ROWE PROFESSIONAL SERVICES COMPANY

Large Firm Resources. Personal Attention. sm

Memorandum

To: Mr. Doraid Markus, Markus Management Group

From: Michael J. Labadie, PE and Jill M. Bauer, PE, PTOE

Date: July 19, 2021

RE: Traffic Impact Study for Proposed Commercial Development, Northeast Corner of Avon Road and Rochester Road – HRC Comments Review

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ROWE Professional Services Company has completed our review of the City of Rochester Hills comments from the "Second Reviewed Plans" document for the proposed commercial development. Below is a list of the comments related to the traffic impact study and our responses.

Comment: See Traffic review comments letter attached. Address each comment with a response letter and plan changes. In addition to the review letter, the internal capture assumption within the Traffic Impact Study (TIS) will not be allowed. Please revise TIS accordingly.

Response: TIS will be revised to not include internal capture.

Comment: Rochester Road is under the jurisdiction of the Michigan Department of Transportation (MDOT). ROWE should provide a copy of the TIS and traffic models to MDOT to review as MDOT must agree to any signal modifications.

Avon Road is under the jurisdiction of the Road Commission for Oakland County (RCOC). ROWE should provide a copy of the TIS and traffic models to RCOC to review as RCOC must agree to any signal modifications.

Response: A copy of TIS and traffic models will be sent to MDOT and RCOC.

Comment: The report indicates all traffic counts used in this study are attached, but no traffic counts are included. The report should include the turning movement counts for the studied intersections as an attachment.

Response: Traffic counts used in the TIS are attached with this review memo.

Comment: Table 2 includes the trip generation for the proposed development, but the land uses, and units (square footages) do not match the Preliminary Site Plans dated June 16, 2021. Various text references throughout the report also do not match the Preliminary Site Plans. The trip generation should be revised to match the land uses and units in the Preliminary Site Plans. The report should also list the actual known tenants (Starbucks) to substantiate the land uses.

Response: Below is an updated trip generation table (Table 2 from the TIS) with the land uses square footages matching what is presented in the Preliminary Site Plan.

Table 2
Trip Generation for Proposed Development

Land Use	Land Use Code	Units	AM Peak Hour			PM Peak Hour			Week Day
			In	Out	Total	In	Out	Total	
General Office Building	710	10,943 sft	32	5	37	2	12	14	124
Shopping Center	820	6,330 sft	4	2	6	33	37	70	920
Fast Casual Restaurant	930	4,001 sft	5	3	8	31	26	57	1,261
Coffee/Donut Shop with Drive-Through Window (Starbucks)	937	2,288 sft	104	100	204	50	49	99	1,877
Total	-	-	**145**	**110**	**255**	**115**	**125**	**240**	**4,184**
Pass-By Rates, LUC 820: 34% PM			-	-	-	11	13	11	-
Pass-By Rates, LUC 934: 49% AM; 50% PM			51	49	100	25	25	50	-
Total Pass-By Trips			**51**	**49**	**100**	**36**	**38**	**74**	**-**
Total New Trips			**94**	**61**	**155**	**79**	**87**	**166**	**4,184**

The land use code (LUC) was updated from fast-food restaurant without a drive-through window (LUC 933) to fast casual restaurant (LUC 930) from the previous TIS report due to the square footage doubling. Updated trip generation figures are attached.

Comment: Table 2 includes pass-by-trips for a Fast-Food Restaurant with Drive-Thru Window (Land Use: 934), but the studied Land Use is a Fast-Food Restaurant without a Drive-Thru Window (Land Use: 933). The Trip Generation Handbook does not recognize a restaurant without a drive-thru as being associated with pass-by-trips. Land uses not associated with pass-by-trips should not be discounted.

Response: See updated trip generation table (Table 2) above. Pass-by trips removed from LUC 933/930.

Comment: Table 3 indicates 25 percent of the generated traffic will travel to the north via Rochester Road during the AM peak hour, but the percentage seems too low to reflect outbound vehicles based on existing traffic patterns (nearly 1,000 outbound vehicles). The report should provide additional information to substantiate this vehicle trip percentage or adjust it based on existing volumes (reduce percentage to the west).

Response: During the AM peak hour, out of the network, there are 914 vehicles to the north, 319 vehicles to the east, 813 vehicles to the west, and 1,532 vehicles to the south. The number of vehicles is based on existing traffic count data. This best reflects existing traffic patterns.

Comment: Tables 5, 7, and 9 show the level of service (LOS) and delay for the approaches (northbound, southbound, etc.), but they do not show them for the movements (northbound left-turn, northbound thru, etc.). LOS and delay shown by the approaches do not show if there are any issues with particular movements. The tables should be revised to include the LOS and delay for the movements for all conditions.

Response: Unacceptable/failing LOS (LOS E or worse) movements are specified in the summary for each analysis period below:

2021 Existing Conditions

- Rochester Road and Diversion Street/Mobile Gas Station Driveway
    - The westbound Diversion Street approach operates at LOS F during the AM and PM peak hours. The westbound left-turn movement operates at LOS F during the AM and PM peak hours.
- Rochester Road and Avon Road
    - Westbound Avon Road approach operates at LOS E during the AM and PM peak hour. The eastbound Avon Road approach operates at LOS E and LOS F during the AM and PM peak hour, respectively. The eastbound and westbound left-turn movement operate at LOS F and the westbound through, westbound through/right movement, northbound left-tum, southbound left-turn movements all operate at LOS E during the AM peak hour. The eastbound left-turn movement and westbound through/right movement operate at LOS F and the eastbound through movement, westbound left-tum movement, westbound through movement, northbound left-turn movement, southbound left-turn movement, and southbound though movement operate at LOS E during the PM peak hour. The intersection overall operates at LOS E during the PM peak hour.
- Rochester Road and Drexelgate Parkway/Eddington Blvd.
    - The east and westbound approaches of Drexelgate Parkway/Eddington Blvd. operate at LOS E during the AM and PM peak hours. The eastbound and westbound left and right-turn movements operate at LOS E during the AM and PM peak hours.

2022 Background Conditions

- Rochester Road and Diversion Street/Mobile Gas Station Driveway
    - The westbound Diversion Street approach operates at LOS F during the AM and PM peak hours. The westbound left-turn movement operates at LOS F during the AM and PM peak hours.
- Rochester Road and Avon Road
    - Westbound Avon Road approach operates at LOS E during the AM and PM peak hour. The eastbound Avon Road approach operates at LOS E and LOS F during the AM and PM peak hour, respectively. The eastbound and westbound left-turn movement operate at LOS F and the westbound through, westbound through/right movement, northbound left-tum, southbound left-turn movements all operate at LOS E during the AM peak hour. The eastbound left-turn movement and westbound through/right movement operate at LOS F and the eastbound through movement, westbound left-tum movement, westbound through movement, northbound left-turn movement, southbound left-turn movement, and southbound though movement operate at LOS E during the PM peak hour. The intersection overall operates at LOS E during the PM peak hour.
- Rochester Road and Drexelgate Parkway/Eddington Blvd.
    - The east and westbound approaches of Drexelgate Parkway/Eddington Blvd. operate at LOS E during the AM and PM peak hours. The eastbound and westbound left and right-turn movements operate at LOS E during the AM and PM peak hours.

2022 Future Conditions

- Rochester Road and Diversion Street/Mobile Gas Station Driveway

  - The westbound Diversion Street approach operates at LOS F during the AM and PM peak hours. The westbound left-turn movement operates at LOS F during the AM and PM peak hours.
- Rochester Road and Avon Road
  - Westbound Avon Road approach operates at LOS E and LOS F during the AM and PM peak hours, respectively. The eastbound Avon Road approach operates at LOS E and LOS F during the AM and PM peak hour, respectively. The eastbound and westbound left-turn movement operate at LOS F and the westbound through, westbound through/right movement, northbound left-turn, southbound left-turn movements all operate at LOS E during the AM peak hour. The eastbound left-turn movement and westbound through/right movement operate at LOS F and the eastbound through movement, westbound left-turn movement, westbound through movement, northbound left-turn movement, southbound left-turn movement, and southbound through movement operate at LOS E during the PM peak hour. The intersection overall operates at LOS E during the PM peak hour.
- Rochester Road and Drexelgate Parkway/Eddington Blvd.
  - The east and westbound approaches of Drexelgate Parkway/Eddington Blvd. operate at LOS E during the AM and PM peak hours. The eastbound and westbound left and right-turn movements operate at LOS E during the AM and PM peak hours.

2022 Future Conditions - Optimized

- Rochester Road and Diversion Street/Mobile Gas Station Driveway
  - The westbound Diversion Street approach operates at LOS F during the AM and PM peak hours. The westbound left-turn movement operates at LOS F during the AM and PM peak hours.
- Rochester Road and Avon Road
  - Westbound Avon Road approach operates at LOS E during the AM and PM peak hours. The eastbound Avon Road approach operates at LOS F during the PM peak hour. The southbound approach operates at LOS E during the PM peak hour. The westbound left-turn movement operate at LOS F and the eastbound left-turn movement, westbound through, westbound through/right movement, northbound left-turn, southbound left-turn movements all operate at LOS E during the AM peak hour. The eastbound left-turn movement, westbound through/right movement, southbound left-turn movement operate at LOS F and the eastbound through movement, westbound left-turn movement, westbound through movement, northbound left-turn movement, and southbound through movement operate at LOS E during the PM peak hour. The intersection overall operates at LOS E during the PM peak hour.
- Rochester Road and Drexelgate Parkway/Eddington Blvd.
  - The east and westbound approaches of Drexelgate Parkway/Eddington Blvd. operate at LOS E during the AM and PM peak hours. The eastbound and westbound left and right-turn movements operate at LOS E during the AM and PM peak hours.

Comment: The signalized intersections all have pedestrian phases, but the Flash Don't Walk times in the models do not match the signal timing permits. The Flash Don't Walk times should match the Pedestrian Crossing Times (CL1) listed in the permits.

Response: Pedestrian phases have been updated to reflect the CL1 times specified in the existing timing permits.

Comment: The report indicates the signal timing was optimized at Rochester Road and Avon Road, but the cycle length was also decreased from 140 seconds to 120 seconds. Changing the cycle length eliminates progression along the Rochester Road Corridor. To maintain progression, the cycle length should remain at 140 seconds or the other signalized intersections along the corridor should be changed to 120 seconds. Any signal timing changes should also be approved by MDOT (see Item #1).

Response: The optimized model/timings have been updated to use 140 second cycle length at Rochester Road and Avon Road intersection per all analysis conditions.

Comment: The simulation for the existing models for the eastbound movements on Avon Road at Rochester Road are not calibrated to the actual field conditions (10 percent or more of collected volumes are not being replicated by simulation). This gives the false impression the existing condition is worse than it really is. Further evidence of this is indicated with the queuing shown (See Item #11). ROWE should verify the simulation settings (eastbound left-turn storage length) to increase the accuracy of the model.

Response: Eastbound Avon Road left-turn lane storage length has been increased from 200 feet to 850 feet. During the PM peak hour, the simulation still illustrates vehicles queueing to the back of the storage length. The simulation is not a "real world" case/a little misleading since vehicles would continue to merge in the eastbound left-turn storage lane. The eastbound through vehicles would not need to wait for the left-turning vehicle to merge into the storage lane. There are 323 westbound left-turning vehicles using a single lane with a volume to capacity ratio of 1.22 and with 23 seconds of 140 second cycle in the existing signal timing plan. The traffic signal is also actuated and the Synchro/SimTraffic does not adjust the signal timing as the "real world" does.

Comment: The simulation for the Existing PM Model shows excessive queuing for the eastbound movement on Avon Road at Rochester Road, stemming from the eastbound left-turns. ROWE should verify in the field if the queuing shown in the model is consistent with the actual condition and adjust the model as needed (See Item #10).

Response: See response of previous comment.

Comment: The simulations for the AM and PM Future Optimized Models show excessive queuing at the following approaches:

a. Southbound on Rochester Road at Avon Road (AM)
b. Northbound on Rochester Road at Avon Road (PM)
c. Eastbound on Avon Road at Rochester Road (PM)

ROWE should look for additional mitigation measures to minimize the queuing. The simulation settings at Site Driveway #1 and Dummy Nodes are also negatively impacting the simulation.

Response: Queueing for northbound and southbound Rochester Road remains consistent with the existing, background, and future conditions. AM and PM Future Optimized models were updated to use 140 second cycle length. Traffic signal phase timing was adjusted to reduce the queue length on the eastbound approach. Simulation settings were also adjusted to as commented.

Comment: The Conclusion indicates the operational analysis indicated that most approaches of the study intersections operate at acceptable levels, but there are various movements with a failing LOS (E or F). This statement should be modified, and caution should be used until this claim can be fully supported by the traffic models.

Response: The report conclusions are correct. The analysis does show some traffic movements operating less than LOS D.

Comment: Site Driveway #2 is across from two different driveways from a dog facility on Avon Road. Being across from the westmost driveway creates an improper offset that permits a left-turn lockup on Avon Road. Being across from the eastmost driveway creates an inadequate offset that permits crash-prone movements between drives. The center left-turn lane storage for westbound left-turning vehicles onto Rochester Road may also conflict with eastbound left-turning vehicles into the site. Site Driveway #2 should be right-in, right-out to eliminate left-turn conflict points. An alternative could also be to eliminate Site Driveway #2 and create a shared-access driveway with Comerica Bank.

Response: If Site Driveway #2 is restricted to right-in/right-out, vehicles desiring to travel east have no way to get there. Vehicle would have to turn right (westbound) and find an alternate driveway to turn around to travel east. Site Driveway #1 is right/left-in/right-out which also restricts vehicles to complete a movement with the vicinity of the development to travel east. With a review of the Preliminary Site Plan, there is a shared-access driveway with Comerica Bank in the northeast corner of the development property.

We hope this response memorandum meets your needs. If you have any questions, please feel free to contact us.

Attachments: Traffic Counts
Updated Figures
Updated LOS Output Reports
Updated Right-turn Turn Lane Warrants

Traffic Data Collection, LLC

www:tdccounts.com

Phone: 586.786-5407

Traffic Study Performed For:

ROWE Professional Services Company

Project: Rochester Trraffic Impact Study
Study:4 Hr. Video Turning Movement Count
Weather:: Cldy. Dry Deg's 70s
Count By Miovision Video VCU 1US SE

File Name : TMC_6 Main & Diversion_9-12_19
Site Code : TMC_6
Start Date : 9/12/2019
Page No : 1

4 Hour traffic study was conducted during typical weekday (Thursday) from 7:00 AM - 9:00 AM morning & 4:00 PM - 6:00 PM afternoon peak hours, while school was in session.

Groups Printed- Pass Cars - Single Units - Heavy Trucks - Peds

	Main Street Southbound					South St. Westbound					Main Street Northbound					Mobil Service Station Eastbound					
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	1	485	4	0	490	8	1	13	0	22	17	170	0	0	187	1	0	0	0	1	700
07:15 AM	3	476	12	0	491	7	0	19	0	26	17	149	0	0	166	0	0	0	0	0	683
07:30 AM	4	436	12	0	452	1	2	21	0	24	13	173	2	0	188	0	1	0	0	1	665
07:45 AM	0	432	15	0	447	1	0	21	0	22	21	171	0	0	192	0	0	0	0	0	661
Total	8	1829	43	0	1880	17	3	74	0	94	68	663	2	0	733	1	1	0	0	2	2709
08:00 AM	3	426	18	0	447	2	2	18	0	22	23	198	0	0	221	0	0	0	0	0	690
08:15 AM	5	381	10	0	396	10	1	27	0	38	24	215	1	0	240	1	1	0	0	2	676
08:30 AM	6	445	15	0	466	8	1	17	0	26	27	234	0	0	261	0	0	1	0	1	754
08:45 AM	3	398	14	0	415	6	1	24	0	31	22	205	0	0	227	1	0	0	0	1	674
Total	17	1650	57	0	1724	26	5	86	0	117	96	852	1	0	949	2	1	1	0	4	2794
*** BREAK ***																					
04:00 PM	4	387	7	0	398	7	1	36	1	45	40	377	0	0	417	0	0	0	0	0	860
04:15 PM	4	363	6	0	373	5	1	32	0	38	35	406	0	0	441	0	0	0	0	0	852
04:30 PM	4	343	7	1	355	15	3	36	2	56	33	403	0	0	436	2	0	0	1	3	850
04:45 PM	2	369	9	0	380	13	1	14	0	28	22	410	0	0	432	0	0	1	1	2	842
Total	14	1462	29	1	1506	40	6	118	3	167	130	1596	0	0	1726	2	0	1	2	5	3404
05:00 PM	5	373	8	1	387	14	1	44	0	59	35	397	0	0	432	0	0	0	2	2	880
05:15 PM	1	417	13	0	431	5	0	28	0	33	24	422	0	0	446	1	0	0	0	1	911
05:30 PM	4	395	7	0	406	8	1	25	0	34	32	422	0	0	454	0	0	1	0	1	895
05:45 PM	2	377	15	0	394	15	0	30	2	47	29	390	0	0	419	0	0	0	0	0	860
Total	12	1562	43	1	1618	42	2	127	2	173	120	1631	0	0	1751	1	0	1	2	4	3546
Grand Total	51	6503	172	2	6728	125	16	405	5	551	414	4742	3	0	5159	6	2	3	4	15	12453
Apprch %	0.8	96.7	2.6	0		22.7	2.9	73.5	0.9		8	91.9	0.1	0		40	13.3	20	26.7		
Total %	0.4	52.2	1.4	0	54	1	0.1	3.3	0	4.4	3.3	38.1	0	0	41.4	0	0	0	0	0.1	
Pass Cars	51	6376	164	0	6591	119	15	385	0	519	403	4635	3	0	5041	6	2	3	0	11	12162
% Pass Cars	100	98	95.3	0	98	95.2	93.8	95.1	0	94.2	97.3	97.7	100	0	97.7	100	100	100	0	73.3	97.7
Single Units	0	107	7	0	114	5	1	19	0	25	10	80	0	0	90	0	0	0	0	0	229
% Single Units	0	1.6	4.1	0	1.7	4	6.2	4.7	0	4.5	2.4	1.7	0	0	1.7	0	0	0	0	0	1.8
Heavy Trucks	0	20	1	0	21	1	0	1	0	2	1	27	0	0	28	0	0	0	0	0	51
% Heavy Trucks	0	0.3	0.6	0	0.3	0.8	0	0.2	0	0.4	0.2	0.6	0	0	0.5	0	0	0	0	0	0.4
Peds	0	0	0	2	2	0	0	0	5	5	0	0	0	0	0	0	0	0	4	4	11
% Peds	0	0	0	100	0	0	0	0	100	0.9	0	0	0	0	0	0	0	0	100	26.7	0.1

TDC Traffic Comments: Signalized SCATS controlled intersection, ped. signals for north (push buttons) & east legs. Video VCU camera was located within SE intersection quadrant. Traffic study was performed for Rochester Traffic Impact Study for ROWE Professional Services Company.

Traffic Data Collection, LLC

www:tdccounts.com

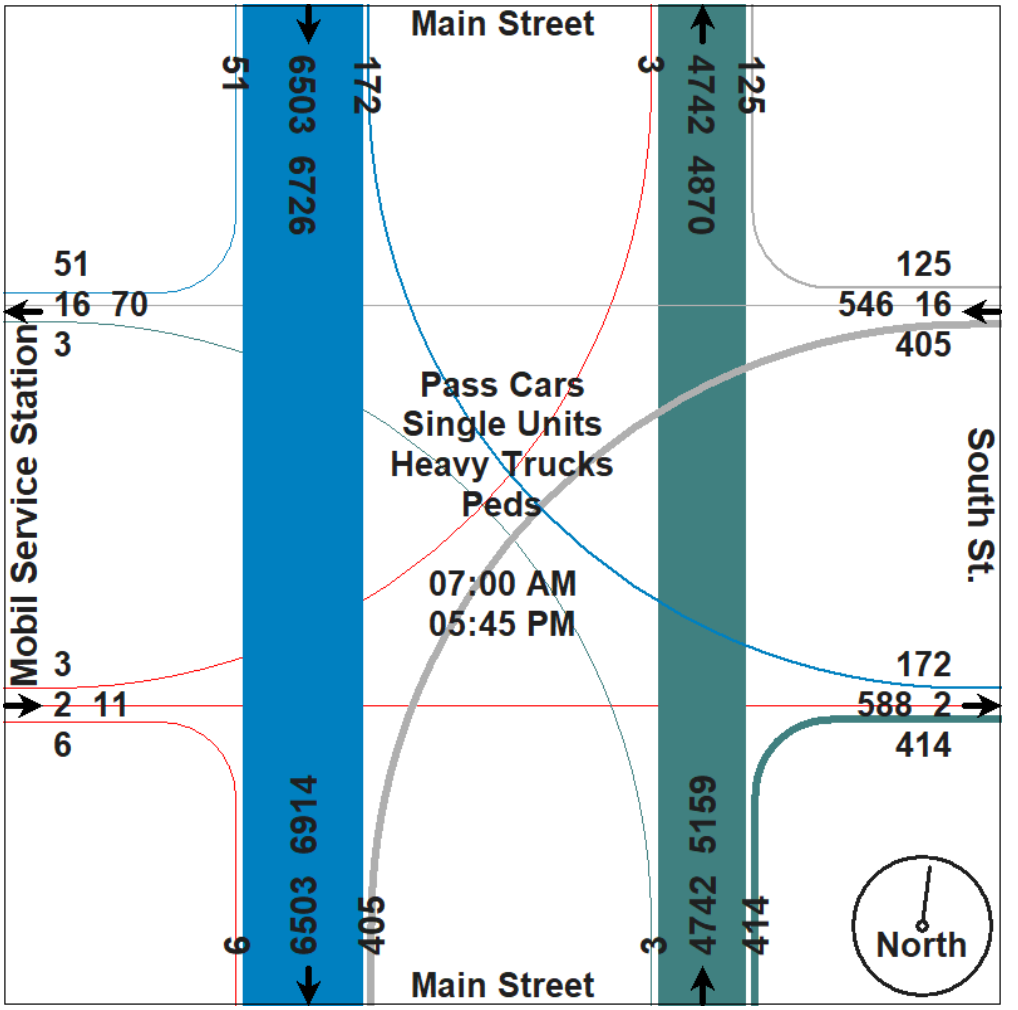
Phone: 586.786-5407

Traffic Study Performed For:

ROWE Professional Services Company

Project: Rochester Trraffic Impact Study
Study:4 Hr. Video Turning Movement Count
Weather:: Cldy. Dry Deg's 70s
Count By Miovision Video VCU 1US SE

File Name : TMC_6 Main & Diversion_9-12_19
Site Code : TMC_6
Start Date : 9/12/2019
Page No : 2



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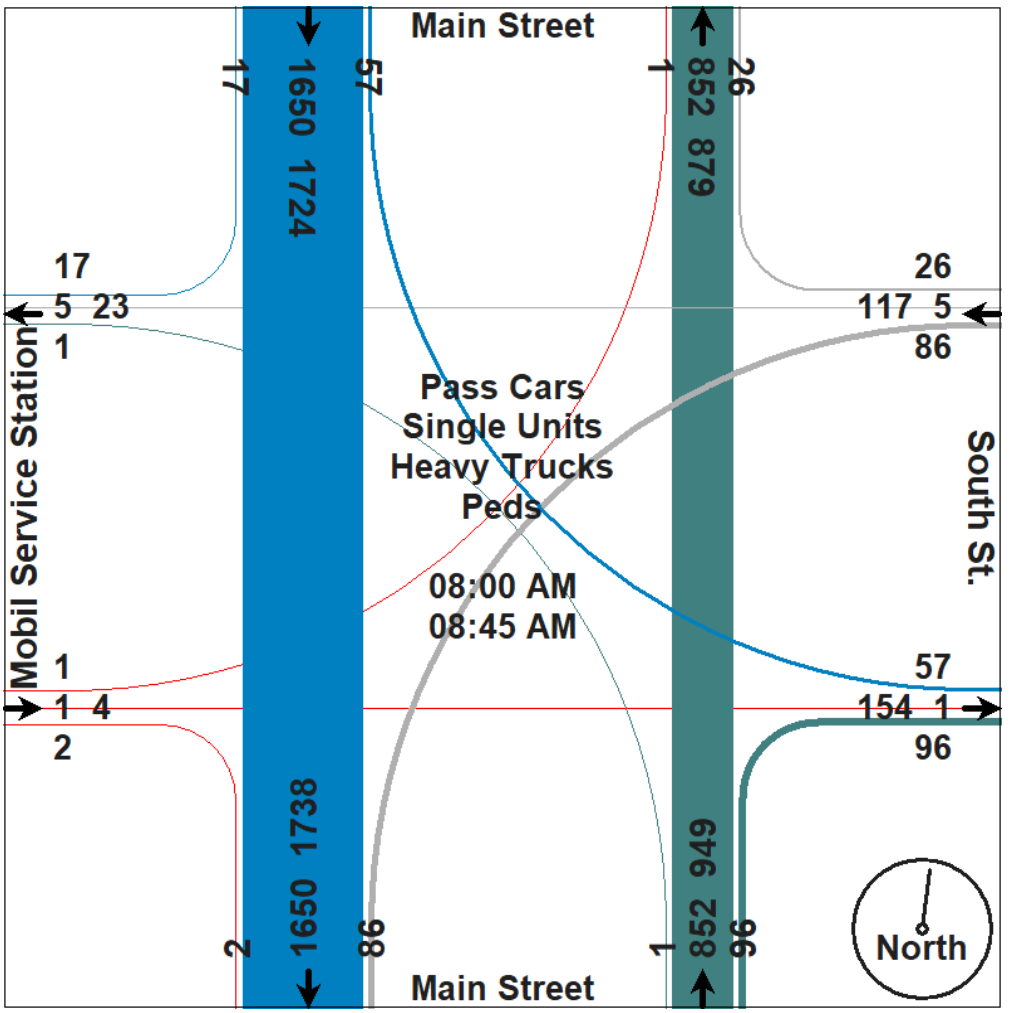
	Main Street Southbound				South St. Westbound				Main Street Northbound				Mobil Service Station Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 12:30 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
08:00 AM	3	426	**18**	447	2	**2**	18	22	23	198	0	221	0	0	0	0	690
08:15 AM	5	381	10	396	**10**	1	**27**	**38**	24	215	**1**	240	**1**	**1**	0	**2**	676
08:30 AM	**6**	**445**	15	**466**	8	1	17	26	**27**	**234**	0	**261**	0	0	**1**	1	**754**
08:45 AM	3	398	14	415	6	1	24	31	22	205	0	227	1	0	0	1	674
Total Volume	17	1650	57	1724	26	5	86	117	96	852	1	949	2	1	1	4	2794
% App. Total	1	95.7	3.3		22.2	4.3	73.5		10.1	89.8	0.1		50	25	25		
PHF	.708	.927	.792	.925	.650	.625	.796	.770	.889	.910	.250	.909	.500	.250	.250	.500	.926
Pass Cars	17	1602	53	1672	23	4	80	107	93	805	1	899	2	1	1	4	2682
% Pass Cars	100	97.1	93.0	97.0	88.5	80.0	93.0	91.5	96.9	94.5	100	94.7	100	100	100	100	96.0
Single Units	0	36	4	40	3	1	6	10	3	37	0	40	0	0	0	0	90
% Single Units	0	2.2	7.0	2.3	11.5	20.0	7.0	8.5	3.1	4.3	0	4.2	0	0	0	0	3.2
Heavy Trucks	0	12	0	12	0	0	0	0	0	10	0	10	0	0	0	0	22
% Heavy Trucks	0	0.7	0	0.7	0	0	0	0	0	1.2	0	1.1	0	0	0	0	0.8
Peds	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Peds	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



