FUSS & O'NEILL
146 Hartford Road
Manchester, CT 06040
860.646.2469
www.fando.com

May 22, 2024

Frank W. Petise, PE
Transportation Bureau Chief
City of Stamford Transportation, Traffic, and Parking (TTP) Department
888 Washington Boulevard, 7th Floor
Stamford, CT 06901

Re: Response to 3/12/24 City TTP Comments
Application # 223-38: 800 Long Ridge Road
Stamford, Connecticut

Dear Mr. Petise:

Fuss and O'Neill received comments prepared by your office, dated March 12th, 2024, regarding Fuss and O'Neill's Traffic Impact Study, dated September 2023, for the proposed development at 800 Long Ridge Road, Stamford, Connecticut. This letter will serve as a response to these comments. The comments excerpted from the Interoffice Memorandum and email correspondence are reprinted in *italics* with our responses below.

1. *Extend the crash analysis back to when the office was fully occupied.*

   Crash data was gathered from CTDOT via the University of Connecticut Crash Data Repository for the following intersections:

   - Route 104 (Long Ridge Road) at Loughran Avenue and Site Drive
   - Route 104 (Long Ridge Road) at 900 Long Ridge Road Driveway and Private Driveway
   - Route 104 (Long Ridge Road) at 777 Long Ridge Road Driveway and Private Driveway

   The records were gathered for the most recent ten years of available data, 2014 through 2023. A summary of the crash data for each study area intersection is provided in *Table 1* of *Appendix A*. Copies of the crash data records have been provided in *Appendix G*.

   The intersection of Route 104 and Loughran Avenue and the site driveway experienced 15 crashes during the study period, averaging less than two crashes per year. A majority of the reported crashes were front to rear collisions (12) which are common at arterial signalized intersections. Of the fifteen collisions, ten resulted property damage only, three resulted in suspected minor injuries, and two resulted in a possible injury.

The intersection of Route 104 and 900 Long Ridge Road Driveway and the Private Driveway experienced no crashes during the study period.

The intersection of Route 104 and 777 Long Ridge Road Driveway and the Private Driveway experienced ten crashes during the study period, averaging one crash per year. Of the reported crashes seven were front to rear, two were sideswipe crashes, and one crash was reported as being with a moving object. Of the ten collisions, eight resulted in property damage only and two resulted in a possible injury.

The type and frequency of crashes reported are not considered abnormal for the traffic volumes and geometric characteristics of the intersections and there were no atypical crash patterns. The volume of traffic generated by the proposed development is not expected to impact the safety of traffic operations in the study area.

2. *Conduct a synchro and crash analysis for the signalized intersection at Long Ridge Road and 777 Long Ridge Road Driveway.*

Additional turning movement counts were conducted at the intersection of Long Ridge Road at 777 Long Ridge Road driveway on Thursday May 2, 2024. The traffic count data collected indicates that the weekday morning peak hour of traffic is 7:45 a.m. to 8:45 a.m. and the weekday afternoon peak hour is 5:00 p.m. to 6:00 p.m. Turning movement counts have been attached to this letter in Appendix F.

The additional turning movement counts were subsequently analyzed during 2025 background conditions and 2025 combined conditions. Capacity analysis was conducted for this signalized intersection using Synchro Professional Software, version 11.0. Additionally, Background and Combined Condition 95th percentile (design) queue lengths were reviewed at the intersection.

The distribution of traffic entering and exiting the proposed site was applied to this intersection based on the existing regional traffic distributions and the layout of the adjacent roadway network. A regional arrival/departure distribution for the existing and new site generated traffic traveling to and from the project site can be found in Figure *No. 4* of *Appendix B*.

It should be noted that the traffic analysis was completed using three different count sources. Turning movement counts at the intersection of Long Ridge Road at the 900 Long Ridge Road driveway were taken from the Kimley Horn study dated September 2023. Turning movement counts at the intersection of Long Ridge Road at 800 Long Ridge Road driveways were captured in late August of 2023 and counts at the intersection of Long Ridge Road at 777 Long Ridge Road driveway were captured in May of 2024. In analyzing these three intersections, we utilized the highest through volumes recorded along Long Ridge Road and carried them through all three intersections in order to provide the most conservative analysis.

The signalized intersection of Route 104 and Loughran Avenue and the 777 Long Ridge Road Driveway operates efficiently at LOS A under background conditions during morning and afternoon

weekday peak hours and continues to do so in the combined condition with the addition of the proposed residential land use at 800 Long Ridge Road.

The 95th percentile queue lengths on all approaches will experience minimal queue increases (four vehicle lengths or less during the morning peak hour and two vehicle lengths or less during the afternoon peak hour) between the background and combined condition with the proposed residential land use. Ample lane storage lengths exist on all approaches to accommodate these anticipated queue increases.

Table No. 2 of *Appendix A* presents a summary of the levels of service at this signalized intersection, for both Background and Combined Condition traffic volumes under both the existing office and proposed residential land uses. *Tables 4 and 5* of *Appendix A* provide a summary of the queue lengths for the critical lanes at each intersection.

Copies of the analysis worksheets can be found in *Appendices C and D*.

3. *Utilize the revised Kimley-Horn traffic study dated September 25, 2023, for the analysis.*

The Kimley Horn traffic study dated September 25, 2023, did not include any information regarding the intersection of Long Ridge Road and 777 Long Ridge Road Driveway. In order to analyze this intersection, additional turning movement counts were collected on Thursday, May 2, 2024, at the intersection of Long Ridge Road and 777 Long Ridge Road Driveway.

4. *Conduct a Saturday trip generation and synchro analysis.*

Additional turning movement counts were conducted at the intersection of Long Ridge Rd at 800 Long Ridge Road driveway on Saturday April 13, 2024. The traffic count data collected indicates that the Saturday midday peak hour of traffic is 11:45 am to 12:45 pm. Turning movement counts have been attached to this letter in Appendix F.

The additional turning movement counts were subsequently analyzed during 2025 background conditions and 2025 combined conditions. Capacity analysis was conducted for the signalized intersection using Synchro Professional Software, version 11.0. Additionally, Background and Combined Condition 95th percentile (design) queue lengths were reviewed at the intersection.

The distribution of traffic entering and exiting the proposed site was applied to the road network based on the existing regional traffic distributions and the layout of the adjacent roadway network. A regional arrival/departure distribution for the existing and new site generated traffic traveling to and from the project site can be found in Figure *No. 4* of *Appendix B*.

The signalized intersection of Route 104 and Loughran Avenue and the Site Driveway operates efficiently at LOS A under background conditions during the Saturday midday peak hour and continues to do so in the combined condition under the proposed residential land use.

The 95th percentile queue lengths on the Long Ridge Road approaches will experience minimal queue increases (one vehicle length or less during the Saturday midday peak hour) between the background and combined condition with the proposed residential land use. Queue lengths of up to three vehicle lengths will be present on the site driveway approach. Ample lane storage lengths exist on all approaches to accommodate these anticipated queue increases.

Table No. 3 of *Appendix A* presents a summary of the Saturday midday peak hour levels of service at this signalized intersection for both Background and Combined Condition traffic volumes of the existing office and proposed residential land uses. *Table 6* of *Appendix A* provides a summary of the queue lengths for the critical lanes at each intersection.

The results presented at the intersection of Long Ridge Rd at 800 Long Ridge Road driveway for the Saturday midday peak hour are comparable to the weekday morning and afternoon peak hour analysis, all of which indicate efficient intersection operations. Therefore, it can be assumed that Saturday midday peak hour operations at the intersections of Long Ridge Rd at the 900 Long Ridge Road driveway and the 777 Long Ridge Road driveway are comparable to the efficient weekday morning and afternoon peak hour operations being experienced.

As noted in the traffic study, the traffic signal at the Long Ridge Road intersection with the 800 Long Ridge Road site driveway and Loughran Avenue operates efficiently under all peak hours in the combined/build condition. The intersection has ample capacity and no geometric or traffic signal modifications will be required. Furthermore, it should be noted that the intersection capacity analysis prepared for all conditions includes background traffic from the proposed 900 Long Ridge Road development whose site plan application was recently denied by the City. Therefore, our analysis should be considered conservative.

Copies of the analysis worksheets can be found in *Appendices E*.

5. *Provide back-up for the 10% internal trip capture credit.*

The 10 percent internal capture is used to represent the number of expected residents that will utilize the daycare facility on site. 10 percent was chosen based on the OSTA Major Traffic Generation Guidelines which can be found in *Appendix H*. OSTA and the CTDOT Planning Division allow a maximum internal trip reduction rate of 10 percent to account for trips originating from one use on site and accessing another. The 10 percent internal capture reduction is extremely conservative as a large percentage of the daycare business is expected to be generated by residents living on site.

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Additional turning movement counts, crash data, synchro analysis reports, and traffic volume figures have been attached to this letter. We trust that this information will be sufficient for you to complete your review, however should you have any questions or require additional information, please contact us.

Sincerely,

Ajeet Sandhu, EIT
Project Engineer

Mark G. Vertucci, PE, PTOE
Vice President

Attachments: Appendix A - Tables
Appendix B - Figures
Appendix C - Intersection Capacity Analysis Worksheets Weekday Morning Peak Hour
Appendix D - Intersection Capacity Analysis Worksheets Weekday Afternoon Peak Hour
Appendix E - Intersection Capacity Analysis Worksheets Midday Saturday Peak Hour
Appendix F - Turning Movement Count (TMC) Data
Appendix G - Crash Data Records
Appendix H - OSTA Major Trip Generation Guidelines

Appendix A

Tables

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Table 1

Intersection Crash Data Summary
800 Long Ridge Road Multi-Family Housing
Stamford, Connecticut

Intersection	Crashes Per Year										
	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Average/Year
Long Ridge Road (Route 104) at Loughran Avenue and the Site Driveway	1	0	5	2	3	0	0	2	1	1	1.5
Long Ridge Road (Route 104) at 900 Long Ridge Road Site Driveway	0	0	0	0	0	0	0	0	0	0	0
Long Ridge Road (Route 104) at 777 Long Ridge Road Site Driveway	2	1	1	1	0	0	1	3	1	0	1

*Values indicated are number of crashes within 200 feet of the intersection during time period shown.
Data provided by the Connecticut Department of Transportation via the UConn Crash Data Repository.

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Table 2

Signalized Intersection Level of Service Summary
800 Long Ridge Road Multi-Family Housing
Stamford, Connecticut

Critical Movements	2025 Weekday Morning Peak Hour			2025 Weekday Afternoon Peak Hour		
	Background	Office Land Use Combined	Residential Land Use Combined	Background	Office Land Use Combined	Residential Land Use Combined
Route 104 at Loughran Avenue and Site Driveway	**A**	**B**	**B**	**A**	**B**	**A**
Eastbound Approach	D	D	D	D	D	D
Westbound Approach	D	D	D	D	C	D
Northbound Approach	A	A	A	A	B	A
Southbound Approach	A	B	B	A	B	A
Route 104 at 900 Long Ridge Road Driveway and Private Driveway	**B**	**C**	**B**	**A**	**A**	**A**
Eastbound Approach	D	D	D	D	D	D
Westbound Approach	D	D	D	D	D	D
Northbound Approach	A	A	A	A	A	A
Southbound Approach	B	D	C	B	B	B
Route 104 at 777 Long Ridge Road Driveway and Private Driveway	**A**	**A**	**A**	**A**	**A**	**A**
Eastbound Approach	D	D	D	D	D	D
Westbound Approach	D	D	D	D	D	D
Northbound Approach	A	A	A	A	A	A
Southbound Approach	A	A	A	A	A	A

*Values indicated are overall intersection and approach Level of Service (LOS)

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Table 3

Signalized Intersection Level of Service Summary – Saturday Midday Peak Hour
800 Long Ridge Road Multi-Family Housing
Stamford, Connecticut

Critical Movements	2025 Saturday Midday Peak Hour		
	Background	Office Land Use Combined	Residential Land Use Combined
Route 104 at Loughran Avenue and Site Driveway	**A**	**A**	**A**
Eastbound Approach	A	D	D
Westbound Approach	D	D	D
Northbound Approach	A	A	A
Southbound Approach	A	A	A

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Table 4

Weekday Morning Peak Hour Queue Length Summary
800 Long Ridge Road Multi-Family Housing
Stamford, Connecticut

Intersection	Approach Lane	2025 Background Queue	2025 Office Use Combined Queue	2025 Residential Use Combined Queue	Available Storage
Route 104 at Loughran Avenue and Site Driveway	EB Left Turn	10 Feet	50 Feet	105. Feet	250 Feet
	EB Through/Right Turn	10 Feet	30 Feet	45 Feet	250 Feet
	WB Approach	25 Feet	25 Feet	20 Feet	1100 Feet
	NB Left Turn	0 Feet	155 Feet	15 Feet	150 Feet
	NB Through/Right Turn	135 Feet	175 Feet	260 Feet	1450 Feet
	SB Left Turn	0 Feet	0 Feet	0 Feet	125 Feet
	SB Through	805 Feet	840 Feet	765 Feet	600 Feet
	SB Right Turn	0 Feet	0 Feet	0 Feet	175 Feet
Route 104 at 900 Long Ridge Road Driveway and Private Driveway	EB Left Turn	100 Feet	100 Feet	100 Feet	100 Feet
	EB Through/Right Turn	60 Feet	65 Feet	65 Feet	+1000 Feet
	WB Approach	0 Feet	0 Feet	0 Feet	25 Feet
	NB Left Turn	20 Feet	20 Feet	15 Feet	65 Feet
	NB Through/Right Turn	65 Feet	80 Feet	95 Feet	275 Feet
	SB Left Turn/Through	380 Feet	865 Feet	745 Feet	1700 Feet
	SB Right Turn	5 Feet	5 Feet	5 Feet	290 Feet
Route 104 at 777 Long Ridge Road Driveway and Private Driveway	EB Approach	0 Feet	0 Feet	0 Feet	110 Feet
	WB Left Turn	20 Feet	20 Feet	20 Feet	260 Feet
	WB Right Turn	0 Feet	0 Feet	0 Feet	120 Feet
	NB Left Turn	0Feet	5 Feet	5 Feet	135 Feet
	NB Through	280 Feet	440 Feet	345 Feet	1,160 Feet
	NB Right Turn	0 Feet	0 Feet	0 Feet	125 Feet
	SB Left Turn	0 Feet	0 Feet	0 Feet	550 Feet
	SB Through/Right Turn	285 Feet	295 Feet	270 Feet	1,470 Feet

NOTE: Values indicated represent 95th percentile (design) vehicle queue lengths. Values are rounded to the nearest 5 feet.

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Table 5

Weekday Afternoon Peak Hour Queue Length Summary
800 Long Ridge Road Multi-Family Housing
Stamford, Connecticut

Intersection	Approach Lane	2025 Background Queue	2025 Office Use Combined Queue	2025 Residential Use Combined Queue	Available Storage
Route 104 at Loughran Avenue and Site Driveway	EB Left Turn	5 Feet	200 Feet	80 Feet	250 Feet
	EB Through/Right Turn	0 Feet	115 Feet	10 Feet	250 Feet
	WB Approach	15 Feet	15 Feet	15 Feet	1100 Feet
	NB Left Turn	0 Feet	15 Feet	25 Feet	150 Feet
	NB Through/Right Turn	185 Feet	490 Feet	325 Feet	1450 Feet
	SB Left Turn	0 Feet	0 Feet	0 Feet	125 Feet
	SB Through	145 Feet	140 Feet	140 Feet	220 Feet
	SB Right Turn	0 Feet	0 Feet	5 Feet	175 Feet
Route 104 at 900 Long Ridge Road Driveway and Private Driveway	EB Left Turn	85 Feet	85 Feet	85 Feet	100 Feet
	EB Through/Right Turn	35 Feet	35 Feet	35 Feet	+1000 Feet
	WB Approach	0 Feet	0 Feet	0 Feet	25 Feet
	NB Left Turn	20 Feet	20 Feet	35 Feet	65 Feet
	NB Through/Right Turn	35 Feet	85 Feet	60 Feet	440 Feet
	SB Left Turn/Through	275 Feet	285 Feet	290 Feet	1700 Feet
	SB Right Turn	5 Feet	5 Feet	5 Feet	290 Feet
Route 104 at 777 Long Ridge Road Driveway and Private Driveway	EB Approach	0 Feet	0 Feet	0 Feet	110 Feet
	WB Left Turn	15 Feet	15 Feet	15 Feet	260 Feet
	WB Right Turn	0 Feet	0 Feet	0 Feet	120 Feet
	NB Left Turn	0 Feet	0 Feet	0 Feet	135 Feet
	NB Through	485 Feet	485 Feet	505 Feet	1,160 Feet
	NB Right Turn	0 Feet	0 Feet	0 Feet	125 Feet
	SB Left Turn	0 Feet	0 Feet	0 Feet	550 Feet
	SB Through/Right Turn	240 Feet	255 Feet	245 Feet	1,470 Feet

NOTE: Values indicated represent 95th percentile (design) vehicle queue lengths. Values are rounded to the nearest 5 feet.

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Table 6

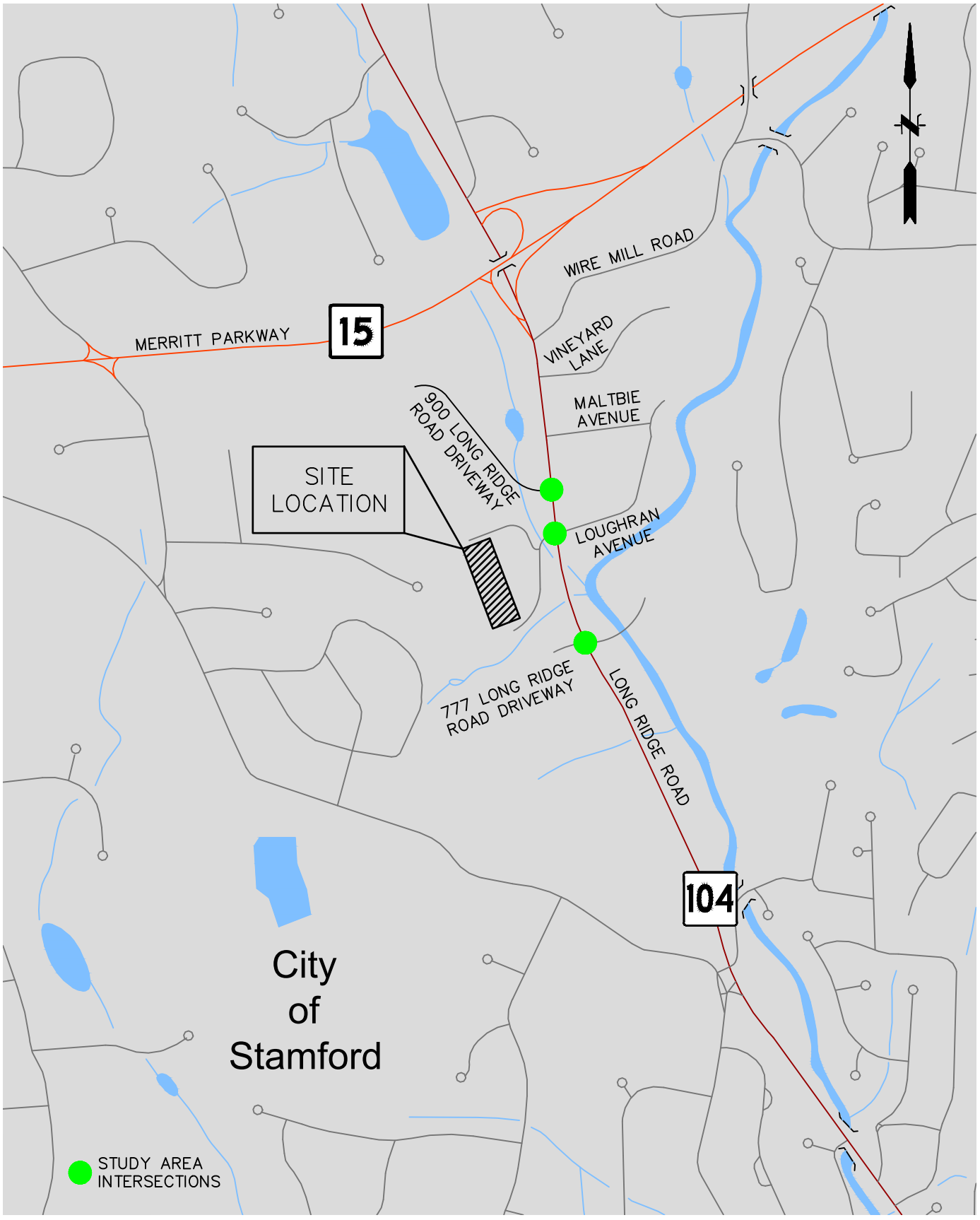
Saturday Midday Peak Hour Queue Length Summary
800 Long Ridge Road Multi-Family Housing
Stamford, Connecticut

Intersection	Approach Lane	2025 Background Queue	2025 Office Use Combined Queue	2025 Residential Use Combined Queue	Available Storage
Route 104 at Loughran Avenue and Site Driveway	EB Left Turn	0 Feet	55 Feet	55 Feet	250 Feet
	EB Through/Right Turn	0 Feet	0 Feet	0 Feet	250 Feet
	WB Approach	15 Feet	15 Feet	15 Feet	1100 Feet
	NB Left Turn	0 Feet	10 Feet	10 Feet	150 Feet
	NB Through/Right Turn	50 Feet	75 Feet	75 Feet	1450 Feet
	SB Left Turn	0 Feet	0 Feet	0 Feet	125 Feet
	SB Through	65 Feet	65 Feet	65 Feet	220 Feet
	SB Right Turn	0 Feet	5 Feet	5 Feet	175 Feet

NOTE: Values indicated represent 95th percentile (design) vehicle queue lengths. Values are rounded to the nearest 5 feet.

Appendix B

Figures



SCALE:	
HORZ.:	1" = 1000'
VERT.:	
DATUM:	
HORZ.:	
VERT.:	

0 500 1000

GRAPHIC SCALE

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BLT MANAGEMENT LLC

SITE LOCATION MAP

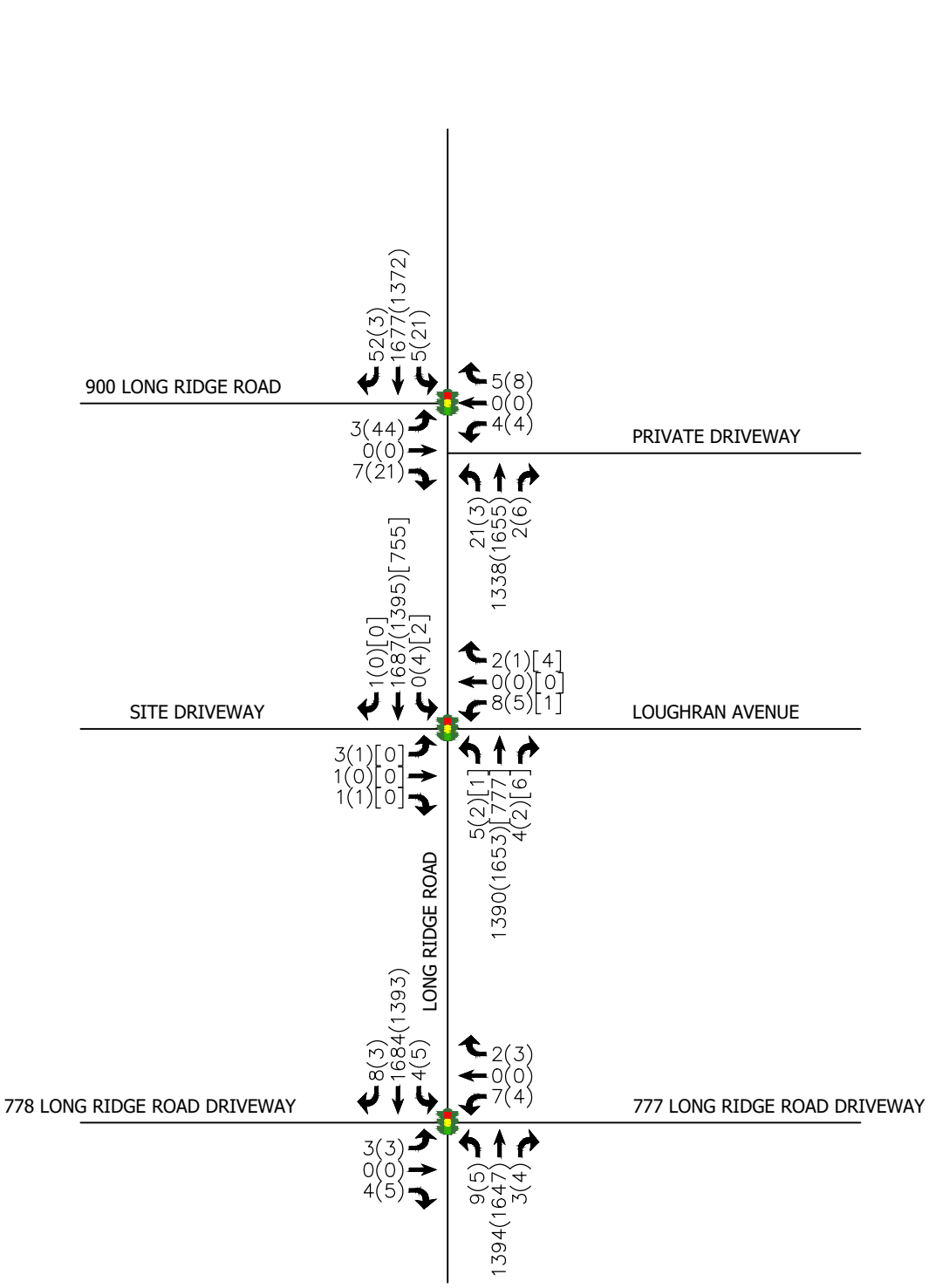
800 LONG RIDGE ROAD

STAMFORD CONNECTICUT

PROJ. No.: 20101217.A30
DATE: MAY 2024

LOC-01

File: J:\DWG\P2010\1217A30\Civil\Traffic Figures\20101217A30_LOC.dwg Layout: 08.5X11-P Plotted: 2024-05-01 4:59 PM Saved: 2024-05-01 4:57 PM User: holly.russell
PC3: AUTOCAD PDF (GENERAL DOCUMENTATION).PC3 STB/CTB: FO.STB
LAYER STATE:
MS VIEW:



XXX(XXX)[XXX] = WEEKDAY MORNING PEAK HOUR (WEEKDAY PM PEAK HOUR) [WEEKEND MIDDAY]

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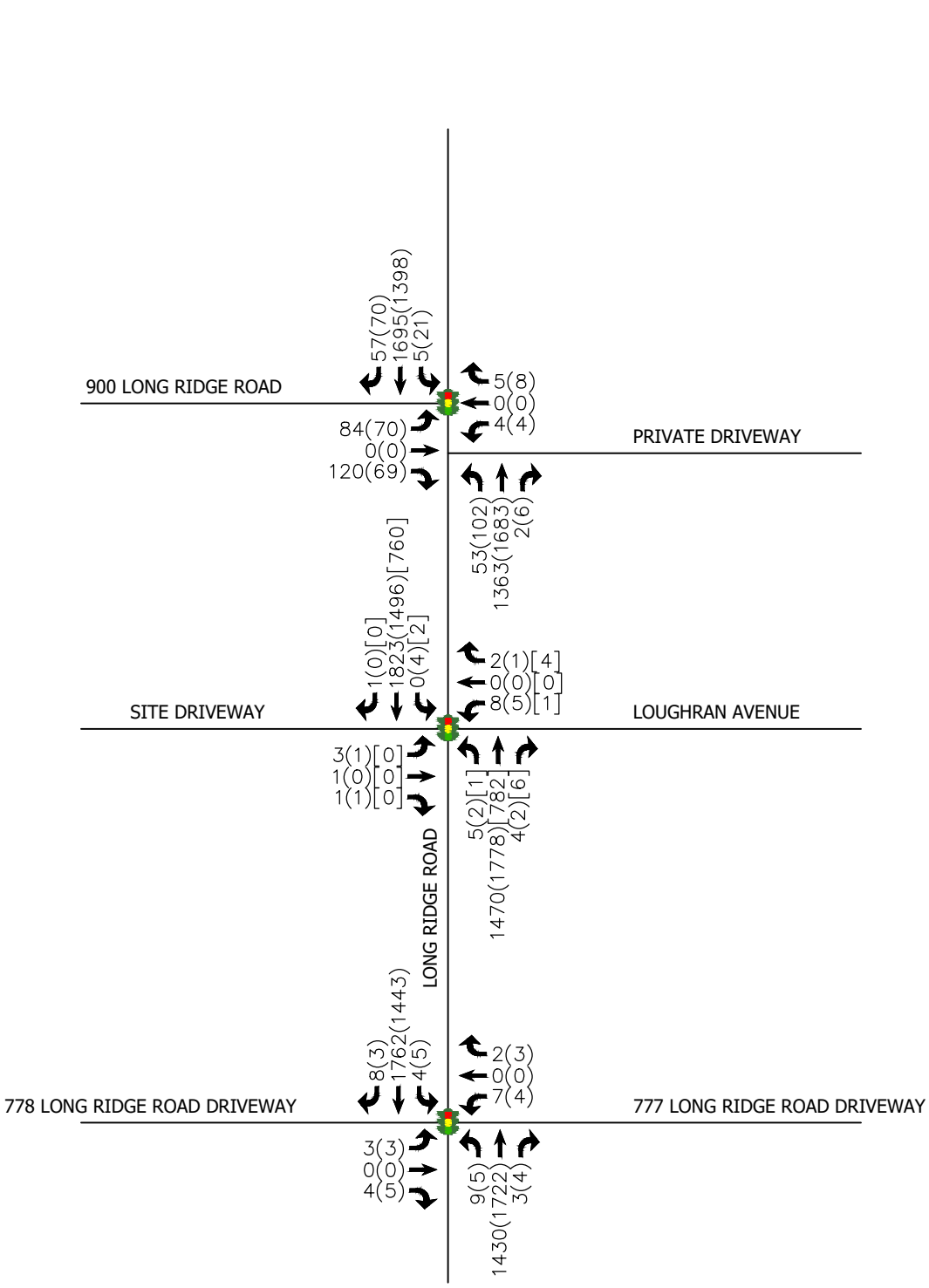
FIGURE 2: 2023 EXISTING CONDITIONS

PROJ. NO: 20101217.A30 | 800 LONG RIDGE ROAD STAMFORD, CT | MAY 2024



XXX(XXX)[XXX] = WEEKDAY MORNING PEAK HOUR (WEEKDAY PM PEAK HOUR) [WEEKEND MIDDAY]

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FIGURE 3: 2025 BACKGROUND CONDITIONS

