



MEMORANDUM

TO: **NB Land, LLC**
Matthew Caffrey, Vice President

FROM: **Dawood Engineering, Inc.**
Scott Bechard, AICP

DATE: June 5, 2023

RE: **Heritage Village Conditional Use Plan**
Opinion of Likely Mitigation for Berks Homes Development
South Middleton Township, Cumberland County, PA

As discussed with representatives from NB Land, LLC, South Middleton Township has requested information from Berks Homes regarding off-site mitigation related to the proposed 746-unit residential development to be located on the Heritage Village site along the Connector Road between Trindle Road (SR 0641) and York Road (SR 0074) in South Middleton Township, Cumberland County. The information is intended to inform a Conditional Use application that is currently under consideration for this development. Thus, the surrounding roadway network has been evaluated to provide a reasonable assessment of future impacts.

It is recognized that the proposed residential development presents a deviation from the approved Transportation Impact Study (TIS), dated September 8, 2017, that was prepared for the Heritage Village site. In the original study, alternate land uses were proposed as part of Phase 1 and the residential portion of the site was proposed to consist of 537 residential units. Therefore, the proposed Berks Development represents an anticipated increase of 227 residential units. This equates to a net increase of 81 entering trips and 59 exiting trips during the highest peak hour (PM Peak) of site trips generated by the residential component of the Heritage Village Development.

Since the Berks Development site is now under consideration for conditional use approval, it is anticipated that the Berks site will comprise the initial phase of the Heritage Village Development. To provide a preliminary evaluation of expected off-site mitigation for this phase, an inductive analysis was completed based on the following assumptions:

- The Berks Development is expected to comprise the first phase of the development. As such, no other land uses were included in this analysis.
- To evaluate the required mitigation, the original traffic model was utilized for consistency with the previous recommendations. It is noted that this model was completed prior to 2017 and utilized previous software versions, and previous analysis methodologies (Highway Capacity Manual 2010).

- The original residential trip distribution was maintained, but all previous trip generation was removed from the With Development Scenario and replaced with total trip generation estimates for the Berks Development.
- Selected analysis years include a 2026 opening year and 2031 horizon year. These years match future scenarios evaluated in the approved TIS. Base (without development) traffic volumes for the years 2026 and 2031 remain unchanged from the approved TIS.
- The criteria used to determine mitigation requirements has evolved slightly due to updated analysis methodology.

Thus, to better inform the Developer and Township during the Conditional Use process, the following discussion summarizes the results of this inductive mitigation analysis for the Berks Development site.

Trip Generation

The trip generation for the Berks Homes Development was determined based on data from the ITE *Trip Generation Manual*, 11th Edition. For the purposes of this analysis, only volumes from the Berks Homes Development were included and analyzed. The volumes generated by the proposed single-family lots were calculated using Land Use Code (LUC) 210, "Single-Family Detached Housing". The volumes generated by the proposed townhomes and apartments were calculated using LUC 220, "Low-Rise Multifamily Housing". The number of housing units was used as the independent variable for each calculation and the fitted curve equation was used per Table 4.2 of the ITE Trip Generation Handbook, 3rd Edition. Volumes were calculated for the AM, PM, and Saturday Peak Hours. A summary of these calculations is provided in **Attachment 1**.

Volume Development

The volume development spreadsheet utilized in the approved TIS was modified to eliminate the previous trip generation assumptions and replace the values with total trip generation for the Berks Development only. To maintain consistency with the previous No-Build (without development) scenarios, the year 2026 was assumed for the opening of the Berks Development and 2031 was assumed as the design year. The previously established site trip distribution and background developments were maintained for consistency with the original analysis. No internal capture was assumed for the residual development, to provide a conservative estimation of off-site traffic. The updated volume development spreadsheets are provided in **Attachment 2**.

Traffic Model Analysis

The resulting build volumes calculated in the volume development section were entered into the previously approved Synchro traffic model for each scenario (corresponding to the applicable analysis year and peak hour) to provide a new estimation of projected level-of-service and 95th percentile queue impacts resulting from the proposed development. It should be noted that the approved traffic study

utilized Synchro version 8 and HCM 2010 for the capacity and queue analysis. Current standards require Synchro 11 and HCM 6th Edition criteria. Synchro 11 Software was utilized for this inductive mitigation analysis, but HCM 2010 criteria were evaluated, when applicable, to provide an “apples to apples” comparison with the original improvement recommendations. If HCM 2010 methodology was not applicable to an intersection, the Synchro Percentile methodology was utilized, similar to the original approved TIS. The result of this analysis yields an overall and per-movement level-of-service and 95th percentile queue length that are projected to occur due to the additional traffic generated by the Berks Development.

It should be noted that due to the limitations of this comparative analysis, the results should be considered a degree of magnitude, rather than specific impact results. More detailed analysis would require updated traffic data, assumptions, and methodologies.

Details of the Synchro reports and revised Level-of-Service / queue tables are provided in **Attachment 3**. Note that The LOS and queue tables retain the original titles and Table references from the approved TIS to facilitate ease of comparison with the original study.

Estimated Mitigation

Following the previously noted capacity and queue analysis, improvement options were evaluated to identify measures necessary to return projected traffic impacts to No-Build (without development) conditions in the analysis years 2026 and 2031 for each peak hour that was studied. However, due to the limitations of this inductive analysis, it was necessary to find a balance between a direct comparison of results that are based on outdated methodologies, versus a comparison of results based on differing methodologies and criteria. One notable difference is exemplified by a previous requirement to mitigate all turning movements that exhibited a volume over capacity (as designated by a # symbol in the Synchro reports). In the current HCM 6th edition methodology capacity is addressed differently, and the 6th Edition methodology can be applied at a greater variety of intersection configurations thus minimizing the emphasis on this requirement.

As such, a set of principles was developed to provide a compromise between the differing methodologies and standards to identify a set of improvements that was reasonable for the scale of development that is proposed. For example, it would not be reasonable to assume significant capacity improvements for a requirement that may no longer be of concern. Specific mitigation details would require updated traffic data. The guiding principles utilized in the mitigation analysis are listed as follows:

- The publication *Policies and Procedures for Transportation Impact Studies* located in PennDOT Publication 282, Appendix A was utilized to determine the appropriate mitigation criteria.
- The need for physical capacity improvements was based on Level of Service (LOS) and Queue length deficiencies, only.
- PennDOT criteria indicates that LOS must be mitigated if the overall intersection LOS drops a “grade” and the increase in delay is greater than a 10 second threshold. The Department may

request mitigation if turning movements experience a drop in level of service and delay similar to the threshold listed above.

- Based on these requirements, all Overall Intersection LOS deficiencies meeting these thresholds were mitigated. For minor instances where a turning movement experienced a drop in LOS but increase in delay of < 20 seconds, only signal retiming was considered. For significant instances where a turning movement experienced a drop in LOS and increased delay > 20 seconds, mitigation was considered to return the increased delay to less than 20 seconds.
- Signal retiming was evaluated to improve turning movements over capacity (designated by #) to the maximum extent feasible. It should be noted that current methodologies would yield different results and a detailed analysis of this condition is of limited value.
- Three intersections in Carlisle Borough are interconnected via a Traffic Adaptive System (InSync). Therefore, it is assumed that a detailed evaluation of timing adjustments is not necessary for these intersections, since the adaptive system continually optimizes signal timings based on live field conditions.
- Queue lengths were mitigated if the 95th percentile vehicle queue exceeded the existing storage and was greater than the without development condition by more than two (2) car lengths, as is typical for recent TIS submissions.
- Signal timing adjustments utilized the updated system plan as a starting point. If revisions to the network cycle length were not necessary, only the subject intersections were evaluated.

To better identify the intersections and conditions that require mitigation, a matrix was developed to track the level of the impacts. A copy of this table is provided in **Attachment 4**. Tables depicting the proposed LOS and 95th percentile queue mitigation are also included in **Attachment 4**.

Recommendations

Based on the evaluation presented in this memo, the following improvements are expected to be necessary to mitigate the impacts of Berks Development traffic, even without the other planned Heritage Village site traffic.

Estimation of Likely Mitigation for Berks Homes Development		
Intersection	Improvement	Approximate Cost Opinion
Trindle Road (SR 0641) / Army Heritage Drive	- Signal timing adjustments. - Provide re-striping to maximize the length of the NBL lane on Army Heritage Drive between Trindle Road (SR 0641) and Westminster Drive – Fairview Street. Estimated length (380 feet). - Provide striping and signing to discourage blocking of the Sheetz Driveway.	\$8,000
Army Heritage Drive / Westminster Drive – Fairview Street	Signal timing adjustments.	\$1,000
Trindle Road (SR 0641) / Middlesex Road	- Traffic signal control required. Various traffic control projects have been proposed at this intersection. Depending on the final outcome, differing mitigation needs would be justified: - Traffic signal control was previously proposed in conjunction with the unassociated Kensington Development. If a traffic signal is installed under this scenario, a “fair share” agreement is recommended. See Approved TIS for discussion of fair-share agreement with Kensington Development. - PennDOT District 8 has a programmed project at this intersection to install a roundabout or traffic signal, adjust alignment and address other safety concerns. The anticipated let date is 1-1-2026. (Project ID 117596). If this project proceeds, mitigation by the Berks Development may not be necessary. - If no other projects are advanced to address traffic signal control at this intersection, it is recommended the Berks Development monitor the intersection to determine if, and when traffic signal control may be required.	To Be Determined

Intersection	Improvement	Approximate Cost Opinion
York Road (SR 0074) / I-81 NB Off-Ramp	Signal timing adjustments.	\$1,000
York Road (SR 0074) / Westminster Drive	- Signal timing adjustments. - Provide re-striping to lengthen the EBL storage to 500'. - Although the Overall Intersection LOS experiences an increase in delay of < 10 seconds, (no mitigation required) the NBL queue requires mitigation and per movement LOS exceeds 10 seconds and even 20 seconds in some locations. Thus, based on further coordination with reviewing agencies, widening of the SB approach of Westminster Dr. may be needed to construct a SB right turn lane to improve capacity at the intersection. - Restripe NB approach to extend the NB Left Turn Lane.	\$150,000

If you have any questions or comments, please contact me by phone at (717) 732-8576 or by email at scott.bechard@dawood.net.

Cc. Chad Zimmerman, Dawood Engineering, Inc.

ATTACHMENT 1

TRIP GENERATION



**TABLE 1
PROPOSED TRIP GENERATION**

PHASE	DESCRIPTION	LUC	SIZE	EQUATION	WEEKDAY (ADT)	AM PEAK HOUR		PM PEAK HOUR		SAT PEAK HOUR	
						ENTER	EXIT	ENTER	EXIT	ENTER	EXIT
1	SINGLE FAMILY LOTS	210	97 UNITS	FITTED	981	18	54	61	36	50	43
	TOWNHOMES	220	112 UNITS	FITTED	793	14	44	43	26	23	23
	APARTMENTS	220	288 UNITS	FITTED	1921	27	85	91	53	59	59
2	SINGLE FAMILY LOTS	210	39 UNITS	FITTED	424	8	24	26	15	23	20
	TOWNHOMES	220	87 UNITS	FITTED	633	12	38	37	21	18	18
3	SINGLE FAMILY LOTS	210	43 UNITS	FITTED	464	9	26	28	17	25	22
	TOWNHOMES	220	80 UNITS	FITTED	588	11	37	35	20	17	16
PROPOSED TOTAL TRIP GENERATION					5804	99	308	321	188	215	201

AVERAGE RATE, ONLY 1 STUDY AVAILABLE
50/50 SPLIT ASSUMED

Table 1 presents the proposed trip generation volumes for the residential component of the Heritage Village site. The information was derived from ITE Trip Generation, 11th edition.

ATTACHMENT 2

VOLUME DEVELOPMENT SPREADSHEETS



G.R. = 1.37 2018 GF 1.056 2026 GF 1.177 2031 GF 1.26

Intersection:		E. High Street(SR 0641) & York Road (SR 0074)															
	AM Existing	Base 2026	Base 2031	BG Dev. - Kensington	BG. Dev. - Ashton (Netherby)	BG. Dev. - Mentzer Farm	BG. Dev. - Morgan's Crossing & Jefferson Court II	BG. Dev. - Parkview at Boiling Springs	Hardee's Site	Future w/o 2026	Future w/o 2031	Phase 1 Total Ext. Site Trips	Phase 2 Total Ext. Site Trips	2026 Connector Adjust.	2031 Connector Adjust.	Future w/ 2026	Future w/ 2031
EBT	483	568	609							568	609	6	7			575	616
EBR	180	212	227							212	227	5	8			220	235
WBL	5	6	6							6	6	0	0			6	6
WBT	434	511	547							511	547	5	22			532	568
NBL	227	267	286							267	286	4	25			292	311
NBR	7	8	9							8	9	0	0			8	9

Intersection:		York Road (SR 0074) & Giant Lane/Carlisle Plaza Mall															
	AM Existing	Base 2026	Base 2031	BG Dev. - Kensington	BG. Dev. - Ashton (Netherby)	BG. Dev. - Mentzer Farm	BG. Dev. - Morgan's Crossing & Jefferson Court II	BG. Dev. - Parkview at Boiling Springs	Hardee's Site	Future w/o 2026	Future w/o 2031	Phase 1 Total Ext. Site Trips	Phase 2 Total Ext. Site Trips	2026 Connector Adjust.	2031 Connector Adjust.	Future w/ 2026	Future w/ 2031
EBL	22	26	28							26	28	0	0			26	28
EBT	252	297	318							297	318	5	8			305	325
EBR	7	8	9							8	9	0	0			8	9
WBL	52	61	66							61	66	0	0			61	66
WBT	376	443	474							443	474	4	25			467	498
WBR	9	11	11							11	11	0	0			11	11
NBL	5	6	6							6	6	0	0			6	6
NBT	22	26	28							26	28	0	0			26	28
NBR	58	68	73							68	73	0	0			68	73
SBL	29	34	37							34	37	0	0			34	37
SBT	19	22	24							22	24	0	0			22	24
SBR	14	16	18							16	18	0	0			16	18

Intersection:		E. High Street (SR 0641) & Carlisle Plaza Mall/Shaffner Avenue															
	AM Existing	Base 2026	Base 2031	BG Dev. - Kensington	BG. Dev. - Ashton (Netherby)	BG. Dev. - Mentzer Farm	BG. Dev. - Morgan's Crossing & Jefferson Court II	BG. Dev. - Parkview at Boiling Springs	Hardee's Site	Future w/o 2026	Future w/o 2031	Phase 1 Total Ext. Site Trips	Phase 2 Total Ext. Site Trips	2026 Connector Adjust.	2031 Connector Adjust.	Future w/ 2026	Future w/ 2031
EBL	2	2	3							2	3	0	0			2	3
EBT	287	338	362							338	362	6	7			345	369
EBR	34	40	43							40	43	0	0			40	43
WBL	28	33	35							33	35	0	0			33	35
WBT	304	358	383							358	383	5	22			379	405
WBR	1	1	1							1	1	0	0			1	1
NBL	19	22	24							22	24	0	0			22	24
NBT	0	0	0							0	0	0	0			0	0
NBR	24	28	30							28	30	0	0			28	30
SBL	2	2	3							2	3	0	0			2	3
SBT	0	0	0							0	0	0	0			0	0
SBR	1	1	1							1	1	0	0			1	1

Intersection:		E. High Street (SR 0641) & Lowes Access/CVS Access															
	AM Existing	Base 2026	Base 2031	BG Dev. - Kensington	BG. Dev. - Ashton (Netherby)	BG. Dev. - Mentzer Farm	BG. Dev. - Morgan's Crossing & Jefferson Court II	BG. Dev. - Parkview at Boiling Springs	Hardee's Site	Future w/o 2026	Future w/o 2031	Phase 1 Total Ext. Site Trips	Phase 2 Total Ext. Site Trips	2026 Connector Adjust.	2031 Connector Adjust.	Future w/ 2026	Future w/ 2031
EBL	6	7	8							7	8	0	0			7	8
EBT	425	500	536							500	536	6	7			507	542
EBR	43	51	54							51	54	0	0			51	54
WBL	27	32	34							32	34	0	0			32	34
WBT	429	505	541							505	541	5	22			526	562
WBR	7	8	9							8	9	0	0			8	9
NBL	30	35	38							35	38	0	0			35	38
NBT	0	0	0							0	0	0	0			0	0
NBR	20	24	25							24	25	0	0			24	25
SBL	1	1	1							1	1	0	0			1	1
SBT	1	1	1							1	1	0	0			1	1
SBR	0	0	0							0	0	0	0			0	0

Intersection:		Trindle Road (SR 0641) & I-81 SB Off-Ramp															
	AM Existing	Base 2026	Base 2031	BG Dev. - Kensington	BG. Dev. - Ashton (Netherby)	BG. Dev. - Mentzer Farm	BG. Dev. - Morgan's Crossing & Jefferson Court II	BG. Dev. - Parkview at Boiling Springs	Hardee's Site	Future w/o 2026	Future w/o 2031	Phase 1 Total Ext. Site Trips	Phase 2 Total Ext. Site Trips	2026 Connector Adjust.	2031 Connector Adjust.	Future w/ 2026	Future w/ 2031
EBT	680	800	857							800	857	6	7			807	864
WBT	372	438	469							438	469	5	22			459	490
SBL	129	152	163							152	163	20	21			173	183
SBR	351	413	442							413	442	0	0			413	442

Intersection:		Trindle Road (SR 0641) & I-81 NB On-Ramp															
	AM Existing	Base 2026	Base 2031	BG Dev. - Kensington	BG. Dev. - Ashton (Netherby)	BG. Dev. - Mentzer Farm	BG. Dev. - Morgan's Crossing & Jefferson Court II	BG. Dev. - Parkview at Boiling Springs	Hardee's Site	Future w/o 2026	Future w/o 2031	Phase 1 Total Ext. Site Trips	Phase 2 Total Ext. Site Trips	2026 Connector Adjust.	2031 Connector Adjust.	Future w/ 2026	Future w/ 2031
EBT	516	607	650							607	650	26	28			635	678
EBR	261	307	329							307	329	0	0			307	329
WBL	202	238	255							238	255	16	65			302	319
WBT	362	426	456							426	456	5	22			448	478

Intersection:		Trindle Road (SR 0641) & Army Heritage Drive															
	AM Existing	Base 2026	Base 2031	BG Dev. - Kensington	BG Dev. - Ashton (Netherby)	BG Dev. - Mentzer Farm	BG Dev. - Morgan's Crossing & Jefferson Court II	BG Dev. - Parkview at Boiling Springs	Hardee's Site	Future w/o 2026	Future w/o 2031	Phase 1 Total Ext. Site Trips	Phase 2 Total Ext. Site Trips	2026 Connector Adjust.	2031 Connector Adjust.	Future w/ 2026	Future w/ 2031
EBL	216	254	272						18	272	290	0	0			272	290
EBT	238	280	300						-5	275	295	26	14	24	25	313	334
EBR	61	72	77						-2	70	75	0	14	-24	-25	60	64
WBL	61	72	77						-2	70	75	0	0	-24	-25	46	50
WBT	322	379	406						6	385	412	20	43			428	455
WBR	76	89	96						6	95	102	3	9			105	111
NBL	166	195	209						6	201	215	0	43	-29	-31	215	227
NBT	360	424	454						6	430	460	0	6	-63	-68	373	398
NBR	113	133	142						-2	131	140	0	0	-20	-21	111	119
SBL	67	79	84						16	95	100	4	3			98	103
SBT	92	108	116						13	121	129	0	2			123	131
SBR	58	68	73						0	68	73	0	0			68	73

Intersection:		Trindle Road (SR 0641) & Horners Road															
	AM Existing	Base 2026	Base 2031	BG Dev. - Kensington	BG. Dev. - Ashton (Netherby)	BG. Dev. - Mentzer Farm	BG. Dev. - Morgan's Crossing & Jefferson Court II	BG. Dev. - Parkview at Boiling Springs	Hardee's Site	Future w/o 2026	Future w/o 2031	Phase 1 Total Ext. Site Trips	Phase 2 Total Ext. Site Trips	2026 Connector Adjust.	2031 Connector Adjust.	Future w/ 2026	Future w/ 2031
EBL	4	5	5							5	5	1	3			8	8
EBT	341	401	430							401	430	11	74			475	504
WBT	375	441	473							441	473	13	24			465	496
WBR	0	0	0							0	0	0	0			0	0
SBL	2	2	3							2	3	0	0			2	3
SBR	18	21	23							21	23	1	1			22	24

Intersection:		Trindle Road (SR 0641) & Middlesex Road															
	AM Existing	Base 2026	Base 2031	BG Dev. - Kensington	BG. Dev. - Ashton (Netherby)	BG. Dev. - Mentzer Farm	BG. Dev. - Morgan's Crossing & Jefferson Court II	BG. Dev. - Parkview at Boiling Springs	Hardee's Site	Future w/o 2026	Future w/o 2031	Phase 1 Total Ext. Site Trips	Phase 2 Total Ext. Site Trips	2026 Connector Adjust.	2031 Connector Adjust.	Future w/ 2026	Future w/ 2031
EBL	15	18	19	4						22	23	3	12			34	35
EBT	285	335	359							335	359	8	62			397	421
EBR	14	16	18							16	18	0	0			16	18
WBL	0	0	0							0	0	0	0			0	0
WBT	324	381	408							381	408	10	20			401	428
WBR	13	15	16	5						20	21	0	0			20	21
NBL	46	54	58							54	58	0	0			54	58
NBT	68	80	86	4						84	90	0	0			84	90
NBR	3	4	4							4	4	0	0			4	4
SBL	17	20	21	15						35	36	0	0			35	36
SBT	12	14	15	15						29	30	0	0			29	30
SBR	14	16	18	17						33	35	3	4			37	39

Intersection:		Army Heritage Drive & Westminster Drive/Fairview St															
	AM Existing	Base 2026	Base 2031	BG Dev. - Kensington	BG Dev. - Ashton (Netherby)	BG Dev. - Mentzer Farm	BG Dev. - Morgan's Crossing & Jefferson Court II	BG Dev. - Parkview at Boiling Springs	Hardee's Site	Future w/o 2026	Future w/o 2031	Phase 1 Total Ext. Site Trips	Phase 2 Total Ext. Site Trips	2026 Connector Adjust.	2031 Connector Adjust.	Future w/ 2026	Future w/ 2031
EBL	238	280	300							280	300	0	0			280	300
EBT	6	7	8							7	8	0	0			7	8
WBT	2	2	3							2	3	0	0			2	3
WBR	296	348	373							348	373	0	49	-112	-120	285	302
SBL	80	94	101							94	101	0	16	-47	-50	63	66
SBR	75	88	95							88	95	0	0			88	95

Intersection:		Fairview St & Lisburn Road															
	AM Existing	Base 2026	Base 2031	BG Dev. - Kensington	BG. Dev. - Ashton (Netherby)	BG. Dev. - Mentzer Farm	BG. Dev. - Morgan's Crossing & Jefferson Court II	Parkview at Boiling Springs	Hardee's Site	Future w/o 2026	Future w/o 2031	Phase 1 Total Ext. Site Trips	Phase 2 Total Ext. Site Trips	2026 Connector Adjust.	2031 Connector Adjust.	Future w/ 2026	Future w/ 2031
WBL	1	1	1							1	1	0	0			1	1
WBR	0	0	0							0	0	0	0			0	0
NBT	413	486	520							486	520	0	49	-112	-120	423	449
NBR	0	0	0							0	0	0	0			0	0
SBL	1	1	1							1	1	0	0			1	1
SBT	91	107	115							107	115	0	16	-47	-50	76	80

Intersection:		York Road (SR 0074) & I-81 SB On-Ramp															
	AM Existing	Base 2026	Base 2031	BG Dev. - Kensington	BG Dev. - Ashton (Netherby)	BG Dev. - Mentzer Farm	BG Dev. - Morgan's Crossing & Jefferson Court II	Parkview at Boiling Springs	Hardee's Site	Future w/o 2026	Future w/o 2031	Phase 1 Total Ext. Site Trips	Phase 2 Total Ext. Site Trips	2026 Connector Adjust.	2031 Connector Adjust.	Future w/ 2026	Future w/ 2031
EBT	208	245	262							245	262	5	8			253	270
EBR	150	177	189							177	189	0	0			177	189
WBL	417	491	525							491	525	14	52			543	578
WBT	532	626	670							626	670	4	25			651	695

Intersection:		York Road (SR 0074) & I-81 NB Off-Ramp															
	AM Existing	Base 2026	Base 2031	BG Dev. - Kensington	BG. Dev. - Ashton (Netherby)	BG. Dev. - Mentzer Farm	BG. Dev. - Morgan's Crossing & Jefferson Court II	BG. Dev. - Parkview at Boiling Springs	Hardee's Site	Future w/o 2026	Future w/o 2031	Phase 1 Total Ext. Site Trips	Phase 2 Total Ext. Site Trips	2026 Connector Adjust.	2031 Connector Adjust.	Future w/ 2026	Future w/ 2031
EBT	208	245	262							245	262	5	8			253	270
WBT	807	950	1017							950	1017	18	77			1027	1094
NBL	161	189	203							189	203	0	0			189	203
NBR	421	496	530							496	530	17	17			512	547

Intersection:		York Road (SR 0074) & Westminster Road															
	AM Existing	Base 2026	Base 2031	BG Dev. - Kensington	BG. Dev. - Ashton (Netherby)	BG. Dev. - Mentzer Farm	BG. Dev. - Morgan's Crossing & Jefferson Court II	BG. Dev. - Parkview at Boiling Springs	Hardee's Site	Future w/o 2026	Future w/o 2031	Phase 1 Total Ext. Site Trips	Phase 2 Total Ext. Site Trips	2026 Connector Adjust.	2031 Connector Adjust.	Future w/ 2026	Future w/ 2031
EBL	163	192	205							192	205	0	0			192	205
EBT	311	366	392							366	392	22	25			391	417
EBR	121	142	152							142	152	0	0			142	152
WBL	10	12	13							12	13	0	0			12	13
WBT	420	494	529							494	529	18	77			571	606
WBR	22	26	28							26	28	0	0			26	28
NBL	278	327	350							327	350	0	0			327	350
NBT	60	71	76							71	76	0	0			71	76
NBR	3	4	4							4	4	0	0			4	4
SBL	16	19	20							19	20	0	0			19	20
SBT	35	41	44							41	44	0	0			41	44
SBR	80	94	101							94	101	0	0			94	101

Intersection:		York Road (SR 0074) & Fairview Street															
	AM Existing	Base 2026	Base 2031	BG Dev. - Kensington	BG. Dev. - Ashton (Netherby)	BG. Dev. - Mentzer Farm	BG. Dev. - Morgan's Crossing & Jefferson Court II	BG. Dev. - Parkview at Boiling Springs	Hardee's Site	Future w/o 2026	Future w/o 2031	Phase 1 Total Ext. Site Trips	Phase 2 Total Ext. Site Trips	2026 Connector Adjust.	2031 Connector Adjust.	Future w/ 2026	Future w/ 2031
EBL	26	31	33							31	33	0	10	-15	-16	25	26
EBT	245	288	309							288	309	22	15	15	16	319	340
EBR	5	6	6							6	6	0	0			6	6
WBL	1	1	1							1	1	3	6			7	7
WBT	456	537	575							537	575	18	46			583	621
WBR	165	194	208							194	208	0	1	-97	-104	98	105
NBL	15	18	19							18	19	0	0			18	19
NBT	193	227	243							227	243	0	2			229	245
NBR	10	12	13							12	13	4	2			14	15
SBL	48	56	60							56	60	0	3	-25	-27	34	37
SBT	18	21	23							21	23	0	6	-9	-10	18	19
SBR	24	28	30							28	30	0	31	-13	-13	46	48

Intersection:		York Road (SR 0074) & Mayapple Drive															
	AM Existing	Base 2026	Base 2031	BG Dev. - Kensington	BG. Dev. - Ashton (Netherby)	BG. Dev. - Mentzer Farm	BG. Dev. - Morgan's Crossing & Jefferson Court II	BG. Dev. - Parkview at Boiling Springs	Hardee's Site	Future w/o 2026	Future w/o 2031	Phase 1 Total Ext. Site Trips	Phase 2 Total Ext. Site Trips	2026 Connector Adjust.	2031 Connector Adjust.	Future w/ 2026	Future w/ 2031
EBT	227	267	286							267	286	8	37			304	323
EBR	8	9	10							9	10	2	3			12	13
WBL	6	7	8							7	8	0	0			7	8
WBT	443	521	558							521	558	10	12			533	570
NBL	29	34	37							34	37	2	1			35	38
NBR	23	27	29							27	29	0	0			27	29

Intersection:		York Road (SR 0074) & East Springsville Road/Shughart Road															
	AM Existing	Base 2026	Base 2031	BG Dev. - Kensington	BG. Dev. - Ashton (Netherby)	BG. Dev. - Mentzer Farm	BG. Dev. - Morgan's Crossing & Jefferson Court II	BG. Dev. - Parkview at Boiling Springs	Hardee's Site	Future w/o 2026	Future w/o 2031	Phase 1 Total Ext. Site Trips	Phase 2 Total Ext. Site Trips	2026 Connector Adjust.	2031 Connector Adjust.	Future w/ 2026	Future w/ 2031
EBL	159	187	200							187	200	0	3			190	203
EBT	246	290	310							290	310	6	31			320	341
EBR	15	18	19			3				21	22	1	3			24	25
WBL	24	28	30			2				30	32	0	0			30	32
WBT	457	538	576							538	576	7	10			548	586
WBR	0	0	0							0	0	0	0			0	0
NBL	59	69	74			10				79	84	2	1			80	85
NBR	58	68	73			7				75	80	0	0			75	80
SBL	0	0	0							0	0	0	0			0	0
SBR	106	125	134							125	134	1	1			126	135

Intersection:		Forge Road (SR 2003) & Westminster Drive															
	AM Existing	Base 2026	Base 2031	BG Dev. - Kensington	BG. Dev. - Ashton (Netherby)	BG. Dev. - Mentzer Farm	BG. Dev. - Morgan's Crossing & Jefferson Court II	BG. Dev. - Parkview at Boiling Springs	Hardee's Site	Future w/o 2026	Future w/o 2031	Phase 1 Total Ext. Site Trips	Phase 2 Total Ext. Site Trips	2026 Connector Adjust.	2031 Connector Adjust.	Future w/ 2026	Future w/ 2031
EBL	1	1	1							1	1	0	0			1	1
EBT	18	21	23							21	23	0	0			21	23
EBR	7	8	9							8	9	0	0			8	9
WBL	151	178	190							178	190	0	0			178	190
WBT	37	44	47							44	47	0	0			44	47
WBR	8	9	10							9	10	0	0			9	10
NBL	8	9	10							9	10	0	0			9	10
NBT	7	8	9							8	9	0	0			8	9
NBR	272	320	343							320	343	0	0			320	343
SBL	10	12	13							12	13	0	0			12	13
SBT	3	4	4							4	4	0	0			4	4
SBR	2	2	3							2	3	0	0			2	3

Intersection:		Forge Road (SR 2003) & Fairview Street															
	AM Existing	Base 2026	Base 2031	BG Dev. - Kensington	BG. Dev. - Ashton (Netherby)	BG. Dev. - Mentzer Farm	BG. Dev. - Morgan's Crossing & Jefferson Court II	BG. Dev. - Parkview at Boiling Springs	Hardee's Site	Future w/o 2026	Future w/o 2031	Phase 1 Total Ext. Site Trips	Phase 2 Total Ext. Site Trips	2026 Connector Adjust.	2031 Connector Adjust.	Future w/ 2026	Future w/ 2031
EBL	4	5	5							5	5	0	0			5	5
EBT	15	18	19							18	19	2	0			18	19
EBR	6	7	8							7	8	0	0			7	8
WBL	26	31	33							31	33	1	6			37	39
WBT	7	8	9							8	9	2	8			16	17
WBR	15	18	19							18	19	0	0			18	19
NBL	6	7	8							7	8	0	0			7	8
NBT	293	345	369				44			389	413	0	0			389	413
NBR	126	148	159							148	159	2	2			150	161
SBL	4	5	5							5	5	0	0			5	5
SBT	98	115	123				12			127	135	0	0			127	135
SBR	0	0	0							0	0	0	0			0	0

Intersection:		Trindle Road (SR 0641) / Rose Business Park Connector / Pharmacy Tract															
	AM Existing	Base 2026	Base 2031	BG Dev. - Kensington	BG. Dev. - Ashton (Netherby)	BG. Dev. - Mentzer Farm	BG. Dev. - Morgan's Crossing & Jefferson Court II	BG. Dev. - Parkview at Boiling Springs	Hardee's Site	Future w/o 2026	Future w/o 2031	Phase 1 Total Ext. Site Trips	Phase 2 Total Ext. Site Trips	2026 Connector Adjust.	2031 Connector Adjust.	Future w/ 2026	Future w/ 2031
EBL	0	0	0							0	0	8	0			0	0
EBT	418	492	527							492	527	0	0			492	527
EBR	0	0	0							0	0	22	17	24	25	40	42
WBL	0	0	0							0	0	10	25	24	25	48	50
WBT	459	540	578							540	578	0	0	-24	-25	517	553
WBR	0	0	0							0	0	4	0			0	0
NBL	0	0	0							0	0	16	52	93	99	145	151
NBT	0	0	0							0	0	11	0			0	0
NBR	0	0	0							0	0	7	77	20	21	97	98
SBL	0	0	0							0	0	4	0			0	0
SBT	0	0	0							0	0	10	0			0	0
SBR	0	0	0							0	0	8	0			0	0

Intersection:		York Road (SR 0074) / Heritage Village Connector															
	AM Existing	Base 2026	Base 2031	BG Dev. - Kensington	BG Dev. - Ashton (Netherby)	BG Dev. - Mentzer Farm	BG Dev. - Morgan's Crossing & Jefferson Court II	BG Dev. - Parkview at Boiling Springs	Hardee's Site	Future w/o 2026	Future w/o 2031	Phase 1 Total Ext. Site Trips	Phase 2 Total Ext. Site Trips	2026 Connector Adjust.	2031 Connector Adjust.	Future w/ 2026	Future w/ 2031
	EBL	0	0	0						0	0	27	17	15	16	32	33
	EBT	303	357	382						357	382	0	3			360	385
	WBT	622	732	784						732	784	0	1	-97	-104	636	681
	WBR	0	0	0						0	0	12	12	97	104	109	116
	SBL	0	0	0						0	0	10	37	22	24	59	60
	SBR	0	0	0						0	0	21	52	25	27	77	79

Intersection:		Lisburn Road / Proposed H.V. - Rose Business Park Connector															
	AM Existing	Base 2026	Base 2031	BG Dev. - Kensington	BG Dev. - Ashton (Netherby)	BG Dev. - Mentzer Farm	BG Dev. - Morgan's Crossing & Jefferson Court II	BG Dev. - Parkview at Boiling Springs	Hardee's Site	Future w/o 2026	Future w/o 2031	Phase 1 Total Ext. Site Trips	Phase 2 Total Ext. Site Trips	2026 Connector Adjust.	2031 Connector Adjust.	Future w/ 2026	Future w/ 2031
EBL	0	0	0							0	0	0	0			0	0
EBT	1	1	1							1	1	0	0			1	1
EBR	0	0	0							0	0	0	0			0	0
WBL	0	0	0							0	0	0	0			0	0
WBT	1	1	1							1	1	0	0			1	1
WBR	0	0	0							0	0	0	0			0	0
NBL	0	0	0							0	0	0	0			0	0
NBT	0	0	0							0	0	11	132	112	120	245	253
NBR	0	0	0							0	0	0	0			0	0
SBL	0	0	0							0	0	0	0			0	0
SBT	0	0	0							0	0	10	43	47	50	90	93
SBR	0	0	0							0	0	0	0			0	0

Intersection:		Fairview Street / Heritage Village Driveway															
	AM Existing	Base 2026	Base 2031	BG Dev. - Kensington	BG Dev. - Ashton (Netherby)	BG Dev. - Mentzer Farm	BG Dev. - Morgan's Crossing & Jefferson Court II	BG Dev. - Parkview at Boiling Springs	Hardee's Site	Future w/o 2026	Future w/o 2031	Phase 1 Total Ext. Site Trips	Phase 2 Total Ext. Site Trips	2026 Connector Adjust.	2031 Connector Adjust.	Future w/ 2026	Future w/ 2031
	WBL	0	0	0						0	0	0	40			40	40
	WBR	0	0	0						0	0	0	49			49	49
	NBT	413	486	520						486	520	0	0	-112	-120	374	400
	NBR	0	0	0						0	0	0	13			13	13
	SBL	0	0	0						0	0	0	16			16	16
	SBT	92	108	116						108	116	0	0	-47	-50	61	66

G.R. =

1.37

2018 GF

1.056

2026 GF

1.26

Phase I - AM Peak Hour

Intersection:		E. High Street(SR 0641) & York Road (SR 0074)																		
Turning Movement		New External Assignment				Pass-by Adjustment				New External Site Trips				Pass -By Trips			Totals	New Site Trip Total	Pass-by Total	Grand Total
		Heritage Village / Rose Business Park Site		Pharm. Tract		Heritage Village / Rose Business Park Site		Pharm. Tract		Heritage Village / Rose Business Park Site		Pharm. Tract		Heritage Village / Rose Business Park Site						
		IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT					
EBT		7%	0%	7%	0%	0%	0%	0%	0%	4	0	2	0	0	0	0	6	0	6	
EBR		6%	0%	6%	0%	0%	0%	0%	0%	4	0	1	0	0	0	0	5	0	5	
WBL		0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	
WBT		0%	7%	0%	7%	0%	0%	0%	0%	0	3	0	2	0	0	0	5	0	5	
NBL		0%	6%	0%	6%	0%	0%	0%	0%	0	3	0	1	0	0	0	4	0	4	
NBR		0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	

Intersection:	York Road (SR 0074) & Giant Lane/Carlisle Plaza Mall																			
	New External Assignment					Pass-by Adjustment				New External Site Trips				Pass-By Trips		Totals				
	Heritage Village / Rose Business Park Site		Pharm. Tract		Heritage Village / Rose Business Park Site		Pharm. Tract		Heritage Village / Rose Business Park Site		Pharm. Tract		Heritage Village / Rose Business Park Site		Pharm. Tract		New Site Trip Total	Pass-by Total	Grand Total	
Turning Movement	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT				
	EBL	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0	0
	EBT	6%	0%	6%	0%	0%	0%	0%	4	0	1	0	0	0	0	0	0	0	5	5
	EBR	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0	0
	WBL	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0	0
	WBT	0%	6%	0%	6%	0%	0%	0%	0	3	0	1	0	0	0	0	0	4	0	4
WBR	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0	0	
NBL	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0	0	
NBT	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0	0	
NBR	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0	0	
SBL	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0	0	
SBT	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0	0	
SBR	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0	0	