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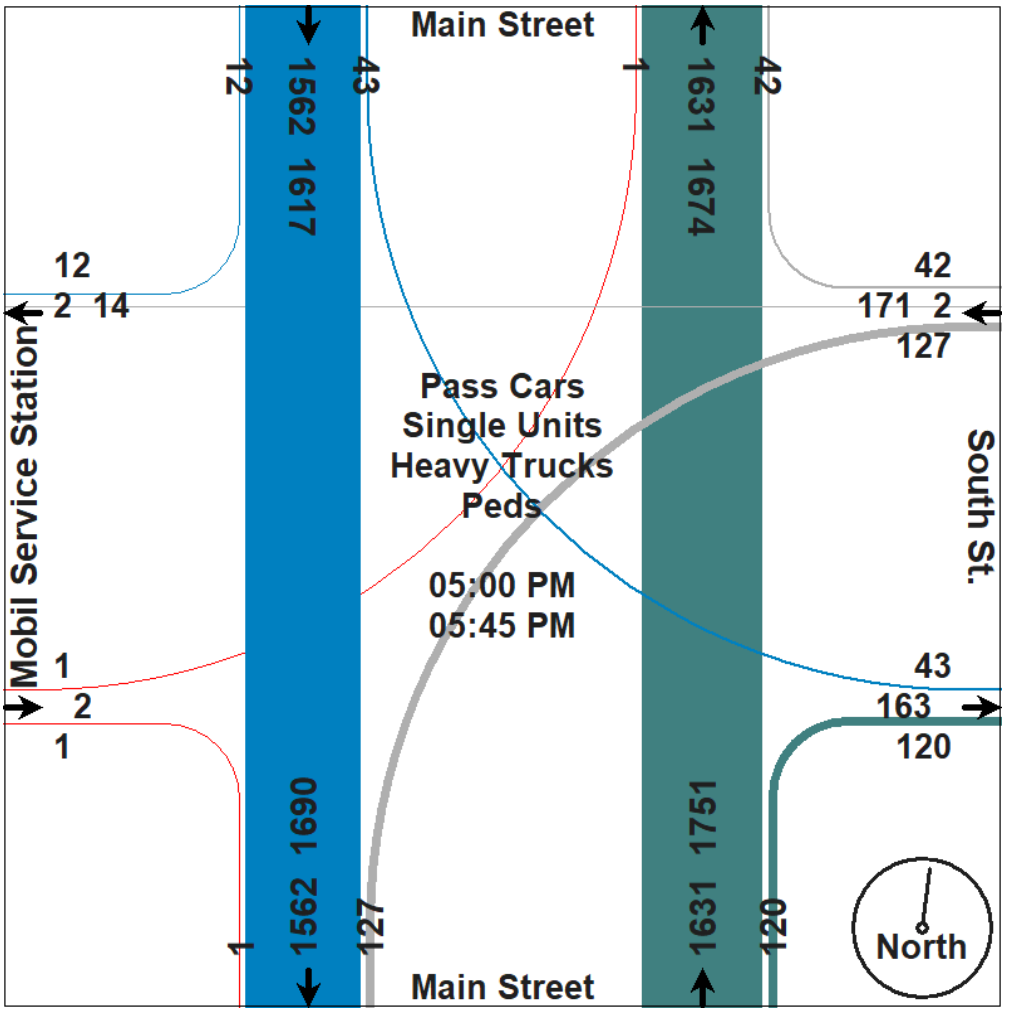
	Main Street Southbound				South St. Westbound				Main Street Northbound				Mobil Service Station Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 12:45 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	**5**	373	8	386	14	**1**	**44**	**59**	**35**	397	0	432	0	0	0	0	877
05:15 PM	1	**417**	13	**431**	5	0	28	33	24	**422**	0	446	**1**	0	0	**1**	**911**
05:30 PM	4	395	7	406	8	1	25	34	32	422	0	**454**	0	0	**1**	1	895
05:45 PM	2	377	**15**	394	**15**	0	30	45	29	390	0	419	0	0	0	0	858
Total Volume	12	1562	43	1617	42	2	127	171	120	1631	0	1751	1	0	1	2	3541
% App. Total	0.7	96.6	2.7		24.6	1.2	74.3		6.9	93.1	0		50	0	50		
PHF	.600	.936	.717	.938	.700	.500	.722	.725	.857	.966	.000	.964	.250	.000	.250	.500	.972
Pass Cars	12	1544	41	1597	42	2	126	170	118	1618	0	1736	1	0	1	2	3505
% Pass Cars	100	98.8	95.3	98.8	100	100	99.2	99.4	98.3	99.2	0	99.1	100	0	100	100	99.0
Single Units	0	18	2	20	0	0	1	1	2	10	0	12	0	0	0	0	33
% Single Units	0	1.2	4.7	1.2	0	0	0.8	0.6	1.7	0.6	0	0.7	0	0	0	0	0.9
Heavy Trucks	0	0	0	0	0	0	0	0	0	3	0	3	0	0	0	0	3
% Heavy Trucks	0	0	0	0	0	0	0	0	0	0.2	0	0.2	0	0	0	0	0.1
Peds	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Peds	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



Traffic Data Collection, LLC

www:tdccounts.com

Phone: 586.786-5407

Traffic Study Performed For:

ROWE Professional Services Company

Project: Rochester Trraffic Impact Study
Study:4 Hr. Video Turning Movement Count
Weather:: Cldy. Dry Deg's 70s
Count By Miovision Video VCU 1US SE

File Name : TMC_6 Main & Diversion_9-12_19
Site Code : TMC_6
Start Date : 9/12/2019

Aerial Photo

Traffic Data Collection, LLC

www:tdccounts.com

Phone: 586.786-5407

Traffic Study Performed For:

ROWE Professional Services Company

Project: Rochester Trraffic Impact Study
Study:4 Hr. Video Turning Movement Count
Weather:: Cldy. Dry Deg's 70s
Count By Miovision Video VCU 8EY SE

File Name : TMC_7 Rochester & Avon_9-12-19
Site Code : TMC_7
Start Date : 9/12/2019
Page No : 1

4 Hour traffic study was conducted during typical weekday (Thursday) from 7:00 AM - 9:00 AM morning & 4:00 PM - 6:00 PM afternoon peak hours, while school was in session.

Groups Printed- Pass Cars - Single Units - Heavy Trucks - Peds

	Rochester Rd. Southbound					Avon Rd. Westbound					Rochester Rd. Northbound					Avon Rd. Eastbound					
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	58	363	27	0	448	26	94	46	1	167	11	135	38	2	186	24	23	31	0	78	879
07:15 AM	59	379	25	0	463	25	115	39	0	179	13	114	22	0	149	16	39	24	0	79	870
07:30 AM	65	399	29	0	493	34	85	43	0	162	15	139	24	0	178	25	37	26	0	88	921
07:45 AM	86	325	32	1	444	33	104	43	0	180	8	129	28	0	165	34	43	28	0	105	894
Total	268	1466	113	1	1848	118	398	171	1	688	47	517	112	2	678	99	142	109	0	350	3564
08:00 AM	74	343	36	0	453	29	82	46	0	157	14	168	16	0	198	27	34	35	1	97	905
08:15 AM	75	301	21	1	398	47	68	44	0	159	15	167	43	0	225	26	35	37	0	98	880
08:30 AM	81	312	22	0	415	59	89	26	0	174	10	169	42	0	221	33	43	35	0	111	921
08:45 AM	93	331	20	0	444	37	77	30	0	144	21	176	41	0	238	41	36	45	0	122	948
Total	323	1287	99	1	1710	172	316	146	0	634	60	680	142	0	882	127	148	152	1	428	3654
*** BREAK ***																					
04:00 PM	55	272	59	1	387	61	63	29	1	154	23	289	54	2	368	29	84	59	0	172	1081
04:15 PM	65	330	48	0	443	74	45	25	1	145	36	316	52	0	404	32	81	63	0	176	1168
04:30 PM	59	276	37	1	373	68	64	33	0	165	27	285	20	0	332	30	79	102	0	211	1081
04:45 PM	45	292	59	0	396	67	60	39	0	166	27	313	41	0	381	38	65	77	0	180	1123
Total	224	1170	203	2	1599	270	232	126	2	630	113	1203	167	2	1485	129	309	301	0	739	4453
05:00 PM	63	289	53	0	405	70	77	29	0	176	25	298	35	0	358	30	82	74	0	186	1125
05:15 PM	59	286	45	0	390	86	56	32	0	174	27	272	53	0	352	32	93	74	0	199	1115
05:30 PM	70	342	37	0	449	60	66	41	0	167	30	332	29	0	391	31	76	87	0	194	1201
05:45 PM	64	274	68	0	406	68	62	31	0	161	25	290	51	0	366	41	86	75	0	202	1135
Total	256	1191	203	0	1650	284	261	133	0	678	107	1192	168	0	1467	134	337	310	0	781	4576
Grand Total	1071	5114	618	4	6807	844	1207	576	3	2630	327	3592	589	4	4512	489	936	872	1	2298	16247
Apprch %	15.7	75.1	9.1	0.1		32.1	45.9	21.9	0.1		7.2	79.6	13.1	0.1		21.3	40.7	37.9	0		
Total %	6.6	31.5	3.8	0	41.9	5.2	7.4	3.5	0	16.2	2	22.1	3.6	0	27.8	3	5.8	5.4	0	14.1	
Pass Cars	1046	5030	601	0	6677	826	1181	569	0	2576	317	3498	578	0	4393	476	919	850	0	2245	15891
% Pass Cars	97.7	98.4	97.2	0	98.1	97.9	97.8	98.8	0	97.9	96.9	97.4	98.1	0	97.4	97.3	98.2	97.5	0	97.7	97.8
Single Units	24	64	17	0	105	16	20	7	0	43	6	71	3	0	80	8	15	19	0	42	270
% Single Units	2.2	1.3	2.8	0	1.5	1.9	1.7	1.2	0	1.6	1.8	2	0.5	0	1.8	1.6	1.6	2.2	0	1.8	1.7
Heavy Trucks	1	20	0	0	21	2	6	0	0	8	4	23	8	0	35	5	2	3	0	10	74
% Heavy Trucks	0.1	0.4	0	0	0.3	0.2	0.5	0	0	0.3	1.2	0.6	1.4	0	0.8	1	0.2	0.3	0	0.4	0.5
Peds	0	0	0	4	4	0	0	0	3	3	0	0	0	4	4	0	0	0	1	1	12
% Peds	0	0	0	100	0.1	0	0	0	100	0.1	0	0	0	100	0.1	0	0	0	100	0	0.1

TDC Traffic Comments: Signalized SCATS controlled intersection, push button ped. signals for all quadrants. NTOR signed for NB & SB approaches. Video VCU camera was located within SE intersection quadrant. Traffic study was performed for Rochester Traffic Impact Study for ROWE Professional Services Company.

Traffic Data Collection, LLC

www:tdccounts.com

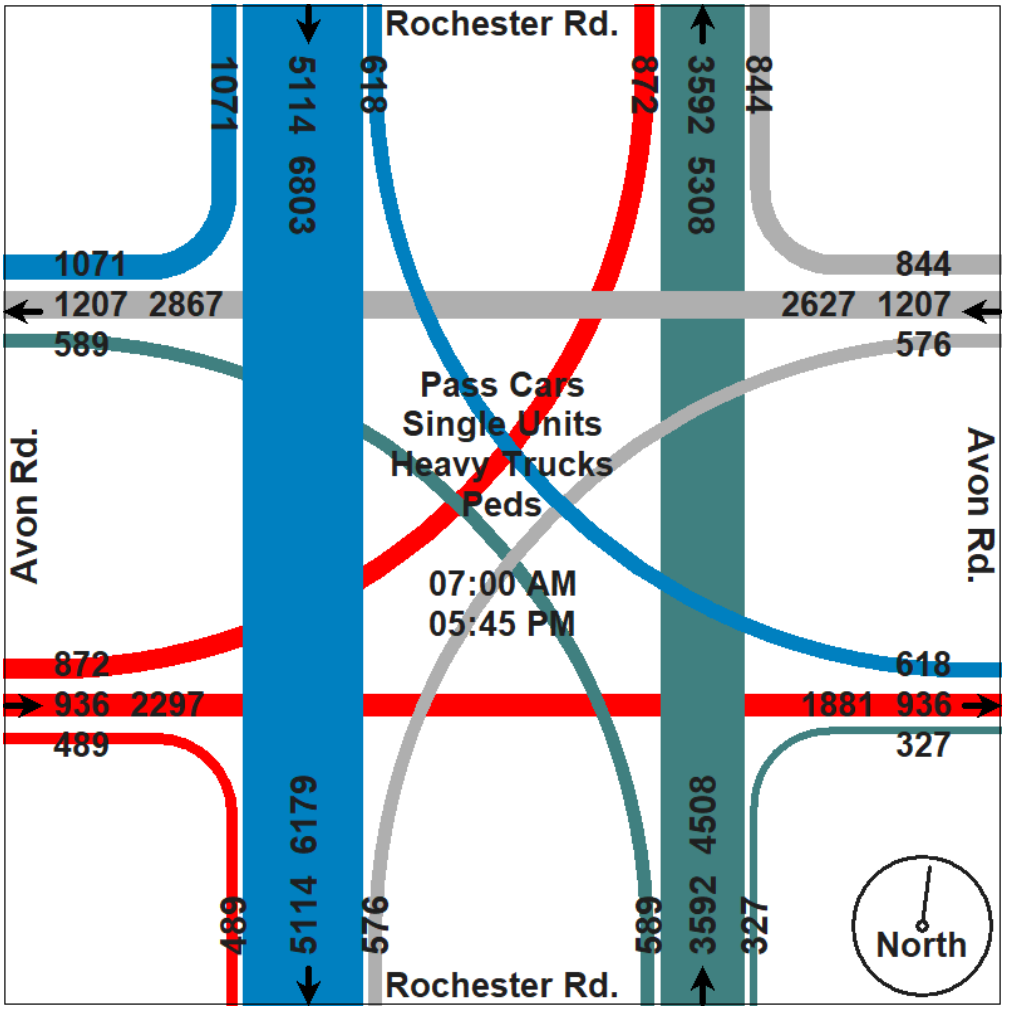
Phone: 586.786-5407

Traffic Study Performed For:

ROWE Professional Services Company

Project: Rochester Trraffic Impact Study
Study:4 Hr. Video Turning Movement Count
Weather:: Cldy. Dry Deg's 70s
Count By Miovision Video VCU 8EY SE

File Name : TMC_7 Rochester & Avon_9-12-19
Site Code : TMC_7
Start Date : 9/12/2019
Page No : 2



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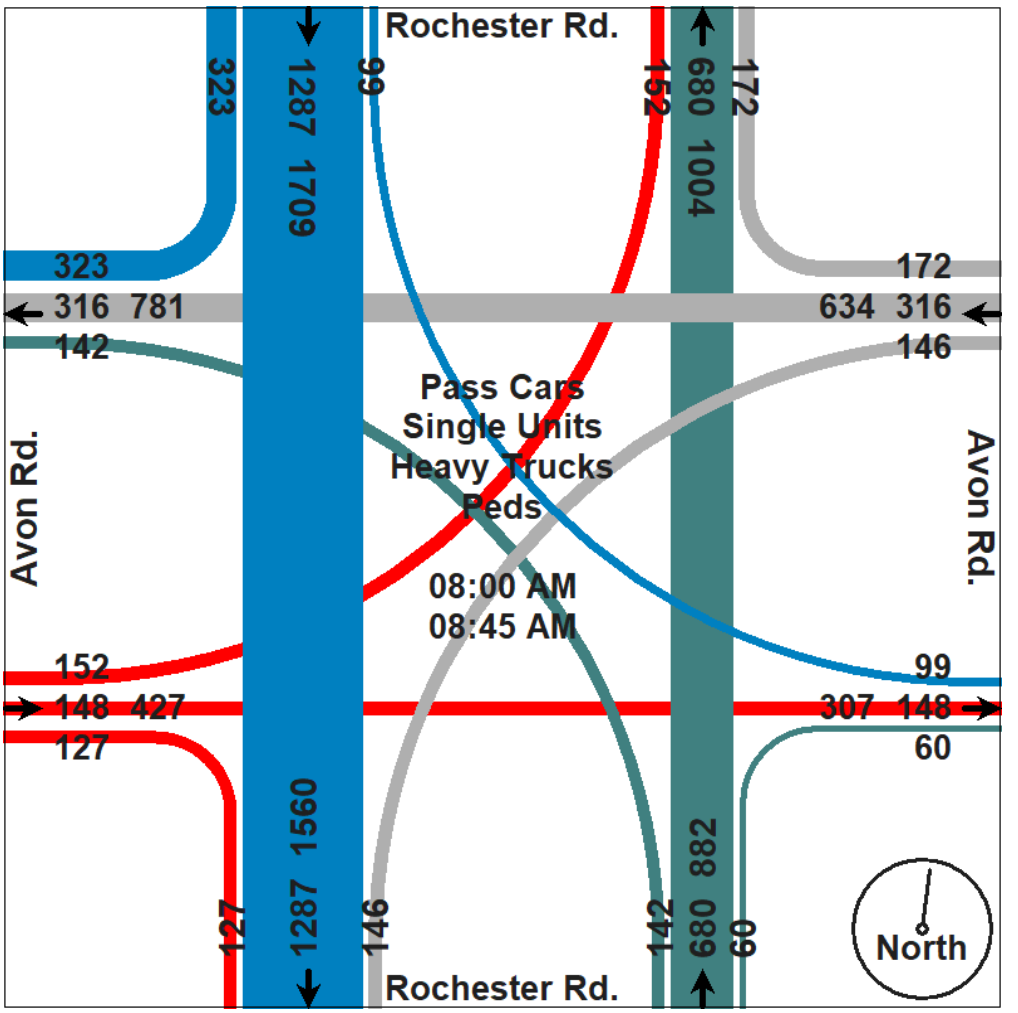
Traffic Study Performed For:

ROWE Professional Services Company

Project: Rochester Trraffic Impact Study
Study:4 Hr. Video Turning Movement Count
Weather:: Cldy. Dry Deg's 70s
Count By Miovision Video VCU 8EY SE

File Name : TMC_7 Rochester & Avon_9-12-19
Site Code : TMC_7
Start Date : 9/12/2019
Page No : 3

	Rochester Rd. Southbound				Avon Rd. Westbound				Rochester Rd. Northbound				Avon Rd. Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 12:30 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
08:00 AM	74	**343**	**36**	**453**	29	82	**46**	157	14	168	16	198	27	34	35	96	904
08:15 AM	75	301	21	397	47	68	44	159	15	167	**43**	225	26	35	37	98	879
08:30 AM	81	312	22	415	**59**	**89**	26	**174**	10	169	42	221	33	**43**	35	111	921
08:45 AM	**93**	331	20	444	37	77	30	144	**21**	**176**	41	**238**	**41**	36	**45**	**122**	**948**
Total Volume	323	1287	99	1709	172	316	146	634	60	680	142	882	127	148	152	427	3652
% App. Total	18.9	75.3	5.8		27.1	49.8	23		6.8	77.1	16.1		29.7	34.7	35.6		
PHF	.868	.938	.688	.943	.729	.888	.793	.911	.714	.966	.826	.926	.774	.860	.844	.875	.963
Pass Cars	312	1256	93	1661	163	304	144	611	56	638	135	829	119	139	145	403	3504
% Pass Cars	96.6	97.6	93.9	97.2	94.8	96.2	98.6	96.4	93.3	93.8	95.1	94.0	93.7	93.9	95.4	94.4	95.9
Single Units	10	22	6	38	8	10	2	20	4	34	3	41	6	8	7	21	120
% Single Units	3.1	1.7	6.1	2.2	4.7	3.2	1.4	3.2	6.7	5.0	2.1	4.6	4.7	5.4	4.6	4.9	3.3
Heavy Trucks	1	9	0	10	1	2	0	3	0	8	4	12	2	1	0	3	28
% Heavy Trucks	0.3	0.7	0	0.6	0.6	0.6	0	0.5	0	1.2	2.8	1.4	1.6	0.7	0	0.7	0.8
Peds	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Peds	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



Traffic Data Collection, LLC

www:tdccounts.com

Phone: 586.786-5407

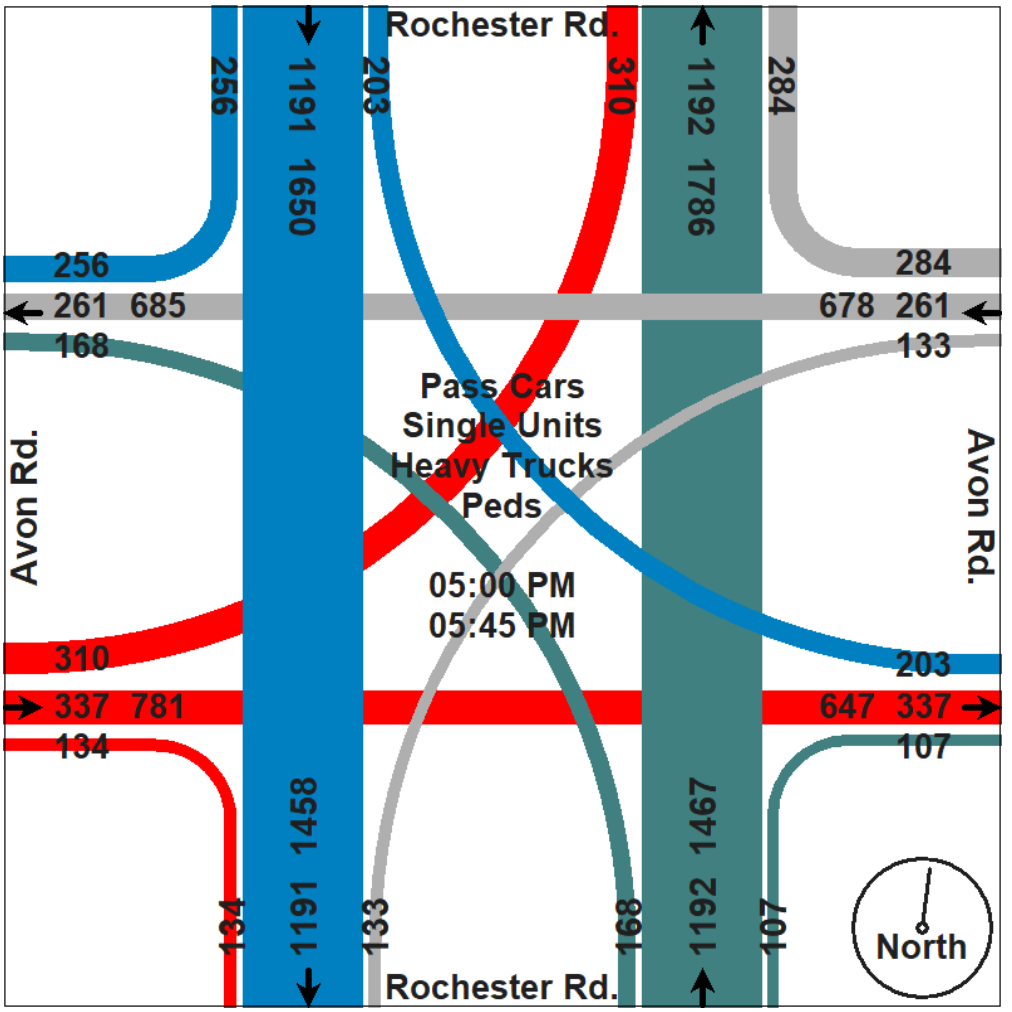
Traffic Study Performed For:

ROWE Professional Services Company

Project: Rochester Trraffic Impact Study
Study:4 Hr. Video Turning Movement Count
Weather:: Cldy. Dry Deg's 70s
Count By Miovision Video VCU 8EY SE

File Name : TMC_7 Rochester & Avon_9-12-19
Site Code : TMC_7
Start Date : 9/12/2019
Page No : 4

	Rochester Rd. Southbound				Avon Rd. Westbound				Rochester Rd. Northbound				Avon Rd. Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 12:45 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	63	289	53	405	70	**77**	29	**176**	25	298	35	358	30	82	74	186	1125
05:15 PM	59	286	45	390	**86**	56	32	174	27	272	**53**	352	32	**93**	74	199	1115
05:30 PM	**70**	**342**	37	**449**	60	66	**41**	167	**30**	**332**	29	**391**	31	76	**87**	194	**1201**
05:45 PM	64	274	**68**	406	68	62	31	161	25	290	51	366	**41**	86	75	**202**	1135
Total Volume	256	1191	203	1650	284	261	133	678	107	1192	168	1467	134	337	310	781	4576
% App. Total	15.5	72.2	12.3		41.9	38.5	19.6		7.3	81.3	11.5		17.2	43.1	39.7		
PHF	.914	.871	.746	.919	.826	.847	.811	.963	.892	.898	.792	.938	.817	.906	.891	.967	.953
Pass Cars	255	1182	201	1638	283	261	133	677	106	1181	167	1454	133	337	306	776	4545
% Pass Cars	99.6	99.2	99.0	99.3	99.6	100	100	99.9	99.1	99.1	99.4	99.1	99.3	100	98.7	99.4	99.3
Single Units	1	9	2	12	1	0	0	1	0	8	0	8	1	0	4	5	26
% Single Units	0.4	0.8	1.0	0.7	0.4	0	0	0.1	0	0.7	0	0.5	0.7	0	1.3	0.6	0.6
Heavy Trucks	0	0	0	0	0	0	0	0	1	3	1	5	0	0	0	0	5
% Heavy Trucks	0	0	0	0	0	0	0	0	0.9	0.3	0.6	0.3	0	0	0	0	0.1
Peds	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Peds	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



