%	0%	2%	2%	2%	17%	0%	12%
Shared Lane Traffic (%)												
Turn Type		NA	Free	pm+pt	NA					Prot		Free
Protected Phases		2		1	6					8		
Permitted Phases			Free	6								Free
Detector Phase		2		1	6					8		
Switch Phase												
Minimum Initial (s)		10.0		7.0	10.0					10.0		
Minimum Split (s)		16.0		13.0	16.0					21.0		
Total Split (s)		29.0		30.0	59.0					21.0		
Total Split (%)		36.3%		37.5%	73.8%					26.3%		
Maximum Green (s)		23.0		24.0	53.0					15.0		
Yellow Time (s)		4.0		4.0	4.0					4.0		
All-Red Time (s)		2.0		2.0	2.0					2.0		
Lost Time Adjust (s)		0.0		0.0	0.0					0.0		
Total Lost Time (s)		6.0		6.0	6.0					6.0		
Lead/Lag		Lag		Lead								
Lead-Lag Optimize?		Yes		Yes								
Vehicle Extension (s)		2.0		2.0	2.0					2.0		
Recall Mode		C-Min		None	C-Min					None		
Walk Time (s)										7.0		
Flash Dont Walk (s)										8.0		
Pedestrian Calls (#/hr)										0		

Intersection Summary

Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBTL, Start of Green, Master Intersection
Natural Cycle: 50
Control Type: Actuated-Coordinated

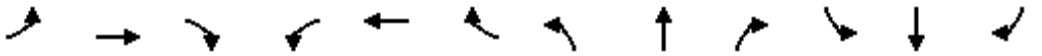
Splits and Phases: 15: Route 24 Southbound Ramp & Innovation Way





Lane Group	EBT	EBR	WBL	WBT	SBL	SBR
Lane Group Flow (vph)	77	107	162	93	143	82
v/c Ratio	0.05	0.08	0.19	0.04	0.38	0.06
Control Delay	17.8	0.1	4.6	2.7	35.1	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.8	0.1	4.6	2.7	35.1	0.1
Queue Length 50th (ft)	10	0	16	4	34	0
Queue Length 95th (ft)	31	0	42	9	61	0
Internal Link Dist (ft)	840			776		
Turn Bay Length (ft)		500	300		600	
Base Capacity (vph)	1515	1417	954	2192	561	1442
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	0.05	0.08	0.17	0.04	0.25	0.06

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	71	98	149	86	0	0	0	0	132	0	75
Future Volume (vph)	0	71	98	149	86	0	0	0	0	132	0	75
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	4.0	6.0	6.0					6.0		4.0
Lane Util. Factor		0.95	1.00	1.00	0.95					0.97		1.00
Frt		1.00	0.85	1.00	1.00					1.00		0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (prot)		2735	1417	1656	3034					2993		1442
Flt Permitted		1.00	1.00	0.62	1.00					0.95		1.00
Satd. Flow (perm)		2735	1417	1081	3034					2993		1442
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	77	107	162	93	0	0	0	0	143	0	82
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	77	107	162	93	0	0	0	0	143	0	82
Heavy Vehicles (%)	0%	32%	14%	9%	19%	0%	2%	2%	2%	17%	0%	12%
Turn Type		NA	Free	pm+pt	NA					Prot		Free
Protected Phases		2		1	6					8		
Permitted Phases			Free	6								Free
Actuated Green, G (s)		44.3	80.0	57.8	57.8					10.2		80.0
Effective Green, g (s)		44.3	80.0	57.8	57.8					10.2		80.0
Actuated g/C Ratio		0.55	1.00	0.72	0.72					0.13		1.00
Clearance Time (s)		6.0		6.0	6.0					6.0		
Vehicle Extension (s)		2.0		2.0	2.0					2.0		
Lane Grp Cap (vph)		1514	1417	834	2192					381		1442
v/s Ratio Prot		0.03		c0.02	0.03					c0.05		
v/s Ratio Perm			0.08	c0.12								0.06
v/c Ratio		0.05	0.08	0.19	0.04					0.38		0.06
Uniform Delay, d1		8.2	0.0	3.7	3.2					32.0		0.0
Progression Factor		2.07	1.00	1.14	0.82					1.00		1.00
Incremental Delay, d2		0.1	0.1	0.0	0.0					0.2		0.1
Delay (s)		17.0	0.1	4.2	2.6					32.2		0.1
Level of Service		B	A	A	A					C		A
Approach Delay (s)		7.2			3.7			0.0			20.5	
Approach LOS		A			A			A			C	

Intersection Summary

HCM 2000 Control Delay	10.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.24		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	27.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	96	66	85	51	119	112
Future Volume (vph)	96	66	85	51	119	112
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150	0		0	400	
Storage Lanes	1	2		0	1	
Taper Length (ft)	25				25	
Right Turn on Red		Yes		Yes		
Link Speed (mph)	30		30			30
Link Distance (ft)	920		357			952
Travel Time (s)	20.9		8.1			21.6
Peak Hour Factor	0.87	0.87	0.85	0.85	0.62	0.62
Heavy Vehicles (%)	2%	35%	1%	8%	27%	1%
Shared Lane Traffic (%)					10%	
Turn Type	Prot	pm+ov	NA		Split	NA
Protected Phases	3	2	1		2	2
Permitted Phases		3				
Detector Phase	3	2	1		2	2
Switch Phase						
Minimum Initial (s)	10.0	7.0	10.0		7.0	7.0
Minimum Split (s)	16.0	13.0	16.0		13.0	13.0
Total Split (s)	17.0	45.0	18.0		45.0	45.0
Total Split (%)	21.3%	56.3%	22.5%		56.3%	56.3%
Maximum Green (s)	11.0	39.0	12.0		39.0	39.0
Yellow Time (s)	4.0	4.0	4.0		4.0	4.0
All-Red Time (s)	2.0	2.0	2.0		2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0		6.0	6.0
Lead/Lag		Lag	Lead		Lag	Lag
Lead-Lag Optimize?		Yes	Yes		Yes	Yes
Vehicle Extension (s)	2.0	2.0	2.0		2.0	2.0
Recall Mode	None	None	C-Min		None	None

Intersection Summary

Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 49 (61%), Referenced to phase 1:NBT, Start of Green
Natural Cycle: 45
Control Type: Actuated-Coordinated