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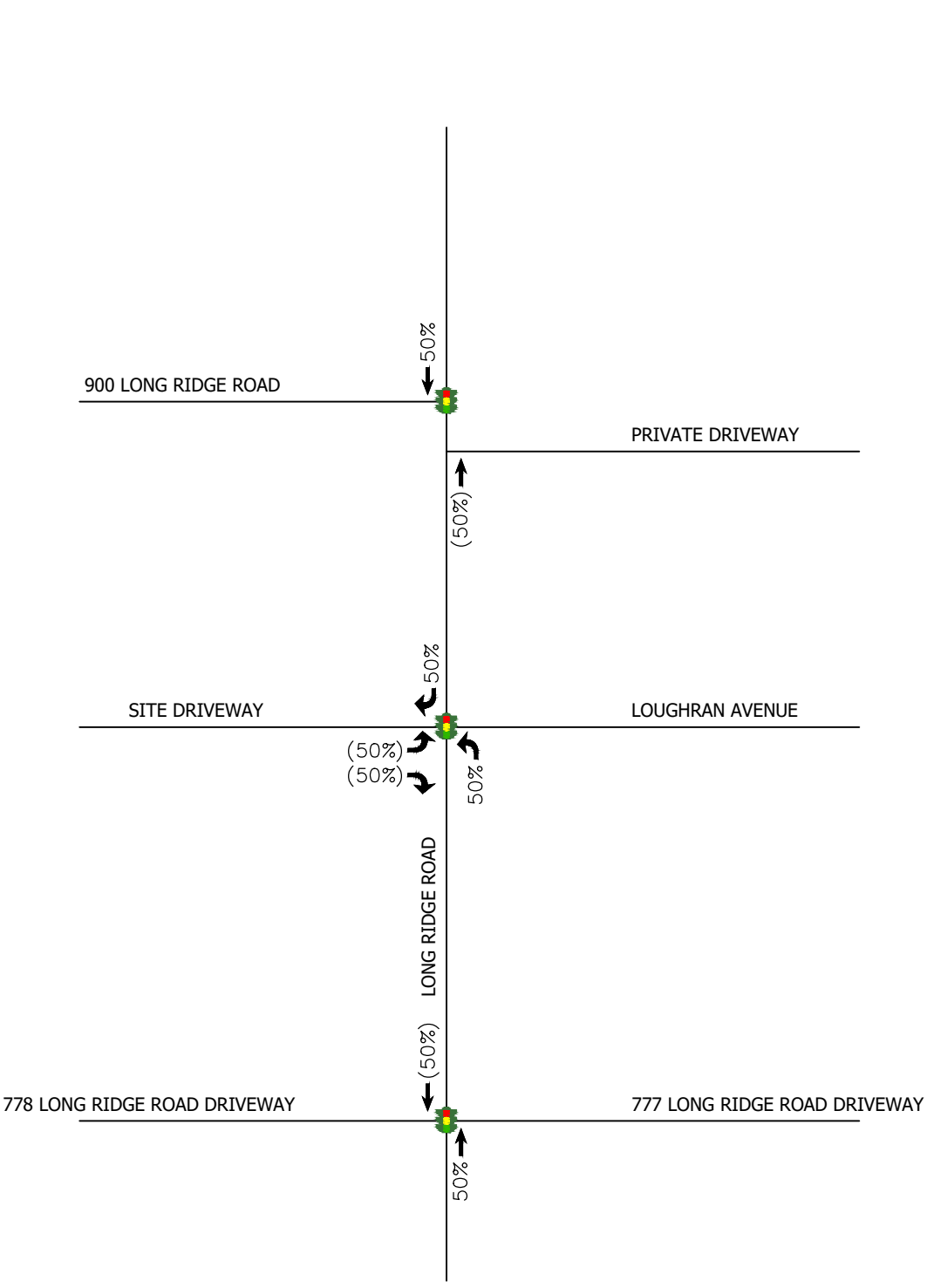

XXX(XXX) = ENTERING TRAFFIC (EXITING TRAFFIC)

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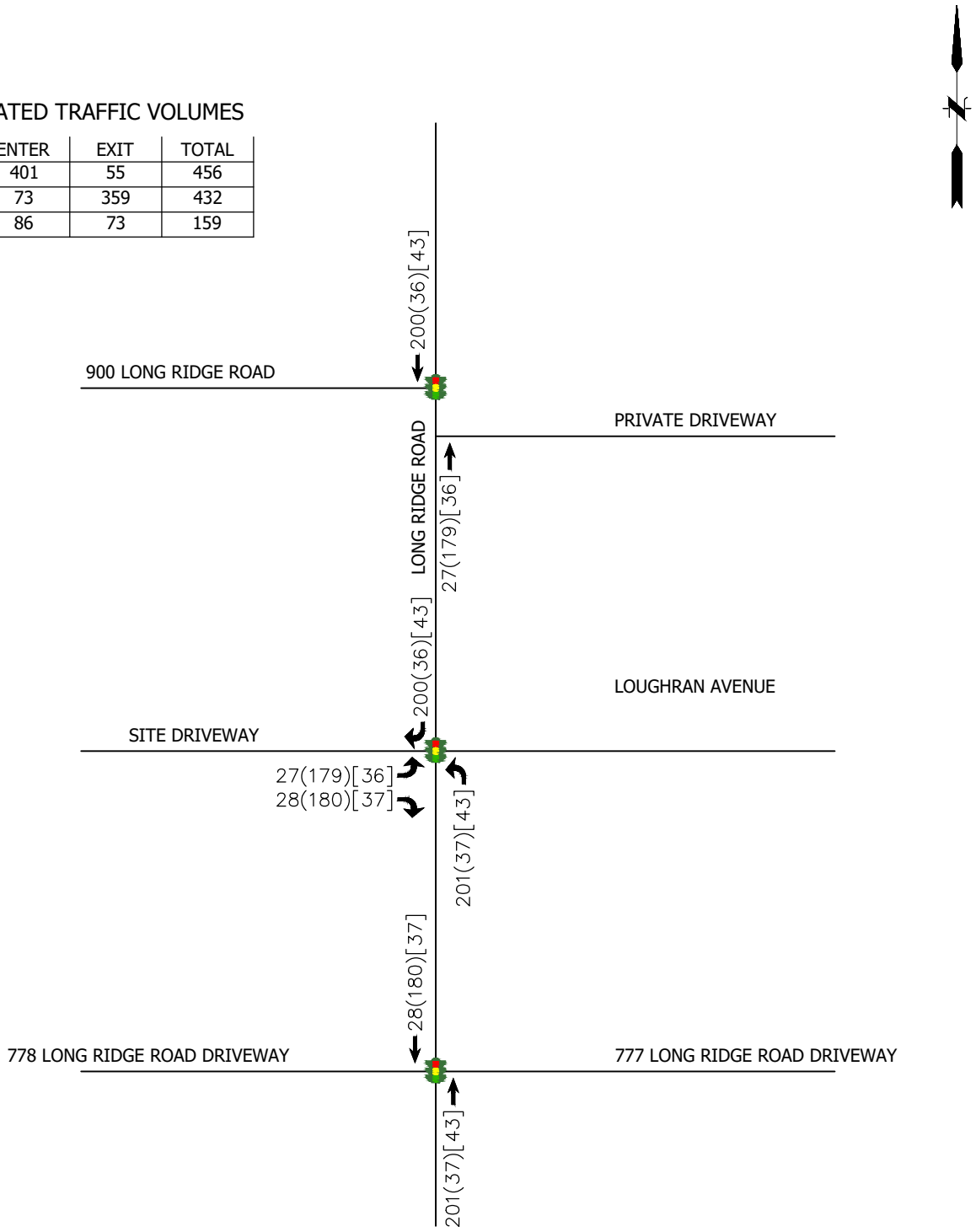
FIGURE 4: TRIP DISTRIBUTION

PROJ. NO: 20101217.A30 | 800 LONG RIDGE ROAD STAMFORD, CT | MAY 2024

SITE GENERATED TRAFFIC VOLUMES

	ENTER	EXIT	TOTAL
MORNING	401	55	456
AFTERNOON	73	359	432
WEEKEND	86	73	159



XXX(XXX)[XXX] = WEEKDAY MORNING PEAK HOUR (WEEKDAY PM PEAK HOUR) [WEEKEND MIDDAY]

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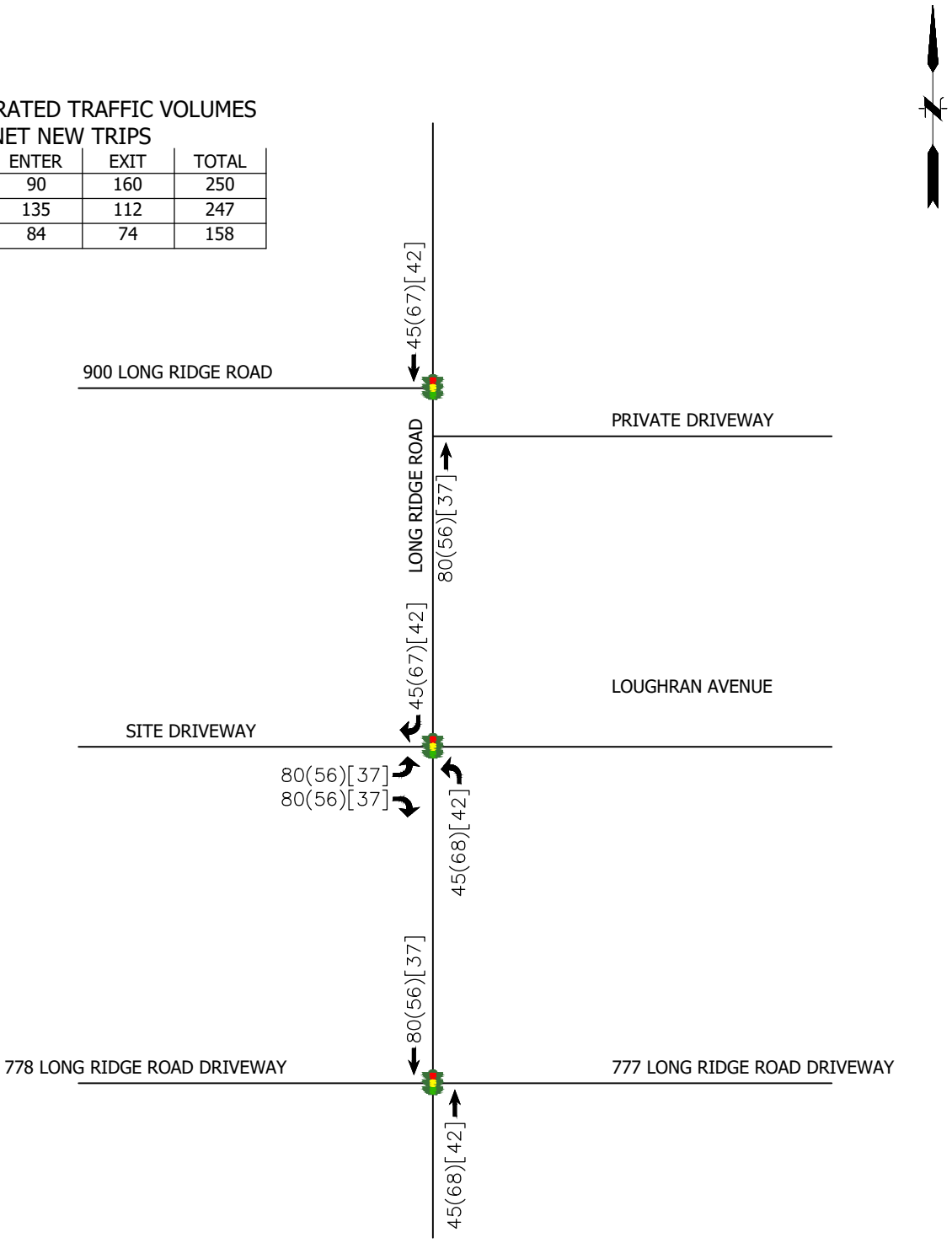
FIGURE 5: TRIP GENERATION - OFFICE LAND USE

PROJ. NO: 20101217.A30 800 LONG RIDGE ROAD STAMFORD, CT MAY 2024

SITE GENERATED TRAFFIC VOLUMES
NET NEW TRIPS

	ENTER	EXIT	TOTAL
MORNING	90	160	250
AFTERNOON	135	112	247
WEEKEND	84	74	158



XXX(XXX)[XXX] = WEEKDAY MORNING PEAK HOUR (WEEKDAY PM PEAK HOUR) [WEEKEND MIDDAY]

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FIGURE 6: TRIP GENERATION - RESIDENTIAL LAND USE

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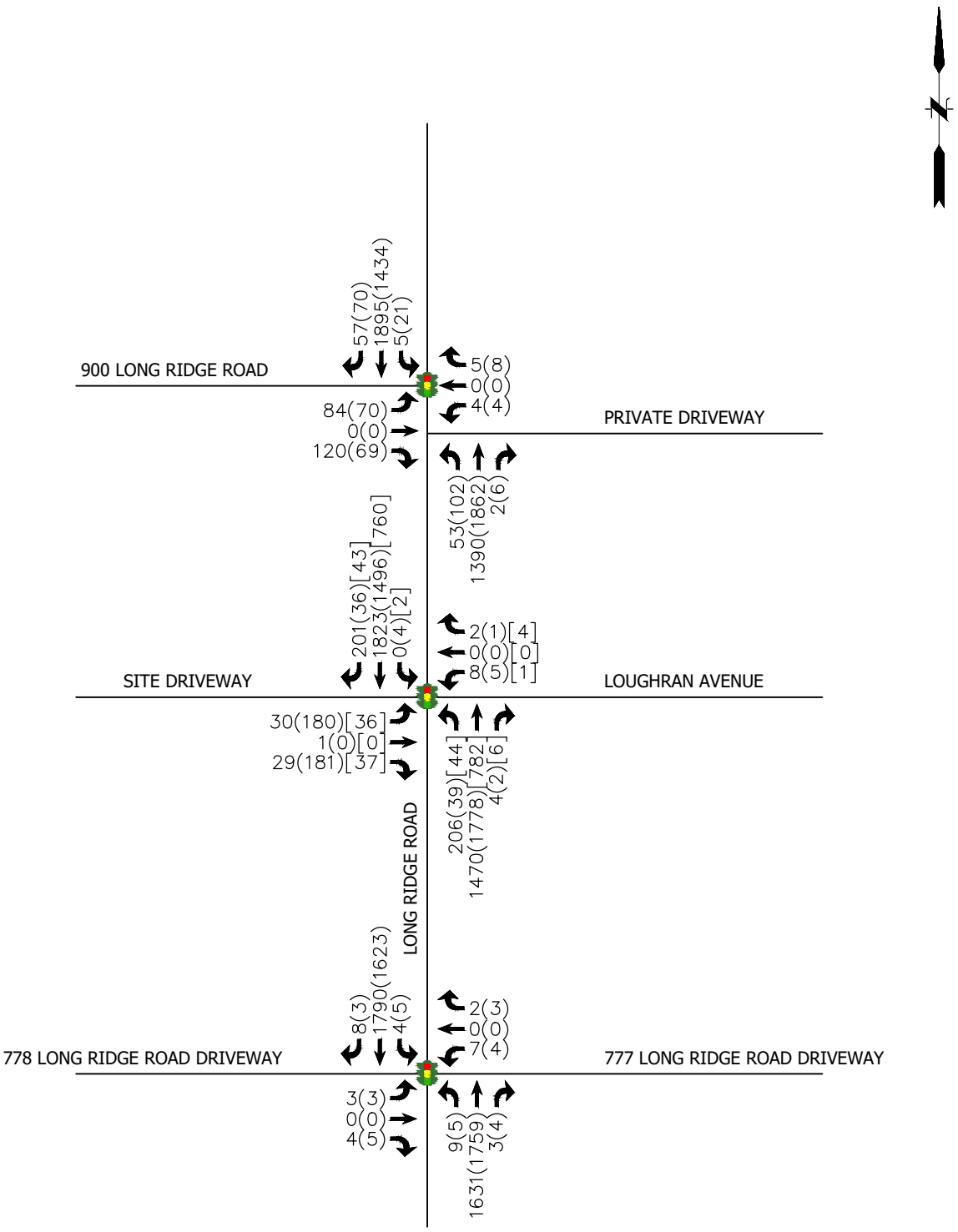

XXX(XXX)[XXX] = WEEKDAY MORNING PEAK HOUR (WEEKDAY PM PEAK HOUR) [WEEKEND MIDDAY]

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FIGURE 7: 2025 COMBINED CONDITIONS OFFICE LAND USE

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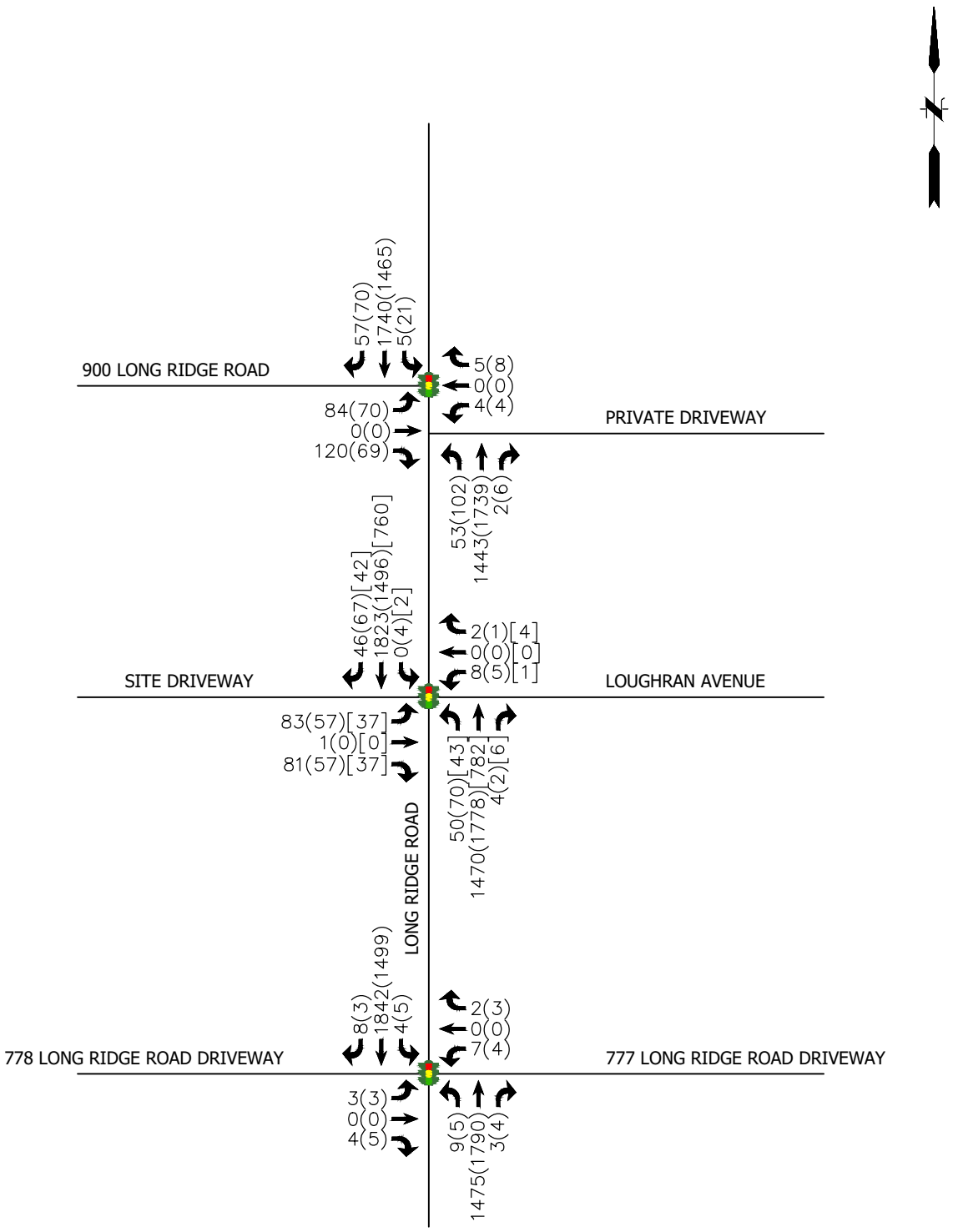

XXX(XXX)[XXX] = WEEKDAY MORNING PEAK HOUR (WEEKDAY PM PEAK HOUR) [WEEKEND MIDDAY]

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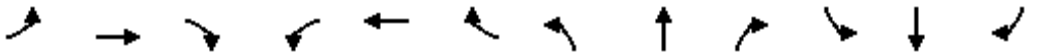
FIGURE 8: 2025 COMBINED CONDITIONS RESIDENTIAL LAND USE

PROJ. NO: 20101217.A30 | 800 LONG RIDGE ROAD STAMFORD, CT | MAY 2024

Appendix C

Intersection Capacity Analysis Worksheets
Weekday Morning Peak Hour



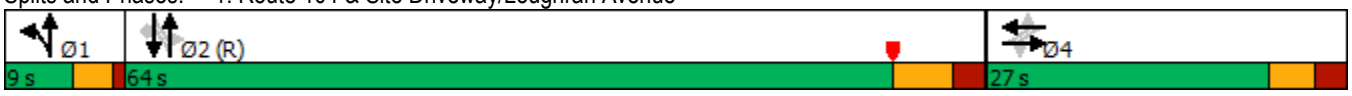
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	1	1	8	0	2	5	1470	4	0	1823	1
Future Volume (vph)	3	1	1	8	0	2	5	1470	4	0	1823	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	150		0	125		165
Storage Lanes	1		0	0		0	1		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Frt		0.925			0.975							0.850
Flt Protected	0.950				0.961		0.950					
Satd. Flow (prot)	1770	1723	0	0	1745	0	1770	3539	0	1863	3539	1583
Flt Permitted							0.062					
Satd. Flow (perm)	1863	1723	0	0	1816	0	115	3539	0	1863	3539	1583
Right Turn on Red			Yes			No			Yes			Yes
Satd. Flow (RTOR)		1						1				75
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		154			229			333			361	
Travel Time (s)		3.5			5.2			7.6			8.2	
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
Adj. Flow (vph)	3	1	1	9	0	2	5	1598	4	0	1982	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	3	2	0	0	11	0	5	1602	0	0	1982	1
Turn Type	Perm	NA		Perm	NA		D.P+P	NA		Perm	NA	Perm
Protected Phases		4			4		1	1 2			2	
Permitted Phases	4			4			2			2		2
Detector Phase	4	4		4	4		1	1 2		2	2	2
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		3.0			15.0	15.0	15.0
Minimum Split (s)	27.0	27.0		27.0	27.0		7.5			47.0	47.0	47.0
Total Split (s)	27.0	27.0		27.0	27.0		9.0			64.0	64.0	64.0
Total Split (%)	27.0%	27.0%		27.0%	27.0%		9.0%			64.0%	64.0%	64.0%
Maximum Green (s)	21.1	21.1		21.1	21.1		5.0			57.1	57.1	57.1
Yellow Time (s)	3.3	3.3		3.3	3.3		3.0			4.4	4.4	4.4
All-Red Time (s)	2.6	2.6		2.6	2.6		1.0			2.5	2.5	2.5
Lost Time Adjust (s)	0.0	0.0			0.0		0.0			0.0	0.0	0.0
Total Lost Time (s)	5.9	5.9			5.9		4.0			6.9	6.9	6.9
Lead/Lag							Lead			Lag	Lag	Lag
Lead-Lag Optimize?							Yes			Yes	Yes	Yes
Vehicle Extension (s)	1.5	1.5		1.5	1.5		2.0			3.0	3.0	3.0
Recall Mode	None	None		None	None		None			C-Min	C-Min	C-Min
Walk Time (s)	20.0	20.0		20.0	20.0							
Flash Dont Walk (s)	1.0	1.0		1.0	1.0							
Pedestrian Calls (#/hr)	0	0		0	0							
Act Effct Green (s)	5.3	5.3			5.3		87.3	93.7			67.9	67.9
Actuated g/C Ratio	0.05	0.05			0.05		0.87	0.94			0.68	0.68
v/c Ratio	0.03	0.02			0.11		0.01	0.48			0.82	0.00
Control Delay	45.0	38.5			47.5		1.2	1.4			7.4	0.0
Queue Delay	0.0	0.0			0.0		0.0	0.0			0.1	0.0
Total Delay	45.0	38.5			47.5		1.2	1.4			7.5	0.0

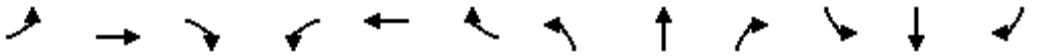
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	D	D			D		A	A			A	A
Approach Delay		42.4			47.5			1.4			7.5	
Approach LOS		D			D			A			A	
Queue Length 50th (ft)	2	1			7		0	0			42	0
Queue Length 95th (ft)	11	8			25		m1	108			#804	m0
Internal Link Dist (ft)		74			149			253			281	
Turn Bay Length (ft)							150					165
Base Capacity (vph)	393	364			383		373	3317			2403	1099
Starvation Cap Reductn	0	0			0		0	0			33	0
Spillback Cap Reductn	0	0			0		0	0			0	0
Storage Cap Reductn	0	0			0		0	0			0	0
Reduced v/c Ratio	0.01	0.01			0.03		0.01	0.48			0.84	0.00

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 3.5 (4%), Referenced to phase 2:NBSB and 6:, Start of Yellow
Natural Cycle: 95
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.82
Intersection Signal Delay: 4.9 Intersection LOS: A
Intersection Capacity Utilization 68.3% ICU Level of Service C
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Route 104 & Site Driveway/Loughran Avenue





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	1	1	8	0	2	5	1470	4	0	1823	1
Future Volume (vph)	3	1	1	8	0	2	5	1470	4	0	1823	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.9	5.9			5.9		4.0	4.0			6.9	6.9
Lane Util. Factor	1.00	1.00			1.00		1.00	0.95			0.95	1.00
Frt	1.00	0.93			0.98		1.00	1.00			1.00	0.85
Flt Protected	0.95	1.00			0.96		0.95	1.00			1.00	1.00
Satd. Flow (prot)	1770	1723			1746		1770	3538			3539	1583
Flt Permitted	1.00	1.00			1.00		0.06	1.00			1.00	1.00
Satd. Flow (perm)	1863	1723			1817		116	3538			3539	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)	3	1	1	9	0	2	5	1598	4	0	1982	1
RTOR Reduction (vph)	0	1	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	3	1	0	0	11	0	5	1602	0	0	1982	1
Turn Type	Perm	NA		Perm	NA		D.P+P	NA		Perm	NA	Perm
Protected Phases		4			4		1	1 2			2	
Permitted Phases	4			4			2			2		2
Actuated Green, G (s)	2.3	2.3			2.3		80.9	84.9			64.4	64.4
Effective Green, g (s)	2.3	2.3			2.3		80.9	84.9			64.4	64.4
Actuated g/C Ratio	0.02	0.02			0.02		0.81	0.85			0.64	0.64
Clearance Time (s)	5.9	5.9			5.9		4.0				6.9	6.9
Vehicle Extension (s)	1.5	1.5			1.5		2.0				3.0	3.0
Lane Grp Cap (vph)	42	39			41		366	3003			2279	1019
v/s Ratio Prot		0.00					0.00	c0.45			c0.56	
v/s Ratio Perm	0.00				c0.01		0.01					0.00
v/c Ratio	0.07	0.03			0.27		0.01	0.53			0.87	0.00
Uniform Delay, d1	47.8	47.8			48.0		10.9	2.1			14.4	6.3
Progression Factor	1.00	1.00			1.00		1.03	0.79			0.27	1.00
Incremental Delay, d2	0.3	0.1			1.3		0.0	0.1			2.4	0.0
Delay (s)	48.1	47.9			49.3		11.1	1.7			6.2	6.3
Level of Service	D	D			D		B	A			A	A
Approach Delay (s)		48.0			49.3			1.8			6.2	
Approach LOS		D			D			A			A	

Intersection Summary			
HCM 2000 Control Delay	4.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.8
Intersection Capacity Utilization	68.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

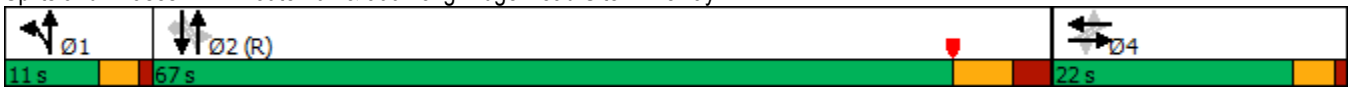
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	84	0	120	4	0	5	53	1363	2	5	1695	57
Future Volume (vph)	84	0	120	4	0	5	53	1363	2	5	1695	57
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	125		0	0		0	70		0	0		300
Storage Lanes	1		0	0		0	1		0	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	1.00
Frt		0.860			0.925							0.850
Flt Protected	0.950	0.997			0.978		0.950					
Satd. Flow (prot)	1681	1517	0	0	1685	0	1770	3539	0	0	3539	1583
Flt Permitted	0.752	0.983			0.873		0.066				0.950	
Satd. Flow (perm)	1331	1496	0	0	1504	0	123	3539	0	0	3362	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		129			92							62
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		266			226			361			758	
Travel Time (s)		6.0			5.1			8.2			17.2	
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
Adj. Flow (vph)	91	0	130	4	0	5	58	1482	2	5	1842	62
Shared Lane Traffic (%)	10%											
Lane Group Flow (vph)	82	139	0	0	9	0	58	1484	0	0	1847	62
Turn Type	Perm	NA		Perm	NA		D.P+P	NA		Perm	NA	Perm
Protected Phases		4			4		1	1 2			2	
Permitted Phases	4			4			2			2		2
Detector Phase	4	4		4	4		1	1 2		2	2	2
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		3.0			15.0	15.0	15.0
Minimum Split (s)	22.0	22.0		22.0	22.0		9.5			25.4	25.4	25.4
Total Split (s)	22.0	22.0		22.0	22.0		11.0			67.0	67.0	67.0
Total Split (%)	22.0%	22.0%		22.0%	22.0%		11.0%			67.0%	67.0%	67.0%
Maximum Green (s)	17.9	17.9		17.9	17.9		7.0			59.6	59.6	59.6
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0			4.4	4.4	4.4
All-Red Time (s)	1.1	1.1		1.1	1.1		1.0			3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0			0.0		0.0				0.0	0.0
Total Lost Time (s)	4.1	4.1			4.1		4.0				7.4	7.4
Lead/Lag							Lead			Lag	Lag	Lag
Lead-Lag Optimize?							Yes			Yes	Yes	Yes
Vehicle Extension (s)	1.5	1.5		1.5	1.5		2.0			3.0	3.0	3.0
Recall Mode	None	None		None	None		Min			C-Max	C-Max	C-Max
Walk Time (s)	16.0	16.0		16.0	16.0							
Flash Dont Walk (s)	1.0	1.0		1.0	1.0							
Pedestrian Calls (#/hr)	0	0		0	0							
Act Effct Green (s)	10.1	10.1			10.1		77.8	81.8			60.6	60.6
Actuated g/C Ratio	0.10	0.10			0.10		0.78	0.82			0.61	0.61
v/c Ratio	0.61	0.52			0.04		0.18	0.51			0.91	0.06
Control Delay	61.3	16.1			0.2		8.8	2.8			20.7	1.8
Queue Delay	0.0	0.0			0.0		0.0	0.1			1.4	0.0
Total Delay	61.3	16.1			0.2		8.8	2.8			22.1	1.8