Traffic Data Collection, LLC

www:tdccounts.com

Phone: 586.786-5407

Traffic Study Performed For:

ROWE Professional Services Company

Project: Rochester Trraffic Impact Study
Study:4 Hr. Video Turning Movement Count
Weather:: Cldy. Dry Deg's 70s
Count By Miovision Video VCU 8EY SE

File Name : TMC_7 Rochester & Avon_9-12-19
Site Code : TMC_7
Start Date : 9/12/2019
Page No : 5

Aerial Photo

Drexelgate Parkway & Michigan 150 (2 RTOR) (... - TMC

Tue Feb 23, 2021
Full Length (7 AM-9 AM, 4 PM-6 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 813091, Location: 42.65781, -83.132877

Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg	Rochester					Drexel					
Direction	Southbound					Westbound					
Time	R	T	L	U	**App**	R	T	L	U	RR	**App**
2021-02-23 7:00AM	1	209	0	0	**210**	1	2	9	0	3	**15**
7:15AM	2	265	3	0	**270**	0	0	7	0	1	**8**
7:30AM	2	284	3	0	**289**	1	1	10	0	4	**16**
7:45AM	3	244	3	0	**250**	2	4	8	0	1	**15**
Hourly Total	8	1002	9	0	**1019**	4	7	34	0	9	**54**
8:00AM	2	247	2	0	**251**	1	0	7	0	4	**12**
8:15AM	2	272	4	0	**278**	2	1	9	0	2	**14**
8:30AM	0	312	1	0	**313**	0	1	10	0	1	**12**
8:45AM	3	248	1	0	**252**	0	0	14	0	4	**18**
Hourly Total	7	1079	8	0	**1094**	3	2	40	0	11	**56**
4:00PM	6	309	2	0	**317**	1	1	7	0	2	**11**
4:15PM	7	315	7	0	**329**	3	1	5	0	6	**15**
4:30PM	2	313	1	0	**316**	2	0	5	0	3	**10**
4:45PM	6	312	4	0	**322**	2	0	6	0	2	**10**
Hourly Total	21	1249	14	0	**1284**	8	2	23	0	13	**46**
5:00PM	3	336	2	0	**341**	2	1	11	0	4	**18**
5:15PM	4	345	5	0	**354**	2	2	2	0	2	**8**
5:30PM	4	304	2	0	**310**	1	3	2	0	1	**7**
5:45PM	8	302	4	0	**314**	0	0	5	0	2	**7**
Hourly Total	19	1287	13	0	**1319**	5	6	20	0	9	**40**
Total	55	4617	44	0	**4716**	20	17	117	0	42	**196**
% Approach	1.2%	97.9%	0.9%	0%	**-**	10.2%	8.7%	59.7%	0%	21.4%	**-**
% Total	0.6%	48.2%	0.5%	0%	**49.3%**	0.2%	0.2%	1.2%	0%	0.4%	**2.0%**
Lights	53	4548	42	0	**4643**	19	16	114	0	41	**190**
% Lights	96.4%	98.5%	95.5%	0%	**98.5%**	95.0%	94.1%	97.4%	0%	97.6%	**96.9%**
Articulated Trucks	0	22	0	0	**22**	0	0	0	0	0	**0**
% Articulated Trucks	0%	0.5%	0%	0%	**0.5%**	0%	0%	0%	0%	0%	**0%**
Buses and Single-Unit Trucks	2	47	2	0	**51**	1	1	3	0	1	**6**
% Buses and Single-Unit Trucks	3.6%	1.0%	4.5%	0%	**1.1%**	5.0%	5.9%	2.6%	0%	2.4%	**3.1%**

*L: Left, R: Right, RR: Right on red, T: Thru, U: U-Turn

Drexelgate Parkway & Michigan 150 (2 RTOR) (... - TMC

Tue Feb 23, 2021
Full Length (7 AM-9 AM, 4 PM-6 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 813091, Location: 42.65781, -83.132877

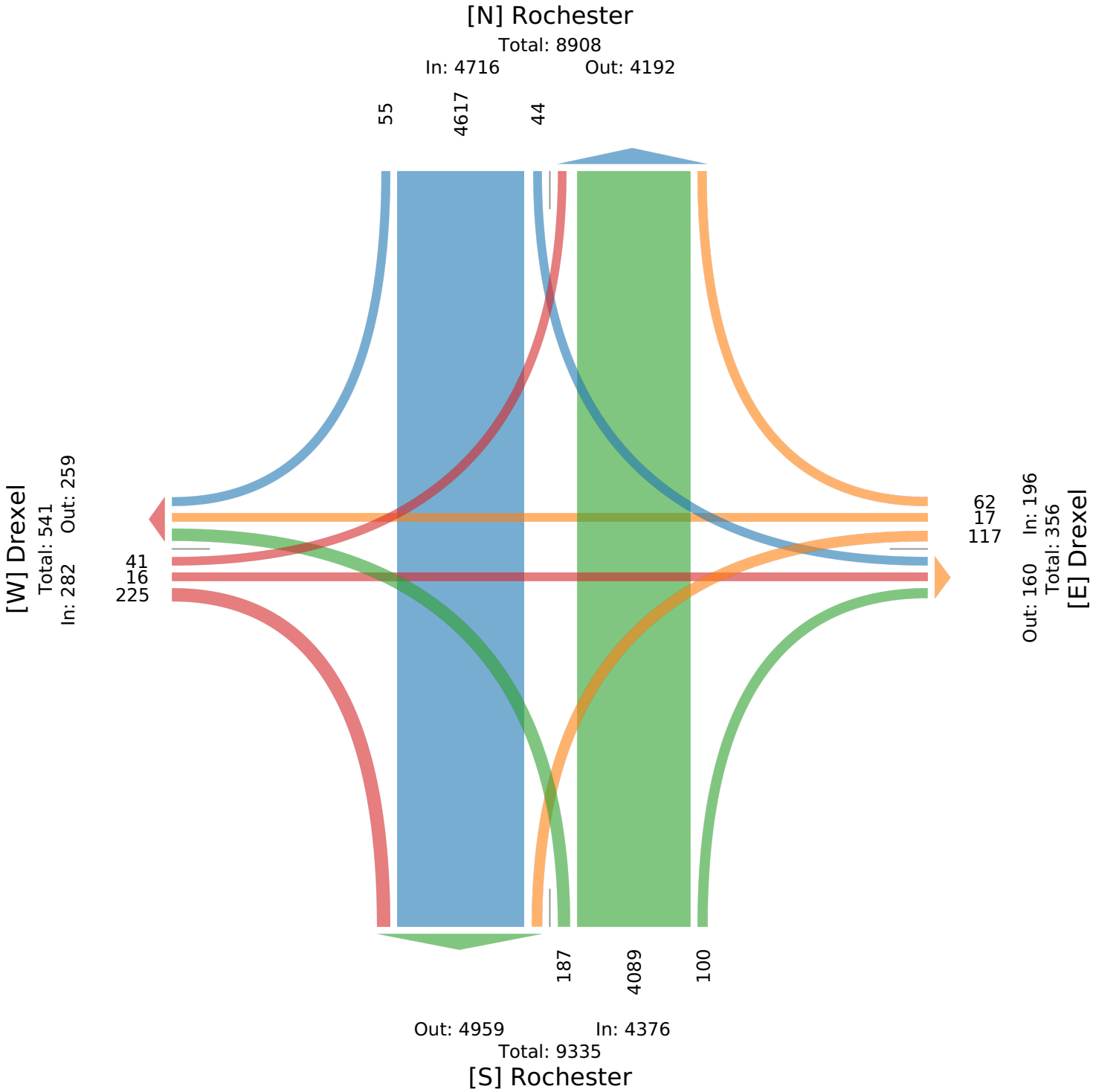
GEWALT HAMILTON ASSOCIATES, INC.
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg	Rochester					Drexel						
Direction	Northbound					Eastbound						
Time	R	T	L	U	**App**	R	T	L	U	RR	**App**	**Int**
2021-02-23 7:00AM	1	126	3	0	**130**	1	1	0	0	13	**15**	**370**
7:15AM	2	101	6	0	**109**	4	2	2	0	5	**13**	**400**
7:30AM	3	161	5	0	**169**	0	0	1	0	13	**14**	**488**
7:45AM	5	173	10	0	**188**	9	1	2	0	19	**31**	**484**
Hourly Total	11	561	24	0	**596**	14	4	5	0	50	**73**	**1742**
8:00AM	6	202	7	0	**215**	2	1	0	0	12	**15**	**493**
8:15AM	3	205	4	0	**212**	4	1	3	0	13	**21**	**525**
8:30AM	4	200	5	0	**209**	3	1	3	0	11	**18**	**552**
8:45AM	2	220	11	0	**233**	2	0	2	0	12	**16**	**519**
Hourly Total	15	827	27	0	**869**	11	3	8	0	48	**70**	**2089**
4:00PM	6	328	17	0	**351**	4	2	2	0	6	**14**	**693**
4:15PM	12	350	17	0	**379**	3	0	5	0	6	**14**	**737**
4:30PM	7	354	11	0	**372**	7	0	4	0	10	**21**	**719**
4:45PM	18	344	20	0	**382**	10	2	3	0	6	**21**	**735**
Hourly Total	43	1376	65	0	**1484**	24	4	14	0	28	**70**	**2884**
5:00PM	10	353	18	0	**381**	6	2	4	0	15	**27**	**767**
5:15PM	4	336	16	0	**356**	2	0	5	0	8	**15**	**733**
5:30PM	10	326	20	0	**356**	9	1	4	0	2	**16**	**689**
5:45PM	7	310	17	0	**334**	4	2	1	0	4	**11**	**666**
Hourly Total	31	1325	71	0	**1427**	21	5	14	0	29	**69**	**2855**
Total	100	4089	187	0	**4376**	70	16	41	0	155	**282**	**9570**
% Approach	2.3%	93.4%	4.3%	0%	**-**	24.8%	5.7%	14.5%	0%	55.0%	**-**	-
% Total	1.0%	42.7%	2.0%	0%	**45.7%**	0.7%	0.2%	0.4%	0%	1.6%	**2.9%**	-
Lights	100	4023	187	0	**4310**	66	15	40	0	155	**276**	9419
% Lights	100%	98.4%	100%	0%	**98.5%**	94.3%	93.8%	97.6%	0%	100%	**97.9%**	98.4%
Articulated Trucks	0	32	0	0	**32**	0	0	0	0	0	**0**	54
% Articulated Trucks	0%	0.8%	0%	0%	**0.7%**	0%	0%	0%	0%	0%	**0%**	0.6%
Buses and Single-Unit Trucks	0	34	0	0	**34**	4	1	1	0	0	**6**	97
% Buses and Single-Unit Trucks	0%	0.8%	0%	0%	**0.8%**	5.7%	6.3%	2.4%	0%	0%	**2.1%**	1.0%

*L: Left, R: Right, RR: Right on red, T: Thru, U: U-Turn

Drexelgate Parkway & Michigan 150 (2 RTOR) (... - TMC
Tue Feb 23, 2021
Full Length (7 AM-9 AM, 4 PM-6 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 813091, Location: 42.65781, -83.132877

GEWALT HAMILTON ASSOCIATES, INC.
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



Drexelgate Parkway & Michigan 150 (2 RTOR) (... - TMC

Tue Feb 23, 2021
AM Peak (8 AM - 9 AM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 813091, Location: 42.65781, -83.132877

Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg	Rochester					Drexel					
Direction	Southbound					Westbound					
Time	R	T	L	U	**App**	R	T	L	U	RR	**App**
2021-02-23 8:00AM	2	247	2	0	**251**	1	0	7	0	4	**12**
8:15AM	2	272	4	0	**278**	2	1	9	0	2	**14**
8:30AM	0	312	1	0	**313**	0	1	10	0	1	**12**
8:45AM	3	248	1	0	**252**	0	0	14	0	4	**18**
Total	7	1079	8	0	**1094**	3	2	40	0	11	**56**
% Approach	0.6%	98.6%	0.7%	0%	**-**	5.4%	3.6%	71.4%	0%	19.6%	**-**
% Total	0.3%	51.7%	0.4%	0%	**52.4%**	0.1%	0.1%	1.9%	0%	0.5%	**2.7%**
PHF	0.583	0.865	0.500	-	**0.874**	0.375	0.500	0.714	-	0.688	**0.778**
Lights	7	1061	6	0	**1074**	3	2	39	0	11	**55**
% Lights	100%	98.3%	75.0%	0%	**98.2%**	100%	100%	97.5%	0%	100%	**98.2%**
Articulated Trucks	0	6	0	0	**6**	0	0	0	0	0	**0**
% Articulated Trucks	0%	0.6%	0%	0%	**0.5%**	0%	0%	0%	0%	0%	**0%**
Buses and Single-Unit Trucks	0	12	2	0	**14**	0	0	1	0	0	**1**
% Buses and Single-Unit Trucks	0%	1.1%	25.0%	0%	**1.3%**	0%	0%	2.5%	0%	0%	**1.8%**

*L: Left, R: Right, RR: Right on red, T: Thru, U: U-Turn

Drexelgate Parkway & Michigan 150 (2 RTOR) (... - TMC

Tue Feb 23, 2021
AM Peak (8 AM - 9 AM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 813091, Location: 42.65781, -83.132877

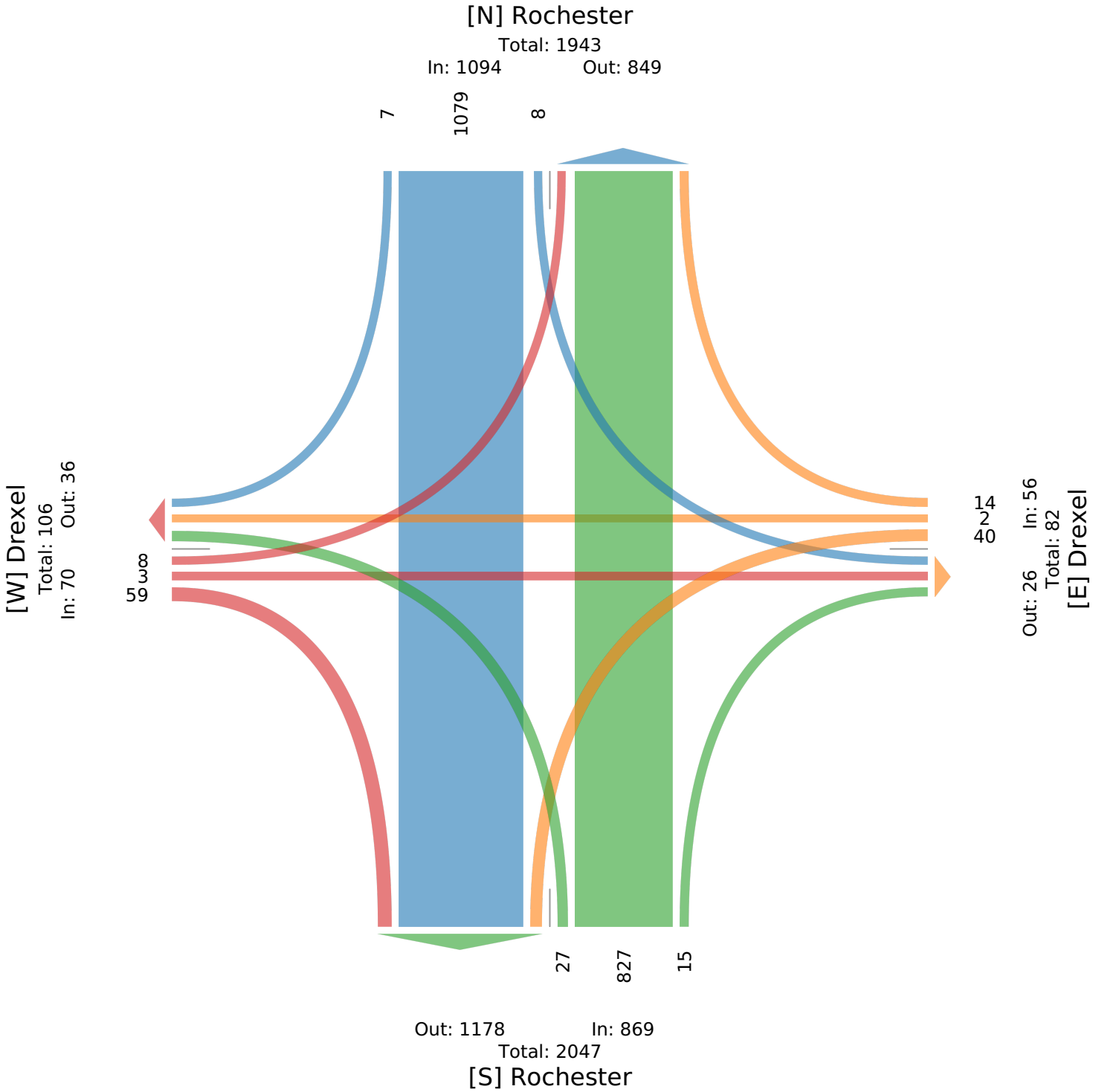
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg	Rochester					Drexel						
Direction	Northbound					Eastbound						
Time	R	T	L	U	**App**	R	T	L	U	RR	**App**	**Int**
2021-02-23 8:00AM	6	202	7	0	**215**	2	1	0	0	12	**15**	**493**
8:15AM	3	205	4	0	**212**	4	1	3	0	13	**21**	**525**
8:30AM	4	200	5	0	**209**	3	1	3	0	11	**18**	**552**
8:45AM	2	220	11	0	**233**	2	0	2	0	12	**16**	**519**
Total	15	827	27	0	**869**	11	3	8	0	48	**70**	**2089**
% Approach	1.7%	95.2%	3.1%	0%	**-**	15.7%	4.3%	11.4%	0%	68.6%	**-**	-
% Total	0.7%	39.6%	1.3%	0%	**41.6%**	0.5%	0.1%	0.4%	0%	2.3%	**3.4%**	-
PHF	0.625	0.940	0.614	-	**0.932**	0.688	0.750	0.667	-	0.923	**0.833**	0.946
Lights	15	792	27	0	**834**	10	3	7	0	48	**68**	2031
% Lights	100%	95.8%	100%	0%	**96.0%**	90.9%	100%	87.5%	0%	100%	**97.1%**	97.2%
Articulated Trucks	0	14	0	0	**14**	0	0	0	0	0	**0**	20
% Articulated Trucks	0%	1.7%	0%	0%	**1.6%**	0%	0%	0%	0%	0%	**0%**	1.0%
Buses and Single-Unit Trucks	0	21	0	0	**21**	1	0	1	0	0	**2**	38
% Buses and Single-Unit Trucks	0%	2.5%	0%	0%	**2.4%**	9.1%	0%	12.5%	0%	0%	**2.9%**	1.8%

*L: Left, R: Right, RR: Right on red, T: Thru, U: U-Turn

Drexelgate Parkway & Michigan 150 (2 RTOR) (... - TMC
Tue Feb 23, 2021
AM Peak (8 AM - 9 AM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 813091, Location: 42.65781, -83.132877

GEWALT HAMILTON ASSOCIATES, INC.
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



Drexelgate Parkway & Michigan 150 (2 RTOR) (... - TMC

Tue Feb 23, 2021
PM Peak (4:15 PM - 5:15 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 813091, Location: 42.65781, -83.132877

Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg	Rochester					Drexel					
Direction	Southbound					Westbound					
Time	R	T	L	U	**App**	R	T	L	U	RR	**App**
2021-02-23 4:15PM	7	315	7	0	**329**	3	1	5	0	6	**15**
4:30PM	2	313	1	0	**316**	2	0	5	0	3	**10**
4:45PM	6	312	4	0	**322**	2	0	6	0	2	**10**
5:00PM	3	336	2	0	**341**	2	1	11	0	4	**18**
Total	18	1276	14	0	**1308**	9	2	27	0	15	**53**
% Approach	1.4%	97.6%	1.1%	0%	**-**	17.0%	3.8%	50.9%	0%	28.3%	**-**
% Total	0.6%	43.1%	0.5%	0%	**44.2%**	0.3%	0.1%	0.9%	0%	0.5%	**1.8%**
PHF	0.643	0.949	0.500	-	**0.959**	0.750	0.500	0.614	-	0.625	**0.736**
Lights	18	1261	14	0	**1293**	8	2	26	0	14	**50**
% Lights	100%	98.8%	100%	0%	**98.9%**	88.9%	100%	96.3%	0%	93.3%	**94.3%**
Articulated Trucks	0	8	0	0	**8**	0	0	0	0	0	**0**
% Articulated Trucks	0%	0.6%	0%	0%	**0.6%**	0%	0%	0%	0%	0%	**0%**
Buses and Single-Unit Trucks	0	7	0	0	**7**	1	0	1	0	1	**3**
% Buses and Single-Unit Trucks	0%	0.5%	0%	0%	**0.5%**	11.1%	0%	3.7%	0%	6.7%	**5.7%**

*L: Left, R: Right, RR: Right on red, T: Thru, U: U-Turn

Drexelgate Parkway & Michigan 150 (2 RTOR) (... - TMC

Tue Feb 23, 2021
PM Peak (4:15 PM - 5:15 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 813091, Location: 42.65781, -83.132877

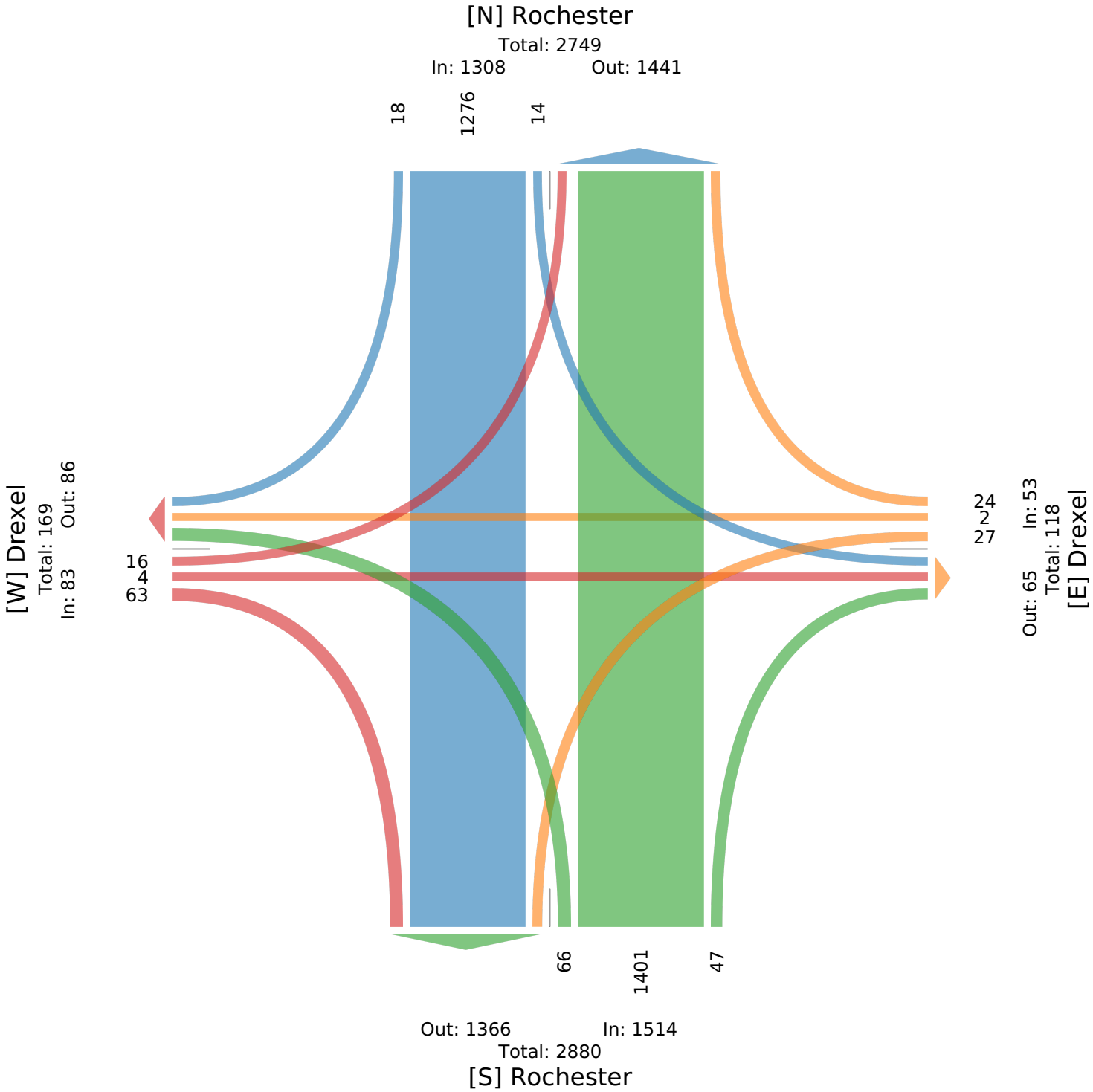
GEWALT HAMILTON ASSOCIATES, INC.
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