Splits and Phases: 16: South Main Street & Innovation Way

Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	110	76	160	173	200
v/c Ratio	0.46	0.09	0.18	0.68	0.61
Control Delay	36.9	3.5	13.2	42.2	36.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	36.9	3.5	13.2	42.2	36.5
Queue Length 50th (ft)	51	0	36	85	97
Queue Length 95th (ft)	92	9	86	86	94
Internal Link Dist (ft)	840		277		872
Turn Bay Length (ft)	150			400	
Base Capacity (vph)	253	1081	868	658	846
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.43	0.07	0.18	0.26	0.24

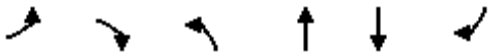
Intersection Summary

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	96	66	85	51	119	112
Future Volume (vph)	96	66	85	51	119	112
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0		6.0	6.0
Lane Util. Factor	1.00	0.88	1.00		0.95	0.95
Frt	1.00	0.85	0.95		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	2105	1741		1350	1736
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	2105	1741		1350	1736
Peak-hour factor, PHF	0.87	0.87	0.85	0.85	0.62	0.62
Adj. Flow (vph)	110	76	100	60	192	181
RTOR Reduction (vph)	0	53	17	0	0	0
Lane Group Flow (vph)	110	23	143	0	173	200
Heavy Vehicles (%)	2%	35%	1%	8%	27%	1%
Turn Type	Prot	pm+ov	NA		Split	NA
Protected Phases	3	2	1		2	2
Permitted Phases		3				
Actuated Green, G (s)	8.8	24.0	38.0		15.2	15.2
Effective Green, g (s)	8.8	24.0	38.0		15.2	15.2
Actuated g/C Ratio	0.11	0.30	0.48		0.19	0.19
Clearance Time (s)	6.0	6.0	6.0		6.0	6.0
Vehicle Extension (s)	2.0	2.0	2.0		2.0	2.0
Lane Grp Cap (vph)	194	789	826		256	329
v/s Ratio Prot	c0.06	0.01	c0.08		c0.13	0.12
v/s Ratio Perm		0.01				
v/c Ratio	0.57	0.03	0.17		0.68	0.61
Uniform Delay, d1	33.8	19.8	12.0		30.1	29.7
Progression Factor	0.96	1.15	1.00		1.00	1.00
Incremental Delay, d2	2.3	0.0	0.5		5.5	2.2
Delay (s)	34.6	22.7	12.5		35.6	31.8
Level of Service	C	C	B		D	C
Approach Delay (s)	29.8		12.5			33.6
Approach LOS	C		B			C

Intersection Summary

HCM 2000 Control Delay	27.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	37.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	38	1	3	215	509	143
Future Volume (vph)	38	1	3	215	509	143
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30			30	30	
Link Distance (ft)	1100			362	552	
Travel Time (s)	25.0			8.2	12.5	
Peak Hour Factor	0.73	0.73	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	42%	0%	33%	12%	6%	11%
Shared Lane Traffic (%)						
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other
Control Type: Unsignalized

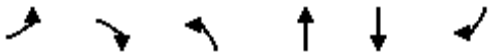
Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	38	1	3	215	509	143
Future Vol, veh/h	38	1	3	215	509	143
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	73	73	92	92	92	92
Heavy Vehicles, %	42	0	33	12	6	11
Mvmt Flow	52	1	3	234	553	155

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	754	354	708	0	-	0
Stage 1	631	-	-	-	-	-
Stage 2	123	-	-	-	-	-
Critical Hdwy	7.64	6.9	4.76	-	-	-
Critical Hdwy Stg 1	6.64	-	-	-	-	-
Critical Hdwy Stg 2	6.64	-	-	-	-	-
Follow-up Hdwy	3.92	3.3	2.53	-	-	-
Pot Cap-1 Maneuver	272	648	708	-	-	-
Stage 1	397	-	-	-	-	-
Stage 2	782	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	271	648	708	-	-	-
Mov Cap-2 Maneuver	271	-	-	-	-	-
Stage 1	395	-	-	-	-	-
Stage 2	782	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	21.1	0.1	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	708	-	271	648	-	-
HCM Lane V/C Ratio	0.005	-	0.192	0.002	-	-
HCM Control Delay (s)	10.1	0	21.4	10.6	-	-
HCM Lane LOS	B	A	C	B	-	-
HCM 95th %tile Q(veh)	0	-	0.7	0	-	-



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	200	60	15	238	594	35
Future Volume (vph)	200	60	15	238	594	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30			30	30	
Link Distance (ft)	1059			552	469	
Travel Time (s)	24.1			12.5	10.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	21%	6%	2%
Shared Lane Traffic (%)						
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other
Control Type: Unsignalized

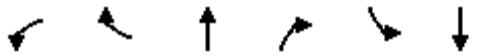
Intersection	
Int Delay, s/veh	11.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	200	60	15	238	594	35
Future Vol, veh/h	200	60	15	238	594	35
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	21	6	2
Mvmt Flow	217	65	16	259	646	38

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	827	342	684	0	-	0
Stage 1	665	-	-	-	-	-
Stage 2	162	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	310	654	905	-	-	-
Stage 1	473	-	-	-	-	-
Stage 2	850	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	303	654	905	-	-	-
Mov Cap-2 Maneuver	303	-	-	-	-	-
Stage 1	463	-	-	-	-	-
Stage 2	850	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	48.5	0.6	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	905	-	346	-	-
HCM Lane V/C Ratio	0.018	-	0.817	-	-
HCM Control Delay (s)	9.1	0.1	48.5	-	-
HCM Lane LOS	A	A	E	-	-
HCM 95th %tile Q(veh)	0.1	-	7.1	-	-



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	4	31	428	10	88	625
Future Volume (vph)	4	31	428	10	88	625
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30		30			30
Link Distance (ft)	1092		469			424
Travel Time (s)	24.8		10.7			9.6
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	12%	0%	0%	7%
Shared Lane Traffic (%)						
Sign Control	Stop		Free			Free

Intersection Summary

Area Type: Other
Control Type: Unsignalized

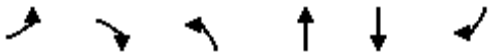
Intersection	
Int Delay, s/veh	1.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	4	31	428	10	88	625
Future Vol, veh/h	4	31	428	10	88	625
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	12	0	0	7
Mvmt Flow	4	34	465	11	96	679