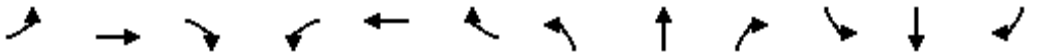
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	E	B			A		A	A			C	A
Approach Delay		32.8			0.3			3.1			21.4	
Approach LOS		C			A			A			C	
Queue Length 50th (ft)	53	6			0		5	114			287	0
Queue Length 95th (ft)	100	62			0		31	68			#382	m7
Internal Link Dist (ft)		186			146			281			678	
Turn Bay Length (ft)	125						70					300
Base Capacity (vph)	238	373			344		324	2895			2035	983
Starvation Cap Reductn	0	0			0		0	272			0	0
Spillback Cap Reductn	0	2			0		0	0			72	0
Storage Cap Reductn	0	0			0		0	0			0	0
Reduced v/c Ratio	0.34	0.37			0.03		0.18	0.57			0.94	0.06

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:NBSB and 6:, Start of Yellow, Master Intersection
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.91
Intersection Signal Delay: 14.4 Intersection LOS: B
Intersection Capacity Utilization 67.4% ICU Level of Service C
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Route 104 & 900 Long Ridge Road Site Driveway

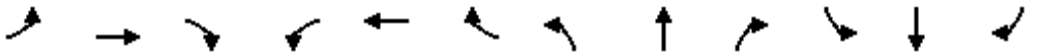




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	84	0	120	4	0	5	53	1363	2	5	1695	57
Future Volume (vph)	84	0	120	4	0	5	53	1363	2	5	1695	57
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.1	4.1			4.1		4.0	4.0			7.4	7.4
Lane Util. Factor	0.95	0.95			1.00		1.00	0.95			0.95	1.00
Frt	1.00	0.86			0.93		1.00	1.00			1.00	0.85
Flt Protected	0.95	1.00			0.98		0.95	1.00			1.00	1.00
Satd. Flow (prot)	1681	1516			1686		1770	3539			3539	1583
Flt Permitted	0.75	0.98			0.87		0.07	1.00			0.95	1.00
Satd. Flow (perm)	1330	1495			1504		123	3539			3362	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)	91	0	130	4	0	5	58	1482	2	5	1842	62
RTOR Reduction (vph)	0	116	0	0	8	0	0	0	0	0	0	24
Lane Group Flow (vph)	82	23	0	0	1	0	58	1484	0	0	1847	38
Turn Type	Perm	NA		Perm	NA		D.P+P	NA		Perm	NA	Perm
Protected Phases		4			4		1	1 2			2	
Permitted Phases	4			4			2			2		2
Actuated Green, G (s)	10.1	10.1			10.1		74.4	78.4			60.5	60.5
Effective Green, g (s)	10.1	10.1			10.1		74.4	78.4			60.5	60.5
Actuated g/C Ratio	0.10	0.10			0.10		0.74	0.78			0.60	0.60
Clearance Time (s)	4.1	4.1			4.1		4.0				7.4	7.4
Vehicle Extension (s)	1.5	1.5			1.5		2.0				3.0	3.0
Lane Grp Cap (vph)	134	150			151		320	2774			2034	957
v/s Ratio Prot							0.03	c0.42				
v/s Ratio Perm	c0.06	0.02			0.00		0.11				c0.55	0.02
v/c Ratio	0.61	0.15			0.01		0.18	0.53			0.91	0.04
Uniform Delay, d1	43.1	41.0			40.4		12.5	4.0			17.3	8.0
Progression Factor	1.00	1.00			1.00		2.51	0.67			0.74	0.72
Incremental Delay, d2	5.7	0.2			0.0		0.1	0.1			6.8	0.1
Delay (s)	48.8	41.2			40.4		31.5	2.8			19.7	5.8
Level of Service	D	D			D		C	A			B	A
Approach Delay (s)		44.0			40.4			3.8			19.2	
Approach LOS		D			D			A			B	

Intersection Summary			
HCM 2000 Control Delay	14.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	15.5
Intersection Capacity Utilization	67.4%	ICU Level of Service	C
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)	3	0	4	7	0	2	9	1430	3	4	1762	8
Future Volume (vph)	3	0	4	7	0	2	9	1430	3	4	1762	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		100	115		0	600		0
Storage Lanes	0		0	1		1	1		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Frt		0.923				0.850			0.850		0.999	
Flt Protected		0.979		0.950			0.950			0.950		
Satd. Flow (prot)	0	1683	0	1770	0	1583	1770	3539	1583	1770	3536	0
Flt Permitted		0.979					0.086			0.135		
Satd. Flow (perm)	0	1683	0	1863	0	1583	160	3539	1583	251	3536	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		87				44					1	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		184			360			649			518	
Travel Time (s)		4.2			8.2			14.8			11.8	
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
Adj. Flow (vph)	3	0	4	8	0	2	10	1554	3	4	1915	9
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	7	0	8	0	2	10	1554	3	4	1924	0
Turn Type	Perm	NA		D.Pm		custom	pm+pt	NA	custom	custom	NA	
Protected Phases		4				1 4	5	2	1 2 5		6	
Permitted Phases	4			4			2		4 6	1 6		
Detector Phase	4	4		4		1 4	5	2	1 2 5	1 6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0			3.0	10.0			10.0	
Minimum Split (s)	32.5	32.5		32.5			22.5	22.5			22.5	
Total Split (s)	32.5	32.5		32.5			22.5	45.0			45.0	
Total Split (%)	32.5%	32.5%		32.5%			22.5%	45.0%			45.0%	
Maximum Green (s)	27.2	27.2		27.2			18.5	38.0			38.0	
Yellow Time (s)	3.2	3.2		3.2			3.0	4.4			4.4	
All-Red Time (s)	2.1	2.1		2.1			1.0	2.6			2.6	
Lost Time Adjust (s)		0.0		0.0			0.0	0.0			0.0	
Total Lost Time (s)		5.3		5.3			4.0	7.0			7.0	
Lead/Lag							Lead	Lag			Lag	
Lead-Lag Optimize?							Yes	Yes			Yes	
Vehicle Extension (s)	1.0	1.0		1.0			1.0	1.0			1.0	
Recall Mode	None	None		None			None	C-Min			C-Min	
Walk Time (s)	15.0	15.0		15.0								
Flash Dont Walk (s)	1.0	1.0		1.0								
Pedestrian Calls (#/hr)	0	0		0								
Act Effct Green (s)		5.1		5.1		10.2	90.5	90.9	99.7	93.3	89.9	
Actuated g/C Ratio		0.05		0.05		0.10	0.90	0.91	1.00	0.93	0.90	
v/c Ratio		0.04		0.08		0.01	0.05	0.48	0.00	0.02	0.61	
Control Delay		0.5		47.1		0.0	1.6	3.1	0.0	2.0	5.7	
Queue Delay		0.0		0.0		0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay		0.5		47.1		0.0	1.6	3.1	0.0	2.0	5.7	

Lane Group	Ø1
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	1
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	3.0
Minimum Split (s)	22.5
Total Split (s)	22.5
Total Split (%)	23%
Maximum Green (s)	18.5
Yellow Time (s)	3.0
All-Red Time (s)	1.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	Yes
Vehicle Extension (s)	1.0
Recall Mode	None
Walk Time (s)	
Flash Dont Walk (s)	
Pedestrian Calls (#/hr)	
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS		A		D		A	A	A	A	A	A	
Approach Delay		0.5			37.7			3.1			5.7	
Approach LOS		A			D			A			A	
Queue Length 50th (ft)		0		5		0	0	0	0	0	0	
Queue Length 95th (ft)		0		20		0	2	279	0	m1	287	
Internal Link Dist (ft)		104			280			569			438	
Turn Bay Length (ft)						100	115			600		
Base Capacity (vph)		521		506		486	444	3217	1583	236	3179	
Starvation Cap Reductn		0		0		0	0	0	0	0	0	
Spillback Cap Reductn		0		0		0	0	0	0	0	0	
Storage Cap Reductn		0		0		0	0	0	0	0	0	
Reduced v/c Ratio		0.01		0.02		0.00	0.02	0.48	0.00	0.02	0.61	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 3.5 (4%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow			
Natural Cycle: 130			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.61			
Intersection Signal Delay: 4.6		Intersection LOS: A	
Intersection Capacity Utilization 63.4%		ICU Level of Service B	
Analysis Period (min) 15			

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

Splits and Phases: 16: Route 104 & 778 Long Ridge Road Driveway/777 Long Ridge Road Driveway

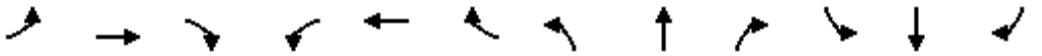
Lane Group	Ø1
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	0	4	7	0	2	9	1430	3	4	1762	8
Future Volume (vph)	3	0	4	7	0	2	9	1430	3	4	1762	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.3		5.3		4.0	4.0	7.0	4.0	4.0	7.0	
Lane Util. Factor		1.00		1.00		1.00	1.00	0.95	1.00	1.00	0.95	
Frt		0.92		1.00		0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.98		0.95		1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1683		1770		1583	1770	3539	1583	1770	3537	
Flt Permitted		0.98		1.00		1.00	0.09	1.00	1.00	0.13	1.00	
Satd. Flow (perm)		1683		1863		1583	160	3539	1583	251	3537	
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)	3	0	4	8	0	2	10	1554	3	4	1915	9
RTOR Reduction (vph)	0	7	0	0	0	2	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	8	0	0	10	1554	3	4	1924	0
Turn Type	Perm	NA		D.Pm		custom	pm+pt	NA	custom	custom	NA	
Protected Phases		4				1 4	5	2	1 2 5		6	
Permitted Phases	4			4			2		4 6	1 6		
Actuated Green, G (s)		2.1		2.1		8.6	81.9	80.4	84.0	81.3	80.1	
Effective Green, g (s)		2.1		2.1		3.3	81.9	80.4	84.0	81.3	80.1	
Actuated g/C Ratio		0.02		0.02		0.03	0.82	0.80	0.84	0.81	0.80	
Clearance Time (s)		5.3		5.3			4.0	7.0			7.0	
Vehicle Extension (s)		1.0		1.0			1.0	1.0			1.0	
Lane Grp Cap (vph)		35		39		52	155	2845	1329	204	2833	
v/s Ratio Prot						0.00	c0.00	0.44	0.00		c0.54	
v/s Ratio Perm		0.00		c0.00			0.05		0.00	0.02		
v/c Ratio		0.00		0.21		0.00	0.06	0.55	0.00	0.02	0.68	
Uniform Delay, d1		47.9		48.1		46.8	3.5	3.4	1.3	1.8	4.3	
Progression Factor		1.00		1.00		1.00	1.00	1.00	1.00	1.97	1.41	
Incremental Delay, d2		0.0		1.0		0.0	0.1	0.8	0.0	0.0	0.7	
Delay (s)		47.9		49.1		46.8	3.6	4.2	1.3	3.5	6.8	
Level of Service		D		D		D	A	A	A	A	A	
Approach Delay (s)		47.9			48.6			4.2			6.8	
Approach LOS		D			D			A			A	

Intersection Summary			
HCM 2000 Control Delay	5.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.3
Intersection Capacity Utilization	63.4%	ICU Level of Service	B
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)	30	1	29	8	0	2	206	1470	4	0	1823	201
Future Volume (vph)	30	1	29	8	0	2	206	1470	4	0	1823	201
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	150		0	125		165
Storage Lanes	1		0	0		0	1		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Frt		0.855			0.975							0.850
Flt Protected	0.950				0.961		0.950					
Satd. Flow (prot)	1770	1593	0	0	1745	0	1770	3539	0	1863	3539	1583
Flt Permitted	0.750				0.742		0.071					
Satd. Flow (perm)	1397	1593	0	0	1348	0	132	3539	0	1863	3539	1583
Right Turn on Red			Yes			No			Yes			Yes
Satd. Flow (RTOR)		32						1				133
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		154			229			333			361	
Travel Time (s)		3.5			5.2			7.6			8.2	
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
Adj. Flow (vph)	33	1	32	9	0	2	224	1598	4	0	1982	218
Shared Lane Traffic (%)												
Lane Group Flow (vph)	33	33	0	0	11	0	224	1602	0	0	1982	218
Turn Type	Perm	NA		Perm	NA		D.P+P	NA		Perm	NA	Perm
Protected Phases		4			4		1	1 2			2	
Permitted Phases	4			4			2			2		2
Detector Phase	4	4		4	4		1	1 2		2	2	2
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		3.0			15.0	15.0	15.0
Minimum Split (s)	27.0	27.0		27.0	27.0		7.5			47.0	47.0	47.0
Total Split (s)	27.0	27.0		27.0	27.0		9.0			64.0	64.0	64.0
Total Split (%)	27.0%	27.0%		27.0%	27.0%		9.0%			64.0%	64.0%	64.0%
Maximum Green (s)	21.1	21.1		21.1	21.1		5.0			57.1	57.1	57.1
Yellow Time (s)	3.3	3.3		3.3	3.3		3.0			4.4	4.4	4.4
All-Red Time (s)	2.6	2.6		2.6	2.6		1.0			2.5	2.5	2.5
Lost Time Adjust (s)	0.0	0.0			0.0		0.0			0.0	0.0	0.0
Total Lost Time (s)	5.9	5.9			5.9		4.0			6.9	6.9	6.9
Lead/Lag							Lead			Lag	Lag	Lag
Lead-Lag Optimize?							Yes			Yes	Yes	Yes
Vehicle Extension (s)	1.5	1.5		1.5	1.5		2.0			3.0	3.0	3.0
Recall Mode	None	None		None	None		None			C-Min	C-Min	C-Min
Walk Time (s)	20.0	20.0		20.0	20.0							
Flash Dont Walk (s)	1.0	1.0		1.0	1.0							
Pedestrian Calls (#/hr)	0	0		0	0							
Act Effct Green (s)	6.7	6.7			6.7		81.6	86.4			57.2	57.2
Actuated g/C Ratio	0.07	0.07			0.07		0.82	0.86			0.57	0.57
v/c Ratio	0.35	0.24			0.12		0.49	0.52			0.98	0.23
Control Delay	54.5	19.9			45.7		28.2	2.3			14.5	0.6
Queue Delay	0.0	0.0			0.0		0.0	0.0			22.1	0.0
Total Delay	54.5	19.9			45.7		28.2	2.3			36.7	0.6

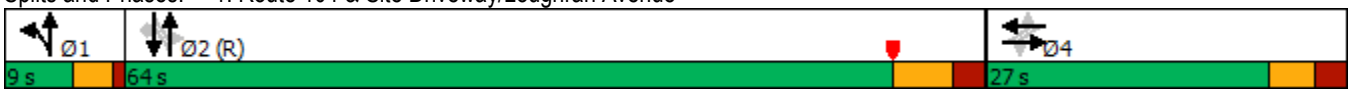
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	D	B			D		C	A			D	A
Approach Delay		37.2			45.7			5.5			33.1	
Approach LOS		D			D			A			C	
Queue Length 50th (ft)	21	1			7		69	108			75	1
Queue Length 95th (ft)	51	30			24		182	86			m84	m0
Internal Link Dist (ft)		74			149			253			281	
Turn Bay Length (ft)							150					165
Base Capacity (vph)	294	361			284		460	3058			2023	961
Starvation Cap Reductn	0	0			0		0	0			144	0
Spillback Cap Reductn	0	0			0		0	0			0	0
Storage Cap Reductn	0	0			0		0	0			0	0
Reduced v/c Ratio	0.11	0.09			0.04		0.49	0.52			1.05	0.23

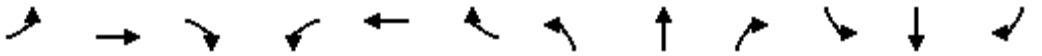
Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 3.5 (4%), Referenced to phase 2:NBSB and 6:, Start of Yellow
Natural Cycle: 105
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.98
Intersection Signal Delay: 20.9 Intersection LOS: C
Intersection Capacity Utilization 83.0% ICU Level of Service E
Analysis Period (min) 15

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

Splits and Phases: 1: Route 104 & Site Driveway/Loughran Avenue





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	1	29	8	0	2	206	1470	4	0	1823	201
Future Volume (vph)	30	1	29	8	0	2	206	1470	4	0	1823	201
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.9	5.9			5.9		4.0	4.0			6.9	6.9
Lane Util. Factor	1.00	1.00			1.00		1.00	0.95			0.95	1.00
Frt	1.00	0.85			0.98		1.00	1.00			1.00	0.85
Flt Protected	0.95	1.00			0.96		0.95	1.00			1.00	1.00
Satd. Flow (prot)	1770	1592			1746		1770	3538			3539	1583
Flt Permitted	0.75	1.00			0.74		0.07	1.00			1.00	1.00
Satd. Flow (perm)	1398	1592			1348		133	3538			3539	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)	33	1	32	9	0	2	224	1598	4	0	1982	218
RTOR Reduction (vph)	0	30	0	0	0	0	0	0	0	0	0	59
Lane Group Flow (vph)	33	3	0	0	11	0	224	1602	0	0	1982	159
Turn Type	Perm	NA		Perm	NA		D.P+P	NA		Perm	NA	Perm
Protected Phases		4			4		1	1 2			2	
Permitted Phases	4			4			2			2		2
Actuated Green, G (s)	5.7	5.7			5.7		77.5	81.5			56.0	56.0
Effective Green, g (s)	5.7	5.7			5.7		77.5	81.5			56.0	56.0
Actuated g/C Ratio	0.06	0.06			0.06		0.78	0.82			0.56	0.56
Clearance Time (s)	5.9	5.9			5.9		4.0				6.9	6.9
Vehicle Extension (s)	1.5	1.5			1.5		2.0				3.0	3.0
Lane Grp Cap (vph)	79	90			76		455	2883			1981	886
v/s Ratio Prot		0.00					0.11	c0.45			c0.56	
v/s Ratio Perm	c0.02				0.01		0.28					0.10
v/c Ratio	0.42	0.03			0.14		0.49	0.56			1.00	0.18
Uniform Delay, d1	45.5	44.5			44.8		24.1	3.1			22.0	10.8
Progression Factor	1.00	1.00			1.00		1.32	0.71			0.27	0.11
Incremental Delay, d2	1.3	0.1			0.3		0.3	0.1			10.8	0.1
Delay (s)	46.8	44.6			45.2		32.2	2.3			16.7	1.3
Level of Service	D	D			D		C	A			B	A
Approach Delay (s)		45.7			45.2			6.0			15.2	
Approach LOS		D			D			A			B	

Intersection Summary			
HCM 2000 Control Delay	11.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.8
Intersection Capacity Utilization	83.0%	ICU Level of Service	E
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)	84	0	120	4	0	5	53	1390	2	5	1895	57
Future Volume (vph)	84	0	120	4	0	5	53	1390	2	5	1895	57
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	125		0	0		0	70		0	0		300
Storage Lanes	1		0	0		0	1		0	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	1.00
Frt		0.860			0.925							0.850
Flt Protected	0.950	0.997			0.978		0.950					
Satd. Flow (prot)	1681	1517	0	0	1685	0	1770	3539	0	0	3539	1583
Flt Permitted	0.752	0.983			0.873		0.066				0.950	
Satd. Flow (perm)	1331	1496	0	0	1504	0	123	3539	0	0	3362	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		123			92							62
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		266			226			361			758	
Travel Time (s)		6.0			5.1			8.2			17.2	
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
Adj. Flow (vph)	91	0	130	4	0	5	58	1511	2	5	2060	62
Shared Lane Traffic (%)	10%											
Lane Group Flow (vph)	82	139	0	0	9	0	58	1513	0	0	2065	62
Turn Type	Perm	NA		Perm	NA		D.P+P	NA		Perm	NA	Perm
Protected Phases		4			4		1	1 2			2	
Permitted Phases	4			4			2			2		2
Detector Phase	4	4		4	4		1	1 2		2	2	2
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		3.0			15.0	15.0	15.0
Minimum Split (s)	22.0	22.0		22.0	22.0		9.5			25.4	25.4	25.4
Total Split (s)	22.0	22.0		22.0	22.0		11.0			67.0	67.0	67.0
Total Split (%)	22.0%	22.0%		22.0%	22.0%		11.0%			67.0%	67.0%	67.0%
Maximum Green (s)	17.9	17.9		17.9	17.9		7.0			59.6	59.6	59.6
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0			4.4	4.4	4.4
All-Red Time (s)	1.1	1.1		1.1	1.1		1.0			3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0			0.0		0.0				0.0	0.0
Total Lost Time (s)	4.1	4.1			4.1		4.0				7.4	7.4
Lead/Lag							Lead			Lag	Lag	Lag
Lead-Lag Optimize?							Yes			Yes	Yes	Yes
Vehicle Extension (s)	1.5	1.5		1.5	1.5		2.0			3.0	3.0	3.0
Recall Mode	None	None		None	None		Min			C-Max	C-Max	C-Max
Walk Time (s)	16.0	16.0		16.0	16.0							
Flash Dont Walk (s)	1.0	1.0		1.0	1.0							
Pedestrian Calls (#/hr)	0	0		0	0							
Act Effct Green (s)	10.1	10.1			10.1		77.8	81.8			60.5	60.5
Actuated g/C Ratio	0.10	0.10			0.10		0.78	0.82			0.60	0.60
v/c Ratio	0.61	0.53			0.04		0.18	0.52			1.02	0.06
Control Delay	61.3	17.6			0.2		8.6	2.7			38.3	2.3
Queue Delay	0.0	0.0			0.0		0.0	0.0			23.8	0.0
Total Delay	61.3	17.6			0.2		8.6	2.8			62.1	2.3

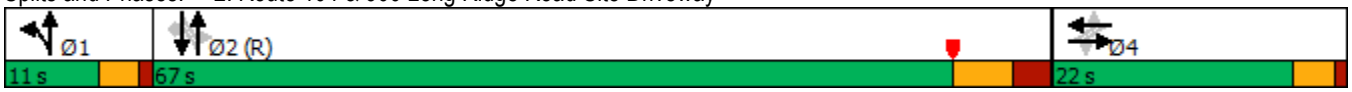
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	E	B			A		A	A			E	A
Approach Delay		33.8			0.3			3.0			60.3	
Approach LOS		C			A			A			E	
Queue Length 50th (ft)	53	9			0		4	71			~733	0
Queue Length 95th (ft)	100	66			0		m29	102			m#867	m7
Internal Link Dist (ft)		186			146			281			678	
Turn Bay Length (ft)	125						70					300
Base Capacity (vph)	238	368			344		324	2895			2034	982
Starvation Cap Reductn	0	0			0		0	150			0	0
Spillback Cap Reductn	0	3			0		0	0			119	0
Storage Cap Reductn	0	0			0		0	0			0	0
Reduced v/c Ratio	0.34	0.38			0.03		0.18	0.55			1.08	0.06

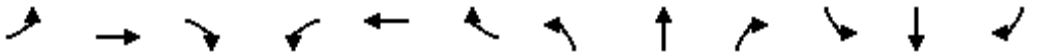
Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:NBSB and 6:, Start of Yellow, Master Intersection
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.02
Intersection Signal Delay: 35.8 Intersection LOS: D
Intersection Capacity Utilization 72.9% ICU Level of Service C
Analysis Period (min) 15

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

Splits and Phases: 2: Route 104 & 900 Long Ridge Road Site Driveway

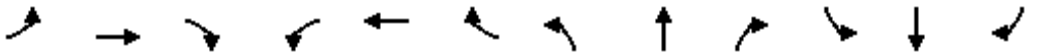




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	84	0	120	4	0	5	53	1390	2	5	1895	57
Future Volume (vph)	84	0	120	4	0	5	53	1390	2	5	1895	57
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.1	4.1			4.1		4.0	4.0			7.4	7.4
Lane Util. Factor	0.95	0.95			1.00		1.00	0.95			0.95	1.00
Frt	1.00	0.86			0.93		1.00	1.00			1.00	0.85
Flt Protected	0.95	1.00			0.98		0.95	1.00			1.00	1.00
Satd. Flow (prot)	1681	1516			1686		1770	3539			3539	1583
Flt Permitted	0.75	0.98			0.87		0.07	1.00			0.95	1.00
Satd. Flow (perm)	1330	1495			1504		123	3539			3364	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)	91	0	130	4	0	5	58	1511	2	5	2060	62
RTOR Reduction (vph)	0	111	0	0	8	0	0	0	0	0	0	24
Lane Group Flow (vph)	82	28	0	0	1	0	58	1513	0	0	2065	38
Turn Type	Perm	NA		Perm	NA		D.P+P	NA		Perm	NA	Perm
Protected Phases		4			4		1	1 2			2	
Permitted Phases	4			4			2			2		2
Actuated Green, G (s)	10.1	10.1			10.1		74.4	78.4			60.5	60.5
Effective Green, g (s)	10.1	10.1			10.1		74.4	78.4			60.5	60.5
Actuated g/C Ratio	0.10	0.10			0.10		0.74	0.78			0.60	0.60
Clearance Time (s)	4.1	4.1			4.1		4.0				7.4	7.4
Vehicle Extension (s)	1.5	1.5			1.5		2.0				3.0	3.0
Lane Grp Cap (vph)	134	150			151		320	2774			2035	957
v/s Ratio Prot							0.03	c0.43				
v/s Ratio Perm	c0.06	0.02			0.00		0.11				c0.61	0.02
v/c Ratio	0.61	0.19			0.01		0.18	0.55			1.01	0.04
Uniform Delay, d1	43.1	41.2			40.4		18.2	4.1			19.8	8.0
Progression Factor	1.00	1.00			1.00		2.44	0.64			0.72	0.95
Incremental Delay, d2	5.7	0.2			0.0		0.1	0.1			21.8	0.1
Delay (s)	48.8	41.4			40.4		44.6	2.7			36.1	7.7
Level of Service	D	D			D		D	A			D	A
Approach Delay (s)		44.2			40.4			4.3			35.3	
Approach LOS		D			D			A			D	

Intersection Summary			
HCM 2000 Control Delay	23.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	15.5
Intersection Capacity Utilization	72.9%	ICU Level of Service	C
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)	3	0	4	7	0	2	9	1631	3	4	1790	8
Future Volume (vph)	3	0	4	7	0	2	9	1631	3	4	1790	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		100	115		0	600		0
Storage Lanes	0		0	1		1	1		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Frt		0.923				0.850			0.850		0.999	
Flt Protected		0.979		0.950			0.950			0.950		
Satd. Flow (prot)	0	1683	0	1770	0	1583	1770	3539	1583	1770	3536	0
Flt Permitted		0.979					0.079			0.095		
Satd. Flow (perm)	0	1683	0	1863	0	1583	147	3539	1583	177	3536	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		93				44					1	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		184			360			649			518	
Travel Time (s)		4.2			8.2			14.8			11.8	
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
Adj. Flow (vph)	3	0	4	8	0	2	10	1773	3	4	1946	9
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	7	0	8	0	2	10	1773	3	4	1955	0
Turn Type	Perm	NA		D.Pm		custom	pm+pt	NA	custom	custom	NA	
Protected Phases		4				1 4	5	2	1 2 5		6	
Permitted Phases	4			4			2		4 6	1 6		
Detector Phase	4	4		4		1 4	5	2	1 2 5	1 6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0			3.0	10.0			10.0	
Minimum Split (s)	31.3	31.3		31.3			9.5	25.0			25.0	
Total Split (s)	31.3	31.3		31.3			9.5	59.2			59.2	
Total Split (%)	31.3%	31.3%		31.3%			9.5%	59.2%			59.2%	
Maximum Green (s)	26.0	26.0		26.0			5.5	52.2			52.2	
Yellow Time (s)	3.2	3.2		3.2			3.0	4.4			4.4	
All-Red Time (s)	2.1	2.1		2.1			1.0	2.6			2.6	
Lost Time Adjust (s)		0.0		0.0			0.0	0.0			0.0	
Total Lost Time (s)		5.3		5.3			4.0	7.0			7.0	
Lead/Lag							Lead	Lag			Lag	
Lead-Lag Optimize?							Yes	Yes			Yes	
Vehicle Extension (s)	3.0	3.0		3.0			3.0	3.0			3.0	
Recall Mode	None	None		None			None	C-Min			C-Min	
Walk Time (s)	15.0	15.0		15.0								
Flash Dont Walk (s)	1.0	1.0		1.0								
Pedestrian Calls (#/hr)	0	0		0								
Act Effct Green (s)		6.2		6.2		11.9	89.6	89.6	99.8	92.5	88.4	
Actuated g/C Ratio		0.06		0.06		0.12	0.90	0.90	1.00	0.92	0.88	
v/c Ratio		0.04		0.07		0.01	0.05	0.56	0.00	0.02	0.63	
Control Delay		0.3		44.9		0.0	1.8	4.7	0.0	3.0	7.1	
Queue Delay		0.0		0.0		0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay		0.3		44.9		0.0	1.8	4.7	0.0	3.0	7.1	

Lane Group	Ø1
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	1
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	9.5
Total Split (s)	9.5
Total Split (%)	10%
Maximum Green (s)	5.0
Yellow Time (s)	3.5
All-Red Time (s)	1.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	Yes
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	
Flash Dont Walk (s)	
Pedestrian Calls (#/hr)	
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS		A		D		A	A	A	A	A	A	
Approach Delay		0.3			35.9			4.7			7.0	
Approach LOS		A			D			A			A	
Queue Length 50th (ft)		0		5		0	0	0	0	0	0	
Queue Length 95th (ft)		0		20		0	3	438	0	m1	m297	
Internal Link Dist (ft)		104			280			569			438	
Turn Bay Length (ft)						100	115			600		
Base Capacity (vph)		506		484		456	222	3172	1579	164	3125	
Starvation Cap Reductn		0		0		0	0	0	0	0	0	
Spillback Cap Reductn		0		0		0	0	0	0	0	0	
Storage Cap Reductn		0		0		0	0	0	0	0	0	
Reduced v/c Ratio		0.01		0.02		0.00	0.05	0.56	0.00	0.02	0.63	

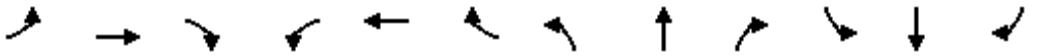
Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow			
Natural Cycle: 100			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.63			
Intersection Signal Delay: 6.0		Intersection LOS: A	
Intersection Capacity Utilization 67.4%		ICU Level of Service C	
Analysis Period (min) 15			

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

Splits and Phases: 16: Route 104 & 778 Long Ridge Road Driveway/777 Long Ridge Road Driveway