Phase I - AM Peak Hour

Intersection:	E. High Street (SR 0641) & Carlisle Plaza Mall/Shaffner Avenue																				
	New External Assignment						Pass-by Adjustment						Pass-By Trips						Totals		
	Heritage Village / Rose Business Park Site			Pharm. Tract			Heritage Village / Rose Business Park Site			Pharm. Tract			Heritage Village / Rose Business Park Site			Pharm. Tract			New Site Trip Total	Pass-by Total	Grand Total
IN	OUT		IN	OUT		IN	OUT		IN	OUT		IN	OUT		IN	OUT					
EBL	0%	0%		0%	0%		0%	0%		0	0		0	0		0	0		0	0	0
EBT	7%	0%		0%	0%		0%	0%		4	0		2	0		0	0		6	0	6
EBR	0%	0%		0%	0%		0%	0%		0	0		0	0		0	0		0	0	0
WBL	0%	0%		0%	0%		0%	0%		0	0		0	0		0	0		0	0	0
WBT	0%	7%		0%	7%		0%	0%		0	3		0	2		0	0		5	0	5
WBR	0%	0%		0%	0%		0%	0%		0	0		0	0		0	0		0	0	0
NBL	0%	0%		0%	0%		0%	0%		0	0		0	0		0	0		0	0	0
NBT	0%	0%		0%	0%		0%	0%		0	0		0	0		0	0		0	0	0
NBR	0%	0%		0%	0%		0%	0%		0	0		0	0		0	0		0	0	0
SBL	0%	0%		0%	0%		0%	0%		0	0		0	0		0	0		0	0	0
SBT	0%	0%		0%	0%		0%	0%		0	0		0	0		0	0		0	0	0
SBR	0%	0%		0%	0%		0%	0%		0	0		0	0		0	0		0	0	0

[illegible]

Intersection:	Trindle Road (SR 0641) & Horners Road																						
Turning Movement	New External Assignment						Pass-by Adjustment						New External Site Trips				Pass -By Trips			Totals			
	Heritage Village / Rose Business Park Site			Pharm. Tract			Heritage Village / Rose Business Park Site			Pharm. Tract			Heritage Village / Rose Business Park Site			Pharm. Tract			New Site Trip Total	Pass-by Total	Grand Total		
	IN	OUT		IN	OUT		IN	OUT		IN	OUT		IN	OUT		IN	OUT		IN	OUT			
EBL	0%	1%		0%	1%		0%	0%		0%	0%		0	0		0	0		0		1	0	1
EBT	0%	16%		0%	16%		0%	0%		0%	0%		0	7		0	4		0	0	11	0	11
WBT	16%	0%		16%	0%		0%	0%		0%	0%		10	0		4	0		0	0	13	0	13
WBR	0%	0%		0%	0%		0%	0%		0%	0%		0	0		0	0		0	0	0	0	0
SBL	0%	0%		0%	0%		0%	0%		0%	0%		0	0		0	0		0	0	0	0	0
SBR	1%	0%		1%	0%		0%	0%		0%	0%		1	0		0	0		0	0	1	0	1

Intersection:		Trindle Road (SR 0641) & Middlesex Road																			
		New External Assignment				Pass-by Adjustment				New External Site Trips				Pass-By Trips				Totals			
Turning Movement		Heritage Village / Rose Business Park Site		Pharm. Tract		Heritage Village / Rose Business Park Site		Pharm. Tract		Heritage Village / Rose Business Park Site		Pharm. Tract		Heritage Village / Rose Business Park Site		Pharm. Tract		New Site Trip Total	Pass-by Total	Grand Total	
		IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT				
	EBL	0%	4%	0%	4%	0%	0%	0%	0%	0	2	0	1	0	0	0	0	0	3	0	3
	EBT	0%	12%	0%	12%	0%	0%	0%	0%	0	5	0	3	0	0	0	0	0	8	0	8
	EBR	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0	0
	WBL	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0	0
	WBT	12%	0%	12%	0%	0%	0%	0%	0%	7	0	3	0	0	0	0	0	0	10	0	10
	WBR	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0	0
	NBL	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0	0
	NBT	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0	0
	NBR	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0	0
	SBL	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0	0
	SBT	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0	0
	SBR	4%	0%	4%	0%	0%	0%	0%	0%	2	0	1	0	0	0	0	0	0	3	0	3

Intersection: Army Heritage Drive & Westminster Drive/Fairview St														
Turning Movement	New External Assignment					Pass-by Adjustment					New External Site Trips			
	Heritage Village / Rose Business Park Site		Pharm. Tract			Heritage Village / Rose Business Park Site		Pharm. Tract			Heritage Village / Rose Business Park Site		Pharm. Tract	
	IN	OUT	IN	OUT		IN	OUT	IN	OUT		IN	OUT	IN	OUT
EBL	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0
EBT	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0
WBT	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0
WBR	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0
SBL	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0
SBR	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0
											New Site Trip Total		Pass-by Total	Grand Total
											0		0	0
											0		0	0
											0		0	0
											0		0	0
											0		0	0

Intersection: Fairview St & Lisburn Road														
Turning Movement	New External Assignment					Pass-by Adjustment					New External Site Trips			
	Heritage Village / Rose Business Park Site		Pharm. Tract			Heritage Village / Rose Business Park Site		Pharm. Tract			Heritage Village / Rose Business Park Site		Pharm. Tract	
	IN	OUT	IN	OUT		IN	OUT	IN	OUT		IN	OUT	IN	OUT
WBR	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0
WBL	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0
NBT	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0
NBR	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0
SBL	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0
SBT	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0
											New Site Trip Total		Pass-by Total	Grand Total
											0		0	0
											0		0	0
											0		0	0
											0		0	0

Intersection: York Road (SR 0074) & I-81 SB On-Ramp														
Turning Movement	New External Assignment					Pass-by Adjustment					New External Site Trips			
	Heritage Village / Rose Business Park Site		Pharm. Tract			Heritage Village / Rose Business Park Site		Pharm. Tract			Heritage Village / Rose Business Park Site		Pharm. Tract	
	IN	OUT	IN	OUT		IN	OUT	IN	OUT		IN	OUT	IN	OUT
EBT	6%	0%	6%	0%	0%	0%	0%	0%	0%	0%	4	0	1	0
EBR	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0
WBL	0%	21%	0%	21%	0%	0%	0%	0%	0%	0%	0	9	0	5
WBT	0%	6%	0%	6%	0%	0%	0%	0%	0%	0%	0	3	0	1
											New Site Trip Total		Pass-by Total	Grand Total
											5		0	5
											0		0	0
											14		0	14
											4		0	4

Intersection:	York Road (SR 0074) & I-81 NB Off-Ramp															
Turning Movement	New External Assignment				Pass-by Adjustment				New External Site Trips				Pass-By Trips		Totals	
	Heritage Village / Rose Business Park Site		Pharm. Tract		Heritage Village / Rose Business Park Site		Pharm. Tract		Heritage Village / Rose Business Park Site		Pharm. Tract		New Site Trip Total	Pass-by Total	Grand Total	
	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT				
	6%	0%	6%	0%	0%	0%	4	0	0	0	0	0				
EBT	0%	27%	0%	27%	0%	0%	0	12	0	6	0	0	5	0	5	
WBT	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	18	0	18	
NBL	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	
NBR	21%	0%	21%	0%	0%	0%	13	0	5	0	0	0	17	0	17	

[illegible]

Intersection:		York Road (SR 0074) & Fairview Street																										
		New External Assignment						Pass-by Adjustment						New External Site Trips						Pass-By Trips						Totals		
		Heritage Village / Rose Business Park Site			Pharm. Tract			Heritage Village / Rose Business Park Site			Pharm. Tract			Heritage Village / Rose Business Park Site			Pharm. Tract			Heritage Village / Rose Business Park Site			Pharm. Tract			New Site Trip Total	Pass-by Total	Grand Total
Turning Movement	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT
	EBL	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	EBT	27%	0%	0%	0%	0%	0%	0%	0%	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	22
	EBR	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	WBL	0%	5%	0%	5%	0%	0%	0%	0%	0	2	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	3
	WBT	0%	27%	0%	27%	0%	0%	0%	0%	0	12	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	18
	WBR	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NBL	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NBT	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NBR	5%	0%	0%	5%	0%	0%	0%	0%	3	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4
SBL	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SBT	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SBR	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Intersection:		York Road (SR 0074) & Mayapple Drive																	
		New External Assignment				Pass-by Adjustment				New External Site Trips				Pass -By Trips				Totals	
Turning Movement	Heritage Village / Rose Business Park Site		Pharm. Tract		Heritage Village / Rose Business Park Site		Pharm. Tract		Heritage Village / Rose Business Park Site		Pharm. Tract		Heritage Village / Rose Business Park Site		Pharm. Tract		New Site Trip Total	Pass-by Total	Grand Total
	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	
EBT	0%	12%	0%	12%	0%	0%	0%	0%	0	5	0	3	0	0	0	0	8	0	8
EBR	0%	3%	0%	3%	0%	0%	0%	0%	0	1	0	1	0	0	0	0	2	0	2
WBL	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0
WBT	12%	0%	12%	0%	0%	0%	0%	0%	7	0	3	0	0	0	0	0	10	0	10
NBL	3%	0%	3%	0%	0%	0%	0%	0%	2	0	1	0	0	0	0	0	2	0	2
NBR	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0

Forge Road (SR 2003) & Fairview Street																					
Intersection:		New External Assignment					Pass-by Adjustment					New External Site Trips					Pass-By Trips			Totals	
		Heritage Village / Rose Business Park Site		Pharm. Tract		Heritage Village / Rose Business Park Site		Pharm. Tract		Heritage Village / Rose Business Park Site		Pharm. Tract		Heritage Village / Rose Business Park Site		Pharm. Tract		New Site Trip Total	Pass-by Total	Grand Total	
		IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT				
EBL		0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0	
EBT		3%	0%	3%	0%	0%	0%	0%	0%	2	0	1	0	0	0	0	2	0	2	2	
EBR		0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0	
WBL		0%	2%	0%	2%	0%	0%	0%	0%	0	1	0	0	0	0	0	1	0	1	1	
WBT		0%	3%	0%	3%	0%	0%	0%	0%	0	1	0	1	0	0	0	2	0	2	2	
WBR		0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0	
NBL		0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0	
NBT		0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0	
NBR		2%	0%	2%	0%	0%	0%	0%	0%	1	0	0	0	0	0	0	2	0	2	2	
SBL		0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0	
SBT		0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0	
SBR		0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0	

Intersection:	Trindle Road (SR 0641) / Rose Business Park Connector / Pharm. Tract Driveway																							
	New External Assignment						Pass-by Adjustment						New External Site Trips						Pass -By Trips				Totals	
	Heritage Village / Rose Business Park Site			Pharm. Tract			Heritage Village / Rose Business Park Site			Pharm. Tract			Heritage Village / Rose Business Park Site			Pharm. Tract			New Site Trip Total			Pass-by Total	Grand Total	
IN	OUT		IN	OUT		IN	OUT		IN	OUT		IN	OUT		IN	OUT		IN	OUT					
EBL	0%	0%		36%	0%		0%	0%		46%	0%		0	0		8	0		0	0		8	8	
EBT	0%	0%		0%	0%		-20%	0%		-46%	0%		0	0		0	0		0	0		0	0	
EBR	36%	0%		0%	0%		20%	0%		0%	0%		22	0		0	0		0	0		22	22	
WBL	17%	0%		0%	0%		23%	0%		0%	0%		10	0		0	0		0	0		10	10	
WBT	0%	0%		0%	0%		-23%	0%		-54%	0%		0	0		0	0		0	0		0	0	
WBR	0%	0%		17%	0%		0%	0%		54%	0%		0	0		4	0		0	0		4	4	
NBL	0%	36%		0%	0%		0%	23%		0%	0%		0	16		0	0		0	0		16	16	
NBT	0%	0%		47%	0%		0%	0%		0%	0%		0	0		11	0		0	0		11	11	
NBR	0%	17%		0%	0%		0%	20%		0%	0%		0	7		0	0		0	0		7	7	
SBL	0%	0%		0%	17%		0%	0%		0%	46%		0	0		0	4		0	0		4	4	
SBT	0%	0%		0%	47%		0%	0%		0%	0%		0	0		0	10		0	0		10	10	
SBR	0%	0%		0%	36%		0%	0%		0%	54%		0	0		0	8		0	0		8	8	

Phase I - AM Peak Hour

Intersection:		York Road (SR 0074) / Heritage Village Connector																		
Turning Movement		New External Assignment				Pass-by Adjustment				New External Site Trips						Pass-By Trips		New Site Trip Total	Totals	Grand Total
		Heritage Village / Rose Business Park Site		Pharm. Tract		Heritage Village / Rose Business Park Site		Pharm. Tract		Heritage Village / Rose Business Park Site		Pharm. Tract		Heritage Village / Rose Business Park Site						
		IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT					
EBL		32%	0%	32%	0%	19%	0%	0%	0%	19	0	7	0	0	0	27	0	27		
EBT		0%	0%	0%	0%	-19%	0%	0%	0%	0	0	0	0	0	0	0	0	0		
WBT		0%	0%	0%	0%	-38%	0%	0%	0%	0	0	0	0	0	0	0	0	0		
WBR		15%	0%	15%	0%	38%	0%	0%	0%	9	0	3	0	0	0	12	0	12		
SBL		0%	15%	0%	15%	0%	19%	0%	0%	0	7	0	3	0	0	10	0	10		
SBR		0%	32%	0%	32%	0%	38%	0%	0%	0	14	0	7	0	0	21	0	21		

Intersection:		Lisburn Road / Proposed H.V. - Rose Business Park Connector																	
		New External Assignment				Pass-by Adjustment				New External Site Trips				Pass-By Trips				Totals	
		Heritage Village / Rose Business Park Site		Pharm. Tract		Heritage Village / Rose Business Park Site		Pharm. Tract		Heritage Village / Rose Business Park Site		Pharm. Tract		New Site Trip Total		Pass-by Total	Grand Total		
Turning Movement	EBL	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0		
	EBT	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0		
	EBR	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0		
	WBL	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0		
	WBT	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0		
	WBR	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0		
	NBL	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0		
	NBT	0%	0%	47%	0%	0%	0%	0	0	11	0	0	0	0	11	0	11		
NBR	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0		
SBL	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0		
SBT	0%	0%	0%	47%	0%	0%	0	0	0	0	10	0	0	10	0	10	0		
SBR	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0		

Phase I - AM Peak Hour

Site Trip Generation:		
Access Point	H.V./ Rose	Pharm. Tract
New Site Trips		
	Inbound: 60	23
Pass-by Trips		
	Inbound: 0	0
Total:		
	104	45

Phase II - AM Peak Hour

Intersection:		E. High Street(SR 0641) & York Road (SR 0074)																									
Turning Movement		New External Assignment - Commercial / Indust.				New External Assignment - Residential				Pass-by Adjustment				New External Site Trips								Pass-By Trips				Totals	
		Heritage Village / Rose Business Park Site		Pharm. Tract		Heritage Village / Rose Business Park Site		Pharm. Tract		Heritage Village - Residential		Heritage Village / Rose Business Park Site		Pharm. Tract		Heritage Village - Residential		Heritage Village / Rose Business Park Site		Pharm. Tract		Heritage Village - Residential		New Site Trip Total	Pass-by Total	Grand Total	
		IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT		
EBT		7%	0%	7%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	7	0	7	
EBR		6%	0%	6%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	8	0	8	
WBL		0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	
WBT		0%	7%	0%	7%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	22	0	22	
NBL		0%	6%	0%	6%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	25	0	25	
NBR		0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	

Intersection:	York Road (SR 0074) & Giant Lane/Carliste Plaza Mall																	Totals						
Turning Movement	New External Assignment - Commercial / Indust.				New External Assignment - Residential				Pass-by Adjustment				New External Site Trips						Pass-By Trips			New Site Trip Total	Grand Total	
	Heritage Village / Rose Business Park Site		Pharm. Tract		Heritage Village		Heritage Village / Rose Business Park Site		Pharm. Tract		Heritage Village - Residential		Heritage Village / Rose Business Park Site		Pharm. Tract		Heritage Village - Residential		Heritage Village / Rose Business Park Site		Pharm. Tract			
	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN			OUT
EBL	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%		
EBT	6%	0%	6%	0%	8%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	8%	0%	0%	0%	8%	0%		
EBR	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%		
WBL	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%		
WBT	0%	6%	0%	6%	0%	8%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	25%	0%	0%	0%	25%		
WBR	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%		
NBL	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%		
NBT	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%		
NBR	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%		
SBL	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%		
SBT	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%		
SBR	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%		

Intersection:	E. High Street (SR 0641) & Carlisle Plaza Mall/Shaffner Avenue																			
	New External Assignment - Commercial / Indust.				New External Assignment - Residential				Pass-by Adjustment				New External Site Trips							
													Heritage Village / Rose Business Park Site		Pharm. Tract		Heritage Village - Residential		Heritage Village / Rose Business Park Site	
													Heritage Village / Rose Business Park Site		Pharm. Tract		Heritage Village - Residential		Heritage Village / Rose Business Park Site	
													IN	OUT	IN	OUT	IN	OUT	IN	OUT
Turning Movement	Heritage Village / Rose Business Park Site				Heritage Village				Pharm. Tract				Heritage Village / Rose Business Park Site		Pharm. Tract		Heritage Village - Residential		Heritage Village / Rose Business Park Site	
	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT
	EBL	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0
	EBT	7%	0%	7%	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0
	EBR	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0
	WBL	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0
	WBT	0%	7%	0%	7%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0
	WBR	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0
Turning Movement	Heritage Village / Rose Business Park Site				Heritage Village				Pharm. Tract				Heritage Village / Rose Business Park Site		Pharm. Tract		Heritage Village - Residential		Heritage Village / Rose Business Park Site	
	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT
	NBL	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0
	NBT	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0
	NBR	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0
	SBL	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0
	SBT	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0
	SBR	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0

Intersection:	E. High Street (SR 0641) & Lowes Access/CVS Access																			
	New External Assignment - Commercial / Indust.				New External Assignment - Residential				Pass-by Adjustment				New External Site Trips							
													Heritage Village / Rose Business Park Site		Pharm. Tract		Heritage Village - Residential		Heritage Village / Rose Business Park Site	
													Heritage Village / Rose Business Park Site		Pharm. Tract		Heritage Village - Residential		Heritage Village / Rose Business Park Site	
													IN	OUT	IN	OUT	IN	OUT	IN	OUT
Turning Movement	Heritage Village / Rose Business Park Site				Heritage Village				Pharm. Tract				Heritage Village / Rose Business Park Site		Pharm. Tract		Heritage Village - Residential		Heritage Village / Rose Business Park Site	
	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT
	EBL	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0
	EBT	7%	0%	7%	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0
	EBR	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0
	WBL	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0
	WBT	0%	7%	0%	7%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0
	WBR	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0
Turning Movement	Heritage Village / Rose Business Park Site				Heritage Village				Pharm. Tract				Heritage Village / Rose Business Park Site		Pharm. Tract		Heritage Village - Residential		Heritage Village / Rose Business Park Site	
	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT
	NBL	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0
	NBT	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0
	NBR	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0
	SBL	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0
	SBT	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0
	SBR	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0

Intersection:	Trindle Road (SR 0641) & Horners Road																														
Turning Movement	New External Assignment - Commercial / Indust.						New External Assignment - Residential				Pass-by / Adjustment						New External Site Trips						Pass-By Trips						Totals		
	Heritage Village / Rose Business Park Site			Pharm. Tract			Heritage Village		Heritage Village - Rose Business Park Site		Pharm. Tract		Heritage Village - Residential		Heritage Village / Rose Business Park Site		Pharm. Tract		Heritage Village - Residential		Heritage Village - Rose Business Park Site		Pharm. Tract		Heritage Village - Residential		New Site Trip Total	Pass-by Total	Grand Total		
	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT					
	0%	1%	0%	1%	0%	1%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%				0%	0%
EBL	0%	1%	0%	1%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	3	0	3		
EBT	0%	0%	0%	16%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	74	0	74	0	74	
WBT	16%	0%	0%	16%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	24	0	0	0	0	0	24	0	24	0	24
WBR	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0
SBL	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0
SBR	1%	0%	1%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1	0	0	0	0	0	1	0	1	0	1

Intersection:	Trindle Road (SR 0641) & Middlesex Road																																								
Turning Movement	New External Assignment - Commercial / Indust.						New External Assignment - Residential						Pass-by Adjustment						New External Site Trips						Pass -By Trips						Totals										
	Heritage Village / Rose Business Park Site			Pharm. Tract			Heritage Village			Heritage Village - Residential			Heritage Village / Rose Business Park Site			Pharm. Tract			Heritage Village - Residential			Heritage Village / Rose Business Park Site			Pharm. Tract			Heritage Village - Residential			New Site Trip Total	Pass-by Total	Grand Total								
	Heritage Village / Rose Business Park Site			Heritage Village			Heritage Village / Rose Business Park Site			Heritage Village - Residential			Heritage Village / Rose Business Park Site			Heritage Village - Residential			Heritage Village / Rose Business Park Site			Pharm. Tract			Heritage Village - Residential			Heritage Village / Rose Business Park Site						Pharm. Tract			Heritage Village - Residential				
	IN	OUT		IN	OUT		IN	OUT		IN	OUT		IN	OUT		IN	OUT		IN	OUT		IN	OUT		IN	OUT		IN	OUT					IN	OUT		IN	OUT			
EBL	0%	4%	0%	4%	0%	4%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	12	0	12	0	12		
EBT	0%	12%	0%	12%	0%	20%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	62	0	62	0	62	
EBR	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0
WBL	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0
WBT	12%	0%	12%	0%	20%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	20	0	20	0	20	0	20	0	20			
WBR	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0	
NBL	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0	
NBT	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0	
NBR	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0	
SBL	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0	
SBR	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0	
SRT	4%	0%	4%	0%	4%	0%	4%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	4	0	4	0	4	0	4	0	4	0	4	

Phase II - AM Peak Hour

Intersection:	Army Heritage Drive & Westminster Drive/Fairview St																					
Turning Movement	New External Assignment - Commercial / Indust.				New External Assignment - Residential				Pass-by/Adjustment				New External Site Trips				Pass-By Trips				Totals	
	Heritage Village / Rose Business Park Site		Pharm. Tract		Heritage Village		Heritage Village - Rose Business Park Site		Pharm. Tract		Heritage Village - Residential		Heritage Village / Rose Business Park Site		Pharm. Tract		Heritage Village - Residential		New Site Trip Total	Pass-by Total	Grand Total	
	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT				
EBL	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	
EBT	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	
WBT	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	
WBR	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	49	0	49	
SBL	0%	0%	0%	0%	16%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	16	0	0	16	0	
SBR	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	

Intersection:	Fairview St & Lisburn Road																												
Turning Movement	New External Assignment - Commercial / Indust.						New External Assignment - Residential				Pass-by Adjustment						New External Site Trips						Pass-By Trips				Totals		
	Heritage Village / Rose Business Park Site			Pharm. Tract			Heritage Village		Heritage Village - Residential		Pharm. Tract		Heritage Village - Residential		Heritage Village / Rose Business Park Site		Pharm. Tract		Heritage Village - Residential		Heritage Village / Rose Business Park Site		Pharm. Tract		Heritage Village - Residential		New Site Trip Total	Pass-by Total	Grand Total
	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT			
WBR	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0
WBL	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0
NBT	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	49	0	0	0	0	0	49	0	49
NBR	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0
SBL	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0
SBT	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	16	0	0	0	0	0	0	16	0	16

Intersection:		York Road (SR 0074) & I-81 SB On-Ramp																							
		New External Assignment - Commercial / Indust.				New External Assignment - Residential				Pass-by Adjustment				New External Site Trips				Pass-By Trips				Totals			
Turning Movement	Heritage Village / Rose Business Park Site		Pharm. Tract		Heritage Village		Heritage Village - Residential		Heritage Village / Rose Business Park Site		Pharm. Tract		Heritage Village - Residential		Heritage Village / Rose Business Park Site		Pharm. Tract		Heritage Village - Residential		New Site Trip Total		pass-by Total		Grand Total
	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT			
	EBT	0%	0%	6%	0%	8%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	8	0	8
	EBR	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0
	WBL	0%	21%	0%	0%	0%	17%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	52	0	52	0
	WBT	0%	6%	0%	6%	0%	8%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	25	0	25	0

[illegible][illegible]

[illegible][illegible]

[illegible]

Phase II - AM Peak Hour

Site Trip Generation:			
Access Point	Site - Com. / Indust.	H.V. - Resid.	Pharm. Tract
New Site Trips			
Inbound:	0	99	0
Outbound:	0	308	0
Pass-by Trips			
Inbound:	0	0	0
Outbound:	0	0	0
Total:	0	407	0

G.R. = 1.37 2018 GF 1.056 2026 GF 1.177 2031 GF 1.26

Intersection:		E. High Street(SR 0641) & York Road (SR 0074)															
	PM Existing	Base 2026	Base 2031	BG Dev. - Kensington	BG. Dev. - Ashton (Netherby)	BG. Dev. - Mentzer Farm	BG. Dev. - Morgan's Crossing & Jefferson Court II	BG. Dev. - Parkview at Boiling Springs	Hardee's Site	Future w/o 2026	Future w/o 2031	Phase 1 Total Ext. Site Trips	Phase 2 Total Ext. Site Trips	2026 Connector Adjust.	2031 Connector Adjust.	Future w/ 2026	Future w/ 2031
EBT	542	638	683							638	683	6	22			660	705
EBR	355	418	447							418	447	5	26			444	473
WBL	22	26	28							26	28	0	0			26	28
WBT	583	686	735							686	735	7	13			699	748
NBL	218	257	275							257	275	6	15			272	290
NBR	6	7	8							7	8	0	0			7	8

Intersection:		York Road (SR 0074) & Giant Lane/Carlisle Plaza Mall															
	PM Existing	Base 2026	Base 2031	BG Dev. - Kensington	BG. Dev. - Ashton (Netherby)	BG. Dev. - Mentzer Farm	BG. Dev. - Morgan's Crossing & Jefferson Court II	BG. Dev. - Parkview at Boiling Springs	Hardee's Site	Future w/o 2026	Future w/o 2031	Phase 1 Total Ext. Site Trips	Phase 2 Total Ext. Site Trips	2026 Connector Adjust.	2031 Connector Adjust.	Future w/ 2026	Future w/ 2031
	EBL	84	99	106						99	106	0	0			99	106
	EBT	474	558	597						558	597	5	26			584	623
	EBR	26	31	33						31	33	0	0			31	33
	WBL	312	367	393						367	393	0	0			367	393
	WBT	385	453	485						453	485	6	15			468	500
	WBR	56	66	71						66	71	0	0			66	71
	NBL	6	7	8						7	8	0	0			7	8
	NBT	32	38	40						38	40	0	0			38	40
	NBR	131	154	165						154	165	0	0			154	165
	SBL	66	78	83						78	83	0	0			78	83
	SBT	137	161	173						161	173	0	0			161	173
	SBR	66	78	83						78	83	0	0			78	83

Intersection:		E. High Street (SR 0641) & Carlisle Plaza Mall/Shaffner Avenue															
	PM Existing	Base 2026	Base 2031	BG Dev. - Kensington	BG. Dev. - Ashton (Netherby)	BG. Dev. - Mentzer Farm	BG. Dev. - Morgan's Crossing & Jefferson Court II	BG. Dev. - Parkview at Boiling Springs	Hardee's Site	Future w/o 2026	Future w/o 2031	Phase 1 Total Ext. Site Trips	Phase 2 Total Ext. Site Trips	2026 Connector Adjust.	2031 Connector Adjust.	Future w/ 2026	Future w/ 2031
EBL	0	0	0							0	0	0	0			0	0
EBT	497	585	626							585	626	6	22			607	649
EBR	54	64	68							64	68	0	0			64	68
WBL	111	131	140							131	140	0	0			131	140
WBT	529	623	667							623	667	7	13			636	680
WBR	1	1	1							1	1	0	0			1	1
NBL	46	54	58							54	58	0	0			54	58
NBT	0	0	0							0	0	0	0			0	0
NBR	71	84	89							84	89	0	0			84	89
SBL	0	0	0							0	0	0	0			0	0
SBT	0	0	0							0	0	0	0			0	0
SBR	1	1	1							1	1	0	0			1	1

Intersection:		E. High Street (SR 0641) & Lowes Access/CVS Access															
	PM Existing	Base 2026	Base 2031	BG Dev. - Kensington	BG. Dev. - Ashton (Netherby)	BG. Dev. - Mentzer Farm	BG. Dev. - Morgan's Crossing & Jefferson Court II	BG. Dev. - Parkview at Boiling Springs	Hardee's Site	Future w/o 2026	Future w/o 2031	Phase 1 Total Ext. Site Trips	Phase 2 Total Ext. Site Trips	2026 Connector Adjust.	2031 Connector Adjust.	Future w/ 2026	Future w/ 2031
EBL	15	18	19							18	19	0	0			18	19
EBT	488	574	615							574	615	6	22			597	637
EBR	59	69	74							69	74	0	0			69	74
WBL	80	94	101							94	101	0	0			94	101
WBT	574	676	723							676	723	7	13			689	736
WBR	22	26	28							26	28	0	0			26	28
NBL	77	91	97							91	97	0	0			91	97
NBT	2	2	3							2	3	0	0			2	3
NBR	36	42	45							42	45	0	0			42	45
SBL	10	12	13							12	13	0	0			12	13
SBT	1	1	1							1	1	0	0			1	1
SBR	12	14	15							14	15	0	0			14	15

Trindle Road (SR 0641) & I-81 SB Off-Ramp																	
Intersection:																	
	PM Existing	Base 2026	Base 2031	BG Dev. - Kensington	BG. Dev. - Ashton (Netherby)	BG. Dev. - Mentzer Farm	BG. Dev. - Morgan's Crossing & Jefferson Court II	BG. Dev. - Parkview at Boiling Springs	Hardee's Site	Future w/o 2026	Future w/o 2031	Phase 1 Total Ext. Site Trips	Phase 2 Total Ext. Site Trips	2026 Connector Adjust.	2031 Connector Adjust.	Future w/ 2026	Future w/ 2031
EBT	833	980	1050							980	1050	6	22			1003	1072
WBT	483	568	609							568	609	7	13			582	622
SBL	232	273	292							273	292	21	67			340	360
SBR	372	438	469							438	469	0	0			438	469

Intersection:		Trindle Road (SR 0641) & I-81 NB On-Ramp															
	PM Existing	Base 2026	Base 2031	BG Dev. - Kensington	BG. Dev. - Ashton (Netherby)	BG. Dev. - Mentzer Farm	BG. Dev. - Morgan's Crossing & Jefferson Court II	BG. Dev. - Parkview at Boiling Springs	Hardee's Site	Future w/o 2026	Future w/o 2031	Phase 1 Total Ext. Site Trips	Phase 2 Total Ext. Site Trips	2026 Connector Adjust.	2031 Connector Adjust.	Future w/ 2026	Future w/ 2031
EBT	721	849	908							849	908	27	90			938	998
EBR	308	363	388							363	388	0	0			363	388
WBL	129	152	163							152	163	25	39			191	202
WBT	484	570	610							570	610	7	13			583	623

Intersection:		Trindle Road (SR 0641) & Army Heritage Drive															
	PM Existing	Base 2026	Base 2031	BG Dev. - Kensington	BG. Dev. - Ashton (Netherby)	BG. Dev. - Mentzer Farm	BG. Dev. - Morgan's Crossing & Jefferson Court II	BG. Dev. - Parkview at Boiling Springs	Hardee's Site	Future w/o 2026	Future w/o 2031	Phase 1 Total Ext. Site Trips	Phase 2 Total Ext. Site Trips	2026 Connector Adjust.	2031 Connector Adjust.	Future w/ 2026	Future w/ 2031
	EBL	143	168	180					15	183	195	0	0			183	195
	EBT	311	366	392					-4	362	388	27	45	105	112	512	545
	EBR	239	281	301					-3	278	298	0	45	-105	-112	219	231
	WBL	163	192	205					-2	190	203	0	0	-71	-76	119	127
	WBT	333	392	420					5	397	425	32	26			423	451
	WBR	51	60	64					4	64	68	5	6			70	74
	NBL	148	174	186					4	178	190	0	26	-19	-21	185	196
	NBT	190	224	239					4	228	243	0	4	-25	-26	207	221
	NBR	101	119	127					-1	118	126	0	0	-13	-14	105	112
	SBL	98	115	123					12	127	135	4	10			137	145
	SBT	267	314	336					14	328	350	0	6			335	357
	SBR	107	126	135					0	126	135	0	0			126	135

Intersection:		Trindle Road (SR 0641) & Horners Road														
PM Existing	Base 2026	Base 2031	BG Dev. - Kensington	BG. Dev. - Ashton (Netherby)	BG. Dev. - Mentzer Farm	BG. Dev. - Morgan's Crossing & Jefferson Court II	BG. Dev. - Parkview at Boiling Springs	Hardee's Site	Future w/o 2026	Future w/o 2031	Phase 1 Total Ext. Site Trips	Phase 2 Total Ext. Site Trips	2026 Connector Adjust.	2031 Connector Adjust.	Future w/ 2026	Future w/ 2031
EBL	12	14	15						14	15	1	2			16	17
EBT	385	453	485						453	485	16	45			498	530
WBT	424	499	534						499	534	14	77			576	611
WBR	2	2	3						2	3	0	0			2	3
SBL	2	2	3						2	3	0	0			2	3
SBR	11	13	14						13	14	1	3			16	17

Intersection:		Trindle Road (SR 0641) & Middlesex Road															
	PM Existing	Base 2026	Base 2031	BG Dev. - Kensington	BG. Dev. - Ashton (Netherby)	BG. Dev. - Mentzer Farm	BG. Dev. - Morgan's Crossing & Jefferson Court II	BG. Dev. - Parkview at Boiling Springs	Hardee's Site	Future w/o 2026	Future w/o 2031	Phase 1 Total Ext. Site Trips	Phase 2 Total Ext. Site Trips	2026 Connector Adjust.	2031 Connector Adjust.	Future w/ 2026	Future w/ 2031
EBL	17	20	21	16						36	37	4	8			44	45
EBT	316	372	398							372	398	12	38			410	436
EBR	37	44	47							44	47	0	0			44	47
WBL	8	9	10							9	10	0	0			9	10
WBT	370	435	466							435	466	11	64			500	530
WBR	22	26	28	17						43	45	0	0			43	45
NBL	27	32	34							32	34	0	0			32	34
NBT	22	26	28	14						40	42	0	0			40	42
NBR	3	4	4							4	4	0	0			4	4
SBL	30	35	38	9						44	47	0	0			44	47
SBT	65	77	82	8						85	90	0	0			85	90
SBR	16	19	20	9						28	29	4	13			41	42

Intersection:		Army Heritage Drive & Westminster Drive/Fairview St															
	PM Existing	Base 2026	Base 2031	BG Dev. - Kensington	BG. Dev. - Ashton (Netherby)	BG. Dev. - Mentzer Farm	BG. Dev. - Morgan's Crossing & Jefferson Court II	BG. Dev. - Parkview at Boiling Springs	Hardee's Site	Future w/o 2026	Future w/o 2031	Phase 1 Total Ext. Site Trips	Phase 2 Total Ext. Site Trips	2026 Connector Adjust.	2031 Connector Adjust.	Future w/ 2026	Future w/ 2031
	EBL	279	328	352						328	352	0	0			328	352
	EBT	18	21	23						21	23	0	0			21	23
	WBT	8	9	10						9	10	0	0			9	10
	WBR	162	191	204						191	204	0	30	-57	-61	164	173
	SBL	299	352	377						352	377	0	51	-176	-188	227	240
	SBR	315	371	397						371	397	0	0			371	397

Intersection:		Fairview St & Lisburn Road														
PM Existing	Base 2026	Base 2031	BG Dev. - Kensington	BG. Dev. - Ashton (Netherby)	BG. Dev. - Mentzer Farm	BG. Dev. - Morgan's Crossing & Jefferson Court II	BG. Dev. - Parkview at Boiling Springs	Hardee's Site	Future w/o 2026	Future w/o 2031	Phase 1 Total Ext. Site Trips	Phase 2 Total Ext. Site Trips	2026 Connector Adjust.	2031 Connector Adjust.	Future w/ 2026	Future w/ 2031
WBL	0	0	0						0	0	0	0			0	0
WBR	0	0	0						0	0	0	0			0	0
NBT	165	194	208						194	208	0	30	-57	-61	167	177
NBR	1	1	1						1	1	0	0			1	1
SBL	0	0	0						0	0	0	0			0	0
SBT	322	379	406						379	406	0	51	176	-188	254	269

Intersection:		York Road (SR 0074) & I-81 SB On-Ramp															
	PM Existing	Base 2026	Base 2031	BG Dev. - Kensington	BG. Dev. - Ashton (Netherby)	BG. Dev. - Mentzer Farm	BG. Dev. - Morgan's Crossing & Jefferson Court II	BG. Dev. - Parkview at Boiling Springs	Hardee's Site	Future w/o 2026	Future w/o 2031	Phase 1 Total Ext. Site Trips	Phase 2 Total Ext. Site Trips	2026 Connector Adjust.	2031 Connector Adjust.	Future w/ 2026	Future w/ 2031
EBT	517	609	651							609	651	5	26			634	677
EBR	224	264	282							264	282	0	0			264	282
WBL	429	505	541							505	541	22	32			537	573
WBT	629	740	793							740	793	6	15			755	808

Intersection:		York Road (SR 0074) & I-81 NB Off-Ramp															
	PM Existing	Base 2026	Base 2031	BG Dev. - Kensington	BG. Dev. - Ashton (Netherby)	BG. Dev. - Mentzer Farm	BG. Dev. - Morgan's Crossing & Jefferson Court II	BG. Dev. - Parkview at Boiling Springs	Hardee's Site	Future w/o 2026	Future w/o 2031	Phase 1 Total Ext. Site Trips	Phase 2 Total Ext. Site Trips	2026 Connector Adjust.	2031 Connector Adjust.	Future w/ 2026	Future w/ 2031
EBT	543	639	684							639	684	5	26			665	710
WBT	876	1031	1104							1031	1104	28	47			1078	1151
NBL	174	205	219							205	219	0	0			205	219
NBR	526	619	663							619	663	18	55			674	717