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1003	238	0	0	476	0
Stage 1	471	-	-	-	-	-
Stage 2	532	-	-	-	-	-
Critical Hdwy	6.8	6.9	-	-	4.1	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	242	769	-	-	1097	-
Stage 1	600	-	-	-	-	-
Stage 2	559	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	208	769	-	-	1097	-
Mov Cap-2 Maneuver	208	-	-	-	-	-
Stage 1	600	-	-	-	-	-
Stage 2	480	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.5	0	1.5
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	588	1097	-
HCM Lane V/C Ratio	-	-	0.065	0.087	-
HCM Control Delay (s)	-	-	11.5	8.6	0.5
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0.3	-



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	10	55	404	703	165
Future Volume (vph)	0	10	55	404	703	165
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30			30	30	
Link Distance (ft)	1076			424	2483	
Travel Time (s)	24.5			9.6	56.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	12%	6%	2%
Shared Lane Traffic (%)						
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other
Control Type: Unsignalized

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	10	55	404	703	165
Future Vol, veh/h	0	10	55	404	703	165
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	12	6	2
Mvmt Flow	0	11	60	439	764	179

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	472	943	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	4.14	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	0	538	723	-	-	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	538	723	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.8	1.7	0
HCM LOS	B		

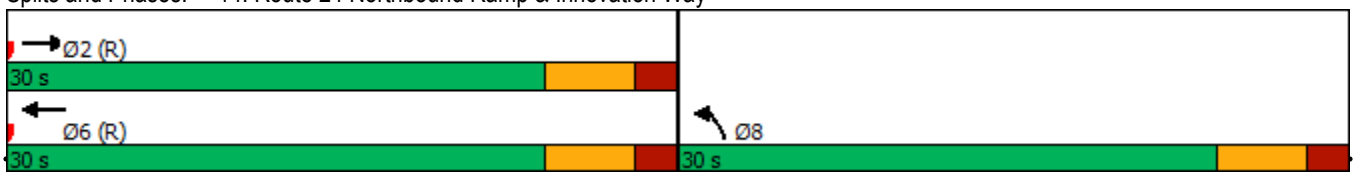
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	723	-	538	-	-
HCM Lane V/C Ratio	0.083	-	0.02	-	-
HCM Control Delay (s)	10.4	0.5	11.8	-	-
HCM Lane LOS	B	A	B	-	-
HCM 95th %tile Q(veh)	0.3	-	0.1	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	243	70	0	236	173	76	0	625	0	0	0
Future Volume (vph)	0	243	70	0	236	173	76	0	625	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		200	0		300	0		0
Storage Lanes	0		0	0		1	2		1	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		856			2483			1251			336	
Travel Time (s)		19.5			56.4			28.4			7.6	
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
Heavy Vehicles (%)	0%	9%	24%	0%	9%	14%	34%	0%	4%	2%	2%	2%
Shared Lane Traffic (%)												
Turn Type		NA			NA	Free	Prot		Free			
Protected Phases		2			6		8					
Permitted Phases						Free			Free			
Detector Phase		2			6		8					
Switch Phase												
Minimum Initial (s)		10.0			10.0		10.0					
Minimum Split (s)		21.0			16.0		16.0					
Total Split (s)		30.0			30.0		30.0					
Total Split (%)		50.0%			50.0%		50.0%					
Maximum Green (s)		24.0			24.0		24.0					
Yellow Time (s)		4.0			4.0		4.0					
All-Red Time (s)		2.0			2.0		2.0					
Lost Time Adjust (s)		0.0			0.0		0.0					
Total Lost Time (s)		6.0			6.0		6.0					
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)		2.0			2.0		2.0					
Recall Mode		C-Min			C-Min		None					
Walk Time (s)		7.0										
Flash Dont Walk (s)		8.0										
Pedestrian Calls (#/hr)		0										

Intersection Summary

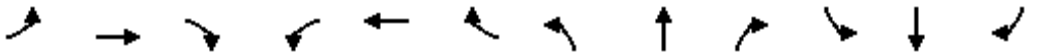
Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 22 (37%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 40
Control Type: Actuated-Coordinated

Splits and Phases: 14: Route 24 Northbound Ramp & Innovation Way



Lane Group	EBT	WBT	WBR	NBL	NBR
Lane Group Flow (vph)	340	257	188	83	679
v/c Ratio	0.14	0.10	0.13	0.19	0.44
Control Delay	7.4	3.6	0.2	22.9	0.9
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	7.4	3.6	0.2	22.9	0.9
Queue Length 50th (ft)	38	16	0	13	0
Queue Length 95th (ft)	61	27	0	30	0
Internal Link Dist (ft)	776	2403			
Turn Bay Length (ft)			200		300
Base Capacity (vph)	2437	2583	1417	1045	1553
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.14	0.10	0.13	0.08	0.44

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	243	70	0	236	173	76	0	625	0	0	0
Future Volume (vph)	0	243	70	0	236	173	76	0	625	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0	4.0	6.0		4.0			
Lane Util. Factor		0.95			0.95	1.00	0.97		1.00			
Frt		0.97			1.00	0.85	1.00		0.85			
Flt Protected		1.00			1.00	1.00	0.95		1.00			
Satd. Flow (prot)		3105			3312	1417	2613		1553			
Flt Permitted		1.00			1.00	1.00	0.95		1.00			
Satd. Flow (perm)		3105			3312	1417	2613		1553			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	264	76	0	257	188	83	0	679	0	0	0
RTOR Reduction (vph)	0	22	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	318	0	0	257	188	83	0	679	0	0	0
Heavy Vehicles (%)	0%	9%	24%	0%	9%	14%	34%	0%	4%	2%	2%	2%
Turn Type		NA			NA	Free	Prot		Free			
Protected Phases		2			6		8					
Permitted Phases						Free			Free			
Actuated Green, G (s)		42.0			42.0	60.0	6.0		60.0			
Effective Green, g (s)		42.0			42.0	60.0	6.0		60.0			
Actuated g/C Ratio		0.70			0.70	1.00	0.10		1.00			
Clearance Time (s)		6.0			6.0		6.0					
Vehicle Extension (s)		2.0			2.0		2.0					
Lane Grp Cap (vph)		2173			2318	1417	261		1553			
v/s Ratio Prot		0.10			0.08		0.03					
v/s Ratio Perm						0.13			c0.44			
v/c Ratio		0.15			0.11	0.13	0.32		0.44			
Uniform Delay, d1		3.0			2.9	0.0	25.1		0.0			
Progression Factor		2.54			1.00	1.00	1.00		1.00			
Incremental Delay, d2		0.1			0.1	0.2	0.3		0.9			
Delay (s)		7.8			3.0	0.2	25.4		0.9			
Level of Service		A			A	A	C		A			
Approach Delay (s)		7.8			1.8			3.6			0.0	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	4.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	20.6%	ICU Level of Service	A
Analysis Period (min)	15		