Lane Group	Ø1
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	0	4	7	0	2	9	1631	3	4	1790	8
Future Volume (vph)	3	0	4	7	0	2	9	1631	3	4	1790	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.3		5.3		4.5	4.0	7.0	4.5	4.5	7.0	
Lane Util. Factor		1.00		1.00		1.00	1.00	0.95	1.00	1.00	0.95	
Frt		0.92		1.00		0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.98		0.95		1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1683		1770		1583	1770	3539	1583	1770	3537	
Flt Permitted		0.98		1.00		1.00	0.08	1.00	1.00	0.10	1.00	
Satd. Flow (perm)		1683		1863		1583	147	3539	1583	177	3537	
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)	3	0	4	8	0	2	10	1773	3	4	1946	9
RTOR Reduction (vph)	0	7	0	0	0	2	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	8	0	0	10	1773	3	4	1955	0
Turn Type	Perm	NA		D.Pm		custom	pm+pt	NA	custom	custom	NA	
Protected Phases		4				1 4	5	2	1 2 5		6	
Permitted Phases	4			4			2		4 6	1 6		
Actuated Green, G (s)		2.8		2.8		9.8	81.0	78.7	83.8	80.3	78.6	
Effective Green, g (s)		2.8		2.8		4.5	81.0	78.7	83.8	80.3	78.6	
Actuated g/C Ratio		0.03		0.03		0.04	0.81	0.79	0.84	0.80	0.79	
Clearance Time (s)		5.3		5.3			4.0	7.0			7.0	
Vehicle Extension (s)		3.0		3.0			3.0	3.0			3.0	
Lane Grp Cap (vph)		47		52		71	156	2785	1326	142	2780	
v/s Ratio Prot						0.00	c0.00	0.50	0.00		c0.55	
v/s Ratio Perm		0.00		c0.00			0.05		0.00	0.02		
v/c Ratio		0.00		0.15		0.00	0.06	0.64	0.00	0.03	0.70	
Uniform Delay, d1		47.2		47.4		45.6	4.3	4.5	1.3	2.0	5.1	
Progression Factor		1.00		1.00		1.00	1.00	1.00	1.00	2.01	1.34	
Incremental Delay, d2		0.0		1.4		0.0	0.2	1.1	0.0	0.0	0.5	
Delay (s)		47.3		48.8		45.6	4.5	5.7	1.3	4.0	7.3	
Level of Service		D		D		D	A	A	A	A	A	
Approach Delay (s)		47.3			48.2			5.7			7.3	
Approach LOS		D			D			A			A	

Intersection Summary			
HCM 2000 Control Delay	6.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.8
Intersection Capacity Utilization	67.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

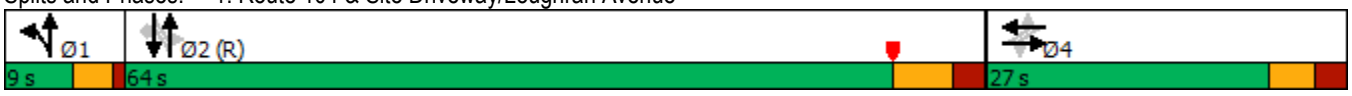
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	83	1	81	8	0	2	50	1470	4	0	1823	46
Future Volume (vph)	83	1	81	8	0	2	50	1470	4	0	1823	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	150		0	125		165
Storage Lanes	1		0	0		0	1		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Frt		0.852			0.975							0.850
Flt Protected	0.950				0.961		0.950					
Satd. Flow (prot)	1770	1587	0	0	1745	0	1770	3539	0	1863	3539	1583
Flt Permitted	0.750				0.742		0.069					
Satd. Flow (perm)	1397	1587	0	0	1348	0	129	3539	0	1863	3539	1583
Right Turn on Red			Yes			No			Yes			Yes
Satd. Flow (RTOR)		88						1				75
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		154			229			333			361	
Travel Time (s)		3.5			5.2			7.6			8.2	
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
Adj. Flow (vph)	90	1	88	9	0	2	54	1598	4	0	1982	50
Shared Lane Traffic (%)												
Lane Group Flow (vph)	90	89	0	0	11	0	54	1602	0	0	1982	50
Turn Type	Perm	NA		Perm	NA		D.P+P	NA		Perm	NA	Perm
Protected Phases		4			4		1	1 2			2	
Permitted Phases	4			4			2			2		2
Detector Phase	4	4		4	4		1	1 2		2	2	2
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		3.0			15.0	15.0	15.0
Minimum Split (s)	27.0	27.0		27.0	27.0		7.5			47.0	47.0	47.0
Total Split (s)	27.0	27.0		27.0	27.0		9.0			64.0	64.0	64.0
Total Split (%)	27.0%	27.0%		27.0%	27.0%		9.0%			64.0%	64.0%	64.0%
Maximum Green (s)	21.1	21.1		21.1	21.1		5.0			57.1	57.1	57.1
Yellow Time (s)	3.3	3.3		3.3	3.3		3.0			4.4	4.4	4.4
All-Red Time (s)	2.6	2.6		2.6	2.6		1.0			2.5	2.5	2.5
Lost Time Adjust (s)	0.0	0.0			0.0		0.0			0.0	0.0	0.0
Total Lost Time (s)	5.9	5.9			5.9		4.0			6.9	6.9	6.9
Lead/Lag							Lead			Lag	Lag	Lag
Lead-Lag Optimize?							Yes			Yes	Yes	Yes
Vehicle Extension (s)	1.5	1.5		1.5	1.5		2.0			3.0	3.0	3.0
Recall Mode	None	None		None	None		None			C-Min	C-Min	C-Min
Walk Time (s)	20.0	20.0		20.0	20.0							
Flash Dont Walk (s)	1.0	1.0		1.0	1.0							
Pedestrian Calls (#/hr)	0	0		0	0							
Act Effct Green (s)	10.3	10.3			10.3		75.8	79.8			57.7	57.7
Actuated g/C Ratio	0.10	0.10			0.10		0.76	0.80			0.58	0.58
v/c Ratio	0.62	0.37			0.08		0.16	0.57			0.97	0.05
Control Delay	60.8	13.3			39.1		9.9	3.8			14.9	0.2
Queue Delay	0.0	0.0			0.0		0.0	0.0			4.7	0.0
Total Delay	60.8	13.3			39.1		9.9	3.8			19.7	0.2

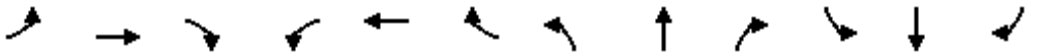
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	E	B			D		A	A			B	A
Approach Delay		37.2			39.1			4.0			19.2	
Approach LOS		D			D			A			B	
Queue Length 50th (ft)	56	1			6		6	152			70	0
Queue Length 95th (ft)	103	44			22		m28	110			m#764	m1
Internal Link Dist (ft)		74			149			253			281	
Turn Bay Length (ft)							150					165
Base Capacity (vph)	294	404			284		347	2822			2040	944
Starvation Cap Reductn	0	0			0		0	0			56	0
Spillback Cap Reductn	0	0			0		0	0			0	0
Storage Cap Reductn	0	0			0		0	0			0	0
Reduced v/c Ratio	0.31	0.22			0.04		0.16	0.57			1.00	0.05

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 3.5 (4%), Referenced to phase 2:NBSB and 6:, Start of Yellow
Natural Cycle: 95
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.97
Intersection Signal Delay: 13.6 Intersection LOS: B
Intersection Capacity Utilization 68.3% ICU Level of Service C
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Route 104 & Site Driveway/Loughran Avenue





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	83	1	81	8	0	2	50	1470	4	0	1823	46
Future Volume (vph)	83	1	81	8	0	2	50	1470	4	0	1823	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.9	5.9			5.9		4.0	4.0			6.9	6.9
Lane Util. Factor	1.00	1.00			1.00		1.00	0.95			0.95	1.00
Frt	1.00	0.85			0.98		1.00	1.00			1.00	0.85
Flt Protected	0.95	1.00			0.96		0.95	1.00			1.00	1.00
Satd. Flow (prot)	1770	1586			1746		1770	3538			3539	1583
Flt Permitted	0.75	1.00			0.74		0.07	1.00			1.00	1.00
Satd. Flow (perm)	1398	1586			1348		129	3538			3539	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)	90	1	88	9	0	2	54	1598	4	0	1982	50
RTOR Reduction (vph)	0	79	0	0	0	0	0	0	0	0	0	21
Lane Group Flow (vph)	90	10	0	0	11	0	54	1602	0	0	1982	29
Turn Type	Perm	NA		Perm	NA		D.P+P	NA		Perm	NA	Perm
Protected Phases		4			4		1	1 2			2	
Permitted Phases	4			4			2			2		2
Actuated Green, G (s)	10.3	10.3			10.3		72.9	76.9			57.7	57.7
Effective Green, g (s)	10.3	10.3			10.3		72.9	76.9			57.7	57.7
Actuated g/C Ratio	0.10	0.10			0.10		0.73	0.77			0.58	0.58
Clearance Time (s)	5.9	5.9			5.9		4.0				6.9	6.9
Vehicle Extension (s)	1.5	1.5			1.5		2.0				3.0	3.0
Lane Grp Cap (vph)	143	163			138		343	2720			2042	913
v/s Ratio Prot		0.01					0.02	c0.45			c0.56	
v/s Ratio Perm	c0.06				0.01		0.09					0.02
v/c Ratio	0.63	0.06			0.08		0.16	0.59			0.97	0.03
Uniform Delay, d1	43.0	40.5			40.6		17.6	4.9			20.3	9.1
Progression Factor	1.00	1.00			1.00		2.97	0.72			0.24	0.11
Incremental Delay, d2	6.1	0.1			0.1		0.1	0.2			7.8	0.0
Delay (s)	49.1	40.5			40.7		52.4	3.7			12.7	1.1
Level of Service	D	D			D		D	A			B	A
Approach Delay (s)		44.9			40.7			5.3			12.4	
Approach LOS		D			D			A			B	

Intersection Summary			
HCM 2000 Control Delay	10.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.8
Intersection Capacity Utilization	68.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

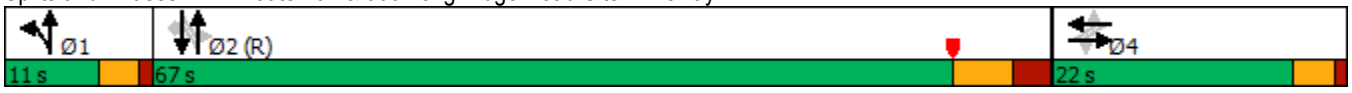
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	84	0	120	4	0	5	53	1443	2	5	1740	57
Future Volume (vph)	84	0	120	4	0	5	53	1443	2	5	1740	57
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	125		0	0		0	70		0	0		300
Storage Lanes	1		0	0		0	1		0	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	1.00
Frt		0.860			0.925							0.850
Flt Protected	0.950	0.997			0.978		0.950					
Satd. Flow (prot)	1681	1517	0	0	1685	0	1770	3539	0	0	3539	1583
Flt Permitted	0.752	0.983			0.873		0.066				0.950	
Satd. Flow (perm)	1331	1496	0	0	1504	0	123	3539	0	0	3362	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		127			92							62
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		266			226			361			758	
Travel Time (s)		6.0			5.1			8.2			17.2	
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
Adj. Flow (vph)	91	0	130	4	0	5	58	1568	2	5	1891	62
Shared Lane Traffic (%)	10%											
Lane Group Flow (vph)	82	139	0	0	9	0	58	1570	0	0	1896	62
Turn Type	Perm	NA		Perm	NA		D.P+P	NA		Perm	NA	Perm
Protected Phases		4			4		1	1 2			2	
Permitted Phases	4			4			2			2		2
Detector Phase	4	4		4	4		1	1 2		2	2	2
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		3.0			15.0	15.0	15.0
Minimum Split (s)	22.0	22.0		22.0	22.0		9.5			25.4	25.4	25.4
Total Split (s)	22.0	22.0		22.0	22.0		11.0			67.0	67.0	67.0
Total Split (%)	22.0%	22.0%		22.0%	22.0%		11.0%			67.0%	67.0%	67.0%
Maximum Green (s)	17.9	17.9		17.9	17.9		7.0			59.6	59.6	59.6
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0			4.4	4.4	4.4
All-Red Time (s)	1.1	1.1		1.1	1.1		1.0			3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0			0.0		0.0				0.0	0.0
Total Lost Time (s)	4.1	4.1			4.1		4.0				7.4	7.4
Lead/Lag							Lead			Lag	Lag	Lag
Lead-Lag Optimize?							Yes			Yes	Yes	Yes
Vehicle Extension (s)	1.5	1.5		1.5	1.5		2.0			3.0	3.0	3.0
Recall Mode	None	None		None	None		Min			C-Max	C-Max	C-Max
Walk Time (s)	16.0	16.0		16.0	16.0							
Flash Dont Walk (s)	1.0	1.0		1.0	1.0							
Pedestrian Calls (#/hr)	0	0		0	0							
Act Effct Green (s)	10.1	10.1			10.1		77.8	81.8			60.2	60.2
Actuated g/C Ratio	0.10	0.10			0.10		0.78	0.82			0.60	0.60
v/c Ratio	0.61	0.52			0.04		0.18	0.54			0.94	0.06
Control Delay	61.3	16.5			0.2		8.8	2.6			23.4	1.9
Queue Delay	0.0	0.0			0.0		0.0	0.0			8.0	0.0
Total Delay	61.3	16.6			0.2		8.8	2.6			31.3	1.9

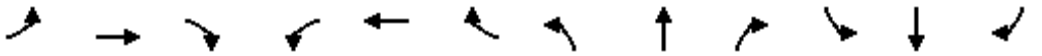
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	E	B			A		A	A			C	A
Approach Delay		33.1			0.3			2.8			30.4	
Approach LOS		C			A			A			C	
Queue Length 50th (ft)	53	7			0		4	74			300	0
Queue Length 95th (ft)	100	64			0		m23	96			#746	m7
Internal Link Dist (ft)		186			146			281			678	
Turn Bay Length (ft)	125						70					300
Base Capacity (vph)	238	372			344		329	2895			2025	978
Starvation Cap Reductn	0	0			0		0	147			0	0
Spillback Cap Reductn	0	4			0		0	0			130	0
Storage Cap Reductn	0	0			0		0	0			0	0
Reduced v/c Ratio	0.34	0.38			0.03		0.18	0.57			1.00	0.06

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:NBSB and 6:, Start of Yellow, Master Intersection
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.94
Intersection Signal Delay: 18.7 Intersection LOS: B
Intersection Capacity Utilization 69.5% ICU Level of Service C
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Route 104 & 900 Long Ridge Road Site Driveway





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	84	0	120	4	0	5	53	1443	2	5	1740	57
Future Volume (vph)	84	0	120	4	0	5	53	1443	2	5	1740	57
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.1	4.1			4.1		4.0	4.0			7.4	7.4
Lane Util. Factor	0.95	0.95			1.00		1.00	0.95			0.95	1.00
Frt	1.00	0.86			0.93		1.00	1.00			1.00	0.85
Flt Protected	0.95	1.00			0.98		0.95	1.00			1.00	1.00
Satd. Flow (prot)	1681	1516			1686		1770	3539			3539	1583
Flt Permitted	0.75	0.98			0.87		0.07	1.00			0.95	1.00
Satd. Flow (perm)	1330	1495			1504		124	3539			3361	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)	91	0	130	4	0	5	58	1568	2	5	1891	62
RTOR Reduction (vph)	0	114	0	0	8	0	0	0	0	0	0	25
Lane Group Flow (vph)	82	25	0	0	1	0	58	1570	0	0	1896	37
Turn Type	Perm	NA		Perm	NA		D.P+P	NA		Perm	NA	Perm
Protected Phases		4			4		1	1 2			2	
Permitted Phases	4			4			2			2		2
Actuated Green, G (s)	10.1	10.1			10.1		74.4	78.4			60.2	60.2
Effective Green, g (s)	10.1	10.1			10.1		74.4	78.4			60.2	60.2
Actuated g/C Ratio	0.10	0.10			0.10		0.74	0.78			0.60	0.60
Clearance Time (s)	4.1	4.1			4.1		4.0				7.4	7.4
Vehicle Extension (s)	1.5	1.5			1.5		2.0				3.0	3.0
Lane Grp Cap (vph)	134	150			151		325	2774			2023	952
v/s Ratio Prot							0.03	c0.44				
v/s Ratio Perm	c0.06	0.02			0.00		0.11				c0.56	0.02
v/c Ratio	0.61	0.17			0.01		0.18	0.57			0.94	0.04
Uniform Delay, d1	43.1	41.1			40.4		13.7	4.2			18.2	8.1
Progression Factor	1.00	1.00			1.00		2.51	0.57			0.73	0.77
Incremental Delay, d2	5.7	0.2			0.0		0.1	0.1			9.0	0.1
Delay (s)	48.8	41.3			40.4		34.5	2.5			22.3	6.3
Level of Service	D	D			D		C	A			C	A
Approach Delay (s)		44.1			40.4			3.7			21.8	
Approach LOS		D			D			A			C	

Intersection Summary			
HCM 2000 Control Delay	15.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	15.5
Intersection Capacity Utilization	69.5%	ICU Level of Service	C
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)	3	0	4	7	0	2	9	1475	3	4	1842	8
Future Volume (vph)	3	0	4	7	0	2	9	1475	3	4	1842	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		100	115		0	600		0
Storage Lanes	0		0	1		1	1		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Frt		0.923				0.850			0.850		0.999	
Flt Protected		0.979		0.950			0.950			0.950		
Satd. Flow (prot)	0	1683	0	1770	0	1583	1770	3539	1583	1770	3536	0
Flt Permitted		0.979					0.072			0.122		
Satd. Flow (perm)	0	1683	0	1863	0	1583	134	3539	1583	227	3536	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		136				87						
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		184			360			649			518	
Travel Time (s)		4.2			8.2			14.8			11.8	
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
Adj. Flow (vph)	3	0	4	8	0	2	10	1603	3	4	2002	9
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	7	0	8	0	2	10	1603	3	4	2011	0
Turn Type	Perm	NA		D.Pm		custom	pm+pt	NA	custom	custom	NA	
Protected Phases		4				1 4	5	2	1 2 5		6	
Permitted Phases	4			4			2		4 6	1 6		
Detector Phase	4	4		4		1 4	5	2	1 2 5	1 6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0			3.0	10.0			10.0	
Minimum Split (s)	32.5	32.5		32.5			22.5	25.0			25.0	
Total Split (s)	32.5	32.5		32.5			22.5	57.9			45.0	
Total Split (%)	32.5%	32.5%		32.5%			22.5%	57.9%			45.0%	
Maximum Green (s)	27.2	27.2		27.2			18.5	50.9			38.0	
Yellow Time (s)	3.2	3.2		3.2			3.0	4.4			4.4	
All-Red Time (s)	2.1	2.1		2.1			1.0	2.6			2.6	
Lost Time Adjust (s)		0.0		0.0			0.0	0.0			0.0	
Total Lost Time (s)		5.3		5.3			4.0	7.0			7.0	
Lead/Lag							Lead	Lag			Lag	
Lead-Lag Optimize?							Yes	Yes			Yes	
Vehicle Extension (s)	3.0	3.0		3.0			3.0	3.0			3.0	
Recall Mode	None	None		None			None	C-Min			C-Min	
Walk Time (s)	15.0	15.0		15.0								
Flash Dont Walk (s)	1.0	1.0		1.0								
Pedestrian Calls (#/hr)	0	0		0								
Act Effct Green (s)		6.2		6.2		11.6	89.8	89.8	99.6	92.2	88.4	
Actuated g/C Ratio		0.06		0.06		0.12	0.90	0.90	1.00	0.92	0.88	
v/c Ratio		0.03		0.07		0.01	0.05	0.50	0.00	0.02	0.64	
Control Delay		0.2		44.9		0.0	1.8	4.0	0.0	2.8	6.7	
Queue Delay		0.0		0.0		0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay		0.2		44.9		0.0	1.8	4.0	0.0	2.8	6.7	

Lane Group	Ø1
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	1
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	9.5
Total Split (s)	9.6
Total Split (%)	10%
Maximum Green (s)	5.1
Yellow Time (s)	3.5
All-Red Time (s)	1.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	Yes
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	
Flash Dont Walk (s)	
Pedestrian Calls (#/hr)	
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS		A		D		A	A	A	A	A	A	
Approach Delay		0.2			35.9			3.9			6.7	
Approach LOS		A			D			A			A	
Queue Length 50th (ft)		0		5		0	0	0	0	0	0	
Queue Length 95th (ft)		0		20		0	3	345	0	m1	m269	
Internal Link Dist (ft)		104			280			569			438	
Turn Bay Length (ft)						100	115			600		
Base Capacity (vph)		556		506		505	424	3179	1583	209	3125	
Starvation Cap Reductn		0		0		0	0	0	0	0	0	
Spillback Cap Reductn		0		0		0	0	0	0	0	0	
Storage Cap Reductn		0		0		0	0	0	0	0	0	
Reduced v/c Ratio		0.01		0.02		0.00	0.02	0.50	0.00	0.02	0.64	

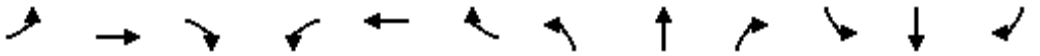
Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 3.5 (4%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow			
Natural Cycle: 140			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.64			
Intersection Signal Delay: 5.5		Intersection LOS: A	
Intersection Capacity Utilization 65.6%		ICU Level of Service C	
Analysis Period (min) 15			

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

Splits and Phases: 16: Route 104 & 778 Long Ridge Road Driveway/777 Long Ridge Road Driveway

Lane Group	Ø1
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary



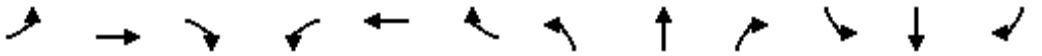
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	0	4	7	0	2	9	1475	3	4	1842	8
Future Volume (vph)	3	0	4	7	0	2	9	1475	3	4	1842	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.3		5.3		4.5	4.0	7.0	4.5	4.5	7.0	
Lane Util. Factor		1.00		1.00		1.00	1.00	0.95	1.00	1.00	0.95	
Frt		0.92		1.00		0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.98		0.95		1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1683		1770		1583	1770	3539	1583	1770	3537	
Flt Permitted		0.98		1.00		1.00	0.07	1.00	1.00	0.12	1.00	
Satd. Flow (perm)		1683		1863		1583	133	3539	1583	227	3537	
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)	3	0	4	8	0	2	10	1603	3	4	2002	9
RTOR Reduction (vph)	0	7	0	0	0	2	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	8	0	0	10	1603	3	4	2011	0
Turn Type	Perm	NA		D.Pm		custom	pm+pt	NA	custom	custom	NA	
Protected Phases		4				1 4	5	2	1 2 5		6	
Permitted Phases	4			4			2		4 6	1 6		
Actuated Green, G (s)		2.8		2.8		9.6	81.2	78.9	84.0	80.1	78.6	
Effective Green, g (s)		2.8		2.8		4.3	81.2	78.9	84.0	80.1	78.6	
Actuated g/C Ratio		0.03		0.03		0.04	0.81	0.79	0.84	0.80	0.79	
Clearance Time (s)		5.3		5.3			4.0	7.0			7.0	
Vehicle Extension (s)		3.0		3.0			3.0	3.0			3.0	
Lane Grp Cap (vph)		47		52		68	145	2792	1329	181	2780	
v/s Ratio Prot						0.00	c0.00	0.45	0.00		c0.57	
v/s Ratio Perm		0.00		c0.00			0.05		0.00	0.02		
v/c Ratio		0.00		0.15		0.00	0.07	0.57	0.00	0.02	0.72	
Uniform Delay, d1		47.2		47.4		45.8	4.8	4.1	1.3	2.0	5.3	
Progression Factor		1.00		1.00		1.00	1.00	1.00	1.00	1.89	1.19	
Incremental Delay, d2		0.0		1.4		0.0	0.2	0.9	0.0	0.0	0.6	
Delay (s)		47.3		48.8		45.8	5.0	4.9	1.3	3.8	6.9	
Level of Service		D		D		D	A	A	A	A	A	
Approach Delay (s)		47.3			48.2			4.9			6.9	
Approach LOS		D			D			A			A	

Intersection Summary			
HCM 2000 Control Delay	6.2	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.8
Intersection Capacity Utilization	65.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Appendix D

Intersection Capacity Analysis Worksheets
Weekday Afternoon Peak Hour



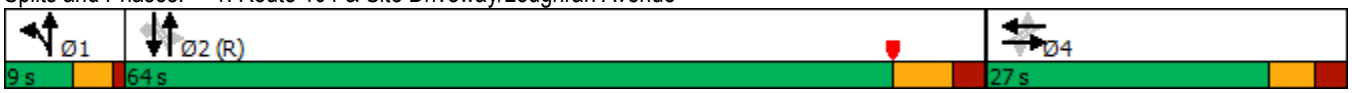
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	0	1	5	0	1	2	1778	2	4	1496	0
Future Volume (vph)	1	0	1	5	0	1	2	1778	2	4	1496	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	150		0	125		165
Storage Lanes	1		0	0		0	1		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Frt		0.850			0.977							
Flt Protected	0.950				0.960		0.950			0.950		
Satd. Flow (prot)	1770	1583	0	0	1747	0	1770	3539	0	1770	3539	1863
Flt Permitted							0.082			0.111		
Satd. Flow (perm)	1863	1583	0	0	1820	0	153	3539	0	207	3539	1863
Right Turn on Red			Yes			No			Yes			Yes
Satd. Flow (RTOR)		109										
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		154			229			333			361	
Travel Time (s)		3.5			5.2			7.6			8.2	
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
Adj. Flow (vph)	1	0	1	5	0	1	2	1933	2	4	1626	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	1	1	0	0	6	0	2	1935	0	4	1626	0
Turn Type	Perm	NA		Perm	NA		D.P+P	NA		Perm	NA	Perm
Protected Phases		4			4		1	1 2			2	
Permitted Phases	4			4			2			2		2
Detector Phase	4	4		4	4		1	1 2		2	2	2
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		3.0			15.0	15.0	15.0
Minimum Split (s)	27.0	27.0		27.0	27.0		7.5			47.0	47.0	47.0
Total Split (s)	27.0	27.0		27.0	27.0		9.0			64.0	64.0	64.0
Total Split (%)	27.0%	27.0%		27.0%	27.0%		9.0%			64.0%	64.0%	64.0%
Maximum Green (s)	21.1	21.1		21.1	21.1		5.0			57.1	57.1	57.1
Yellow Time (s)	3.3	3.3		3.3	3.3		3.0			4.4	4.4	4.4
All-Red Time (s)	2.6	2.6		2.6	2.6		1.0			2.5	2.5	2.5
Lost Time Adjust (s)	0.0	0.0			0.0		0.0			0.0	0.0	0.0
Total Lost Time (s)	5.9	5.9			5.9		4.0			6.9	6.9	6.9
Lead/Lag							Lead			Lag	Lag	Lag
Lead-Lag Optimize?							Yes			Yes	Yes	Yes
Vehicle Extension (s)	1.5	1.5		1.5	1.5		2.0			3.0	3.0	3.0
Recall Mode	None	None		None	None		None			C-Min	C-Min	C-Min
Walk Time (s)	20.0	20.0		20.0	20.0							
Flash Dont Walk (s)	1.0	1.0		1.0	1.0							
Pedestrian Calls (#/hr)	0	0		0	0							
Act Effct Green (s)	5.1	5.1			5.1		89.7	96.9		66.0	66.0	
Actuated g/C Ratio	0.05	0.05			0.05		0.90	0.97		0.66	0.66	
v/c Ratio	0.01	0.01			0.06		0.00	0.56		0.03	0.70	
Control Delay	45.0	0.0			46.7		1.0	1.2		4.2	4.4	
Queue Delay	0.0	0.0			0.0		0.0	0.0		0.0	0.2	
Total Delay	45.0	0.0			46.7		1.0	1.2		4.2	4.6	

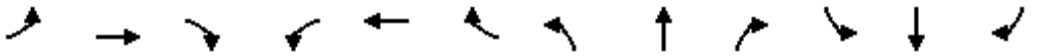
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	D	A			D		A	A		A	A	
Approach Delay		22.5			46.7			1.2			4.6	
Approach LOS		C			D			A			A	
Queue Length 50th (ft)	1	0			4		0	0		0	49	
Queue Length 95th (ft)	6	0			17		m0	102		m0	78	
Internal Link Dist (ft)		74			149			253			281	
Turn Bay Length (ft)							150			125		
Base Capacity (vph)	393	420			384		474	3430		136	2334	
Starvation Cap Reductn	0	0			0		0	0		0	153	
Spillback Cap Reductn	0	0			0		0	0		0	0	
Storage Cap Reductn	0	0			0		0	0		0	0	
Reduced v/c Ratio	0.00	0.00			0.02		0.00	0.56		0.03	0.75	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 3.5 (4%), Referenced to phase 2:NBSB and 6:, Start of Yellow			
Natural Cycle: 85			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.70			
Intersection Signal Delay: 2.8		Intersection LOS: A	
Intersection Capacity Utilization 61.9%		ICU Level of Service B	
Analysis Period (min) 15			

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

Splits and Phases: 1: Route 104 & Site Driveway/Loughran Avenue





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	0	1	5	0	1	2	1778	2	4	1496	0
Future Volume (vph)	1	0	1	5	0	1	2	1778	2	4	1496	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.9	5.9			5.9		4.0	4.0		6.9	6.9	
Lane Util. Factor	1.00	1.00			1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.85			0.98		1.00	1.00		1.00	1.00	
Flt Protected	0.95	1.00			0.96		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1583			1748		1770	3539		1770	3539	
Flt Permitted	1.00	1.00			1.00		0.08	1.00		0.11	1.00	
Satd. Flow (perm)	1863	1583			1821		153	3539		207	3539	
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)	1	0	1	5	0	1	2	1933	2	4	1626	0
RTOR Reduction (vph)	0	1	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	1	0	0	0	6	0	2	1935	0	4	1626	0
Turn Type	Perm	NA		Perm	NA		D.P+P	NA		Perm	NA	Perm
Protected Phases		4			4		1	1 2			2	
Permitted Phases	4			4			2			2		2
Actuated Green, G (s)	1.1	1.1			1.1		82.1	86.1		61.2	61.2	
Effective Green, g (s)	1.1	1.1			1.1		82.1	86.1		61.2	61.2	
Actuated g/C Ratio	0.01	0.01			0.01		0.82	0.86		0.61	0.61	
Clearance Time (s)	5.9	5.9			5.9		4.0			6.9	6.9	
Vehicle Extension (s)	1.5	1.5			1.5		2.0			3.0	3.0	
Lane Grp Cap (vph)	20	17			20		463	3047		126	2165	
v/s Ratio Prot		0.00					0.00	c0.55			c0.46	
v/s Ratio Perm	0.00				c0.00		0.00			0.02		
v/c Ratio	0.05	0.00			0.30		0.00	0.64		0.03	0.75	
Uniform Delay, d1	48.9	48.9			49.1		5.6	2.1		7.7	13.9	
Progression Factor	1.00	1.00			1.00		0.92	0.81		0.46	0.26	
Incremental Delay, d2	0.4	0.0			3.1		0.0	0.3		0.3	1.6	
Delay (s)	49.3	48.9			52.1		5.2	2.0		3.8	5.3	
Level of Service	D	D			D		A	A		A	A	
Approach Delay (s)		49.1			52.1			2.0			5.3	
Approach LOS		D			D			A			A	