Intersection:		York Road (SR 0074) & Westminster Road															
	PM Existing	Base 2026	Base 2031	BG Dev. - Kensington	BG. Dev. - Ashton (Netherby)	BG. Dev. - Mentzer Farm	BG. Dev. - Morgan's Crossing & Jefferson Court II	BG. Dev. - Parkview at Boiling Springs	Hardee's Site	Future w/o 2031	Future w/o 2031	Phase 1 Total Ext. Site Trips	Phase 2 Total Ext. Site Trips	2026 Connector Adjust.	2031 Connector Adjust.	Future w/ 2026	Future w/ 2031
	EBL	217	255	273						255	273	0	0			255	273
	EBT	482	567	607						567	607	24	80			648	688
	EBR	336	395	423						395	423	0	0			395	423
	WBL	9	11	11						11	11	0	0			11	11
	WBT	352	414	444						414	444	28	47			461	491
	WBR	41	48	52						48	52	0	0			48	52
	NBL	210	247	265						247	265	0	0			247	265
	NBT	118	139	149						139	149	0	0			139	149
	NBR	16	19	20						19	20	0	0			19	20
	SBL	51	60	64						60	64	0	0			60	64
	SBT	179	211	226						211	226	0	0			211	226
	SBR	232	273	292						273	292	0	0			273	292

Intersection:		York Road (SR 0074) & Fairview Street															
	PM Existing	Base 2026	Base 2031	BG Dev. - Kensington	BG. Dev. - Ashton (Netherby)	BG. Dev. - Mentzer Farm	BG. Dev. - Morgan's Crossing & Jefferson Court II	BG. Dev. - Parkview at Boiling Springs	Hardee's Site	Future w/o 2026	Future w/o 2031	Phase 1 Total Ext. Site Trips	Phase 2 Total Ext. Site Trips	2026 Connector Adjust.	2031 Connector Adjust.	Future w/ 2026	Future w/ 2031
EBL	38	45	48							45	48	0	32	-22	-24	54	56
EBT	457	538	576							538	576	24	48	22	24	608	648
EBR	14	16	18							16	18	0	0			16	18
WBL	18	21	23							21	23	5	4			25	26
WBT	332	391	418							391	418	28	28			419	447
WBR	59	69	74							69	74	0	3	-35	-37	38	40
NBL	10	12	13							12	13	0	0			12	13
NBT	78	92	98							92	98	0	6			98	105
NBR	1	1	1							1	1	4	6			8	8
SBL	195	230	246							230	246	0	2	-97	-103	135	144
SBT	122	144	154							144	154	0	4	-60	-65	87	93
SBR	38	45	48							45	48	0	19	-19	-20	45	47

Intersection:		York Road (SR 0074) & Mayapple Drive															
	PM Existing	Base 2026	Base 2031	BG Dev. - Kensington	BG. Dev. - Ashton (Netherby)	BG. Dev. - Mentzer Farm	BG. Dev. - Morgan's Crossing & Jefferson Court II	BG. Dev. - Parkview at Boiling Springs	Hardee's Site	Future w/o 2026	Future w/o 2031	Phase 1 Total Ext. Site Trips	Phase 2 Total Ext. Site Trips	2026 Connector Adjust.	2031 Connector Adjust.	Future w/ 2026	Future w/ 2031
EBT	494	581	622							581	622	12	23			604	645
EBR	82	97	103							97	103	3	2			98	105
WBL	40	47	50							47	50	0	0			47	50
WBT	361	425	455							425	455	11	39			463	493
NBL	20	24	25							24	25	3	3			27	28
NBR	20	24	25							24	25	0	0			24	25

Intersection:		York Road (SR 0074) & East Springville Road/Shughart Road															
	PM Existing	Base 2026	Base 2031	BG Dev. - Kensington	BG. Dev. - Ashton (Netherby)	BG. Dev. - Mentzer Farm	BG. Dev. - Morgan's Crossing & Jefferson Court II	BG. Dev. - Parkview at Boiling Springs	Hardee's Site	Future w/o 2026	Future w/o 2031	Phase 1 Total Ext. Site Trips	Phase 2 Total Ext. Site Trips	2026 Connector Adjust.	2031 Connector Adjust.	Future w/ 2026	Future w/ 2031
EBL	106	125	134							125	134	1	2			127	135
EBT	468	551	590							551	590	9	19			570	608
EBR	65	77	82			12				89	94	2	2			90	96
WBL	71	84	89			8				92	97	0	0			92	97
WBT	306	360	386							360	386	8	32			392	418
WBR	11	13	14							13	14	0	0			13	14
NBL	33	39	42			6				45	48	2	3			48	51
NBR	19	22	24			5				27	29	0	0			27	29
SBL	1	1	1							1	1	0	0			1	1
SBR	181	213	228							213	228	1	3			216	231

Intersection:		Forge Road (SR 2003) & Westminster Drive															
	PM Existing	Base 2026	Base 2031	BG Dev. - Kensington	BG. Dev. - Ashton (Netherby)	BG. Dev. - Mentzer Farm	BG. Dev. - Morgan's Crossing & Jefferson Court II	BG. Dev. - Parkview at Boiling Springs	Hardee's Site	Future w/o 2026	Future w/o 2031	Phase 1 Total Ext. Site Trips	Phase 2 Total Ext. Site Trips	2026 Connector Adjust.	2031 Connector Adjust.	Future w/ 2026	Future w/ 2031
EBL	1	1	1							1	1	0	0			1	1
EBT	57	67	72							67	72	0	0			67	72
EBR	12	14	15							14	15	0	0			14	15
WBL	413	486	520							486	520	0	0			486	520
WBT	69	81	87							81	87	0	0			81	87
WBR	19	22	24							22	24	0	0			22	24
NBL	4	5	5							5	5	0	0			5	5
NBT	8	9	10							9	10	0	0			9	10
NBR	242	285	305							285	305	0	0			285	305
SBL	22	26	28							26	28	0	0			26	28
SBT	19	22	24							22	24	0	0			22	24
SBR	5	6	6							6	6	0	0			6	6

Intersection:		Forge Road (SR 2003) & Fairview Street															
	PM Existing	Base 2026	Base 2031	BG Dev. - Kensington	BG. Dev. - Ashton (Netherby)	BG. Dev. - Mentzer Farm	BG. Dev. - Morgan's Crossing & Jefferson Court II	BG. Dev. - Parkview at Boiling Springs	Hardee's Site	Future w/o 2026	Future w/o 2031	Phase 1 Total Ext. Site Trips	Phase 2 Total Ext. Site Trips	2026 Connector Adjust.	2031 Connector Adjust.	Future w/ 2026	Future w/ 2031
EBL	3	4	4							4	4	0	0			4	4
EBT	8	9	10							9	10	3	0			9	10
EBR	18	21	23							21	23	0	0			21	23
WBL	74	87	93							87	93	2	4			91	97
WBT	24	28	30							28	30	3	10			38	40
WBR	15	18	19							18	19	0	0			18	19
NBL	18	21	23							21	23	0	0			21	23
NBT	267	314	336				25			339	361	0	0			339	361
NBR	42	49	53							49	53	2	6			56	59
SBL	20	24	25							24	25	0	0			24	25
SBT	375	441	473				46			487	519	0	0			487	519
SBR	9	11	11							11	11	0	0			11	11

Intersection:		Trindle Road (SR 0641) / Rose Business Park Connector / Pharmacy Tract															
	PM Existing	Base 2026	Base 2031	BG Dev. - Kensington	BG. Dev. - Ashton (Netherby)	BG. Dev. - Mentzer Farm	BG. Dev. - Morgan's Crossing & Jefferson Court II	BG. Dev. - Parkview at Boiling Springs	Hardee's Site	Future w/o 2026	Future w/o 2031	Phase 1 Total Ext. Site Trips	Phase 2 Total Ext. Site Trips	2026 Connector Adjust.	2031 Connector Adjust.	Future w/ 2026	Future w/ 2031
	EBL	0	0	0						0	0	27	0			0	0
	EBT	510	600	643						600	643	-21	0			600	643
	EBR	0	0	0						0	0	26	55	105	112	159	167
	WBL	0	0	0						0	0	17	80	71	76	152	157
	WBT	547	644	689						644	689	-24	0	-71	-76	572	613
	WBR	0	0	0						0	0	23	0			0	0
	NBL	0	0	0						0	0	32	32	44	47	76	79
	NBT	0	0	0						0	0	16	0			0	0
	NBR	0	0	0						0	0	18	47	13	14	60	61
	SBL	0	0	0						0	0	20	0			0	0
	SBT	0	0	0						0	0	16	0			0	0
	SBR	0	0	0						0	0	28	0			0	0

Intersection:		York Road (SR 0074) / Heritage Village Connector															
	PM Existing	Base 2026	Base 2031	BG Dev. - Kensington	BG. Dev. - Ashton (Netherby)	BG. Dev. - Mentzer Farm	BG. Dev. - Morgan's Crossing & Jefferson Court II	BG. Dev. - Parkview at Boiling Springs	Hardee's Site	Future w/o 2026	Future w/o 2031	Phase 1 Total Ext. Site Trips	Phase 2 Total Ext. Site Trips	2026 Connector Adjust.	2031 Connector Adjust.	Future w/ 2026	Future w/ 2031
EBL	0	0	0							0	0	39	55	22	24	77	79
EBT	653	769	823							769	823	-11	2			770	825
WBT	409	481	515							481	515	-7	3	-35	-37	450	481
WBR	0	0	0							0	0	20	39	35	37	73	76
SBL	0	0	0							0	0	26	23	79	85	102	107
SBR	0	0	0							0	0	40	32	97	103	129	135

Intersection:		Lisburn Road / Proposed H.V. - Rose Business Park Connector															
	PM Existing	Base 2026	Base 2031	BG Dev. - Kensington	BG. Dev. - Ashton (Netherby)	BG. Dev. - Mentzer Farm	BG. Dev. - Morgan's Crossing & Jefferson Court II	BG. Dev. - Parkview at Boiling Springs	Hardee's Site	Future w/o 2026	Future w/o 2031	Phase 1 Total Ext. Site Trips	Phase 2 Total Ext. Site Trips	2026 Connector Adjust.	2031 Connector Adjust.	Future w/ 2026	Future w/ 2031
	EBL	0	0	0						0	0	0	0			0	0
	EBT	1	1	1						1	1	0	0			1	1
	EBR	0	0	0						0	0	0	0			0	0
	WBL	0	0	0						0	0	0	0			0	0
	WBT	0	0	0						0	0	0	0			0	0
	WBR	0	0	0						0	0	0	0			0	0
	NBL	0	0	0						0	0	0	0			0	0
	NBT	0	0	0						0	0	16	81	57	61	138	142
	NBR	0	0	0						0	0	0	0			0	0
	SBL	0	0	0						0	0	0	0			0	0
	SBT	0	0	0						0	0	16	138	176	188	314	326
	SBR	0	0	0						0	0	0	0			0	0

Intersection:		Fairview Street / Heritage Village Driveway															
	PM Existing	Base 2026	Base 2031	BG Dev. - Kensington	BG. Dev. - Ashton (Netherby)	BG. Dev. - Mentzer Farm	BG. Dev. - Morgan's Crossing & Jefferson Court II	BG. Dev. - Parkview at Boiling Springs	Hardee's Site	Future w/o 2026	Future w/o 2031	Phase 1 Total Ext. Site Trips	Phase 2 Total Ext. Site Trips	2026 Connector Adjust.	2031 Connector Adjust.	Future w/ 2026	Future w/ 2031
	WBL	0	0	0						0	0	0	24			24	24
	WBR	0	0	0						0	0	0	30			30	30
	NBT	166	195	209						195	209	0	0	-57	-61	138	148
	NBR	0	0	0						0	0	0	42			42	42
	SBL	0	0	0						0	0	0	51			51	51
	SBT	322	379	406						379	406	0	0	176	-188	203	217

Intersection:		Trindle Road (SR 0641) & Horners Road																					
		New External Assignment						Pass-by Adjustment						New External Site Trips				Pass -By Trips			Totals		
		Heritage Village / Rose Business Park Site			Pharm. Tract			Heritage Village / Rose Business Park Site			Pharm. Tract			Heritage Village / Rose Business Park Site			Pharm. Tract			New Site Trip Total	Pass-by Total	Grand Total	
Turning Movement	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	
	EBL	0%	1%	0%	1%	0%	1%	0%	0%	0%	0%	1%	0	0	0	0	0	0	0	0	0	0	1
	EBT	0%	16%	0%	16%	0%	0%	0%	0%	0%	0%	11	0	5	0	0	0	0	0	0	0	16	0
	WBT	16%	0%	16%	0%	0%	0%	0%	0%	0%	0%	9	0	5	0	0	0	0	0	0	0	14	0
	WBR	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0	0
SBL	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0	0	
SBR	1%	0%	1%	0%	0%	0%	0%	0%	0%	0%	1	0	0	0	0	0	0	0	0	0	0	1	

Trindle Road (SR 0641) & Middlesex Road																								
Intersection:		New External Assignment						Pass-by Adjustment						New External Site Trips						Pass-By Trips			Totals	
		Heritage Village / Rose Business Park Site			Pharm. Tract			Heritage Village / Rose Business Park Site			Pharm. Tract			Heritage Village / Rose Business Park Site			Pharm. Tract			New Site Trip Total	Pass-by Total	Grand Total		
Turning Movement	EBL	0%	4%	0%	0%	4%	0%	0%	0%	0	3	0	1	0	0	0	0	4	0	4				
	EBT	0%	12%	0%	0%	12%	0%	0%	0%	0	8	0	4	0	0	0	0	12	0	12				
	EBR	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0				
	WBL	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0				
	WBT	12%	0%	12%	0%	0%	0%	0%	0%	7	0	4	0	0	0	0	0	11	0	11				
	WBR	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0				
	NBL	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0				
	NBT	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0				
NBR	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0					
SBL	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0					
SBT	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0					
SBR	4%	0%	4%	0%	0%	0%	0%	0%	2	0	1	0	0	0	0	0	4	0	4					

[illegible][illegible]

Intersection:	York Road (SR 0074) & I-81 SB On-Ramp																		
	New External Assignment				Pass-by Adjustment				New External Site Trips				Pass-By Trips			Totals			
	Heritage Village / Rose Business Park Site		Pharm. Tract		Heritage Village / Rose Business Park Site		Pharm. Tract		Heritage Village / Rose Business Park Site		Pharm. Tract		Heritage Village / Rose Business Park Site		Pharm. Tract		New Site Trip Total	Pass-by Total	Grand Total
Turning Movement	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT			
	6%	0%	6%	0%	0%	0%	0%	0%	3	0	2	0	0	0	0	0	5	0	5
	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0
	0%	21%	0%	21%	0%	0%	0%	0%	0	15	0	7	0	0	0	0	22	0	22
WBT	0%	6%	0%	6%	0%	0%	0%	0%	0	4	0	2	0	0	0	0	6	0	6

Intersection:		York Road (SR 0074) & East Springfield Road/Shughart Road																		
Turning Movement		New External Assignment				Pass-by Adjustment				New External Site Trips				Pass -By Trips				Totals		
		Heritage Village / Rose Business Park Site		Pharm. Tract		Heritage Village / Rose Business Park Site		Pharm. Tract		Heritage Village / Rose Business Park Site		Pharm. Tract		Heritage Village / Rose Business Park Site		Pharm. Tract		New Site Trip Total	Pass-by Total	Grand Total
		IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT			
EBL		0%	1%	0%	1%	0%	0%	0%	0%	0	1	0	0	0	0	0	0	1	0	1
EBT		0%	9%	0%	9%	0%	0%	0%	0%	0	6	0	0	0	0	0	0	9	0	9
EBR		0%	2%	0%	2%	0%	0%	0%	0%	0	1	0	0	0	0	0	0	2	0	2
WBL		0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0
WBT		9%	0%	9%	0%	0%	0%	0%	0%	5	0	3	0	0	0	0	0	8	0	8
WBR		0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0
NBL		2%	0%	2%	0%	0%	0%	0%	0%	1	0	1	0	0	0	0	0	2	0	2
NBR		0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0
SBL		0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0
SBR		1%	0%	1%	0%	0%	0%	0%	0%	1	0	0	0	0	0	0	0	1	0	1

Intersection:		Forge Road (SR 2003) & Westminster Drive																		
Turning Movement		New External Assignment				Pass-by Adjustment				New External Site Trips				Pass -By Trips				Totals		
		Heritage Village / Rose Business Park Site		Pharm. Tract		Heritage Village / Rose Business Park Site		Pharm. Tract		Heritage Village / Rose Business Park Site		Pharm. Tract		Heritage Village / Rose Business Park Site		Pharm. Tract		New Site Trip Total	Pass-by Total	Grand Total
		IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT			
EBL		0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0
EBT		0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0
EBR		0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0
WBL		0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0
WBT		0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0
WBR		0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0
NBL		0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0
NBT		0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0
NBR		0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0
SBL		0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0
SBT		0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0
SBR		0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0

Forge Road (SR 2003) & Fairview Street														
Intersection:	New External Assignment					Pass-by Adjustment					New External Site Trips			
	Heritage Village / Rose Business Park Site		Pharm. Tract			Heritage Village / Rose Business Park Site		Pharm. Tract			Heritage Village / Rose Business Park Site		Pharm. Tract	
	IN	OUT	IN	OUT		IN	OUT	IN	OUT		IN	OUT	IN	OUT
EBL	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0
EBT	3%	0%	3%	0%	0%	0%	0%	0%	0%	0%	2	0	1	0
EBR	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0
WBL	0%	2%	0%	2%	0%	0%	0%	0%	0%	0%	0	1	0	0
WBT	0%	3%	0%	3%	0%	0%	0%	0%	0%	0%	0	2	0	1
WBR	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0
NBL	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0
NBT	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0
NBR	2%	0%	2%	0%	0%	0%	0%	0%	0%	0%	1	0	1	0
SBL	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0
SBT	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0
SBR	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0

Trindle Road (SR 0641) / Rose Business Park Connector / Pharm. Tract Driveway														
Intersection:	New External Assignment					Pass-by Adjustment					New External Site Trips			
	Heritage Village / Rose Business Park Site		Pharm. Tract			Heritage Village / Rose Business Park Site		Pharm. Tract			Heritage Village / Rose Business Park Site		Pharm. Tract	
	IN	OUT	IN	OUT		IN	OUT	IN	OUT		IN	OUT	IN	OUT
EBL	0%	0%	36%	0%	0%	0%	0%	47%	0%	0%	0	0	12	0
EBT	0%	0%	0%	0%	-20%	0%	-47%	0%	0%	0%	0	0	-15	0
EBR	36%	0%	0%	0%	0%	20%	0%	0%	0%	0%	20	0	0	0
WBL	17%	0%	0%	0%	23%	0%	0%	0%	0%	0%	9	0	0	0
WBT	0%	0%	0%	0%	-23%	0%	-53%	0%	0%	0%	0	0	-17	0
WBR	0%	0%	17%	0%	0%	0%	53%	0%	0%	0%	0	0	17	0
NBL	0%	36%	0%	0%	0%	0%	23%	0%	0%	0%	0	25	0	0
NBT	0%	0%	47%	0%	0%	0%	0%	0%	0%	16	0	0	0	0
NBR	0%	17%	0%	0%	0%	0%	20%	0%	0%	0	12	0	0	0
SBL	0%	0%	0%	17%	0%	0%	0%	0%	47%	0%	0	0	0	15
SBT	0%	0%	0%	47%	0%	0%	0%	0%	0%	0%	0	0	0	0
SBR	0%	0%	0%	36%	0%	0%	0%	0%	53%	0%	0	0	0	16

Intersection:	Lisburn Road / Proposed H.V. - Rose Business Park Connector																	
	New External Assignment						Pass-by Adjustment				New External Site Trips				Pass-By Trips		Totals	
	Heritage Village / Rose Business Park Site		Pharm. Tract		Heritage Village / Rose Business Park Site		Pharm. Tract		Heritage Village / Rose Business Park Site		Pharm. Tract		Heritage Village / Rose Business Park Site		New Site Trip Total	Pass-by Total	Grand Total	
	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT				
Turning Movement	EBL	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0
	EBT	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0
	EBR	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0
	WBL	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0
	WBT	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0
	WBR	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0
	NBL	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0
	NBT	0%	0%	47%	0%	0%	0%	0%	0%	0	16	0	0	0	16	0	0	16
NBR	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	
SBL	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	
SBT	0%	0%	0%	47%	0%	0%	0%	0%	0	0	0	16	0	0	16	0	16	
SBR	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	

Intersection:

Intersection:	E. High Street(SR 0641) & York Road (SR 0074)																													
Turning Movement	New External Assignment - Commercial / Indust.						New External Assignment - Residential				Pass-by Adjustment						New External Site Trips								Pass -By Trips				Totals	
	Heritage Village / Rose Business Park Site			Pharm. Tract			Heritage Village - Residential			Heritage Village / Rose Business Park Site			Pharm. Tract			Heritage Village - Residential			Heritage Village / Rose Business Park Site			Pharm. Tract			Heritage Village - Residential			New Site Trip Total	pass-by Total	Grand Total
	IN	OUT	%	IN	OUT	%	IN	OUT	%	IN	OUT	%	IN	OUT	%	IN	OUT	%	IN	OUT	%	IN	OUT	%	IN	OUT	%			
EBT	7%	0%		7%	0%		0%	0%		0%	0%		0%	0%		0%	0%		0%	0%		0%	0%		0%	0%		22	0	22
EBR	6%	0%		6%	0%		0%	0%		0%	0%		0%	0%		0%	0%		0%	0%		0%	0%		0%	0%		26	0	26
WBL	0%	0%		0%	0%		0%	0%		0%	0%		0%	0%		0%	0%		0%	0%		0%	0%		0%	0%		0	0	0
WBT	0%	7%		0%	7%		0%	0%		0%	0%		0%	0%		0%	0%		0%	0%		0%	0%		0%	0%		13	0	13
NBL	0%	6%		0%	6%		0%	0%		0%	0%		0%	0%		0%	0%		0%	0%		0%	0%		0%	0%		15	0	15
NBR	0%	0%		0%	0%		0%	0%		0%	0%		0%	0%		0%	0%		0%	0%		0%	0%		0%	0%		0	0	0

Intersection:

[illegible]

Intersection:	Trindle Road (SR 0641) & I-81 SR Off-Ramp																			
	New External Assignment - Commercial / Indust.				New External Assignment - Residential				Pass-by Adjustment				New External Site Trips				Pass -By Trips			
	Heritage Village / Rose Business Park Site		Pharm. Tract		Heritage Village		Heritage Village - Residential		Pharm. Tract		Heritage Village / Rose Business Park Site		Pharm. Tract		Heritage Village - Residential		Heritage Village / Rose Business Park Site		Pharm. Tract	
Turning Movement	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT
	7%	0%	7%	0%	7%	0%	0%	0%	0%	0%	0%	0%	0%	0%	22	0	0	0	0	0
	WBT	0%	7%	0%	7%	0%	0%	0%	0%	0%	0%	0%	0%	0%	13	0	0	0	0	22
	SBL	24%	0%	24%	0%	21%	0%	0%	0%	0%	0%	0%	0%	0%	67	0	0	0	0	13
	SBR	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	67
Grand Total				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Intersection:	Trindle Road (SR 0641) & I-81 NB On-Ramp																			
	New External Assignment - Commercial / Indust.				New External Assignment - Residential				Pass-by Adjustment				New External Site Trips				Pass -By Trips			
	Heritage Village / Rose Business Park Site		Pharm. Tract		Heritage Village		Heritage Village - Residential		Pharm. Tract		Heritage Village / Rose Business Park Site		Pharm. Tract		Heritage Village - Residential		Heritage Village / Rose Business Park Site		Pharm. Tract	
Turning Movement	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT
	31%	0%	31%	0%	28%	0%	0%	0%	0%	0%	0	0	0	0	90	0	0	0	0	0
	EBT	0%	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	90
	EBR	0%	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0
	WBL	0%	24%	0%	24%	0%	21%	0%	0%	0%	0	0	0	0	39	0	0	0	0	39
Grand Total				0	7%	0%	7%	0%	0%	0%	0	0	0	0	13	0	0	0	0	13

Intersection:	Trindle Road (SR 0641) & Army Heritage Drive																			
	New External Assignment - Commercial / Indust.				New External Assignment - Residential				Pass-by Adjustment				New External Site Trips				Pass -By Trips			
	Heritage Village / Rose Business Park Site		Pharm. Tract		Heritage Village		Heritage Village - Residential		Pharm. Tract		Heritage Village / Rose Business Park Site		Pharm. Tract		Heritage Village - Residential		Heritage Village / Rose Business Park Site		Pharm. Tract	
Turning Movement	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT
	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0
	EBT	31%	0%	31%	0%	14%	0%	0%	0%	0%	0	0	0	0	45	0	0	0	0	45
	EBR	0%	0%	0%	0%	14%	0%	0%	0%	0%	0	0	0	0	45	0	0	0	0	45
	WBL	0%	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0
Grand Total				0	31%	0%	14%	0%	0%	0%	0	0	0	0	26	0	0	0	0	26
Turning Movement	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT
	0%	5%	0%	5%	0%	3%	0%	0%	0%	0%	0	0	0	0	6	0	0	0	0	6
	WBR	0%	0%	0%	0%	14%	0%	0%	0%	0%	0	0	0	0	26	0	0	0	0	26
	NBL	0%	0%	0%	0%	2%	0%	0%	0%	0%	0	0	0	0	4	0	0	0	0	4
	NBR	0%	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0
Grand Total				5%	0%	3%	0%	0%	0%	0%	0	0	0	10	0	0	0	0	10	0
Turning Movement	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT
	0%	0%	0%	0%	2%	0%	0%	0%	0%	0%	0	0	0	0	6	0	0	0	0	6
	SBL	0%	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0
	SBT	0%	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0
	SBR	0%	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0
Grand Total				0	0	2%	0%	0%	0%	0%	0	0	0	0	6	0	0	0	0	6

Intersection:		York Road (SR 0074) & I-81 NB Off-Ramp																						
Turning Movement	New External Assignment - Commercial / Indust.				New External Assignment - Residential				Pass-by Adjustment				New External Site Trips						Pass -By Trips				Totals	
	Heritage Village / Rose Business Park Site		Pharm. Tract		Heritage Village - Residential		Pharm. Tract		Heritage Village / Rose Business Park Site		Pharm. Tract		Heritage Village / Rose Business Park Site		Pharm. Tract		Heritage Village - Residential		Pharm. Tract		New Site Trip Total	Pass-by Total	Grand Total	
	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT				
	EBT	6%	0%	6%	0%	8%	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	26	0
WBT	0%	27%	0%	27%	0%	25%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	47	0	0	0	47	0	47
NBL	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0
NBR	21%	0%	21%	0%	17%	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	55	0	0	0	0	55	0	55

Intersection:		York Road (SR 0074) & Westminster Road																							
Turning Movement	New External Assignment - Commercial / Indust.				New External Assignment - Residential				Pass-by Adjustment				New External Site Trips				Pass -By Trips				Totals				
	Heritage Village / Rose Business Park Site		Pharm. Tract		Heritage Village		Heritage Village - Residential		Heritage Village / Rose Business Park Site		Pharm. Tract		Heritage Village - Residential		Heritage Village / Rose Business Park Site		Pharm. Tract		Heritage Village - Residential		New Site Trip Total	Pass-by Total	Grand Total		
	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT					
	EBL	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	
EBT	27%	0%	27%	0%	25%	0%	0%	0%	0%	0%	0%	0%	0%	80	0	0	0	0	0	0	80	0	80		
EBR	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0		
WBL	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0		
WBT	0%	27%	0%	27%	0%	25%	0%	0%	0%	0%	0%	0%	47	0	0	0	0	0	0	0	47	0	47		
WBR	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0		
NBL	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0		
NBT	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0		
NBR	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0		
SBL	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0		
SBT	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0		
SBR	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0		

Intersection:		York Road (SR 0074) & Fairview Street																												
Turning Movement	New External Assignment - Commercial / Indust.				New External Assignment - Residential				Pass-by Adjustment								New External Site Trips								Pass -By Trips				Totals	
	Heritage Village / Rose Business Park Site				Heritage Village				Heritage Village / Rose Business Park Site		Pharm. Tract		Heritage Village - Residential				Pharm. Tract		Heritage Village / Rose Business Park Site		Pharm. Tract		Heritage Village - Residential		New Site Trip Total	Pass-by Total	Grand Total			
	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT								
	0%	0%	0%	0%	10%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%				0%	0%	
EBL	0%	0%	0%	0%	27%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	32	0	32		
EBT	27%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	48	0	48		
EBR	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0		
WBL	0%	5%	0%	5%	0%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	4	0	4		
WBT	0%	27%	0%	27%	0%	15%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	28	0	28		
WBR	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	3	0	3		
NBL	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0		
NBT	0%	0%	0%	0%	0%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	6	0	6		
NBR	5%	0%	0%	0%	5%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	6	0	6		
SBL	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2	0	2		
SBT	0%	0%	0%	0%	0%	0%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	4	0	4		
SBR	0%	0%	0%	0%	0%	0%	10%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	19	0	19		

Intersection:		York Road [SR 0074] & East Springville Road/Shughart Road																		
Turning Movement	New External Assignment - Commercial / Indust.				New External Assignment - Residential				Pass-by Adjustment				New External Site Trips							
	Heritage Village / Rose Business Park Site				Heritage Village				Heritage Village - Rose Business Park Site				Pharm. Tract		Heritage Village - Residential		Pharm. Tract		Heritage Village - Residential	
	IN		OUT		IN		OUT		IN		OUT		IN		IN		OUT		IN	
	0%	1%	0%	1%	0%	1%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
EBL	0%	1%	0%	1%	0%	1%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
EBT	0%	9%	0%	9%	0%	10%	0%	10%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
EBR	0%	2%	0%	2%	0%	1%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
WBL	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
WBT	9%	0%	0%	9%	10%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
WBR	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
NBL	2%	0%	0%	2%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
NBR	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
SBL	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
SBR	1%	0%	1%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Totals					Totals				Totals				Totals		Totals		Totals		Totals	
Grand Total				2	Grand Total				Grand Total				Grand Total		Grand Total		Grand Total		Grand Total	

Intersection:		Forge Road [SR 2003] & Westminster Drive																		
Turning Movement	New External Assignment - Commercial / Indust.				New External Assignment - Residential				Pass-by Adjustment				New External Site Trips							
	Heritage Village / Rose Business Park Site				Heritage Village				Heritage Village - Rose Business Park Site				Pharm. Tract		Heritage Village - Residential		Pharm. Tract		Heritage Village - Residential	
	IN		OUT		IN		OUT		IN		OUT		IN		IN		OUT		IN	
	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
EBL	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
EBT	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
EBR	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
WBL	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
WBT	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
WBR	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
NBL	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
NBR	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
SBL	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
SBR	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Totals					Totals				Totals				Totals		Totals		Totals		Totals	
Grand Total				0	Grand Total				Grand Total				Grand Total		Grand Total		Grand Total		Grand Total	

Phase II - PM Peak Hour

Site Trip Generation:			
Access Point	Site - Com. / Indust.	H.V. - Resid.	Pharm. Tract
New Site Trips			
Inbound:	0	321	0
Outbound:	0	188	0
Pass-by Trips			
Inbound:	0	0	0
Outbound:	0	0	0
Total:	0	509	0

Intersection:		E. High Street(SR 0641) & York Road (SR 0074)															
	SAT Existing	Base 2026	Base 2031	BG Dev. - Kensington	BG. Dev. - Ashton (Netherby)	BG. Dev. - Mentzer Farm	BG. Dev. - Morgan's Crossing & Jefferson Court II	BG. Dev. - Parkview at Boiling Springs	Hardee's Site	Future w/o 2026	Future w/o 2031	Phase 1 Total Ext. Site Trips	Phase 2 Total Ext. Site Trips	2026 Connector Adjust.	2031 Connector Adjust.	Future w/ 2026	Future w/ 2031
EBT	546	643	688							643	688	8	15			658	703
EBR	303	357	382							357	382	6	17			374	399
WBL	19	22	24							22	24	0	0			22	24
WBT	522	614	658							614	658	8	14			628	672
NBL	235	277	296							277	296	7	16			293	312
NBR	10	12	13							12	13	0	0			12	13

Intersection:		York Road (SR 0074) & Giant Lane/Carlisle Plaza Mall															
	SAT Existing	Base 2026	Base 2031	BG Dev. - Kensington	BG. Dev. - Ashton (Netherby)	BG. Dev. - Mentzer Farm	BG. Dev. - Morgan's Crossing & Jefferson Court II	BG. Dev. - Parkview at Boiling Springs	Hardee's Site	Future w/o 2026	Future w/o 2031	Phase 1 Total Ext. Site Trips	Phase 2 Total Ext. Site Trips	2026 Connector Adjust.	2031 Connector Adjust.	Future w/ 2026	Future w/ 2031
EBL	88	104	111							104	111	0	0			104	111
EBT	420	494	529							494	529	6	17			512	546
EBR	25	29	32							29	32	0	0			29	32
WBL	138	162	174							162	174	0	0			162	174
WBT	348	410	438							410	438	7	16			426	455
WBR	36	42	45							42	45	0	0			42	45
NBL	18	21	23							21	23	0	0			21	23
NBT	42	49	53							49	53	0	0			49	53
NBR	132	155	166							155	166	0	0			155	166
SBL	57	67	72							67	72	0	0			67	72
SBT	63	74	79							74	79	0	0			74	79
SBR	57	67	72							67	72	0	0			67	72

Intersection:		E. High Street (SR 0641) & Carlisle Plaza Mall/Shaffner Avenue															
	SAT Existing	Base 2026	Base 2031	BG Dev. - Kensington	BG. Dev. - Ashton (Netherby)	BG. Dev. - Mentzer Farm	BG. Dev. - Morgan's Crossing & Jefferson Court II	BG. Dev. - Parkview at Boiling Springs	Hardee's Site	Future w/o 2026	Future w/o 2031	Phase 1 Total Ext. Site Trips	Phase 2 Total Ext. Site Trips	2026 Connector Adjust.	2031 Connector Adjust.	Future w/ 2026	Future w/ 2031
EBL	0	0	0							0	0	0	0			0	0
EBT	485	571	611							571	611	8	15			586	626
EBR	121	142	152							142	152	0	0			142	152
WBL	76	89	96							89	96	0	0			89	96
WBT	465	547	586							547	586	8	14			561	600
WBR	34	40	43							40	43	0	0			40	43
NBL	74	87	93							87	93	0	0			87	93
NBT	0	0	0							0	0	0	0			0	0
NBR	99	117	125							117	125	0	0			117	125
SBL	0	0	0							0	0	0	0			0	0
SBT	0	0	0							0	0	0	0			0	0
SBR	0	0	0							0	0	0	0			0	0

Intersection:		E. High Street (SR 0641) & Lowes Access/CVS Access															
	SAT Existing	Base 2026	Base 2031	BG Dev. - Kensington	BG. Dev. - Ashton (Netherby)	BG. Dev. - Mentzer Farm	BG. Dev. - Morgan's Crossing & Jefferson Court II	BG. Dev. - Parkview at Boiling Springs	Hardee's Site	Future w/o 2026	Future w/o 2031	Phase 1 Total Ext. Site Trips	Phase 2 Total Ext. Site Trips	2026 Connector Adjust.	2031 Connector Adjust.	Future w/ 2026	Future w/ 2031
EBL	19	22	24							22	24	0	0			22	24
EBT	466	548	587							548	587	8	15			564	602
EBR	123	145	155							145	155	0	0			145	155
WBL	93	109	117							109	117	0	0			109	117
WBT	405	477	510							477	510	8	14			491	524
WBR	10	12	13							12	13	0	0			12	13
NBL	127	149	160							149	160	0	0			149	160
NBT	6	7	8							7	8	0	0			7	8
NBR	98	115	123							115	123	0	0			115	123
SBL	9	11	11							11	11	0	0			11	11
SBT	2	2	3							2	3	0	0			2	3
SBR	12	14	15							14	15	0	0			14	15

Intersection:		Trindle Road (SR 0641) & I-81 SB Off-Ramp															
	SAT Existing	Base 2026	Base 2031	BG Dev. - Kensington	BG. Dev. - Ashton (Netherby)	BG. Dev. - Mentzer Farm	BG. Dev. - Morgan's Crossing & Jefferson Court II	BG. Dev. - Parkview at Boiling Springs	Hardee's Site	Future w/o 2026	Future w/o 2031	Phase 1 Total Ext. Site Trips	Phase 2 Total Ext. Site Trips	2026 Connector Adjust.	2031 Connector Adjust.	Future w/ 2026	Future w/ 2031
EBT	602	709	759							709	759	8	15			724	774
WBT	355	418	447							418	447	8	14			432	461
SBL	132	155	166							155	166	26	45			201	211
SBR	168	198	212							198	212	0	0			198	212

Intersection:		Trindle Road (SR 0641) & I-81 NB On-Ramp															
	SAT Existing	Base 2026	Base 2031	BG Dev. - Kensington	BG. Dev. - Ashton (Netherby)	BG. Dev. - Mentzer Farm	BG. Dev. - Morgan's Crossing & Jefferson Court II	BG. Dev. - Parkview at Boiling Springs	Hardee's Site	Future w/o 2026	Future w/o 2031	Phase 1 Total Ext. Site Trips	Phase 2 Total Ext. Site Trips	2026 Connector Adjust.	2031 Connector Adjust.	Future w/ 2026	Future w/ 2031
EBT	575	677	725							677	725	33	60			737	785
EBR	182	214	229							214	229	0	0			214	229
WBL	117	138	147							138	147	27	42			180	190
WBT	346	407	436							407	436	8	14			421	450

Intersection:		Trindle Road (SR 0641) & Army Heritage Drive															
	SAT Existing	Base 2026	Base 2031	BG Dev. - Kensington	BG. Dev. - Ashton (Netherby)	BG. Dev. - Mentzer Farm	BG. Dev. - Morgan's Crossing & Jefferson Court II	BG. Dev. - Parkview at Boiling Springs	Hardee's Site	Future w/o 2026	Future w/o 2031	Phase 1 Total Ext. Site Trips	Phase 2 Total Ext. Site Trips	2026 Connector Adjust.	2031 Connector Adjust.	Future w/ 2026	Future w/ 2031
EBL	146	172	184						24	196	208	0	0			196	208
EBT	197	232	248						-5	227	243	33	30	62	67	319	340
EBR	232	273	292						-2	271	290	0	30	-62	-67	239	254
WBL	98	115	123						-2	113	121	0	0	-26	-28	87	93
WBT	195	230	246						9	239	255	35	28			267	283
WBR	76	89	96						8	97	104	6	6			103	110
NBL	148	174	186						8	182	194	0	28	-18	-19	192	204
NBT	227	267	286						9	276	295	0	4	-27	-29	253	270
NBR	74	87	93						-2	85	91	0	0	-9	-10	76	82
SBL	56	66	71						23	89	94	5	6			95	100
SBT	167	197	210						21	218	231	0	4			222	236
SBR	101	119	127						0	119	127	0	0			119	127