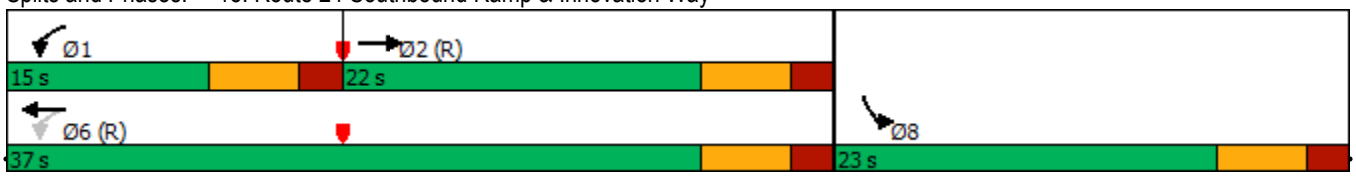
c Critical Lane Group

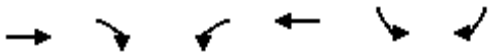
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	133	63	206	108	0	0	0	0	178	0	28
Future Volume (vph)	0	133	63	206	108	0	0	0	0	178	0	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		500	300		0	0		0	600		0
Storage Lanes	0		1	1		0	0		0	1		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		920			856			388			1004	
Travel Time (s)		20.9			19.5			8.8			22.8	
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
Heavy Vehicles (%)	0%	15%	19%	8%	28%	0%	2%	2%	2%	10%	0%	18%
Shared Lane Traffic (%)												
Turn Type		NA	Free	pm+pt	NA					Prot		Free
Protected Phases		2		1	6					8		
Permitted Phases			Free	6								Free
Detector Phase		2		1	6					8		
Switch Phase												
Minimum Initial (s)		10.0		7.0	10.0					10.0		
Minimum Split (s)		16.0		13.0	16.0					21.0		
Total Split (s)		22.0		15.0	37.0					23.0		
Total Split (%)		36.7%		25.0%	61.7%					38.3%		
Maximum Green (s)		16.0		9.0	31.0					17.0		
Yellow Time (s)		4.0		4.0	4.0					4.0		
All-Red Time (s)		2.0		2.0	2.0					2.0		
Lost Time Adjust (s)		0.0		0.0	0.0					0.0		
Total Lost Time (s)		6.0		6.0	6.0					6.0		
Lead/Lag		Lag		Lead								
Lead-Lag Optimize?												
Vehicle Extension (s)		2.0		2.0	2.0					2.0		
Recall Mode		C-Min		None	C-Min					None		
Walk Time (s)										7.0		
Flash Dont Walk (s)										8.0		
Pedestrian Calls (#/hr)										0		

Intersection Summary

Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBTL, Start of Green, Master Intersection
Natural Cycle: 50
Control Type: Actuated-Coordinated

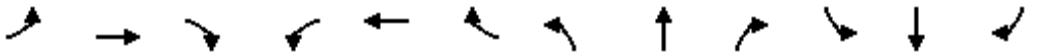
Splits and Phases: 15: Route 24 Southbound Ramp & Innovation Way





Lane Group	EBT	EBR	WBL	WBT	SBL	SBR
Lane Group Flow (vph)	145	68	224	117	193	30
v/c Ratio	0.12	0.05	0.33	0.07	0.36	0.02
Control Delay	7.4	0.1	9.0	7.0	24.2	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.4	0.1	9.0	7.0	24.2	0.0
Queue Length 50th (ft)	11	0	45	11	32	0
Queue Length 95th (ft)	25	0	83	23	57	0
Internal Link Dist (ft)	840			776		
Turn Bay Length (ft)		500	300		600	
Base Capacity (vph)	1231	1357	700	1781	901	1369
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	0.12	0.05	0.32	0.07	0.21	0.02

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	133	63	206	108	0	0	0	0	178	0	28
Future Volume (vph)	0	133	63	206	108	0	0	0	0	178	0	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	4.0	6.0	6.0					6.0		4.0
Lane Util. Factor		0.95	1.00	1.00	0.95					0.97		1.00
Frt		1.00	0.85	1.00	1.00					1.00		0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (prot)		3139	1357	1671	2820					3183		1369
Flt Permitted		1.00	1.00	0.53	1.00					0.95		1.00
Satd. Flow (perm)		3139	1357	925	2820					3183		1369
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	145	68	224	117	0	0	0	0	193	0	30
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	145	68	224	117	0	0	0	0	193	0	30
Heavy Vehicles (%)	0%	15%	19%	8%	28%	0%	2%	2%	2%	10%	0%	18%
Turn Type		NA	Free	pm+pt	NA					Prot		Free
Protected Phases		2		1	6					8		
Permitted Phases			Free	6								Free
Actuated Green, G (s)		23.5	60.0	37.9	37.9					10.1		60.0
Effective Green, g (s)		23.5	60.0	37.9	37.9					10.1		60.0
Actuated g/C Ratio		0.39	1.00	0.63	0.63					0.17		1.00
Clearance Time (s)		6.0		6.0	6.0					6.0		
Vehicle Extension (s)		2.0		2.0	2.0					2.0		
Lane Grp Cap (vph)		1229	1357	688	1781					535		1369
v/s Ratio Prot		0.05		c0.05	0.04					c0.06		
v/s Ratio Perm			0.05	c0.16								0.02
v/c Ratio		0.12	0.05	0.33	0.07					0.36		0.02
Uniform Delay, d1		11.6	0.0	5.1	4.2					22.1		0.0
Progression Factor		0.58	1.00	1.58	1.59					1.00		1.00
Incremental Delay, d2		0.2	0.1	0.1	0.1					0.2		0.0
Delay (s)		6.9	0.1	8.1	6.8					22.2		0.0
Level of Service		A	A	A	A					C		A
Approach Delay (s)		4.7			7.7			0.0			19.3	
Approach LOS		A			A			A			B	

Intersection Summary

HCM 2000 Control Delay	10.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	38.2%	ICU Level of Service	A
Analysis Period (min)	15		