Intersection Summary			
HCM 2000 Control Delay	3.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.8
Intersection Capacity Utilization	61.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

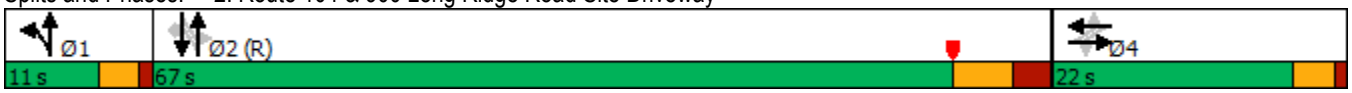
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	70	0	69	4	0	8	102	1683	6	21	1398	70
Future Volume (vph)	70	0	69	4	0	8	102	1683	6	21	1398	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	125		0	0		0	70		0	0		300
Storage Lanes	1		0	0		0	1		0	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	1.00
Frt		0.865			0.907							0.850
Flt Protected	0.950	0.995			0.985		0.950				0.999	
Satd. Flow (prot)	1681	1523	0	0	1664	0	1770	3539	0	0	3536	1583
Flt Permitted	0.749	0.971			0.905		0.105				0.880	
Satd. Flow (perm)	1325	1486	0	0	1529	0	196	3539	0	0	3115	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		92			92			1				75
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		266			226			361			758	
Travel Time (s)		6.0			5.1			8.2			17.2	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	75	0	74	4	0	9	110	1810	6	23	1503	75
Shared Lane Traffic (%)	10%											
Lane Group Flow (vph)	67	82	0	0	13	0	110	1816	0	0	1526	75
Turn Type	Perm	NA		Perm	NA		D.P+P	NA		Perm	NA	Perm
Protected Phases		4			4		1	1 2			2	
Permitted Phases	4			4			2			2		2
Detector Phase	4	4		4	4		1	1 2		2	2	2
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		3.0			15.0	15.0	15.0
Minimum Split (s)	22.0	22.0		22.0	22.0		9.5			25.4	25.4	25.4
Total Split (s)	22.0	22.0		22.0	22.0		11.0			67.0	67.0	67.0
Total Split (%)	22.0%	22.0%		22.0%	22.0%		11.0%			67.0%	67.0%	67.0%
Maximum Green (s)	17.9	17.9		17.9	17.9		7.0			59.6	59.6	59.6
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0			4.4	4.4	4.4
All-Red Time (s)	1.1	1.1		1.1	1.1		1.0			3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0			0.0		0.0				0.0	0.0
Total Lost Time (s)	4.1	4.1			4.1		4.0				7.4	7.4
Lead/Lag							Lead			Lag	Lag	Lag
Lead-Lag Optimize?							Yes			Yes	Yes	Yes
Vehicle Extension (s)	1.5	1.5		1.5	1.5		2.0			3.0	3.0	3.0
Recall Mode	None	None		None	None		Min			C-Max	C-Max	C-Max
Walk Time (s)	16.0	16.0		16.0	16.0							
Flash Dont Walk (s)	1.0	1.0		1.0	1.0							
Pedestrian Calls (#/hr)	0	0		0	0							
Act Effct Green (s)	9.1	9.1			9.1		80.6	85.4			62.5	62.5
Actuated g/C Ratio	0.09	0.09			0.09		0.81	0.85			0.62	0.62
v/c Ratio	0.56	0.38			0.06		0.28	0.60			0.78	0.07
Control Delay	59.8	12.4			0.5		8.9	3.5			14.3	1.2
Queue Delay	0.0	0.0			0.0		0.0	0.0			0.1	0.0
Total Delay	59.8	12.4			0.5		8.9	3.6			14.4	1.2

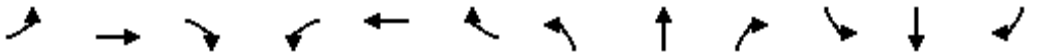
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	E	B			A		A	A			B	A
Approach Delay		33.7			0.5			3.9			13.8	
Approach LOS		C			A			A			B	
Queue Length 50th (ft)	44	0			0		9	151			223	1
Queue Length 95th (ft)	86	37			0		55	128			273	m6
Internal Link Dist (ft)		186			146			281			678	
Turn Bay Length (ft)	125						70					300
Base Capacity (vph)	237	341			349		388	3022			1947	1017
Starvation Cap Reductn	0	0			0		0	126			0	0
Spillback Cap Reductn	0	0			0		0	0			25	0
Storage Cap Reductn	0	0			0		0	0			0	0
Reduced v/c Ratio	0.28	0.24			0.04		0.28	0.63			0.79	0.07

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 0 (0%), Referenced to phase 2:NBSB and 6:, Start of Yellow, Master Intersection			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.78			
Intersection Signal Delay: 9.4		Intersection LOS: A	
Intersection Capacity Utilization 97.9%		ICU Level of Service F	
Analysis Period (min) 15			

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

Splits and Phases: 2: Route 104 & 900 Long Ridge Road Site Driveway

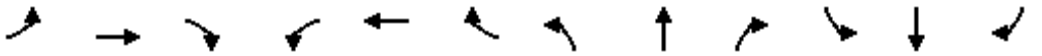




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	70	0	69	4	0	8	102	1683	6	21	1398	70
Future Volume (vph)	70	0	69	4	0	8	102	1683	6	21	1398	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.1	4.1			4.1		4.0	4.0			7.4	7.4
Lane Util. Factor	0.95	0.95			1.00		1.00	0.95			0.95	1.00
Frt	1.00	0.86			0.91		1.00	1.00			1.00	0.85
Flt Protected	0.95	1.00			0.98		0.95	1.00			1.00	1.00
Satd. Flow (prot)	1681	1523			1663		1770	3537			3537	1583
Flt Permitted	0.75	0.97			0.91		0.10	1.00			0.88	1.00
Satd. Flow (perm)	1326	1485			1529		195	3537			3116	1583
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	75	0	74	4	0	9	110	1810	6	23	1503	75
RTOR Reduction (vph)	0	75	0	0	12	0	0	0	0	0	0	29
Lane Group Flow (vph)	67	7	0	0	1	0	110	1816	0	0	1526	46
Turn Type	Perm	NA		Perm	NA		D.P+P	NA		Perm	NA	Perm
Protected Phases		4			4		1	1 2			2	
Permitted Phases	4			4			2			2		2
Actuated Green, G (s)	8.1	8.1			8.1		76.4	80.4			61.7	61.7
Effective Green, g (s)	8.1	8.1			8.1		76.4	80.4			61.7	61.7
Actuated g/C Ratio	0.08	0.08			0.08		0.76	0.80			0.62	0.62
Clearance Time (s)	4.1	4.1			4.1		4.0				7.4	7.4
Vehicle Extension (s)	1.5	1.5			1.5		2.0				3.0	3.0
Lane Grp Cap (vph)	107	120			123		380	2843			1922	976
v/s Ratio Prot							0.04	c0.51				
v/s Ratio Perm	c0.05	0.00			0.00		0.18				c0.49	0.03
v/c Ratio	0.63	0.06			0.01		0.29	0.64			0.79	0.05
Uniform Delay, d1	44.5	42.4			42.3		7.2	3.9			14.4	7.6
Progression Factor	1.00	1.00			1.00		2.50	0.85			0.74	0.48
Incremental Delay, d2	8.0	0.1			0.0		0.1	0.3			3.2	0.1
Delay (s)	52.4	42.5			42.3		18.1	3.6			13.9	3.7
Level of Service	D	D			D		B	A			B	A
Approach Delay (s)		47.0			42.3			4.5			13.4	
Approach LOS		D			D			A			B	

Intersection Summary			
HCM 2000 Control Delay	10.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	15.5
Intersection Capacity Utilization	97.9%	ICU Level of Service	F
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)	3	0	5	4	0	3	5	1722	4	5	1443	3
Future Volume (vph)	3	0	5	4	0	3	5	1722	4	5	1443	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		100	115		0	600		0
Storage Lanes	0		0	1		1	1		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Frt		0.916				0.850			0.850			
Flt Protected		0.982		0.950			0.950			0.950		
Satd. Flow (prot)	0	1676	0	1770	0	1583	1770	3539	1583	1770	3539	0
Flt Permitted		0.982					0.146			0.078		
Satd. Flow (perm)	0	1676	0	1863	0	1583	272	3539	1583	145	3539	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		93				44						
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		184			360			649			518	
Travel Time (s)		4.2			8.2			14.8			11.8	
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
Adj. Flow (vph)	3	0	5	4	0	3	5	1872	4	5	1568	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	8	0	4	0	3	5	1872	4	5	1571	0
Turn Type	Perm	NA		D.Pm		custom	pm+pt	NA	custom	custom	NA	
Protected Phases		4				1 4	5	2	1 2 5		6	
Permitted Phases	4			4			2		4 6	1 6		
Detector Phase	4	4		4		1 4	5	2	1 2 5	1 6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0			3.0	10.0			10.0	
Minimum Split (s)	31.3	31.3		31.3			9.5	25.0			25.0	
Total Split (s)	31.3	31.3		31.3			9.5	59.2			59.2	
Total Split (%)	31.3%	31.3%		31.3%			9.5%	59.2%			59.2%	
Maximum Green (s)	26.0	26.0		26.0			5.5	52.2			52.2	
Yellow Time (s)	3.2	3.2		3.2			3.0	4.4			4.4	
All-Red Time (s)	2.1	2.1		2.1			1.0	2.6			2.6	
Lost Time Adjust (s)		0.0		0.0			0.0	0.0			0.0	
Total Lost Time (s)		5.3		5.3			4.0	7.0			7.0	
Lead/Lag							Lead	Lag			Lag	
Lead-Lag Optimize?							Yes	Yes			Yes	
Vehicle Extension (s)	3.0	3.0		3.0			3.0	3.0			3.0	
Recall Mode	None	None		None			None	C-Min			C-Min	
Walk Time (s)	15.0	15.0		15.0								
Flash Dont Walk (s)	1.0	1.0		1.0								
Pedestrian Calls (#/hr)	0	0		0								
Act Effct Green (s)		5.9		5.9		11.8	88.5	87.4	99.9	93.4	90.6	
Actuated g/C Ratio		0.06		0.06		0.12	0.88	0.87	1.00	0.93	0.91	
v/c Ratio		0.04		0.04		0.01	0.02	0.61	0.00	0.04	0.49	
Control Delay		0.4		44.8		0.0	1.4	6.5	0.0	3.0	4.3	
Queue Delay		0.0		0.0		0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay		0.4		44.8		0.0	1.4	6.5	0.0	3.0	4.3	

Lane Group	Ø1
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	1
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	9.5
Total Split (s)	9.5
Total Split (%)	10%
Maximum Green (s)	5.0
Yellow Time (s)	3.5
All-Red Time (s)	1.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	Yes
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	
Flash Dont Walk (s)	
Pedestrian Calls (#/hr)	
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS		A		D		A	A	A	A	A	A	
Approach Delay		0.4			25.6			6.4			4.3	
Approach LOS		A			C			A			A	
Queue Length 50th (ft)		0		2		0	0	0	0	0	0	
Queue Length 95th (ft)		0		14		0	2	486	0	m1	242	
Internal Link Dist (ft)		104			280			569			438	
Turn Bay Length (ft)						100	115			600		
Base Capacity (vph)		504		484		456	324	3094	1581	135	3205	
Starvation Cap Reductn		0		0		0	0	0	0	0	0	
Spillback Cap Reductn		0		0		0	0	0	0	0	0	
Storage Cap Reductn		0		0		0	0	0	0	0	0	
Reduced v/c Ratio		0.02		0.01		0.01	0.02	0.61	0.00	0.04	0.49	

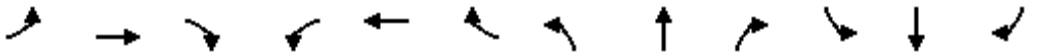
Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow			
Natural Cycle: 100			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.61			
Intersection Signal Delay: 5.5		Intersection LOS: A	
Intersection Capacity Utilization 69.9%		ICU Level of Service C	
Analysis Period (min) 15			

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

Splits and Phases: 16: Route 104 & 778 Long Ridge Road Driveway/777 Long Ridge Road Driveway

Lane Group	Ø1
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	0	5	4	0	3	5	1722	4	5	1443	3
Future Volume (vph)	3	0	5	4	0	3	5	1722	4	5	1443	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.3		5.3		4.5	4.0	7.0	4.5	4.5	7.0	
Lane Util. Factor		1.00		1.00		1.00	1.00	0.95	1.00	1.00	0.95	
Frt		0.92		1.00		0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.98		0.95		1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1674		1770		1583	1770	3539	1583	1770	3538	
Flt Permitted		0.98		1.00		1.00	0.15	1.00	1.00	0.08	1.00	
Satd. Flow (perm)		1674		1863		1583	272	3539	1583	146	3538	
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)	3	0	5	4	0	3	5	1872	4	5	1568	3
RTOR Reduction (vph)	0	8	0	0	0	3	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	4	0	0	5	1872	4	5	1571	0
Turn Type	Perm	NA		D.Pm		custom	pm+pt	NA	custom	custom	NA	
Protected Phases		4				1 4	5	2	1 2 5		6	
Permitted Phases	4			4			2		4 6	1 6		
Actuated Green, G (s)		2.6		2.6		11.2	78.4	77.3	85.9	83.3	80.0	
Effective Green, g (s)		2.6		2.6		5.9	78.4	77.3	85.9	83.3	80.0	
Actuated g/C Ratio		0.03		0.03		0.06	0.78	0.77	0.86	0.83	0.80	
Clearance Time (s)		5.3		5.3			4.0	7.0			7.0	
Vehicle Extension (s)		3.0		3.0			3.0	3.0			3.0	
Lane Grp Cap (vph)		43		48		93	229	2735	1359	121	2830	
v/s Ratio Prot						0.00	0.00	c0.53	0.00		c0.44	
v/s Ratio Perm		0.00		c0.00			0.02		0.00	c0.03		
v/c Ratio		0.00		0.08		0.00	0.02	0.68	0.00	0.04	0.56	
Uniform Delay, d1		47.4		47.5		44.3	2.6	5.5	1.0	1.4	3.6	
Progression Factor		1.00		1.00		1.00	1.00	1.00	1.00	1.92	1.41	
Incremental Delay, d2		0.0		0.7		0.0	0.0	1.4	0.0	0.1	0.6	
Delay (s)		47.5		48.3		44.3	2.6	6.9	1.0	2.9	5.6	
Level of Service		D		D		D	A	A	A	A	A	
Approach Delay (s)		47.5			46.6			6.9			5.6	
Approach LOS		D			D			A			A	

Intersection Summary			
HCM 2000 Control Delay	6.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.8
Intersection Capacity Utilization	69.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

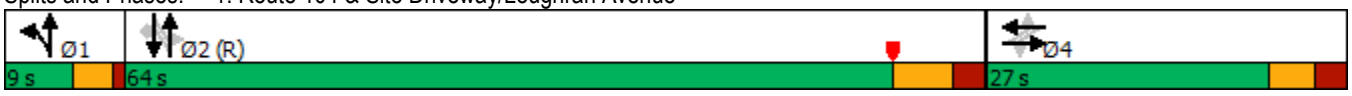
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	180	0	181	5	0	1	39	1778	2	4	1496	36
Future Volume (vph)	180	0	181	5	0	1	39	1778	2	4	1496	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	150		0	125		165
Storage Lanes	1		0	0		0	1		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Frt		0.850			0.977							0.850
Flt Protected	0.950				0.960		0.950			0.950		
Satd. Flow (prot)	1770	1583	0	0	1747	0	1770	3539	0	1770	3539	1583
Flt Permitted	0.754				0.792		0.070			0.070		
Satd. Flow (perm)	1405	1583	0	0	1441	0	130	3539	0	130	3539	1583
Right Turn on Red			Yes			No			Yes			Yes
Satd. Flow (RTOR)		109										75
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		154			229			333			361	
Travel Time (s)		3.5			5.2			7.6			8.2	
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
Adj. Flow (vph)	196	0	197	5	0	1	42	1933	2	4	1626	39
Shared Lane Traffic (%)												
Lane Group Flow (vph)	196	197	0	0	6	0	42	1935	0	4	1626	39
Turn Type	Perm	NA		Perm	NA		D.P+P	NA		Perm	NA	Perm
Protected Phases		4			4		1	1 2			2	
Permitted Phases	4			4			2			2		2
Detector Phase	4	4		4	4		1	1 2		2	2	2
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		3.0			15.0	15.0	15.0
Minimum Split (s)	27.0	27.0		27.0	27.0		7.5			47.0	47.0	47.0
Total Split (s)	27.0	27.0		27.0	27.0		9.0			64.0	64.0	64.0
Total Split (%)	27.0%	27.0%		27.0%	27.0%		9.0%			64.0%	64.0%	64.0%
Maximum Green (s)	21.1	21.1		21.1	21.1		5.0			57.1	57.1	57.1
Yellow Time (s)	3.3	3.3		3.3	3.3		3.0			4.4	4.4	4.4
All-Red Time (s)	2.6	2.6		2.6	2.6		1.0			2.5	2.5	2.5
Lost Time Adjust (s)	0.0	0.0			0.0		0.0			0.0	0.0	0.0
Total Lost Time (s)	5.9	5.9			5.9		4.0			6.9	6.9	6.9
Lead/Lag							Lead			Lag	Lag	Lag
Lead-Lag Optimize?							Yes			Yes	Yes	Yes
Vehicle Extension (s)	1.5	1.5		1.5	1.5		2.0			3.0	3.0	3.0
Recall Mode	None	None		None	None		None			C-Min	C-Min	C-Min
Walk Time (s)	20.0	20.0		20.0	20.0							
Flash Dont Walk (s)	1.0	1.0		1.0	1.0							
Pedestrian Calls (#/hr)	0	0		0	0							
Act Effct Green (s)	17.0	17.0			17.0		69.1	73.1		57.1	57.1	57.1
Actuated g/C Ratio	0.17	0.17			0.17		0.69	0.73		0.57	0.57	0.57
v/c Ratio	0.82	0.55			0.02		0.18	0.75		0.05	0.80	0.04
Control Delay	66.0	22.5			32.2		7.2	7.4		5.0	6.8	0.1
Queue Delay	0.0	0.0			0.0		0.0	0.0		0.0	0.9	0.0
Total Delay	66.0	22.5			32.2		7.2	7.4		5.0	7.7	0.1

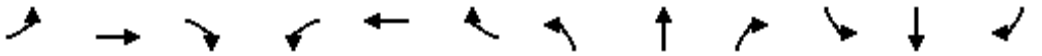
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	E	C			C		A	A		A	A	A
Approach Delay		44.2			32.2			7.4			7.5	
Approach LOS		D			C			A			A	
Queue Length 50th (ft)	120	49			3		7	340		0	50	0
Queue Length 95th (ft)	#198	115			14		m9	145		m0	77	m0
Internal Link Dist (ft)		74			149			253			281	
Turn Bay Length (ft)							150			125		165
Base Capacity (vph)	296	420			304		239	2586		74	2020	936
Starvation Cap Reductn	0	0			0		0	1		0	169	0
Spillback Cap Reductn	0	0			0		0	0		0	0	0
Storage Cap Reductn	0	0			0		0	0		0	0	0
Reduced v/c Ratio	0.66	0.47			0.02		0.18	0.75		0.05	0.88	0.04

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 3.5 (4%), Referenced to phase 2:NBSB and 6:, Start of Yellow
Natural Cycle: 85
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.82
Intersection Signal Delay: 11.0 Intersection LOS: B
Intersection Capacity Utilization 68.7% ICU Level of Service C
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Route 104 & Site Driveway/Loughran Avenue





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	180	0	181	5	0	1	39	1778	2	4	1496	36
Future Volume (vph)	180	0	181	5	0	1	39	1778	2	4	1496	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.9	5.9			5.9		4.0	4.0		6.9	6.9	6.9
Lane Util. Factor	1.00	1.00			1.00		1.00	0.95		1.00	0.95	1.00
Frt	1.00	0.85			0.98		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00			0.96		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1583			1748		1770	3539		1770	3539	1583
Flt Permitted	0.75	1.00			0.79		0.07	1.00		0.07	1.00	1.00
Satd. Flow (perm)	1404	1583			1443		130	3539		130	3539	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)	196	0	197	5	0	1	42	1933	2	4	1626	39
RTOR Reduction (vph)	0	90	0	0	0	0	0	0	0	0	0	17
Lane Group Flow (vph)	196	107	0	0	6	0	42	1935	0	4	1626	22
Turn Type	Perm	NA		Perm	NA		D.P+P	NA		Perm	NA	Perm
Protected Phases		4			4		1	1 2			2	
Permitted Phases	4			4			2			2		2
Actuated Green, G (s)	17.0	17.0			17.0		66.2	70.2		57.1	57.1	57.1
Effective Green, g (s)	17.0	17.0			17.0		66.2	70.2		57.1	57.1	57.1
Actuated g/C Ratio	0.17	0.17			0.17		0.66	0.70		0.57	0.57	0.57
Clearance Time (s)	5.9	5.9			5.9		4.0			6.9	6.9	6.9
Vehicle Extension (s)	1.5	1.5			1.5		2.0			3.0	3.0	3.0
Lane Grp Cap (vph)	238	269			245		235	2484		74	2020	903
v/s Ratio Prot		0.07					0.02	c0.55			0.46	
v/s Ratio Perm	c0.14				0.00		0.10			0.03		0.01
v/c Ratio	0.82	0.40			0.02		0.18	0.78		0.05	0.80	0.02
Uniform Delay, d1	40.1	36.9			34.6		11.8	9.8		9.5	17.0	9.3
Progression Factor	1.00	1.00			1.00		1.22	0.63		0.39	0.26	0.16
Incremental Delay, d2	19.2	0.4			0.0		0.1	1.2		0.9	2.2	0.0
Delay (s)	59.3	37.3			34.6		14.5	7.4		4.6	6.7	1.6
Level of Service	E	D			C		B	A		A	A	A
Approach Delay (s)		48.2			34.6			7.5			6.5	
Approach LOS		D			C			A			A	

Intersection Summary			
HCM 2000 Control Delay	11.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.8
Intersection Capacity Utilization	68.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

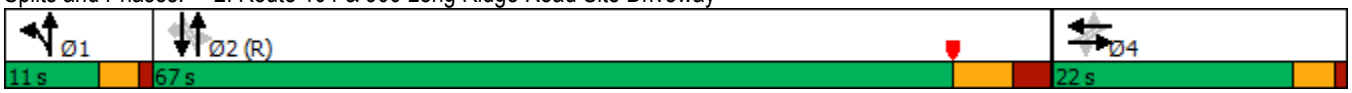
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	70	0	69	4	0	8	102	1862	6	21	1434	70
Future Volume (vph)	70	0	69	4	0	8	102	1862	6	21	1434	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	125		0	0		0	70		0	0		300
Storage Lanes	1		0	0		0	1		0	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	1.00
Frt		0.865			0.907							0.850
Flt Protected	0.950	0.995			0.985		0.950				0.999	
Satd. Flow (prot)	1681	1523	0	0	1664	0	1770	3539	0	0	3536	1583
Flt Permitted	0.749	0.971			0.905		0.095				0.868	
Satd. Flow (perm)	1325	1486	0	0	1529	0	177	3539	0	0	3072	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		92			92			1				75
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		266			226			361			758	
Travel Time (s)		6.0			5.1			8.2			17.2	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	75	0	74	4	0	9	110	2002	6	23	1542	75
Shared Lane Traffic (%)	10%											
Lane Group Flow (vph)	67	82	0	0	13	0	110	2008	0	0	1565	75
Turn Type	Perm	NA		Perm	NA		D.P+P	NA		Perm	NA	Perm
Protected Phases		4			4		1	1 2			2	
Permitted Phases	4			4			2			2		2
Detector Phase	4	4		4	4		1	1 2		2	2	2
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		3.0			15.0	15.0	15.0
Minimum Split (s)	22.0	22.0		22.0	22.0		11.0			25.4	25.4	25.4
Total Split (s)	22.0	22.0		22.0	22.0		11.0			67.0	67.0	67.0
Total Split (%)	22.0%	22.0%		22.0%	22.0%		11.0%			67.0%	67.0%	67.0%
Maximum Green (s)	17.9	17.9		17.9	17.9		7.0			59.6	59.6	59.6
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0			4.4	4.4	4.4
All-Red Time (s)	1.1	1.1		1.1	1.1		1.0			3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0			0.0		0.0				0.0	0.0
Total Lost Time (s)	4.1	4.1			4.1		4.0				7.4	7.4
Lead/Lag							Lead			Lag	Lag	Lag
Lead-Lag Optimize?							Yes			Yes	Yes	Yes
Vehicle Extension (s)	1.5	1.5		1.5	1.5		2.0			3.0	3.0	3.0
Recall Mode	None	None		None	None		Min			C-Max	C-Max	C-Max
Walk Time (s)	16.0	16.0		16.0	16.0							
Flash Dont Walk (s)	1.0	1.0		1.0	1.0							
Pedestrian Calls (#/hr)	0	0		0	0							
Act Effct Green (s)	9.1	9.1			9.1		80.6	85.4			62.0	62.0
Actuated g/C Ratio	0.09	0.09			0.09		0.81	0.85			0.62	0.62
v/c Ratio	0.56	0.38			0.06		0.29	0.66			0.82	0.07
Control Delay	59.8	12.4			0.5		8.2	2.8			14.4	0.9
Queue Delay	0.0	0.0			0.0		0.0	0.1			0.1	0.0
Total Delay	59.8	12.4			0.5		8.2	2.9			14.5	0.9

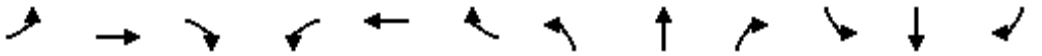
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	E	B			A		A	A			B	A
Approach Delay		33.7			0.5			3.2			13.9	
Approach LOS		C			A			A			B	
Queue Length 50th (ft)	44	0			0		8	87			243	0
Queue Length 95th (ft)	86	37			0		m27	178			285	m4
Internal Link Dist (ft)		186			146			281			678	
Turn Bay Length (ft)	125						70					300
Base Capacity (vph)	237	341			349		384	3022			1904	1009
Starvation Cap Reductn	0	0			0		0	122			0	0
Spillback Cap Reductn	0	0			0		0	0			21	0
Storage Cap Reductn	0	0			0		0	0			0	0
Reduced v/c Ratio	0.28	0.24			0.04		0.29	0.69			0.83	0.07

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 0 (0%), Referenced to phase 2:NBSB and 6:, Start of Yellow, Master Intersection			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.82			
Intersection Signal Delay: 8.8		Intersection LOS: A	
Intersection Capacity Utilization 97.9%		ICU Level of Service F	
Analysis Period (min) 15			

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

Splits and Phases: 2: Route 104 & 900 Long Ridge Road Site Driveway





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	70	0	69	4	0	8	102	1862	6	21	1434	70
Future Volume (vph)	70	0	69	4	0	8	102	1862	6	21	1434	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.1	4.1			4.1		4.0	4.0			7.4	7.4
Lane Util. Factor	0.95	0.95			1.00		1.00	0.95			0.95	1.00
Frt	1.00	0.86			0.91		1.00	1.00			1.00	0.85
Flt Protected	0.95	1.00			0.98		0.95	1.00			1.00	1.00
Satd. Flow (prot)	1681	1523			1663		1770	3538			3537	1583
Flt Permitted	0.75	0.97			0.91		0.10	1.00			0.87	1.00
Satd. Flow (perm)	1326	1485			1529		177	3538			3074	1583
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	75	0	74	4	0	9	110	2002	6	23	1542	75
RTOR Reduction (vph)	0	75	0	0	12	0	0	0	0	0	0	29
Lane Group Flow (vph)	67	7	0	0	1	0	110	2008	0	0	1565	46
Turn Type	Perm	NA		Perm	NA		D.P+P	NA		Perm	NA	Perm
Protected Phases		4			4		1	1 2			2	
Permitted Phases	4			4			2			2		2
Actuated Green, G (s)	8.1	8.1			8.1		76.4	80.4			61.2	61.2
Effective Green, g (s)	8.1	8.1			8.1		76.4	80.4			61.2	61.2
Actuated g/C Ratio	0.08	0.08			0.08		0.76	0.80			0.61	0.61
Clearance Time (s)	4.1	4.1			4.1		4.0				7.4	7.4
Vehicle Extension (s)	1.5	1.5			1.5		2.0				3.0	3.0
Lane Grp Cap (vph)	107	120			123		377	2844			1881	968
v/s Ratio Prot							0.04	c0.57				
v/s Ratio Perm	c0.05	0.00			0.00		0.18				c0.51	0.03
v/c Ratio	0.63	0.06			0.01		0.29	0.71			0.83	0.05
Uniform Delay, d1	44.5	42.4			42.3		8.0	4.4			15.3	7.8
Progression Factor	1.00	1.00			1.00		1.64	0.55			0.67	0.35
Incremental Delay, d2	8.0	0.1			0.0		0.1	0.4			3.8	0.1
Delay (s)	52.4	42.5			42.3		13.3	2.9			14.0	2.8
Level of Service	D	D			D		B	A			B	A
Approach Delay (s)		47.0			42.3			3.4			13.5	
Approach LOS		D			D			A			B	