Intersection:		Trindle Road (SR 0641) & Horners Road															
	SAT Existing	Base 2026	Base 2031	BG Dev. - Kensington	BG. Dev. - Ashton (Netherby)	BG. Dev. - Mentzer Farm	BG. Dev. - Morgan's Crossing & Jefferson Court II	BG. Dev. - Parkview at Boiling Springs	Hardee's Site	Future w/o 2026	Future w/o 2031	Phase 1 Total Ext. Site Trips	Phase 2 Total Ext. Site Trips	2026 Connector Adjust.	2031 Connector Adjust.	Future w/ 2026	Future w/ 2031
EBL	13	15	16							15	16	1	2			17	18
EBT	267	314	336							314	336	18	48			362	385
WBT	278	327	350							327	350	17	52			379	402
WBR	0	0	0							0	0	0	0			0	0
SBL	0	0	0							0	0	0	0			0	0
SBR	20	24	25							24	25	1	2			26	27

Intersection:		Trindle Road (SR 0641) & Middlesex Road															
	SAT Existing	Base 2026	Base 2031	BG Dev. - Kensington	BG. Dev. - Ashton (Netherby)	BG. Dev. - Mentzer Farm	BG. Dev. - Morgan's Crossing & Jefferson Court II	BG. Dev. - Parkview at Boiling Springs	Hardee's Site	Future w/o 2026	Future w/o 2031	Phase 1 Total Ext. Site Trips	Phase 2 Total Ext. Site Trips	2026 Connector Adjust.	2031 Connector Adjust.	Future w/ 2026	Future w/ 2031
EBL	8	9	10							9	10	5	8			17	18
EBT	226	266	285							266	285	14	40			306	325
EBR	22	26	28							26	28	0	0			26	28
WBL	6	7	8							7	8	0	0			7	8
WBT	231	272	291							272	291	13	43			315	334
WBR	17	20	21							20	21	0	0			20	21
NBL	26	31	33							31	33	0	0			31	33
NBT	30	35	38							35	38	0	0			35	38
NBR	4	5	5							5	5	0	0			5	5
SBL	13	15	16							15	16	0	0			15	16
SBT	19	22	24							22	24	0	0			22	24
SBR	20	24	25							24	25	4	9			32	34

Intersection:		Army Heritage Drive & Westminster Drive/Fairview St															
	SAT Existing	Base 2026	Base 2031	BG Dev. - Kensington	BG. Dev. - Ashton (Netherby)	BG. Dev. - Mentzer Farm	BG. Dev. - Morgan's Crossing & Jefferson Court II	BG. Dev. - Parkview at Boiling Springs	Hardee's Site	Future w/o 2026	Future w/o 2031	Phase 1 Total Ext. Site Trips	Phase 2 Total Ext. Site Trips	2026 Connector Adjust.	2031 Connector Adjust.	Future w/ 2026	Future w/ 2031
EBL	237	279	299							279	299	0	0			279	299
EBT	8	9	10							9	10	0	0			9	10
WBT	14	16	18							16	18	0	0			16	18
WBR	96	113	121							113	121	0	32	-54	-58	91	95
SBL	151	178	190							178	190	0	34	-89	-95	123	130
SBR	226	266	285							266	285	0	0			266	285

Intersection:		Fairview St & Lisburn Road															
	SAT Existing	Base 2026	Base 2031	BG Dev. - Kensington	BG. Dev. - Ashton (Netherby)	BG. Dev. - Mentzer Farm	BG. Dev. - Morgan's Crossing & Jefferson Court II	BG. Dev. - Parkview at Boiling Springs	Hardee's Site	Future w/o 2026	Future w/o 2031	Phase 1 Total Ext. Site Trips	Phase 2 Total Ext. Site Trips	2026 Connector Adjust.	2031 Connector Adjust.	Future w/ 2026	Future w/ 2031
WBL	0	0	0							0	0	0	0			0	0
WBR	0	0	0							0	0	0	0			0	0
NBT	161	189	203							189	203	0	32	-54	-58	168	177
NBR	1	1	1							1	1	0	0			1	1
SBL	2	2	3							2	3	0	0			2	3
SBT	168	198	212							198	212	0	34	-89	-95	143	151

Intersection:		York Road (SR 0074) & I-81 SB On-Ramp															
	SAT Existing	Base 2026	Base 2031	BG Dev. - Kensington	BG. Dev. - Ashton (Netherby)	BG. Dev. - Mentzer Farm	BG. Dev. - Morgan's Crossing & Jefferson Court II	BG. Dev. - Parkview at Boiling Springs	Hardee's Site	Future w/o 2026	Future w/o 2031	Phase 1 Total Ext. Site Trips	Phase 2 Total Ext. Site Trips	2026 Connector Adjust.	2031 Connector Adjust.	Future w/ 2026	Future w/ 2031
EBT	465	547	586							547	586	6	17			565	603
EBR	195	230	246							230	246	0	0			230	246
WBL	346	407	436							407	436	24	34			441	470
WBT	641	754	808							754	808	7	16			771	824

Intersection:		York Road (SR 0074) & I-81 NB Off-Ramp																
		SAT Existing	Base 2026	Base 2031	BG Dev. - Kensington	BG. Dev. - Ashton (Netherby)	BG. Dev. - Mentzer Farm	BG. Dev. - Morgan's Crossing & Jefferson Court II	BG. Dev. - Parkview at Boiling Springs	Hardee's Site	Future w/o 2026	Future w/o 2031	Phase 1 Total Ext. Site Trips	Phase 2 Total Ext. Site Trips	2026 Connector Adjust.	2031 Connector Adjust.	Future w/ 2026	Future w/ 2031
EBT		453	533	571							533	571	6	17			550	588
WBT		846	996	1066							996	1066	31	50			1046	1116
NBL		133	157	168							157	168	0	0			157	168
NBR		323	380	407							380	407	23	37			417	444

Intersection:		York Road (SR 0074) & Westminster Road															
	SAT Existing	Base 2026	Base 2031	BG Dev. - Kensington	BG. Dev. - Ashton (Netherby)	BG. Dev. - Mentzer Farm	BG. Dev. - Morgan's Crossing & Jefferson Court II	BG. Dev. - Parkview at Boiling Springs	Hardee's Site	Future w/o 2026	Future w/o 2031	Phase 1 Total Ext. Site Trips	Phase 2 Total Ext. Site Trips	2026 Connector Adjust.	2031 Connector Adjust.	Future w/ 2026	Future w/ 2031
EBL	296	348	373							348	373	0	0			348	373
EBT	247	291	311							291	311	29	54			344	365
EBR	165	194	208							194	208	0	0			194	208
WBL	7	8	9							8	9	0	0			8	9
WBT	275	324	347							324	347	31	50			374	397
WBR	43	51	54							51	54	0	0			51	54
NBL	295	347	372							347	372	0	0			347	372
NBT	108	127	136							127	136	0	0			127	136
NBR	7	8	9							8	9	0	0			8	9
SBL	53	62	67							62	67	0	0			62	67
SBT	98	115	123							115	123	0	0			115	123
SBR	313	368	394							368	394	0	0			368	394

Intersection:		York Road (SR 0074) & Fairview Street															
	SAT Existing	Base 2026	Base 2031	BG Dev. - Kensington	BG. Dev. - Ashton (Netherby)	BG. Dev. - Mentzer Farm	BG. Dev. - Morgan's Crossing & Jefferson Court II	BG. Dev. - Parkview at Boiling Springs	Hardee's Site	Future w/o 2026	Future w/o 2031	Phase 1 Total Ext. Site Trips	Phase 2 Total Ext. Site Trips	2026 Connector Adjust.	2031 Connector Adjust.	Future w/ 2026	Future w/ 2031
EBL	30	35	38							35	38	0	22	-18	-19	39	40
EBT	293	345	369							345	369	29	32	18	19	395	420
EBR	13	15	16							15	16	0	0			15	16
WBL	3	4	4							4	4	6	4			8	8
WBT	291	343	367							343	367	31	30			373	397
WBR	62	73	78							73	78	0	2	-36	-39	39	41
NBL	17	20	21							20	21	0	0			20	21
NBT	58	68	73							68	73	0	4			73	77
NBR	8	9	10							9	10	5	4			14	14
SBL	76	89	96							89	96	0	2	-39	-42	52	55
SBT	71	84	89							84	89	0	4	-37	-39	51	54
SBR	24	28	30							28	30	0	20	-12	-13	36	37

Intersection:		York Road (SR 0074) & Mayapple Drive															
	SAT Existing	Base 2026	Base 2031	BG Dev. - Kensington	BG. Dev. - Ashton (Netherby)	BG. Dev. - Mentzer Farm	BG. Dev. - Morgan's Crossing & Jefferson Court II	BG. Dev. - Parkview at Boiling Springs	Hardee's Site	Future w/o 2026	Future w/o 2031	Phase 1 Total Ext. Site Trips	Phase 2 Total Ext. Site Trips	2026 Connector Adjust.	2031 Connector Adjust.	Future w/ 2026	Future w/ 2031
EBT	337	397	425							397	425	14	24			421	449
EBR	45	53	57							53	57	3	2			55	59
WBL	19	22	24							22	24	0	0			22	24
WBT	339	399	427							399	427	13	26			425	453
NBL	19	22	24							22	24	3	2			25	26
NBR	24	28	30							28	30	0	0			28	30

Intersection:		York Road (SR 0074) & East Springsville Road/Shughart Road															
	SAT Existing	Base 2026	Base 2031	BG Dev. - Kensington	BG. Dev. - Ashton (Netherby)	BG. Dev. - Mentzer Farm	BG. Dev. - Morgan's Crossing & Jefferson Court II	BG. Dev. - Parkview at Boiling Springs	Hardee's Site	Future w/o 2026	Future w/o 2031	Phase 1 Total Ext. Site Trips	Phase 2 Total Ext. Site Trips	2026 Connector Adjust.	2031 Connector Adjust.	Future w/ 2026	Future w/ 2031
EBL	71	84	89							84	89	1	2			86	91
EBT	283	333	357							333	357	10	20			353	377
EBR	43	51	54							51	54	2	2			53	56
WBL	37	44	47							44	47	0	0			44	47
WBT	304	358	383							358	383	10	22			379	405
WBR	0	0	0							0	0	0	0			0	0
NBL	35	41	44							41	44	2	2			43	46
NBR	23	27	29							27	29	0	0			27	29
SBL	0	0	0							0	0	0	0			0	0
SBR	102	120	129							120	129	1	2			122	131

Intersection:		Forge Road (SR 2003) & Westminster Drive															
	SAT Existing	Base 2026	Base 2031	BG Dev. - Kensington	BG. Dev. - Ashton (Netherby)	BG. Dev. - Mentzer Farm	BG. Dev. - Morgan's Crossing & Jefferson Court II	BG. Dev. - Parkview at Boiling Springs	Hardee's Site	Future w/o 2026	Future w/o 2031	Phase 1 Total Ext. Site Trips	Phase 2 Total Ext. Site Trips	2026 Connector Adjust.	2031 Connector Adjust.	Future w/ 2026	Future w/ 2031
EBL	1	1	1							1	1	0	0			1	1
EBT	30	35	38							35	38	0	0			35	38
EBR	5	6	6							6	6	0	0			6	6
WBL	266	313	335							313	335	0	0			313	335
WBT	33	39	42							39	42	0	0			39	42
WBR	7	8	9							8	9	0	0			8	9
NBL	1	1	1							1	1	0	0			1	1
NBT	11	13	14							13	14	0	0			13	14
NBR	296	348	373							348	373	0	0			348	373
SBL	26	31	33							31	33	0	0			31	33
SBT	12	14	15							14	15	0	0			14	15
SBR	1	1	1							1	1	0	0			1	1

Intersection:		Forge Road (SR 2003) & Fairview Street															
	SAT Existing	Base 2026	Base 2031	BG Dev. - Kensington	BG. Dev. - Ashton (Netherby)	BG. Dev. - Mentzer Farm	BG. Dev. - Morgan's Crossing & Jefferson Court II	BG. Dev. - Parkview at Boiling Springs	Hardee's Site	Future w/o 2026	Future w/o 2031	Phase 1 Total Ext. Site Trips	Phase 2 Total Ext. Site Trips	2026 Connector Adjust.	2031 Connector Adjust.	Future w/ 2026	Future w/ 2031
EBL	9	11	11							11	11	0	0			11	11
EBT	12	14	15							14	15	3	0			14	15
EBR	11	13	14							13	14	0	0			13	14
WBL	39	46	49							46	49	2	4			50	53
WBT	13	15	16							15	16	3	8			24	25
WBR	11	13	14							13	14	0	0			13	14
NBL	17	20	21							20	21	0	0			20	21
NBT	297	350	374							350	374	0	0			350	374
NBR	33	39	42							39	42	2	4			43	46
SBL	10	12	13							12	13	0	0			12	13
SBT	301	354	379							354	379	0	0			354	379
SBR	5	6	6							6	6	0	0			6	6

Intersection:		Trindle Road (SR 0641) / Rose Business Park Connector / Pharmacy Tract															
	SAT Existing	Base 2026	Base 2031	BG Dev. - Kensington	BG. Dev. - Ashton (Netherby)	BG. Dev. - Mentzer Farm	BG. Dev. - Morgan's Crossing & Jefferson Court II	BG. Dev. - Parkview at Boiling Springs	Hardee's Site	Future w/o 2026	Future w/o 2031	Phase 1 Total Ext. Site Trips	Phase 2 Total Ext. Site Trips	2026 Connector Adjust.	2031 Connector Adjust.	Future w/ 2026	Future w/ 2031
EBL	0	0	0							0	0	19	0			0	0
EBT	327	385	412							385	412	0	0			385	412
EBR	0	0	0							0	0	20	37	62	67	99	103
WBL	0	0	0							0	0	10	54	26	28	80	82
WBT	369	434	465							434	465	0	0	-26	-28	408	437
WBR	0	0	0							0	0	9	0			0	0
NBL	0	0	0							0	0	21	34	45	48	79	83
NBT	0	0	0							0	0	24	0			0	0
NBR	0	0	0							0	0	10	50	9	10	59	60
SBL	0	0	0							0	0	9	0			0	0
SBT	0	0	0							0	0	26	0			0	0
SBR	0	0	0							0	0	20	0			0	0

Intersection:		York Road (SR 0074) / Heritage Village Connector															
	SAT Existing	Base 2026	Base 2031	BG Dev. - Kensington	BG. Dev. - Ashton (Netherby)	BG. Dev. - Mentzer Farm	BG. Dev. - Morgan's Crossing & Jefferson Court II	BG. Dev. - Parkview at Boiling Springs	Hardee's Site	Future w/o 2026	Future w/o 2031	Phase 1 Total Ext. Site Trips	Phase 2 Total Ext. Site Trips	2026 Connector Adjust.	2031 Connector Adjust.	Future w/ 2026	Future w/ 2031
EBL	0	0	0							0	0	35	37	18	19	54	55
EBT	377	444	475							444	475	0	2			446	477
WBT	356	419	449							419	449	0	2	-36	-39	385	412
WBR	0	0	0							0	0	16	26	36	39	62	65
SBL	0	0	0							0	0	17	24	49	53	73	77
SBR	0	0	0							0	0	36	34	39	42	74	76

Intersection:		Lisburn Road / Proposed H.V. - Rose Business Park Connector															
	SAT Existing	Base 2026	Base 2031	BG Dev. - Kensington	BG. Dev. - Ashton (Netherby)	BG. Dev. - Mentzer Farm	BG. Dev. - Morgan's Crossing & Jefferson Court II	BG. Dev. - Parkview at Boiling Springs	Hardee's Site	Future w/o 2026	Future w/o 2031	Phase 1 Total Ext. Site Trips	Phase 2 Total Ext. Site Trips	2026 Connector Adjust.	2031 Connector Adjust.	Future w/ 2026	Future w/ 2031
EBL	0	0	0							0	0	0	0			0	0
EBT	3	4	4							4	4	0	0			4	4
EBR	0	0	0							0	0	0	0			0	0
WBL	0	0	0							0	0	0	0			0	0
WBT	0	0	0							0	0	0	0			0	0
WBR	0	0	0							0	0	0	0			0	0
NBL	0	0	0							0	0	0	0			0	0
NBT	0	0	0							0	0	24	86	54	58	141	144
NBR	0	0	0							0	0	0	0			0	0
SBL	0	0	0							0	0	0	0			0	0
SBT	0	0	0							0	0	26	92	89	95	181	188
SBR	0	0	0							0	0	0	0			0	0

Intersection:		Fairview Street / Heritage Village Driveway															
	SAT Existing	Base 2026	Base 2031	BG Dev. - Kensington	BG. Dev. - Ashton (Netherby)	BG. Dev. - Mentzer Farm	BG. Dev. - Morgan's Crossing & Jefferson Court II	BG. Dev. - Parkview at Boiling Springs	Hardee's Site	Future w/o 2026	Future w/o 2031	Phase 1 Total Ext. Site Trips	Phase 2 Total Ext. Site Trips	2026 Connector Adjust.	2031 Connector Adjust.	Future w/ 2026	Future w/ 2031
	WBL	0	0	0						0	0	0	26			26	26
	WBR	0	0	0						0	0	0	32			32	32
	NBT	162	191	204						191	204	0	0	-54	-58	137	146
	NBR	0	0	0						0	0	0	28			28	28
	SBL	0	0	0						0	0	0	34			34	34
	SBT	168	198	212						198	212	0	0	-89	-95	109	117

Phase I - Sat. Peak Hour

Intersection:		E. High Street(SR 0641) & York Road (SR 0074)															
Turning Movement	New External Assignment				Pass-by Adjustment				New External Site Trips				Pass -By Trips			Totals	
	Heritage Village / Rose Business Park Site		Pharm. Tract		Heritage Village / Rose Business Park Site		Pharm. Tract		Heritage Village / Rose Business Park Site		Pharm. Tract		New Site Trip Total	Pass-by Total	Grand Total		
	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT					
EBT	7%	0%	7%	0%	0%	0%	0%	4	0	4	0	0	0	8	0	8	
EBR	6%	0%	6%	0%	0%	0%	0%	3	0	3	0	0	0	6	0	6	
WBL	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	
WBT	0%	7%	0%	7%	0%	0%	0%	0	4	0	4	0	0	8	0	8	
NBL	0%	6%	0%	6%	0%	0%	0%	0	3	0	3	0	0	7	0	7	
NBR	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	

Intersection:	York Road (SR 0074) & Giant Lane/Carlisle Plaza Mall																	
	New External Assignment				Pass-by Adjustment				New External Site Trips				Pass -By Trips			Totals		
	Heritage Village / Rose Business Park Site		Pharm. Tract		Heritage Village / Rose Business Park Site		Pharm. Tract		Heritage Village / Rose Business Park Site		Pharm. Tract		Heritage Village / Rose Business Park Site		New Site Trip Total	Pass-by Total	Grand Total	
Turning Movement	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT				
	EBL	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0
	EBT	6%	0%	6%	0%	0%	0%	3	0	3	0	0	0	0	6	0	6	6
	EBR	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0
	WBL	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0
	WBT	0%	6%	0%	6%	0%	0%	0	3	0	3	0	0	0	7	0	7	7
	WBR	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0
	NBL	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0
	NBT	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0
	NBR	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0
	SBL	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0
	SBT	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0
	SBR	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0

Intersection:		Trindle Road (SR 0641) & Horners Road																
Turning Movement		New External Assignment				Pass-by Adjustment				New External Site Trips				Pass-By Trips			Totals	
		Heritage Village / Rose Business Park Site		Pharm. Tract		Heritage Village / Rose Business Park Site		Pharm. Tract		Heritage Village / Rose Business Park Site		Pharm. Tract		New Site Trip Total	Pass-by Total	Grand Total		
		IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT					
EBL		0%	1%	0%	1%	0%	0%	0%	0%	0	1	0	1	0	0	1	0	1
EBT		0%	16%	0%	16%	0%	0%	0%	0%	0	9	0	9	0	0	18	0	18
WBT		16%	0%	16%	0%	0%	0%	0%	0%	9	0	8	0	0	0	17	0	17
WBR		0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0
SBL		0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0
SBR		1%	0%	1%	0%	0%	0%	0%	0%	1	0	1	0	0	0	1	0	1

Intersection:		Trindle Road (SR 0641) & Middlesex Road																		
		New External Assignment				Pass-by Adjustment				New External Site Trips				Pass-By Trips			Totals			
Turning Movement		Heritage Village / Rose Business Park Site		Pharm. Tract		Heritage Village / Rose Business Park Site		Pharm. Tract		Heritage Village / Rose Business Park Site		Pharm. Tract		Heritage Village / Rose Business Park Site		Pharm. Tract		New Site Trip Total	Pass-by Total	Grand Total
		IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT			
EBL		0%	4%	0%	4%	0%	0%	0%	0%	0	2	0	2	0	0	0	0	5	0	5
EBT		0%	12%	0%	12%	0%	0%	0%	0%	0	7	0	7	0	0	0	0	14	0	14
EBR		0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0
WBL		0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0
WBT		12%	0%	12%	0%	0%	0%	0%	0%	7	0	6	0	0	0	0	0	13	0	13
WBR		0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0
NBL		0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0
NBT		0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0
NBR		0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0
SBL		0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0
SBT		0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0
SBR		4%	0%	4%	0%	0%	0%	0%	0%	2	0	2	0	0	0	0	0	4	0	4

Intersection:		Army Heritage Drive & Westminster Drive/Fairview St															
Turning Movement		New External Assignment				Pass-by Adjustment				New External Site Trips				Pass -By Trips		Totals	
		Heritage Village / Rose Business Park Site		Pharm. Tract		Heritage Village / Rose Business Park Site		Pharm. Tract		Heritage Village / Rose Business Park Site		Pharm. Tract		New Site Trip Total	Pass-by Total	Grand Total	
		IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT		
EBL		0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	
EBT		0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	
WBT		0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	
WBR		0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	
SBL		0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	
SBR		0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	

Intersection:		Fairview St & Lisburn Road															
Turning Movement		New External Assignment				Pass-by Adjustment				New External Site Trips				Pass -By Trips		Totals	
		Heritage Village / Rose Business Park Site		Pharm. Tract		Heritage Village / Rose Business Park Site		Pharm. Tract		Heritage Village / Rose Business Park Site		Pharm. Tract		New Site Trip Total	Pass-by Total	Grand Total	
		IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT		
WBR		0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	
WBL		0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	
NBT		0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	
NBR		0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	
SBL		0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	
SBT		0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	

Intersection:		York Road (SR 0074) & I-81 SB On-Ramp																		
		New External Assignment				Pass-by Adjustment				New External Site Trips				Pass-By Trips		Totals				
Turning Movement		Heritage Village / Rose Business Park Site		Pharm. Tract		Heritage Village / Rose Business Park Site		Pharm. Tract		Heritage Village / Rose Business Park Site		Pharm. Tract		Heritage Village / Rose Business Park Site		Pharm. Tract		New Site Trip Total	Pass-by Total	Grand Total
		IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT			
		IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT			
EBT		6%	0%	6%	0%	0%	0%	0%	0%	3	0	3	0	0	0	0	0	6	0	6
EBR		0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0
WBL		0%	21%	0%	21%	0%	0%	0%	0%	0	12	0	12	0	0	0	0	24	0	24
WBT		0%	6%	0%	6%	0%	0%	0%	0%	0	3	0	3	0	0	0	0	7	0	7

York Road (SR 0074) & I-81 NB Off-Ramp														
Turning Movement	New External Assignment					Pass-by Adjustment					New External Site Trips			
	Heritage Village / Rose Business Park Site		Pharm. Tract			Heritage Village / Rose Business Park Site		Pharm. Tract			Heritage Village / Rose Business Park Site		Pharm. Tract	
	IN	OUT	IN	OUT		IN	OUT	IN	OUT		IN	OUT	IN	OUT
EBT	6%	0%	6%	0%	0%	0%	0%	0%	0%	0	3	0	0	0
WBT	0%	27%	0%	27%	0%	0%	0%	0%	0%	0	16	0	0	0
NBL	0%	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0
NBR	21%	0%	21%	0%	0%	0%	0%	0%	0%	12	0	0	0	0
											New Site Trip Total		Pass-by Total	
											6		0	
											31		0	
											0		0	
											23		0	
											23		0	

York Road (SR 0074) & Westminster Road																
Intersection:	New External Assignment				Pass-by Adjustment				New External Site Trips				Pass-By Trips		Totals	
	Heritage Village / Rose Business Park Site		Pharm. Tract		Heritage Village / Rose Business Park Site		Pharm. Tract		Heritage Village / Rose Business Park Site		Pharm. Tract		New Site Trip Total	Pass-by Total	Grand Total	
	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT				
	Turning Movement	EBL	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0
EBT		27%	0%	27%	0%	0%	0%	15	0	14	0	0	29	0	29	
EBR		0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	
WBL		0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	
WBT		0%	27%	0%	27%	0%	0%	0	16	0	15	0	31	0	31	
WBR		0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	
NBL		0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	
NBT		0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	
NBR	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	
SBL	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	
SBT	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	
SBR	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	

Intersection:		York Road (SR 0074) & East Springfield Road/Shughart Road																		
Turning Movement		New External /Assignment				Pass-by Adjustment				New External Site Trips				Pass -By Trips				Totals		
		Heritage Village / Rose Business Park Site		Pharm. Tract		Heritage Village / Rose Business Park Site		Pharm. Tract		Heritage Village / Rose Business Park Site		Pharm. Tract		Heritage Village / Rose Business Park Site		Pharm. Tract		New Site Trip Total	Pass-by Total	Grand Total
		IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT			
EBL		0%	1%	0%	1%	0%	0%	0%	0%	0	1	0	1	0	0	0	0	1	0	1
EBT		0%	9%	0%	9%	0%	0%	0%	0%	0	5	0	5	0	0	0	0	10	0	10
EBR		0%	2%	0%	2%	0%	0%	0%	0%	0	1	0	1	0	0	0	0	2	0	2
WBL		0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0
WBT		9%	0%	9%	0%	0%	0%	0%	0%	5	0	5	0	0	0	0	0	10	0	10
WBR		0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0
NBL		2%	0%	2%	0%	0%	0%	0%	0%	1	0	1	0	0	0	0	0	2	0	2
NBR		0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0
SBL		0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0
SBR		1%	0%	1%	0%	0%	0%	0%	0%	1	0	1	0	0	0	0	0	1	0	1

Intersection:		Forge Road (SR 2003) & Westminster Drive																		
Turning Movement		New External Assignment				Pass-by Adjustment				New External Site Trips				Pass-By Trips				Totals		
		Heritage Village / Rose Business Park Site		Pharm. Tract		Heritage Village / Rose Business Park Site		Pharm. Tract		Heritage Village / Rose Business Park Site		Pharm. Tract		Heritage Village / Rose Business Park Site		Pharm. Tract		New Site Trip Total	Pass-by Total	Grand Total
EBL		IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	0	0	0
EBT		IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	0	0	0
EBR		IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	0	0	0
WBL		IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	0	0	0
WBT		IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	0	0	0
WBR		IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	0	0	0
NBL		IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	0	0	0
NBT		IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	0	0	0
NBR		IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	0	0	0
SBL		IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	0	0	0
SBT		IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	0	0	0
SBR		IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	0	0	0

Forge Road (SR 2003) & Fairview Street														
Intersection:	New External Assignment					Pass-by Adjustment					New External Site Trips			
	Heritage Village / Rose Business Park Site		Pharm. Tract		Heritage Village / Rose Business Park Site		Pharm. Tract		Heritage Village / Rose Business Park Site		Pharm. Tract		Pharm. Village / Rose Business Park Site	
	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT
EBL	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0
EBT	3%	0%	3%	0%	0%	0%	0%	0%	2	0	2	0	0	0
EBR	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0
WBL	0%	2%	0%	2%	0%	0%	0%	0%	0	1	0	1	0	0
WBT	0%	3%	0%	3%	0%	0%	0%	0%	0	2	0	2	0	0
WBR	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0
NBL	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0
NBT	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0
NBR	2%	0%	2%	0%	0%	0%	0%	0%	1	0	1	0	0	0
SBL	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0
SBT	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0
SBR	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0

Trindle Road (SR 0641) / Rose Business Park Connector / Pharm. Tract Driveway														
Intersection:	New External Assignment					Pass-by Adjustment					New External Site Trips			
	Heritage Village / Rose Business Park Site		Pharm. Tract		Heritage Village / Rose Business Park Site		Pharm. Tract		Heritage Village / Rose Business Park Site		Pharm. Tract		Pharm. Village / Rose Business Park Site	
	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT
EBL	0%	0%	36%	0%	0%	0%	47%	0%	0	0	19	0	0	0
EBT	0%	0%	0%	0%	-23%	0%	-47%	0%	0	0	0	0	0	0
EBR	36%	0%	0%	0%	23%	0%	0%	0%	20	0	0	0	0	0
WBL	17%	0%	0%	0%	26%	0%	0%	0%	10	0	0	0	0	0
WBT	0%	0%	0%	0%	-26%	0%	-53%	0%	0	0	0	0	0	0
WBR	0%	0%	17%	0%	0%	0%	53%	0%	0	0	9	0	0	0
NBL	0%	36%	0%	0%	0%	26%	0%	0%	0	21	0	0	0	0
NBT	0%	0%	47%	0%	0%	0%	0%	0%	0	0	24	0	0	0
NBR	0%	17%	0%	0%	0%	23%	0%	0%	0	10	0	0	0	0
SBL	0%	0%	0%	17%	0%	0%	0%	47%	0	0	9	0	0	9
SBT	0%	0%	0%	47%	0%	0%	0%	0%	0	0	0	0	0	0
SBR	0%	0%	0%	36%	0%	0%	0%	53%	0	0	0	0	0	0

Phase I - Sat. Peak Hour

Intersection:		York Road (SR 0074) / Heritage Village Connector													
Turning Movement	New External Assignment				Pass-by Adjustment				New External Site Trips				Pass - By Trips		
	Heritage Village / Rose Business Park Site		Pharm. Tract		Heritage Village / Rose Business Park Site		Pharm. Tract		Heritage Village / Rose Business Park Site		Pharm. Tract		Heritage Village / Rose Business Park Site		New Site Trip Total
	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	
EBL	32%	0%	32%	0%	0%	0%	0%	0%	18	0	17	0	0	0	35
EBT	0%	0%	0%	0%	-26%	0%	0%	0%	0	0	0	0	0	0	0
WBT	0%	0%	0%	0%	-25%	0%	0%	0%	0	0	0	0	0	0	0
WBR	15%	0%	15%	0%	25%	0%	0%	0%	8	0	8	0	0	0	16
SBL	0%	15%	0%	15%	0%	26%	0%	0%	0	9	0	8	0	0	17
SBR	0%	32%	0%	32%	0%	25%	0%	0%	0	19	0	18	0	0	36

Intersection:		Lisburn Road / Proposed H.V. - Rose Business Park Connector													
Turning Movement	New External Assignment				Pass-by Adjustment				New External Site Trips				Pass - By Trips		
	Heritage Village / Rose Business Park Site		Pharm. Tract		Heritage Village / Rose Business Park Site		Pharm. Tract		Heritage Village / Rose Business Park Site		Pharm. Tract		Heritage Village / Rose Business Park Site		New Site Trip Total
	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	
EBL	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0
EBT	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0
EBR	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0
WBL	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0
WBT	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0
WBR	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0
NBL	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0
NBT	0%	0%	47%	0%	0%	0%	0%	0%	0	0	24	0	0	0	24
NBR	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0
SBL	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0
SBT	0%	0%	0%	47%	0%	0%	0%	0%	0	0	0	26	0	0	26
SBR	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0

Phase I - Sat. Peak Hour

Site Trip Generation:		
Access Point	H.V. / Rose	Pharm. Tract
New Site Trips		
Inbound:	56	52
Outbound:	58	55
Pass-by Trips		
Inbound:	0	0
Outbound:	0	0
Total:	114	107

Phase II - Sat. Peak Hour

Turning Movement	E. High Street(SR 0641) & York Road (SR 0074)										Totals					
	New External Assignment - Commercial / Indust.				Pass-by Adjustment				New External Site Trips				Pass-By Trips			
	Heritage Village / Rose Business Park Site		Pharm. Tract		Heritage Village / Rose Business Park Site		Pharm. Tract		Heritage Village - Residential		Pharm. Tract		Heritage Village / Rose Business Park Site		Pharm. Tract	
	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT
	7%	0%	7%	0%	0%	0%	0%	0%	0%	15	0	0	0	0	15	0
EBT																
FBR	6%	0%	6%	0%	0%	0%	0%	0%	0%	17	0	0	0	0	17	0
WBL	0%	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0
WBT	0%	7%	0%	7%	0%	0%	0%	0%	0%	14	0	0	0	0	14	0
NBL	0%	6%	0%	6%	0%	0%	0%	0%	0%	16	0	0	0	0	16	0
NBR	0%	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0

Turning Movement	York Road (SR 0074) & Gint Lane/Carlisle Plaza Mall										Totals					
	New External Assignment - Commercial / Indust.				Pass-by Adjustment				New External Site Trips				Pass-By Trips			
	Heritage Village / Rose Business Park Site		Pharm. Tract		Heritage Village / Rose Business Park Site		Pharm. Tract		Heritage Village - Residential		Pharm. Tract		Heritage Village / Rose Business Park Site		Pharm. Tract	
	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT
	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0
EBL																
EBT	6%	0%	6%	0%	0%	0%	0%	0%	0	17	0	0	0	0	17	0
FBR	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0
WBL	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0
WBT	0%	6%	0%	6%	0%	0%	0%	0%	0	16	0	0	0	0	16	0
WBR	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0
NBL	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0
NBT	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0
NBR	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0
SBL	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0
SBT	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0
SBR	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0

Intersection:		E. High Street (SR 0641) & Carlisle Plaza Mall/Shaffner Avenue																								
Turning Movement	New External Assignment - Commercial / Indust.				New External Assignment - Residential				Pass-by Adjustment				New External Site Trips								Pass -By Trips				Totals	
	Heritage Village / Rose Business Park Site		Pharm. Tract		Heritage Village		Heritage Village - Residential		Heritage Village / Rose Business Park Site		Pharm. Tract		Heritage Village - Residential		Heritage Village / Rose Business Park Site		Pharm. Tract		Heritage Village - Residential		New Site Trip Total	Pass-by Total	Grand Total			
	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT						
	EBL	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0			
	EBT	7%	0%	7%	0%	7%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	15	0	15			
	EBR	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0			
	WBL	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0			
	WBT	0%	7%	0%	7%	0%	7%	0%	0%	0%	0%	0%	0%	0%	0%	14	0	0	0	0	14	0	14			
	WBR	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0			
	NBL	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0			
	NBT	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0			
	NBR	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0			
	SBL	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0			
	SBT	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0			
	SBR	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0			

[illegible]

Intersection:		Trindle Road (SR 0641) & I-81 SB Off-Ramp																																	
Turning Movement	New External Assignment - Commercial / Indust.				New External Assignment - Residential				Pass-by Adjustment				New External Site Trips								Pass-By Trips				Totals										
	Heritage Village / Rose Business Park Site				Heritage Village / Rose Business Park Site				Heritage Village / Rose Business Park Site				Heritage Village - Residential				Heritage Village - Residential				Heritage Village / Rose Business Park Site				Pharm. Tract				Pharm. Tract				New Site Trip Total	Pass-by Total	Grand Total
	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT			
	EBT	7%	0%	7%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	15	0	0	15				
WBT	0%	7%	0%	7%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	14	0	0	0	0	0	0	0	0	14	0	0	14					
SBL	24%	0%	24%	0%	21%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	45	0	0	0	0	0	0	0	0	45	0	0	45					
SBR	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0	0	0					

Intersection:		Trindle Road (SR 0641) & I-81 NB On-Ramp																						
Turning Movement	New External Assignment - Commercial / Indust.				New External Assignment - Residential				Pass-by Adjustment				New External Site Trips						Pass-By Trips				Totals	
	Heritage Village / Rose Business Park Site		Pharm. Tract		Heritage Village / Rose Business Park Site		Pharm. Tract		Heritage Village - Residential		Heritage Village / Rose Business Park Site		Pharm. Tract		Heritage Village - Residential		Heritage Village / Rose Business Park Site		Pharm. Tract		New Site Trip Total	Pass-by Total	Grand Total	
	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT						
	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT						
	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT						
EBT	31%	0%	31%	0%	28%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	60	0	60	
EBR	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	
WBL	0%	24%	0%	24%	0%	21%	0%	0%	0%	0%	0%	0%	0%	0%	0%	42	0	0	0	0	42	0	42	
WBT	0%	7%	0%	7%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	14	0	0	0	0	14	0	14	

Intersection:	Trindle Road (SR 0641) & Army Heritage Drive																						
	New External Assignment - Commercial / Indust.				New External Assignment - Residential				Pass-by Adjustment				New External Site Trips				Pass By Trips				Totals		
	Heritage Village / Rose Business Park Site		Pharm. Tract		Heritage Village		Heritage Village - Residential		Heritage Village / Rose Business Park Site		Pharm. Tract		Heritage Village - Residential		Heritage Village / Rose Business Park Site		Pharm. Tract		Heritage Village - Residential		New Site Trip Total	Pass-by Total	Grand Total
	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT			
	Turning Movement																						
EBL	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0
EBT	31%	0%	31%	0%	14%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	30	0	30
EBR	0%	0%	0%	0%	14%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	30	0	30
WBL	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0
WBT	0%	31%	0%	31%	0%	14%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	28	0	28
WBR	0%	5%	0%	5%	0%	3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	6	0	6
NBL	0%	0%	0%	0%	0%	14%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	28	0	28
NBT	0%	0%	0%	0%	0%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	4	0	4
NBR	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0
SBL	5%	0%	5%	0%	3%	0%	0%	0%	0%	0%	0%	0%	0%	6	0	0	0	0	0	0	6	0	6
SBT	0%	0%	0%	0%	2%	0%	0%	0%	0%	0%	0%	0%	0%	4	0	0	0	0	0	0	4	0	4
SBR	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0