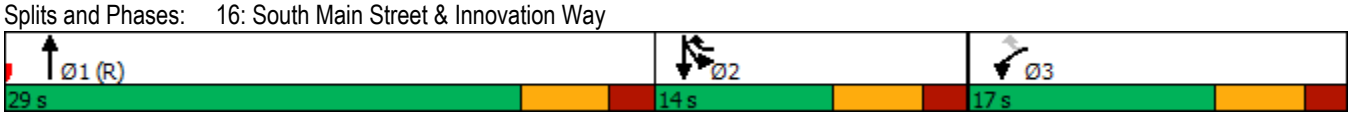
c Critical Lane Group

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	29	73	76	103	88	74
Future Volume (vph)	29	73	76	103	88	74
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150	0		0	400	
Storage Lanes	1	2		0	1	
Taper Length (ft)	25				25	
Right Turn on Red		Yes		Yes		
Link Speed (mph)	30		30			30
Link Distance (ft)	920		357			952
Travel Time (s)	20.9		8.1			21.6
Peak Hour Factor	0.60	0.60	0.91	0.91	0.87	0.87
Heavy Vehicles (%)	17%	27%	7%	5%	34%	15%
Shared Lane Traffic (%)					10%	
Turn Type	Prot	pm+ov	NA		Split	NA
Protected Phases	3	2	1		2	2
Permitted Phases		3				
Detector Phase	3	2	1		2	2
Switch Phase						
Minimum Initial (s)	6.0	7.0	10.0		7.0	7.0
Minimum Split (s)	12.0	13.0	16.0		13.0	13.0
Total Split (s)	17.0	14.0	29.0		14.0	14.0
Total Split (%)	28.3%	23.3%	48.3%		23.3%	23.3%
Maximum Green (s)	11.0	8.0	23.0		8.0	8.0
Yellow Time (s)	4.0	4.0	4.0		4.0	4.0
All-Red Time (s)	2.0	2.0	2.0		2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0		6.0	6.0
Lead/Lag		Lag	Lead		Lag	Lag
Lead-Lag Optimize?		Yes	Yes		Yes	Yes
Vehicle Extension (s)	2.0	2.0	2.0		2.0	2.0
Recall Mode	None	None	C-Min		None	None

Intersection Summary

Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 20 (33%), Referenced to phase 1:NBT, Start of Green
Natural Cycle: 45
Control Type: Actuated-Coordinated

Splits and Phases: 16: South Main Street & Innovation Way



Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	48	122	197	91	95
v/c Ratio	0.27	0.17	0.20	0.46	0.40
Control Delay	22.9	2.5	6.6	29.7	26.9
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	22.9	2.5	6.6	29.7	26.9
Queue Length 50th (ft)	11	0	17	32	33
Queue Length 95th (ft)	16	0	62	64	64
Internal Link Dist (ft)	840		277		872
Turn Bay Length (ft)	150			400	
Base Capacity (vph)	282	752	1014	208	250
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.17	0.16	0.19	0.44	0.38

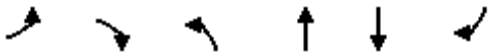
Intersection Summary

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	29	73	76	103	88	74
Future Volume (vph)	29	73	76	103	88	74
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0		6.0	6.0
Lane Util. Factor	1.00	0.88	1.00		0.95	0.95
Frt	1.00	0.85	0.92		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	0.99
Satd. Flow (prot)	1543	2238	1656		1280	1535
Flt Permitted	0.95	1.00	1.00		0.95	0.99
Satd. Flow (perm)	1543	2238	1656		1280	1535
Peak-hour factor, PHF	0.60	0.60	0.91	0.91	0.87	0.87
Adj. Flow (vph)	48	122	84	113	101	85
RTOR Reduction (vph)	0	97	57	0	0	0
Lane Group Flow (vph)	48	25	140	0	91	95
Heavy Vehicles (%)	17%	27%	7%	5%	34%	15%
Turn Type	Prot	pm+ov	NA		Split	NA
Protected Phases	3	2	1		2	2
Permitted Phases		3				
Actuated Green, G (s)	4.5	12.5	29.5		8.0	8.0
Effective Green, g (s)	4.5	12.5	29.5		8.0	8.0
Actuated g/C Ratio	0.08	0.21	0.49		0.13	0.13
Clearance Time (s)	6.0	6.0	6.0		6.0	6.0
Vehicle Extension (s)	2.0	2.0	2.0		2.0	2.0
Lane Grp Cap (vph)	115	690	814		170	204
v/s Ratio Prot	c0.03	0.00	c0.08		c0.07	0.06
v/s Ratio Perm		0.01				
v/c Ratio	0.42	0.04	0.17		0.54	0.47
Uniform Delay, d1	26.5	18.9	8.5		24.3	24.0
Progression Factor	0.80	0.83	1.00		1.00	1.00
Incremental Delay, d2	0.9	0.0	0.5		1.6	0.6
Delay (s)	22.0	15.7	8.9		25.9	24.6
Level of Service	C	B	A		C	C
Approach Delay (s)	17.5		8.9			25.2
Approach LOS	B		A			C

Intersection Summary

HCM 2000 Control Delay	17.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.27		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	36.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	125	8	5	523	328	78
Future Volume (vph)	125	8	5	523	328	78
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30			30	30	
Link Distance (ft)	1100			362	552	
Travel Time (s)	25.0			8.2	12.5	
Peak Hour Factor	0.45	0.45	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	6%	38%	0%	3%	5%	13%
Shared Lane Traffic (%)						
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other
Control Type: Unsignalized

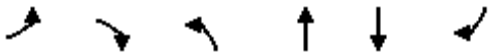
Intersection	
Int Delay, s/veh	8.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	125	8	5	523	328	78
Future Vol, veh/h	125	8	5	523	328	78
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	45	45	92	92	92	92
Heavy Vehicles, %	6	38	0	3	5	13
Mvmt Flow	278	18	5	568	357	85