Intersection Summary			
HCM 2000 Control Delay	9.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	15.5
Intersection Capacity Utilization	97.9%	ICU Level of Service	F
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)	3	0	5	4	0	3	5	1759	4	5	1623	3
Future Volume (vph)	3	0	5	4	0	3	5	1759	4	5	1623	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		100	115		0	600		0
Storage Lanes	0		0	1		1	1		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Frt		0.916				0.850			0.850			
Flt Protected		0.982		0.950			0.950			0.950		
Satd. Flow (prot)	0	1676	0	1770	0	1583	1770	3539	1583	1770	3539	0
Flt Permitted		0.982					0.112			0.075		
Satd. Flow (perm)	0	1676	0	1863	0	1583	209	3539	1583	140	3539	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		136				87						
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		184			360			649			518	
Travel Time (s)		4.2			8.2			14.8			11.8	
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
Adj. Flow (vph)	3	0	5	4	0	3	5	1912	4	5	1764	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	8	0	4	0	3	5	1912	4	5	1767	0
Turn Type	Perm	NA		D.Pm		custom	pm+pt	NA	custom	custom	NA	
Protected Phases		4				1 4	5	2	1 2 5		6	
Permitted Phases	4			4			2		4 6	1 6		
Detector Phase	4	4		4		1 4	5	2	1 2 5	1 6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0			3.0	10.0			10.0	
Minimum Split (s)	32.5	32.5		32.5			22.5	22.5			22.5	
Total Split (s)	32.5	32.5		32.5			22.5	58.0			45.0	
Total Split (%)	32.5%	32.5%		32.5%			22.5%	58.0%			45.0%	
Maximum Green (s)	27.2	27.2		27.2			18.5	51.0			38.4	
Yellow Time (s)	3.2	3.2		3.2			3.0	4.4			4.0	
All-Red Time (s)	2.1	2.1		2.1			1.0	2.6			2.6	
Lost Time Adjust (s)		0.0		0.0			0.0	0.0			0.0	
Total Lost Time (s)		5.3		5.3			4.0	7.0			6.6	
Lead/Lag							Lead	Lag			Lag	
Lead-Lag Optimize?							Yes	Yes			Yes	
Vehicle Extension (s)	3.0	3.0		3.0			3.0	3.0			3.0	
Recall Mode	None	None		None			None	C-Max			C-Max	
Walk Time (s)	15.0	15.0		15.0								
Flash Dont Walk (s)	1.0	1.0		1.0								
Pedestrian Calls (#/hr)	0	0		0								
Act Effct Green (s)		5.9		5.9		11.4	88.8	87.8	99.6	93.1	90.7	
Actuated g/C Ratio		0.06		0.06		0.11	0.89	0.88	1.00	0.93	0.91	
v/c Ratio		0.04		0.04		0.01	0.02	0.62	0.00	0.04	0.55	
Control Delay		0.3		44.8		0.0	1.4	6.3	0.0	2.6	3.7	
Queue Delay		0.0		0.0		0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay		0.3		44.8		0.0	1.4	6.3	0.0	2.6	3.7	

Lane Group	Ø1
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	1
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	9.5
Total Split (s)	9.5
Total Split (%)	10%
Maximum Green (s)	5.0
Yellow Time (s)	3.5
All-Red Time (s)	1.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	Yes
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	
Flash Dont Walk (s)	
Pedestrian Calls (#/hr)	
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS		A		D		A	A	A	A	A	A	
Approach Delay		0.3			25.6			6.3			3.7	
Approach LOS		A			C			A			A	
Queue Length 50th (ft)		0		2		0	0	0	0	0	0	
Queue Length 95th (ft)		0		14		0	2	487	0	m1	255	
Internal Link Dist (ft)		104			280			569			438	
Turn Bay Length (ft)						100	115			600		
Base Capacity (vph)		554		506		505	479	3106	1583	130	3210	
Starvation Cap Reductn		0		0		0	0	0	0	0	0	
Spillback Cap Reductn		0		0		0	0	0	0	0	0	
Storage Cap Reductn		0		0		0	0	0	0	0	0	
Reduced v/c Ratio		0.01		0.01		0.01	0.01	0.62	0.00	0.04	0.55	

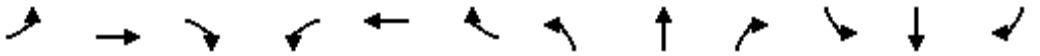
Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 3.5 (4%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow			
Natural Cycle: 120			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.62			
Intersection Signal Delay: 5.1		Intersection LOS: A	
Intersection Capacity Utilization 71.0%		ICU Level of Service C	
Analysis Period (min) 15			

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

Splits and Phases: 16: Route 104 & 778 Long Ridge Road Driveway/777 Long Ridge Road Driveway

Lane Group	Ø1
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	0	5	4	0	3	5	1759	4	5	1623	3
Future Volume (vph)	3	0	5	4	0	3	5	1759	4	5	1623	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.3		5.3		4.5	4.0	7.0	4.5	4.5	6.6	
Lane Util. Factor		1.00		1.00		1.00	1.00	0.95	1.00	1.00	0.95	
Frt		0.92		1.00		0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.98		0.95		1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1674		1770		1583	1770	3539	1583	1770	3538	
Flt Permitted		0.98		1.00		1.00	0.11	1.00	1.00	0.07	1.00	
Satd. Flow (perm)		1674		1863		1583	208	3539	1583	139	3538	
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)	3	0	5	4	0	3	5	1912	4	5	1764	3
RTOR Reduction (vph)	0	8	0	0	0	3	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	4	0	0	5	1912	4	5	1767	0
Turn Type	Perm	NA		D.Pm		custom	pm+pt	NA	custom	custom	NA	
Protected Phases		4				1 4	5	2	1 2 5		6	
Permitted Phases	4			4			2		4 6	1 6		
Actuated Green, G (s)		2.6		2.6		10.8	78.8	77.7	92.5	83.3	80.4	
Effective Green, g (s)		2.6		2.6		5.5	78.8	77.7	85.9	83.3	80.4	
Actuated g/C Ratio		0.03		0.03		0.06	0.79	0.78	0.86	0.83	0.80	
Clearance Time (s)		5.3		5.3			4.0	7.0			6.6	
Vehicle Extension (s)		3.0		3.0			3.0	3.0			3.0	
Lane Grp Cap (vph)		43		48		87	181	2749	1359	115	2844	
v/s Ratio Prot						0.00	0.00	c0.54	0.00		0.50	
v/s Ratio Perm		0.00		c0.00			0.02		0.00	c0.04		
v/c Ratio		0.00		0.08		0.00	0.03	0.70	0.00	0.04	0.62	
Uniform Delay, d1		47.4		47.5		44.7	3.0	5.4	1.0	1.4	3.8	
Progression Factor		1.00		1.00		1.00	1.00	1.00	1.00	1.67	1.06	
Incremental Delay, d2		0.0		0.7		0.0	0.1	1.5	0.0	0.1	0.6	
Delay (s)		47.5		48.3		44.7	3.1	6.9	1.0	2.5	4.7	
Level of Service		D		D		D	A	A	A	A	A	
Approach Delay (s)		47.5			46.7			6.9			4.7	
Approach LOS		D			D			A			A	

Intersection Summary			
HCM 2000 Control Delay	6.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.8
Intersection Capacity Utilization	71.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

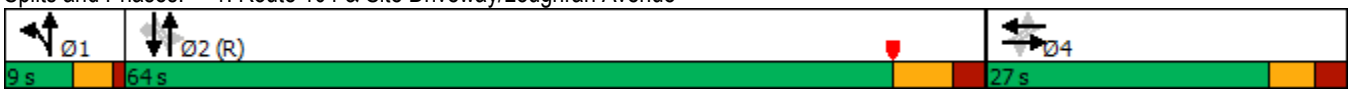
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	57	0	57	5	0	1	70	1778	2	4	1496	67
Future Volume (vph)	57	0	57	5	0	1	70	1778	2	4	1496	67
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	150		0	125		165
Storage Lanes	1		0	0		0	1		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Frt		0.850			0.977							0.850
Flt Protected	0.950				0.960		0.950			0.950		
Satd. Flow (prot)	1770	1583	0	0	1747	0	1770	3539	0	1770	3539	1583
Flt Permitted	0.754				0.719		0.075			0.107		
Satd. Flow (perm)	1405	1583	0	0	1309	0	140	3539	0	199	3539	1583
Right Turn on Red			Yes			No			Yes			Yes
Satd. Flow (RTOR)		109										75
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		154			229			333			361	
Travel Time (s)		3.5			5.2			7.6			8.2	
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
Adj. Flow (vph)	62	0	62	5	0	1	76	1933	2	4	1626	73
Shared Lane Traffic (%)												
Lane Group Flow (vph)	62	62	0	0	6	0	76	1935	0	4	1626	73
Turn Type	Perm	NA		Perm	NA		D.P+P	NA		Perm	NA	Perm
Protected Phases		4			4		1	1 2			2	
Permitted Phases	4			4			2			2		2
Detector Phase	4	4		4	4		1	1 2		2	2	2
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		3.0			15.0	15.0	15.0
Minimum Split (s)	27.0	27.0		27.0	27.0		7.5			47.0	47.0	47.0
Total Split (s)	27.0	27.0		27.0	27.0		9.0			64.0	64.0	64.0
Total Split (%)	27.0%	27.0%		27.0%	27.0%		9.0%			64.0%	64.0%	64.0%
Maximum Green (s)	21.1	21.1		21.1	21.1		5.0			57.1	57.1	57.1
Yellow Time (s)	3.3	3.3		3.3	3.3		3.0			4.4	4.4	4.4
All-Red Time (s)	2.6	2.6		2.6	2.6		1.0			2.5	2.5	2.5
Lost Time Adjust (s)	0.0	0.0			0.0		0.0			0.0	0.0	0.0
Total Lost Time (s)	5.9	5.9			5.9		4.0			6.9	6.9	6.9
Lead/Lag							Lead			Lag	Lag	Lag
Lead-Lag Optimize?							Yes			Yes	Yes	Yes
Vehicle Extension (s)	1.5	1.5		1.5	1.5		2.0			3.0	3.0	3.0
Recall Mode	None	None		None	None		None			C-Min	C-Min	C-Min
Walk Time (s)	20.0	20.0		20.0	20.0							
Flash Dont Walk (s)	1.0	1.0		1.0	1.0							
Pedestrian Calls (#/hr)	0	0		0	0							
Act Effct Green (s)	8.5	8.5			8.5		79.7	84.5		60.4	60.4	60.4
Actuated g/C Ratio	0.08	0.08			0.08		0.80	0.84		0.60	0.60	0.60
v/c Ratio	0.52	0.26			0.05		0.20	0.65		0.03	0.76	0.07
Control Delay	58.1	4.5			40.8		6.3	8.8		4.2	5.2	0.3
Queue Delay	0.0	0.0			0.0		0.0	0.0		0.0	0.5	0.0
Total Delay	58.1	4.5			40.8		6.3	8.8		4.2	5.7	0.3

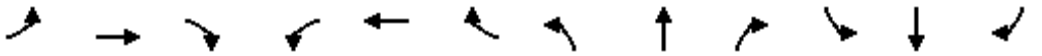
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	E	A			D		A	A		A	A	A
Approach Delay		31.3			40.8			8.7			5.5	
Approach LOS		C			D			A			A	
Queue Length 50th (ft)	39	0			4		7	190		0	45	0
Queue Length 95th (ft)	78	10			16		m29	606		m0	76	m0
Internal Link Dist (ft)		74			149			253			281	
Turn Bay Length (ft)							150			125		165
Base Capacity (vph)	296	420			276		380	2992		120	2135	985
Starvation Cap Reductn	0	0			0		0	40		0	176	0
Spillback Cap Reductn	0	0			0		0	0		0	0	0
Storage Cap Reductn	0	0			0		0	0		0	0	0
Reduced v/c Ratio	0.21	0.15			0.02		0.20	0.66		0.03	0.83	0.07

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 3.5 (4%), Referenced to phase 2:NBSB and 6:, Start of Yellow			
Natural Cycle: 85			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.76			
Intersection Signal Delay: 8.1		Intersection LOS: A	
Intersection Capacity Utilization 70.9%		ICU Level of Service C	
Analysis Period (min) 15			

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

Splits and Phases: 1: Route 104 & Site Driveway/Loughran Avenue





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	57	0	57	5	0	1	70	1778	2	4	1496	67
Future Volume (vph)	57	0	57	5	0	1	70	1778	2	4	1496	67
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.9	5.9			5.9		4.0	4.0		6.9	6.9	6.9
Lane Util. Factor	1.00	1.00			1.00		1.00	0.95		1.00	0.95	1.00
Frt	1.00	0.85			0.98		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00			0.96		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1583			1748		1770	3539		1770	3539	1583
Flt Permitted	0.75	1.00			0.72		0.08	1.00		0.11	1.00	1.00
Satd. Flow (perm)	1404	1583			1309		140	3539		200	3539	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)	62	0	62	5	0	1	76	1933	2	4	1626	73
RTOR Reduction (vph)	0	57	0	0	0	0	0	0	0	0	0	30
Lane Group Flow (vph)	62	5	0	0	6	0	76	1935	0	4	1626	43
Turn Type	Perm	NA		Perm	NA		D.P+P	NA		Perm	NA	Perm
Protected Phases		4			4		1	1 2			2	
Permitted Phases	4			4			2			2		2
Actuated Green, G (s)	7.5	7.5			7.5		75.7	79.7		59.2	59.2	59.2
Effective Green, g (s)	7.5	7.5			7.5		75.7	79.7		59.2	59.2	59.2
Actuated g/C Ratio	0.08	0.08			0.08		0.76	0.80		0.59	0.59	0.59
Clearance Time (s)	5.9	5.9			5.9		4.0			6.9	6.9	6.9
Vehicle Extension (s)	1.5	1.5			1.5		2.0			3.0	3.0	3.0
Lane Grp Cap (vph)	105	118			98		374	2820		118	2095	937
v/s Ratio Prot		0.00					0.03	c0.55			c0.46	
v/s Ratio Perm	c0.04				0.00		0.12			0.02		0.03
v/c Ratio	0.59	0.04			0.06		0.20	0.69		0.03	0.78	0.05
Uniform Delay, d1	44.8	42.9			43.0		9.3	4.5		8.5	15.4	8.6
Progression Factor	1.00	1.00			1.00		1.39	2.01		0.41	0.22	0.10
Incremental Delay, d2	5.8	0.1			0.1		0.1	0.4		0.3	1.8	0.1
Delay (s)	50.6	43.0			43.1		13.0	9.6		3.8	5.2	0.9
Level of Service	D	D			D		B	A		A	A	A
Approach Delay (s)		46.8			43.1			9.7			5.1	
Approach LOS		D			D			A			A	

Intersection Summary			
HCM 2000 Control Delay	8.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.8
Intersection Capacity Utilization	70.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

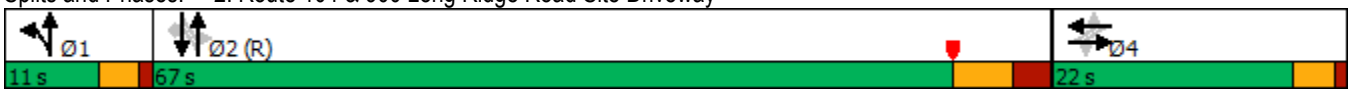
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	70	0	69	4	0	8	102	1739	6	21	1465	70
Future Volume (vph)	70	0	69	4	0	8	102	1739	6	21	1465	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	125		0	0		0	70		0	0		300
Storage Lanes	1		0	0		0	1		0	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	1.00
Frt		0.865			0.907							0.850
Flt Protected	0.950	0.995			0.985		0.950				0.999	
Satd. Flow (prot)	1681	1523	0	0	1664	0	1770	3539	0	0	3536	1583
Flt Permitted	0.749	0.971			0.905		0.090				0.879	
Satd. Flow (perm)	1325	1486	0	0	1529	0	168	3539	0	0	3111	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		92			92			1				75
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		266			226			361			758	
Travel Time (s)		6.0			5.1			8.2			17.2	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	75	0	74	4	0	9	110	1870	6	23	1575	75
Shared Lane Traffic (%)	10%											
Lane Group Flow (vph)	67	82	0	0	13	0	110	1876	0	0	1598	75
Turn Type	Perm	NA		Perm	NA		D.P+P	NA		Perm	NA	Perm
Protected Phases		4			4		1	1 2			2	
Permitted Phases	4			4			2			2		2
Detector Phase	4	4		4	4		1	1 2		2	2	2
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		3.0			15.0	15.0	15.0
Minimum Split (s)	22.0	22.0		22.0	22.0		9.5			22.5	22.5	22.5
Total Split (s)	22.0	22.0		22.0	22.0		11.0			67.0	67.0	67.0
Total Split (%)	22.0%	22.0%		22.0%	22.0%		11.0%			67.0%	67.0%	67.0%
Maximum Green (s)	17.9	17.9		17.9	17.9		7.0			59.6	59.6	59.6
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0			4.4	4.4	4.4
All-Red Time (s)	1.1	1.1		1.1	1.1		1.0			3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0			0.0		0.0				0.0	0.0
Total Lost Time (s)	4.1	4.1			4.1		4.0				7.4	7.4
Lead/Lag							Lead			Lag	Lag	Lag
Lead-Lag Optimize?							Yes			Yes	Yes	Yes
Vehicle Extension (s)	1.5	1.5		1.5	1.5		2.0			3.0	3.0	3.0
Recall Mode	None	None		None	None		Min			C-Max	C-Max	C-Max
Walk Time (s)	16.0	16.0		16.0	16.0							
Flash Dont Walk (s)	1.0	1.0		1.0	1.0							
Pedestrian Calls (#/hr)	0	0		0	0							
Act Effct Green (s)	9.1	9.1			9.1		80.6	85.4			62.3	62.3
Actuated g/C Ratio	0.09	0.09			0.09		0.81	0.85			0.62	0.62
v/c Ratio	0.56	0.38			0.06		0.29	0.62			0.82	0.07
Control Delay	59.8	12.4			0.5		13.5	3.1			14.0	0.8
Queue Delay	0.0	0.0			0.0		0.0	0.0			0.1	0.0
Total Delay	59.8	12.4			0.5		13.5	3.2			14.1	0.8

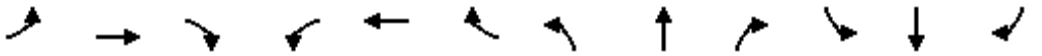
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	E	B			A		B	A			B	A
Approach Delay		33.7			0.5			3.7			13.5	
Approach LOS		C			A			A			B	
Queue Length 50th (ft)	44	0			0		8	87			242	0
Queue Length 95th (ft)	86	37			0		m43	149			291	m3
Internal Link Dist (ft)		186			146			281			678	
Turn Bay Length (ft)	125						70					300
Base Capacity (vph)	237	341			349		374	3022			1938	1014
Starvation Cap Reductn	0	0			0		0	125			0	0
Spillback Cap Reductn	0	0			0		0	0			20	0
Storage Cap Reductn	0	0			0		0	0			0	0
Reduced v/c Ratio	0.28	0.24			0.04		0.29	0.65			0.83	0.07

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 0 (0%), Referenced to phase 2:NBSB and 6:, Start of Yellow, Master Intersection			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.82			
Intersection Signal Delay: 9.2		Intersection LOS: A	
Intersection Capacity Utilization 97.9%		ICU Level of Service F	
Analysis Period (min) 15			

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

Splits and Phases: 2: Route 104 & 900 Long Ridge Road Site Driveway





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	70	0	69	4	0	8	102	1739	6	21	1465	70
Future Volume (vph)	70	0	69	4	0	8	102	1739	6	21	1465	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.1	4.1			4.1		4.0	4.0			7.4	7.4
Lane Util. Factor	0.95	0.95			1.00		1.00	0.95			0.95	1.00
Frt	1.00	0.86			0.91		1.00	1.00			1.00	0.85
Flt Protected	0.95	1.00			0.98		0.95	1.00			1.00	1.00
Satd. Flow (prot)	1681	1523			1663		1770	3538			3537	1583
Flt Permitted	0.75	0.97			0.91		0.09	1.00			0.88	1.00
Satd. Flow (perm)	1326	1485			1529		167	3538			3111	1583
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	75	0	74	4	0	9	110	1870	6	23	1575	75
RTOR Reduction (vph)	0	75	0	0	12	0	0	0	0	0	0	29
Lane Group Flow (vph)	67	7	0	0	1	0	110	1876	0	0	1598	46
Turn Type	Perm	NA		Perm	NA		D.P+P	NA		Perm	NA	Perm
Protected Phases		4			4		1	1 2			2	
Permitted Phases	4			4			2			2		2
Actuated Green, G (s)	8.1	8.1			8.1		76.4	80.4			61.5	61.5
Effective Green, g (s)	8.1	8.1			8.1		76.4	80.4			61.5	61.5
Actuated g/C Ratio	0.08	0.08			0.08		0.76	0.80			0.62	0.62
Clearance Time (s)	4.1	4.1			4.1		4.0				7.4	7.4
Vehicle Extension (s)	1.5	1.5			1.5		2.0				3.0	3.0
Lane Grp Cap (vph)	107	120			123		366	2844			1913	973
v/s Ratio Prot							0.04	c0.53				
v/s Ratio Perm	c0.05	0.00			0.00		0.18				c0.51	0.03
v/c Ratio	0.63	0.06			0.01		0.30	0.66			0.84	0.05
Uniform Delay, d1	44.5	42.4			42.3		8.5	4.1			15.2	7.6
Progression Factor	1.00	1.00			1.00		2.46	0.69			0.64	0.33
Incremental Delay, d2	8.0	0.1			0.0		0.1	0.3			3.8	0.1
Delay (s)	52.4	42.5			42.3		21.2	3.2			13.6	2.6
Level of Service	D	D			D		C	A			B	A
Approach Delay (s)		47.0			42.3			4.2			13.1	
Approach LOS		D			D			A			B	

Intersection Summary			
HCM 2000 Control Delay	9.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	15.5
Intersection Capacity Utilization	97.9%	ICU Level of Service	F
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)	3	0	5	4	0	3	5	1790	4	5	1499	3
Future Volume (vph)	3	0	5	4	0	3	5	1790	4	5	1499	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		100	115		0	600		0
Storage Lanes	0		0	1		1	1		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Frt		0.916				0.850			0.850			
Flt Protected		0.982		0.950			0.950			0.950		
Satd. Flow (prot)	0	1676	0	1770	0	1583	1770	3539	1583	1770	3539	0
Flt Permitted		0.982					0.134			0.070		
Satd. Flow (perm)	0	1676	0	1863	0	1583	250	3539	1583	130	3539	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		136				87						
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		184			360			649			518	
Travel Time (s)		4.2			8.2			14.8			11.8	
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
Adj. Flow (vph)	3	0	5	4	0	3	5	1946	4	5	1629	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	8	0	4	0	3	5	1946	4	5	1632	0
Turn Type	Perm	NA		D.Pm		custom	pm+pt	NA	custom	custom	NA	
Protected Phases		4				1 4	5	2	1 2 5		6	
Permitted Phases	4			4			2		4 6	1 6		
Detector Phase	4	4		4		1 4	5	2	1 2 5	1 6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0			3.0	10.0			10.0	
Minimum Split (s)	32.5	32.5		32.5			22.5	25.0			25.0	
Total Split (s)	32.5	32.5		32.5			22.5	58.0			45.0	
Total Split (%)	32.5%	32.5%		32.5%			22.5%	58.0%			45.0%	
Maximum Green (s)	27.2	27.2		27.2			18.5	51.0			38.0	
Yellow Time (s)	3.2	3.2		3.2			3.0	4.4			4.4	
All-Red Time (s)	2.1	2.1		2.1			1.0	2.6			2.6	
Lost Time Adjust (s)		0.0		0.0			0.0	0.0			0.0	
Total Lost Time (s)		5.3		5.3			4.0	7.0			7.0	
Lead/Lag							Lead	Lag			Lag	
Lead-Lag Optimize?							Yes	Yes			Yes	
Vehicle Extension (s)	3.0	3.0		3.0			3.0	3.0			3.0	
Recall Mode	None	None		None			None	C-Min			C-Min	
Walk Time (s)	15.0	15.0		15.0								
Flash Dont Walk (s)	1.0	1.0		1.0								
Pedestrian Calls (#/hr)	0	0		0								
Act Effct Green (s)		5.9		5.9		11.4	88.9	87.8	99.6	93.1	90.6	
Actuated g/C Ratio		0.06		0.06		0.11	0.89	0.88	1.00	0.93	0.91	
v/c Ratio		0.04		0.04		0.01	0.02	0.63	0.00	0.04	0.51	
Control Delay		0.3		44.8		0.0	1.4	6.5	0.0	0.4	1.4	
Queue Delay		0.0		0.0		0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay		0.3		44.8		0.0	1.4	6.5	0.0	0.4	1.4	

Lane Group	Ø1
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	1
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	9.5
Total Split (s)	9.5
Total Split (%)	10%
Maximum Green (s)	5.0
Yellow Time (s)	3.5
All-Red Time (s)	1.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	Yes
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	
Flash Dont Walk (s)	
Pedestrian Calls (#/hr)	
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS		A		D		A	A	A	A	A	A	
Approach Delay		0.3			25.6			6.5			1.4	
Approach LOS		A			C			A			A	
Queue Length 50th (ft)		0		2		0	0	0	0	0	0	
Queue Length 95th (ft)		0		14		0	2	506	0	m0	5	
Internal Link Dist (ft)		104			280			569			438	
Turn Bay Length (ft)						100	115			600		
Base Capacity (vph)		554		506		505	509	3107	1583	121	3205	
Starvation Cap Reductn		0		0		0	0	0	0	0	0	
Spillback Cap Reductn		0		0		0	0	0	0	0	0	
Storage Cap Reductn		0		0		0	0	0	0	0	0	
Reduced v/c Ratio		0.01		0.01		0.01	0.01	0.63	0.00	0.04	0.51	

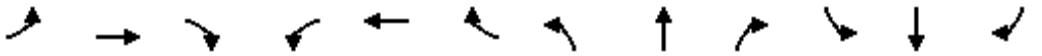
Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 41.5 (42%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.63			
Intersection Signal Delay: 4.2		Intersection LOS: A	
Intersection Capacity Utilization 71.8%		ICU Level of Service C	
Analysis Period (min) 15			

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

Splits and Phases: 16: Route 104 & 778 Long Ridge Road Driveway/777 Long Ridge Road Driveway

Lane Group	Ø1
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary



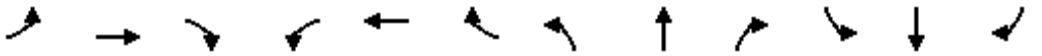
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	0	5	4	0	3	5	1790	4	5	1499	3
Future Volume (vph)	3	0	5	4	0	3	5	1790	4	5	1499	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.3		5.3		4.5	4.0	7.0	4.5	4.5	7.0	
Lane Util. Factor		1.00		1.00		1.00	1.00	0.95	1.00	1.00	0.95	
Frt		0.92		1.00		0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.98		0.95		1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1674		1770		1583	1770	3539	1583	1770	3538	
Flt Permitted		0.98		1.00		1.00	0.13	1.00	1.00	0.07	1.00	
Satd. Flow (perm)		1674		1863		1583	250	3539	1583	131	3538	
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)	3	0	5	4	0	3	5	1946	4	5	1629	3
RTOR Reduction (vph)	0	8	0	0	0	3	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	4	0	0	5	1946	4	5	1632	0
Turn Type	Perm	NA		D.Pm		custom	pm+pt	NA	custom	custom	NA	
Protected Phases		4				1 4	5	2	1 2 5		6	
Permitted Phases	4			4			2		4 6	1 6		
Actuated Green, G (s)		2.6		2.6		10.8	78.8	77.7	85.5	82.9	80.0	
Effective Green, g (s)		2.6		2.6		5.5	78.8	77.7	85.5	82.9	80.0	
Actuated g/C Ratio		0.03		0.03		0.06	0.79	0.78	0.86	0.83	0.80	
Clearance Time (s)		5.3		5.3			4.0	7.0			7.0	
Vehicle Extension (s)		3.0		3.0			3.0	3.0			3.0	
Lane Grp Cap (vph)		43		48		87	213	2749	1353	108	2830	
v/s Ratio Prot						0.00	0.00	c0.55	0.00		0.46	
v/s Ratio Perm		0.00		c0.00			0.02		0.00	c0.04		
v/c Ratio		0.00		0.08		0.00	0.02	0.71	0.00	0.05	0.58	
Uniform Delay, d1		47.4		47.5		44.7	2.7	5.5	1.1	1.5	3.7	
Progression Factor		1.00		1.00		1.00	1.00	1.00	1.00	0.04	0.35	
Incremental Delay, d2		0.0		0.7		0.0	0.0	1.6	0.0	0.1	0.6	
Delay (s)		47.5		48.3		44.7	2.7	7.1	1.1	0.2	1.9	
Level of Service		D		D		D	A	A	A	A	A	
Approach Delay (s)		47.5			46.7			7.1			1.9	
Approach LOS		D			D			A			A	

Intersection Summary			
HCM 2000 Control Delay	4.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.8
Intersection Capacity Utilization	71.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Appendix E

Intersection Capacity Analysis Worksheets
Midday Saturday Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	1	0	4	1	782	6	2	760	0
Future Volume (vph)	0	0	0	1	0	4	1	782	6	2	760	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	150		0	125		165
Storage Lanes	1		0	0		0	1		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Frt					0.892			0.999				
Flt Protected					0.990		0.950			0.950		
Satd. Flow (prot)	1863	1863	0	0	1645	0	1770	3536	0	1770	3539	1863
Flt Permitted							0.334			0.330		
Satd. Flow (perm)	1863	1863	0	0	1662	0	622	3536	0	615	3539	1863
Right Turn on Red			Yes			No			Yes			Yes
Satd. Flow (RTOR)								2				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		154			229			333			361	
Travel Time (s)		3.5			5.2			7.6			8.2	
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
Adj. Flow (vph)	0	0	0	1	0	4	1	850	7	2	826	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	5	0	1	857	0	2	826	0
Turn Type	Perm			Perm	NA		D.P+P	NA		Perm	NA	Perm
Protected Phases		4			4		1	1 2			2	
Permitted Phases	4			4			2			2		2
Detector Phase	4	4		4	4		1	1 2		2	2	2
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		3.0			15.0	15.0	15.0
Minimum Split (s)	27.0	27.0		27.0	27.0		7.5			47.0	47.0	47.0
Total Split (s)	27.0	27.0		27.0	27.0		9.0			64.0	64.0	64.0
Total Split (%)	27.0%	27.0%		27.0%	27.0%		9.0%			64.0%	64.0%	64.0%
Maximum Green (s)	21.1	21.1		21.1	21.1		5.0			57.1	57.1	57.1
Yellow Time (s)	3.3	3.3		3.3	3.3		3.0			4.4	4.4	4.4
All-Red Time (s)	2.6	2.6		2.6	2.6		1.0			2.5	2.5	2.5
Lost Time Adjust (s)	0.0	0.0			0.0		0.0			0.0	0.0	0.0
Total Lost Time (s)	5.9	5.9			5.9		4.0			6.9	6.9	6.9
Lead/Lag							Lead			Lag	Lag	Lag
Lead-Lag Optimize?							Yes			Yes	Yes	Yes
Vehicle Extension (s)	1.5	1.5		1.5	1.5		2.0			3.0	3.0	3.0
Recall Mode	None	None		None	None		None			C-Min	C-Min	C-Min
Walk Time (s)	20.0	20.0		20.0	20.0							
Flash Dont Walk (s)	1.0	1.0		1.0	1.0							
Pedestrian Calls (#/hr)	0	0		0	0							
Act Effct Green (s)					5.1		89.8	97.0		78.3	78.3	
Actuated g/C Ratio					0.05		0.90	0.97		0.78	0.78	
v/c Ratio					0.06		0.00	0.25		0.00	0.30	
Control Delay					46.8		1.0	0.6		4.5	3.7	
Queue Delay					0.0		0.0	0.0		0.0	0.2	
Total Delay					46.8		1.0	0.6		4.5	3.9	