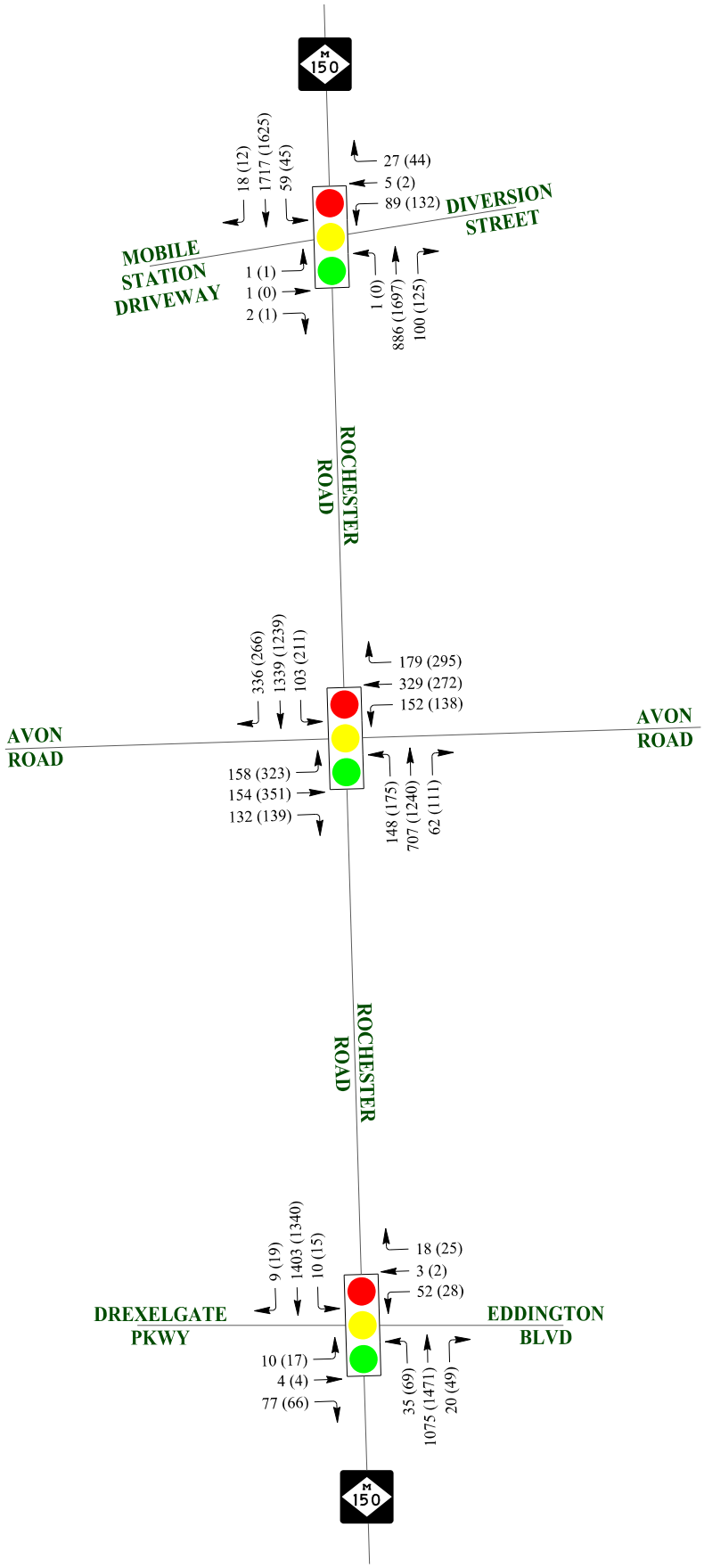
Leg	Rochester					Drexel						
Direction	Northbound					Eastbound						
Time	R	T	L	U	**App**	R	T	L	U	RR	**App**	**Int**
2021-02-23 4:15PM	12	350	17	0	**379**	3	0	5	0	6	**14**	**737**
4:30PM	7	354	11	0	**372**	7	0	4	0	10	**21**	**719**
4:45PM	18	344	20	0	**382**	10	2	3	0	6	**21**	**735**
5:00PM	10	353	18	0	**381**	6	2	4	0	15	**27**	**767**
Total	47	1401	66	0	**1514**	26	4	16	0	37	**83**	**2958**
% Approach	3.1%	92.5%	4.4%	0%	**-**	31.3%	4.8%	19.3%	0%	44.6%	**-**	-
% Total	1.6%	47.4%	2.2%	0%	**51.2%**	0.9%	0.1%	0.5%	0%	1.3%	**2.8%**	-
PHF	0.653	0.989	0.825	-	**0.991**	0.650	0.500	0.800	-	0.617	**0.769**	0.964
Lights	47	1394	66	0	**1507**	25	4	16	0	37	**82**	2932
% Lights	100%	99.5%	100%	0%	**99.5%**	96.2%	100%	100%	0%	100%	**98.8%**	99.1%
Articulated Trucks	0	4	0	0	**4**	0	0	0	0	0	**0**	12
% Articulated Trucks	0%	0.3%	0%	0%	**0.3%**	0%	0%	0%	0%	0%	**0%**	0.4%
Buses and Single-Unit Trucks	0	3	0	0	**3**	1	0	0	0	0	**1**	14
% Buses and Single-Unit Trucks	0%	0.2%	0%	0%	**0.2%**	3.8%	0%	0%	0%	0%	**1.2%**	0.5%

*L: Left, R: Right, RR: Right on red, T: Thru, U: U-Turn

Drexelgate Parkway & Michigan 150 (2 RTOR) (... - TMC
Tue Feb 23, 2021
PM Peak (4:15 PM - 5:15 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 813091, Location: 42.65781, -83.132877

GEWALT HAMILTON ASSOCIATES, INC.
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



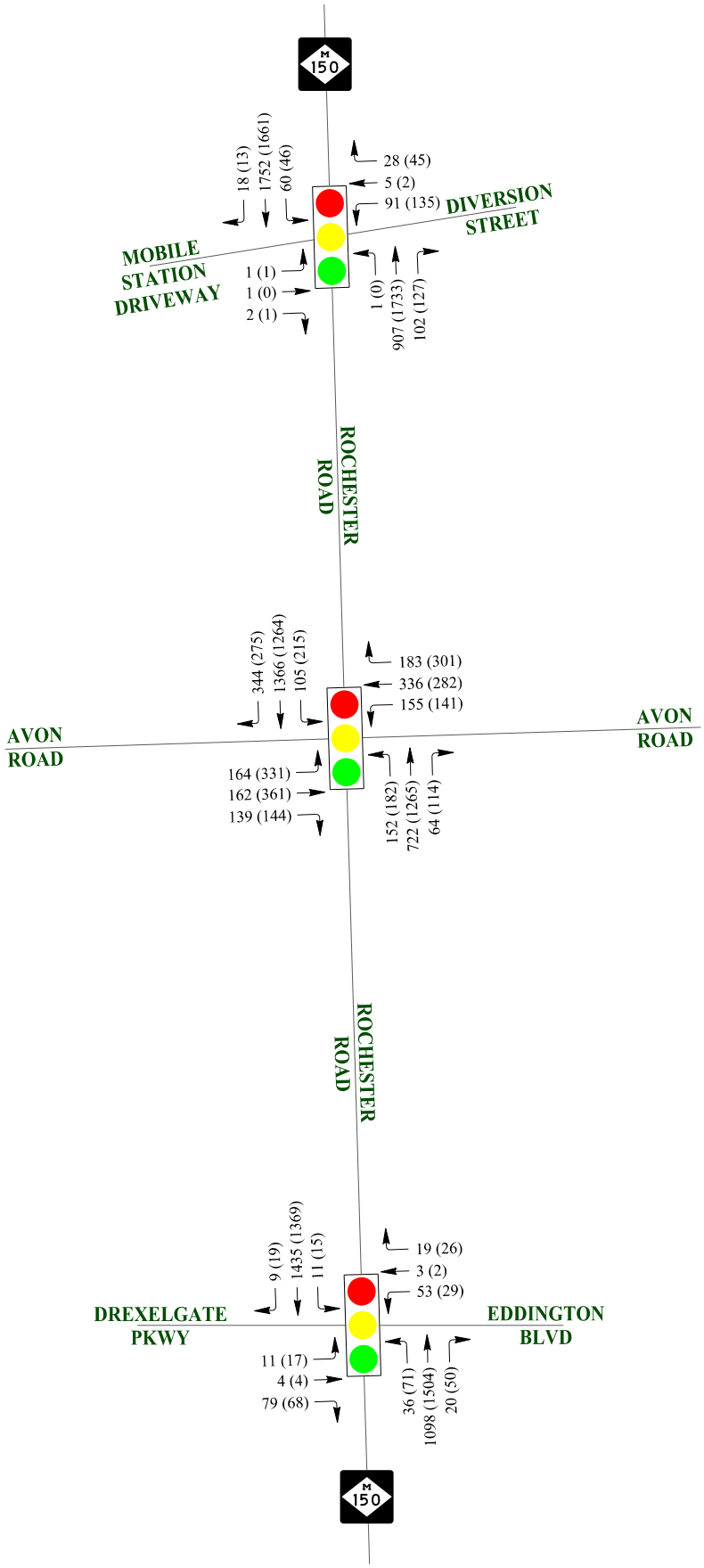


XX = AM PEAK HOUR
(XX) = PM PEAK HOUR

2021 EXISTING AM (PM) PEAK HOUR TRAFFIC VOLUMES

ROWE PROFESSIONAL SERVICES COMPANY

FIGURE 1

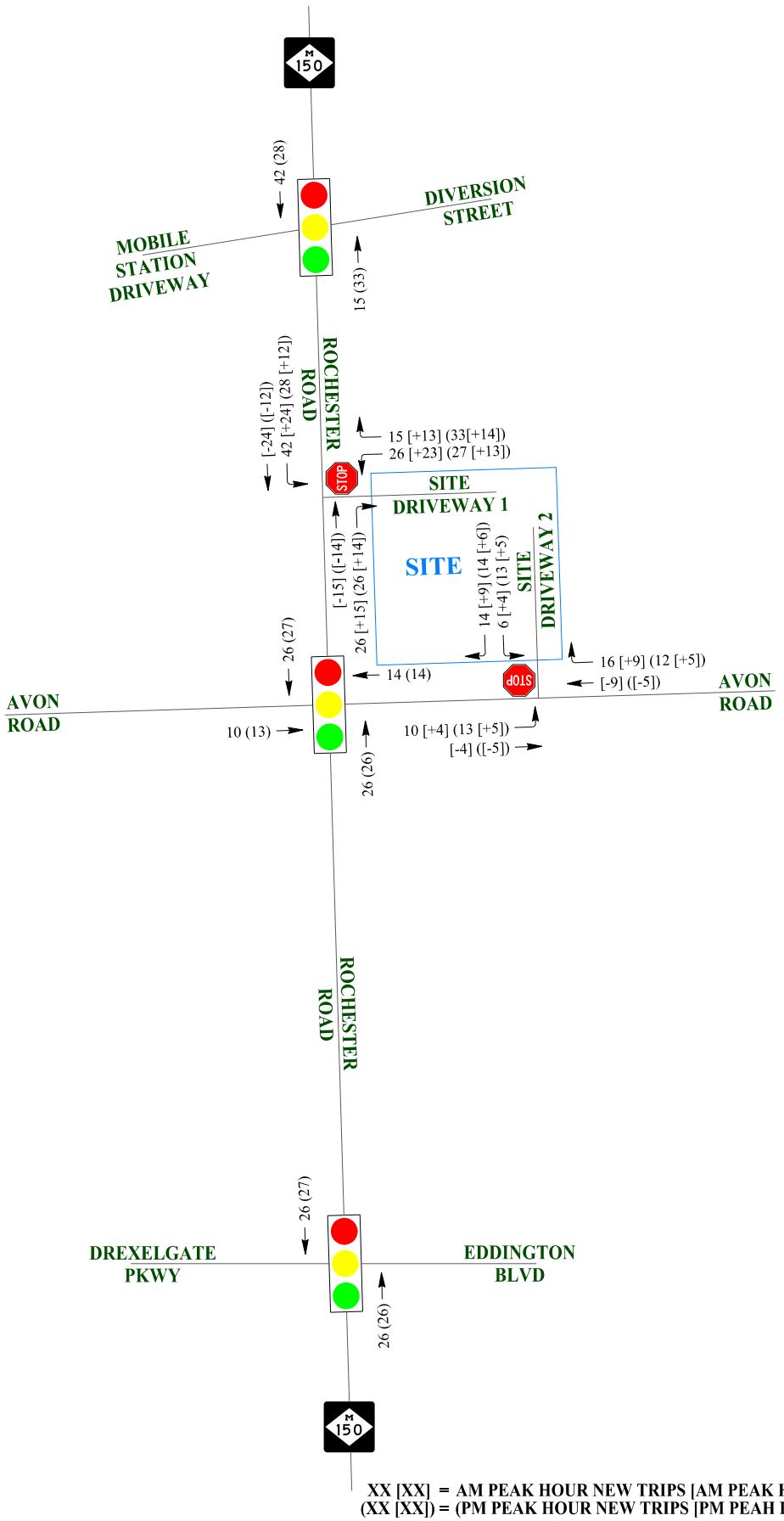


XX = AM PEAK HOUR
(XX) = PM PEAK HOUR

2022 BACKGROUND AM (PM) PEAK HOUR TRAFFIC VOLUMES

ROWE PROFESSIONAL SERVICES COMPANY

FIGURE 2

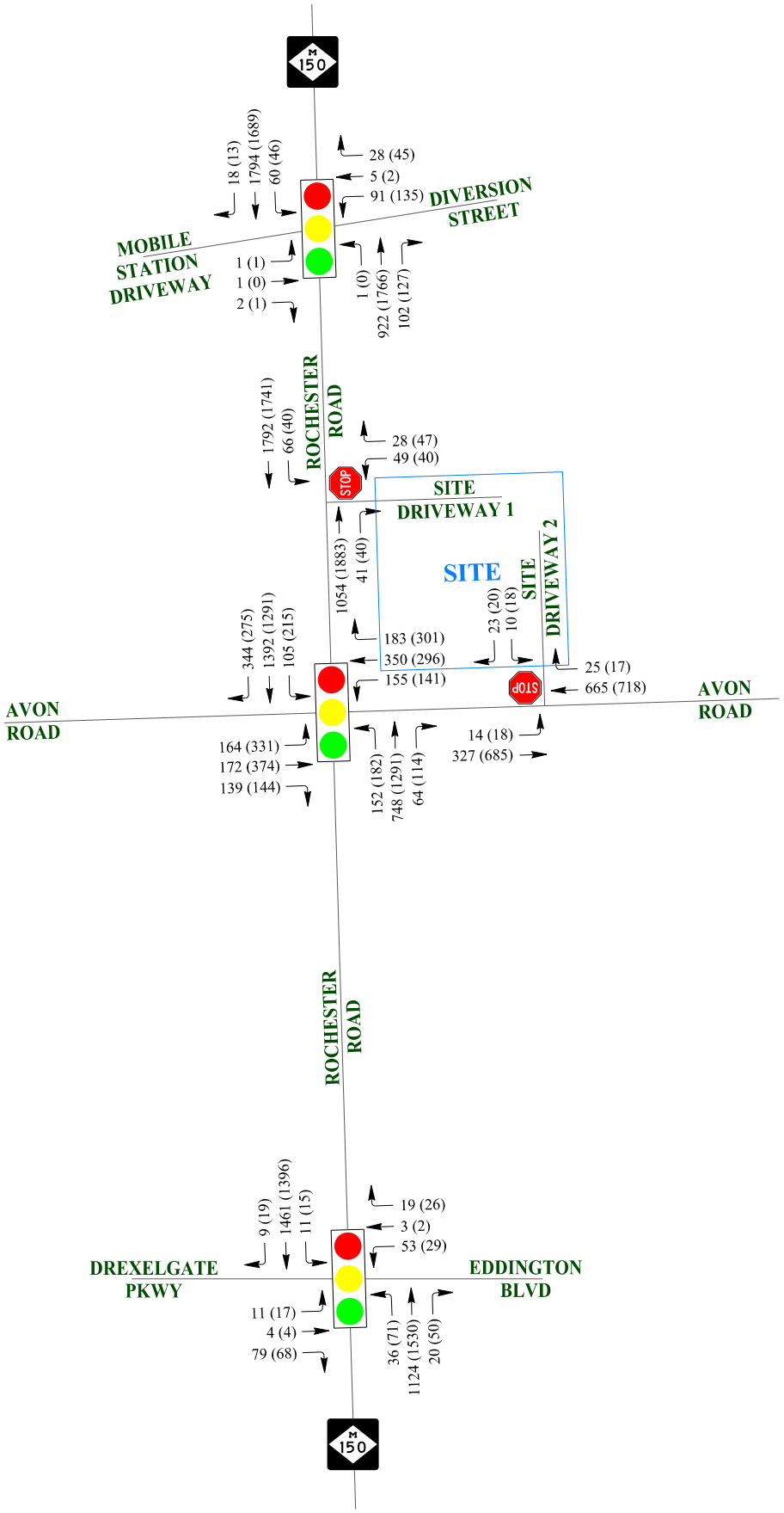


XX [XX] = AM PEAK HOUR NEW TRIPS [AM PEAK HOUR PASS-BY TRIPS]
(XX [XX]) = (PM PEAK HOUR NEW TRIPS [PM PEAH HOUR PASS-BY TRIPS])

TRIP GENERATION AM (PM) PEAK HOUR TRAFFIC VOLUMES

ROWE PROFESSIONAL SERVICES COMPANY

FIGURE 3

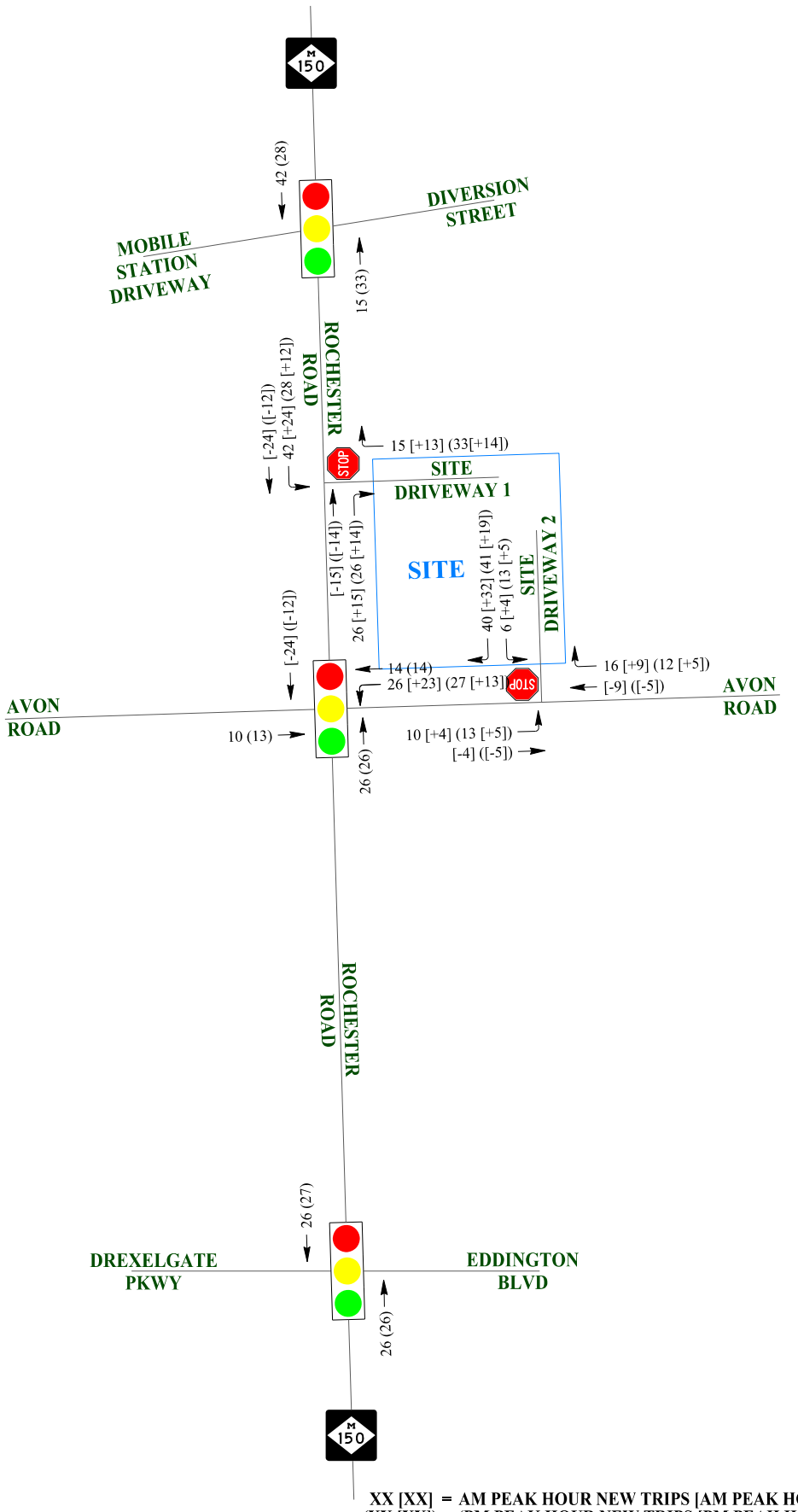


XX = AM PEAK HOUR
(XX) = PM PEAK HOUR

2022 FUTURE (BUILD) AM (PM) PEAK HOUR TRAFFIC VOLUMES

ROWE PROFESSIONAL SERVICES COMPANY

FIGURE 4

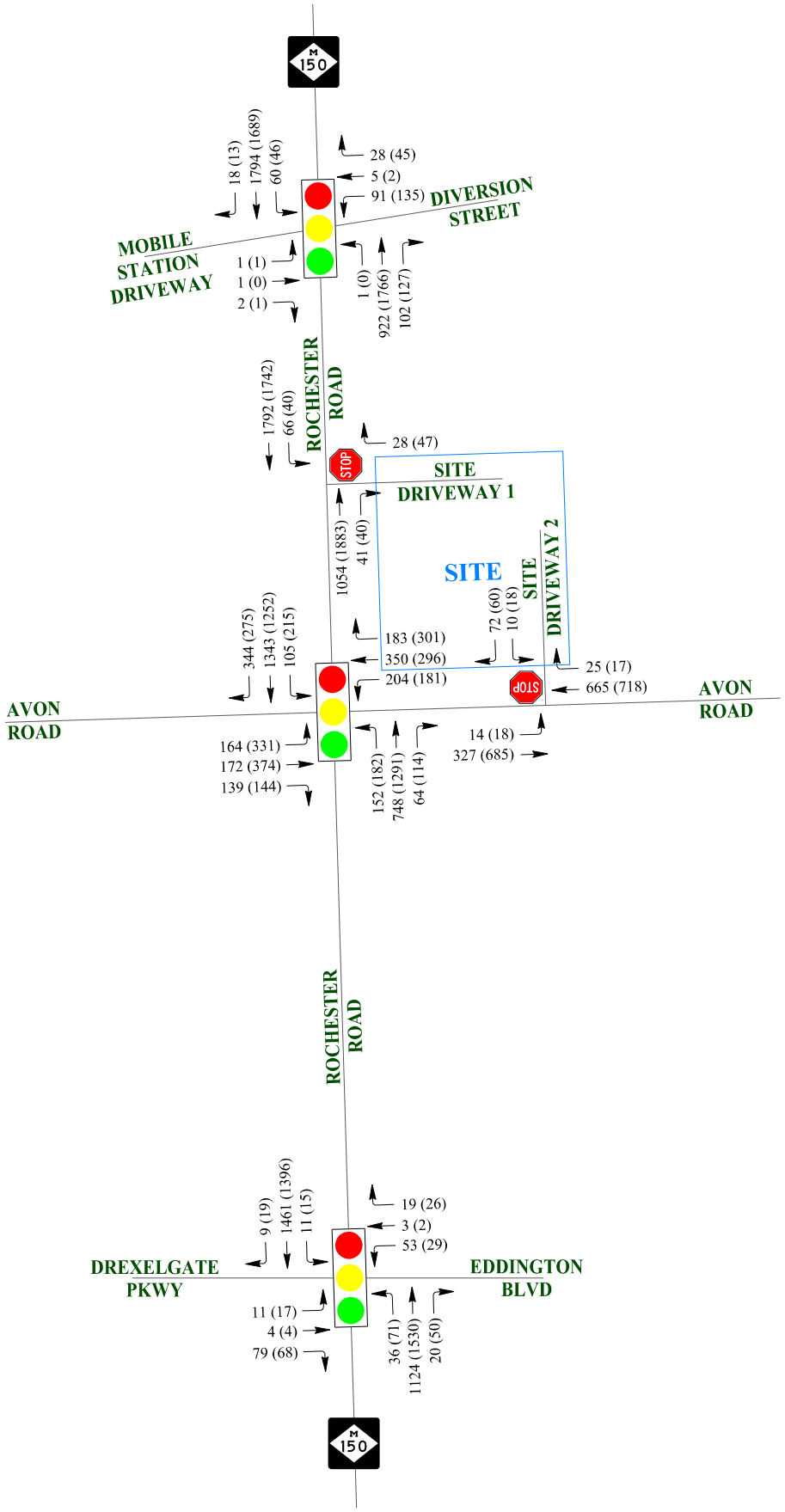


XX [XX] = AM PEAK HOUR NEW TRIPS [AM PEAK HOUR PASS-BY TRIPS]
(XX [XX]) = (PM PEAK HOUR NEW TRIPS [PM PEAH HOUR PASS-BY TRIPS])

TRIP GENERATION AM (PM) PEAK HOUR TRAFFIC VOLUMES - OPTIMIZED

ROWE PROFESSIONAL SERVICES COMPANY

FIGURE 5

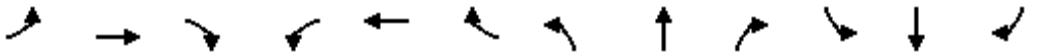


XX = AM PEAK HOUR
(XX) = PM PEAK HOUR

2022 FUTURE (BUILD) AM (PM) PEAK HOUR TRAFFIC VOLUMES - OPTIMIZED

ROWE PROFESSIONAL SERVICES COMPANY

FIGURE 6



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	1	2	89	5	27	1	886	100	59	1717	18
Future Volume (veh/h)	1	1	2	89	5	27	1	886	100	59	1717	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	2000	2000	2000	1860	1860	1860	1922	1922	1922	1953	1953	1953
Adj Flow Rate, veh/h	2	2	3	116	6	35	1	974	110	63	1846	19
Peak Hour Factor	0.60	0.60	0.60	0.77	0.77	0.77	0.91	0.91	0.91	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	9	9	9	5	5	5	3	3	3
Cap, veh/h	33	36	27	135	4	210	187	2843	1268	453	2930	30
Arrive On Green	0.13	0.13	0.13	0.13	0.13	0.13	1.00	1.00	1.00	0.78	0.78	0.78
Sat Flow, veh/h	0	271	204	632	33	1576	240	3652	1629	516	3763	39
Grp Volume(v), veh/h	7	0	0	122	0	35	1	974	110	63	909	956
Grp Sat Flow(s),veh/h/ln	475	0	0	665	0	1576	240	1826	1629	516	1856	1946
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	2.8	0.2	0.0	0.0	4.3	29.8	29.9
Cycle Q Clear(g_c), s	18.7	0.0	0.0	18.7	0.0	2.8	30.1	0.0	0.0	4.3	29.8	29.9
Prop In Lane	0.29		0.43	0.95		1.00	1.00		1.00	1.00		0.02
Lane Grp Cap(c), veh/h	97	0	0	139	0	210	187	2843	1268	453	1445	1515
V/C Ratio(X)	0.07	0.00	0.00	0.88	0.00	0.17	0.01	0.34	0.09	0.14	0.63	0.63
Avail Cap(c_a), veh/h	97	0	0	139	0	210	187	2843	1268	453	1445	1515
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.4	0.0	0.0	63.2	0.0	53.7	4.1	0.0	0.0	3.9	6.7	6.7
Incr Delay (d2), s/veh	0.4	0.0	0.0	43.3	0.0	0.5	0.1	0.3	0.1	0.6	2.1	2.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.4	0.0	0.0	10.1	0.0	2.1	0.0	0.2	0.1	0.9	16.0	16.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	53.9	0.0	0.0	106.5	0.0	54.3	4.2	0.3	0.1	4.5	8.8	8.8
LnGrp LOS	D	A	A	F	A	D	A	A	A	A	A	A
Approach Vol, veh/h		7			157			1085			1928	
Approach Delay, s/veh		53.9			94.9			0.3			8.6	
Approach LOS		D			F			A			A	