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	694	221	442	0	-	0
Stage 1	400	-	-	-	-	-
Stage 2	294	-	-	-	-	-
Critical Hdwy	6.92	7.66	4.1	-	-	-
Critical Hdwy Stg 1	5.92	-	-	-	-	-
Critical Hdwy Stg 2	5.92	-	-	-	-	-
Follow-up Hdwy	3.56	3.68	2.2	-	-	-
Pot Cap-1 Maneuver	368	683	1129	-	-	-
Stage 1	634	-	-	-	-	-
Stage 2	719	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	366	683	1129	-	-	-
Mov Cap-2 Maneuver	366	-	-	-	-	-
Stage 1	630	-	-	-	-	-
Stage 2	719	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	38.2	0.1	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1129	-	366	683	-	-
HCM Lane V/C Ratio	0.005	-	0.759	0.026	-	-
HCM Control Delay (s)	8.2	0	40	10.4	-	-
HCM Lane LOS	A	A	E	B	-	-
HCM 95th %tile Q(veh)	0	-	6.1	0.1	-	-



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	170	52	46	602	356	45
Future Volume (vph)	170	52	46	602	356	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30			30	30	
Link Distance (ft)	1059			552	469	
Travel Time (s)	24.1			12.5	10.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	5%	8%	2%
Shared Lane Traffic (%)						
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other
Control Type: Unsignalized

Intersection	
Int Delay, s/veh	7.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	170	52	46	602	356	45
Future Vol, veh/h	170	52	46	602	356	45
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	5	8	2
Mvmt Flow	185	57	50	654	387	49

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	839	218	436	0	-	0
Stage 1	412	-	-	-	-	-
Stage 2	427	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	304	786	1120	-	-	-
Stage 1	637	-	-	-	-	-
Stage 2	626	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	283	786	1120	-	-	-
Mov Cap-2 Maneuver	283	-	-	-	-	-
Stage 1	592	-	-	-	-	-
Stage 2	626	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	39.7	0.9	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1120	-	333	-	-
HCM Lane V/C Ratio	0.045	-	0.725	-	-
HCM Control Delay (s)	8.4	0.3	39.7	-	-
HCM Lane LOS	A	A	E	-	-
HCM 95th %tile Q(veh)	0.1	-	5.4	-	-

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	13	110	848	5	42	388
Future Volume (vph)	13	110	848	5	42	388
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30		30			30
Link Distance (ft)	1092		469			424
Travel Time (s)	24.8		10.7			9.6
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	4%	7%	0%
Shared Lane Traffic (%)						
Sign Control	Stop		Free			Free

Intersection Summary

Area Type: Other
Control Type: Unsignalized

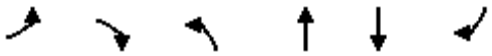
Intersection	
Int Delay, s/veh	1.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	13	110	848	5	42	388
Future Vol, veh/h	13	110	848	5	42	388
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	4	7	0
Mvmt Flow	14	120	922	5	46	422

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1228	464	0	0	927	0
Stage 1	925	-	-	-	-	-
Stage 2	303	-	-	-	-	-
Critical Hdwy	6.8	6.9	-	-	4.24	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.27	-
Pot Cap-1 Maneuver	173	550	-	-	703	-
Stage 1	351	-	-	-	-	-
Stage 2	729	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	158	550	-	-	703	-
Mov Cap-2 Maneuver	158	-	-	-	-	-
Stage 1	351	-	-	-	-	-
Stage 2	667	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	16.9	0	1.4
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	436	703	-
HCM Lane V/C Ratio	-	-	0.307	0.065	-
HCM Control Delay (s)	-	-	16.9	10.5	0.4
HCM Lane LOS	-	-	C	B	A
HCM 95th %tile Q(veh)	-	-	1.3	0.2	-



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	10	20	857	420	120
Future Volume (vph)	0	10	20	857	420	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30			30	30	
Link Distance (ft)	1076			424	2483	
Travel Time (s)	24.5			9.6	56.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	4%	6%	2%
Shared Lane Traffic (%)						
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other
Control Type: Unsignalized

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	10	20	857	420	120
Future Vol, veh/h	0	10	20	857	420	120
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	4	6	2
Mvmt Flow	0	11	22	932	457	130

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	294	587	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	4.14	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	0	702	984	-	-	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	702	984	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.2	0.4	0
HCM LOS	B		

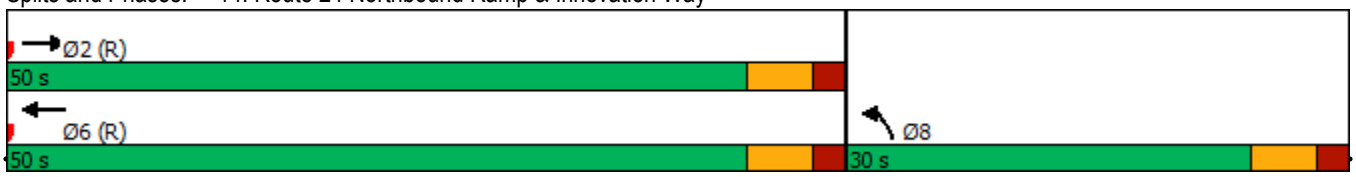
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	984	-	702	-	-
HCM Lane V/C Ratio	0.022	-	0.015	-	-
HCM Control Delay (s)	8.7	0.2	10.2	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	163	31	0	654	206	51	0	377	0	0	0
Future Volume (vph)	0	163	31	0	654	206	51	0	377	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		200	0		300	0		0
Storage Lanes	0		0	0		1	2		1	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		856			2483			1251			336	
Travel Time (s)		19.5			56.4			28.4			7.6	
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
Heavy Vehicles (%)	0%	7%	26%	0%	3%	3%	22%	0%	4%	2%	2%	2%
Shared Lane Traffic (%)												
Turn Type		NA			NA	Free	Prot		Free			
Protected Phases		2			6		8					
Permitted Phases						Free			Free			
Detector Phase		2			6		8					
Switch Phase												
Minimum Initial (s)		10.0			10.0		10.0					
Minimum Split (s)		21.0			16.0		16.0					
Total Split (s)		50.0			50.0		30.0					
Total Split (%)		62.5%			62.5%		37.5%					
Maximum Green (s)		44.0			44.0		24.0					
Yellow Time (s)		4.0			4.0		4.0					
All-Red Time (s)		2.0			2.0		2.0					
Lost Time Adjust (s)		0.0			0.0		0.0					
Total Lost Time (s)		6.0			6.0		6.0					
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)		2.0			2.0		2.0					
Recall Mode		C-Min			C-Min		None					
Walk Time (s)		7.0										
Flash Dont Walk (s)		8.0										
Pedestrian Calls (#/hr)		0										

Intersection Summary

Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 35 (44%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 40
Control Type: Actuated-Coordinated