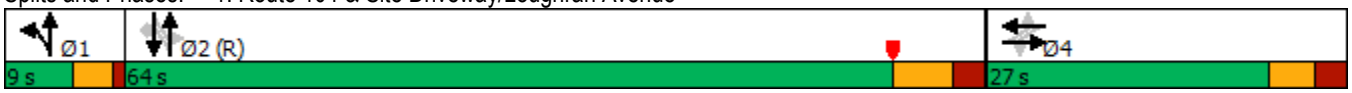
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS					D		A	A		A	A	
Approach Delay					46.8			0.6			3.9	
Approach LOS					D			A			A	
Queue Length 50th (ft)					3		0	0		0	55	
Queue Length 95th (ft)					15		1	48		m1	67	
Internal Link Dist (ft)		74			149			253			281	
Turn Bay Length (ft)							150			125		
Base Capacity (vph)					350		656	3428		481	2772	
Starvation Cap Reductn					0		0	0		0	989	
Spillback Cap Reductn					0		0	0		0	0	
Storage Cap Reductn					0		0	0		0	0	
Reduced v/c Ratio					0.01		0.00	0.25		0.00	0.46	

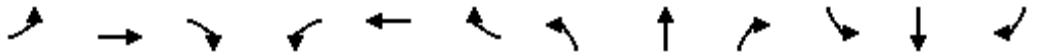
Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 97.5 (98%), Referenced to phase 2:NBSB and 6:, Start of Yellow
Natural Cycle: 85
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.30
Intersection Signal Delay: 2.3 Intersection LOS: A
Intersection Capacity Utilization 35.8% ICU Level of Service A
Analysis Period (min) 15

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

Splits and Phases: 1: Route 104 & Site Driveway/Loughran Avenue





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	1	0	4	1	782	6	2	760	0
Future Volume (vph)	0	0	0	1	0	4	1	782	6	2	760	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					5.9		4.0	4.0		6.9	6.9	
Lane Util. Factor					1.00		1.00	0.95		1.00	0.95	
Frt					0.89		1.00	1.00		1.00	1.00	
Flt Protected					0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)					1645		1770	3535		1770	3539	
Flt Permitted					1.00		0.33	1.00		0.33	1.00	
Satd. Flow (perm)					1662		621	3535		615	3539	
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	0	0	1	0	4	1	850	7	2	826	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	5	0	1	857	0	2	826	0
Turn Type	Perm			Perm	NA		D.P+P	NA		Perm	NA	Perm
Protected Phases		4			4		1	1 2			2	
Permitted Phases	4			4			2			2		2
Actuated Green, G (s)					1.1		82.1	86.1		73.6	73.6	
Effective Green, g (s)					1.1		82.1	86.1		73.6	73.6	
Actuated g/C Ratio					0.01		0.82	0.86		0.74	0.74	
Clearance Time (s)					5.9		4.0			6.9	6.9	
Vehicle Extension (s)					1.5		2.0			3.0	3.0	
Lane Grp Cap (vph)					18		607	3043		452	2604	
v/s Ratio Prot							0.00	c0.24			c0.23	
v/s Ratio Perm					c0.00		0.00			0.00		
v/c Ratio					0.28		0.00	0.28		0.00	0.32	
Uniform Delay, d1					49.1		1.6	1.3		3.5	4.5	
Progression Factor					1.00		1.00	1.00		0.97	0.87	
Incremental Delay, d2					3.0		0.0	0.0		0.0	0.3	
Delay (s)					52.1		1.6	1.3		3.4	4.3	
Level of Service					D		A	A		A	A	
Approach Delay (s)		0.0			52.1			1.3			4.3	
Approach LOS		A			D			A			A	

Intersection Summary			
HCM 2000 Control Delay	2.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.32		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.8
Intersection Capacity Utilization	35.8%	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)	36	0	37	1	0	4	44	782	6	2	760	43
Future Volume (vph)	36	0	37	1	0	4	44	782	6	2	760	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	150		0	125		165
Storage Lanes	1		0	0		0	1		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Frt		0.850			0.892			0.999				0.850
Flt Protected	0.950				0.990		0.950			0.950		
Satd. Flow (prot)	1770	1583	0	0	1645	0	1770	3536	0	1770	3539	1583
Flt Permitted	0.754				0.920		0.319			0.330		
Satd. Flow (perm)	1405	1583	0	0	1529	0	594	3536	0	615	3539	1583
Right Turn on Red			Yes			No			Yes			Yes
Satd. Flow (RTOR)		238						2				75
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		154			229			333			361	
Travel Time (s)		3.5			5.2			7.6			8.2	
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
Adj. Flow (vph)	39	0	40	1	0	4	48	850	7	2	826	47
Shared Lane Traffic (%)												
Lane Group Flow (vph)	39	40	0	0	5	0	48	857	0	2	826	47
Turn Type	Perm	NA		Perm	NA		D.P+P	NA		Perm	NA	Perm
Protected Phases		4			4		1	1 2			2	
Permitted Phases	4			4			2			2		2
Detector Phase	4	4		4	4		1	1 2		2	2	2
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		3.0			15.0	15.0	15.0
Minimum Split (s)	27.0	27.0		27.0	27.0		7.5			47.0	47.0	47.0
Total Split (s)	27.0	27.0		27.0	27.0		9.0			64.0	64.0	64.0
Total Split (%)	27.0%	27.0%		27.0%	27.0%		9.0%			64.0%	64.0%	64.0%
Maximum Green (s)	21.1	21.1		21.1	21.1		5.0			57.1	57.1	57.1
Yellow Time (s)	3.3	3.3		3.3	3.3		3.0			4.4	4.4	4.4
All-Red Time (s)	2.6	2.6		2.6	2.6		1.0			2.5	2.5	2.5
Lost Time Adjust (s)	0.0	0.0			0.0		0.0			0.0	0.0	0.0
Total Lost Time (s)	5.9	5.9			5.9		4.0			6.9	6.9	6.9
Lead/Lag							Lead			Lag	Lag	Lag
Lead-Lag Optimize?							Yes			Yes	Yes	Yes
Vehicle Extension (s)	1.5	1.5		1.5	1.5		2.0			3.0	3.0	3.0
Recall Mode	None	None		None	None		None			C-Min	C-Min	C-Min
Walk Time (s)	20.0	20.0		20.0	20.0							
Flash Dont Walk (s)	1.0	1.0		1.0	1.0							
Pedestrian Calls (#/hr)	0	0		0	0							
Act Effct Green (s)	7.0	7.0			7.0		81.2	86.0		66.6	66.6	66.6
Actuated g/C Ratio	0.07	0.07			0.07		0.81	0.86		0.67	0.67	0.67
v/c Ratio	0.40	0.12			0.05		0.08	0.28		0.00	0.35	0.04
Control Delay	55.4	0.7			42.6		2.1	2.1		8.5	9.0	1.4
Queue Delay	0.0	0.0			0.0		0.0	0.0		0.0	0.1	0.0
Total Delay	55.4	0.7			42.6		2.1	2.1		8.5	9.1	1.4

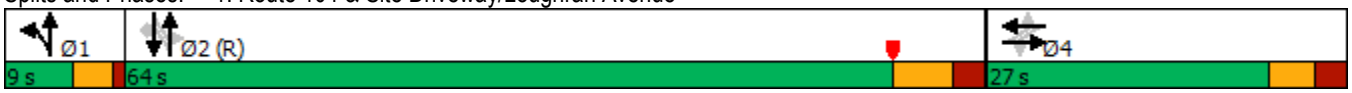
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	E	A			D		A	A		A	A	A
Approach Delay		27.7			42.6			2.1			8.7	
Approach LOS		C			D			A			A	
Queue Length 50th (ft)	24	0			3		4	43		1	139	2
Queue Length 95th (ft)	57	0			14		11	74		m1	65	4
Internal Link Dist (ft)		74			149			253			281	
Turn Bay Length (ft)							150			125		165
Base Capacity (vph)	296	521			322		620	3042		409	2357	1079
Starvation Cap Reductn	0	0			0		0	0		0	585	0
Spillback Cap Reductn	0	0			0		0	0		0	0	0
Storage Cap Reductn	0	0			0		0	0		0	0	0
Reduced v/c Ratio	0.13	0.08			0.02		0.08	0.28		0.00	0.47	0.04

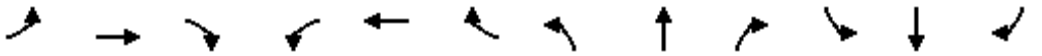
Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 97.5 (98%), Referenced to phase 2:NBSB and 6:, Start of Yellow
Natural Cycle: 85
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.40
Intersection Signal Delay: 6.4 Intersection LOS: A
Intersection Capacity Utilization 52.3% ICU Level of Service A
Analysis Period (min) 15

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

Splits and Phases: 1: Route 104 & Site Driveway/Loughran Avenue





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	0	37	1	0	4	44	782	6	2	760	43
Future Volume (vph)	36	0	37	1	0	4	44	782	6	2	760	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.9	5.9			5.9		4.0	4.0		6.9	6.9	6.9
Lane Util. Factor	1.00	1.00			1.00		1.00	0.95		1.00	0.95	1.00
Frt	1.00	0.85			0.89		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00			0.99		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1583			1645		1770	3535		1770	3539	1583
Flt Permitted	0.75	1.00			0.92		0.32	1.00		0.33	1.00	1.00
Satd. Flow (perm)	1405	1583			1528		595	3535		615	3539	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)	39	0	40	1	0	4	48	850	7	2	826	47
RTOR Reduction (vph)	0	38	0	0	0	0	0	0	0	0	0	16
Lane Group Flow (vph)	39	2	0	0	5	0	48	857	0	2	826	31
Turn Type	Perm	NA		Perm	NA		D.P+P	NA		Perm	NA	Perm
Protected Phases		4			4		1	1 2			2	
Permitted Phases	4			4			2			2		2
Actuated Green, G (s)	6.0	6.0			6.0		77.2	81.2		65.5	65.5	65.5
Effective Green, g (s)	6.0	6.0			6.0		77.2	81.2		65.5	65.5	65.5
Actuated g/C Ratio	0.06	0.06			0.06		0.77	0.81		0.66	0.66	0.66
Clearance Time (s)	5.9	5.9			5.9		4.0			6.9	6.9	6.9
Vehicle Extension (s)	1.5	1.5			1.5		2.0			3.0	3.0	3.0
Lane Grp Cap (vph)	84	94			91		596	2870		402	2318	1036
v/s Ratio Prot		0.00					0.01	c0.24			c0.23	
v/s Ratio Perm	c0.03				0.00		0.05			0.00		0.02
v/c Ratio	0.46	0.03			0.05		0.08	0.30		0.00	0.36	0.03
Uniform Delay, d1	45.4	44.2			44.3		2.8	2.3		6.0	7.8	6.1
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.01	0.99	1.42
Incremental Delay, d2	1.5	0.0			0.1		0.0	0.0		0.0	0.4	0.1
Delay (s)	46.9	44.3			44.4		2.8	2.4		6.0	8.1	8.7
Level of Service	D	D			D		A	A		A	A	A
Approach Delay (s)		45.6			44.4			2.4			8.1	
Approach LOS		D			D			A			A	

Intersection Summary			
HCM 2000 Control Delay	7.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.8
Intersection Capacity Utilization	52.3%	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)	37	0	37	1	0	4	43	782	6	2	760	42
Future Volume (vph)	37	0	37	1	0	4	43	782	6	2	760	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	150		0	125		165
Storage Lanes	1		0	0		0	1		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Frt		0.850			0.892			0.999				0.850
Flt Protected	0.950				0.990		0.950			0.950		
Satd. Flow (prot)	1770	1583	0	0	1645	0	1770	3536	0	1770	3539	1583
Flt Permitted	0.754				0.920		0.319			0.330		
Satd. Flow (perm)	1405	1583	0	0	1529	0	594	3536	0	615	3539	1583
Right Turn on Red			Yes			No			Yes			Yes
Satd. Flow (RTOR)		238						2				75
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		154			229			333			361	
Travel Time (s)		3.5			5.2			7.6			8.2	
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
Adj. Flow (vph)	40	0	40	1	0	4	47	850	7	2	826	46
Shared Lane Traffic (%)												
Lane Group Flow (vph)	40	40	0	0	5	0	47	857	0	2	826	46
Turn Type	Perm	NA		Perm	NA		D.P+P	NA		Perm	NA	Perm
Protected Phases		4			4		1	1 2			2	
Permitted Phases	4			4			2			2		2
Detector Phase	4	4		4	4		1	1 2		2	2	2
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		3.0			15.0	15.0	15.0
Minimum Split (s)	27.0	27.0		27.0	27.0		7.5			47.0	47.0	47.0
Total Split (s)	27.0	27.0		27.0	27.0		9.0			64.0	64.0	64.0
Total Split (%)	27.0%	27.0%		27.0%	27.0%		9.0%			64.0%	64.0%	64.0%
Maximum Green (s)	21.1	21.1		21.1	21.1		5.0			57.1	57.1	57.1
Yellow Time (s)	3.3	3.3		3.3	3.3		3.0			4.4	4.4	4.4
All-Red Time (s)	2.6	2.6		2.6	2.6		1.0			2.5	2.5	2.5
Lost Time Adjust (s)	0.0	0.0			0.0		0.0			0.0	0.0	0.0
Total Lost Time (s)	5.9	5.9			5.9		4.0			6.9	6.9	6.9
Lead/Lag							Lead			Lag	Lag	Lag
Lead-Lag Optimize?							Yes			Yes	Yes	Yes
Vehicle Extension (s)	1.5	1.5		1.5	1.5		2.0			3.0	3.0	3.0
Recall Mode	None	None		None	None		None			C-Min	C-Min	C-Min
Walk Time (s)	20.0	20.0		20.0	20.0							
Flash Dont Walk (s)	1.0	1.0		1.0	1.0							
Pedestrian Calls (#/hr)	0	0		0	0							
Act Effct Green (s)	7.1	7.1			7.1		81.2	86.0		66.5	66.5	66.5
Actuated g/C Ratio	0.07	0.07			0.07		0.81	0.86		0.66	0.66	0.66
v/c Ratio	0.40	0.12			0.05		0.08	0.28		0.00	0.35	0.04
Control Delay	55.5	0.7			42.6		2.1	2.1		8.5	9.0	1.3
Queue Delay	0.0	0.0			0.0		0.0	0.0		0.0	0.1	0.0
Total Delay	55.5	0.7			42.6		2.1	2.1		8.5	9.1	1.3

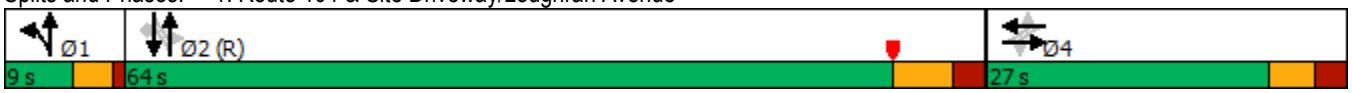
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	E	A			D		A	A		A	A	A
Approach Delay		28.1			42.6			2.1			8.7	
Approach LOS		C			D			A			A	
Queue Length 50th (ft)	25	0			3		4	44		1	140	2
Queue Length 95th (ft)	57	0			14		11	75		m1	64	3
Internal Link Dist (ft)		74			149			253			281	
Turn Bay Length (ft)							150			125		165
Base Capacity (vph)	296	521			322		620	3039		409	2353	1077
Starvation Cap Reductn	0	0			0		0	0		0	582	0
Spillback Cap Reductn	0	0			0		0	0		0	0	0
Storage Cap Reductn	0	0			0		0	0		0	0	0
Reduced v/c Ratio	0.14	0.08			0.02		0.08	0.28		0.00	0.47	0.04

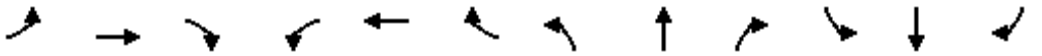
Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 97.5 (98%), Referenced to phase 2:NBSB and 6:, Start of Yellow
Natural Cycle: 85
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.40
Intersection Signal Delay: 6.4 Intersection LOS: A
Intersection Capacity Utilization 51.7% ICU Level of Service A
Analysis Period (min) 15

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

Splits and Phases: 1: Route 104 & Site Driveway/Loughran Avenue





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	37	0	37	1	0	4	43	782	6	2	760	42
Future Volume (vph)	37	0	37	1	0	4	43	782	6	2	760	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.9	5.9			5.9		4.0	4.0		6.9	6.9	6.9
Lane Util. Factor	1.00	1.00			1.00		1.00	0.95		1.00	0.95	1.00
Frt	1.00	0.85			0.89		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00			0.99		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1583			1645		1770	3535		1770	3539	1583
Flt Permitted	0.75	1.00			0.92		0.32	1.00		0.33	1.00	1.00
Satd. Flow (perm)	1405	1583			1528		594	3535		615	3539	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)	40	0	40	1	0	4	47	850	7	2	826	46
RTOR Reduction (vph)	0	38	0	0	0	0	0	0	0	0	0	16
Lane Group Flow (vph)	40	2	0	0	5	0	47	857	0	2	826	30
Turn Type	Perm	NA		Perm	NA		D.P+P	NA		Perm	NA	Perm
Protected Phases		4			4		1	1 2			2	
Permitted Phases	4			4			2			2		2
Actuated Green, G (s)	6.1	6.1			6.1		77.1	81.1		65.3	65.3	65.3
Effective Green, g (s)	6.1	6.1			6.1		77.1	81.1		65.3	65.3	65.3
Actuated g/C Ratio	0.06	0.06			0.06		0.77	0.81		0.65	0.65	0.65
Clearance Time (s)	5.9	5.9			5.9		4.0			6.9	6.9	6.9
Vehicle Extension (s)	1.5	1.5			1.5		2.0			3.0	3.0	3.0
Lane Grp Cap (vph)	85	96			93		596	2866		401	2310	1033
v/s Ratio Prot		0.00					0.01	c0.24			c0.23	
v/s Ratio Perm	c0.03				0.00		0.05			0.00		0.02
v/c Ratio	0.47	0.03			0.05		0.08	0.30		0.00	0.36	0.03
Uniform Delay, d1	45.4	44.2			44.2		2.8	2.4		6.0	7.9	6.1
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.01	0.99	1.33
Incremental Delay, d2	1.5	0.0			0.1		0.0	0.0		0.0	0.4	0.0
Delay (s)	46.9	44.2			44.3		2.8	2.4		6.1	8.2	8.2
Level of Service	D	D			D		A	A		A	A	A
Approach Delay (s)		45.5			44.3			2.4			8.2	
Approach LOS		D			D			A			A	

Intersection Summary			
HCM 2000 Control Delay	7.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.8
Intersection Capacity Utilization	51.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Appendix F

Turning Movement Count (TMC) Data

Connecticut Counts LLC
Kensington, Connecticut 06037
(860) 828-1693

Long Ridge Road at 777 Long Ridge Road
Stamford, Connecticut

File Name : 25437b
Site Code : 25437
Start Date : 5/2/2024

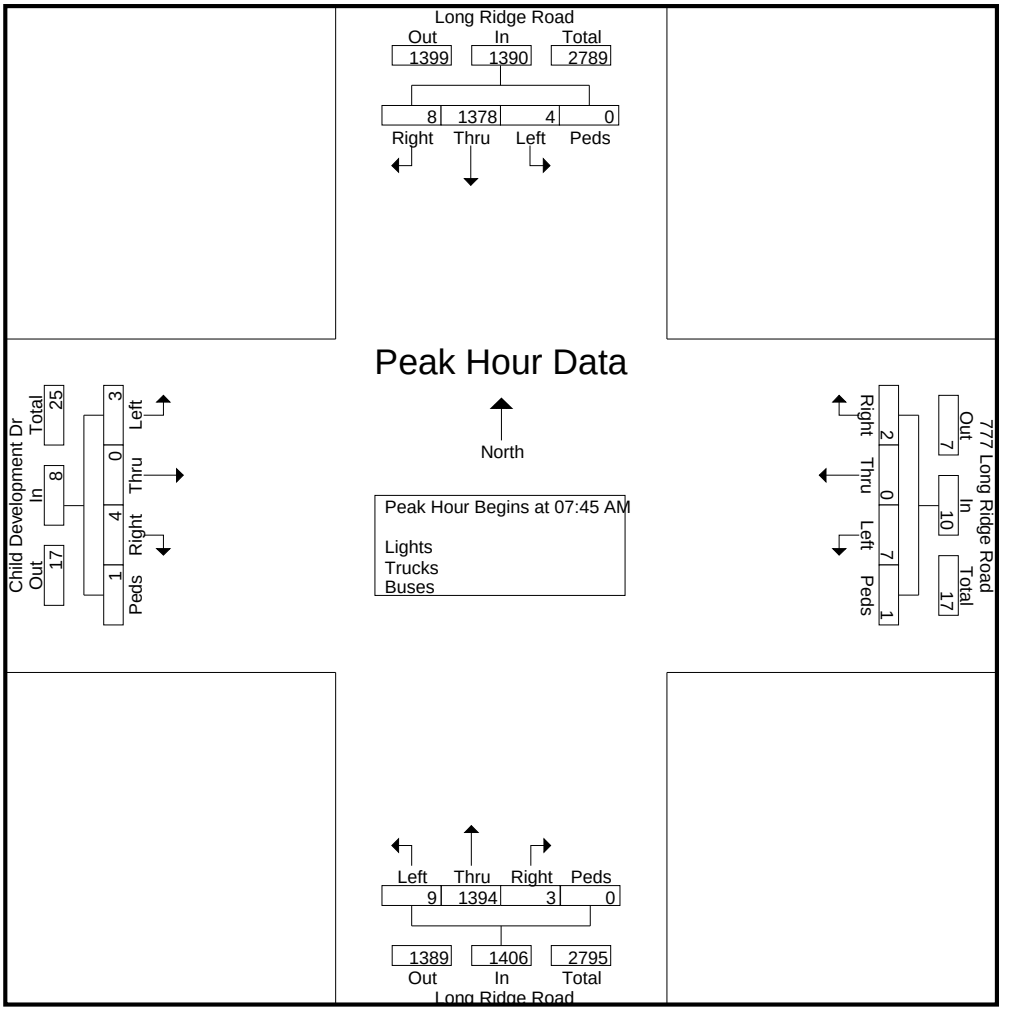
Groups Printed- Lights - Trucks - Buses

	Long Ridge Road From North					777 Long Ridge Road From East					Long Ridge Road From South					Child Development Dr From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	4	336	0	0	340	2	0	0	0	2	0	186	3	0	189	1	1	1	0	3	534
07:15 AM	2	281	2	0	285	1	0	2	0	3	1	286	1	0	288	3	0	1	0	4	580
07:30 AM	4	365	3	0	372	2	0	0	0	2	0	309	0	0	309	0	0	0	0	0	683
07:45 AM	2	365	0	0	367	2	0	2	0	4	0	390	2	0	392	1	0	0	0	1	764
Total	12	1347	5	0	1364	7	0	4	0	11	1	1171	6	0	1178	5	1	2	0	8	2561
08:00 AM	2	322	3	0	327	0	0	0	0	0	1	351	3	0	355	0	0	0	1	1	683
08:15 AM	0	337	0	0	337	0	0	2	0	2	0	329	1	0	330	0	0	0	0	0	669
08:30 AM	4	354	1	0	359	0	0	3	1	4	2	324	3	0	329	3	0	3	0	6	698
08:45 AM	2	299	1	0	302	0	0	1	0	1	1	302	2	0	305	1	0	1	0	2	610
Total	8	1312	5	0	1325	0	0	6	1	7	4	1306	9	0	1319	4	0	4	1	9	2660
Grand Total	20	2659	10	0	2689	7	0	10	1	18	5	2477	15	0	2497	9	1	6	1	17	5221
Apprch %	0.7	98.9	0.4	0		38.9	0	55.6	5.6		0.2	99.2	0.6	0		52.9	5.9	35.3	5.9		
Total %	0.4	50.9	0.2	0	51.5	0.1	0	0.2	0	0.3	0.1	47.4	0.3	0	47.8	0.2	0	0.1	0	0.3	
Lights	20	2620										2422									
% Lights	100	98.5	100	0	98.5	100	0	100	100	100	100	97.8	100	0	97.8	100	100	100	100	100	98.2
Trucks	0	10	0	0	10	0	0	0	0	0	0	12	0	0	12	0	0	0	0	0	22
% Trucks	0	0.4	0	0	0.4	0	0	0	0	0	0	0.5	0	0	0.5	0	0	0	0	0	0.4
Buses	0	29	0	0	29	0	0	0	0	0	0	43	0	0	43	0	0	0	0	0	72
% Buses	0	1.1	0	0	1.1	0	0	0	0	0	0	1.7	0	0	1.7	0	0	0	0	0	1.4

Connecticut Counts LLC
Kensington, Connecticut 06037
(860) 828-1693

File Name : 25437b
Site Code : 25437
Start Date : 5/2/2024
Page No : 2

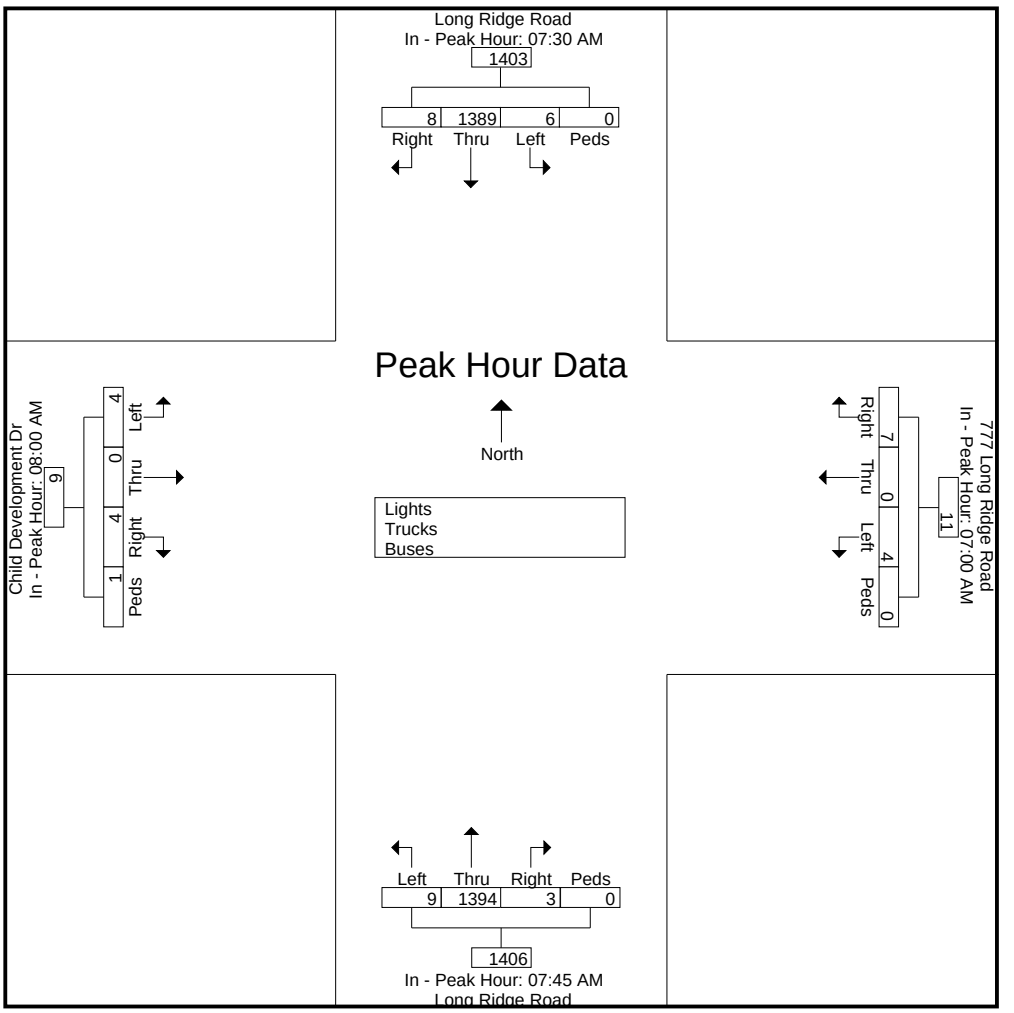
	Long Ridge Road From North					777 Long Ridge Road From East					Long Ridge Road From South					Child Development Dr From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45 AM																					
07:45 AM	2	365	0	0	367	2	0	2	0	4	0	390	2	0	392	1	0	0	0	1	764
08:00 AM	2	322	3	0	327	0	0	0	0	0	1	351	3	0	355	0	0	0	1	1	683
08:15 AM	0	337	0	0	337	0	0	2	0	2	0	329	1	0	330	0	0	0	0	0	669
08:30 AM	4	354	1	0	359	0	0	3	1	4	2	324	3	0	329	3	0	3	0	6	698
Total Volume	8	1378	4	0	1390	2	0	7	1	10	3	1394	9	0	1406	4	0	3	1	8	2814
% App. Total	0.6	99.1	0.3	0		20	0	70	10		0.2	99.1	0.6	0		50	0	37.5	12.5		
PHF	.500	.944	.333	.000	.947	.250	.000	.583	.250	.625	.375	.894	.750	.000	.897	.333	.000	.250	.250	.333	.921



Connecticut Counts LLC
Kensington, Connecticut 06037
(860) 828-1693

File Name : 25437b
Site Code : 25437
Start Date : 5/2/2024
Page No : 3

Start Time	Long Ridge Road From North					777 Long Ridge Road From East					Long Ridge Road From South					Child Development Dr From West					
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Each Approach Begins at:																					
	07:30 AM					07:00 AM					07:45 AM					08:00 AM					
+0 mins.	4	365	3	0	372	2	0	0	0	2	0	390	2	0	392	0	0	0	1	1	
+15 mins.	2	365	0	0	367	1	0	2	0	3	1	351	3	0	355	0	0	0	0	0	
+30 mins.	2	322	3	0	327	2	0	0	0	2	0	329	1	0	330	3	0	3	0	6	
+45 mins.	0	337	0	0	337	2	0	2	0	4	2	324	3	0	329	1	0	1	0	2	
Total Volume	8	1389	6	0	1403	7	0	4	0	11	3	1394	9	0	1406	4	0	4	1	9	
% App. Total	0.6	99	0.4	0		63.6	0	36.4	0		0.2	99.1	0.6	0		44.4	0	44.4	11.1		
PHF	.500	.951	.500	.000	.943	.875	.000	.500	.000	.688	.375	.894	.750	.000	.897	.333	.000	.333	.250	.375	