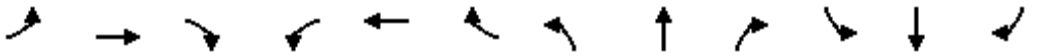
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		115.0		25.0		115.0		25.0				
Change Period (Y+Rc), s		* 6		* 6.3		* 6		* 6.3				
Max Green Setting (Gmax), s		* 1.1E2		* 19		* 1.1E2		* 19				
Max Q Clear Time (g_c+I1), s		32.1		20.7		31.9		20.7				
Green Ext Time (p_c), s		8.5		0.0		30.5		0.0				

Intersection Summary		
HCM 6th Ctrl Delay		10.2
HCM 6th LOS		B

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



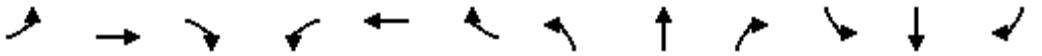
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	158	154	132	152	329	179	148	707	62	103	1339	336
Future Volume (veh/h)	158	154	132	152	329	179	148	707	62	103	1339	336
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1906	1906	1906	1938	1938	1938	1906	1906	1906	1953	1953	1953
Adj Flow Rate, veh/h	180	175	150	167	362	197	159	760	67	110	1424	357
Peak Hour Factor	0.88	0.88	0.88	0.91	0.91	0.91	0.93	0.93	0.93	0.94	0.94	0.94
Percent Heavy Veh, %	6	6	6	4	4	4	6	6	6	3	3	3
Cap, veh/h	189	388	534	192	471	252	231	1913	1022	188	1863	1004
Arrive On Green	0.10	0.20	0.20	0.10	0.20	0.17	0.25	1.00	1.00	0.20	1.00	1.00
Sat Flow, veh/h	1816	1906	1616	1845	2316	1239	1816	3622	1616	1860	3711	1655
Grp Volume(v), veh/h	180	175	150	167	286	273	159	760	67	110	1424	357
Grp Sat Flow(s),veh/h/ln	1816	1906	1616	1845	1841	1715	1816	1811	1616	1860	1856	1655
Q Serve(g_s), s	13.8	11.3	9.6	12.5	20.6	21.2	11.1	0.0	0.0	7.5	0.0	0.0
Cycle Q Clear(g_c), s	13.8	11.3	9.6	12.5	20.6	21.2	11.1	0.0	0.0	7.5	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.72	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	189	388	534	192	375	349	231	1913	1022	188	1863	1004
V/C Ratio(X)	0.95	0.45	0.28	0.87	0.76	0.78	0.69	0.40	0.07	0.59	0.76	0.36
Avail Cap(c_a), veh/h	189	403	547	192	389	362	246	1913	1022	252	1863	1004
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	62.3	48.9	34.6	61.7	52.6	54.5	49.7	0.0	0.0	53.2	0.0	0.0
Incr Delay (d2), s/veh	51.2	0.8	0.3	31.7	8.5	10.2	7.3	0.6	0.1	2.9	3.0	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	13.8	9.2	6.8	12.0	15.5	15.4	8.5	0.3	0.1	6.1	1.4	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	113.5	49.7	34.8	93.5	61.1	64.6	57.0	0.6	0.1	56.1	3.0	1.0
LnGrp LOS	F	D	C	F	E	E	E	A	A	E	A	A
Approach Vol, veh/h		505			726			986			1891	
Approach Delay, s/veh		68.0			69.9			9.7			5.7	
Approach LOS		E			E			A			A	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.1	76.0	17.0	30.9	19.8	72.3	17.0	30.9
Change Period (Y+Rc), s	6.7	6.7	7.1	7.1	6.7	6.7	7.1	7.1
Max Green Setting (Gmax), s	14.3	63.3	9.9	24.9	14.3	63.3	9.9	24.9
Max Q Clear Time (g_c+I1), s	9.5	2.0	14.5	13.3	13.1	2.0	15.8	23.2
Green Ext Time (p_c), s	0.1	5.6	0.0	1.0	0.0	17.7	0.0	0.6

Intersection Summary	
HCM 6th Ctrl Delay	25.7
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	4	77	52	3	18	35	1075	20	10	1403	9
Future Volume (veh/h)	10	4	77	52	3	18	35	1075	20	10	1403	9
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1953	1953	1953	1969	1969	1969	1938	1938	1938	1969	1969	1969
Adj Flow Rate, veh/h	12	5	18	67	4	5	38	1156	22	11	1594	10
Peak Hour Factor	0.83	0.83	0.83	0.78	0.78	0.78	0.93	0.93	0.93	0.88	0.88	0.88
Percent Heavy Veh, %	3	3	3	2	2	2	4	4	4	2	2	2
Cap, veh/h	149	28	100	138	59	74	311	3070	1369	412	3119	1391
Arrive On Green	0.07	0.07	0.07	0.07	0.07	0.07	0.83	0.83	0.83	1.00	1.00	1.00
Sat Flow, veh/h	1395	372	1340	1388	795	994	312	3681	1642	476	3741	1668
Grp Volume(v), veh/h	12	0	23	67	0	9	38	1156	22	11	1594	10
Grp Sat Flow(s),veh/h/ln	1395	0	1712	1388	0	1790	312	1841	1642	476	1870	1668
Q Serve(g_s), s	1.1	0.0	1.8	6.7	0.0	0.7	3.2	10.7	0.3	0.3	0.0	0.0
Cycle Q Clear(g_c), s	1.8	0.0	1.8	8.4	0.0	0.7	3.2	10.7	0.3	11.0	0.0	0.0
Prop In Lane	1.00		0.78	1.00		0.56	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	149	0	128	138	0	134	311	3070	1369	412	3119	1391
V/C Ratio(X)	0.08	0.00	0.18	0.49	0.00	0.07	0.12	0.38	0.02	0.03	0.51	0.01
Avail Cap(c_a), veh/h	396	0	430	383	0	450	311	3070	1369	412	3119	1391
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	61.1	0.0	60.7	64.7	0.0	60.2	2.2	2.8	2.0	0.5	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.0	0.7	2.6	0.0	0.2	0.8	0.4	0.0	0.1	0.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.7	0.0	1.4	4.5	0.0	0.6	0.3	4.3	0.1	0.0	0.5	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	61.3	0.0	61.4	67.3	0.0	60.4	3.0	3.2	2.0	0.6	0.6	0.0
LnGrp LOS	E	A	E	E	A	E	A	A	A	A	A	A
Approach Vol, veh/h		35			76			1216			1615	
Approach Delay, s/veh		61.4			66.5			3.1			0.6	
Approach LOS		E			E			A			A	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		122.7		17.3		122.7		17.3				
Change Period (Y+Rc), s		* 6		* 6.8		* 6		* 6.8				
Max Green Setting (Gmax), s		* 92		* 35		* 92		* 35				
Max Q Clear Time (g_c+I1), s		12.7		3.8		13.0		10.4				
Green Ext Time (p_c), s		11.6		0.1		18.4		0.2				

Intersection Summary		
HCM 6th Ctrl Delay	4.1	
HCM 6th LOS	A	

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection: 1: Rochester Road & Mobil Driveway/Diversion Street

Movement	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	LT	R	T	T	R	L	T	TR
Maximum Queue (ft)	50	198	57	98	114	60	47	304	276
Average Queue (ft)	6	80	17	39	42	8	26	95	102
95th Queue (ft)	28	181	39	91	98	33	50	231	234
Link Distance (ft)	265	241		1412	1412			772	772
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)			100			425	200		
Storage Blk Time (%)		11						2	
Queuing Penalty (veh)		3						1	

Intersection: 2: Rochester Road & Avon Road

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB
Directions Served	L	T	R	L	T	TR	L	T	T	R	L	T
Maximum Queue (ft)	631	248	172	341	260	250	280	217	246	60	184	589
Average Queue (ft)	386	111	72	202	194	160	179	145	156	6	97	370
95th Queue (ft)	579	212	146	302	253	241	274	208	227	27	162	557
Link Distance (ft)		888	888		926			1643	1643			1106
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	850			500		435	500			150	500	
Storage Blk Time (%)									11			3
Queuing Penalty (veh)									7			4

Intersection: 2: Rochester Road & Avon Road

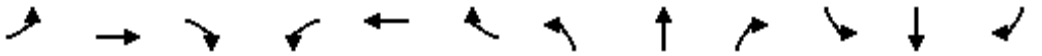
Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	642	450
Average Queue (ft)	400	183
95th Queue (ft)	606	484
Link Distance (ft)	1106	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		350
Storage Blk Time (%)	19	
Queuing Penalty (veh)	63	

Intersection: 3: Rochester Road & Drexelgate Pkwy/Eddington Blvd

Movement	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	T	R	L	T	T	R
Maximum Queue (ft)	24	107	105	42	51	125	74	25	26	198	213	31
Average Queue (ft)	6	38	44	10	14	49	29	2	2	94	119	2
95th Queue (ft)	21	72	91	32	37	111	70	14	15	176	204	15
Link Distance (ft)		315		330		760	760			1290	1290	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	100		95		150			150	150			130
Storage Blk Time (%)		0	2							2	4	
Queuing Penalty (veh)		0	0							0	0	

Zone Summary

Zone wide Queuing Penalty: 79



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	0	1	132	2	44	0	1697	125	45	1625	12
Future Volume (veh/h)	1	0	1	132	2	44	0	1697	125	45	1625	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	2000	2000	2000	1984	1984	1984	1984	1984	1984	1984	1984	1984
Adj Flow Rate, veh/h	2	0	2	181	3	60	0	1786	132	48	1729	13
Peak Hour Factor	0.60	0.60	0.60	0.73	0.73	0.73	0.95	0.95	0.95	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	1	1	1	1	1	1	1	1	1
Cap, veh/h	39	13	13	201	2	252	51	2989	1333	238	3041	23
Arrive On Green	0.15	0.00	0.13	0.15	0.15	0.15	0.00	1.00	1.00	0.79	0.79	0.78
Sat Flow, veh/h	0	87	87	1001	17	1682	279	3770	1682	235	3836	29
Grp Volume(v), veh/h	4	0	0	184	0	60	0	1786	132	48	849	893
Grp Sat Flow(s),veh/h/ln	175	0	0	1018	0	1682	279	1885	1682	235	1885	1979
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	4.4	0.0	0.0	0.0	7.4	23.8	23.9
Cycle Q Clear(g_c), s	21.0	0.0	0.0	21.0	0.0	4.4	0.0	0.0	0.0	7.4	23.8	23.9
Prop In Lane	0.50		0.50	0.98		1.00	1.00		1.00	1.00		0.01
Lane Grp Cap(c), veh/h	65	0	0	204	0	252	51	2989	1333	238	1495	1569
V/C Ratio(X)	0.06	0.00	0.00	0.90	0.00	0.24	0.00	0.60	0.10	0.20	0.57	0.57
Avail Cap(c_a), veh/h	65	0	0	204	0	252	51	2989	1333	238	1495	1569
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.4	0.0	0.0	61.3	0.0	52.4	0.0	0.0	0.0	3.8	5.5	5.5
Incr Delay (d2), s/veh	0.6	0.0	0.0	38.1	0.0	0.7	0.0	0.9	0.1	1.9	1.6	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.2	0.0	0.0	13.7	0.0	3.5	0.0	0.7	0.1	0.8	13.0	13.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	53.0	0.0	0.0	99.4	0.0	53.1	0.0	0.9	0.1	5.7	7.0	7.0
LnGrp LOS	D	A	A	F	A	D	A	A	A	A	A	A
Approach Vol, veh/h		4			244			1918			1790	
Approach Delay, s/veh		53.0			88.0			0.8			7.0	
Approach LOS		D			F			A			A	

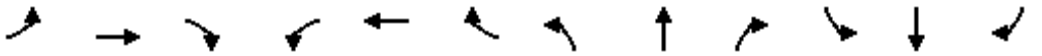
Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	115.0	25.0	115.0	25.0
Change Period (Y+Rc), s	* 6	* 6.3	* 6	* 6.3
Max Green Setting (Gmax), s	* 1.1E2	* 19	* 1.1E2	* 19
Max Q Clear Time (g_c+I1), s	2.0	23.0	25.9	23.0
Green Ext Time (p_c), s	26.8	0.0	28.4	0.0

Intersection Summary	
HCM 6th Ctrl Delay	9.0
HCM 6th LOS	A

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



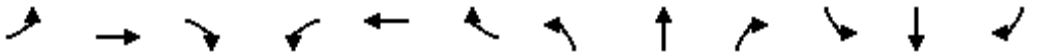
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	323	351	139	138	272	295	175	1240	111	211	1239	266
Future Volume (veh/h)	323	351	139	138	272	295	175	1240	111	211	1239	266
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1984	1984	1984	2000	2000	2000	1984	1984	1984	1984	1984	1984
Adj Flow Rate, veh/h	340	369	146	145	286	311	186	1319	118	229	1347	289
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.94	0.94	0.94	0.92	0.92	0.92
Percent Heavy Veh, %	1	1	1	0	0	0	1	1	1	1	1	1
Cap, veh/h	278	429	603	230	361	322	269	1670	948	297	1726	1017
Arrive On Green	0.15	0.22	0.22	0.12	0.19	0.16	0.14	0.44	0.44	0.05	0.15	0.15
Sat Flow, veh/h	1890	1984	1682	1905	1900	1695	1890	3770	1682	1890	3770	1682
Grp Volume(v), veh/h	340	369	146	145	286	311	186	1319	118	229	1347	289
Grp Sat Flow(s),veh/h/ln	1890	1984	1682	1905	1900	1695	1890	1885	1682	1890	1885	1682
Q Serve(g_s), s	20.6	25.1	8.5	10.1	20.1	25.5	13.1	42.0	4.6	16.8	48.1	15.8
Cycle Q Clear(g_c), s	20.6	25.1	8.5	10.1	20.1	25.5	13.1	42.0	4.6	16.8	48.1	15.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	278	429	603	230	361	322	269	1670	948	297	1726	1017
V/C Ratio(X)	1.22	0.86	0.24	0.63	0.79	0.97	0.69	0.79	0.12	0.77	0.78	0.28
Avail Cap(c_a), veh/h	278	429	603	280	361	322	297	1670	948	297	1726	1017
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	59.7	52.8	31.5	58.6	54.1	58.6	57.1	33.4	14.3	63.9	52.6	22.0
Incr Delay (d2), s/veh	128.0	16.0	0.2	3.2	11.4	40.9	6.0	3.9	0.3	11.7	3.6	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	29.3	20.3	6.2	8.7	16.0	20.9	10.7	26.2	3.2	14.5	33.4	11.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	187.7	68.8	31.8	61.8	65.5	99.4	63.1	37.3	14.6	75.6	56.2	22.7
LnGrp LOS	F	E	C	E	E	F	E	D	B	E	E	C
Approach Vol, veh/h		855			742			1623			1865	
Approach Delay, s/veh		109.7			79.0			38.6			53.4	
Approach LOS		F			E			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	24.0	64.0	23.0	29.0	21.9	66.1	19.3	32.7
Change Period (Y+Rc), s	6.7	6.7	7.1	7.1	6.7	6.7	7.1	7.1
Max Green Setting (Gmax), s	17.3	57.3	15.9	21.9	17.3	57.3	15.9	21.9
Max Q Clear Time (g_c+I1), s	18.8	44.0	22.6	27.5	15.1	50.1	12.1	27.1
Green Ext Time (p_c), s	0.0	7.3	0.0	0.0	0.1	5.0	0.1	0.0

Intersection Summary	
HCM 6th Ctrl Delay	61.9
HCM 6th LOS	E

Notes

User approved pedestrian interval to be less than phase max green.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	17	4	66	28	2	25	69	1471	49	15	1340	19
Future Volume (veh/h)	17	4	66	28	2	25	69	1471	49	15	1340	19
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1984	1984	1984	1906	1906	1906	1984	1984	1984	1984	1984	1984
Adj Flow Rate, veh/h	22	5	35	38	3	12	73	1548	52	16	1411	20
Peak Hour Factor	0.77	0.77	0.77	0.74	0.74	0.74	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	1	1	6	6	6	1	1	1	1	1	1
Cap, veh/h	131	14	98	108	22	87	334	3180	1418	287	3180	1418
Arrive On Green	0.07	0.07	0.07	0.07	0.07	0.07	0.84	0.84	0.84	0.84	0.84	0.84
Sat Flow, veh/h	1410	214	1500	1324	333	1333	377	3770	1682	320	3770	1682
Grp Volume(v), veh/h	22	0	40	38	0	15	73	1548	52	16	1411	20
Grp Sat Flow(s),veh/h/ln	1410	0	1714	1324	0	1666	377	1885	1682	320	1885	1682
Q Serve(g_s), s	2.1	0.0	3.1	4.0	0.0	1.2	8.4	15.3	0.7	2.0	13.1	0.3
Cycle Q Clear(g_c), s	3.3	0.0	3.1	7.1	0.0	1.2	21.5	15.3	0.7	17.2	13.1	0.3
Prop In Lane	1.00		0.88	1.00		0.80	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	131	0	112	108	0	109	334	3180	1418	287	3180	1418
V/C Ratio(X)	0.17	0.00	0.36	0.35	0.00	0.14	0.22	0.49	0.04	0.06	0.44	0.01
Avail Cap(c_a), veh/h	394	0	431	355	0	419	334	3180	1418	287	3180	1418
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	63.3	0.0	62.6	66.0	0.0	61.7	5.4	2.9	1.8	5.2	2.7	1.7
Incr Delay (d2), s/veh	0.6	0.0	1.9	1.9	0.0	0.6	1.5	0.5	0.0	0.4	0.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.4	0.0	2.6	2.5	0.0	0.9	1.2	5.9	0.3	0.3	5.1	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	63.9	0.0	64.6	68.0	0.0	62.3	6.9	3.4	1.8	5.6	3.2	1.8
LnGrp LOS	E	A	E	E	A	E	A	A	A	A	A	A
Approach Vol, veh/h		62			53			1673			1447	
Approach Delay, s/veh		64.3			66.4			3.6			3.2	
Approach LOS		E			E			A			A	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		124.1		15.9		124.1		15.9				
Change Period (Y+Rc), s		* 6		* 6.8		* 6		* 6.8				
Max Green Setting (Gmax), s		* 92		* 35		* 92		* 35				
Max Q Clear Time (g_c+I1), s		23.5		5.3		19.2		9.1				
Green Ext Time (p_c), s		20.2		0.2		14.8		0.1				

Intersection Summary												
HCM 6th Ctrl Delay			5.6									
HCM 6th LOS			A									

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection: 1: Rochester Road & Mobil Driveway/Diversion Street

Movement	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	LT	R	T	T	R	L	T	TR
Maximum Queue (ft)	31	295	150	72	105	26	65	251	242
Average Queue (ft)	1	119	33	21	36	10	28	127	113
95th Queue (ft)	10	212	103	62	79	27	58	202	201
Link Distance (ft)	257	304		1441	1441			862	862
Upstream Blk Time (%)		0							
Queuing Penalty (veh)		0							
Storage Bay Dist (ft)			100			425	200		
Storage Blk Time (%)		19	0					1	
Queuing Penalty (veh)		9	0					0	

Intersection: 2: Rochester Road & Avon Road

Movement	EB	EB	EB	B19	B19	WB	WB	WB	NB	NB	NB	NB
Directions Served	L	T	R	T	T	L	T	TR	L	T	T	R
Maximum Queue (ft)	875	991	128	280	194	220	308	298	345	471	481	200
Average Queue (ft)	736	867	54	141	7	115	188	201	244	288	309	84
95th Queue (ft)	1074	1097	107	347	65	182	279	298	343	410	419	233
Link Distance (ft)		896	896	195	195		950			1658	1658	
Upstream Blk Time (%)		41		39	0							
Queuing Penalty (veh)		164		153	0							
Storage Bay Dist (ft)	850					500		435	500			150
Storage Blk Time (%)	48	4									38	
Queuing Penalty (veh)	164	15									42	

Intersection: 2: Rochester Road & Avon Road

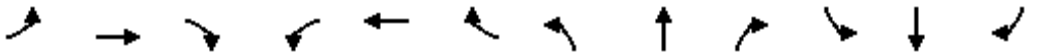
Movement	SB	SB	SB	SB
Directions Served	L	T	T	R
Maximum Queue (ft)	520	636	672	450
Average Queue (ft)	188	384	405	100
95th Queue (ft)	350	550	571	334
Link Distance (ft)		1138	1138	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	500			350
Storage Blk Time (%)		2	15	
Queuing Penalty (veh)		5	41	

Intersection: 3: Rochester Road & Drexelgate Pkwy/Eddington Blvd

Movement	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	T	R	L	T	T	R
Maximum Queue (ft)	46	108	86	57	71	118	114	30	50	214	193	31
Average Queue (ft)	17	34	22	14	35	52	35	4	9	72	82	1
95th Queue (ft)	45	75	60	36	68	117	93	20	33	171	178	10
Link Distance (ft)		272		321		710	710			1292	1292	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	100		95		150			150	150			130
Storage Blk Time (%)		1	0							1	1	
Queuing Penalty (veh)		0	0							0	0	

Zone Summary

Zone wide Queuing Penalty: 595



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	1	2	91	5	28	1	907	102	60	1752	18
Future Volume (veh/h)	1	1	2	91	5	28	1	907	102	60	1752	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	2000	2000	2000	1860	1860	1860	1922	1922	1922	1953	1953	1953
Adj Flow Rate, veh/h	2	2	3	118	6	36	1	997	112	65	1884	19
Peak Hour Factor	0.60	0.60	0.60	0.77	0.77	0.77	0.91	0.91	0.91	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	9	9	9	5	5	5	3	3	3
Cap, veh/h	33	36	27	135	4	210	180	2843	1268	444	2931	30
Arrive On Green	0.13	0.13	0.13	0.13	0.13	0.13	1.00	1.00	1.00	0.78	0.78	0.78
Sat Flow, veh/h	0	271	204	632	32	1576	231	3652	1629	504	3764	38
Grp Volume(v), veh/h	7	0	0	124	0	36	1	997	112	65	927	976
Grp Sat Flow(s),veh/h/ln	475	0	0	664	0	1576	231	1826	1629	504	1856	1946
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	2.8	0.2	0.0	0.0	4.6	31.0	31.2
Cycle Q Clear(g_c), s	18.7	0.0	0.0	18.7	0.0	2.8	31.3	0.0	0.0	4.6	31.0	31.2
Prop In Lane	0.29		0.43	0.95		1.00	1.00		1.00	1.00		0.02
Lane Grp Cap(c), veh/h	97	0	0	139	0	210	180	2843	1268	444	1445	1515
V/C Ratio(X)	0.07	0.00	0.00	0.89	0.00	0.17	0.01	0.35	0.09	0.15	0.64	0.64
Avail Cap(c_a), veh/h	97	0	0	139	0	210	180	2843	1268	444	1445	1515
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.4	0.0	0.0	63.3	0.0	53.8	4.5	0.0	0.0	3.9	6.9	6.9
Incr Delay (d2), s/veh	0.4	0.0	0.0	46.6	0.0	0.5	0.1	0.3	0.1	0.7	2.2	2.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.4	0.0	0.0	10.4	0.0	2.1	0.0	0.2	0.1	0.9	16.5	17.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	53.9	0.0	0.0	109.9	0.0	54.3	4.5	0.3	0.1	4.6	9.1	9.0
LnGrp LOS	D	A	A	F	A	D	A	A	A	A	A	A
Approach Vol, veh/h		7			160			1110			1968	
Approach Delay, s/veh		53.9			97.4			0.3			8.9	
Approach LOS		D			F			A			A	

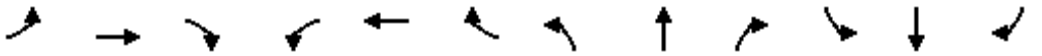
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		115.0		25.0		115.0		25.0				
Change Period (Y+Rc), s		* 6		* 6.3		* 6		* 6.3				
Max Green Setting (Gmax), s		* 1.1E2		* 19		* 1.1E2		* 19				
Max Q Clear Time (g_c+I1), s		33.3		20.7		33.2		20.7				
Green Ext Time (p_c), s		8.8		0.0		32.0		0.0				