Splits and Phases: 14: Route 24 Northbound Ramp & Innovation Way



Lane Group	EBT	WBT	WBR	NBL	NBR
Lane Group Flow (vph)	211	711	224	55	410
v/c Ratio	0.08	0.24	0.14	0.15	0.26
Control Delay	0.1	2.9	0.2	32.5	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	0.1	2.9	0.2	32.5	0.4
Queue Length 50th (ft)	0	52	0	12	0
Queue Length 95th (ft)	0	71	0	29	0
Internal Link Dist (ft)	776	2403			
Turn Bay Length (ft)			200		300
Base Capacity (vph)	2678	2927	1568	861	1553
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.08	0.24	0.14	0.06	0.26

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	163	31	0	654	206	51	0	377	0	0	0
Future Volume (vph)	0	163	31	0	654	206	51	0	377	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0	4.0	6.0		4.0			
Lane Util. Factor		0.95			0.95	1.00	0.97		1.00			
Frt		0.98			1.00	0.85	1.00		0.85			
Flt Protected		1.00			1.00	1.00	0.95		1.00			
Satd. Flow (prot)		3201			3505	1568	2870		1553			
Flt Permitted		1.00			1.00	1.00	0.95		1.00			
Satd. Flow (perm)		3201			3505	1568	2870		1553			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	177	34	0	711	224	55	0	410	0	0	0
RTOR Reduction (vph)	0	8	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	203	0	0	711	224	55	0	410	0	0	0
Heavy Vehicles (%)	0%	7%	26%	0%	3%	3%	22%	0%	4%	2%	2%	2%
Turn Type		NA			NA	Free	Prot		Free			
Protected Phases		2			6		8					
Permitted Phases						Free			Free			
Actuated Green, G (s)		62.0			62.0	80.0	6.0		80.0			
Effective Green, g (s)		62.0			62.0	80.0	6.0		80.0			
Actuated g/C Ratio		0.78			0.78	1.00	0.08		1.00			
Clearance Time (s)		6.0			6.0		6.0					
Vehicle Extension (s)		2.0			2.0		2.0					
Lane Grp Cap (vph)		2480			2716	1568	215		1553			
v/s Ratio Prot		0.06			0.20		0.02					
v/s Ratio Perm						0.14			c0.26			
v/c Ratio		0.08			0.26	0.14	0.26		0.26			
Uniform Delay, d1		2.2			2.5	0.0	34.9		0.0			
Progression Factor		0.00			1.00	1.00	1.00		1.00			
Incremental Delay, d2		0.1			0.2	0.2	0.2		0.4			
Delay (s)		0.1			2.8	0.2	35.1		0.4			
Level of Service		A			A	A	D		A			
Approach Delay (s)		0.1			2.2			4.5			0.0	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	2.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.31		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	29.7%	ICU Level of Service	A
Analysis Period (min)	15		

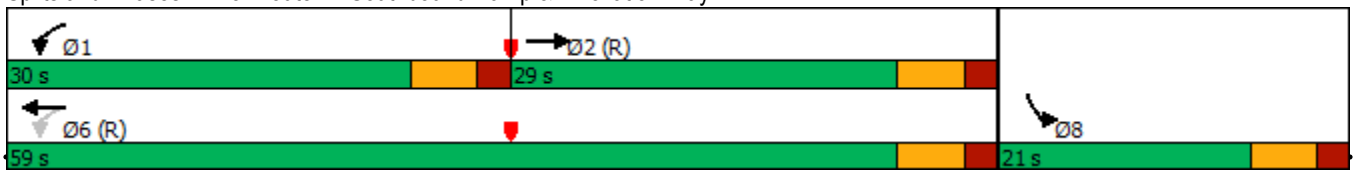
c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	80	98	534	126	0	0	0	0	147	0	75
Future Volume (vph)	0	80	98	534	126	0	0	0	0	147	0	75
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		500	300		0	0		0	600		0
Storage Lanes	0		1	1		0	0		0	1		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		920			856			388			1004	
Travel Time (s)		20.9			19.5			8.8			22.8	
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
Heavy Vehicles (%)	0%	29%	14%	5%	13%	0%	2%	2%	2%	16%	0%	12%
Shared Lane Traffic (%)												
Turn Type		NA	Free	pm+pt	NA					Prot		Free
Protected Phases		2		1	6					8		
Permitted Phases			Free	6								Free
Detector Phase		2		1	6					8		
Switch Phase												
Minimum Initial (s)		10.0		7.0	10.0					10.0		
Minimum Split (s)		16.0		13.0	16.0					21.0		
Total Split (s)		29.0		30.0	59.0					21.0		
Total Split (%)		36.3%		37.5%	73.8%					26.3%		
Maximum Green (s)		23.0		24.0	53.0					15.0		
Yellow Time (s)		4.0		4.0	4.0					4.0		
All-Red Time (s)		2.0		2.0	2.0					2.0		
Lost Time Adjust (s)		0.0		0.0	0.0					0.0		
Total Lost Time (s)		6.0		6.0	6.0					6.0		
Lead/Lag		Lag		Lead								
Lead-Lag Optimize?		Yes		Yes								
Vehicle Extension (s)		2.0		2.0	2.0					2.0		
Recall Mode		C-Min		None	C-Min					None		
Walk Time (s)										7.0		
Flash Dont Walk (s)										8.0		
Pedestrian Calls (#/hr)										0		

Intersection Summary

Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBTL, Start of Green, Master Intersection
Natural Cycle: 60
Control Type: Actuated-Coordinated

Splits and Phases: 15: Route 24 Southbound Ramp & Innovation Way



Lane Group	EBT	EBR	WBL	WBT	SBL	SBR
Lane Group Flow (vph)	87	107	580	137	160	82
v/c Ratio	0.07	0.08	0.64	0.06	0.41	0.06
Control Delay	25.9	0.1	14.6	6.8	35.5	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.9	0.1	14.6	6.8	35.5	0.1
Queue Length 50th (ft)	19	0	197	14	38	0
Queue Length 95th (ft)	37	0	313	32	66	0
Internal Link Dist (ft)	840			776		
Turn Bay Length (ft)		500	300		600	
Base Capacity (vph)	1235	1417	970	2305	566	1442
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	0.07	0.08	0.60	0.06	0.28	0.06