Intersection:	Trindle Road (SR 0641) & Horners Road																									
	New External Assignment - Commercial / Indust.				New External Assignment - Residential				Pass-by Adjustment				New External Site Trips				Pass -By Trips				Totals					
	Heritage Village / Rose Business Park Site		Pharm. Tract		Heritage Village - Residential		Pharm. Tract		Heritage Village - Residential		Heritage Village / Rose Business Park Site		Pharm. Tract		Heritage Village - Residential		Heritage Village / Rose Business Park Site		Pharm. Tract		Heritage Village - Residential		New Site Trip Total	Pass-by Total	Grand Total	
Turning Movement	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT
EBL	0%	1%	0%	1%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2
	0%	16%	0%	16%	0%	24%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	48	
	16%	0%	16%	0%	24%	0%	0%	0%	0%	0%	0%	0%	0%	0%	52	0	0	0	0	0	0	0	0	0	52	
	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0	
SBL	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0	0
	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0	0	0
	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0	0	0
	1%	0%	1%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	2	0	0	0	0	0	0	0	0	0	0	2	2

Intersection:	Army Heritage Drive & Westminster Drive/Fairview St																								
	New External Assignment - Commercial / Indust.				New External Assignment - Residential				Pass-by Adjustment				New External Site Trips				Pass-By Trips				Totals				
	Heritage Village / Rose Business Park Site		Pharm. Tract		Heritage Village - Residential		Heritage Village - Rose Business Park Site		Pharm. Tract		Heritage Village - Residential		Heritage Village / Rose Business Park Site		Pharm. Tract		Heritage Village - Residential		New Site Trip Total		Pass-by Total		Grand Total		
	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	
	EBL	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0
Turning Movement	EBT	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0
	WBT	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0
	WBR	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0
	SBL	0%	0%	0%	0%	16%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	32	0	0	0	32	0	0	32	0
	SBR	0%	0%	0%	0%	16%	0%	0%	0%	0%	0%	0%	0%	0%	0%	34	0	0	0	34	0	0	34	0	
	SBR	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0

Forge Road (SR 2003) & Fairview Street

Trindle Road (SR 0641) / Rose Business Park Connector / Pharm. Tract Driveway

York Road (SR 0074) / Heritage Village Connector

Intersection:	York Road (SR 0074) / Heritage Village Connector																						
Turning Movement	New External Assignment - Commercial / Indust.				New External Assignment - Residential				Pass-by Adjustment				New External Site Trips				Pass-By Trips				Totals		
	Heritage Village / Rose Business Park Site		Pharm. Tract		Heritage Village		Heritage Village - Residential		Heritage Village / Rose Business Park Site		Pharm. Tract		Heritage Village - Residential		Heritage Village / Rose Business Park Site		Pharm. Tract		Heritage Village - Residential		New Site Trip Total	Grand Total	
	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT			
EBL	32%	0%	32%	0%	17%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	37	0	37
EFT	0%	0%	0%	0%	0%	1%	-26%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2	0	2
WBL	0%	0%	0%	0%	1%	0%	-25%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2	0	2
WBR	15%	0%	15%	0%	12%	0%	25%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	26	0	26
SBL	0%	0%	0%	15%	0%	12%	0%	26%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	24	0	24
SBR	0%	32%	0%	32%	0%	17%	0%	25%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	34	0	34

Lisburn Road / Proposed H.V. - Rose Business Park Connector

[illegible]

Fairview Street / Heritage Village Driveway

[illegible]

Phase II - Sat. Peak Hour

Site Trip Generation:			
Access Point	Site - Com. / Indust.	H.V. - Resid.	Pharm. Tract
New Site Trips			
Inbound:	0	215	0
Outbound:	0	201	0
Pass-by Trips			
Inbound:	0	0	0
Outbound:	0	0	0
Total:	0	416	0

ATTACHMENT 3

LOS / QUEUE TABLES



TABLE A: LEVEL OF SERVICE RESULTS

AM PEAK INTERSECTION		PERFORMANCE METRICS (2023-2024)															
		2026 WITHOUT DEVELOPMENT				2026 WITH DEVELOPMENT				2031 WITHOUT DEVELOPMENT				2031 WITH DEVELOPMENT			
		DELAY		LOS	DELAY		LOS	DELAY		LOS	DELAY		LOS	DELAY		LOS	
EAST HIGH STREET (SR 0641) AT YORK ROAD (SR 0074) {Signalized}	EB	T	8.2	A	9.1	A	9.4	A	10.4	B							
		R	0.0	A	0.0	A	0.0	A									
		A	8.2	A	9.1	A	9.4	A									
	WB	L	2.0	A	2.3	A	2.7	A	3.2	A							
		T	1.4	A	1.6	A	1.7	A	1.9	A							
		A	1.4	A	1.6	A	1.7	A	1.9	A							
	NB	LR	27.3	C	30.9	C	31.2	C	32.1	C							
		A	27.3	C	30.9	C	31.2	C	32.1	C							
		OVERALL	9.5	A	10.9	B	10.9	B	11.8	B							
	YORK ROAD (SR 0074) AT GIANT LANE / CARLISLE PLAZA MALL {Signalized}	EB	L	3.0	A	2.9	A	1.6	A	3.0	A						
TR			12.7	B	12.7	B	14.3	B	12.9	B							
A			12.0	B	11.9	B	13.3	B	12.1	B							
WB		L	3.1	A	3.1	A	3.2	A	3.2	A							
		TR	20.0	C	22.0	C	22.5	C	24.7	C							
		A	18.0	B	19.9	B	20.2	C	22.2	C							
NB		L	20.8	C	20.8	C	20.5	C	20.5	C							
		TR	12.3	B	12.3	B	12.0	B	12.0	B							
		A	12.8	B	12.8	B	12.5	B	12.5	B							
SB		L	27.9	C	27.9	C	27.1	C	28.2	C							
	TR	17.9	B	17.8	B	17.5	B	17.9	B								
	A	22.7	C	22.5	C	22.1	C	22.7	C								
OVERALL	15.9	B	16.8	B	17.3	B	18.1	B									

TABLE A: LEVEL OF SERVICE RESULTS																	
AM PEAK INTERSECTION		2026 WITHOUT DEVELOPMENT						2026 WITH DEVELOPMENT		2021 WITHOUT DEVELOPMENT				2021 WITH DEVELOPMENT			
		DELAY		LOS		DELAY		LOS		DELAY		LOS		DELAY		LOS	
EAST HIGH STREET (SR 0641) AT CARLISLE PLAZA MALL / SHAFFNER AVE {Signalized}	EB	L	2.0	A			2.0	A		2.1	A		2.1	A		2.1	A
		T	0.5	A			0.4	A		0.5	A		0.4	A		0.4	A
		R	0.1	A			0.1	A		0.1	A		0.1	A		0.1	A
		A	0.5	A			0.4	A		0.5	A		0.4	A		0.4	A
		L	1.7	A			2.2	A		2.3	A		2.2	A		2.2	A
		TR	1.0	A			0.9	A		1.0	A		1.0	A		1.0	A
	WB	A	1.0	A			1.0	A		1.1	A		1.1	A		1.1	A
		TL	47.0	D			56.7	E		47.2	D		56.5	E		56.5	E
		R	50.8	D			61.2	E		50.9	D		60.9	E		60.9	E
	NB	A	49.1	D			59.2	E		49.2	D		59.0	E		59.0	E
		LTR	45.8	D			55.3	E		46.1	D		55.1	E		55.1	E
		A	45.8	D			55.3	E		46.1	D		55.1	E		55.1	E
	OVERALL		3.9	A			4.4	A		4.0	A		4.4	A		4.4	A
EAST HIGH STREET (SR 0641) AT CVS ACCESS DRIVE / LOWE'S ACCESS DRIVE {Signalized}	EB	L	2.3	A			2.3	A		2.6	A		2.4	A		2.4	A
		T	0.8	A			0.8	A		0.9	A		0.8	A		0.8	A
		R	0.1	A			0.1	A		0.1	A		0.1	A		0.1	A
		A	0.8	A			0.7	A		0.9	A		0.8	A		0.8	A
		L	2.1	A			2.0	A		1.9	A		1.7	A		1.7	A
		TR	5.4	A			4.9	A		5.8	A		4.8	A		4.8	A
	WB	A	5.2	A			4.7	A		5.6	A		4.7	A		4.7	A
		TL	48.2	D			58.3	E		48.9	D		58.2	E		58.2	E
		R	49.5	D			59.5	E		49.4	D		59.3	E		59.3	E
	NB	A	48.8	D			58.8	E		49.1	D		58.6	E		58.6	E
		LTR	46.0	D			55.5	E		46.2	D		55.2	E		55.2	E
		A	46.0	D			55.5	E		46.2	D		55.2	E		55.2	E
	OVERALL		5.3	A			5.6	A		5.6	A		5.6	A		5.6	A

TABLE A: LEVEL OF SERVICE RESULTS																
AM PEAK INTERSECTION																
		2026 WITHOUT DEVELOPMENT			2026 WITH DEVELOPMENT			2031 WITHOUT DEVELOPMENT			2031 WITH DEVELOPMENT					
		DELAY	LOS		DELAY	LOS		DELAY	LOS		DELAY	LOS				
TRINDLE ROAD (SR 0641) AT I-81 SOUTHBOUND OFF- RAMP {Signalized}	EB	LT	9.1	A		9.0	A		10.4	B		10.7	B			
		A	9.1	A		9.0	A		10.4	B		10.7	B			
	WB	TR	4.5	A		6.2	A		5.4	A		5.6	A			
		A	4.5	A		6.2	A		5.4	A		5.6	A			
	SB	L	15.0	B		17.6	B		15.5	B		15.9	B			
		R	12.7	B		13.9	B		15.7	B		16.4	B			
	A	13.3	B		15.0	B		15.6	B		16.2	B				
	OVERALL		9.3	A		10.2	B		10.8	B		11.2	B			
	Trindle Road (SR 0641) AT I-81 NORTHBOUND ON-RAMP {Signalized}	WB	R	-	-		-	-		-	-		-	-		
			A	-	-		-	-		-	-		-	-		
OVERALL			-	-		-	-		-	-		-	-			
TRINDLE ROAD (SR 0641) AT ARMY HERITAGE DRIVE {Signalized}		EB	L	63.3	E		60.6	E		99.9	F		97.5	F		
	T		24.3	C		21.7	C		25.7	C		22.1	C			
	R		3.7	A		3.0	A		4.9	A		3.5	A			
	A		39.5	D		36.7	D		56.5	E		52.6	D			
	WB	L	18.8	B		6.4	A		20.3	C		18.5	B			
		T	71.9	E		34.9	C		73.0	E		61.0	E			
		R	0.8	A		3.7	A		0.7	A		1.8	A			
		A	52.8	D		27.0	C		53.8	D		46.9	D			
	NB	L	19.6	B		26.4	C		21.2	C		25.9	C			
		TR	90.9	F		87.8	F		99.9	F		101.9	F			
		A	72.1	E		68.9	E		79.1	E		78.7	E			
		L	55.4	E		57.8	E		74.4	E		62.5	E			
	SB	TR	-	-		-	-		-	-		-	-			
		T	30.4	C		36.5	D		33.8	C		38.0	D			
		R	1.4	A		2.2	A		0.3	A		2.8	A			
		A	32.0	C		35.9	D		39.4	D		38.0	D			
OVERALL		53.1	D		44.2	D		61.5	E		57.5	E				

TABLE A: LEVEL OF SERVICE RESULTS

AM PEAK INTERSECTION		PERFORMANCE METRICS															
		2026 WITHOUT DEVELOPMENT				2026 WITH DEVELOPMENT				2031 WITHOUT DEVELOPMENT				2031 WITH DEVELOPMENT			
		DELAY		LOS		DELAY		LOS		DELAY		LOS		DELAY		LOS	
TRINDLE ROAD (SR 0641) AT HORNERS ROAD (T-590) {Unsignalized}	EB	LT	8.4	A		8.5	A		8.5	A		8.6	A				
	A		0.1	A		0.1	A		0.1	A		0.1	A				
	WB	TR	0.0	A		0.0	A		0.0	A		0.0	A				
	A		0.0	A		0.0	A		0.0	A		0.0	A				
	LR		12.4	B		12.1	B		13.2	B		12.6	B				
	SB	A	12.4	B		12.1	B		13.2	B		12.6	B				
TRINDLE ROAD (SR 0641) AT SOUTH MIDDLESEX ROAD (T-590) {Unsignalized}	OVERALL		0.4	A		0.3	A		0.4	A		0.4	A				
	LTR		8.3	A		8.4	A		8.4	A		8.5	A				
	A		0.5	A		0.6	A		0.5	A		0.6	A				
	LTR		0.0	A		0.0	A		0.0	A		0.0	A				
	WB	A	0.0	A		0.0	A		0.0	A		0.0	A				
	LTR		29.8	D		40.8	E		36.9	E		54.6	F				
ARMY HERITAGE DRIVE AT WESTMINSTER DRIVE / FAIRVIEW STREET {Signalized}	A		29.8	D		40.8	E		36.9	E		54.6	F				
	LTR		21.7	C		26.6	D		24.7	C		31.6	D				
	SB	A	21.7	C		26.6	D		24.7	C		31.6	D				
	OVERALL		6.4	A		7.9	A		7.7	A		10.1	B				
	L		7.5	A		5.8	A		8.7	A		6.5	A				
	T		2.4	A		2.2	A		2.4	A		2.3	A				
ARMY HERITAGE DRIVE AT WESTMINSTER DRIVE / FAIRVIEW STREET {Signalized}	A		7.4	A		5.7	A		8.5	A		6.4	A				
	TR		18.9	B		16.2	B		23.5	C		18.3	B				
	WB	A	18.9	B		16.2	B		23.5	C		18.3	B				
	L		38.6	D		48.2	D		43.4	D		47.6	D				
	SB	R	39.8	D		53.5	D		44.9	D		53.2	D				
	A		39.2	D		51.3	D		44.1	D		50.9	D				
OVERALL		19.4	B		19.3	B		22.8	C		20.3	C					

TABLE A: LEVEL OF SERVICE RESULTS

AM PEAK INTERSECTION		2026 WITHOUT DEVELOPMENT				2026 WITH DEVELOPMENT				2031 WITHOUT DEVELOPMENT				2031 WITH DEVELOPMENT			
		DELAY		LOS		DELAY		LOS		DELAY		LOS		DELAY		LOS	
FAIRVIEW STREET AT LISBURN ROAD {Unsignalized}	WB	LR	15.9		C		14.1		B		16.8		C		14.6		B
		A	15.9		C		14.1		B		16.8		C		14.6		B
	TR		0.0		A		0.0		A		0.0		A		0.0		A
	NB	A	0.0		A		0.0		A		0.0		A		0.0		A
	LT		8.7		A		8.5		A		8.9		A		8.6		A
	SB	A	0.1		A		0.1		A		0.1		A		0.1		A
	OVERALL		0.0		A		0.0		A		0.0		A		0.0		A
YORK ROAD (SR 0074) AT I-81 SOUTHBOUND ON- RAMP {Signalized}	WB	R	-		-		-		-		-		-		-		-
	A		-		-		-		-		-		-		-		-
	OVERALL		-		-		-		-		-		-		-		-
YORK ROAD (SR 0074) AT I-81 NORTHBOUND OFF- RAMP {Signalized}	EB	TR	7.1		A		7.7		A		8.5		A		9.4		A
		A	7.1		A		7.7		A		8.5		A		9.4		A
	WB	LT	6.1		A		7.7		A		7.8		A		10.8		B
		A	6.1		A		7.7		A		7.8		A		10.8		B
	L		29.4		C		27.9		C		30.7		C		30.6		C
	NB	R	13.5		B		15.2		B		18.4		B		21.3		C
		A	17.9		B		18.7		B		21.8		C		23.8		C
	OVERALL		10.5		B		11.6		B		13.0		B		15.2		B

TABLE A: LEVEL OF SERVICE RESULTS

AM PEAK INTERSECTION		PERFORMANCE METRICS (2023-2024)															
		2026 WITHOUT DEVELOPMENT				2026 WITH DEVELOPMENT				2031 WITHOUT DEVELOPMENT				2031 WITH DEVELOPMENT			
		DELAY	LOS			DELAY	LOS			DELAY	LOS			DELAY	LOS		
YORK ROAD (SR 0074) AT WESTMINSTER ROAD {Signalized}	EB	L	20.4	C		25.2	C		29.4	C		38.4	D				
		T	17.1	B		16.1	B		21.2	C		20.5	C				
		R	1.9	A		1.4	A		2.5	A		2.1	A				
	WB	A	14.9	B		15.6	B		19.6	B		21.6	C				
		L	26.8	C		22.3	C		27.1	C		22.5	C				
		T	40.8	D		42.6	D		44.2	D		43.3	D				
	NB	R	0.1	A		0.1	A		0.1	A		0.1	A				
		A	38.5	D		40.4	D		41.6	D		41.1	D				
		L	83.9	F		100.2	F		84.2	F		103.0	F				
	SB	TR	36.4	D		38.0	D		38.5	D		43.6	D				
		A	75.1	E		88.6	F		75.8	E		92.0	F				
		L	66.1	E		66.1	E		73.8	E		78.3	E				
YORK ROAD (SR 0074) AT FAIRVIEW STREET (T-512) {Signalized}	EB	TR	58.6	E		58.6	E		73.8	E		80.7	F				
		A	59.5	E		59.5	E		73.8	E		80.4	F				
		OVERALL	39.3	D		42.7	D		43.4	D		47.6	D				
	WB	L	8.8	A		9.2	A		8.4	A		7.5	A				
		TR	8.5	A		9.7	A		8.3	A		8.3	A				
		A	8.5	A		9.7	A		8.3	A		8.3	A				
	NB	LTR	22.5	C		12.0	B		24.8	C		8.3	A				
		A	22.5	C		12.0	B		24.8	C		8.3	A				
		LTR	36.3	D		36.5	D		45.0	D		49.8	D				
	SB	A	36.3	D		36.5	D		45.0	D		49.8	D				
		LTR	22.8	C		14.5	B		30.6	C		21.3	C				
		A	22.8	C		14.5	B		30.6	C		21.3	C				
OVERALL	21.8	C		16.2	B		25.1	C		17.0	B						

TABLE A: LEVEL OF SERVICE RESULTS																
AM PEAK INTERSECTION																
			2026 WITHOUT DEVELOPMENT			2026 WITH DEVELOPMENT			2031 WITHOUT DEVELOPMENT			2031 WITH DEVELOPMENT				
			DELAY	LOS	DELAY	LOS	DELAY	LOS	DELAY	LOS	DELAY	LOS	DELAY	LOS	LOS	
YORK ROAD (SR 0074) AT MAYAPPLE DRIVE {Unsignalized}	EB	TR	0.0	A			0.0	A			0.0	A			0.0	A
		A	0.0	A			0.0	A			0.0	A			0.0	A
	WB	LT	8.1	A			8.2	A			8.2	A			8.3	A
		A	0.1	A			0.1	A			0.1	A			0.1	A
	NB	LR	18.9	C			18.2	C			21.2	C			23.4	C
		A	18.9	C			18.2	C			21.2	C			23.4	C
	OVERALL		1.4	A			1.3	A			1.6	A			1.7	A
YORK ROAD (SR 0074) AT SPRINGVILLE ROAD {Unsignalized}	EB	TR	0.0	A			0.0	A			0.0	A			0.0	A
		A	0.0	A			0.0	A			0.0	A			0.0	A
	WB	LT	8.0	A			8.1	A			8.1	A			8.2	A
		A	0.4	A			0.4	A			0.4	A			0.4	A
	NB	LR	26.4	D			20.3	C			33.2	D			29.7	D
		A	26.4	D			20.3	C			33.2	D			29.7	D
	OVERALL		3.8	A			3.1	A			4.8	A			4.5	A
YORK ROAD (SR 0074) AT SHUGHART ROAD {Unsignalized}	EB	LT	9.5	A			9.6	A			9.8	A			9.9	A
		A	4.9	A			3.6	A			5.0	A			3.7	A
	WB	TR	0.0	A			0.0	A			0.0	A			0.0	A
		A	0.0	A			0.0	A			0.0	A			0.0	A
	SB	LR	14.4	B			14.6	B			15.4	C			15.7	C
		A	14.4	B			14.6	B			15.4	C			15.7	C
	OVERALL		3.5	A			3.1	A			3.6	A			3.3	A

TABLE A: LEVEL OF SERVICE RESULTS										
AM PEAK INTERSECTION	2026 WITHOUT DEVELOPMENT						2026 WITH DEVELOPMENT			
	DELAY		LOS		2031 WITHOUT DEVELOPMENT		DELAY		LOS	
	DELAY	LOS	DELAY	LOS	DELAY	LOS	DELAY	LOS	DELAY	LOS
FORGE ROAD (SR 2003) AT WESTMINSTER DRIVE {Unsignalized}	LTR	11.9	B				8.3	A	12.3	B
	EB						8.3	A	12.3	B
	LTR	11.0	B				10.7	B	11.4	B
	WB						10.7	B	11.4	B
	LTR	11.0	B				10.7	B	11.4	B
	WB						10.7	B	11.4	B
	LTR	7.2	A				8.4	A	7.2	A
	LT						8.4	A	7.2	A
	NB	-	-				-	-	-	-
	R	-	-				-	-	-	-
FORGE ROAD (SR 2003) AT FAIRVIEW STREET {Unsignalized}	LTR	8.2	A				8.5	A	8.3	A
	SB						8.5	A	8.3	A
	LTR	8.2	A				8.5	A	8.3	A
	SB						8.5	A	8.3	A
	LTR	8.2	A				8.5	A	8.3	A
	SB						8.5	A	8.3	A
	LTR	8.2	A				8.5	A	8.3	A
	SB						8.5	A	8.3	A
	LTR	8.2	A				8.5	A	8.3	A
	SB						8.5	A	8.3	A
FORGE ROAD (SR 2003) AT FAIRVIEW STREET {Unsignalized}	LTR	14.6	B				14.6	B	15.1	C
	EB						14.6	B	15.1	C
	LTR	15.8	C				16.7	C	16.9	C
	WB						16.7	C	16.9	C
	LTR	15.8	C				16.7	C	16.9	C
	WB						16.7	C	16.9	C
	LTR	7.7	A				7.7	A	7.7	A
	NB						7.7	A	7.7	A
	LTR	0.1	A				0.1	A	0.1	A
	NB						0.1	A	0.1	A
FORGE ROAD (SR 2003) AT FAIRVIEW STREET {Unsignalized}	LTR	8.7	A				8.7	A	8.8	A
	SB						8.7	A	8.8	A
	LTR	8.7	A				8.7	A	8.8	A
	SB						8.7	A	8.8	A
	LTR	8.7	A				8.7	A	8.8	A
	SB						8.7	A	8.8	A
	LTR	8.7	A				8.7	A	8.8	A
	SB						8.7	A	8.8	A
	LTR	8.7	A				8.7	A	8.8	A
	SB						8.7	A	8.8	A
FORGE ROAD (SR 2003) AT FAIRVIEW STREET {Unsignalized}	LTR	0.0	A				0.3	A	0.0	A
	SB						0.3	A	0.0	A
	LTR	0.0	A				0.3	A	0.0	A
	SB						0.3	A	0.0	A
	LTR	0.0	A				0.3	A	0.0	A
	SB						0.3	A	0.0	A
	LTR	0.0	A				0.3	A	0.0	A
	SB						0.3	A	0.0	A
	LTR	0.0	A				0.3	A	0.0	A
	SB						0.3	A	0.0	A
FORGE ROAD (SR 2003) AT FAIRVIEW STREET {Unsignalized}	LTR	8.9	A				10.6	B	9.0	A
	EB						10.6	B	9.0	A
	LTR	14.6	B				14.6	B	15.1	C
	EB						14.6	B	15.1	C
	LTR	15.8	C				16.7	C	16.9	C
	WB						16.7	C	16.9	C
	LTR	15.8	C				16.7	C	16.9	C
	WB						16.7	C	16.9	C
	LTR	7.7	A				7.7	A	7.7	A
	NB						7.7	A	7.7	A
FORGE ROAD (SR 2003) AT FAIRVIEW STREET {Unsignalized}	LTR	0.1	A				0.1	A	0.1	A
	NB						0.1	A	0.1	A
	LTR	8.7	A				8.7	A	8.8	A
	SB						8.7	A	8.8	A
	LTR	8.7	A				8.7	A	8.8	A
	SB						8.7	A	8.8	A
	LTR	8.7	A				8.7	A	8.8	A
	SB						8.7	A	8.8	A
	LTR	8.7	A				8.7	A	8.8	A
	SB						8.7	A	8.8	A
FORGE ROAD (SR 2003) AT FAIRVIEW STREET {Unsignalized}	LTR	0.0	A				0.3	A	0.0	A
	SB						0.3	A	0.0	A
	LTR	0.0	A				0.3	A	0.0	A
	SB						0.3	A	0.0	A
	LTR	0.0	A				0.3	A	0.0	A
	SB						0.3	A	0.0	A
	LTR	0.0	A				0.3	A	0.0	A
	SB						0.3	A	0.0	A
	LTR	0.0	A				0.3	A	0.0	A
	SB						0.3	A	0.0	A
FORGE ROAD (SR 2003) AT FAIRVIEW STREET {Unsignalized}	LTR	1.9	A				2.2	A	2.0	A
	EB						2.2	A	2.0	A
	LTR	1.9	A				2.2	A	2.0	A
	EB						2.2	A	2.0	A
	LTR	1.9	A				2.2	A	2.0	A
	WB						2.2	A	2.0	A
	LTR	1.9	A				2.2	A	2.0	A
	WB						2.2	A	2.0	A
	LTR	1.9	A				2.2	A	2.0	A
	WB						2.2	A	2.0	A

TABLE A: LEVEL OF SERVICE RESULTS

AM PEAK		INTERSECTION											
		2026 WITHOUT DEVELOPMENT				2026 WITH DEVELOPMENT				2031 WITHOUT DEVELOPMENT			
		DELAY	LOS			DELAY	LOS			DELAY	LOS		
TRINDLE ROAD (SR 0641) AT ROSE BUSINESS PARK CONNECTOR / PHARMACY TRACT {Signalized}	EB	L	-	-		0.0	A			-	-		
		T	-	-		8.6	A			-	-		
		R	-	-		0.0	A			-	-		
		A	-	-		8.6	A			-	-		
	WB	L	-	-		50.2	D			-	-		
		TR	-	-		3.2	A			-	-		
		A	-	-		7.6	A			-	-		
		L	-	-		51.4	D			-	-		
	NB	TR	-	-		54.8	D			-	-		
		A	-	-		52.7	D			-	-		
		L	-	-		0.0	A			-	-		
		TR	-	-		0.0	A			-	-		
	SB	A	-	-		0.0	A			-	-		
		OVERALL	-	-		16.4	B			-	-		
		L	-	-		36.8	D			-	-		
		T	-	-		0.4	A			-	-		
YORK ROAD (SR 0074) AT HERITAGE VILLAGE CONNECTOR {Signalized}	EB	A	-	-		3.4	A			-	-		
		T	-	-		7.4	A			-	-		
		R	-	-		0.0	A			-	-		
		A	-	-		7.4	A			-	-		
	WB	L	-	-		41.2	D			-	-		
		R	-	-		0.0	A			-	-		
		A	-	-		41.2	D			-	-		
		OVERALL	-	-		7.8	A			-	-		
	SB	L	-	-		48.7	D			-	-		
		R	-	-		0.0	A			-	-		
		A	-	-		48.7	D			-	-		
		OVERALL	-	-		8.9	A			-	-		
	OVERALL	L	-	-		15.9	B			-	-		
		T	-	-		41.0	D			-	-		
		R	-	-		0.5	A			-	-		
		A	-	-		3.7	A			-	-		

TABLE A: LEVEL OF SERVICE RESULTS

PM PEAK		2026 WITHOUT DEVELOPMENT						2026 WITH DEVELOPMENT						2031 WITHOUT DEVELOPMENT						2031 WITH DEVELOPMENT					
INTERSECTION		DELAY	LOS	2026 WITHOUT DEVELOPMENT		DELAY	LOS	DELAY	LOS	2026 WITH DEVELOPMENT		DELAY	LOS	DELAY	LOS	2031 WITHOUT DEVELOPMENT		DELAY	LOS	DELAY	LOS	2031 WITH DEVELOPMENT		DELAY	LOS
EAST HIGH STREET (SR 0641) AT YORK ROAD (SR 0074) {Signalized}	T	8.0	A			8.4	A			8.4	A			8.4	A			8.4	A			9.6	A		
	EB	0.0	A			0.0	A			0.0	A			0.0	A			0.0	A			0.0	A		
	A	8.0	A			8.4	A			8.4	A			8.4	A			8.4	A			9.6	A		
	L	2.3	A			2.7	A			2.7	A			2.9	A			2.9	A			3.6	A		
	WB	1.9	A			1.8	A			1.8	A			1.7	A			1.7	A			1.4	A		
	A	1.9	A			1.8	A			1.8	A			1.8	A			1.8	A			1.5	A		
	LR	28.1	C			32.7	C			32.7	C			39.6	D			39.6	D			53.1	D		
	NB	28.1	C			32.7	C			32.7	C			39.6	D			39.6	D			53.1	D		
	OVERALL	8.6	A			9.6	A			9.6	A			10.6	B			10.6	B			13.4	B		
	L	6.3	A			6.1	A			6.1	A			6.5	A			6.5	A			6.8	A		
YORK ROAD (SR 0074) AT GIANT LANE / CARLISLE PLAZA MALL {Signalized}	EB	31.9	C			30.5	C			30.5	C			30.9	C			30.9	C			37.2	D		
	A	28.2	C			27.1	C			27.1	C			27.4	C			27.4	C			33.0	C		
	L	24.8	C			24.8	C			24.8	C			29.7	C			29.7	C			35.4	D		
	WB	15.1	B			14.2	B			14.2	B			13.5	B			13.5	B			13.9	B		
	A	19.1	B			18.5	B			18.5	B			20.2	C			20.2	C			22.6	C		
	L	21.6	C			24.0	C			24.0	C			27.0	C			27.0	C			27.0	C		
	NB	9.5	A			10.3	B			10.3	B			10.9	B			10.9	B			10.9	B		
	A	9.9	A			10.7	B			10.7	B			11.5	B			11.5	B			11.5	B		
	L	32.8	C			37.6	D			37.6	D			46.9	D			46.9	D			46.9	D		
	SB	31.5	C			35.8	D			35.8	D			42.7	D			42.7	D			42.7	D		
	A	31.8	C			36.2	D			36.2	D			43.8	D			43.8	D			43.8	D		
	OVERALL	23.2	C			23.3	C			23.3	C			25.3	C			25.3	C			28.2	C		

TABLE A: LEVEL OF SERVICE RESULTS

PM PEAK		TABLE A: LEVEL OF SERVICE RESULTS																	
		INTERSECTION		2026 WITHOUT DEVELOPMENT				2026 WITH DEVELOPMENT				2031 WITHOUT DEVELOPMENT				2031 WITH DEVELOPMENT			
				DELAY	LOS	DELAY	LOS	DELAY	LOS	DELAY	LOS	DELAY	LOS	DELAY	LOS				
EAST HIGH STREET (SR 0641) AT CARLISLE PLAZA MALL / SHAFFNER AVE {Signalized}		EB	L	0.0	A		0.0	A		0.0	A		0.0	A		0.0	A		
			T	1.6	A		1.4	A		1.4	A		1.4	A		1.9	A		
			R	0.1	A		0.1	A		0.1	A		0.1	A		0.1	A		
			A	1.5	A		1.3	A		1.3	A		1.3	A		1.7	A		
		WB	L	5.9	A		3.0	A		10.8	B		7.5	A		7.5	A		
			TR	0.9	A		0.9	A		0.9	A		1.0	A		1.0	A		
			A	1.8	A		1.3	A		2.6	A		2.1	A		2.1	A		
			TL	42.9	D		58.2	E		75.4	E		48.6	D		48.6	D		
		NB	R	45.7	D		62.5	E		81.4	F		52.0	D		52.0	D		
			A	44.6	D		60.8	E		79.0	E		50.7	D		50.7	D		
			LTR	39.9	D		54.3	D		70.1	E		45.1	D		45.1	D		
			A	39.9	D		54.3	D		70.0	E		45.1	D		45.1	D		
		OVERALL			5.5	A		6.5	A		9.0	A		6.2	A		6.2	A	
		EAST HIGH STREET (SR 0641) AT CVS ACCESS DRIVE / LOWE'S ACCESS DRIVE {Signalized}		EB	L	7.0	A		6.6	A		8.4	A		7.2	A		7.2	A
					T	1.4	A		1.2	A		1.2	A		1.4	A		1.4	A
					R	0.1	A		0.1	A		0.1	A		0.1	A		0.1	A
					A	1.4	A		1.2	A		1.3	A		1.4	A		1.4	A
WB	L			5.1	A		4.6	A		5.4	A		4.8	A		4.8	A		
	TR			11.9	B		10.5	B		12.6	B		11.7	B		11.7	B		
	A			11.1	B		9.8	A		11.7	B		10.9	B		10.9	B		
	TL			44.7	D		58.1	E		77.9	E		48.8	D		48.8	D		
NB	R			38.7	D		50.6	D		66.1	E		42.8	D		42.8	D		
	A			42.8	D		55.7	E		74.2	E		46.9	D		46.9	D		
	LTR			39.6	D		52.0	D		72.6	E		43.9	D		43.9	D		
	A			39.6	D		52.0	D		72.6	E		43.9	D		43.9	D		
OVERALL					10.2	B		10.7	B		13.7	B		10.5	B		10.5	B	

TABLE A: LEVEL OF SERVICE RESULTS

PM PEAK		2026 WITHOUT DEVELOPMENT						2026 WITH DEVELOPMENT						2031 WITHOUT DEVELOPMENT						2031 WITH DEVELOPMENT					
INTERSECTION		DELAY	LOS	DELAY	LOS	DELAY	LOS	DELAY	LOS	DELAY	LOS	DELAY	LOS	DELAY	LOS	DELAY	LOS	DELAY	LOS	DELAY	LOS	DELAY	LOS	DELAY	LOS
TRINDLE ROAD (SR 0641) AT I-81 SOUTHBOUND OFF- RAMP {Signalized}	EB	12.5	B	12.1	B	12.5	B	12.1	B	6.3	A	10.7	B	6.3	A	10.7	B	6.3	A	10.7	B	6.3	A	10.7	B
	A	12.5	B	12.1	B	12.5	B	12.1	B	6.3	A	10.7	B	6.3	A	10.7	B	6.3	A	10.7	B	6.3	A	10.7	B
	TR	6.2	A	6.8	A	6.2	A	6.8	A	4.7	A	8.2	A	4.7	A	8.2	A	4.7	A	8.2	A	4.7	A	8.2	A
	A	6.2	A	6.8	A	6.2	A	6.8	A	4.7	A	8.2	A	4.7	A	8.2	A	4.7	A	8.2	A	4.7	A	8.2	A
	L	14.1	B	19.9	B	14.1	B	19.9	B	31.7	C	20.6	C	31.7	C	20.6	C	31.7	C	20.6	C	31.7	C	20.6	C
	SB	14.9	B	16.1	B	14.9	B	16.1	B	26.9	C	19.0	B	26.9	C	19.0	B	26.9	C	19.0	B	26.9	C	19.0	B
	R	14.9	B	16.1	B	14.9	B	16.1	B	26.9	C	19.0	B	26.9	C	19.0	B	26.9	C	19.0	B	26.9	C	19.0	B
	A	14.6	B	17.7	B	14.6	B	17.7	B	29.7	C	19.7	B	29.7	C	19.7	B	29.7	C	19.7	B	29.7	C	19.7	B
	OVERALL	11.6	B	12.7	B	11.6	B	12.7	B	12.9	B	13.0	B	12.9	B	13.0	B	12.9	B	13.0	B	12.9	B	13.0	B
	R	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Trindle Road (SR 0641) AT I-81 NORTHBOUND ON-RAMP {Signalized}	WB	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	OVERALL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	L	19.2	B	14.8	B	19.2	B	14.8	B	16.6	B	17.6	B	16.6	B	17.6	B	16.6	B	17.6	B	16.6	B	17.6	B
	T	25.2	C	24.2	C	25.2	C	24.2	C	26.9	C	23.0	C	26.9	C	23.0	C	26.9	C	23.0	C	26.9	C	23.0	C
	R	5.0	A	5.8	A	5.0	A	5.8	A	5.4	A	4.4	A	5.4	A	4.4	A	5.4	A	4.4	A	5.4	A	4.4	A
	A	17.1	B	17.9	B	17.1	B	17.9	B	17.3	B	17.5	B	17.3	B	17.5	B	17.3	B	17.5	B	17.3	B	17.5	B
	L	20.5	C	9.1	A	20.5	C	9.1	A	21.5	C	22.7	C	21.5	C	22.7	C	21.5	C	22.7	C	21.5	C	22.7	C
	T	46.8	D	25.4	C	46.8	D	25.4	C	56.4	E	42.5	D	56.4	E	42.5	D	56.4	E	42.5	D	56.4	E	42.5	D
	R	0.3	A	0.7	A	0.3	A	0.7	A	0.4	A	0.4	A	0.4	A	0.4	A	0.4	A	0.4	A	0.4	A	0.4	A
TRINDLE ROAD (SR 0641) AT ARMY HERITAGE DRIVE {Signalized}	A	34.6	C	19.5	B	34.6	C	19.5	B	40.8	D	33.8	C	40.8	D	33.8	C	40.8	D	33.8	C	40.8	D	33.8	C
	L	41.7	D	59.8	E	41.7	D	59.8	E	53.2	D	74.7	E	53.2	D	74.7	E	53.2	D	74.7	E	53.2	D	74.7	E
	TR	34.5	C	47.5	D	34.5	C	47.5	D	34.5	C	48.3	D	34.5	C	48.3	D	34.5	C	48.3	D	34.5	C	48.3	D
	A	37.0	D	52.1	D	37.0	D	52.1	D	40.8	D	58.1	E	40.8	D	58.1	E	40.8	D	58.1	E	40.8	D	58.1	E
	L	36.4	D	41.5	D	36.4	D	41.5	D	42.4	D	45.9	D	42.4	D	45.9	D	42.4	D	45.9	D	42.4	D	45.9	D
	TR	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	T	39.7	D	60.1	E	39.7	D	60.1	E	39.3	D	63.3	E	39.3	D	63.3	E	39.3	D	63.3	E	39.3	D	63.3	E
	R	2.7	A	4.0	A	2.7	A	4.0	A	3.2	A	3.9	A	3.2	A	3.9	A	3.2	A	3.9	A	3.2	A	3.9	A
	A	30.9	C	44.0	D	30.9	C	44.0	D	32.1	C	46.7	D	32.1	C	46.7	D	32.1	C	46.7	D	32.1	C	46.7	D
	OVERALL	28.6	C	30.7	C	28.6	C	30.7	C	31.4	C	35.7	D	31.4	C	35.7	D	31.4	C	35.7	D	31.4	C	35.7	D