Connecticut Counts LLC
Kensington, Connecticut 06037
(860) 828-1693

Long Ridge Road at 777 Long Ridge Road
Stamford, Connecticut

File Name : 25438
Site Code : 25438
Start Date : 5/1/2024
Page No : 1

Groups Printed- Lights - Trucks - Buses

	Long Ridge Road From North					777 Long Ridge Road From East					Long Ridge Road From South					Child Development Dr From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	0	268	1	0	269	1	0	0	1	2	0	251	1	0	252	1	0	2	0	3	526
04:15 PM	1	273	1	0	275	2	0	0	0	2	0	313	3	0	316	1	0	1	0	2	595
04:30 PM	0	332	1	0	333	2	0	1	0	3	0	366	2	0	368	3	0	2	0	5	709
04:45 PM	0	252	1	0	253	0	0	0	0	0	2	298	1	0	301	2	0	1	0	3	557
Total	1	1125	4	0	1130	5	0	1	1	7	2	1228	7	0	1237	7	0	6	0	13	2387
05:00 PM	1	386	3	0	390	3	0	0	1	4	2	397	0	1	400	1	0	1	0	2	796
05:15 PM	1	392	1	0	394	0	0	2	0	2	1	345	1	0	347	1	0	1	0	2	745
05:30 PM	0	333	1	0	334	0	0	2	0	2	0	372	4	0	376	1	0	0	0	1	713
05:45 PM	1	282	0	0	283	0	0	0	0	0	1	275	0	0	276	2	0	1	0	3	562
Total	3	1393	5	0	1401	3	0	4	1	8	4	1389	5	1	1399	5	0	3	0	8	2816
Grand Total	4	2518	9	0	2531	8	0	5	2	15	6	2617	12	1	2636	12	0	9	0	21	5203
Apprch %	0.2	99.5	0.4	0		53.3	0	33.3	13.3		0.2	99.3	0.5	0		57.1	0	42.9	0		
Total %	0.1	48.4	0.2	0	48.6	0.2	0	0.1	0	0.3	0.1	50.3	0.2	0	50.7	0.2	0	0.2	0	0.4	
Lights	4	2484										2599									
% Lights	100	98.6	100	0	98.7	100	0	100	100	100	100	99.3	100	100	99.3	100	0	100	0	100	99
Trucks	0	15	0	0	15	0	0	0	0	0	0	11	0	0	11	0	0	0	0	0	26
% Trucks	0	0.6	0	0	0.6	0	0	0	0	0	0	0.4	0	0	0.4	0	0	0	0	0	0.5
Buses	0	19	0	0	19	0	0	0	0	0	0	7	0	0	7	0	0	0	0	0	26
% Buses	0	0.8	0	0	0.8	0	0	0	0	0	0	0.3	0	0	0.3	0	0	0	0	0	0.5

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Kensington, Connecticut 06037
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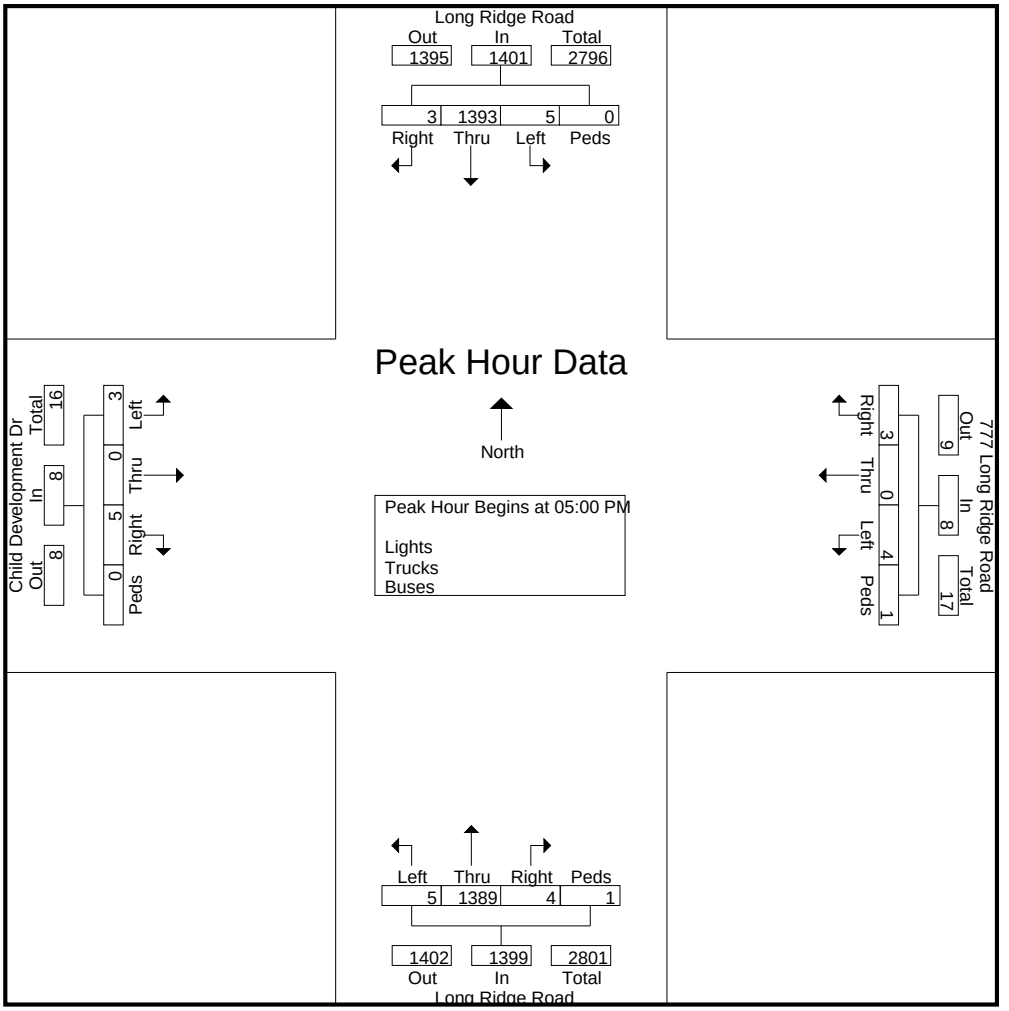
File Name : 25438
Site Code : 25438
Start Date : 5/1/2024
Page No : 2

	Long Ridge Road From North					777 Long Ridge Road From East					Long Ridge Road From South					Child Development Dr From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	1	386	3	0	390	3	0	0	1	4	2	397	0	1	400	1	0	1	0	2	796
05:15 PM	1	392	1	0	394	0	0	2	0	2	1	345	1	0	347	1	0	1	0	2	745
05:30 PM	0	333	1	0	334	0	0	2	0	2	0	372	4	0	376	1	0	0	0	1	713
05:45 PM	1	282	0	0	283	0	0	0	0	0	1	275	0	0	276	2	0	1	0	3	562
Total Volume	3	1393	5	0	1401	3	0	4	1	8	4	1389	5	1	1399	5	0	3	0	8	2816
% App. Total	0.2	99.4	0.4	0		37.5	0	50	12.5		0.3	99.3	0.4	0.1		62.5	0	37.5	0		
PHF	.750	.888	.417	.000	.889	.250	.000	.500	.250	.500	.500	.875	.313	.250	.874	.625	.000	.750	.000	.667	.884



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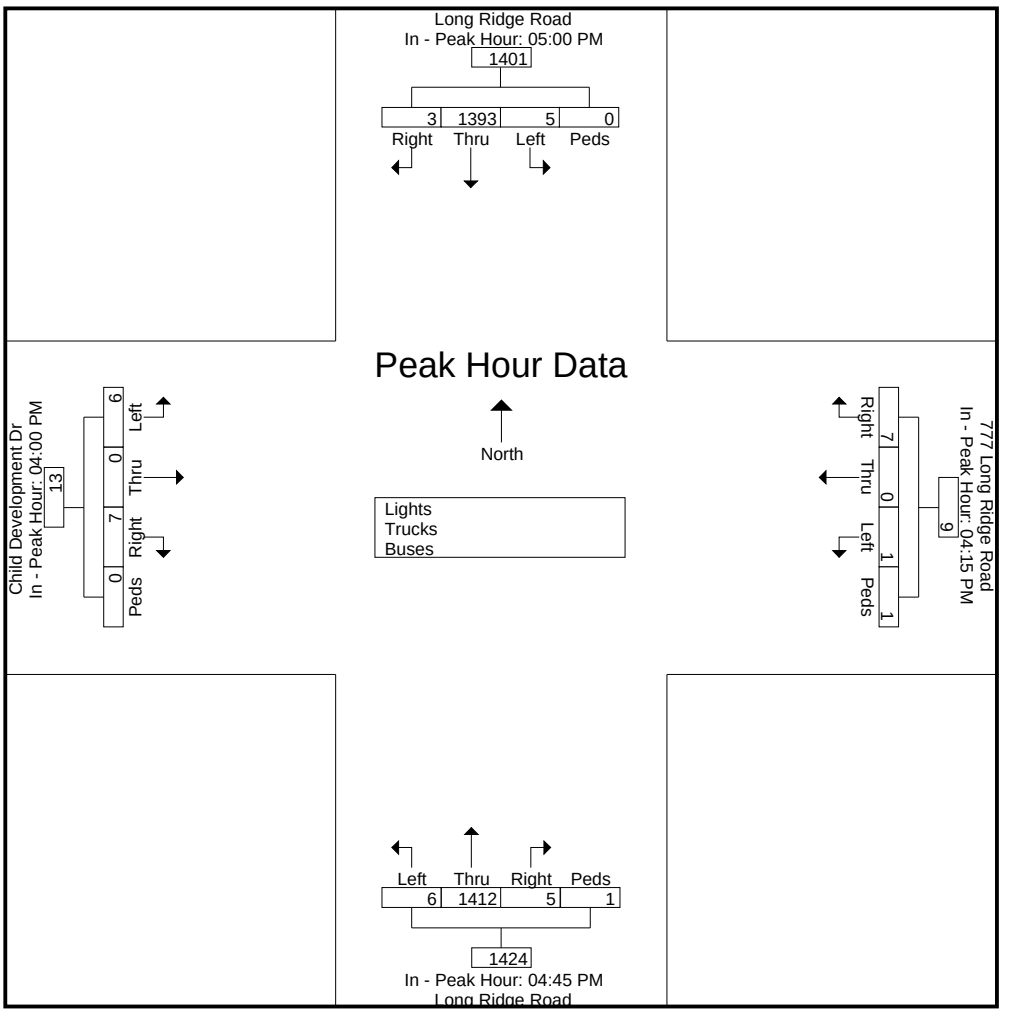
	Long Ridge Road From North					777 Long Ridge Road From East					Long Ridge Road From South					Child Development Dr From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Each Approach Begins at:																					
	05:00 PM					04:15 PM					04:45 PM					04:00 PM					
+0 mins.	1	386	3	0	390	2	0	0	0	2	2	298	1	0	301	1	0	2	0	3	
+15 mins.	1	392	1	0	394	2	0	1	0	3	2	397	0	1	400	1	0	1	0	2	
+30 mins.	0	333	1	0	334	0	0	0	0	0	1	345	1	0	347	3	0	2	0	5	
+45 mins.	1	282	0	0	283	3	0	0	1	4	0	372	4	0	376	2	0	1	0	3	
Total Volume	3	1393	5	0	1401	7	0	1	1	9	5	1412	6	1	1424	7	0	6	0	13	
% App. Total	0.2	99.4	0.4	0		77.8	0	11.1	11.1		0.4	99.2	0.4	0.1		53.8	0	46.2	0		
PHF	.750	.888	.417	.000	.889	.583	.000	.250	.250	.563	.625	.889	.375	.250	.890	.583	.000	.750	.000	.650	



NE TRAFFIC COUNTS

New England Traffic Counts

(413) 579-8366

emayboroda@netrafficcounts.com

www.netrafficcounts.com

CLIENT	Fuss & O'Neill,	**STREET 1**	Long Ridge Road at Loughran Avenue
CITY/TOWN	Stamford, CT	**STREET 2**	Long Ridge Road
WEATHER	Cloudy	**DATE**	04/13/2024
INTERSECTION #	8		

Passenger Cars & Heavy Vehicles Combined

	Long Ridge Road - Northbound				Long Ridge Road - Southbound				800 Long Ridge Road Driveway - Eastbound				Loughran Avenue - Westbound			
Start Time	**U-Turn**	**Left**	**Thru**	**Right**	**U-Turn**	**Left**	**Thru**	**Right**	**U-Turn**	**Left**	**Thru**	**Right**	**U-Turn**	**Left**	**Thru**	**Right**
11:00 AM	0	0	215	0	1	0	170	0	0	0	0	0	0	4	0	1
11:15 AM	0	0	191	2	0	0	173	0	0	0	0	0	0	1	0	0
11:30 AM	0	0	166	1	1	2	162	0	0	0	0	0	0	1	0	0
11:45 AM	0	0	197	1	0	0	199	0	0	0	0	0	0	0	0	0
12:00 PM	0	0	177	3	0	1	169	0	0	0	0	0	0	1	0	1
12:15 PM	0	0	210	2	0	0	209	0	0	0	0	0	0	0	0	2
12:30 PM	0	1	193	0	0	1	178	0	0	0	0	0	0	0	0	1
12:45 PM	0	0	186	3	0	0	179	0	0	0	0	1	0	0	0	0
1:00 PM	0	0	152	1	0	0	167	0	0	0	0	0	0	0	0	0
1:15 PM	0	1	141	2	0	0	154	0	0	0	0	0	0	1	0	0
1:30 PM	0	0	153	2	0	1	150	0	0	0	0	0	0	0	0	2
1:45 PM	0	0	159	0	0	0	177	0	0	0	0	1	0	1	0	0
2:00 PM	0	0	164	3	0	1	178	0	0	0	0	0	0	1	0	1
2:15 PM	0	0	184	0	0	0	177	0	0	0	0	0	0	3	0	2
2:30 PM	0	0	166	1	0	0	183	0	0	0	0	0	0	1	0	0
2:45 PM	0	0	143	0	0	0	207	0	0	0	0	0	0	1	0	0

AM PEAK HOURS 11:45 AM	Long Ridge Road - Northbound				Long Ridge Road - Southbound				800 Long Ridge Road Driveway - Eastbound				Loughran Avenue - Westbound			
	U-Turn	**Left**	**Thru**	**Right**	**U-Turn**	**Left**	**Thru**	**Right**	**U-Turn**	**Left**	**Thru**	**Right**	**U-Turn**	**Left**	**Thru**	**Right**
	0	1	777	6	0	2	755	0	0	0	0	0	0	1	0	4
PHF	#N/A				#N/A				0.00				#N/A			
HV%	0.0%	0.0%	1.7%	0.0%	0.0%	50.0%	0.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	25.0%

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CLIENT	Fuss & O'Neill,	**STREET 1**	Long Ridge Road at Loughran Avenue
CITY/TOWN	Stamford, CT	**STREET 2**	Long Ridge Road
WEATHER	Cloudy	**DATE**	04/13/2024
INTERSECTION #	8		

Heavy Vehicles

	Long Ridge Road - Northbound				Long Ridge Road - Southbound				800 Long Ridge Road Driveway - Eastbound				Loughran Avenue - Westbound			
Start Time	**U-Turn**	**Left**	**Thru**	**Right**	**U-Turn**	**Left**	**Thru**	**Right**	**U-Turn**	**Left**	**Thru**	**Right**	**U-Turn**	**Left**	**Thru**	**Right**
11:00 AM	0	0	3	0	0	0	3	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	3	1	0	0	1	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	1	0	0	0	3	0	0	0	0	0	0	0	0	0
12:00 PM	0	0	4	0	0	0	1	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	3	0	0	0	2	0	0	0	0	0	0	0	0	1
12:30 PM	0	0	5	0	0	1	1	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	3	0	0	0	3	0	0	0	0	0	0	0	0	0
1:00 PM	0	0	1	0	0	0	5	0	0	0	0	0	0	0	0	0
1:15 PM	0	0	4	0	0	0	3	0	0	0	0	0	0	0	0	0
1:30 PM	0	0	5	0	0	0	3	0	0	0	0	0	0	0	0	0
1:45 PM	0	0	5	0	0	0	1	0	0	0	0	0	0	0	0	0
2:00 PM	0	0	1	0	0	0	10	0	0	0	0	0	0	0	0	0
2:15 PM	0	0	0	0	0	0	4	0	0	0	0	0	0	1	0	0
2:30 PM	0	0	1	1	0	0	3	0	0	0	0	0	0	0	0	0
2:45 PM	0	0	2	0	0	0	4	0	0	0	0	0	0	0	0	0

AM PEAK HOURS 11:45 AM	Long Ridge Road - Northbound				Long Ridge Road - Southbound				800 Long Ridge Road Driveway - Eastbound				Loughran Avenue - Westbound			
	U-Turn	**Left**	**Thru**	**Right**	**U-Turn**	**Left**	**Thru**	**Right**	**U-Turn**	**Left**	**Thru**	**Right**	**U-Turn**	**Left**	**Thru**	**Right**
	0	0	13	0	0	1	7	0	0	0	0	0	0	0	0	1

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CLIENT	Fuss & O'Neill,	**STREET 1**	Long Ridge Road at Loughran Avenue
CITY/TOWN	Stamford, CT	**STREET 2**	Long Ridge Road
WEATHER	Cloudy	**DATE**	04/13/2024
INTERSECTION #	8		

Pedestrians and Bicycles

	Long Ridge Road - Northbound				Long Ridge Road - Southbound				800 Long Ridge Road Driveway - Eastbound				Loughran Avenue - Westbound			
Start Time	**Peds**	**Left**	**Thru**	**Right**	**Peds**	**Left**	**Thru**	**Right**	**Peds**	**Left**	**Thru**	**Right**	**Peds**	**Left**	**Thru**	**Right**
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
2:15 PM	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

AM PEAK HOURS	Long Ridge Road - Northbound				Long Ridge Road - Southbound				800 Long Ridge Road Driveway - Eastbound				Loughran Avenue - Westbound			
11:45 AM	**Peds**	**Left**	**Thru**	**Right**	**Peds**	**Left**	**Thru**	**Right**	**Peds**	**Left**	**Thru**	**Right**	**Peds**	**Left**	**Thru**	**Right**
	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0

Appendix G

Crash Data Records

Uconn Crash Data

800 Long Ridge Road Multi-Family Housing
Stamford, Connecticut
January 1, 2014 - December 31, 2023

Date Of Crash	Time of Crash	Severity	No. Of Veh.	No. Of Non-Motorists	Town	Mileage	Roadway	Intersecting Roadway Name	Collision Type	Weather	Light Condition	Road Surface Condition	Contributing Circumstances
01) Route 104 (Long Ridge Road) at Loughran Avenue and Site Driveway													
11/7/2014	21:17:00	PDO	1	0	Stamford	1.84	104-N	Loughran Ave	Moving Object	No Adverse Condition	Dark-Lighted	Dry	Animal or Foreign Object in Road
2/4/2016	2:00:00	PDO	2	0	Stamford	1.9	800 Long Ridge Rd	Loughran Ave	Front to rear	Cloudy	Dark-Lighted	Wet	None
6/22/2016	22:15:00	Possible Injury (C)	2	0	Stamford	1.9	800 Long Ridge Rd	Loughran Ave	Front to rear	Clear	Dark-Lighted	Dry	None
6/29/2016	17:34:00	PDO	2	0	Stamford	1.9	Long Ridge Rd	Loughran Ave	Front to rear	Clear	Daylight	Dry	None
9/8/2016	17:37:00	PDO	2	0	Stamford	1.9	Long Ridge Rd	Loughran Ave	Front to rear	Clear	Daylight	Dry	None
12/21/2016	18:51:00	PDO	2	0	Stamford	1.9	Long Ridge Rd	Loughran Ave	Front to rear	Clear	Dark-Lighted	Dry	Backup Due to Prior Crash
11/22/2017	19:12:00	PDO	1	0	Stamford	1.89	Long Ridge Rd	Unknown	Not Applicable	Clear	Dark-Lighted	Dry	None
11/28/2017	18:55:00	PDO	2	0	Stamford	1.87	800 Long Ridge Rd	Unknown	Front to rear	Clear	Dark-Lighted	Dry	None
8/1/2018	9:24:00	Suspected Minor Injury (B)	2	0	Stamford	1.9	104-N	Unknown	Sideswipe, opposite direction	Cloudy	Daylight	Dry	None
5/17/2018	13:12:00	PDO	2	0	Stamford	1.92	104-N	Unknown	Front to rear	Cloudy	Daylight	Wet	None
9/25/2018	19:39:00	PDO	2	0	Stamford	1.9	104-N	Loughran Ave	Front to rear	Clear	Dark-Lighted	Dry	None
11/24/2021	8:58:00	Suspected Minor Injury (B)	2	0	Stamford	1.9	104-N	Loughran Ave	Front to rear	Clear	Daylight	Dry	None
10/29/2021	16:50:00	Possible Injury (C)	2	0	Stamford	1.91	104-N	Loughran Ave	Front to rear	Clear	Daylight	Dry	None
10/6/2022	15:28:00	Suspected Minor Injury (B)	2	0	Stamford	1.9	104-N	Loughran Ave	Front to rear	Clear	Daylight	Dry	None
2/2/2023	17:25:00	PDO	2	0	Stamford	1.88	104-N	Unknown	Front to rear	Clear	Dark-Lighted	Dry	None
02) Route 104 (Long Ridge Road) at 777 Long Ridge Road Driveway and Private Driveway													
3/7/2014	18:30:00	PDO	1	0	Stamford	1.78	104-N	Loughran Ave	Moving Object	No Adverse Condition	Dark-Lighted	Dry	Animal or Foreign Object in Road
6/19/2014	18:57:00	PDO	2	0	Stamford	1.74	104-N	Loughran Ave	Sideswipe-Same Direction	No Adverse Condition	Daylight	Dry	Improper Lane Change
10/20/2015	14:22:00	PDO	2	0	Stamford	1.7	743 Long Ridge Rd	Barnes Road	Front to rear	Clear	Daylight	Dry	None
3/30/2016	14:00:00	Possible Injury (C)	2	0	Stamford	1.75	778 Long Ridge Rd	Ent To Lng Ridge Office Park	Front to rear	Clear	Daylight	Dry	None
7/14/2017	8:31:00	PDO	2	0	Stamford		778 Long Ridge Rd	Loughran Ave	Front to rear	Rain	Daylight	Wet	Weather Conditions
9/21/2020	12:30:00	PDO	2	0	Stamford		778 Long Ridge Rd	Loughran Ave	Front to rear	Clear	Daylight	Dry	None
5/17/2021	8:54:00	PDO	2	0	Stamford	1.73	104-N	Barnes Road	Sideswipe, same direction	Clear	Daylight	Dry	None
8/20/2021	18:00:00	PDO	2	0	Stamford	1.72	104-N	Loughran Ave	Front to rear	Clear	Daylight	Dry	None
10/16/2021	16:02:00	PDO	2	0	Stamford	1.73	104-N	Loughran Ave	Front to rear	Clear	Daylight	Dry	None
9/15/2022	8:29:00	Possible Injury (C)	2	0	Stamford	1.74	104-N	Barnes Road	Front to rear	Clear	Daylight	Dry	None

Appendix H

OSTA Major Trip Generation Guidelines

October 2023

OSTA MAJOR TRAFFIC GENERATOR TRIP GENERATION GUIDELINES

Trip generation is the estimation of the number and the type of trips associated with the land use(s) proposed by the development. In preparing a trip generation analysis, unadjusted (no reduction for trip type or internal trips) trip rates for the appropriate land use codes from the most recent edition of the Institute of Traffic Engineers (ITE) Trip Generation Manual shall be used. Contact the CTDOT Trip Analysis Unit at Gary.Sojka@ct.gov with any questions regarding trip generation or distribution. The amount of information required will be based on the expected number of new trips associated with the development, expansion, or land use change.

Alternative rates will be considered on-case-by-case basis under the following conditions listed below:

- If there is/are no applicable ITE Trip Generation rate(s)
- If the sample size on which the ITE Trip Generation rate(s) is/are based on a prohibitively small sample.
- If the description of the ITE Trip Generation rate(s) does not resemble the characteristics of the proposed project within the land use context.
- An alternative data source is available, such as empirical trip rates measured at existing active sites. The sample size of similar developments must include at least three (3) similar sites with a comparable scale (size) of the proposed development.

General Guidance for Developments with One Land Use

- The trip generation shall reflect a typical day and not abnormally high-peak periods, such as holiday weekends.
- For apartments, condominiums, hotels, and motels, the number of 1-, 2- and 3-bedroom units, and the square foot area of each type of unit shall be noted.
- For retail developments, Friday afternoon and Saturday midday peak are required study periods.
- In most cases, trip generation data derived from the latest ITE Trip Generation Manual will be acceptable. Approved CTDOT studies are currently used to derive trip generation data for super food stores and Dunkin' Donut's locations. Other studies will be taken into consideration but will be subject to Department approval.
- Out parcels contained within retail developments shall use the most specific land use code available via ITE or other acceptable study data. For restaurants, indicate whether it is a fast-food or sit-down service and if a drive through window is proposed.
- For Transit Oriented Developments (TOD) located within a half (1/2) mile from rail station, either a 20% volume reduction credit can be used or ITE Trip Generation reduced volumes must be provided for each land use.
- **In cases where the redevelopment of an existing, vacant MTG site is proposed, no trip rate credit will be given for total site generated trips. For sites on previously approved MTG that are partially occupied, a partial trip rate credit will be considered at the discretion of CTDOT Trip Analysis Unit.**

Mixed -Use Development Guidance

- Internal trips occur among mixed-use developments and should be limited to sites or subdivisions that are accessible without using or crossing public roads (trips are "not made on street system.") Internal trips, if present, shall be subtracted out before pass-by trip reductions are applied. A maximum internal trip reduction rate of 10% can be used.
- Pass-by trips are made as intermediate trips on the way from an origin to a primary trip destination and do not require a route diversion from another roadway. Pass-by trips are new at the site driveway but are not new on the adjacent roadway. The number of pass-by trips is calculated after accounting for internal trips and shall be 20% percent of traffic for most commercial developments.
- Diverted trips should only be estimated in an MTG application if reliable data reporting the percentage of distribution of the three types of trips (primary, pass-by, and diverted trips) are available for the land use(s) being considered and the travel routes for the diverted trips can be clearly established. Diverted linked trips require a route diversion from one roadway to another to reach the site. If these conditions cannot be met, the analysis should treat all non-pass-by trips as primary trips.

Sample Trip Generation Tables

Mixed-Use Development with Commercial, Industrial, and Residential Uses

Development Name / Address											
ITE Land Use Code	Size (ksf/ units)	ADT	Trips								
			AM Peak Hour Adjacent Street Traffic			PM Peak Hour Adjacent Street Traffic			Saturday Midday Peak Hour		
			Total	In	Out	Total	In	Out	Total	In	Out
310 - Hotel	76	400	31	17	14	28	14	14	58	33	25
821 - Shopping Center (40-150k)	42.8	4,707	151	94	57	447	215	232	450	230	220
850 - Supermarket	43.2	4,142	124	73	51	392	196	196	491	246	245
912 - Drive in Bank	3.5	351	35	20	15	74	37	37	92	47	45
937 - Coffee Shop with Drive-Thru Window	2.0	1,067	172	88	84	78	39	39	176	88	88
932 - High Turnover Sit-down Restaurant	7.0	750	67	37	30	63	39	24	78	40	38
Total Commercial Trips	**79.7**	11,417	**580**	**329**	**251**	**1082**	**540**	**542**	**1345**	**684**	**661**
Less Internal Capture (10%) [1]		-1,142	-58	-33	-25	-108	-54	-54	-135	-68	-66
Gross Commercial Site Trips		**12,559**	**638**	**362**	**276**	**1190**	**594**	**596**	**1480**	**752**	**727**
Less Pass-By (20%) [2]		-2,512	-128	-64	-64	-238	-119	-119	-119	-60	-60
Net Commercial Site Trips		**15,071**	**766**	**426**	**340**	**1428**	**713**	**715**	**1599**	**812**	**787**
150- Warehouse	150.0	275	42	32	10	44	12	32	8	5	3
Net Industrial Site Trips		**275**	**42**	**32**	**10**	**44**	**12**	**32**	**8**	**5**	**3**
220 Multifamily housing (Low Rise) [3]	220	1,483	91	22	69	112	74	41	90	45	45
221 Multifamily housing (Mid Rise)	270	1,241	107	25	82	106	64	42	109	55	54
Total Residential Trips		**2,724**	**198**	**47**	**151**	**218**	**138**	**83**	**199**	**100**	**99**
Less Internal Capture (10%) [1]		-272	-20	-5	-15	-22	-14	-8	-20	-10	-10
Net Residential Site Trips		**2,452**	**178**	**42**	**136**	**196**	**124**	**75**	**179**	**90**	**89**
Net Total New Trips (Commercial, Industrial, and Residential)		**17,798**	**986**	**500**	**486**	**1,668**	**849**	**822**	**1,786**	**907**	**879**

Ref: Trip Generation, 11th Edition

1 10% of trips to account for internal capture on site

2 20% Pass-by for commercial developments per maximum CTDOT Allowance (50%/50% split between entering and exiting vehicles)

3 Saturday Midday Peak Hour Trips assume 50%/50% split due to lack of values.

Note: No Credit was taken for Transit Oriented Developments (TOD) and potential 20% reduction.

Mixed-Use Development (Commercial Uses Only)

Development Name / Address											
ITE Land Use Code	Size (ksf/ units)	ADT	Trips								
			AM Peak Hour Adjacent Street Traffic			PM Peak Hour Adjacent Street Traffic			Saturday Midday Peak Hour[1]		
			Total	In	Out	Total	In	Out	Total	In	Out
937 - Coffee Shop with Drive-Thru Window	2.0	1,067	172	88	84	78	39	39	176	88	88
822- Strip Retail Plaza (<40k)	5.5	462	13	8	5	36	18	18	36	18	18
934 - Fast-Food Restaurant with Drive-Through Window	2.5	1,169	112	57	55	83	43	40	138	70	68
Total Commercial Trips	**10**	**2698**	**297**	**153**	**144**	**197**	**100**	**97**	**350**	**176**	**174**
Less Pass-By (20%) 2		-540	-60	-30	-30	-40	-20	-20	-20	-10	-10
Net Commercial Site Trips		**3,238**	**357**	**183**	**174**	**237**	**120**	**117**	**370**	**186**	**184**

Ref: Trip Generation, 11th Edition

1 Saturday Midday Peak Hour data for Peak Hour of Generator

2 20% Pass-by for commercial developments per maximum CTDOT Allowance (50%/50% split between entering and exiting vehicles)

Residential Development Only

Development Name / Address								
ITE Land Use Code	Size (ksf/ units)	ADT	Trips					
			AM Peak Hour Adjacent Street Traffic			PM Peak Hour Adjacent Street Traffic		
			Total	In	Out	Total	In	Out
220 Multifamily housing (Low Rise)	220	1,483	91	22	69	112	74	41
221 Multifamily housing (Mid Rise)	270	1,241	107	25	82	106	64	42
252 - Senior Adult Housing - Multifamily	105	328	21	7	14	26	15	11
Total Residential Trips		**3,052**	**219**	**54**	**165**	**244**	**153**	**94**
Less Internal Capture (10%) [1]		-305	-22	-5	-17	-24	-15	-9
Net Residential Site Trips		**2,747**	**197**	**49**	**148**	**220**	**138**	**85**

Ref: Trip Generation, 11th Edition

1 10% of trips to account for internal capture on site

Note: No Credit was taken for Transit Oriented Developments (TOD) and potential 20% reduction.