Intersection Summary		
HCM 6th Ctrl Delay		10.4
HCM 6th LOS		B

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



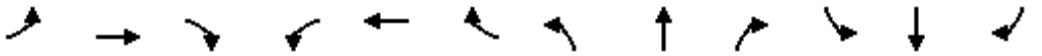
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	164	162	139	155	336	183	152	722	64	105	1366	344
Future Volume (veh/h)	164	162	139	155	336	183	152	722	64	105	1366	344
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1906	1906	1906	1938	1938	1938	1906	1906	1906	1953	1953	1953
Adj Flow Rate, veh/h	186	184	158	170	369	201	163	776	69	112	1453	366
Peak Hour Factor	0.88	0.88	0.88	0.91	0.91	0.91	0.93	0.93	0.93	0.94	0.94	0.94
Percent Heavy Veh, %	6	6	6	4	4	4	6	6	6	3	3	3
Cap, veh/h	189	392	541	192	476	255	234	1902	1017	190	1848	997
Arrive On Green	0.10	0.21	0.21	0.10	0.21	0.17	0.26	1.00	1.00	0.20	1.00	1.00
Sat Flow, veh/h	1816	1906	1616	1845	2314	1241	1816	3622	1616	1860	3711	1655
Grp Volume(v), veh/h	186	184	158	170	292	278	163	776	69	112	1453	366
Grp Sat Flow(s),veh/h/ln	1816	1906	1616	1845	1841	1714	1816	1811	1616	1860	1856	1655
Q Serve(g_s), s	14.3	11.9	10.1	12.7	21.0	21.7	11.4	0.0	0.0	7.6	1.0	0.2
Cycle Q Clear(g_c), s	14.3	11.9	10.1	12.7	21.0	21.7	11.4	0.0	0.0	7.6	1.0	0.2
Prop In Lane	1.00		1.00	1.00		0.72	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	189	392	541	192	379	353	234	1902	1017	190	1848	997
V/C Ratio(X)	0.98	0.47	0.29	0.88	0.77	0.79	0.70	0.41	0.07	0.59	0.79	0.37
Avail Cap(c_a), veh/h	189	403	550	192	389	362	246	1902	1017	252	1848	997
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	62.6	48.9	34.3	61.9	52.5	54.4	49.4	0.0	0.0	53.1	0.1	0.1
Incr Delay (d2), s/veh	60.1	0.9	0.3	34.8	9.0	10.8	7.8	0.7	0.1	2.9	3.5	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	14.7	9.6	7.2	12.3	15.9	15.7	8.7	0.3	0.1	6.2	1.8	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	122.6	49.8	34.6	96.7	61.5	65.2	57.2	0.7	0.1	56.0	3.6	1.1
LnGrp LOS	F	D	C	F	E	E	E	A	A	E	A	A
Approach Vol, veh/h		528			740			1008			1931	
Approach Delay, s/veh		70.9			71.0			9.8			6.2	
Approach LOS		E			E			A			A	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.3	75.5	17.0	31.2	20.1	71.7	17.0	31.2
Change Period (Y+Rc), s	6.7	6.7	7.1	7.1	6.7	6.7	7.1	7.1
Max Green Setting (Gmax), s	14.3	63.3	9.9	24.9	14.3	63.3	9.9	24.9
Max Q Clear Time (g_c+I1), s	9.6	2.0	14.7	13.9	13.4	3.0	16.3	23.7
Green Ext Time (p_c), s	0.1	5.8	0.0	1.1	0.0	18.3	0.0	0.4

Intersection Summary	
HCM 6th Ctrl Delay	26.5
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	4	79	53	3	19	36	1098	20	11	1435	9
Future Volume (veh/h)	11	4	79	53	3	19	36	1098	20	11	1435	9
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1953	1953	1953	1969	1969	1969	1938	1938	1938	1969	1969	1969
Adj Flow Rate, veh/h	13	5	18	68	4	5	39	1181	22	12	1631	10
Peak Hour Factor	0.83	0.83	0.83	0.78	0.78	0.78	0.93	0.93	0.93	0.88	0.88	0.88
Percent Heavy Veh, %	3	3	3	2	2	2	4	4	4	2	2	2
Cap, veh/h	150	28	101	139	60	75	302	3067	1368	402	3116	1390
Arrive On Green	0.08	0.08	0.08	0.08	0.08	0.08	0.83	0.83	0.83	1.00	1.00	1.00
Sat Flow, veh/h	1395	372	1340	1388	795	994	301	3681	1642	465	3741	1668
Grp Volume(v), veh/h	13	0	23	68	0	9	39	1181	22	12	1631	10
Grp Sat Flow(s),veh/h/ln	1395	0	1712	1388	0	1790	301	1841	1642	465	1870	1668
Q Serve(g_s), s	1.2	0.0	1.8	6.8	0.0	0.7	3.5	11.0	0.3	0.4	0.0	0.0
Cycle Q Clear(g_c), s	1.9	0.0	1.8	8.5	0.0	0.7	3.5	11.0	0.3	11.4	0.0	0.0
Prop In Lane	1.00		0.78	1.00		0.56	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	150	0	129	139	0	135	302	3067	1368	402	3116	1390
V/C Ratio(X)	0.09	0.00	0.18	0.49	0.00	0.07	0.13	0.39	0.02	0.03	0.52	0.01
Avail Cap(c_a), veh/h	396	0	430	383	0	450	302	3067	1368	402	3116	1390
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	61.0	0.0	60.6	64.6	0.0	60.1	2.2	2.9	2.0	0.5	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.0	0.6	2.7	0.0	0.2	0.9	0.4	0.0	0.1	0.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.8	0.0	1.4	4.5	0.0	0.6	0.4	4.5	0.1	0.0	0.5	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	61.2	0.0	61.3	67.3	0.0	60.3	3.1	3.2	2.0	0.7	0.6	0.0
LnGrp LOS	E	A	E	E	A	E	A	A	A	A	A	A
Approach Vol, veh/h		36			77			1242			1653	
Approach Delay, s/veh		61.3			66.5			3.2			0.6	
Approach LOS		E			E			A			A	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		122.6		17.4		122.6		17.4				
Change Period (Y+Rc), s		* 6		* 6.8		* 6		* 6.8				
Max Green Setting (Gmax), s		* 92		* 35		* 92		* 35				
Max Q Clear Time (g_c+I1), s		13.0		3.9		13.4		10.5				
Green Ext Time (p_c), s		12.1		0.1		19.3		0.2				

Intersection Summary	
HCM 6th Ctrl Delay	4.1
HCM 6th LOS	A

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection: 1: Rochester Road & Mobil Driveway/Diversion Street

Movement	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	LT	R	T	T	R	L	T	TR
Maximum Queue (ft)	31	217	44	92	128	46	97	309	268
Average Queue (ft)	6	82	13	33	46	11	28	130	127
95th Queue (ft)	25	148	36	75	94	31	64	227	235
Link Distance (ft)	265	241		1412	1412			772	772
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)			100			425	200		
Storage Blk Time (%)		10						1	
Queuing Penalty (veh)		3						1	

Intersection: 2: Rochester Road & Avon Road

Movement	EB	EB	EB	B19	B19	WB	WB	WB	NB	NB	NB	NB
Directions Served	L	T	R	T	T	L	T	TR	L	T	T	R
Maximum Queue (ft)	875	1007	109	254	192	513	540	360	282	216	232	200
Average Queue (ft)	685	588	54	47	7	235	277	233	149	131	138	27
95th Queue (ft)	1080	1267	102	189	64	446	438	348	227	194	207	123
Link Distance (ft)		899	899	192	192		926			1643	1643	
Upstream Blk Time (%)		23		6	0							
Queuing Penalty (veh)		52		14	0							
Storage Bay Dist (ft)	850					500		435	500			150
Storage Blk Time (%)	40	9				3					6	
Queuing Penalty (veh)	64	15				14					4	

Intersection: 2: Rochester Road & Avon Road

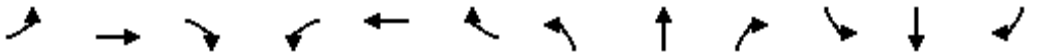
Movement	SB	SB	SB	SB
Directions Served	L	T	T	R
Maximum Queue (ft)	178	569	677	450
Average Queue (ft)	101	345	362	130
95th Queue (ft)	170	484	508	345
Link Distance (ft)		1106	1106	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	500			350
Storage Blk Time (%)		1	12	
Queuing Penalty (veh)		1	42	

Intersection: 3: Rochester Road & Drexelgate Pkwy/Eddington Blvd

Movement	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	T	R	L	T	T
Maximum Queue (ft)	24	87	105	20	73	114	164	25	50	163	202
Average Queue (ft)	6	27	40	7	25	48	44	3	8	80	97
95th Queue (ft)	21	58	87	22	62	97	111	15	31	155	178
Link Distance (ft)		315		330		760	760			1290	1290
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (ft)	100		95		150			150	150		
Storage Blk Time (%)		0	4				0			0	2
Queuing Penalty (veh)		0	1				0			0	0

Zone Summary

Zone wide Queuing Penalty: 211



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	0	1	135	2	45	0	1733	127	46	1661	13
Future Volume (veh/h)	1	0	1	135	2	45	0	1733	127	46	1661	13
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	2000	2000	2000	1984	1984	1984	1984	1984	1984	1984	1984	1984
Adj Flow Rate, veh/h	2	0	2	185	3	62	0	1824	134	49	1767	14
Peak Hour Factor	0.60	0.60	0.60	0.73	0.73	0.73	0.95	0.95	0.95	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	1	1	1	1	1	1	1	1	1
Cap, veh/h	39	13	13	201	2	252	51	2989	1333	231	3040	24
Arrive On Green	0.15	0.00	0.13	0.15	0.15	0.15	0.00	1.00	1.00	0.79	0.79	0.78
Sat Flow, veh/h	0	87	87	1002	16	1682	269	3770	1682	226	3834	30
Grp Volume(v), veh/h	4	0	0	188	0	62	0	1824	134	49	868	913
Grp Sat Flow(s),veh/h/ln	175	0	0	1018	0	1682	269	1885	1682	226	1885	1979
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	4.6	0.0	0.0	0.0	8.0	24.7	24.9
Cycle Q Clear(g_c), s	21.0	0.0	0.0	21.0	0.0	4.6	0.0	0.0	0.0	8.0	24.7	24.9
Prop In Lane	0.50		0.50	0.98		1.00	1.00		1.00	1.00		0.02
Lane Grp Cap(c), veh/h	65	0	0	204	0	252	51	2989	1333	231	1495	1569
V/C Ratio(X)	0.06	0.00	0.00	0.92	0.00	0.25	0.00	0.61	0.10	0.21	0.58	0.58
Avail Cap(c_a), veh/h	65	0	0	204	0	252	51	2989	1333	231	1495	1569
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.4	0.0	0.0	61.5	0.0	52.5	0.0	0.0	0.0	3.8	5.6	5.6
Incr Delay (d2), s/veh	0.6	0.0	0.0	42.5	0.0	0.7	0.0	0.9	0.2	2.1	1.7	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.2	0.0	0.0	14.2	0.0	3.6	0.0	0.7	0.1	0.8	13.4	14.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	53.0	0.0	0.0	104.0	0.0	53.2	0.0	0.9	0.2	5.9	7.2	7.2
LnGrp LOS	D	A	A	F	A	D	A	A	A	A	A	A
Approach Vol, veh/h		4			250			1958			1830	
Approach Delay, s/veh		53.0			91.4			0.9			7.2	
Approach LOS		D			F			A			A	

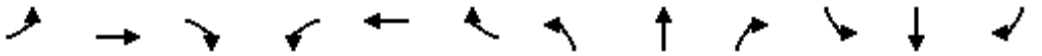
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		115.0		25.0		115.0		25.0				
Change Period (Y+Rc), s		* 6		* 6.3		* 6		* 6.3				
Max Green Setting (Gmax), s		* 1.1E2		* 19		* 1.1E2		* 19				
Max Q Clear Time (g_c+I1), s		2.0		23.0		26.9		23.0				
Green Ext Time (p_c), s		28.2		0.0		30.1		0.0				

Intersection Summary	
HCM 6th Ctrl Delay	9.4
HCM 6th LOS	A

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



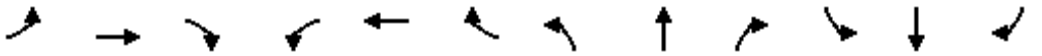
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	331	361	144	141	282	301	182	1265	114	215	1264	275
Future Volume (veh/h)	331	361	144	141	282	301	182	1265	114	215	1264	275
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1984	1984	1984	2000	2000	2000	1984	1984	1984	1984	1984	1984
Adj Flow Rate, veh/h	348	380	152	148	297	317	194	1346	121	234	1374	299
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.94	0.94	0.94	0.92	0.92	0.92
Percent Heavy Veh, %	1	1	1	0	0	0	1	1	1	1	1	1
Cap, veh/h	278	426	607	233	361	322	276	1670	950	297	1712	1011
Arrive On Green	0.15	0.21	0.21	0.12	0.19	0.16	0.15	0.44	0.44	0.05	0.15	0.15
Sat Flow, veh/h	1890	1984	1682	1905	1900	1695	1890	3770	1682	1890	3770	1682
Grp Volume(v), veh/h	348	380	152	148	297	317	194	1346	121	234	1374	299
Grp Sat Flow(s),veh/h/ln	1890	1984	1682	1905	1900	1695	1890	1885	1682	1890	1885	1682
Q Serve(g_s), s	20.6	26.0	8.9	10.4	21.0	26.1	13.7	43.3	4.7	17.1	49.3	16.4
Cycle Q Clear(g_c), s	20.6	26.0	8.9	10.4	21.0	26.1	13.7	43.3	4.7	17.1	49.3	16.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	278	426	607	233	361	322	276	1670	950	297	1712	1011
V/C Ratio(X)	1.25	0.89	0.25	0.64	0.82	0.98	0.70	0.81	0.13	0.79	0.80	0.30
Avail Cap(c_a), veh/h	278	426	607	280	361	322	297	1670	950	297	1712	1011
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	59.7	53.4	31.4	58.5	54.4	58.8	56.9	33.8	14.3	64.1	53.5	22.4
Incr Delay (d2), s/veh	139.3	20.3	0.2	3.4	14.2	45.8	6.7	4.3	0.3	13.2	4.1	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	30.7	21.5	6.5	8.9	16.9	21.8	11.2	27.0	3.3	14.9	34.2	12.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	199.0	73.7	31.6	61.9	68.6	104.6	63.6	38.1	14.5	77.3	57.6	23.2
LnGrp LOS	F	E	C	E	E	F	E	D	B	E	E	C
Approach Vol, veh/h		880			762			1661			1907	
Approach Delay, s/veh		116.0			82.3			39.3			54.6	
Approach LOS		F			F			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	24.0	64.0	19.5	32.5	22.4	65.6	23.0	29.0
Change Period (Y+Rc), s	6.7	6.7	7.1	7.1	6.7	6.7	7.1	7.1
Max Green Setting (Gmax), s	17.3	57.3	15.9	21.9	17.3	57.3	15.9	21.9
Max Q Clear Time (g_c+I1), s	19.1	45.3	12.4	28.0	15.7	51.3	22.6	28.1
Green Ext Time (p_c), s	0.0	6.9	0.1	0.0	0.1	4.4	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	64.1
HCM 6th LOS	E

Notes

User approved pedestrian interval to be less than phase max green.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	17	4	68	29	2	26	71	1504	50	15	1369	19
Future Volume (veh/h)	17	4	68	29	2	26	71	1504	50	15	1369	19
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1984	1984	1984	1906	1906	1906	1984	1984	1984	1984	1984	1984
Adj Flow Rate, veh/h	22	5	37	39	3	13	75	1583	53	16	1441	20
Peak Hour Factor	0.77	0.77	0.77	0.74	0.74	0.74	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	1	1	6	6	6	1	1	1	1	1	1
Cap, veh/h	133	14	101	109	21	91	324	3172	1415	276	3172	1415
Arrive On Green	0.07	0.07	0.07	0.07	0.07	0.07	0.84	0.84	0.84	0.84	0.84	0.84
Sat Flow, veh/h	1408	204	1509	1321	312	1351	366	3770	1682	309	3770	1682
Grp Volume(v), veh/h	22	0	42	39	0	16	75	1583	53	16	1441	20
Grp Sat Flow(s),veh/h/ln	1408	0	1713	1321	0	1663	366	1885	1682	309	1885	1682
Q Serve(g_s), s	2.1	0.0	3.3	4.1	0.0	1.3	9.3	16.1	0.7	2.1	13.7	0.3
Cycle Q Clear(g_c), s	3.4	0.0	3.3	7.4	0.0	1.3	23.0	16.1	0.7	18.2	13.7	0.3
Prop In Lane	1.00		0.88	1.00		0.81	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	133	0	115	109	0	112	324	3172	1415	276	3172	1415
V/C Ratio(X)	0.16	0.00	0.36	0.36	0.00	0.14	0.23	0.50	0.04	0.06	0.45	0.01
Avail Cap(c_a), veh/h	393	0	431	353	0	418	324	3172	1415	276	3172	1415
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	63.1	0.0	62.4	65.9	0.0	61.5	5.8	3.0	1.8	5.5	2.9	1.8
Incr Delay (d2), s/veh	0.6	0.0	1.9	2.0	0.0	0.6	1.7	0.6	0.0	0.4	0.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.4	0.0	2.7	2.6	0.0	1.0	1.3	6.3	0.3	0.3	5.4	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	63.6	0.0	64.4	67.9	0.0	62.1	7.5	3.6	1.9	5.9	3.3	1.8
LnGrp LOS	E	A	E	E	A	E	A	A	A	A	A	A
Approach Vol, veh/h		64			55			1711			1477	
Approach Delay, s/veh		64.1			66.2			3.7			3.3	
Approach LOS		E			E			A			A	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		123.8		16.2		123.8		16.2				
Change Period (Y+Rc), s		* 6		* 6.8		* 6		* 6.8				
Max Green Setting (Gmax), s		* 92		* 35		* 92		* 35				
Max Q Clear Time (g_c+I1), s		25.0		5.4		20.2		9.4				
Green Ext Time (p_c), s		21.2		0.3		15.4		0.2				

Intersection Summary	
HCM 6th Ctrl Delay	5.8
HCM 6th LOS	A

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection: 1: Rochester Road & Mobil Driveway/Diversion Street

Movement	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LT	R	T	T	R	L	T	TR
Maximum Queue (ft)	299	150	94	71	22	63	265	260
Average Queue (ft)	139	49	23	35	6	26	144	119
95th Queue (ft)	261	132	67	67	21	49	244	227
Link Distance (ft)	304		1441	1441			862	862
Upstream Blk Time (%)	0							
Queuing Penalty (veh)	0							
Storage Bay Dist (ft)		100			425	200		
Storage Blk Time (%)	27	0					1	
Queuing Penalty (veh)	13	0					1	

Intersection: 2: Rochester Road & Avon Road

Movement	EB	EB	EB	B19	B19	WB	WB	WB	NB	NB	NB	NB
Directions Served	L	T	R	T	T	L	T	TR	L	T	T	R
Maximum Queue (ft)	875	960	152	264	203	233	300	347	524	848	874	200
Average Queue (ft)	871	952	54	226	28	111	190	208	225	385	412	108
95th Queue (ft)	901	1019	129	325	143	185	281	350	420	676	708	262
Link Distance (ft)		888	888	203	203		950			1658	1658	
Upstream Blk Time (%)	14	75		62	0							
Queuing Penalty (veh)	0	313		261	1							
Storage Bay Dist (ft)	850					500		435	500			150
Storage Blk Time (%)	87	2								7	43	
Queuing Penalty (veh)	313	7								13	49	

Intersection: 2: Rochester Road & Avon Road

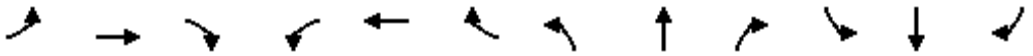
Movement	SB	SB	SB	SB
Directions Served	L	T	T	R
Maximum Queue (ft)	524	601	623	450
Average Queue (ft)	358	390	399	152
95th Queue (ft)	576	553	555	456
Link Distance (ft)		1138	1138	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	500			350
Storage Blk Time (%)	3	1	15	
Queuing Penalty (veh)	16	3	42	

Intersection: 3: Rochester Road & Drexelgate Pkwy/Eddington Blvd

Movement	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	T	R	L	T	T	R
Maximum Queue (ft)	47	128	97	84	95	253	233	29	50	281	298	250
Average Queue (ft)	12	35	23	15	33	82	64	2	13	100	117	10
95th Queue (ft)	35	75	61	45	72	186	169	13	38	214	228	85
Link Distance (ft)		272		321		710	710			1292	1292	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	100		95		150			150	150			130
Storage Blk Time (%)		1	1	0		1	0			1	3	
Queuing Penalty (veh)		0	0	0		1	0			0	1	

Zone Summary

Zone wide Queuing Penalty: 1035



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	1	2	91	5	28	1	922	102	60	1794	18
Future Volume (veh/h)	1	1	2	91	5	28	1	922	102	60	1794	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	2000	2000	2000	1860	1860	1860	1922	1922	1922	1953	1953	1953
Adj Flow Rate, veh/h	2	2	3	118	6	36	1	1013	112	65	1929	19
Peak Hour Factor	0.60	0.60	0.60	0.77	0.77	0.77	0.91	0.91	0.91	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	9	9	9	5	5	5	3	3	3
Cap, veh/h	33	36	27	135	4	210	172	2843	1268	438	2931	29
Arrive On Green	0.13	0.13	0.13	0.13	0.13	0.13	1.00	1.00	1.00	0.78	0.78	0.78
Sat Flow, veh/h	0	271	204	632	32	1576	221	3652	1629	497	3765	37
Grp Volume(v), veh/h	7	0	0	124	0	36	1	1013	112	65	949	999
Grp Sat Flow(s),veh/h/ln	475	0	0	664	0	1576	221	1826	1629	497	1856	1947
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	2.8	0.2	0.0	0.0	4.7	32.5	32.7
Cycle Q Clear(g_c), s	18.7	0.0	0.0	18.7	0.0	2.8	32.9	0.0	0.0	4.7	32.5	32.7
Prop In Lane	0.29		0.43	0.95		1.00	1.00		1.00	1.00		0.02
Lane Grp Cap(c), veh/h	97	0	0	139	0	210	172	2843	1268	438	1445	1516
V/C Ratio(X)	0.07	0.00	0.00	0.89	0.00	0.17	0.01	0.36	0.09	0.15	0.66	0.66
Avail Cap(c_a), veh/h	97	0	0	139	0	210	172	2843	1268	438	1445	1516
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.4	0.0	0.0	63.3	0.0	53.8	4.9	0.0	0.0	3.9	7.0	7.1
Incr Delay (d2), s/veh	0.4	0.0	0.0	46.6	0.0	0.5	0.1	0.3	0.1	0.7	2.3	2.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.4	0.0	0.0	10.4	0.0	2.1	0.0	0.2	0.1	0.9	17.2	18.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	53.9	0.0	0.0	109.9	0.0	54.3	5.0	0.3	0.1	4.7	9.4	9.3
LnGrp LOS	D	A	A	F	A	D	A	A	A	A	A	A
Approach Vol, veh/h		7			160			1126			2013	
Approach Delay, s/veh		53.9			97.4			0.3			9.2	
Approach LOS		D			F			A			A	

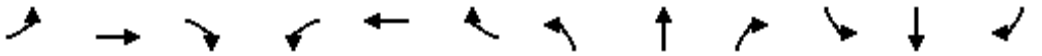
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		115.0		25.0		115.0		25.0				
Change Period (Y+Rc), s		* 6		* 6.3		* 6		* 6.3				
Max Green Setting (Gmax), s		* 1.1E2		* 19		* 1.1E2		* 19				
Max Q Clear Time (g_c+I1), s		34.9		20.7		34.7		20.7				
Green Ext Time (p_c), s		9.0		0.0		33.6		0.0				

Intersection Summary	
HCM 6th Ctrl Delay	10.5
HCM 6th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



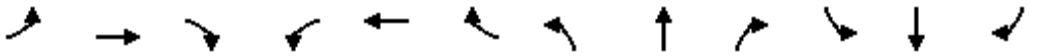
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	164	172	139	155	350	183	152	748	64	105	1392	344
Future Volume (veh/h)	164	172	139	155	350	183	152	748	64	105	1392	344
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1906	1906	1906	1938	1938	1938	1906	1906	1906	1953	1953	1953
Adj Flow Rate, veh/h	186	195	158	170	385	201	163	804	69	112	1481	366
Peak Hour Factor	0.88	0.88	0.88	0.91	0.91	0.91	0.93	0.93	0.93	0.94	0.94	0.94
Percent Heavy Veh, %	6	6	6	4	4	4	6	6	6	3	3	3
Cap, veh/h	189	397	545	192	490	252	234	1892	1012	190	1838	992
Arrive On Green	0.10	0.21	0.21	0.10	0.21	0.17	0.26	1.00	1.00	0.20	0.99	0.99
Sat Flow, veh/h	1816	1906	1616	1845	2350	1210	1816	3622	1616	1860	3711	1655
Grp Volume(v), veh/h	186	195	158	170	300	286	163	804	69	112	1481	366
Grp Sat Flow(s),veh/h/ln	1816	1906	1616	1845	1841	1720	1816	1811	1616	1860	1856	1655
Q Serve(g_s), s	14.3	12.6	10.1	12.7	21.6	22.2	11.4	0.0	0.0	7.6	2.6	0.4
Cycle Q Clear(g_c), s	14.3	12.6	10.1	12.7	21.6	22.2	11.4	0.0	0.0	7.6	2.6	0.4
Prop In Lane	1.00		1.00	1.00		0.70	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	189	397	545	192	384	358	234	1892	1012	190	1838	992
V/C Ratio(X)	0.98	0.49	0.29	0.88	0.78	0.80	0.70	0.42	0.07	0.59	0.81	0.37
Avail Cap(c_a), veh/h	189	403	550	192	389	364	246	1892	1012	252	1838	992
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	62.6	48.9	34.0	61.9	52.4	54.2	49.4	0.0	0.0	53.1	0.3	0.2
Incr Delay (d2), s/veh	60.1	0.9	0.3	34.8	9.9	11.6	7.8	0.7	0.1	2.9	3.9	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	14.7	10.0	7.1	12.3	16.3	16.2	8.7	0.3	0.1	6.2	2.2	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	122.6	49.8	34.3	96.7	62.3	65.8	57.2	0.7	0.1	56.0	4.2	1.3
LnGrp LOS	F	D	C	F	E	E	E	A	A	E	A	A
Approach Vol, veh/h		539			756			1036			1959	
Approach Delay, s/veh		70.4			71.4			9.6			6.6	
Approach LOS		E			E			A			A	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.3	75.1	17.0	31.6	20.1	71.3	17.0	31.6
Change Period (Y+Rc), s	6.7	6.7	7.1	7.1	6.7	6.7	7.1	7.1
Max Green Setting (Gmax), s	14.3	63.3	9.9	24.9	14.3	63.3	9.9	24.9
Max Q Clear Time (g_c+I1), s	9.6	2.0	14.7	14.6	13.4	4.6	16.3	24.2
Green Ext Time (p_c), s	0.1	6.0	0.0	1.1	0.0	18.8	0.0	0.3