TABLE A: LEVEL OF SERVICE RESULTS

PM PEAK		2026 WITHOUT DEVELOPMENT						2026 WITH DEVELOPMENT						2031 WITHOUT DEVELOPMENT						2031 WITH DEVELOPMENT					
INTERSECTION		DELAY		LOS		DELAY		LOS		DELAY		LOS		DELAY		LOS		DELAY		LOS		DELAY		LOS	
TRINDLE ROAD (SR 0641) AT HORNERS ROAD (T-590) {Unsignalized}	EB	LT	8.5	A				A		8.8		A		8.6		A		8.9		A					
		A	0.3	A				A		0.3		A		0.3		A		0.3		A					
	WB	TR	0.0	A				A		0.0		A		0.0		A		0.0		A					
		A	0.0	A				A		0.0		A		0.0		A		0.0		A					
	LR		13.3	B				B		12.9		B		14.5		B		13.7		B					
	SB	A	13.3	B				B		12.9		B		14.5		B		13.7		B					
	OVERALL		0.3	A				A		0.3		A		0.4		A		0.4		A					
TRINDLE ROAD (SR 0641) AT SOUTH MIDDLESEX ROAD (T-590) {Unsignalized}	LTR		8.7	A				A		8.7		A		8.8		A		9.0		A					
		A	0.7	A				A		0.8		A		0.7		A		0.8		A					
	LTR		8.2	A				A		8.3		A		8.3		A		8.4		A					
		A	0.2	A				A		0.1		A		0.2		A		0.1		A					
	LTR		41.2	E				E		63.0		F		56.2		F		108.3		F					
		A	41.2	E				E		63.0		F		56.2		F		108.3		F					
	LTR		53.3	F				F		82.3		F		78.3		F		145.3		F					
ARMY HERITAGE DRIVE AT WESTMINSTER DRIVE / FAIRVIEW STREET {Signalized}	SB	A	53.3	F				F		82.3		F		78.3		F		145.3		F					
	OVERALL		10.2	B				B		14.8		B		14.3		B		25.6		D					
	L		14.6	B				B		14.0		B		17.0		B		14.6		B					
	EB	T	7.6	A				A		8.0		A		8.1		A		8.0		A					
		A	14.2	B				B		13.6		B		16.4		B		14.2		B					
	TR		19.9	B				B		26.1		C		21.0		C		28.0		C					
	WB	A	19.9	B				B		26.1		C		21.0		C		28.0		C					
WESTMINSTER DRIVE / FAIRVIEW STREET {Signalized}	L		33.3	C				C		33.8		C		34.6		C		34.4		C					
		R	41.8	D				D		54.6		D		45.0		D		68.0		E					
	SB	A	37.7	D				D		46.7		D		39.9		D		55.4		E					
	OVERALL		28.4	C				C		33.2		C		30.5		C		38.3		D					

TABLE A: LEVEL OF SERVICE RESULTS

PM PEAK		2026 WITHOUT DEVELOPMENT						2026 WITH DEVELOPMENT						2031 WITHOUT DEVELOPMENT						2031 WITH DEVELOPMENT					
INTERSECTION		DELAY		LOS		DELAY		LOS		DELAY		LOS		DELAY		LOS		DELAY		LOS		DELAY		LOS	
FAIRVIEW STREET AT LISBURN ROAD {Unsignalized}	WB	0.0		A		0.0		A		0.0		A		0.0		A		0.0		A		0.0		A	
	LR	0.0		A		0.0		A		0.0		A		0.0		A		0.0		A		0.0		A	
	A	0.0		A		0.0		A		0.0		A		0.0		A		0.0		A		0.0		A	
	TR	0.0		A		0.0		A		0.0		A		0.0		A		0.0		A		0.0		A	
	NB	0.0		A		0.0		A		0.0		A		0.0		A		0.0		A		0.0		A	
	A	0.0		A		0.0		A		0.0		A		0.0		A		0.0		A		0.0		A	
	LT	0.0		A		0.0		A		0.0		A		0.0		A		0.0		A		0.0		A	
YORK ROAD (SR 0074) AT I-81 SOUTHBOUND ON- RAMP {Signalized}	SB	0.0		A		0.0		A		0.0		A		0.0		A		0.0		A		0.0		A	
	A	0.0		A		0.0		A		0.0		A		0.0		A		0.0		A		0.0		A	
	OVERALL	0.0		A		0.0		A		0.0		A		0.0		A		0.0		A		0.0		A	
	R	-		-		-		-		-		-		-		-		-		-		-		-	
	WB	-		-		-		-		-		-		-		-		-		-		-		-	
	A	-		-		-		-		-		-		-		-		-		-		-		-	
	OVERALL	-		-		-		-		-		-		-		-		-		-		-		-	
YORK ROAD (SR 0074) AT I-81 NORTHBOUND OFF- RAMP {Signalized}	EB	16.9		B		21.0		C		21.0		C		21.1		C		21.1		C		22.1		C	
	A	16.9		B		21.0		C		21.0		C		21.1		C		21.1		C		22.1		C	
	LT	15.2		B		19.8		B		19.8		B		19.7		B		19.7		B		21.3		C	
	WB	15.2		B		19.8		B		19.8		B		19.7		B		19.7		B		21.3		C	
	A	15.2		B		19.8		B		19.8		B		19.7		B		19.7		B		21.3		C	
	L	15.2		B		17.1		B		17.1		B		17.5		B		17.5		B		17.0		B	
	NB	31.9		C		38.4		D		38.4		D		38.2		D		38.2		D		45.6		D	
	R	31.9		C		38.4		D		38.4		D		38.2		D		38.2		D		45.6		D	
YORK ROAD (SR 0074) AT I-81 NORTHBOUND OFF- RAMP {Signalized}	A	27.8		C		33.5		C		33.5		C		33.1		C		33.1		C		38.9		D	
	OVERALL	19.8		B		24.7		C		24.7		C		24.5		C		24.5		C		27.4		C	

TABLE A: LEVEL OF SERVICE RESULTS

PM PEAK INTERSECTION		Overall Performance Metrics (Q1-Q4 2023)															
		2026 WITHOUT DEVELOPMENT				2026 WITH DEVELOPMENT				2031 WITHOUT DEVELOPMENT				2031 WITH DEVELOPMENT			
		DELAY	LOS	LOS	DELAY	DELAY	LOS	LOS	DELAY	DELAY	LOS	LOS	DELAY	DELAY	LOS	LOS	
YORK ROAD (SR 0074) AT WESTMINSTER ROAD {Signalized}	EB	L	54.5	D		73.5	E		113.1	F		112.4	F				
		T	44.3	D		34.2	C		36.2	D		35.2	D				
		R	12.4	B		4.3	A		3.8	A		3.3	A				
		A	36.1	D		32.8	C		41.8	D		40.7	D				
	WB	L	41.7	D		18.0	B		16.5	B		20.8	C				
		T	69.3	E		39.7	D		47.6	D		41.7	D				
		R	3.4	A		0.7	A		0.6	A		0.8	A				
		A	61.9	E		35.6	D		42.1	D		37.4	D				
	NB	L	79.7	E		90.1	F		86.8	F		143.4	F				
		TR	23.6	C		18.2	B		16.8	B		19.3	B				
		A	57.8	E		62.1	E		59.6	E		95.0	F				
		L	43.2	D		31.3	C		30.3	C		31.7	C				
SB	TR	78.9	E		83.6	F		88.4	F		107.2	F					
	A	74.9	E		77.8	E		82.0	F		98.9	F					
	OVERALL	52.1	D		46.5	D		52.9	D		59.5	E					
	YORK ROAD (SR 0074) AT FAIRVIEW STREET (T-512) {Signalized}	EB	L	11.2	B		2.6	A		4.1	A		2.4	A			
TR			17.0	B		4.2	A		8.6	A		4.1	A				
A			16.6	B		4.1	A		8.2	A		4.0	A				
LTR			20.4	C		4.2	A		26.6	C		4.8	A				
WB		A	20.4	C		4.2	A		26.6	C		4.8	A				
		LTR	16.4	B		29.8	C		19.7	B		30.0	C				
		A	16.4	B		29.8	C		19.7	B		30.0	C				
		LTR	40.3	D		55.4	E		50.7	D		60.8	E				
SB		A	40.3	D		55.4	E		50.7	D		60.8	E				
		OVERALL	23.9	C		14.9	B		25.6	C		16.1	B				

TABLE A: LEVEL OF SERVICE RESULTS

PM PEAK		2026 WITHOUT DEVELOPMENT						2026 WITH DEVELOPMENT						2031 WITHOUT DEVELOPMENT						2031 WITH DEVELOPMENT					
INTERSECTION		DELAY		LOS		DELAY		LOS		DELAY		LOS		DELAY		LOS		DELAY		LOS		DELAY		LOS	
YORK ROAD (SR 0074) AT MAYAPPLE DRIVE {Unsignalized}	EB	TR	0.0		A		0.0		A		0.0		A		0.0		A		0.0		A		0.0		A
	A		0.0		A		0.0		A		0.0		A		0.0		A		0.0		A		0.0		A
	WB	LT	10.1		B		9.7		A		9.7		A		10.4		B		10.5		B		10.5		B
		A	1.0		A		0.9		A		0.9		A		1.0		A		1.0		A		1.0		A
	LR		36.1		E		33.3		D		33.3		D		45.0		E		58.1		F		58.1		F
	NB		36.1		E		33.3		D		33.3		D		45.0		E		58.1		F		58.1		F
	OVERALL		1.8		A		1.7		A		1.7		A		2.2		A		2.7		A		2.7		A
YORK ROAD (SR 0074) AT SPRINGVILLE ROAD {Unsignalized}	EB	TR	0.0		A		0.0		A		0.0		A		0.0		A		0.0		A		0.0		A
	A		0.0		A		0.0		A		0.0		A		0.0		A		0.0		A		0.0		A
	WB	LT	9.7		A		9.8		A		9.8		A		10.0		B		10.1		B		10.1		B
		A	1.6		A		1.9		A		1.9		A		1.6		A		1.9		A		1.9		A
	LR		55.8		F		34.7		D		34.7		D		81.5		F		67.1		F		67.1		F
	NB		55.8		F		34.7		D		34.7		D		81.5		F		67.1		F		67.1		F
	OVERALL		3.8		A		2.9		A		2.9		A		5.3		A		4.9		A		4.9		A
YORK ROAD (SR 0074) AT SHUGHART ROAD {Unsignalized}	EB	LT	8.6		A		8.8		A		8.8		A		8.8		A		8.9		A		8.9		A
	A		1.9		A		1.6		A		1.6		A		1.9		A		1.6		A		1.6		A
	WB	TR	0.0		A		0.0		A		0.0		A		0.0		A		0.0		A		0.0		A
		A	0.0		A		0.0		A		0.0		A		0.0		A		0.0		A		0.0		A
	LR		14.5		B		15.5		C		15.5		C		15.7		C		17.0		C		17.0		C
	SB		14.5		B		15.5		C		15.5		C		15.7		C		17.0		C		17.0		C
	OVERALL		3.6		A		3.4		A		3.4		A		3.8		A		3.6		A		3.6		A

TABLE A: LEVEL OF SERVICE RESULTS

PM PEAK		TABLE A: LEVEL OF SERVICE RESULTS																	
		INTERSECTION		2026 WITHOUT DEVELOPMENT				2026 WITH DEVELOPMENT				2031 WITHOUT DEVELOPMENT				2031 WITH DEVELOPMENT			
				DELAY	LOS			DELAY	LOS			DELAY	LOS			DELAY	LOS		
FORGE ROAD (SR 2003) AT WESTMINSTER DRIVE {Unsignalized}		EB	LTR	13.5	B			10.3	B			14.0	B			10.7	B		
			A	13.5	B			10.3	B			14.0	B			10.7	B		
		WB	LTR	44.4	E			49.3	E			67.9	F			74.5	F		
			A	44.4	E			49.3	E			67.9	F			74.5	F		
		NB	LTR	7.3	A			9.9	A			7.3	A			10.1	B		
			R	-	-			-	-			-	-			-	-		
		SB	A	-	-			-	-			-	-			-	-		
			LTR	8.0	A			10.8	B			8.1	A			11.3	B		
		OVERALL	A	-	-			10.8	B			-	-			11.3	B		
				29.0	D			34.1	D			42.7	E			49.1	E		
FORGE ROAD (SR 2003) AT FAIRVIEW STREET {Unsignalized}		EB	LTR	17.1	C			17.4	C			18.4	C			18.7	C		
			A	17.1	C			17.4	C			18.4	C			18.7	C		
		WB	LTR	52.6	F			63.6	F			79.3	F			97.4	F		
			A	52.6	F			63.6	F			79.3	F			97.4	F		
		NB	LTR	9.0	A			9.0	A			9.1	A			9.1	A		
			A	0.5	A			0.5	A			0.5	A			0.5	A		
		SB	LTR	8.3	A			8.3	A			8.4	A			8.4	A		
			A	0.4	A			0.4	A			0.4	A			0.4	A		
		OVERALL		7.3	A			9.3	A			10.6	B			13.7	B		

TABLE A: LEVEL OF SERVICE RESULTS

PM PEAK		2026 WITHOUT DEVELOPMENT						2026 WITH DEVELOPMENT						2031 WITHOUT DEVELOPMENT						2031 WITH DEVELOPMENT					
INTERSECTION		DELAY		LOS		DELAY		LOS		DELAY		LOS		DELAY		LOS		DELAY		LOS		DELAY		LOS	
TRINDLE ROAD (SR 0641) AT ROSE BUSINESS PARK CONNECTOR / PHARMACY TRACT {Signalized}	EB	L	-	-	-	-	-	-	-	0.0	-	A	-	-	-	-	-	-	-	-	-	0.0	-	A	-
		T	-	-	-	-	-	-	-	8.9	-	A	-	-	-	-	-	-	-	-	-	9.5	-	A	-
		R	-	-	-	-	-	-	-	0.0	-	A	-	-	-	-	-	-	-	-	-	0.0	-	A	-
		A	-	-	-	-	-	-	-	8.9	-	A	-	-	-	-	-	-	-	-	-	9.5	-	A	-
	WB	L	-	-	-	-	-	-	-	59.2	-	E	-	-	-	-	-	-	-	-	-	54.0	-	D	-
		TR	-	-	-	-	-	-	-	3.1	-	A	-	-	-	-	-	-	-	-	-	3.3	-	A	-
		A	-	-	-	-	-	-	-	14.9	-	B	-	-	-	-	-	-	-	-	-	13.7	-	B	-
	NB	L	-	-	-	-	-	-	-	52.6	-	D	-	-	-	-	-	-	-	-	-	52.5	-	D	-
		TR	-	-	-	-	-	-	-	55.3	-	E	-	-	-	-	-	-	-	-	-	55.5	-	D	-
		A	-	-	-	-	-	-	-	53.8	-	D	-	-	-	-	-	-	-	-	-	53.8	-	D	-
	SB	L	-	-	-	-	-	-	-	0.0	-	A	-	-	-	-	-	-	-	-	-	0.0	-	A	-
		TR	-	-	-	-	-	-	-	0.0	-	A	-	-	-	-	-	-	-	-	-	0.0	-	A	-
		A	-	-	-	-	-	-	-	0.0	-	A	-	-	-	-	-	-	-	-	-	0.0	-	A	-
	OVERALL		-	-	-	-	-	-	-	16.1	-	B	-	-	-	-	-	-	-	-	-	15.6	-	B	-
YORK ROAD (SR 0074) AT HERITAGE VILLAGE CONNECTOR {Signalized}	EB	L	-	-	-	-	-	-	-	38.3	-	D	-	-	-	-	-	-	-	-	-	38.2	-	D	-
		T	-	-	-	-	-	-	-	1.4	-	A	-	-	-	-	-	-	-	-	-	1.5	-	A	-
		A	-	-	-	-	-	-	-	4.7	-	A	-	-	-	-	-	-	-	-	-	4.7	-	A	-
	WB	T	-	-	-	-	-	-	-	9.5	-	A	-	-	-	-	-	-	-	-	-	10.0	-	A	-
		R	-	-	-	-	-	-	-	0.0	-	A	-	-	-	-	-	-	-	-	-	0.0	-	A	-
		A	-	-	-	-	-	-	-	9.5	-	A	-	-	-	-	-	-	-	-	-	10.0	-	A	-
	SB	L	-	-	-	-	-	-	-	48.7	-	D	-	-	-	-	-	-	-	-	-	48.5	-	D	-
		R	-	-	-	-	-	-	-	0.0	-	A	-	-	-	-	-	-	-	-	-	0.0	-	A	-
		A	-	-	-	-	-	-	-	48.7	-	D	-	-	-	-	-	-	-	-	-	48.5	-	D	-
	OVERALL		-	-	-	-	-	-	-	9.5	-	A	-	-	-	-	-	-	-	-	-	9.6	-	A	-

TABLE A: LEVEL OF SERVICE RESULTS

SATURDAY PEAK		Overall Project Performance Summary												
		2026 WITHOUT DEVELOPMENT						2026 WITH DEVELOPMENT		2031 WITHOUT DEVELOPMENT		2031 WITH DEVELOPMENT		
		DELAY	LOS	LOS	DELAY	LOS	LOS	DELAY	LOS	DELAY	LOS	DELAY	LOS	
INTERSECTION	EB	T	8.5	A		9.2	A		9.9	A		10.5	B	
		R	0.0	A		0.0	A		0.0	A		0.0	A	
		A	8.5	A		9.2	A		9.9	A		10.5	B	
		L	6.0	A		6.8	A		3.4	A		3.9	A	
	WB	T	3.7	A		4.1	A		1.8	A		1.3	A	
		A	3.8	A		4.2	A		1.9	A		1.3	A	
	NB	LR	30.0	C		29.3	C		29.2	C		48.9	D	
		A	30.0	C		29.3	C		29.2	C		48.9	D	
	OVERALL		10.6		B		11.0	B		10.2	B		14.1	B
		EB	L	8.5	A		4.6	A		5.0	A		5.2	A
TR			12.8	B		19.7	B		21.0	C		22.4	C	
		A	12.1	B		17.3	B		18.3	B		19.7	B	
		L	14.1	B		3.7	A		6.3	A		6.8	A	
WB		TR	17.0	B		12.9	B		18.1	B		19.1	B	
		A	16.3	B		10.6	B		15.0	B		15.9	B	
NB		L	19.6	B		19.6	B		19.2	B		19.0	B	
		TR	10.3	B		10.3	B		10.0	B		9.9	A	
		A	11.2	B		11.2	B		10.9	B		10.8	B	
		L	31.0	C		31.0	C		32.5	C		32.5	C	
SB	TR	15.1	B		15.1	B		14.7	B		14.6	B		
	A	20.3	C		20.3	C		20.4	C		20.4	C		
OVERALL		14.5		B		14.4	B		16.4	B		17.2	B	

TABLE A: LEVEL OF SERVICE RESULTS

SATURDAY PEAK		INTERSECTION																
		2026 WITHOUT DEVELOPMENT				2026 WITH DEVELOPMENT				2031 WITHOUT DEVELOPMENT				2031 WITH DEVELOPMENT				
		DELAY		LOS		DELAY		LOS		DELAY		LOS		DELAY		LOS		
EAST HIGH STREET (SR 0641) AT CARLISLE PLAZA MALL / SHAFFNER AVE {Signalized}	EB	L	0.0	A		0.0	A		0.0	A		0.0	A		0.0	A		
		T	1.2	A		1.1	A		1.3	A		1.9	A		1.9	A		
		R	0.2	A		0.2	A		0.2	A		0.3	A		0.3	A		
		A	1.0	A		0.9	A		1.1	A		1.5	A		1.5	A		
	WB	L	3.4	A		3.1	A		3.4	A		6.7	A		6.7	A		
		TR	4.5	A		0.9	A		1.1	A		1.3	A		1.3	A		
		A	4.4	A		1.2	A		1.4	A		2.0	A		2.0	A		
		TL	42.7	D		48.0	D		42.6	D		43.0	D		43.0	D		
	NB	R	45.3	D		51.1	D		45.4	D		45.8	D		45.8	D		
		A	44.2	D		49.8	D		44.2	D		44.6	D		44.6	D		
		LTR	0.0	A		0.0	A		0.0	A		0.0	A		0.0	A		
		A	0.0	A		0.0	A		0.0	A		0.0	A		0.0	A		
	OVERALL		8.0	A		7.2	A		6.7	A		7.1	A		7.1	A		
	EAST HIGH STREET (SR 0641) AT CVS ACCESS DRIVE / LOWE'S ACCESS DRIVE {Signalized}	EB	L	9.4	A		8.9	A		10.0	B		9.9	A		9.9	A	
			T	16.9	B		1.8	A		2.2	A		2.6	A		2.6	A	
			R	11.8	B		0.3	A		0.4	A		0.4	A		0.4	A	
A			15.6	B		1.7	A		2.0	A		2.4	A		2.4	A		
WB		L	11.7	B		7.8	A		8.9	A		8.7	A		8.7	A		
		TR	14.8	B		13.6	B		15.4	B		15.4	B		15.4	B		
		A	14.2	B		12.6	B		14.2	B		14.2	B		14.2	B		
		TL	43.1	D		46.2	D		52.8	D		49.7	D		49.7	D		
NB		R	34.2	C		36.1	D		34.4	C		31.6	C		31.6	C		
		A	39.3	D		41.9	D		45.0	D		42.1	D		42.1	D		
		LTR	34.4	C		36.2	D		36.2	D		32.8	C		32.8	C		
		A	34.4	C		36.2	D		36.2	D		32.8	C		32.8	C		
OVERALL			19.4	B		13.0	B		14.4	B		13.9	B		13.9	B		

TABLE A: LEVEL OF SERVICE RESULTS

SATURDAY PEAK		SATURDAY PEAK															
		INTERSECTION															
		2026 WITHOUT DEVELOPMENT			2026 WITH DEVELOPMENT			2031 WITHOUT DEVELOPMENT			2031 WITH DEVELOPMENT						
DELAY			LOS			DELAY			LOS			DELAY			LOS		
TRINDLE ROAD (SR 0641) AT I-81 SOUTHBOUND OFF- RAMP {Signalized}	EB	LT	7.1	A	8.1	A	7.5	A	5.3	A							
		A	7.1	A	8.1	A	7.5	A	5.3	A							
	WB	TR	3.7	A	4.2	A	4.1	A	3.5	A							
		A	3.7	A	4.2	A	4.1	A	3.5	A							
	SB	L	16.0	B	16.0	B	16.0	B	18.6	B							
		R	4.6	A	4.1	A	4.6	A	4.5	A							
	A	A	9.6	A	10.1	B	9.6	A	11.5	B							
		OVERALL	6.8	A	7.5	A	7.0	A	6.4	A							
	Trindle Road (SR 0641) AT 81 NORTHBOUND ON-RAMP {Signalized}	WB	R	-	-	-	-	-	-	-	-						
			A	-	-	-	-	-	-	-	-						
OVERALL		-	-	-	-	-	-	-	-	-							
TRINDLE ROAD (SR 0641) AT ARMY HERITAGE DRIVE {Signalized}		EB	L	14.9	B	15.1	B	16.4	B	13.2	B						
			T	20.8	C	20.1	C	21.6	C	17.6	B						
	R		5.0	A	4.2	A	5.3	A	3.7	A							
	WB	A	12.9	B	13.8	B	13.7	B	12.1	B							
		L	15.9	B	7.1	A	16.6	B	20.5	C							
		T	33.3	C	18.4	B	35.1	D	35.8	D							
	NB	R	0.5	A	3.6	A	0.6	A	1.6	A							
		A	21.8	C	12.9	B	22.9	C	25.1	C							
		L	28.1	C	32.6	C	29.0	C	34.4	C							
		TR	37.6	D	35.7	D	39.1	D	40.9	D							
SB	A	34.4	C	34.6	C	35.7	D	38.5	D								
	L	27.5	C	27.3	C	29.5	C	32.0	C								
	TR	-	-	-	-	-	-	-	-								
	T	32.2	C	33.7	C	32.5	C	40.6	D								
	R	2.6	A	2.6	A	2.6	A	3.3	A								
OVERALL	22.4	C	20.6	C	23.3	C	24.5	C									

TABLE A: LEVEL OF SERVICE RESULTS

SATURDAY PEAK		SATURDAY PEAK													
		2026 WITHOUT DEVELOPMENT						2026 WITH DEVELOPMENT				2031 WITHOUT DEVELOPMENT		2031 WITH DEVELOPMENT	
		DELAY		LOS		2026 WITH DEVELOPMENT		2026 WITH DEVELOPMENT		2031 WITHOUT DEVELOPMENT		2031 WITH DEVELOPMENT			
INTERSECTION															
TRINDLE ROAD (SR 0641) AT HORNERS ROAD (T-590) {Unsignalized}	EB	LT	8.0	A	8.2	A	8.1	A	8.2	A	8.1	A	8.2	A	
		A	0.4	A	0.4	A	0.4	A	0.4	A	0.4	A			
	WB	TR	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A	
		A	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A	
	SB	LR	10.4	B	10.8	B	10.6	B	10.6	B	11.0	B	11.0	B	
		A	10.4	B	10.8	B	10.6	B	10.6	B	11.0	B	11.0	B	
	OVERALL			0.6	A	0.6	A	0.6	A	0.6	A	0.6	A	0.6	A
	TRINDLE ROAD (SR 0641) AT SOUTH MIDDLESEX ROAD (T-590) {Unsignalized}	EB	LTR	8.0	A	8.1	A	8.1	A	8.2	A	8.1	A	8.2	A
A			0.2	A	0.4	A	0.2	A	0.4	A	0.4	A			
WB		LTR	7.9	A	7.9	A	7.9	A	7.9	A	8.0	A	8.0	A	
		A	0.2	A	0.2	A	0.2	A	0.2	A	0.2	A	0.2	A	
NB		LTR	16.4	C	19.0	C	17.6	C	17.6	C	21.1	C	21.1	C	
		A	16.4	C	19.0	C	17.6	C	17.6	C	21.1	C	21.1	C	
SB		LTR	14.1	B	15.4	C	15.0	C	15.0	C	16.5	C	16.5	C	
		A	14.1	B	15.4	C	15.0	C	15.0	C	16.5	C	16.5	C	
OVERALL			2.9	A	3.2	A	3.1	A	3.4	A	3.4	A	3.4	A	
ARMY HERITAGE DRIVE AT WESTMINSTER DRIVE / FAIRVIEW STREET {Signalized}	EB	L	9.0	A	8.7	A	9.8	A	9.5	A	9.8	A	9.5	A	
		T	5.2	A	5.2	A	5.5	A	5.7	A	5.7	A			
	WB	A	8.9	A	8.6	A	9.6	A	9.4	A	9.4	A	9.4	A	
		TR	15.0	B	14.1	B	16.3	B	16.3	B	17.5	B	17.5	B	
	SB	L	29.4	C	30.2	C	29.8	C	29.8	C	32.9	C	32.9	C	
		R	38.1	D	43.1	D	41.9	D	41.9	D	48.7	D	48.7	D	
	OVERALL			23.1	C	24.4	C	24.7	C	27.5	C	27.5	C	27.5	C

TABLE A: LEVEL OF SERVICE RESULTS

SATURDAY PEAK		TABLE A: LEVEL OF SERVICE RESULTS											
INTERSECTION		2026 WITHOUT DEVELOPMENT			2026 WITH DEVELOPMENT			2031 WITHOUT DEVELOPMENT			2031 WITH DEVELOPMENT		
		DELAY	LOS		DELAY	LOS		DELAY	LOS		DELAY	LOS	
FAIRVIEW STREET AT LISBURN ROAD {Unsignalized}	WB	0.0	A		0.0	A		0.0	A		0.0	A	
	LR	0.0	A		0.0	A		0.0	A		0.0	A	
	A	0.0	A		0.0	A		0.0	A		0.0	A	
	TR	0.0	A		0.0	A		0.0	A		0.0	A	
	NB	0.0	A		0.0	A		0.0	A		0.0	A	
	A	0.0	A		0.0	A		0.0	A		0.0	A	
	LT	7.6	A		7.6	A		7.7	A		7.6	A	
YORK ROAD (SR 0074) AT I-81 SOUTHBOUND ON- RAMP {Signalized}	SB	0.1	A		0.1	A		0.1	A		0.1	A	
	A	0.1	A		0.1	A		0.1	A		0.1	A	
	OVERALL	0.1	A		0.0	A		0.1	A		0.0	A	
	R	-	-		-	-		-	-		-	-	
	WB	-	-		-	-		-	-		-	-	
	A	-	-		-	-		-	-		-	-	
	OVERALL	-	-		-	-		-	-		-	-	
YORK ROAD (SR 0074) AT I-81 NORTHBOUND OFF- RAMP {Signalized}	EB	9.0	A		5.4	A		9.7	A		9.8	A	
	TR	9.0	A		5.4	A		9.7	A		9.8	A	
	LT	9.0	A		10.1	B		11.2	B		11.9	B	
	WB	9.0	A		10.1	B		11.2	B		11.9	B	
	A	15.9	B		16.6	B		18.5	B		19.3	B	
	NB	18.7	B		22.3	C		23.4	C		23.1	C	
	A	17.9	B		20.7	C		22.0	C		22.0	C	
OVERALL		11.3	B		11.7	B		13.6	B		14.1	B	

TABLE A: LEVEL OF SERVICE RESULTS

[illegible]

TABLE A: LEVEL OF SERVICE RESULTS												
SATURDAY PEAK INTERSECTION												
		2026 WITHOUT DEVELOPMENT			2026 WITH DEVELOPMENT			2031 WITHOUT DEVELOPMENT			2031 WITH DEVELOPMENT	
		DELAY	LOS		DELAY	LOS		DELAY	LOS		DELAY	LOS
YORK ROAD (SR 0074) AT MAYAPPLE DRIVE {Unsignalized}	TR	0.0	A		0.0	A		0.0	A		0.0	A
	A	0.0	A		0.0	A		0.0	A		0.0	A
	LT	8.8	A		8.9	A		9.0	A		9.1	A
	A	0.5	A		0.4	A		0.5	A		0.5	A
	LR	19.2	C		21.5	C		21.5	C		24.6	C
	A	19.2	C		21.5	C		21.5	C		24.6	C
	OVERALL	1.3	A		1.4	A		1.4	A		1.6	A
	TR	0.0	A		0.0	A		0.0	A		0.0	A
	A	0.0	A		0.0	A		0.0	A		0.0	A
	LT	8.3	A		8.4	A		8.4	A		8.6	A
YORK ROAD (SR 0074) AT SPRINGVILLE ROAD {Unsignalized}	A	0.8	A		0.9	A		0.8	A		0.9	A
	LR	19.8	C		19.3	C		22.2	C		22.4	C
	A	19.8	C		19.3	C		22.2	C		22.4	C
	OVERALL	1.9	A		1.9	A		2.0	A		2.2	A
	TR	8.4	A		8.5	A		8.5	A		8.6	A
	A	2.0	A		1.7	A		2.0	A		1.7	A
	TR	0.0	A		0.0	A		0.0	A		0.0	A
	A	0.0	A		0.0	A		0.0	A		0.0	A
	LR	12.0	B		12.3	B		12.5	B		13.1	B
	A	12.0	B		12.3	B		12.5	B		13.1	B
OVERALL	2.6	A		2.4	A		2.7	A		2.5	A	
YORK ROAD (SR 0074) AT SHUGHART ROAD {Unsignalized}	TR	8.4	A		8.5	A		8.5	A		8.6	A
	A	2.0	A		1.7	A		2.0	A		1.7	A
	TR	0.0	A		0.0	A		0.0	A		0.0	A
	A	0.0	A		0.0	A		0.0	A		0.0	A
	LR	12.0	B		12.3	B		12.5	B		13.1	B
	A	12.0	B		12.3	B		12.5	B		13.1	B
	OVERALL	2.6	A		2.4	A		2.7	A		2.5	A

TABLE A: LEVEL OF SERVICE RESULTS

SATURDAY PEAK INTERSECTION		2026 WITHOUT DEVELOPMENT						2026 WITH DEVELOPMENT						2031 WITHOUT DEVELOPMENT						2031 WITH DEVELOPMENT					
		DELAY		LOS		DELAY		LOS		DELAY		LOS		DELAY		LOS		DELAY		LOS		DELAY		LOS	
FORGE ROAD (SR 2003) AT WESTMINSTER DRIVE {Unsignalized}	EB	LTR	13.3		B					9.2		B		13.9		B		9.5		B		9.5		B	
		A	13.3		B					9.2		B		13.9		B		9.5		B		9.5		B	
	WB	LTR	14.0		B					15.6		C		15.1		C		17.7		C		17.7		C	
		A	14.0		B					15.6		C		15.1		C		17.7		C		17.7		C	
	LT		7.2		A					8.8		A		7.3		A		8.9		A		8.9		A	
	R		-		-					-		-		-		-		-		-		-		-	
	A		-		-					-		-		-		-		-		-		-		-	
	LTR		8.2		A					9.6		A		8.3		A		9.9		A		9.9		A	
	A		-		-					9.6		A		-		-		9.9		-		9.9		A	
	OVERALL		10.6		B					14.0		B		11.2		B		15.7		B		15.7		C	
	LTR		16.0		C					16.2		C		17.0		C		18.3		C		18.3		C	
	A		16.0		C					16.2		C		17.0		C		18.3		C		18.3		C	
FORGE ROAD (SR 2003) AT FAIRVIEW STREET {Unsignalized}	WB	LTR	20.3		C					21.6		C		22.7		C		27.7		D		27.7		D	
		A	20.3		C					21.6		C		22.7		C		27.7		D		27.7		D	
	NB	LTR	8.4		A					8.4		A		8.5		A		8.6		A		8.6		A	
		A	0.4		A					0.4		A		0.4		A		0.4		A		0.4		A	
	LTR		8.1		A					8.1		A		8.2		A		8.3		A		8.3		A	
	A		0.3		A					0.3		A		0.3		A		0.3		A		0.3		A	
	OVERALL		2.7		A					3.0		A		2.9		A		3.7		A		3.7		A	
	LTR		16.0		C					16.2		C		17.0		C		18.3		C		18.3		C	
	A		16.0		C					16.2		C		17.0		C		18.3		C		18.3		C	
	LTR		20.3		C					21.6		C		22.7		C		27.7		D		27.7		D	
	A		20.3		C					21.6		C		22.7		C		27.7		D		27.7		D	

TABLE A: LEVEL OF SERVICE RESULTS

SATURDAY PEAK		INTERSECTION															
		2026 WITHOUT DEVELOPMENT				2026 WITH DEVELOPMENT				2031 WITHOUT DEVELOPMENT				2031 WITH DEVELOPMENT			
		DELAY	LOS			DELAY	LOS			DELAY	LOS			DELAY	LOS		
TRINDLE ROAD (SR 0641) AT ROSE BUSINESS PARK CONNECTOR / PHARMACY TRACT {Signalized}	EB	L	-	-				0.0	A			-	-	0.0	A		
		T	-	-					8.3	A			-	-	6.3	A	
		R	-	-					0.0	A			-	-	0.0	A	
	WB	A	-	-					8.3	A			-	-	6.3	A	
		L	-	-					39.4	D			-	-	47.5	D	
		TR	-	-					2.9	A			-	-	2.8	A	
	NB	A	-	-					8.9	A			-	-	9.9	A	
		L	-	-					39.9	D			-	-	47.4	D	
		TR	-	-					42.5	D			-	-	48.7	D	
	SB	A	-	-					41.0	D			-	-	48.0	D	
		L	-	-					0.0	A			-	-	0.0	A	
		TR	-	-					0.0	A			-	-	0.0	A	
	OVERALL	A	-	-					0.0	A			-	-	0.0	A	
				-	-				13.1	B			-	-	13.5	B	
				-	-				25.9	C			-	-	25.2	C	
YORK ROAD (SR 0074) AT HERITAGE VILLAGE CONNECTOR {Signalized}	EB	T	-	-				3.3	A			-	-	0.7	A		
		A	-	-					5.8	A			-	-	3.3	A	
		T	-	-					8.6	A			-	-	9.3	A	
	WB	R	-	-					0.0	A			-	-	0.0	A	
		A	-	-					8.6	A			-	-	9.3	A	
		L	-	-					30.3	C			-	-	35.0	C	
	SB	R	-	-					0.0	A			-	-	0.0	A	
		A	-	-					30.3	C			-	-	35.0	C	
				-	-				8.8	A			-	-	8.1	A	
	OVERALL		-	-				-	-			-	-	-	-	A	

TABLE B: QUEUE RESULTS										
AM PEAK										
		INTERSECTION								
		2026 WITHOUT DEVELOPMENT		2026 WITH DEVELOPMENT		2031 WITHOUT DEVELOPMENT		2031 WITH DEVELOPMENT		EXISTING AVAILABLE STORAGE
		QUEUE	QUEUE	QUEUE	QUEUE	QUEUE	QUEUE	QUEUE	QUEUE	
TRINDLE ROAD (SR 0641) AT ARMY HERITAGE DRIVE {Signalized}	EB	L	#311	#307	#390	#384	375	375	2031 WITH DEVELOPMENT & MITIGATION	Yes
		T	193	222	208	228	-	-	2026 WITH DEVELOPMENT & MITIGATION	
		R	23	20	27	22	95	-	2031 WITH DEVELOPMENT & MITIGATION	
	WB	L	55	m14	63	m42	110	-	2026 WITH DEVELOPMENT & MITIGATION	
		T	#461	#499	#521	#538	-	-	2031 WITH DEVELOPMENT & MITIGATION	
		R	0	m27	0	11	155	-	2026 WITH DEVELOPMENT & MITIGATION	
		L	126	161	149	167	140	260	2031 WITH DEVELOPMENT & MITIGATION	
	NB	TR	#655	#614	#754	#664	400	-	2026 WITH DEVELOPMENT & MITIGATION	
		T	-	-	-	-	-	-	2031 WITH DEVELOPMENT & MITIGATION	
		R	-	-	-	-	-	290	2026 WITH DEVELOPMENT & MITIGATION	
		L	#111	#124	#138	#134	125	195	2031 WITH DEVELOPMENT & MITIGATION	
		TR	-	-	-	-	-	-	2026 WITH DEVELOPMENT & MITIGATION	
TRINDLE ROAD (SR 0641) AT HORNERS ROAD (T-590) {Unsignalized}	SB	T	118	136	137	147	214	-	2031 WITH DEVELOPMENT & MITIGATION	No
		R	11	16	0	19	150	-	2026 WITH DEVELOPMENT & MITIGATION	
		L	0	0	0	0	1993	-	2031 WITH DEVELOPMENT & MITIGATION	
		TR	0	0	0	0	3207	-	2026 WITH DEVELOPMENT & MITIGATION	
		LR	5	5	5	5	-	-	2031 WITH DEVELOPMENT & MITIGATION	
		L	3	3	3	3	3207	-	2026 WITH DEVELOPMENT & MITIGATION	
TRINDLE ROAD (SR 0641) AT SOUTH MIDDLESEX ROAD (T-590) {Unsignalized}	EB	L	3	3	3	3	3207	-	2031 WITH DEVELOPMENT & MITIGATION	No
		TR	0	0	0	0	3600	-	2026 WITH DEVELOPMENT & MITIGATION	
		LR	68	88	88	118	3021	-	2031 WITH DEVELOPMENT & MITIGATION	
		L	33	43	40	53	2045	-	2026 WITH DEVELOPMENT & MITIGATION	