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	80	98	534	126	0	0	0	0	147	0	75
Future Volume (vph)	0	80	98	534	126	0	0	0	0	147	0	75
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	4.0	6.0	6.0					6.0		4.0
Lane Util. Factor		0.95	1.00	1.00	0.95					0.97		1.00
Frt		1.00	0.85	1.00	1.00					1.00		0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (prot)		2798	1417	1719	3195					3019		1442
Flt Permitted		1.00	1.00	0.60	1.00					0.95		1.00
Satd. Flow (perm)		2798	1417	1079	3195					3019		1442
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	87	107	580	137	0	0	0	0	160	0	82
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	87	107	580	137	0	0	0	0	160	0	82
Heavy Vehicles (%)	0%	29%	14%	5%	13%	0%	2%	2%	2%	16%	0%	12%
Turn Type		NA	Free	pm+pt	NA					Prot		Free
Protected Phases		2		1	6					8		
Permitted Phases			Free	6								Free
Actuated Green, G (s)		35.3	80.0	57.7	57.7					10.3		80.0
Effective Green, g (s)		35.3	80.0	57.7	57.7					10.3		80.0
Actuated g/C Ratio		0.44	1.00	0.72	0.72					0.13		1.00
Clearance Time (s)		6.0		6.0	6.0					6.0		
Vehicle Extension (s)		2.0		2.0	2.0					2.0		
Lane Grp Cap (vph)		1234	1417	909	2304					388		1442
v/s Ratio Prot		0.03		c0.13	0.04					c0.05		
v/s Ratio Perm			0.08	c0.33								0.06
v/c Ratio		0.07	0.08	0.64	0.06					0.41		0.06
Uniform Delay, d1		12.9	0.0	5.1	3.2					32.1		0.0
Progression Factor		1.71	1.00	2.27	2.02					1.00		1.00
Incremental Delay, d2		0.1	0.1	1.1	0.0					0.3		0.1
Delay (s)		22.1	0.1	12.7	6.6					32.3		0.1
Level of Service		C	A	B	A					C		A
Approach Delay (s)		10.0			11.5			0.0			21.4	
Approach LOS		A			B			A			C	

Intersection Summary

HCM 2000 Control Delay	13.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	48.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	115	66	85	60	119	112
Future Volume (vph)	115	66	85	60	119	112
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150	0		0	400	
Storage Lanes	1	2		0	1	
Taper Length (ft)	25				25	
Right Turn on Red		Yes		Yes		
Link Speed (mph)	30		30			30
Link Distance (ft)	920		357			952
Travel Time (s)	20.9		8.1			21.6
Peak Hour Factor	0.87	0.87	0.85	0.85	0.62	0.62
Heavy Vehicles (%)	3%	35%	1%	7%	27%	1%
Shared Lane Traffic (%)					10%	
Turn Type	Prot	pm+ov	NA		Split	NA
Protected Phases	3	2	1		2	2
Permitted Phases		3				
Detector Phase	3	2	1		2	2
Switch Phase						
Minimum Initial (s)	10.0	7.0	10.0		7.0	7.0
Minimum Split (s)	16.0	13.0	16.0		13.0	13.0
Total Split (s)	17.0	45.0	18.0		45.0	45.0
Total Split (%)	21.3%	56.3%	22.5%		56.3%	56.3%
Maximum Green (s)	11.0	39.0	12.0		39.0	39.0
Yellow Time (s)	4.0	4.0	4.0		4.0	4.0
All-Red Time (s)	2.0	2.0	2.0		2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0		6.0	6.0
Lead/Lag		Lag	Lead		Lag	Lag
Lead-Lag Optimize?		Yes	Yes		Yes	Yes
Vehicle Extension (s)	2.0	2.0	2.0		2.0	2.0
Recall Mode	None	None	C-Min		None	None

Intersection Summary

Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 61 (76%), Referenced to phase 1:NBT, Start of Green
Natural Cycle: 45
Control Type: Actuated-Coordinated

Splits and Phases: 16: South Main Street & Innovation Way

Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	132	76	171	173	200
v/c Ratio	0.53	0.09	0.20	0.68	0.61
Control Delay	45.1	7.9	13.5	42.2	36.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	45.1	7.9	13.5	42.2	36.5
Queue Length 50th (ft)	69	0	37	85	97
Queue Length 95th (ft)	119	20	92	86	94
Internal Link Dist (ft)	840		277		872
Turn Bay Length (ft)	150			400	
Base Capacity (vph)	261	1089	855	658	846
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.51	0.07	0.20	0.26	0.24

Intersection Summary

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	115	66	85	60	119	112
Future Volume (vph)	115	66	85	60	119	112
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0		6.0	6.0
Lane Util. Factor	1.00	0.88	1.00		0.95	0.95
Frt	1.00	0.85	0.94		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1752	2105	1733		1350	1736
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1752	2105	1733		1350	1736
Peak-hour factor, PHF	0.87	0.87	0.85	0.85	0.62	0.62
Adj. Flow (vph)	132	76	100	71	192	181
RTOR Reduction (vph)	0	53	20	0	0	0
Lane Group Flow (vph)	132	23	151	0	173	200
Heavy Vehicles (%)	3%	35%	1%	7%	27%	1%
Turn Type	Prot	pm+ov	NA		Split	NA
Protected Phases	3	2	1		2	2
Permitted Phases		3				
Actuated Green, G (s)	9.4	24.6	37.4		15.2	15.2
Effective Green, g (s)	9.4	24.6	37.4		15.2	15.2
Actuated g/C Ratio	0.12	0.31	0.47		0.19	0.19
Clearance Time (s)	6.0	6.0	6.0		6.0	6.0
Vehicle Extension (s)	2.0	2.0	2.0		2.0	2.0
Lane Grp Cap (vph)	205	805	810		256	329
v/s Ratio Prot	c0.08	0.01	c0.09		c0.13	0.12
v/s Ratio Perm		0.01				
v/c Ratio	0.64	0.03	0.19		0.68	0.61
Uniform Delay, d1	33.7	19.4	12.4		30.1	29.7
Progression Factor	1.18	2.86	1.00		1.00	1.00
Incremental Delay, d2	5.1	0.0	0.5		5.5	2.2
Delay (s)	44.8	55.4	12.9		35.6	31.8
Level of Service	D	E	B		D	C
Approach Delay (s)	48.6		12.9			33.6
Approach LOS	D		B			C

Intersection Summary

HCM 2000 Control Delay	33.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	37.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group