Intersection Summary	
HCM 6th Ctrl Delay	26.8
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	4	79	53	3	19	36	1124	20	11	1461	9
Future Volume (veh/h)	11	4	79	53	3	19	36	1124	20	11	1461	9
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1953	1953	1953	1969	1969	1969	1938	1938	1938	1969	1969	1969
Adj Flow Rate, veh/h	13	5	18	68	4	5	39	1209	22	12	1660	10
Peak Hour Factor	0.83	0.83	0.83	0.78	0.78	0.78	0.93	0.93	0.93	0.88	0.88	0.88
Percent Heavy Veh, %	3	3	3	2	2	2	4	4	4	2	2	2
Cap, veh/h	150	28	101	139	60	75	295	3067	1368	392	3116	1390
Arrive On Green	0.08	0.08	0.08	0.08	0.08	0.08	0.83	0.83	0.83	1.00	1.00	1.00
Sat Flow, veh/h	1395	372	1340	1388	795	994	292	3681	1642	453	3741	1668
Grp Volume(v), veh/h	13	0	23	68	0	9	39	1209	22	12	1660	10
Grp Sat Flow(s),veh/h/ln	1395	0	1712	1388	0	1790	292	1841	1642	453	1870	1668
Q Serve(g_s), s	1.2	0.0	1.8	6.8	0.0	0.7	3.6	11.4	0.3	0.4	0.0	0.0
Cycle Q Clear(g_c), s	1.9	0.0	1.8	8.5	0.0	0.7	3.6	11.4	0.3	11.8	0.0	0.0
Prop In Lane	1.00		0.78	1.00		0.56	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	150	0	129	139	0	135	295	3067	1368	392	3116	1390
V/C Ratio(X)	0.09	0.00	0.18	0.49	0.00	0.07	0.13	0.39	0.02	0.03	0.53	0.01
Avail Cap(c_a), veh/h	396	0	430	383	0	450	295	3067	1368	392	3116	1390
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	61.0	0.0	60.6	64.6	0.0	60.1	2.3	2.9	2.0	0.6	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.0	0.6	2.7	0.0	0.2	0.9	0.4	0.0	0.1	0.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.8	0.0	1.4	4.5	0.0	0.6	0.4	4.7	0.1	0.0	0.5	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	61.2	0.0	61.3	67.3	0.0	60.3	3.2	3.3	2.0	0.7	0.7	0.0
LnGrp LOS	E	A	E	E	A	E	A	A	A	A	A	A
Approach Vol, veh/h		36			77			1270			1682	
Approach Delay, s/veh		61.3			66.5			3.3			0.7	
Approach LOS		E			E			A			A	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		122.6		17.4		122.6		17.4				
Change Period (Y+Rc), s		* 6		* 6.8		* 6		* 6.8				
Max Green Setting (Gmax), s		* 92		* 35		* 92		* 35				
Max Q Clear Time (g_c+I1), s		13.4		3.9		13.8		10.5				
Green Ext Time (p_c), s		12.6		0.1		20.0		0.2				

Intersection Summary	
HCM 6th Ctrl Delay	4.1
HCM 6th LOS	A

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection: 1: Rochester Road & Mobil Driveway/Diversion Street

Movement	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	LT	R	T	T	R	L	T	TR
Maximum Queue (ft)	30	193	150	153	135	47	86	229	314
Average Queue (ft)	7	88	17	59	58	13	27	138	132
95th Queue (ft)	25	175	63	128	123	39	57	247	261
Link Distance (ft)	265	241		1412	1412			772	772
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)			100			425	200		
Storage Blk Time (%)		13						2	
Queuing Penalty (veh)		4						1	

Intersection: 2: Rochester Road & Avon Road

Movement	EB	EB	EB	B19	WB	WB	WB	NB	NB	NB	NB	SB
Directions Served	L	T	R	T	L	T	TR	L	T	T	R	L
Maximum Queue (ft)	875	955	171	83	298	309	273	198	326	303	200	177
Average Queue (ft)	632	454	64	5	173	179	162	121	168	165	21	124
95th Queue (ft)	989	1078	137	33	284	278	267	198	266	266	83	194
Link Distance (ft)		884	884	206	252	252	252		1643	1643		
Upstream Blk Time (%)	1	5			7	2	0					1
Queuing Penalty (veh)	0	12			16	5	1					0
Storage Bay Dist (ft)	850							500			150	500
Storage Blk Time (%)	4	6								10		1
Queuing Penalty (veh)	7	10								6		5

Intersection: 2: Rochester Road & Avon Road

Movement	SB	SB	SB
Directions Served	T	T	R
Maximum Queue (ft)	246	270	140
Average Queue (ft)	222	228	66
95th Queue (ft)	241	256	122
Link Distance (ft)	178	178	178
Upstream Blk Time (%)	34	38	
Queuing Penalty (veh)	210	235	
Storage Bay Dist (ft)			
Storage Blk Time (%)	34		
Queuing Penalty (veh)	36		

Intersection: 3: Rochester Road & Drexelgate Pkwy/Eddington Blvd

Movement	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	T	R	L	T	T	R
Maximum Queue (ft)	24	82	89	63	68	124	140	31	30	179	187	31
Average Queue (ft)	8	37	40	14	23	51	46	1	8	80	93	4
95th Queue (ft)	26	66	81	39	51	102	103	10	28	152	168	19
Link Distance (ft)		315		330		760	760			1290	1290	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	100		95		150			150	150			130
Storage Blk Time (%)		0	3				0			1	2	
Queuing Penalty (veh)		0	1				0			0	0	

Intersection: 4: Rochester Road & Site Driveway 1

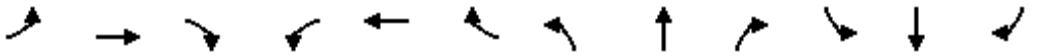
Movement	WB	WB	NB	SB	SB	SB	SB
Directions Served	L	R	TR	L	T	T	T
Maximum Queue (ft)	281	75	48	174	597	643	150
Average Queue (ft)	243	5	2	28	208	214	62
95th Queue (ft)	261	35	18	80	462	484	184
Link Distance (ft)	242		178		859	859	
Upstream Blk Time (%)	97						
Queuing Penalty (veh)	0						
Storage Bay Dist (ft)		50		150			75
Storage Blk Time (%)	100	0			13	23	
Queuing Penalty (veh)	28	0			9	140	

Intersection: 5: Avon Road & Site Driveway 2

Movement	EB	WB	SB
Directions Served	LT	T	LR
Maximum Queue (ft)	183	53	72
Average Queue (ft)	24	4	28
95th Queue (ft)	104	24	58
Link Distance (ft)	252	792	180
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Zone Summary

Zone wide Queuing Penalty: 726



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	0	1	135	2	45	0	1766	127	46	1689	13
Future Volume (veh/h)	1	0	1	135	2	45	0	1766	127	46	1689	13
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	2000	2000	2000	1984	1984	1984	1984	1984	1984	1984	1984	1984
Adj Flow Rate, veh/h	2	0	2	185	3	62	0	1859	134	49	1797	14
Peak Hour Factor	0.60	0.60	0.60	0.73	0.73	0.73	0.95	0.95	0.95	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	1	1	1	1	1	1	1	1	1
Cap, veh/h	39	13	13	201	2	252	51	2989	1333	225	3040	24
Arrive On Green	0.15	0.00	0.13	0.15	0.15	0.15	0.00	1.00	1.00	0.79	0.79	0.78
Sat Flow, veh/h	0	87	87	1002	16	1682	261	3770	1682	218	3834	30
Grp Volume(v), veh/h	4	0	0	188	0	62	0	1859	134	49	883	928
Grp Sat Flow(s),veh/h/ln	175	0	0	1018	0	1682	261	1885	1682	218	1885	1979
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	4.6	0.0	0.0	0.0	8.4	25.5	25.6
Cycle Q Clear(g_c), s	21.0	0.0	0.0	21.0	0.0	4.6	0.0	0.0	0.0	8.4	25.5	25.6
Prop In Lane	0.50		0.50	0.98		1.00	1.00		1.00	1.00		0.02
Lane Grp Cap(c), veh/h	65	0	0	204	0	252	51	2989	1333	225	1495	1569
V/C Ratio(X)	0.06	0.00	0.00	0.92	0.00	0.25	0.00	0.62	0.10	0.22	0.59	0.59
Avail Cap(c_a), veh/h	65	0	0	204	0	252	51	2989	1333	225	1495	1569
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.4	0.0	0.0	61.5	0.0	52.5	0.0	0.0	0.0	3.9	5.6	5.7
Incr Delay (d2), s/veh	0.6	0.0	0.0	42.5	0.0	0.7	0.0	1.0	0.2	2.2	1.7	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.2	0.0	0.0	14.2	0.0	3.6	0.0	0.7	0.1	0.8	13.8	14.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	53.0	0.0	0.0	104.0	0.0	53.2	0.0	1.0	0.2	6.1	7.4	7.3
LnGrp LOS	D	A	A	F	A	D	A	A	A	A	A	A
Approach Vol, veh/h		4			250			1993			1860	
Approach Delay, s/veh		53.0			91.4			0.9			7.3	
Approach LOS		D			F			A			A	

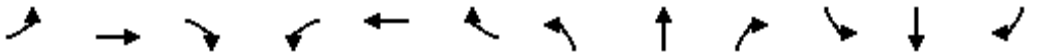
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		115.0		25.0		115.0		25.0				
Change Period (Y+Rc), s		* 6		* 6.3		* 6		* 6.3				
Max Green Setting (Gmax), s		* 1.1E2		* 19		* 1.1E2		* 19				
Max Q Clear Time (g_c+I1), s		2.0		23.0		27.6		23.0				
Green Ext Time (p_c), s		29.6		0.0		31.4		0.0				

Intersection Summary	
HCM 6th Ctrl Delay	9.4
HCM 6th LOS	A

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



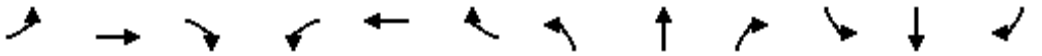
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	331	374	144	141	296	301	182	1291	114	215	1291	275
Future Volume (veh/h)	331	374	144	141	296	301	182	1291	114	215	1291	275
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1984	1984	1984	2000	2000	2000	1984	1984	1984	1984	1984	1984
Adj Flow Rate, veh/h	348	394	152	148	312	317	194	1373	121	234	1403	299
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.94	0.94	0.94	0.92	0.92	0.92
Percent Heavy Veh, %	1	1	1	0	0	0	1	1	1	1	1	1
Cap, veh/h	278	426	607	233	361	322	276	1670	950	297	1712	1011
Arrive On Green	0.15	0.21	0.21	0.12	0.19	0.16	0.15	0.44	0.44	0.05	0.15	0.15
Sat Flow, veh/h	1890	1984	1682	1905	1900	1695	1890	3770	1682	1890	3770	1682
Grp Volume(v), veh/h	348	394	152	148	312	317	194	1373	121	234	1403	299
Grp Sat Flow(s),veh/h/ln	1890	1984	1682	1905	1900	1695	1890	1885	1682	1890	1885	1682
Q Serve(g_s), s	20.6	27.2	8.9	10.4	22.3	26.1	13.7	44.7	4.7	17.1	50.5	16.4
Cycle Q Clear(g_c), s	20.6	27.2	8.9	10.4	22.3	26.1	13.7	44.7	4.7	17.1	50.5	16.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	278	426	607	233	361	322	276	1670	950	297	1712	1011
V/C Ratio(X)	1.25	0.92	0.25	0.64	0.86	0.98	0.70	0.82	0.13	0.79	0.82	0.30
Avail Cap(c_a), veh/h	278	426	607	280	361	322	297	1670	950	297	1712	1011
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	59.7	53.8	31.4	58.5	55.0	58.8	56.9	34.2	14.3	64.1	54.0	22.4
Incr Delay (d2), s/veh	139.3	25.8	0.2	3.4	19.1	45.8	6.7	4.7	0.3	13.2	4.5	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	30.7	22.9	6.5	8.9	18.2	21.8	11.2	27.8	3.3	14.9	35.0	12.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	199.0	79.7	31.6	61.9	74.0	104.6	63.6	38.9	14.5	77.3	58.5	23.2
LnGrp LOS	F	E	C	E	E	F	E	D	B	E	E	C
Approach Vol, veh/h		894			777			1688			1936	
Approach Delay, s/veh		118.0			84.2			40.0			55.3	
Approach LOS		F			F			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	24.0	64.0	19.5	32.5	22.4	65.6	23.0	29.0
Change Period (Y+Rc), s	6.7	6.7	7.1	7.1	6.7	6.7	7.1	7.1
Max Green Setting (Gmax), s	17.3	57.3	15.9	21.9	17.3	57.3	15.9	21.9
Max Q Clear Time (g_c+I1), s	19.1	46.7	12.4	29.2	15.7	52.5	22.6	28.1
Green Ext Time (p_c), s	0.0	6.5	0.1	0.0	0.1	3.7	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	65.2
HCM 6th LOS	E

Notes

User approved pedestrian interval to be less than phase max green.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	17	4	68	29	2	26	71	1530	50	15	1396	19
Future Volume (veh/h)	17	4	68	29	2	26	71	1530	50	15	1396	19
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1984	1984	1984	1906	1906	1906	1984	1984	1984	1984	1984	1984
Adj Flow Rate, veh/h	22	5	37	39	3	13	75	1611	53	16	1469	20
Peak Hour Factor	0.77	0.77	0.77	0.74	0.74	0.74	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	1	1	6	6	6	1	1	1	1	1	1
Cap, veh/h	133	14	101	109	21	91	315	3172	1415	269	3172	1415
Arrive On Green	0.07	0.07	0.07	0.07	0.07	0.07	0.84	0.84	0.84	0.84	0.84	0.84
Sat Flow, veh/h	1408	204	1509	1321	312	1351	356	3770	1682	301	3770	1682
Grp Volume(v), veh/h	22	0	42	39	0	16	75	1611	53	16	1469	20
Grp Sat Flow(s),veh/h/ln	1408	0	1713	1321	0	1663	356	1885	1682	301	1885	1682
Q Serve(g_s), s	2.1	0.0	3.3	4.1	0.0	1.3	9.7	16.6	0.7	2.2	14.2	0.3
Cycle Q Clear(g_c), s	3.4	0.0	3.3	7.4	0.0	1.3	23.9	16.6	0.7	18.8	14.2	0.3
Prop In Lane	1.00		0.88	1.00		0.81	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	133	0	115	109	0	112	315	3172	1415	269	3172	1415
V/C Ratio(X)	0.16	0.00	0.36	0.36	0.00	0.14	0.24	0.51	0.04	0.06	0.46	0.01
Avail Cap(c_a), veh/h	393	0	431	353	0	418	315	3172	1415	269	3172	1415
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	63.1	0.0	62.4	65.9	0.0	61.5	6.0	3.1	1.8	5.7	2.9	1.8
Incr Delay (d2), s/veh	0.6	0.0	1.9	2.0	0.0	0.6	1.8	0.6	0.0	0.4	0.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.4	0.0	2.7	2.6	0.0	1.0	1.4	6.5	0.3	0.3	5.6	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	63.6	0.0	64.4	67.9	0.0	62.1	7.8	3.7	1.9	6.1	3.4	1.8
LnGrp LOS	E	A	E	E	A	E	A	A	A	A	A	A
Approach Vol, veh/h		64			55			1739			1505	
Approach Delay, s/veh		64.1			66.2			3.8			3.4	
Approach LOS		E			E			A			A	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		123.8		16.2		123.8		16.2				
Change Period (Y+Rc), s		* 6		* 6.8		* 6		* 6.8				
Max Green Setting (Gmax), s		* 92		* 35		* 92		* 35				
Max Q Clear Time (g_c+I1), s		25.9		5.4		20.8		9.4				
Green Ext Time (p_c), s		21.9		0.3		16.0		0.2				

Intersection Summary												
HCM 6th Ctrl Delay			5.8									
HCM 6th LOS			A									

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection: 1: Rochester Road & Mobil Driveway/Diversion Street

Movement	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	LT	R	T	T	R	L	T	TR
Maximum Queue (ft)	31	319	149	92	112	23	66	207	191
Average Queue (ft)	6	116	31	33	49	8	31	110	96
95th Queue (ft)	24	230	95	74	88	24	64	187	178
Link Distance (ft)	257	304		1441	1441			862	862
Upstream Blk Time (%)		2							
Queuing Penalty (veh)		0							
Storage Bay Dist (ft)			100			425	200		
Storage Blk Time (%)		18	0					0	
Queuing Penalty (veh)		10	1					0	

Intersection: 2: Rochester Road & Avon Road

Movement	EB	EB	EB	B19	B19	WB	WB	WB	NB	NB	NB	NB
Directions Served	L	T	R	T	T	L	T	TR	L	T	T	R
Maximum Queue (ft)	875	986	148	281	201	200	318	322	276	459	453	200
Average Queue (ft)	862	942	66	229	21	124	184	198	164	288	301	105
95th Queue (ft)	915	1046	123	360	121	200	279	288	223	411	436	253
Link Distance (ft)		891	891	201	201	264	264	264		1658	1658	
Upstream Blk Time (%)	1	64		65	0		2	3				
Queuing Penalty (veh)	0	274		277	1		6	7				
Storage Bay Dist (ft)	850								500			150
Storage Blk Time (%)	75	3									37	
Queuing Penalty (veh)	281	9									42	

Intersection: 2: Rochester Road & Avon Road

Movement	SB	SB	SB	SB
Directions Served	L	T	T	R
Maximum Queue (ft)	230	337	309	93
Average Queue (ft)	191	286	281	46
95th Queue (ft)	278	317	301	81
Link Distance (ft)		230	230	230
Upstream Blk Time (%)	7	28	29	
Queuing Penalty (veh)	0	169	169	
Storage Bay Dist (ft)	500			
Storage Blk Time (%)	7	28		
Queuing Penalty (veh)	48	61		

Intersection: 3: Rochester Road & Drexelgate Pkwy/Eddington Blvd

Movement	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	T	R	L	T	T
Maximum Queue (ft)	64	106	68	64	90	201	140	31	163	166	202
Average Queue (ft)	20	29	23	17	33	73	41	3	19	85	101
95th Queue (ft)	50	65	54	45	71	161	105	16	70	174	209
Link Distance (ft)		272		321		710	710			1292	1292
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (ft)	100		95		150			150	150		
Storage Blk Time (%)		0				1	0		0	0	3
Queuing Penalty (veh)		0				1	0		0	0	1

Intersection: 4: Rochester Road & Site Driveway 1

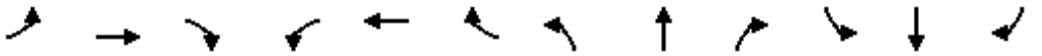
Movement	WB	WB	NB	NB	SB	SB	SB	SB
Directions Served	L	R	T	TR	L	T	T	T
Maximum Queue (ft)	262	75	146	22	76	361	410	150
Average Queue (ft)	240	15	5	1	20	134	145	61
95th Queue (ft)	283	65	49	7	52	308	325	181
Link Distance (ft)	247		230	230		839	839	
Upstream Blk Time (%)	87							
Queuing Penalty (veh)	0							
Storage Bay Dist (ft)		50			150			75
Storage Blk Time (%)	100	4				5	13	0
Queuing Penalty (veh)	47	2				2	79	0

Intersection: 5: Avon Road & Site Driveway 2

Movement	EB	WB	SB
Directions Served	LT	TR	LR
Maximum Queue (ft)	206	71	72
Average Queue (ft)	17	6	27
95th Queue (ft)	93	34	57
Link Distance (ft)	264		189
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		100	
Storage Blk Time (%)			
Queuing Penalty (veh)			

Zone Summary

Zone wide Queuing Penalty: 1484



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	1	2	91	5	28	1	922	102	60	1794	18
Future Volume (veh/h)	1	1	2	91	5	28	1	922	102	60	1794	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	2000	2000	2000	1860	1860	1860	1922	1922	1922	1953	1953	1953
Adj Flow Rate, veh/h	2	2	3	118	6	36	1	1013	112	65	1929	19
Peak Hour Factor	0.60	0.60	0.60	0.77	0.77	0.77	0.91	0.91	0.91	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	9	9	9	5	5	5	3	3	3
Cap, veh/h	33	36	27	135	4	210	172	2843	1268	438	2931	29
Arrive On Green	0.13	0.13	0.13	0.13	0.13	0.13	1.00	1.00	1.00	0.78	0.78	0.78
Sat Flow, veh/h	0	271	204	632	32	1576	221	3652	1629	497	3765	37
Grp Volume(v), veh/h	7	0	0	124	0	36	1	1013	112	65	949	999
Grp Sat Flow(s),veh/h/ln	475	0	0	664	0	1576	221	1826	1629	497	1856	1947
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	2.8	0.2	0.0	0.0	4.7	32.5	32.7
Cycle Q Clear(g_c), s	18.7	0.0	0.0	18.7	0.0	2.8	32.9	0.0	0.0	4.7	32.5	32.7
Prop In Lane	0.29		0.43	0.95		1.00	1.00		1.00	1.00		0.02
Lane Grp Cap(c), veh/h	97	0	0	139	0	210	172	2843	1268	438	1445	1516
V/C Ratio(X)	0.07	0.00	0.00	0.89	0.00	0.17	0.01	0.36	0.09	0.15	0.66	0.66
Avail Cap(c_a), veh/h	97	0	0	139	0	210	172	2843	1268	438	1445	1516
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.4	0.0	0.0	63.3	0.0	53.8	4.9	0.0	0.0	3.9	7.0	7.1
Incr Delay (d2), s/veh	0.4	0.0	0.0	46.6	0.0	0.5	0.1	0.3	0.1	0.7	2.3	2.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.4	0.0	0.0	10.4	0.0	2.1	0.0	0.2	0.1	0.9	17.2	18.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	53.9	0.0	0.0	109.9	0.0	54.3	5.0	0.3	0.1	4.7	9.4	9.3
LnGrp LOS	D	A	A	F	A	D	A	A	A	A	A	A
Approach Vol, veh/h		7			160			1126			2013	
Approach Delay, s/veh		53.9			97.4			0.3			9.2	
Approach LOS		D			F			A			A	

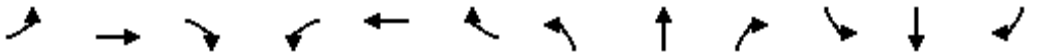
Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	115.0	25.0	115.0	25.0
Change Period (Y+Rc), s	* 6	* 6.3	* 6	* 6.3
Max Green Setting (Gmax), s	* 1.1E2	* 19	* 1.1E2	* 19
Max Q Clear Time (g_c+I1), s	34.9	20.7	34.7	20.7
Green Ext Time (p_c), s	9.0	0.0	33.6	0.0

Intersection Summary	
HCM 6th Ctrl Delay	10.5
HCM 6th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



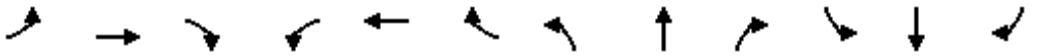
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	164	172	139	204	350	183	152	748	64	105	1343	344
Future Volume (veh/h)	164	172	139	204	350	183	152	748	64	105	1343	344
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1906	1906	1906	1938	1938	1938	1906	1906	1906	1953	1953	1953
Adj Flow Rate, veh/h	186	195	158	224	385	201	163	804	69	112	1429	366
Peak Hour Factor	0.88	0.88	0.88	0.91	0.91	0.91	0.93	0.93	0.93	0.94	0.94	0.94
Percent Heavy Veh, %	6	6	6	4	4	4	6	6	6	3	3	3
Cap, veh/h	241	397	545	245	490	252	234	1788	1012	190	1732	992
Arrive On Green	0.13	0.21	0.21	0.13	0.21	0.17	0.26	0.99	0.99	0.20	0.93	0.93
Sat Flow, veh/h	1816	1906	1616	1845	2350	1210	1816	3622	1616	1860	3711	1655
Grp Volume(v), veh/h	186	195	158	224	300	286	163	804	69	112	1429	366
Grp Sat Flow(s),veh/h/ln	1816	1906	1616	1845	1841	1720	1816	1811	1616	1860	1856	1655
Q Serve(g_s), s	13.9	12.6	10.1	16.8	21.6	22.2	11.4	0.7	0.1	7.6	15.6	2.8
Cycle Q Clear(g_c), s	13.9	12.6	10.1	16.8	21.6	22.2	11.4	0.7	0.1	7.6	15.6	2.8
Prop In Lane	1.00		1.00	1.00		0.70	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	241	397	545	245	384	358	234	1788	1012	190	1732	992
V/C Ratio(X)	0.77	0.49	0.29	0.91	0.78	0.80	0.70	0.45	0.07	0.59	0.83	0.37
Avail Cap(c_a), veh/h	241	403	550	245	389	364	246	1788	1012	252	1732	992
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	58.6	48.9	34.0	59.9	52.4	54.2	49.4	0.4	0.2	53.1	3.0	1.5
Incr Delay (d2), s/veh	14.2	0.9	0.3	35.2	9.9	11.6	7.8	0.8	0.1	2.9	4.6	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	11.6	10.0	7.1	15.4	16.3	16.2	8.7	0.7	0.1	6.2	4.9	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	72.8	49.8	34.3	95.1	62.3	65.8	57.2	1.3	0.4	56.0	7.6	2.5
LnGrp LOS	E	D	C	F	E	E	E	A	A	E	A	A
Approach Vol, veh/h		539			810			1036			1907	
Approach Delay, s/veh		53.2			72.6			10.0			9.5	
Approach LOS		D			E			B			A	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.3	71.1	21.0	31.6	20.1	67.3	21.0	31.6
Change Period (Y+Rc), s	6.7	6.7	7.1	7.1	6.7	6.7	7.1	7.1
Max Green Setting (Gmax), s	14.3	59.3	13.9	24.9	14.3	59.3	13.9	24.9
Max Q Clear Time (g_c+I1), s	9.6	2.7	18.8	14.6	13.4	17.6	15.9	24.2
Green Ext Time (p_c), s	0.1	6.0	0.0	1.1	0.0	16.2	0.0	0.3