TABLE B: QUEUE RESULTS																		
AM PEAK																		
		INTERSECTION		2026 WITHOUT DEVELOPMENT		2026 WITH DEVELOPMENT		2031 WITHOUT DEVELOPMENT		2031 WITH DEVELOPMENT		EXISTING AVAILABLE STORAGE	PROPOSED AVAILABLE STORAGE	2026 WITH DEVELOPMENT & MITIGATION		2031 WITH DEVELOPMENT & MITIGATION		Mitigation Required?
				QUEUE		QUEUE		QUEUE		QUEUE				QUEUE		QUEUE		
YORK ROAD (SR 0074) AT HERITAGE VILLAGE CONNECTOR (Signalized)		EB	L	-	18	-	-	20	-	-	150	-	-	-	-	No		
			T	-	8	-	-	8	1645	-	-	-	-					
		WB	T	-	308	-	-	378	1500	-	-	-	-	-	-			
			R	-	0	-	-	0	-	-	275	-	-	-	-			
		SB	L	-	68	-	-	83	-	-	150	-	-	-	-			
			R	-	0	-	-	0	-	-	-	-	-	-	-			

TABLE B: QUEUE RESULTS																	
PM PEAK INTERSECTION			2026 WITHOUT DEVELOPMENT		2026 WITH DEVELOPMENT		2031 WITHOUT DEVELOPMENT		2031 WITH DEVELOPMENT		EXISTING AVAILABLE STORAGE	PROPOSED AVAILABLE STORAGE	2026 WITH DEVELOPMENT & MITIGATION		2031 WITH DEVELOPMENT & MITIGATION		Mitigation Required?
			QUEUE		QUEUE		QUEUE		QUEUE				QUEUE		QUEUE		
EAST HIGH STREET (SR 0641) AT YORK ROAD (SR 0074) {Signalized}	EB	T	260		298		340		428		500	-			-		No
	R		0		0		0		0		500	-			-		
	WB	L	8		10		10		13		75	-			-		
	T		28		28		28		23		1070	-			-		
YORK ROAD (SR 0074) AT GIANT LANE / CARLISLE PLAZA MALL {Signalized}	NB	LR	203		243		290		388		1070	-			-		No
	L		29		29		30		30		210	-			-		
	TR		#415		#444		#475		#518		1070	-			-		
	WB	L	#246		#249		#281		#308		210	-			-		
EAST HIGH STREET (SR 0641) AT SHAFFNER AVE / CARLISLE PLAZA MALL {Signalized}	TR		242		249		259		271		1415	-			-		Yes
	NB	L	12		13		15		15		110	-			-		
	TR		62		66		73		73		2091	-			-		
	SB	L	68		75		#95		#95		65	-			-		
EAST HIGH STREET (SR 0641) AT CVS ACCESS DRIVE / LOWE'S ACCESS DRIVE {Signalized}	TR		152		166		#214		#214		480	-			-		No
	L		0		0		0		0		60	-			-		
	EB	T	23		20		20		25		1070	-			-		
	R		0		0		0		3		60	-			-		
TRINDLE ROAD (SR 0641) AT I-81 SOUTHBOUND OFF-RAMP {Signalized}	WB	L	65		63		108		78		60	-			-		-
	TR		15		15		18		15		800	-			-		
	NB	LT	68		93		128		85		480	-			-		
	R		110		148		198		133		80	-			-		
EAST HIGH STREET (SR 0641) AT CVS ACCESS DRIVE / LOWE'S ACCESS DRIVE {Signalized}	SB	LTR	0		3		3		3		575	-			-		No
	L		8		8		13		8		60	-			-		
	EB	T	20		18		20		20		800	-			-		
	R		3		3		3		3		60	-			-		
TRINDLE ROAD (SR 0641) AT I-81 SOUTHBOUND OFF-RAMP {Signalized}	WB	L	40		43		55		45		80	-			-		No
	TR		453		483		628		503		3366	-			-		
	NB	LT	125		163		223		145		425	-			-		
	R		50		65		93		58		50	-			-		
Trindle Road (SR 0641) AT I-81 NORTHBOUND ON-RAMP {Signalized}	SB	LTR	33		43		70		40		220	-			-		-
	EB	LT	171		200		212		268		3366	-			-		
	WB	TR	81		m82		116		m85		1420	-			-		
	SB	L	95		146		192		162		800	-			-		

TABLE B: QUEUE RESULTS															
PM PEAK INTERSECTION	2026 WITHOUT DEVELOPMENT		2026 WITH DEVELOPMENT		2031 WITHOUT DEVELOPMENT		2031 WITH DEVELOPMENT		EXISTING STORAGE AVAILABLE STORAGE		2026 WITH DEVELOPMENT & MITIGATION		2031 WITH DEVELOPMENT & MITIGATION		Mitigation Required?
	QUEUE		QUEUE		QUEUE		QUEUE		PROPOSED AVAILABLE STORAGE		QUEUE		QUEUE		
ARMY HERITAGE DRIVE AT WESTMINSTER DRIVE / FAIRVIEW STREET {Signalized}	EB	L	220	238	118	258	3029	-	-	0					
		T	10	13	13	13	3029	-	-	0					
	WB	TR	173	190	193	205	760	-	-	235					
	SB	L	335	248	365	263	400	-	-	260					
FAIRVIEW STREET AT LISBURN ROAD {Unsignalized}	WB	R	608	475	658	550	400	-	-	0					
		LR	0	0	0	0	-	-	-	-					
	NB	TR	0	0	0	0	2780	-	-	-					
	SB	LT	0	0	0	0	760	-	-	-					
YORK ROAD (SR 0074) AT I-81 SOUTHBOUND ON-RAMP {Signalized}	WB	L	-	-	-	-	-	-	-	-				No	
YORK ROAD (SR 0074) AT I-81 NORTHBOUND OFF-RAMP {Signalized}	EB	TR	172	219	225	231	670	-	-	164					
		T	298	m325	325	m326	970	-	-	m#376					
	NB	L	103	121	130	132	25	-	-	76					
		R	#415	#561	#550	#641	1300	-	-	#412					
YORK ROAD (SR 0074) AT WESTMINSTER DRIVE {Signalized}		L	#347	m#213	#272	m#230	120	-	-	m#331					
	EB	T	693	m512	#516	m529	945	-	-	m693					
		R	140	m57	22	m20	945	-	-	m86					
		L	13	m11	7	m11	75	-	-	m13					
	WB	T	#624	#471	#484	m#495	2220	-	-	#649					
		R	8	m2	0	m1	180	-	-	m6					
		L	#371	#287	#305	#331	130	-	-	#377					
		TR	141	106	108	117	460	-	-	133					
		L	92	67	70	71	130	-	-	84					
		TR	#715	#524	#560	#577	650	-	-	#691					
		T	-	-	-	-	650	-	-	-					
		R	-	-	-	-	-	-	-	-					
YORK ROAD (SR 0074) AT FAIRVIEW STREET (T-512) {Signalized}	EB	L	29	m5	6	m5	75	-	-	-				No	
		TR	298	m56	65	m60	2220	-	-	-					
	WB	LTR	311	64	421	72	1645	-	-	-					
	NB	LTR	67	108	85	117	290	-	-	-					
YORK ROAD (SR 0074) AT MAYAPPLE DRIVE {Unsignalized}	SB	LTR	#346	#278	#459	#320	2780	-	-	-					
	EB	TR	0	0	0	0	1500	-	-	-					
	WB	LT	5	5	8	8	3600	-	-	-					
	NB	LR	33	33	43	55	500	-	-	-					
YORK ROAD (SR 0074) AT SPRINGVILLE ROAD {Unsignalized}	EB	TR	0	0	0	0	3600	-	-	-				No	
		LT	10	10	13	13	330	-	-	-					
	NB	LR	70	48	95	88	3030	-	-	-					
		LT	10	13	13	13	330	-	-	-					
YORK ROAD (SR 0074) AT SHUGHART ROAD {Unsignalized}	WB	TR	0	0	0	0	2600	-	-	-				No	
		LR	48	53	58	63	2050	-	-	-					

TABLE B: QUEUE RESULTS

PM PEAK																		Mitigation Required?
		INTERSECTION		2026 WITHOUT DEVELOPMENT		2026 WITH DEVELOPMENT		2031 WITHOUT DEVELOPMENT		2031 WITH DEVELOPMENT		EXISTING AVAILABLE STORAGE	PROPOSED AVAILABLE STORAGE	2026 WITH DEVELOPMENT & MITIGATION		2031 WITH DEVELOPMENT & MITIGATION		
				QUEUE		QUEUE		QUEUE		QUEUE				QUEUE				
FORGE ROAD (SR 2003) AT WESTMINSTER DRIVE {Unsignalized}	EB	LTR	16		13		19		15		480	-		-				
	WB	LTR	333		348		449		463		2000	-		-				
	NB	LT	0		3		0		3		1550	-		-				
		R			-		-		-		100	-		-				
	SB	LTR	2		10		2		10		-	-		-				
FORGE ROAD (SR 2003) AT FAIRVIEW STREET {Unsignalized}	EB	LTR	10		10		13		13		2125	-		-				
	WB	LTR	110		135		150		180		130	-		-				
	NB	LTR	3		3		3		3		500	-		-				
	SB	LTR	3		3		3		3		1550	-		-				
		L	-		0		-		0		-	150	-		-			
TRINDLE ROAD (SR 0641) AT ROSE BUSINESS PARK CONNECTOR / PHARMACY TRACT {Signalized}	EB	T	-		368		-		403		2300	-		-				
		R	-		0		-		0		-	475	-		-			
		L	-		128		-		123		-	200	-		-			
	WB	TR	-		218		-		238		1993	-		-				
		L	-		58		-		60		-	150	-		-			
	NB	TR	-		93		-		95		-	-	-		-			
		L	-		0		-		0		-	75	-		-			
	SB	TR	-		0		-		0		-	-	-		-			

TABLE B: QUEUE RESULTS

PM PEAK		INTERSECTION												Mitigation Required?					
		2026 WITHOUT DEVELOPMENT		2026 WITH DEVELOPMENT		2031 WITHOUT DEVELOPMENT		2031 WITH DEVELOPMENT		EXISTING AVAILABLE STORAGE		PROPOSED AVAILABLE STORAGE				2026 WITH DEVELOPMENT & MITIGATION		2031 WITH DEVELOPMENT & MITIGATION	
				QUEUE	QUEUE	QUEUE	QUEUE	QUEUE	QUEUE							QUEUE	QUEUE		
YORK ROAD (SR 0074) AT HERITAGE VILLAGE CONNECTOR (Signalized)	EB	L	-	48	-	-	-	48	-	-	150	-	-	-	-				
		T	-	25	-	-	-	28	-	1645	-	-	-	-					
	WB	T	-	275	-	-	-	300	-	1500	-	-	-	-					
		R	-	0	-	-	-	0	-	-	275	-	-	-					
	SB	L	-	143	-	-	-	150	-	-	150	-	-	-					
		R	-	0	-	-	-	0	-	-	-	-	-	-					

TABLE B: QUEUE RESULTS

SAT PEAK																Mitigation Required?	
		INTERSECTION															
		2026 WITHOUT DEVELOPMENT		2026 WITH DEVELOPMENT		2031 WITHOUT DEVELOPMENT		2031 WITH DEVELOPMENT		EXISTING STORAGE AVAILABLE STORAGE		PROPOSED AVAILABLE STORAGE		2026 WITH DEVELOPMENT & MITIGATION			2031 WITH DEVELOPMENT & MITIGATION
		QUEUE	127	132	138	105	375	375									
TRINDLE ROAD (SR 0641) AT ARMY HERITAGE DRIVE (Signalized)	EB	L	127	132	138	105	375	375									
		T	152	207	157	190		-	-								
		R	63	56	67	59		95	-								
		L	70	m36	75	67		110	-								
	WB	T	211	219	225	240		-	-								
		R	0	m22	0	9		155	-								
		L	117	132	117	140		140	260								
	NB	TR	#296	268	#349	303		400	-								
		T	-	-	-	-		-	-								
		R	-	-	-	-		-	290								
		L	66	69	69	79		125	195								
		TR	-	-	-	-		-	-								
TRINDLE ROAD (SR 0641) AT HORNERS ROAD (T-590) {Unsignalized}	SB	T	176	180	187	208		214									
		R	25	25	26	31		150	-								
	EB		0	0	0	3		1993	-								
	WB	TR	0	0	0	0		3207	-								
TRINDLE ROAD (SR 0641) AT SOUTH MIDDLESEX ROAD (T-590) {Unsignalized}	SB	L	3	3	3	3		-	-								
		EB	L	0	0	0	3		3207	-							
		WB	L	0	0	0	0		3600	-							
	NB	L	18	20	20	25		3021	-								
		SB	L	13	15	15	18		2045	-							

TABLE B: QUEUE RESULTS

SAT PEAK																		Mitigation Required?
		INTERSECTION																
		2026 WITHOUT DEVELOPMENT		2026 WITH DEVELOPMENT		2031 WITHOUT DEVELOPMENT		2031 WITH DEVELOPMENT		EXISTING STORAGE AVAILABLE STORAGE		PROPOSED AVAILABLE STORAGE		2026 WITH DEVELOPMENT & MITIGATION		2031 WITH DEVELOPMENT & MITIGATION		
	QUEUE	QUEUE	QUEUE	QUEUE	QUEUE	QUEUE	QUEUE	QUEUE	QUEUE	QUEUE	QUEUE	QUEUE	QUEUE	QUEUE	QUEUE	QUEUE	QUEUE	
FORGE ROAD (SR 2003) AT WESTMINSTER DRIVE {Unsignalized}	EB LTR	8		5		9		8		460		-		-		-		
	WB LTR	70		95		83		115		2000		-		-		-		
	LT	0		3		0		3		1550		-		-		-		
	NB R	-		-		-		-		100		-		-		-		
	SB LTR	2		8		3		8		-		-		-		-		
	EB LTR	10		10		10		13		2125		-		-		-		
	WB LTR	25		30		30		45		130		-		-		-		
	NB LTR	3		3		3		3		500		-		-		-		
	SB LTR	0		0		0		0		1550		-		-		-		
	L	-		0		-		0		-		150		-		-		
	EB T	-		218		-		218		2300		-		-		-		
	R	-		0		-		0		-		475		-		-		
	L	-		50		-		55		-		200		-		-		
	WB TR	-		138		-		153		1993		-		-		-		
	L	-		48		-		55		-		150		-		-		
	NB TR	-		73		-		85		-		-		-		-		
	L	-		0		-		0		-		75		-		-		
	SB TR	-		0		-		0		-		-		-		-		
	TR	-				-				-		-		-		-		
	TR	-				-				-		-		-		-		
TRINDLE ROAD (SR 0641) AT ROSE BUSINESS PARK CONNECTOR / PHARMACY TRACT {Signalized}																		

TABLE B: QUEUE RESULTS

SAT PEAK																			
INTERSECTION																			
YORK ROAD (SR 0074) AT HERITAGE VILLAGE CONNECTOR (Signalized)		2026 WITHOUT DEVELOPMENT		2026 WITH DEVELOPMENT		2031 WITHOUT DEVELOPMENT		2031 WITH DEVELOPMENT		EXISTING AVAILABLE STORAGE		PROPOSED AVAILABLE STORAGE		2026 WITH DEVELOPMENT & MITIGATION		2031 WITH DEVELOPMENT & MITIGATION		Mitigation Required?	
		QUEUE		QUEUE		QUEUE		QUEUE		2031 WITH DEVELOPMENT				QUEUE		QUEUE			
		L	-	23	-	-	-	23	-	-	-	150	-	-	-				
		T	-	133	-	-	-	13	-	1645	-	-	-	-					
		WB	-	188	-	-	-	220	-	1500	-	-	-	-					
		R	-	0	-	-	-	0	-	-	275	-	-	-					
		SB	-	63	-	-	-	78	-	-	150	-	-	-					

Lanes, Volumes, Timings

Timing Plan: AM Peak Hour

1: York Road (SR 0074) & E. High St. (SR 0641)/E High St. (SR 0641)

05/08/2023

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑	↓	↑	↘	↗
Traffic Volume (vph)	575	220	6	532	292	8
Future Volume (vph)	575	220	6	532	292	8
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	16	10	13	14	14
Storage Length (ft)		0	75		0	0
Storage Lanes		1	1		1	0
Taper Length (ft)			25		25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850			0.996	
Flt Protected			0.950		0.954	
Satd. Flow (prot)	1673	1683	1330	1771	1743	0
Flt Permitted			0.329		0.954	
Satd. Flow (perm)	1673	1683	461	1771	1743	0
Right Turn on Red		No				Yes
Satd. Flow (RTOR)					2	
Link Speed (mph)	35			35	35	
Link Distance (ft)	1498			1127	625	
Travel Time (s)	29.2			22.0	12.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	4%	3%	20%	5%	4%	29%
Adj. Flow (vph)	625	239	7	578	317	9
Shared Lane Traffic (%)						
Lane Group Flow (vph)	625	239	7	578	326	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	14	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.12	0.91	1.17	1.03	0.99	0.99
Turning Speed (mph)		9	15		15	9
Number of Detectors	1	0	1	1	1	
Detector Template						
Leading Detector (ft)	37	0	37	37	37	
Trailing Detector (ft)	-3	0	-3	-3	-3	
Detector 1 Position(ft)	-3	0	-3	-3	-3	
Detector 1 Size(ft)	40	20	40	40	40	
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Turn Type	NA	Perm	Perm	NA	Prot	
Protected Phases	2			6	8	
Permitted Phases		2	6			
Detector Phase	2	2	6	6	8	
Switch Phase						
Minimum Initial (s)	30.0	30.0	30.0	30.0	10.0	



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Minimum Split (s)	35.2	35.2	35.2	35.2	14.9	
Total Split (s)	39.0	39.0	39.0	39.0	21.0	
Total Split (%)	65.0%	65.0%	65.0%	65.0%	35.0%	
Maximum Green (s)	33.8	33.8	33.8	33.8	16.1	
Yellow Time (s)	3.6	3.6	3.6	3.6	3.7	
All-Red Time (s)	1.6	1.6	1.6	1.6	1.2	
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-0.5	
Total Lost Time (s)	4.2	4.2	4.2	4.2	4.4	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	
Act Effct Green (s)	36.3	36.3	36.3	36.3	15.1	
Actuated g/C Ratio	0.60	0.60	0.60	0.60	0.25	
v/c Ratio	0.62	0.23	0.03	0.54	0.74	
Control Delay	11.3	6.6	4.7	6.8	15.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	11.3	6.6	4.7	6.8	15.6	
LOS	B	A	A	A	B	
Approach Delay	10.0			6.8	15.6	
Approach LOS	B			A	B	
Queue Length 50th (ft)	133	37	1	100	44	
Queue Length 95th (ft)	231	68	m4	217	75	
Internal Link Dist (ft)	1418			1047	545	
Turn Bay Length (ft)			75			
Base Capacity (vph)	1013	1019	279	1072	483	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.62	0.23	0.03	0.54	0.67	

Intersection Summary

Area Type: Other

Cycle Length: 60

Actuated Cycle Length: 60

Offset: 50 (83%), Referenced to phase 2:EBT and 6:WBTL, Start of Green

Natural Cycle: 55

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.74

Intersection Signal Delay: 10.0

Intersection LOS: A

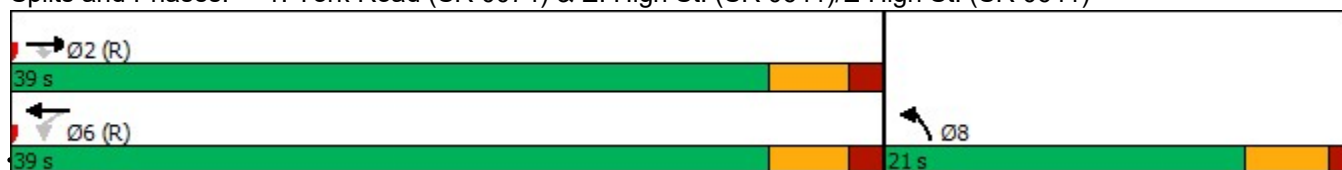
Intersection Capacity Utilization 57.0%

ICU Level of Service B

Analysis Period (min) 15

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

Splits and Phases: 1: York Road (SR 0074) & E. High St. (SR 0641)/E High St. (SR 0641)



HCM 2010 Signalized Intersection Summary

Timing Plan: AM Peak Hour

1: York Road (SR 0074) & E. High St. (SR 0641)/E High St. (SR 0641)

05/08/2023

									
Movement	EBT	EBR	WBL	WBT	NBL	NBR			
Lane Configurations									
Traffic Volume (veh/h)	575	220	6	532	292	8			
Future Volume (veh/h)	575	220	6	532	292	8			
Number	2	12	1	6	3	18			
Initial Q (Qb), veh	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1731	1817	1500	1783	1788	1872			
Adj Flow Rate, veh/h	625	0	7	578	317	9			
Adj No. of Lanes	1	1	1	1	0	0			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	4	3	20	5	4	29			
Cap, veh/h	1073	958	395	1106	389	11			
Arrive On Green	0.62	0.00	1.00	1.00	0.24	0.23			
Sat Flow, veh/h	1731	1545	677	1783	1646	47			
Grp Volume(v), veh/h	625	0	7	578	327	0			
Grp Sat Flow(s),veh/h/ln	1731	1545	677	1783	1698	0			
Q Serve(g_s), s	12.9	0.0	0.2	0.0	10.9	0.0			
Cycle Q Clear(g_c), s	12.9	0.0	13.1	0.0	10.9	0.0			
Prop In Lane		1.00	1.00		0.97	0.03			
Lane Grp Cap(c), veh/h	1073	958	395	1106	402	0			
V/C Ratio(X)	0.58	0.00	0.02	0.52	0.81	0.00			
Avail Cap(c_a), veh/h	1073	958	395	1106	470	0			
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	1.00			
Upstream Filter(I)	1.00	0.00	0.89	0.89	1.00	0.00			
Uniform Delay (d), s/veh	6.8	0.0	2.3	0.0	21.7	0.0			
Incr Delay (d2), s/veh	2.3	0.0	0.1	1.6	9.3	0.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(95%),veh/ln	1.0	0.0	0.1	0.9	10.2	0.0			
LnGrp Delay(d),s/veh	9.1	0.0	2.3	1.6	30.9	0.0			
LnGrp LOS	A		A	A	C				
Approach Vol, veh/h	625			585	327				
Approach Delay, s/veh	9.1			1.6	30.9				
Approach LOS	A			A	C				
Timer	1	2	3	4	5	6	7	8	
Assigned Phs		2				6		8	
Phs Duration (G+Y+Rc), s		41.4				41.4		18.6	
Change Period (Y+Rc), s		* 5.2				* 5.2		4.9	
Max Green Setting (Gmax), s		* 34				* 34		16.1	
Max Q Clear Time (g_c+l1), s		15.4				15.6		13.4	
Green Ext Time (p_c), s		2.3				2.1		0.3	
Intersection Summary									
HCM 2010 Ctrl Delay			10.9						
HCM 2010 LOS			B						
Notes									

User approved volume balancing among the lanes for turning movement.

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	26	305	8	61	467	11	6	26	68	34	22	16
Future Volume (vph)	26	305	8	61	467	11	6	26	68	34	22	16
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	13	13	13	13	12	13	11	14	14	10	12	12
Grade (%)		1%			2%			-2%			2%	
Storage Length (ft)	210		0	210		0	110		0	65		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.996			0.996			0.892			0.937	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1724	1807	0	1715	1676	0	1637	1696	0	1477	1604	0
Flt Permitted	0.260			0.454			0.729			0.688		
Satd. Flow (perm)	472	1807	0	820	1676	0	1256	1696	0	1069	1604	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			3			77			18	
Link Speed (mph)		35			35			35			25	
Link Distance (ft)		549			3632			825			544	
Travel Time (s)		10.7			70.8			16.1			14.8	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	2%	2%	2%	2%	6%	2%	2%	2%	2%	7%	2%	7%
Adj. Flow (vph)	30	347	9	69	531	13	7	30	77	39	25	18
Shared Lane Traffic (%)												
Lane Group Flow (vph)	30	356	0	69	544	0	7	107	0	39	43	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		13			13			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.03	1.03	1.03	1.04	1.09	1.04	1.11	0.97	0.97	1.19	1.09	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1		1	1		1	1	
Detector Template												
Leading Detector (ft)	40	256		40	256		30	37		30	35	
Trailing Detector (ft)	-10	250		-10	250		-10	-3		-10	-5	
Detector 1 Position(ft)	-10	250		-10	250		-10	-3		-10	-5	
Detector 1 Size(ft)	50	6		50	6		40	40		40	40	
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	5	2		1	6		8	8		4	4	
Switch Phase												

Lanes, Volumes, Timings
2: Giant Ln./Carlisle Plaza Mall & York Road (SR 0074)

Timing Plan: AM Peak Hour

05/08/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Minimum Initial (s)	3.0	10.0		3.0	10.0		3.0	3.0		3.0	3.0	
Minimum Split (s)	8.0	24.4		8.0	24.4		21.4	21.4		21.4	21.4	
Total Split (s)	8.0	30.6		8.0	30.6		21.4	21.4		21.4	21.4	
Total Split (%)	13.3%	51.0%		13.3%	51.0%		35.7%	35.7%		35.7%	35.7%	
Maximum Green (s)	4.5	25.2		4.5	25.2		16.0	16.0		16.0	16.0	
Yellow Time (s)	3.0	3.6		3.0	3.6		3.8	3.8		3.8	3.8	
All-Red Time (s)	0.5	1.8		0.5	1.8		1.6	1.6		1.6	1.6	
Lost Time Adjust (s)	-0.5	-1.0		-0.5	-1.0		-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)	3.0	4.4		3.0	4.4		4.4	4.4		4.4	4.4	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	6.0		3.0	6.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.5		3.0	3.5		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	25.0		0.0	25.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	20.0		0.0	20.0		0.0	0.0		0.0	0.0	
Recall Mode	Max	C-Max		Max	C-Max		None	None		None	None	
Walk Time (s)		19.0			19.0		16.0	16.0		16.0	16.0	
Flash Dont Walk (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Pedestrian Calls (#/hr)		0			0		0	0		0	0	
Act Effct Green (s)	42.9	26.2		42.9	26.2		8.9	8.9		8.9	8.9	
Actuated g/C Ratio	0.72	0.44		0.72	0.44		0.15	0.15		0.15	0.15	
v/c Ratio	0.05	0.45		0.08	0.74		0.04	0.34		0.25	0.17	
Control Delay	2.9	12.7		3.1	22.0		20.8	12.3		27.7	17.8	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	2.9	12.7		3.1	22.0		20.8	12.3		27.7	17.8	
LOS	A	B		A	C		C	B		C	B	
Approach Delay		11.9			19.9			12.8			22.5	
Approach LOS		B			B			B			C	
Queue Length 50th (ft)	2	73		5	154		2	10		15	10	
Queue Length 95th (ft)	7	96		16	#260		11	42		33	29	
Internal Link Dist (ft)		469			3552			745			464	
Turn Bay Length (ft)	210			210			110			65		
Base Capacity (vph)	656	790		814	733		355	535		302	467	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.05	0.45		0.08	0.74		0.02	0.20		0.13	0.09	

Intersection Summary

Area Type: Other

Cycle Length: 60

Actuated Cycle Length: 60

Offset: 57 (95%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.74

Intersection Signal Delay: 16.8

Intersection LOS: B

Intersection Capacity Utilization 49.3%

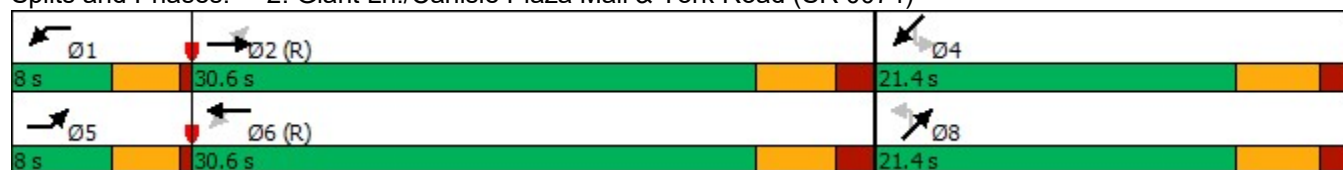
ICU Level of Service A

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 2: Giant Ln./Carlisle Plaza Mall & York Road (SR 0074)



HCM 2010 analysis expects stop-line detection. Detectors cannot be further than 20 feet from the stop bar.

Lanes, Volumes, Timings

Timing Plan: AM Peak Hour

3: Carlisle Plaza Mall/Shaffner Ave. & E High St. (SR 0641)/E. High St. (SR 0641) 05/08/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	345	40	33	379	1	22	0	28	2	0	1
Future Volume (vph)	2	345	40	33	379	1	22	0	28	2	0	1
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12	12	12	12	16	16	16
Grade (%)		0%			0%			2%			0%	
Storage Length (ft)	60		60	60		0	0		80	0		0
Storage Lanes	1		1	1		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850						0.850		0.955	
Flt Protected	0.950			0.950				0.950			0.968	
Satd. Flow (prot)	1676	1731	1443	1644	1513	0	0	1660	1402	0	1132	0
Flt Permitted	0.440			0.469				0.756			0.822	
Satd. Flow (perm)	776	1731	1443	812	1513	0	0	1321	1402	0	961	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			75						76		76	
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		1127			853			544			592	
Travel Time (s)		22.0			16.6			10.6			11.5	
Peak Hour Factor	1.00	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	2%	4%	6%	4%	19%	2%	2%	2%	8%	50%	2%	100%
Adj. Flow (vph)	2	401	47	38	441	1	26	0	33	2	0	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	2	401	47	38	442	0	0	26	33	0	3	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane					Yes							
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.09	1.09	1.09	0.91	0.91	0.91
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	1	1	1		1	1	1	1	2	
Detector Template							Left			Left		
Leading Detector (ft)	45	35	35	45	35		20	45	45	20	20	
Trailing Detector (ft)	-5	-5	-5	-5	-5		0	-5	-5	0	-3	
Detector 1 Position(ft)	-5	-5	-5	-5	-5		0	-5	-5	0	-3	
Detector 1 Size(ft)	50	40	40	50	40		20	50	50	20	6	
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex		CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)											14	
Detector 2 Size(ft)											6	
Detector 2 Type											CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)											0.0	

Lanes, Volumes, Timings

Timing Plan: AM Peak Hour

3: Carlisle Plaza Mall/Shaffner Ave. & E High St. (SR 0641)/E. High St. (SR 0641) 05/08/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Perm	NA	Perm	Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2		2	6			8		8	4		
Detector Phase	5	2	2	1	6		8	8	8	4	4	
Switch Phase												
Minimum Initial (s)	3.0	10.0	10.0	3.0	10.0		3.0	3.0	3.0	3.0	3.0	
Minimum Split (s)	8.7	27.7	27.7	8.7	27.7		26.5	26.5	26.5	26.5	26.5	
Total Split (s)	11.0	81.0	81.0	11.0	81.0		28.0	28.0	28.0	28.0	28.0	
Total Split (%)	9.2%	67.5%	67.5%	9.2%	67.5%		23.3%	23.3%	23.3%	23.3%	23.3%	
Maximum Green (s)	5.3	75.3	75.3	5.3	75.3		22.5	22.5	22.5	22.5	22.5	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.5	2.5	2.5	2.5	2.5	
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0			-1.0	-1.0		-1.0	
Total Lost Time (s)	4.7	4.7	4.7	4.7	4.7			4.5	4.5		4.5	
Lead/Lag	Lead	Lag	Lag	Lead	Lag							
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	6.0	6.0	3.0	6.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	Max	C-Max	C-Max	Max	C-Max		None	None	None	None	None	
Walk Time (s)		12.0	12.0		12.0		11.0	11.0	11.0	11.0	11.0	
Flash Dont Walk (s)		10.0	10.0		10.0		10.0	10.0	10.0	10.0	10.0	
Pedestrian Calls (#/hr)		0	0		0		0	0	0	0	0	
Act Effct Green (s)	99.3	76.3	76.3	99.3	76.3			9.1	9.1		9.0	
Actuated g/C Ratio	0.83	0.64	0.64	0.83	0.64			0.08	0.08		0.08	
v/c Ratio	0.00	0.36	0.05	0.05	0.46			0.26	0.19		0.02	
Control Delay	0.5	7.3	1.5	1.5	7.0			59.0	4.2		0.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0			0.0	0.0		0.0	
Total Delay	0.5	7.3	1.5	1.5	7.0			59.0	4.2		0.3	
LOS	A	A	A	A	A			E	A		A	
Approach Delay		6.7			6.5			28.3			0.3	
Approach LOS		A			A			C			A	
Queue Length 50th (ft)	0	137	3	3	60			20	1		0	
Queue Length 95th (ft)	m0	184	m6	m6	74			m45	m1		0	
Internal Link Dist (ft)		1047			773			464			512	
Turn Bay Length (ft)	60		60	60					80			
Base Capacity (vph)	814	1100	944	830	962			258	335		249	
Starvation Cap Reductn	0	0	0	0	0			0	0		0	
Spillback Cap Reductn	0	0	0	0	0			0	0		0	
Storage Cap Reductn	0	0	0	0	0			0	0		0	
Reduced v/c Ratio	0.00	0.36	0.05	0.05	0.46			0.10	0.10		0.01	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 90 (75%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 65

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.46

Intersection Signal Delay: 7.9

Intersection LOS: A

Intersection Capacity Utilization 39.4%

ICU Level of Service A

Analysis Period (min) 15

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

Splits and Phases: 3: Carlisle Plaza Mall/Shaffner Ave. & E High St. (SR 0641)/E. High St. (SR 0641)



HCM 2010 Signalized Intersection Summary

Timing Plan: AM Peak Hour

3: Carlisle Plaza Mall/Shaffner Ave. & E High St. (SR 0641)/E. High St. (SR 0641)

05/08/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	345	40	33	379	1	22	0	28	2	0	1
Future Volume (veh/h)	2	345	40	33	379	1	22	0	28	2	0	1
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	2	0	0	4	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
Adj Sat Flow, veh/h/ln	1765	1731	1698	1731	1513	1800	1782	1747	1650	1872	1123	1872
Adj Flow Rate, veh/h	2	401	47	38	441	1	26	0	33	2	0	1
Adj No. of Lanes	1	1	1	1	1	0	0	1	1	0	1	0
Peak Hour Factor	1.00	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	2	4	6	4	19	2	2	2	8	50	2	100
Cap, veh/h	877	1357	1132	857	1183	3	131	0	67	67	7	12
Arrive On Green	0.11	1.00	1.00	0.11	1.00	1.00	0.04	0.00	0.05	0.04	0.00	0.04
Sat Flow, veh/h	1681	1731	1443	1648	1509	3	1501	0	1403	366	139	252
Grp Volume(v), veh/h	2	401	47	38	0	442	26	0	33	3	0	0
Grp Sat Flow(s),veh/h/ln	1681	1731	1443	1648	0	1512	1501	0	1403	757	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	2.8	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.4	0.0	0.0	1.8	0.0	2.8	1.8	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.00	1.00		1.00	0.67		0.33
Lane Grp Cap(c), veh/h	877	1357	1132	857	0	1186	119	0	67	80	0	0
V/C Ratio(X)	0.00	0.30	0.04	0.04	0.00	0.37	0.22	0.00	0.50	0.04	0.00	0.00
Avail Cap(c_a), veh/h	888	1357	1132	868	0	1186	326	0	275	213	0	0
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	0.75	0.75	0.75	0.86	0.00	0.86	0.97	0.00	0.97	1.00	0.00	0.00
Uniform Delay (d), s/veh	2.0	0.0	0.0	2.1	0.0	0.0	55.8	0.0	55.7	55.1	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.4	0.1	0.1	0.0	0.8	0.9	0.0	5.4	0.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.0	0.3	0.0	0.4	0.0	0.5	1.6	0.0	2.1	0.2	0.0	0.0
LnGrp Delay(d),s/veh	2.0	0.4	0.1	2.2	0.0	0.9	56.7	0.0	61.2	55.3	0.0	0.0
LnGrp LOS	A	A	A	A		A	E		E	E		
Approach Vol, veh/h		450			480			59			3	
Approach Delay, s/veh		0.4			1.0			59.2			55.3	
Approach LOS		A			A			E			E	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.0	98.8		10.2	11.0	98.8		10.2				
Change Period (Y+Rc), s	* 5.7	* 5.7		5.5	* 5.7	* 5.7		5.5				
Max Green Setting (Gmax), s	5.3	* 75		22.5	* 5.3	* 75		22.5				
Max Q Clear Time (g_c+l1)2s	2.5	2.5		3.8	2.5	2.5		5.3				
Green Ext Time (p_c), s	0.0	6.1		0.0	0.0	6.2		0.1				
Intersection Summary												
HCM 2010 Ctrl Delay			4.4									
HCM 2010 LOS			A									
Notes												