Intersection Summary	
HCM 6th Ctrl Delay	27.0
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	4	79	53	3	19	36	1124	20	11	1461	9
Future Volume (veh/h)	11	4	79	53	3	19	36	1124	20	11	1461	9
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1953	1953	1953	1969	1969	1969	1938	1938	1938	1969	1969	1969
Adj Flow Rate, veh/h	13	5	18	68	4	5	39	1209	22	12	1660	10
Peak Hour Factor	0.83	0.83	0.83	0.78	0.78	0.78	0.93	0.93	0.93	0.88	0.88	0.88
Percent Heavy Veh, %	3	3	3	2	2	2	4	4	4	2	2	2
Cap, veh/h	150	28	101	139	60	75	295	3067	1368	392	3116	1390
Arrive On Green	0.08	0.08	0.08	0.08	0.08	0.08	0.83	0.83	0.83	1.00	1.00	1.00
Sat Flow, veh/h	1395	372	1340	1388	795	994	292	3681	1642	453	3741	1668
Grp Volume(v), veh/h	13	0	23	68	0	9	39	1209	22	12	1660	10
Grp Sat Flow(s),veh/h/ln	1395	0	1712	1388	0	1790	292	1841	1642	453	1870	1668
Q Serve(g_s), s	1.2	0.0	1.8	6.8	0.0	0.7	3.6	11.4	0.3	0.4	0.0	0.0
Cycle Q Clear(g_c), s	1.9	0.0	1.8	8.5	0.0	0.7	3.6	11.4	0.3	11.8	0.0	0.0
Prop In Lane	1.00		0.78	1.00		0.56	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	150	0	129	139	0	135	295	3067	1368	392	3116	1390
V/C Ratio(X)	0.09	0.00	0.18	0.49	0.00	0.07	0.13	0.39	0.02	0.03	0.53	0.01
Avail Cap(c_a), veh/h	396	0	430	383	0	450	295	3067	1368	392	3116	1390
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	61.0	0.0	60.6	64.6	0.0	60.1	2.3	2.9	2.0	0.6	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.0	0.6	2.7	0.0	0.2	0.9	0.4	0.0	0.1	0.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.8	0.0	1.4	4.5	0.0	0.6	0.4	4.7	0.1	0.0	0.5	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	61.2	0.0	61.3	67.3	0.0	60.3	3.2	3.3	2.0	0.7	0.7	0.0
LnGrp LOS	E	A	E	E	A	E	A	A	A	A	A	A
Approach Vol, veh/h		36			77			1270			1682	
Approach Delay, s/veh		61.3			66.5			3.3			0.7	
Approach LOS		E			E			A			A	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		122.6		17.4		122.6		17.4				
Change Period (Y+Rc), s		* 6		* 6.8		* 6		* 6.8				
Max Green Setting (Gmax), s		* 92		* 35		* 92		* 35				
Max Q Clear Time (g_c+I1), s		13.4		3.9		13.8		10.5				
Green Ext Time (p_c), s		12.6		0.1		20.0		0.2				

Intersection Summary		
HCM 6th Ctrl Delay	4.1	
HCM 6th LOS	A	

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection: 1: Rochester Road & Mobil Driveway/Diversion Street

Movement	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	LT	R	T	T	R	L	T	TR
Maximum Queue (ft)	30	152	44	134	171	58	65	225	255
Average Queue (ft)	6	74	13	56	59	12	22	131	112
95th Queue (ft)	23	132	36	114	130	37	47	212	209
Link Distance (ft)	265	241		1412	1412			772	772
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)			100			425	200		
Storage Blk Time (%)		5						1	
Queuing Penalty (veh)		1						0	

Intersection: 2: Rochester Road & Avon Road

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB
Directions Served	L	T	R	L	T	TR	L	T	T	R	L	T
Maximum Queue (ft)	340	191	141	346	322	305	320	325	319	200	182	254
Average Queue (ft)	184	109	69	263	250	232	171	188	196	42	136	229
95th Queue (ft)	275	171	132	363	346	317	284	279	291	148	215	256
Link Distance (ft)		686	686	252	252	252		1643	1643			183
Upstream Blk Time (%)				49	27	13					2	36
Queuing Penalty (veh)				120	69	33					0	212
Storage Bay Dist (ft)	850						500			150	500	
Storage Blk Time (%)									20		2	36
Queuing Penalty (veh)									13		11	37

Intersection: 2: Rochester Road & Avon Road

Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	250	146
Average Queue (ft)	231	65
95th Queue (ft)	246	120
Link Distance (ft)	183	183
Upstream Blk Time (%)	41	
Queuing Penalty (veh)	246	
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 3: Rochester Road & Drexelgate Pkwy/Eddington Blvd

Movement	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	T	R	L	T	T	R
Maximum Queue (ft)	24	149	106	60	174	175	114	25	30	202	254	26
Average Queue (ft)	7	31	36	11	23	48	31	2	4	76	91	1
95th Queue (ft)	24	73	77	33	74	110	82	15	19	160	187	9
Link Distance (ft)		315		330		760	760			1290	1290	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	100		95		150			150	150			130
Storage Blk Time (%)		1	2		0	0				1	2	
Queuing Penalty (veh)		0	0		0	0				0	0	

Intersection: 4: Rochester Road & Site Driveway 1

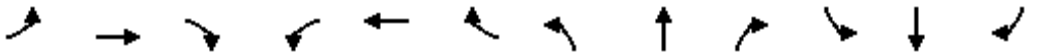
Movement	WB	NB	SB	SB	SB	SB
Directions Served	R	TR	L	T	T	T
Maximum Queue (ft)	52	19	174	486	555	150
Average Queue (ft)	21	1	42	212	227	67
95th Queue (ft)	48	6	108	447	475	190
Link Distance (ft)	242	183		866	866	
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			150			75
Storage Blk Time (%)			0	18	27	
Queuing Penalty (veh)			0	11	160	

Intersection: 5: Avon Road & Site Driveway 2

Movement	EB	WB	WB	WB	SB
Directions Served	LT	T	T	TR	LR
Maximum Queue (ft)	183	526	200	150	232
Average Queue (ft)	26	167	104	23	142
95th Queue (ft)	114	437	257	102	263
Link Distance (ft)	252	792			180
Upstream Blk Time (%)					50
Queuing Penalty (veh)					0
Storage Bay Dist (ft)			100	100	
Storage Blk Time (%)		19	7	0	
Queuing Penalty (veh)		88	17	0	

Zone Summary

Zone wide Queuing Penalty: 1021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	0	1	135	2	45	0	1766	127	46	1689	13
Future Volume (veh/h)	1	0	1	135	2	45	0	1766	127	46	1689	13
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	2000	2000	2000	1984	1984	1984	1984	1984	1984	1984	1984	1984
Adj Flow Rate, veh/h	2	0	2	185	3	62	0	1859	134	49	1797	14
Peak Hour Factor	0.60	0.60	0.60	0.73	0.73	0.73	0.95	0.95	0.95	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	1	1	1	1	1	1	1	1	1
Cap, veh/h	39	13	13	201	2	252	51	2989	1333	225	3040	24
Arrive On Green	0.15	0.00	0.13	0.15	0.15	0.15	0.00	1.00	1.00	0.79	0.79	0.78
Sat Flow, veh/h	0	87	87	1002	16	1682	261	3770	1682	218	3834	30
Grp Volume(v), veh/h	4	0	0	188	0	62	0	1859	134	49	883	928
Grp Sat Flow(s),veh/h/ln	175	0	0	1018	0	1682	261	1885	1682	218	1885	1979
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	4.6	0.0	0.0	0.0	8.4	25.5	25.6
Cycle Q Clear(g_c), s	21.0	0.0	0.0	21.0	0.0	4.6	0.0	0.0	0.0	8.4	25.5	25.6
Prop In Lane	0.50		0.50	0.98		1.00	1.00		1.00	1.00		0.02
Lane Grp Cap(c), veh/h	65	0	0	204	0	252	51	2989	1333	225	1495	1569
V/C Ratio(X)	0.06	0.00	0.00	0.92	0.00	0.25	0.00	0.62	0.10	0.22	0.59	0.59
Avail Cap(c_a), veh/h	65	0	0	204	0	252	51	2989	1333	225	1495	1569
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.4	0.0	0.0	61.5	0.0	52.5	0.0	0.0	0.0	3.9	5.6	5.7
Incr Delay (d2), s/veh	0.6	0.0	0.0	42.5	0.0	0.7	0.0	1.0	0.2	2.2	1.7	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.2	0.0	0.0	14.2	0.0	3.6	0.0	0.7	0.1	0.8	13.8	14.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	53.0	0.0	0.0	104.0	0.0	53.2	0.0	1.0	0.2	6.1	7.4	7.3
LnGrp LOS	D	A	A	F	A	D	A	A	A	A	A	A
Approach Vol, veh/h		4			250			1993			1860	
Approach Delay, s/veh		53.0			91.4			0.9			7.3	
Approach LOS		D			F			A			A	

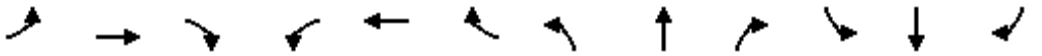
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		115.0		25.0		115.0		25.0				
Change Period (Y+Rc), s		* 6		* 6.3		* 6		* 6.3				
Max Green Setting (Gmax), s		* 1.1E2		* 19		* 1.1E2		* 19				
Max Q Clear Time (g_c+I1), s		2.0		23.0		27.6		23.0				
Green Ext Time (p_c), s		29.6		0.0		31.4		0.0				

Intersection Summary	
HCM 6th Ctrl Delay	9.4
HCM 6th LOS	A

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



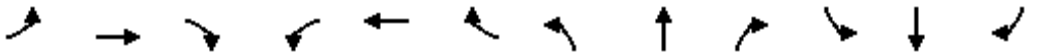
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	331	374	144	181	296	301	182	1291	114	215	1252	275
Future Volume (veh/h)	331	374	144	181	296	301	182	1291	114	215	1252	275
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1984	1984	1984	2000	2000	2000	1984	1984	1984	1984	1984	1984
Adj Flow Rate, veh/h	348	394	152	191	312	317	194	1373	121	234	1361	299
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.94	0.94	0.94	0.92	0.92	0.92
Percent Heavy Veh, %	1	1	1	0	0	0	1	1	1	1	1	1
Cap, veh/h	319	439	613	275	375	334	270	1616	963	270	1616	1004
Arrive On Green	0.17	0.22	0.22	0.14	0.20	0.16	0.14	0.43	0.43	0.05	0.14	0.14
Sat Flow, veh/h	1890	1984	1682	1905	1900	1695	1890	3770	1682	1890	3770	1682
Grp Volume(v), veh/h	348	394	152	191	312	317	194	1373	121	234	1361	299
Grp Sat Flow(s),veh/h/ln	1890	1984	1682	1905	1900	1695	1890	1885	1682	1890	1885	1682
Q Serve(g_s), s	23.6	27.0	8.8	13.4	22.1	25.9	13.7	45.8	4.6	17.2	49.3	16.0
Cycle Q Clear(g_c), s	23.6	27.0	8.8	13.4	22.1	25.9	13.7	45.8	4.6	17.2	49.3	16.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	319	439	613	275	375	334	270	1616	963	270	1616	1004
V/C Ratio(X)	1.09	0.90	0.25	0.69	0.83	0.95	0.72	0.85	0.13	0.87	0.84	0.30
Avail Cap(c_a), veh/h	319	439	613	321	375	334	270	1616	963	270	1616	1004
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	58.2	52.9	31.1	57.0	54.0	57.8	57.3	35.9	13.8	65.4	55.5	21.9
Incr Delay (d2), s/veh	77.4	20.6	0.2	5.2	14.8	35.9	8.9	5.8	0.3	24.4	5.5	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	25.9	22.1	6.5	11.0	17.6	20.7	11.4	28.8	3.2	15.9	34.5	11.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	135.6	73.6	31.3	62.2	68.8	93.7	66.2	41.7	14.0	89.8	61.0	22.7
LnGrp LOS	F	E	C	E	E	F	E	D	B	F	E	C
Approach Vol, veh/h		894			820			1688			1894	
Approach Delay, s/veh		90.6			76.9			42.6			58.5	
Approach LOS		F			E			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	22.0	62.0	22.6	33.4	22.0	62.0	26.0	30.0
Change Period (Y+Rc), s	6.7	6.7	7.1	7.1	6.7	6.7	7.1	7.1
Max Green Setting (Gmax), s	15.3	55.3	18.9	22.9	15.3	55.3	18.9	22.9
Max Q Clear Time (g_c+I1), s	19.2	47.8	15.4	29.0	15.7	51.3	25.6	27.9
Green Ext Time (p_c), s	0.0	5.0	0.2	0.0	0.0	3.1	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	61.7
HCM 6th LOS	E

Notes

User approved pedestrian interval to be less than phase max green.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	17	4	68	29	2	26	71	1530	50	15	1396	19
Future Volume (veh/h)	17	4	68	29	2	26	71	1530	50	15	1396	19
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1984	1984	1984	1906	1906	1906	1984	1984	1984	1984	1984	1984
Adj Flow Rate, veh/h	22	5	37	39	3	13	75	1611	53	16	1469	20
Peak Hour Factor	0.77	0.77	0.77	0.74	0.74	0.74	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	1	1	6	6	6	1	1	1	1	1	1
Cap, veh/h	133	14	101	109	21	91	315	3172	1415	269	3172	1415
Arrive On Green	0.07	0.07	0.07	0.07	0.07	0.07	0.84	0.84	0.84	0.84	0.84	0.84
Sat Flow, veh/h	1408	204	1509	1321	312	1351	356	3770	1682	301	3770	1682
Grp Volume(v), veh/h	22	0	42	39	0	16	75	1611	53	16	1469	20
Grp Sat Flow(s),veh/h/ln	1408	0	1713	1321	0	1663	356	1885	1682	301	1885	1682
Q Serve(g_s), s	2.1	0.0	3.3	4.1	0.0	1.3	9.7	16.6	0.7	2.2	14.2	0.3
Cycle Q Clear(g_c), s	3.4	0.0	3.3	7.4	0.0	1.3	23.9	16.6	0.7	18.8	14.2	0.3
Prop In Lane	1.00		0.88	1.00		0.81	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	133	0	115	109	0	112	315	3172	1415	269	3172	1415
V/C Ratio(X)	0.16	0.00	0.36	0.36	0.00	0.14	0.24	0.51	0.04	0.06	0.46	0.01
Avail Cap(c_a), veh/h	393	0	431	353	0	418	315	3172	1415	269	3172	1415
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	63.1	0.0	62.4	65.9	0.0	61.5	6.0	3.1	1.8	5.7	2.9	1.8
Incr Delay (d2), s/veh	0.6	0.0	1.9	2.0	0.0	0.6	1.8	0.6	0.0	0.4	0.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.4	0.0	2.7	2.6	0.0	1.0	1.4	6.5	0.3	0.3	5.6	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	63.6	0.0	64.4	67.9	0.0	62.1	7.8	3.7	1.9	6.1	3.4	1.8
LnGrp LOS	E	A	E	E	A	E	A	A	A	A	A	A
Approach Vol, veh/h		64			55			1739			1505	
Approach Delay, s/veh		64.1			66.2			3.8			3.4	
Approach LOS		E			E			A			A	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		123.8		16.2		123.8		16.2				
Change Period (Y+Rc), s		* 6		* 6.8		* 6		* 6.8				
Max Green Setting (Gmax), s		* 92		* 35		* 92		* 35				
Max Q Clear Time (g_c+I1), s		25.9		5.4		20.8		9.4				
Green Ext Time (p_c), s		21.9		0.3		16.0		0.2				

Intersection Summary												
HCM 6th Ctrl Delay			5.8									
HCM 6th LOS			A									

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection: 1: Rochester Road & Mobil Driveway/Diversion Street

Movement	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	LT	R	T	T	R	L	T	TR
Maximum Queue (ft)	31	262	150	135	129	26	152	204	217
Average Queue (ft)	2	130	45	48	63	10	46	130	113
95th Queue (ft)	15	248	128	102	111	28	103	213	212
Link Distance (ft)	257	304		1441	1441			862	862
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)			100			425	200		
Storage Blk Time (%)		21						0	
Queuing Penalty (veh)		11						0	

Intersection: 2: Rochester Road & Avon Road

Movement	EB	EB	EB	B19	B19	WB	WB	WB	NB	NB	NB	NB
Directions Served	L	T	R	T	T	L	T	TR	L	T	T	R
Maximum Queue (ft)	875	980	147	286	201	263	317	320	525	892	891	200
Average Queue (ft)	874	961	63	250	19	156	223	243	274	408	445	82
95th Queue (ft)	880	968	117	334	110	253	324	334	497	714	753	233
Link Distance (ft)		890	890	201	201	264	264	264		1658	1658	
Upstream Blk Time (%)	1	68		62	0	0	11	14				
Queuing Penalty (veh)	0	290		266	1	1	29	37				
Storage Bay Dist (ft)	850								500			150
Storage Blk Time (%)	10	66								9	45	
Queuing Penalty (veh)	36	219								16	52	

Intersection: 2: Rochester Road & Avon Road

Movement	SB	SB	SB	SB
Directions Served	L	T	T	R
Maximum Queue (ft)	236	345	308	94
Average Queue (ft)	229	299	291	50
95th Queue (ft)	254	322	303	84
Link Distance (ft)		236	236	236
Upstream Blk Time (%)	21	75	41	
Queuing Penalty (veh)	0	437	241	
Storage Bay Dist (ft)	500			
Storage Blk Time (%)	21	75		
Queuing Penalty (veh)	132	162		

Intersection: 3: Rochester Road & Drexelgate Pkwy/Eddington Blvd

Movement	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	T	R	L	T	T	R
Maximum Queue (ft)	47	102	65	40	85	167	136	30	31	204	237	31
Average Queue (ft)	14	30	25	11	29	71	56	3	8	86	100	0
95th Queue (ft)	39	69	58	30	69	142	127	18	29	179	195	0
Link Distance (ft)		272		321		710	710			1292	1292	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	100		95		150			150	150			130
Storage Blk Time (%)		0				0	0			1	2	
Queuing Penalty (veh)		0				0	0			0	0	

Intersection: 4: Rochester Road & Site Driveway 1

Movement	WB	NB	SB	SB	SB	SB
Directions Served	R	TR	L	T	T	T
Maximum Queue (ft)	52	19	174	901	934	150
Average Queue (ft)	30	1	96	708	715	118
95th Queue (ft)	54	7	215	1174	1183	218
Link Distance (ft)	246	236		846	846	
Upstream Blk Time (%)				41	40	
Queuing Penalty (veh)				353	347	
Storage Bay Dist (ft)			150			75
Storage Blk Time (%)			0	66	36	
Queuing Penalty (veh)			0	26	207	

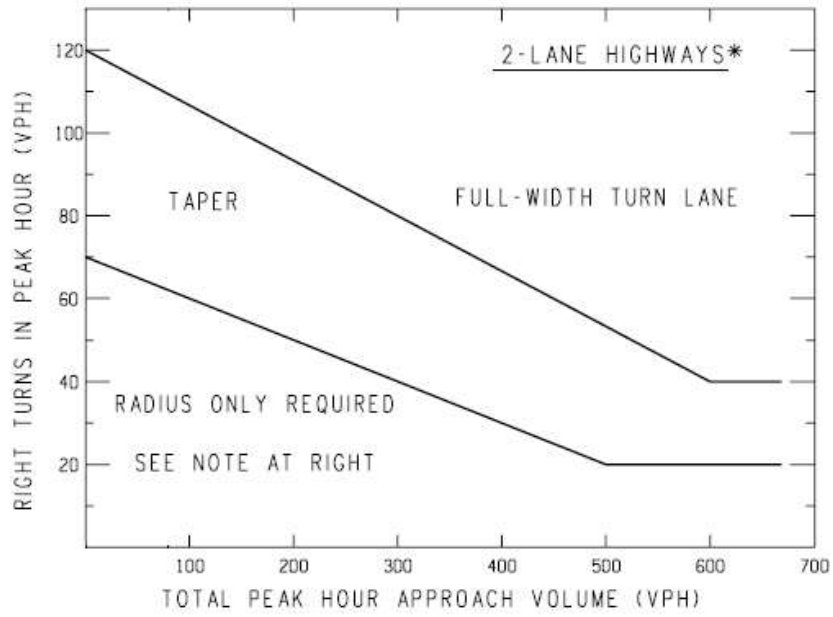
Intersection: 5: Avon Road & Site Driveway 2

Movement	EB	WB	WB	WB	SB
Directions Served	LT	T	T	TR	LR
Maximum Queue (ft)	266	223	193	150	168
Average Queue (ft)	59	12	25	22	54
95th Queue (ft)	192	89	121	98	115
Link Distance (ft)	264	644			189
Upstream Blk Time (%)	1				
Queuing Penalty (veh)	4				
Storage Bay Dist (ft)			100	100	
Storage Blk Time (%)		0	3	0	
Queuing Penalty (veh)		0	6	1	

Zone Summary

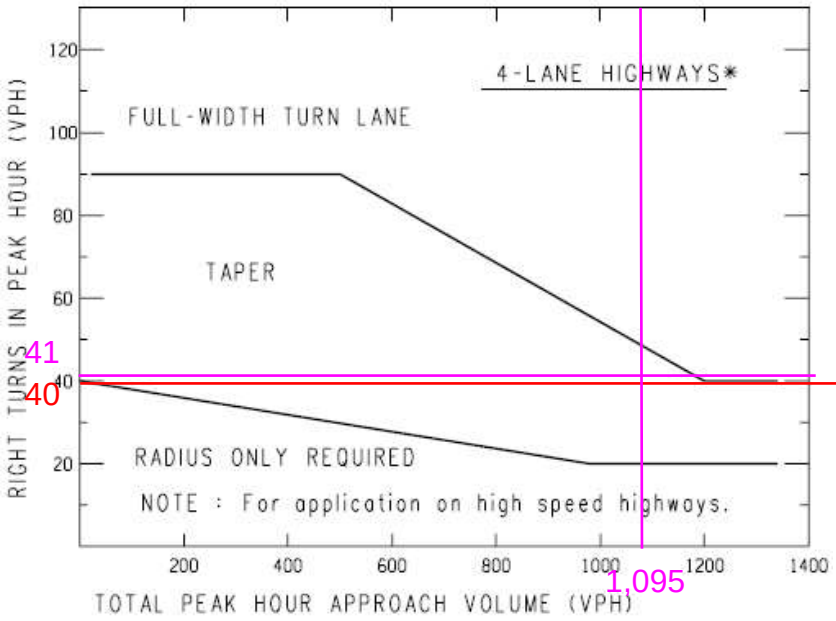
Zone wide Queuing Penalty: 2873

AM Site Driveway 1 (Rochester Road)
PM Site Driveway 1 (Rochester Road)



NOTE: For posted speeds at or under 45 mph, peak hour right turns greater than 40 vph, and total peak hour approach less than 300 vph, adjust right turn volumes.

Adjust peak hour
Right turns = Peak hour
Right turns – 20



*If a center left-turn lane exists (ie 3 or 5 lane roadway), subtract the number of left turns in approach volume form the total approach volume to get an adjusted total approach volume.

1,923

Sample Problem: The Design Speed is 55 mph. The Peak Hour Approach Volume is 300 vph. The Number of Right Turns in the Peak Hous is 100 vph. Determine if a right turn lane is recommended.

Solution: Figure indicates that the intersection of 300 vph and 100 vph is located above the upper trend line; thus, a right-turn lane may be recommended.

AM Site Driveway 2 (Avon Road)
PM Site Driveway 2 (Avon Road)

17,520 - 2015
SEMCOG grown 2%
to 2021 - 19,730.

19,730
19,730

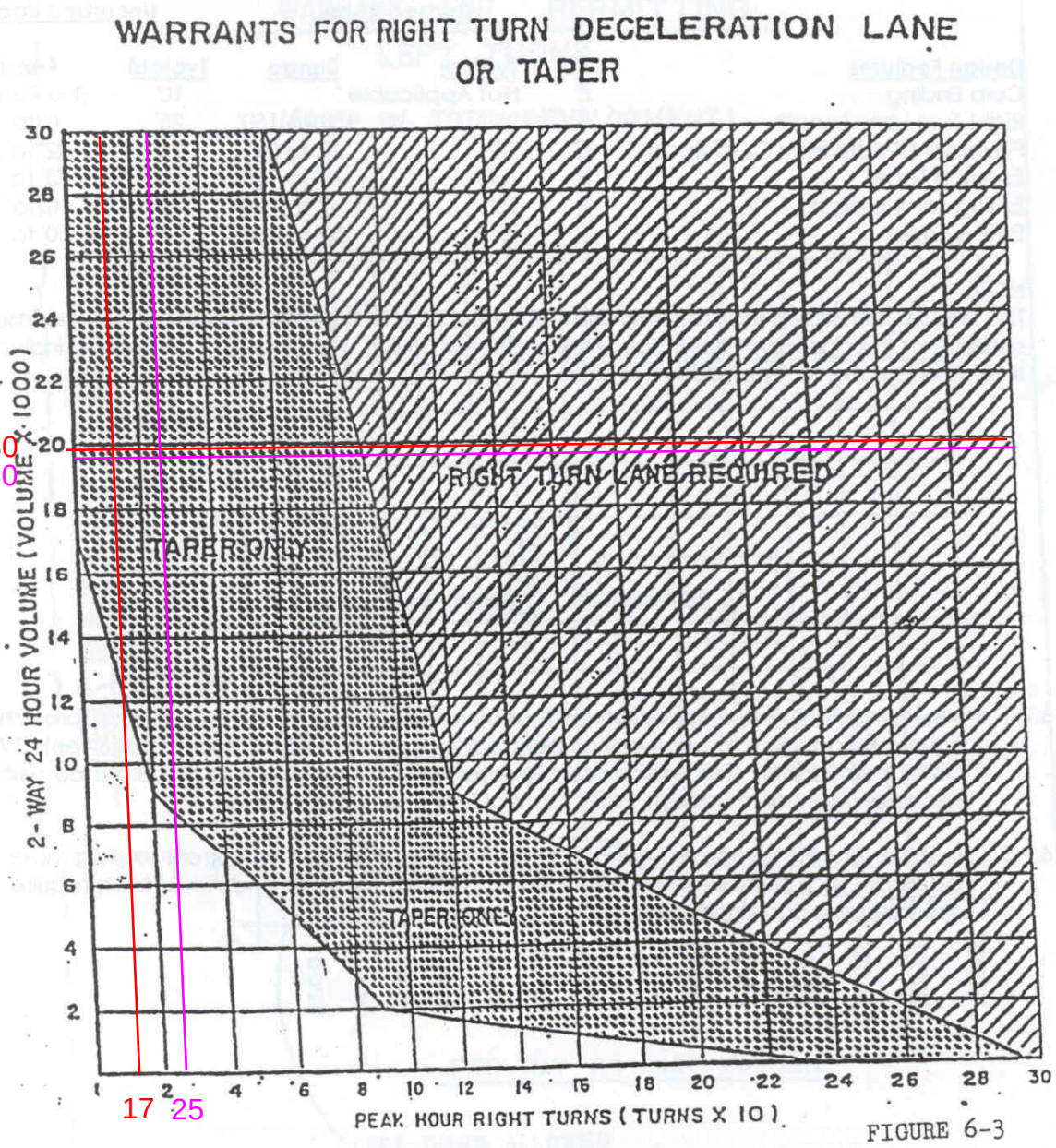


FIGURE 6-3