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Lanes, Volumes, Timings

Timing Plan: AM Peak Hour

4: Lowe's Access Dr./CVS Access Dr. & E. High St. (SR 0641)/W. Trindle Rd. (SR 0641) 08/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	7	507	51	32	526	8	35	0	24	1	1	0
Future Volume (vph)	7	507	51	32	526	8	35	0	24	1	1	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Grade (%)		0%			-1%			-2%			0%	
Storage Length (ft)	60		60	80		0	0		50	0		0
Storage Lanes	1		1	1		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.998				0.850			
Flt Protected	0.950			0.950				0.950			0.976	
Satd. Flow (prot)	1676	1748	1500	1606	1736	0	0	1693	1515	0	1722	0
Flt Permitted	0.370			0.389				0.757			0.874	
Satd. Flow (perm)	653	1748	1500	658	1736	0	0	1349	1515	0	1542	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			75		1				76			
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		853			2952			142			294	
Travel Time (s)		16.6			57.5			3.9			8.0	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	2%	3%	2%	7%	4%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	7	517	52	33	537	8	36	0	24	1	1	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	7	517	52	33	545	0	0	36	24	0	2	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes										
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.06	1.06	1.06	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	1	1	1		1	1	1	1	1	
Detector Template							Left			Left		
Leading Detector (ft)	45	35	35	45	35		20	45	45	20	15	
Trailing Detector (ft)	-5	-5	-5	-5	-5		0	-5	-5	0	-5	
Detector 1 Position(ft)	-5	-5	-5	-5	-5		0	-5	-5	0	-5	
Detector 1 Size(ft)	50	40	40	50	40		20	50	50	20	20	
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex		CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Perm	NA	Perm	Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2		2	6			8		8	4		
Detector Phase	5	2	2	1	6		8	8	8	4	4	
Switch Phase												
Minimum Initial (s)	3.0	10.0	10.0	3.0	10.0		3.0	3.0	3.0	3.0	3.0	

Lanes, Volumes, Timings

Timing Plan: AM Peak Hour

4: Lowe's Access Dr./CVS Access Dr. & E. High St. (SR 0641)/W. Trindle Rd. (SR 0641) 08/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)	8.7	27.7	27.7	8.7	27.7		26.5	26.5	26.5	26.5	26.5	
Total Split (s)	11.0	81.0	81.0	11.0	81.0		28.0	28.0	28.0	28.0	28.0	
Total Split (%)	9.2%	67.5%	67.5%	9.2%	67.5%		23.3%	23.3%	23.3%	23.3%	23.3%	
Maximum Green (s)	5.3	75.3	75.3	5.3	75.3		22.5	22.5	22.5	22.5	22.5	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.5	2.5	2.5	2.5	2.5	
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0			-1.0	-1.0		-1.0	
Total Lost Time (s)	4.7	4.7	4.7	4.7	4.7			4.5	4.5		4.5	
Lead/Lag	Lead	Lag	Lag	Lead	Lag							
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	6.0	6.0	3.0	6.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	Max	C-Max	C-Max	Max	C-Max		None	None	None	None	None	
Walk Time (s)		12.0	12.0		12.0		11.0	11.0	11.0	11.0	11.0	
Flash Dont Walk (s)		10.0	10.0		10.0		10.0	10.0	10.0	10.0	10.0	
Pedestrian Calls (#/hr)		0	0		0		0	0	0	0	0	
Act Effct Green (s)	98.4	76.3	76.3	98.4	76.3			9.9	9.9		9.9	
Actuated g/C Ratio	0.82	0.64	0.64	0.82	0.64			0.08	0.08		0.08	
v/c Ratio	0.01	0.47	0.05	0.05	0.49			0.32	0.12		0.02	
Control Delay	3.0	10.4	1.6	2.1	13.5			58.7	1.3		48.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0			0.0	0.0		0.0	
Total Delay	3.0	10.4	1.6	2.1	13.5			58.7	1.3		48.5	
LOS	A	B	A	A	B			E	A		D	
Approach Delay		9.5			12.8			35.7			48.5	
Approach LOS		A			B			D			D	
Queue Length 50th (ft)	1	107	0	3	208			27	0		1	
Queue Length 95th (ft)	m4	174	10	9	292			60	0		10	
Internal Link Dist (ft)		773			2872			62			214	
Turn Bay Length (ft)	60		60	80					50			
Base Capacity (vph)	724	1111	981	714	1104			264	357		301	
Starvation Cap Reductn	0	0	0	0	0			0	0		0	
Spillback Cap Reductn	0	0	0	0	0			0	0		0	
Storage Cap Reductn	0	0	0	0	0			0	0		0	
Reduced v/c Ratio	0.01	0.47	0.05	0.05	0.49			0.14	0.07		0.01	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 86 (72%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 65

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.49

Intersection Signal Delay: 12.5

Intersection LOS: B

Intersection Capacity Utilization 46.3%

ICU Level of Service A

Analysis Period (min) 15

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

Splits and Phases: 4: Lowe's Access Dr./CVS Access Dr. & E. High St. (SR 0641)/W. Trindle Rd. (SR 0641)



HCM 2010 Signalized Intersection Summary

Timing Plan: AM Peak Hour

4: Lowe's Access Dr./CVS Access Dr. & E. High St. (SR 0641)/W. Trindle Rd. (SR 0641) 08/2023

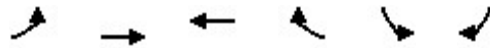
												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	507	51	32	526	8	35	0	24	1	1	0
Future Volume (veh/h)	7	507	51	32	526	8	35	0	24	1	1	0
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	2	0	0	2	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		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
Adj Sat Flow, veh/h/ln	1765	1748	1765	1691	1740	1809	1818	1782	1782	1800	1765	1800
Adj Flow Rate, veh/h	7	517	52	33	537	8	36	0	24	1	1	0
Adj No. of Lanes	1	1	1	1	1	0	0	1	1	0	1	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	3	2	7	4	2	2	2	2	2	2	2
Cap, veh/h	741	1380	1184	773	1350	20	127	0	64	57	40	0
Arrive On Green	0.11	1.00	1.00	0.05	0.79	0.78	0.03	0.00	0.04	0.03	0.04	0.00
Sat Flow, veh/h	1681	1748	1500	1610	1710	25	1593	0	1515	296	952	0
Grp Volume(v), veh/h	7	517	52	33	0	545	36	0	24	2	0	0
Grp Sat Flow(s),veh/h/ln	1681	1748	1500	1610	0	1735	1593	0	1515	1248	0	0
Q Serve(g_s), s	0.1	0.0	0.0	0.4	0.0	11.6	0.0	0.0	1.9	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.1	0.0	0.0	0.4	0.0	11.6	2.5	0.0	1.9	2.5	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.01	1.00		1.00	0.50		0.00
Lane Grp Cap(c), veh/h	741	1380	1184	773	0	1370	114	0	64	87	0	0
V/C Ratio(X)	0.01	0.37	0.04	0.04	0.00	0.40	0.32	0.00	0.38	0.02	0.00	0.00
Avail Cap(c_a), veh/h	746	1380	1184	779	0	1370	333	0	297	325	0	0
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.94	0.94	0.94	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	2.2	0.0	0.0	1.9	0.0	4.0	56.7	0.0	55.9	55.4	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.7	0.1	0.1	0.0	0.9	1.6	0.0	3.6	0.1	0.0	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	0.1	0.5	0.0	0.4	0.0	10.2	2.2	0.0	1.5	0.1	0.0	0.0
LnGrp Delay(d),s/veh	2.3	0.8	0.1	2.0	0.0	4.9	58.3	0.0	59.5	55.5	0.0	0.0
LnGrp LOS	A	A	A	A		A	E		E	E		
Approach Vol, veh/h		576			578			60			2	
Approach Delay, s/veh		0.7			4.7			58.8			55.5	
Approach LOS		A			A			E			E	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.0	99.4		9.6	11.0	99.4		9.6				
Change Period (Y+Rc), s	* 5.7	* 5.7		5.5	* 5.7	* 5.7		5.5				
Max Green Setting (Gmax), s	53	* 75		22.5	* 5.3	* 75		22.5				
Max Q Clear Time (g_c+I1) s	2.9	2.5		4.5	2.6	13.6		4.5				
Green Ext Time (p_c), s	0.0	8.4		0.0	0.0	8.1		0.1				
Intersection Summary												
HCM 2010 Ctrl Delay			5.6									
HCM 2010 LOS			A									
Notes												

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Lanes, Volumes, Timings
5: W. Trindle Rd. (SR 0641) & I-81 SB Off-Ramp

Timing Plan: AM Peak Hour

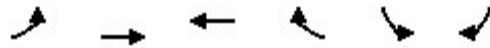
05/08/2023



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↘	↗
Traffic Volume (vph)	0	807	459	0	173	413
Future Volume (vph)	0	807	459	0	173	413
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	12	12	12	14	14
Grade (%)		-2%	0%		-3%	
Storage Length (ft)	0			0	0	70
Storage Lanes	0			0	1	1
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	0	3354	3353	0	1747	1608
Flt Permitted					0.950	
Satd. Flow (perm)	0	3354	3353	0	1747	1608
Right Turn on Red				No		Yes
Satd. Flow (RTOR)						254
Link Speed (mph)		35	35		25	
Link Distance (ft)		472	314		758	
Travel Time (s)		9.2	6.1		20.7	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	2%	3%	2%	2%	6%	3%
Adj. Flow (vph)	0	859	488	0	184	439
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	859	488	0	184	439
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		14	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.11	1.06	1.07	1.07	0.97	0.97
Turning Speed (mph)	15			9	15	9
Number of Detectors		1	1		1	0
Detector Template						
Leading Detector (ft)		256	256		15	0
Trailing Detector (ft)		250	250		-10	0
Detector 1 Position(ft)		250	250		-10	0
Detector 1 Size(ft)		6	6		25	20
Detector 1 Type		CI+Ex	CI+Ex		CI+Ex	CI+Ex
Detector 1 Channel						
Detector 1 Extend (s)		0.0	0.0		0.0	0.0
Detector 1 Queue (s)		0.0	0.0		0.0	0.0
Detector 1 Delay (s)		0.0	0.0		0.0	0.0
Turn Type		NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases						4
Detector Phase		2	6		4	4
Switch Phase						

Lanes, Volumes, Timings
5: W. Trindle Rd. (SR 0641) & I-81 SB Off-Ramp

Timing Plan: AM Peak Hour
05/08/2023



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Minimum Initial (s)		10.0	10.0		3.0	3.0
Minimum Split (s)		16.0	16.0		22.0	22.0
Total Split (s)		29.0	29.0		26.0	26.0
Total Split (%)		52.7%	52.7%		47.3%	47.3%
Maximum Green (s)		23.0	23.0		21.0	21.0
Yellow Time (s)		4.0	4.0		3.0	3.0
All-Red Time (s)		2.0	2.0		2.0	2.0
Lost Time Adjust (s)		-1.0	-1.0		-1.0	-1.0
Total Lost Time (s)		5.0	5.0		4.0	4.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)		6.0	6.0		3.0	3.0
Recall Mode		C-Max	C-Max		None	None
Walk Time (s)		8.0	8.0		17.0	17.0
Flash Dont Walk (s)		0.0	0.0		0.0	0.0
Pedestrian Calls (#/hr)		0	0		0	0
Act Effct Green (s)		31.4	31.4		14.6	14.6
Actuated g/C Ratio		0.57	0.57		0.27	0.27
v/c Ratio		0.45	0.25		0.40	0.72
Control Delay		9.0	6.2		17.6	13.9
Queue Delay		0.0	0.0		0.0	0.0
Total Delay		9.0	6.2		17.6	13.9
LOS		A	A		B	B
Approach Delay		9.0	6.2		15.0	
Approach LOS		A	A		B	
Queue Length 50th (ft)		72	48		50	51
Queue Length 95th (ft)		154	m71		76	105
Internal Link Dist (ft)		392	234		678	
Turn Bay Length (ft)						70
Base Capacity (vph)		1916	1915		698	795
Starvation Cap Reductn		0	0		0	0
Spillback Cap Reductn		0	0		0	0
Storage Cap Reductn		0	0		0	0
Reduced v/c Ratio		0.45	0.25		0.26	0.55

Intersection Summary

Area Type: Other

Cycle Length: 55

Actuated Cycle Length: 55

Offset: 32 (58%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

Natural Cycle: 40

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.72

Intersection Signal Delay: 10.2

Intersection LOS: B

Intersection Capacity Utilization 47.9%

ICU Level of Service A

Analysis Period (min) 15

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

Splits and Phases: 5: W. Trindle Rd. (SR 0641) & I-81 SB Off-Ramp

→ Ø2 (R) 29 s	← Ø4 26 s
← Ø6 (R) 29 s	

HCM 2010 analysis expects stop-line detection. Detectors cannot be further than 20 feet from the stop bar.

Lanes, Volumes, Timings
6: I-81 NB On-Ramp & W. Trindle Rd. (SR 0641)

Timing Plan: AM Peak Hour
05/08/2023

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↘			↙↑↑		
Traffic Volume (vph)	635	307	302	448	0	0
Future Volume (vph)	635	307	302	448	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	11	11	11	16	14
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Frt	0.951					
Flt Protected				0.980		
Satd. Flow (prot)	3073	0	0	3176	0	0
Flt Permitted				0.980		
Satd. Flow (perm)	3073	0	0	3176	0	0
Link Speed (mph)	35			35	25	
Link Distance (ft)	466			628	326	
Travel Time (s)	9.1			12.2	8.9	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	2%	3%	2%	2%	2%	2%
Adj. Flow (vph)	668	323	318	472	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	991	0	0	790	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.12	1.12	1.12	1.12	0.91	0.99
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	57.9%			ICU Level of Service B		
Analysis Period (min)	15					

Lanes, Volumes, Timings
7: Army Heritage Dr. & W. Trindle Rd. (SR 0641)

Timing Plan: AM Peak Hour
05/08/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	272	313	60	46	428	105	215	373	111	98	123	68
Future Volume (vph)	272	313	60	46	428	105	215	373	111	98	123	68
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	13	14	12	13	14	12	13	12	11	14	12
Grade (%)		1%			-1%			-5%			4%	
Storage Length (ft)	90		95	110		155	140		0	125		150
Storage Lanes	1		1	1		1	1		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor								0.99		1.00		
Frt			0.850			0.850		0.966				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1636	1763	1476	1534	1833	1478	1718	1776	0	1500	1680	1282
Flt Permitted	0.150			0.552			0.549			0.147		
Satd. Flow (perm)	258	1763	1476	892	1833	1478	993	1776	0	231	1680	1282
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			99			228			14			99
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		628			1908			461			1667	
Travel Time (s)		12.2			37.2			9.0			32.5	
Confl. Peds. (#/hr)									6	6		
Peak Hour Factor	0.90	0.90	1.00	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.92
Heavy Vehicles (%)	4%	5%	10%	12%	2%	11%	2%	2%	6%	8%	12%	17%
Adj. Flow (vph)	302	348	60	51	476	117	239	414	123	109	137	74
Shared Lane Traffic (%)												
Lane Group Flow (vph)	302	348	60	51	476	117	239	537	0	109	137	74
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane											Yes	
Headway Factor	1.08	1.03	0.99	1.07	1.02	0.98	1.04	1.00	1.04	1.15	1.01	1.10
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	0	1	1	0	1	1		1	1	1
Detector Template												Right
Leading Detector (ft)	35	231	0	35	231	0	35	40		40	35	20
Trailing Detector (ft)	-5	225	0	-5	225	0	-5	-10		-5	-5	0
Detector 1 Position(ft)	-5	225	0	-5	225	0	-5	-10		-5	-5	0
Detector 1 Size(ft)	40	6	20	40	6	20	40	50		45	40	20
Detector 1 Type	CI+Ex	Extend	CI+Ex	CI+Ex	Extend	CI+Ex	CI+Ex	CI+Ex		CI+Ex	CI+Ex	CI+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	pm+ov
Protected Phases	5	2	3	1	6		3	8		7	4	5
Permitted Phases	2		2	6		6	8			4		4

Lanes, Volumes, Timings
7: Army Heritage Dr. & W. Trindle Rd. (SR 0641)

Timing Plan: AM Peak Hour
05/08/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2	3	1	6	6	3	8		7	4	5
Switch Phase												
Minimum Initial (s)	15.0	15.0	3.0	3.0	3.0	3.0	3.0	3.0		4.0	3.0	15.0
Minimum Split (s)	21.5	25.5	9.5	9.5	25.5	25.5	9.5	31.5		10.5	31.5	21.5
Total Split (s)	21.6	51.4	16.2	9.6	39.4	39.4	16.2	37.2		11.8	32.8	21.6
Total Split (%)	19.6%	46.7%	14.7%	8.7%	35.8%	35.8%	14.7%	33.8%		10.7%	29.8%	19.6%
Maximum Green (s)	15.1	44.9	9.7	3.1	32.9	32.9	9.7	30.7		5.3	26.3	15.1
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5		2.5	2.5	2.5
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0		-1.0	-1.0	-1.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5		5.5	5.5	5.5
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	6.0	3.0	3.0	6.0	6.0	3.0	3.0		3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Time Before Reduce (s)	0.0	25.0	0.0	0.0	25.0	25.0	0.0	0.0		0.0	0.0	0.0
Time To Reduce (s)	0.0	15.0	0.0	0.0	15.0	15.0	0.0	0.0		0.0	0.0	0.0
Recall Mode	None	C-Max	None	None	C-Max	C-Max	None	None		None	None	None
Walk Time (s)		10.0			10.0	10.0		10.0			10.0	
Flash Dont Walk (s)		9.0			9.0	9.0		15.0			15.0	
Pedestrian Calls (#/hr)		0			0	0		0			0	
Act Effct Green (s)	55.5	47.8	64.0	38.0	33.9	33.9	42.4	31.7		33.6	27.3	48.9
Actuated g/C Ratio	0.50	0.43	0.58	0.35	0.31	0.31	0.39	0.29		0.31	0.25	0.44
v/c Ratio	0.91	0.45	0.07	0.15	0.84	0.19	0.53	1.03		0.76	0.33	0.12
Control Delay	60.6	21.7	3.0	6.4	34.9	3.7	26.4	83.9		57.8	36.5	2.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.9		0.0	0.0	0.0
Total Delay	60.6	21.7	3.0	6.4	34.9	3.7	26.4	87.8		57.8	36.5	2.2
LOS	E	C	A	A	C	A	C	F		E	D	A
Approach Delay		36.7			27.0			68.9			35.9	
Approach LOS		D			C			E			D	
Queue Length 50th (ft)	161	165	1	9	282	9	117	~401		49	80	0
Queue Length 95th (ft)	#307	222	20	m14	#499	m27	161	#614		#124	136	16
Internal Link Dist (ft)		548			1828			381			1587	
Turn Bay Length (ft)	90		95	110		155	140			125		150
Base Capacity (vph)	331	766	900	332	564	613	453	521		143	416	624
Starvation Cap Reductn	0	0	0	0	0	0	0	6		0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.91	0.45	0.07	0.15	0.84	0.19	0.53	1.04		0.76	0.33	0.12

Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow, Master Intersection

Natural Cycle: 100

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.03

Intersection Signal Delay: 44.2

Intersection LOS: D

Intersection Capacity Utilization 91.7% ICU Level of Service F

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

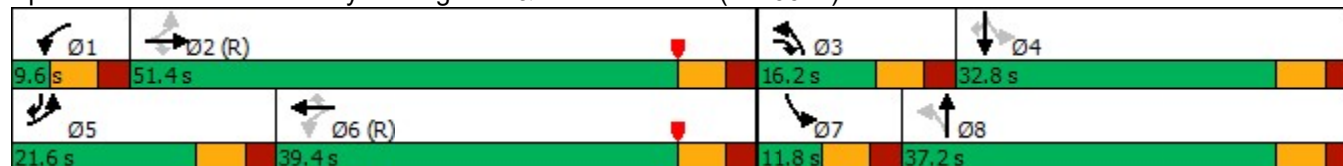
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

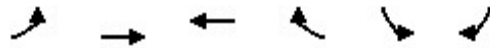
Queue shown is maximum after two cycles.

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

Splits and Phases: 7: Army Heritage Dr. & W. Trindle Rd. (SR 0641)



HCM 2010 analysis cannot be performed without detectors for actuated controller type.



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	8	475	465	0	2	22
Future Volume (vph)	8	475	465	0	2	22
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	11	11
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.875	
Flt Protected		0.999			0.996	
Satd. Flow (prot)	0	1746	1765	0	1487	0
Flt Permitted		0.999			0.996	
Satd. Flow (perm)	0	1746	1765	0	1487	0
Link Speed (mph)		45	45		35	
Link Distance (ft)		1985	3218		1923	
Travel Time (s)		30.1	48.8		37.5	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	3%	2%	2%	2%	2%
Adj. Flow (vph)	9	528	517	0	2	24
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	537	517	0	26	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		24	24		11	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.07	1.07	1.07	1.07	1.12	1.12
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 43.1% ICU Level of Service A

Analysis Period (min) 15

Intersection

Int Delay, s/veh 0.3

Movement EBL EBT WBT WBR SBL SBRLane Configurations 

Traffic Vol, veh/h 8 475 465 0 2 22

Future Vol, veh/h 8 475 465 0 2 22

Conflicting Peds, #/hr 0 0 0 0 0 0

Sign Control Free Free Free Free Stop Stop

RT Channelized - None - None - None

Storage Length - - - - 0 -

Veh in Median Storage, # 0 0 - 1 -

Grade, % - 0 0 - 0 -

Peak Hour Factor 90 90 90 90 90 90

Heavy Vehicles, % 2 3 2 2 2 2

Mvmt Flow 9 528 517 0 2 24

Major/Minor Major1 Major2 Minor2

Conflicting Flow All 517 0 - 0 1063 517

Stage 1 - - - - 517 -

Stage 2 - - - - 546 -

Critical Hdwy 4.12 - - - 7.1 6.22

Critical Hdwy Stg 1 - - - - 5.42 -

Critical Hdwy Stg 2 - - - - 5.42 -

Follow-up Hdwy 2.218 - - - 3.518 3.318

Pot Cap-1 Maneuver 1049 - - - 202 558

Stage 1 - - - - 598 -

Stage 2 - - - - 580 -

Platoon blocked, % - - - -

Mov Cap-1 Maneuver 1049 - - - 200 558

Mov Cap-2 Maneuver - - - - 358 -

Stage 1 - - - - 591 -

Stage 2 - - - - 580 -

Approach EB WB SB

HCM Control Delay, s 0.1 0 12.1

HCM LOS B

Minor Lane/Major Mvmt EBL EBT WBT WBR SBLn1

Capacity (veh/h) 1049 - - - 533

HCM Lane V/C Ratio 0.008 - - - 0.05

HCM Control Delay (s) 8.5 0 - - 12.1

HCM Lane LOS A A - - B

HCM 95th %tile Q(veh) 0 - - - 0.2

Lanes, Volumes, Timings
9: Middlesex Rd. & W. Trindle Rd. (SR0641)

Timing Plan: AM Peak Hour

05/08/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	34	397	16	0	401	20	54	84	4	35	29	37
Future Volume (vph)	34	397	16	0	401	20	54	84	4	35	29	37
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12	11	11	11	11	11	11
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.995			0.994			0.996			0.951	
Flt Protected		0.996						0.981			0.983	
Satd. Flow (prot)	0	1681	0	0	1749	0	0	1654	0	0	1530	0
Flt Permitted		0.996						0.981			0.983	
Satd. Flow (perm)	0	1681	0	0	1749	0	0	1654	0	0	1530	0
Link Speed (mph)		45			45			35			40	
Link Distance (ft)		3218			3646			1268			2562	
Travel Time (s)		48.8			55.2			24.7			43.7	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	7%	6%	7%	2%	2%	8%	4%	2%	2%	2%	17%	2%
Adj. Flow (vph)	35	405	16	0	409	20	55	86	4	36	30	38
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	456	0	0	429	0	0	145	0	0	104	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.12	1.12	1.12	1.12	1.12	1.12
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type: Unsignalized												
Intersection Capacity Utilization 69.6% ICU Level of Service C												
Analysis Period (min) 15												

Intersection												
Int Delay, s/veh	7.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	34	397	16	0	401	20	54	84	4	35	29	37
Future Vol, veh/h	34	397	16	0	401	20	54	84	4	35	29	37
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	-	-	0	-	-	0	-	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	98	98	98	98	98	98	98	98	98	98	98	98
Heavy Vehicles, %	7	6	7	2	2	8	4	2	2	2	17	2
Mvmt Flow	35	405	16	0	409	20	55	86	4	36	30	38

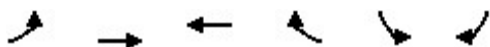
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	429	0	0	421	0	0	936	912	413	947	910	419
Stage 1	-	-	-	-	-	-	483	483	-	419	419	-
Stage 2	-	-	-	-	-	-	453	429	-	528	491	-
Critical Hdwy	4.17	-	-	4.12	-	-	7.14	6.52	6.22	7.12	6.67	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.14	5.52	-	6.12	5.67	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.14	5.52	-	6.12	5.67	-
Follow-up Hdwy	2.263	-	-	2.218	-	-	3.536	4.018	3.318	3.518	4.153	3.318
Pot Cap-1 Maneuver	104	-	-	1138	-	-	243	274	639	241	259	634
Stage 1	-	-	-	-	-	-	561	553	-	612	565	-
Stage 2	-	-	-	-	-	-	582	584	-	534	524	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	104	-	-	1138	-	-	201	263	639	174	248	634
Mov Cap-2 Maneuver	-	-	-	-	-	-	201	263	-	174	248	-
Stage 1	-	-	-	-	-	-	538	530	-	587	565	-
Stage 2	-	-	-	-	-	-	519	584	-	427	503	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	0	40.8	26.6
HCM LOS			E	D

Minor Lane/Major Mvm	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	239	1104	-	-	1138	-	-	268
HCM Lane V/C Ratio	0.606	0.031	-	-	-	-	-	0.385
HCM Control Delay (s)	40.8	8.4	0	-	0	-	-	26.6
HCM Lane LOS	E	A	A	-	A	-	-	D
HCM 95th %tile Q(veh)	3.5	0.1	-	-	0	-	-	1.7

Lanes, Volumes, Timings
10: Westminster Dr./Fairview St. & Army Heritage Dr.

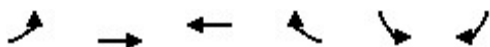
Timing Plan: AM Peak Hour
05/08/2023



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	280	7	2	285	63	88
Future Volume (vph)	280	7	2	285	63	88
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	14	14	14	14	12	14
Grade (%)		-1%	3%		1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00		0.98		0.99	
Frt			0.866			0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1729	1892	1569	0	1533	1388
Flt Permitted	0.414				0.950	
Satd. Flow (perm)	752	1892	1569	0	1523	1388
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			303			94
Link Speed (mph)		35	35		35	
Link Distance (ft)		1287	797		461	
Travel Time (s)		25.1	15.5		9.0	
Confl. Peds. (#/hr)	2			2	3	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	6%	2%	2%	2%	11%	17%
Adj. Flow (vph)	298	7	2	303	67	94
Shared Lane Traffic (%)						
Lane Group Flow (vph)	298	7	305	0	67	94
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		14	14		24	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	0.98	0.98	1.01	1.01	1.08	0.99
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	1	1		1	1
Detector Template					Left	Right
Leading Detector (ft)	40	40	35		20	20
Trailing Detector (ft)	-5	-5	-5		0	0
Detector 1 Position(ft)	-5	-5	-5		0	0
Detector 1 Size(ft)	45	45	40		20	20
Detector 1 Type	CI+Ex	Extend	Extend		CI+Ex	CI+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0
Turn Type	pm+pt	NA	NA		Prot	Perm
Protected Phases	5	2	6		7	
Permitted Phases	2					4
Detector Phase	5	2	6		7	4
Switch Phase						
Minimum Initial (s)	3.0	10.0	10.0		4.0	3.0

Lanes, Volumes, Timings
10: Westminster Dr./Fairview St. & Army Heritage Dr.

Timing Plan: AM Peak Hour
05/08/2023

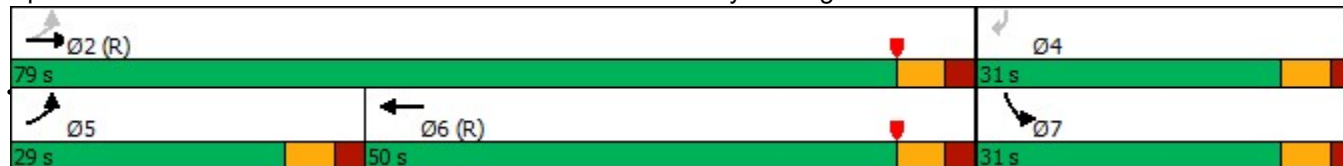


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Minimum Split (s)	9.5	39.5	39.5		10.0	29.0
Total Split (s)	29.0	79.0	50.0		31.0	31.0
Total Split (%)	26.4%	71.8%	45.5%		28.2%	28.2%
Maximum Green (s)	22.5	72.5	43.5		25.0	25.0
Yellow Time (s)	4.0	4.0	4.0		4.0	4.0
All-Red Time (s)	2.5	2.5	2.5		2.0	2.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0		-1.0	-1.0
Total Lost Time (s)	5.5	5.5	5.5		5.0	5.0
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	Max	C-Max	C-Max		None	None
Walk Time (s)		10.0	10.0			10.0
Flash Dont Walk (s)		23.0	23.0			13.0
Pedestrian Calls (#/hr)		0	0			0
Act Effct Green (s)	90.7	91.8	44.5		11.2	11.1
Actuated g/C Ratio	0.82	0.83	0.40		0.10	0.10
v/c Ratio	0.30	0.00	0.37		0.43	0.42
Control Delay	3.6	2.7	3.9		41.8	14.2
Queue Delay	0.1	0.0	0.5		0.0	0.0
Total Delay	3.6	2.7	4.4		41.8	14.2
LOS	A	A	A		D	B
Approach Delay		3.6	4.4		25.7	
Approach LOS		A	A		C	
Queue Length 50th (ft)	39	1	1		44	9
Queue Length 95th (ft)	76	4	53		89	55
Internal Link Dist (ft)		1207	717		381	
Turn Bay Length (ft)						
Base Capacity (vph)	981	1579	815		362	399
Starvation Cap Reductn	0	0	0		0	0
Spillback Cap Reductn	95	0	198		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.34	0.00	0.49		0.19	0.24

Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 48 (44%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.43
Intersection Signal Delay: 8.5
Intersection LOS: A
Intersection Capacity Utilization 60.9%
ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 10: Westminster Dr./Fairview St. & Army Heritage Dr.



								
Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations								
Traffic Volume (veh/h)	280	7	2	285	63	88		
Future Volume (veh/h)	280	7	2	285	63	88		
Number	5	2	6	16	7	14		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1775	1844	1808	1844	1614	1592		
Adj Flow Rate, veh/h	298	7	2	303	67	94		
Adj No. of Lanes	1	1	1	0	1	1		
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94		
Percent Heavy Veh, %	6	2	2	2	11	17		
Cap, veh/h	887	1481	5	822	156	138		
Arrive On Green	0.21	0.80	0.54	0.53	0.10	0.10		
Sat Flow, veh/h	1690	1844	10	1525	1537	1353		
Grp Volume(v), veh/h	298	7	0	305	67	94		
Grp Sat Flow(s),veh/h/ln	1690	1844	0	1535	1537	1353		
Q Serve(g_s), s	5.3	0.1	0.0	12.8	4.5	7.4		
Cycle Q Clear(g_c), s	5.3	0.1	0.0	12.8	4.5	7.4		
Prop In Lane	1.00			0.99	1.00	1.00		
Lane Grp Cap(c), veh/h	887	1481	0	828	156	138		
V/C Ratio(X)	0.34	0.00	0.00	0.37	0.43	0.68		
Avail Cap(c_a), veh/h	887	1481	0	828	363	320		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.98	0.98		
Uniform Delay (d), s/veh	4.7	2.1	0.0	14.9	46.4	47.7		
Incr Delay (d2), s/veh	1.0	0.0	0.0	1.3	1.8	5.8		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(95%),veh/ln	4.8	0.1	0.0	9.6	3.6	5.4		
LnGrp Delay(d),s/veh	5.8	2.2	0.0	16.2	48.2	53.5		
LnGrp LOS	A	A		B	D	D		
Approach Vol, veh/h		305	305		161			
Approach Delay, s/veh		5.7	16.2		51.3			
Approach LOS		A	B		D			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		93.8		16.2	29.0	64.8		
Change Period (Y+Rc), s		6.5		6.0	6.5	6.5		
Max Green Setting (Gmax), s		72.5		25.0	22.5	43.5		
Max Q Clear Time (g_c+I1), s		2.6		9.9	7.8	14.8		
Green Ext Time (p_c), s		0.0		0.4	0.9	1.2		
Intersection Summary								
HCM 2010 Ctrl Delay			19.3					
HCM 2010 LOS			B					

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	1	0	423	0	1	76
Future Volume (vph)	1	0	423	0	1	76
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected	0.950					0.999
Satd. Flow (prot)	1676	0	1765	0	0	1651
Flt Permitted	0.950					0.999
Satd. Flow (perm)	1676	0	1765	0	0	1651
Link Speed (mph)	35		35			35
Link Distance (ft)	2177		1342			797
Travel Time (s)	42.4		26.1			15.5
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Heavy Vehicles (%)	2%	2%	2%	2%	2%	9%
Adj. Flow (vph)	1	0	529	0	1	95
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1	0	529	0	0	96
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	33.5%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W	W	T	T	T	T
Traffic Vol, veh/h	1	0	423	0	1	76
Future Vol, veh/h	1	0	423	0	1	76
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	9
Mvmt Flow	1	0	529	0	1	95

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	626	529	0	0	529	0
Stage 1	529	-	-	-	-	-
Stage 2	97	-	-	-	-	-
Critical Hdwy	7.1	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuve	898	550	-	-	1038	-
Stage 1	591	-	-	-	-	-
Stage 2	927	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuve	898	550	-	-	1038	-
Mov Cap-2 Maneuve	898	-	-	-	-	-
Stage 1	591	-	-	-	-	-
Stage 2	926	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	4.1	0	0.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBL	NBLn1	SBL	SBT
Capacity (veh/h)	-	-	398	1038	-
HCM Lane V/C Ratio	-	-	0.003	0.001	-
HCM Control Delay (s)	-	-	14.1	8.5	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Lanes, Volumes, Timings
12: I-81 SB On-Ramp & York Road (SR 0074)

Timing Plan: AM Peak Hour
05/08/2023

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑		
Traffic Volume (vph)	253	177	543	651	0	0
Future Volume (vph)	253	177	543	651	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	15	15
Grade (%)	2%			-2%	0%	
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Frt	0.938					
Flt Protected				0.978		
Satd. Flow (prot)	2945	0	0	3248	0	0
Flt Permitted				0.978		
Satd. Flow (perm)	2945	0	0	3248	0	0
Link Speed (mph)	35			35	30	
Link Distance (ft)	3632			216	901	
Travel Time (s)	70.8			4.2	20.5	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	7%	9%	4%	4%	2%	2%
Adj. Flow (vph)	284	199	610	731	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	483	0	0	1341	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	13			13	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.09	1.09	1.06	1.06	0.95	0.95
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	55.7%			ICU Level of Service B		
Analysis Period (min)	15					

Lanes, Volumes, Timings
13: I-81 NB Off-Ramp & York Road (SR 0074)

Timing Plan: AM Peak Hour
05/08/2023

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↘	↗
Traffic Volume (vph)	253	0	0	1027	189	512
Future Volume (vph)	253	0	0	1027	189	512
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	16	13
Grade (%)	1%			-2%	0%	
Storage Length (ft)		0	0		25	0
Storage Lanes		0	0		1	1
Taper Length (ft)			25		25	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	3272	0	0	3386	1900	1535
Flt Permitted					0.950	
Satd. Flow (perm)	3272	0	0	3386	1900	1535
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)						476
Link Speed (mph)	35			35	25	
Link Distance (ft)	251			1010	714	
Travel Time (s)	4.9			19.7	19.5	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	4%	2%	2%	2%	2%	3%
Adj. Flow (vph)	294	0	0	1194	220	595
Shared Lane Traffic (%)						
Lane Group Flow (vph)	294	0	0	1194	220	595
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	16	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.08	1.08	1.06	1.06	0.91	1.03
Turning Speed (mph)		9	15		15	9
Number of Detectors	1			1	1	1
Detector Template						
Leading Detector (ft)	231			256	20	40
Trailing Detector (ft)	225			250	-10	-10
Detector 1 Position(ft)	225			250	-10	-10
Detector 1 Size(ft)	6			6	30	50
Detector 1 Type	Extend			Extend	CI+Ex	CI+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0			0.0	0.0	0.0
Detector 1 Queue (s)	0.0			0.0	0.0	0.0
Detector 1 Delay (s)	0.0			0.0	0.0	0.0
Turn Type	NA			NA	Prot	Perm
Protected Phases	2			6	3	
Permitted Phases						8
Detector Phase	2			6	3	8
Switch Phase						

Lanes, Volumes, Timings
13: I-81 NB Off-Ramp & York Road (SR 0074)

Timing Plan: AM Peak Hour
05/08/2023



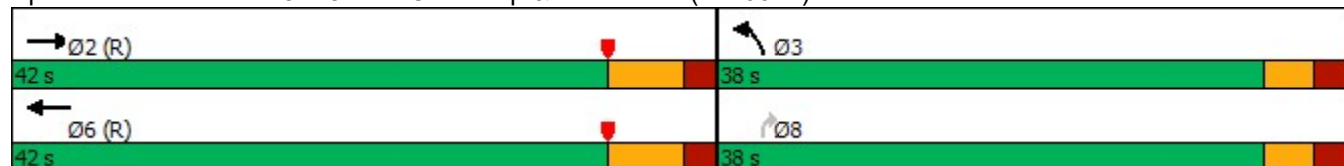
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Minimum Initial (s)	10.0			10.0	4.0	3.0
Minimum Split (s)	24.5			24.5	9.5	22.5
Total Split (s)	42.0			42.0	38.0	38.0
Total Split (%)	52.5%			52.5%	47.5%	47.5%
Maximum Green (s)	35.5			35.5	32.5	32.5
Yellow Time (s)	4.5			4.5	3.0	3.0
All-Red Time (s)	2.0			2.0	2.5	2.5
Lost Time Adjust (s)	-1.0			-1.0	-1.0	-1.0
Total Lost Time (s)	5.5			5.5	4.5	4.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	6.0			6.0	3.0	3.0
Minimum Gap (s)	3.0			3.0	3.0	3.0
Time Before Reduce (s)	25.0			25.0	0.0	0.0
Time To Reduce (s)	13.0			13.0	0.0	0.0
Recall Mode	C-Max			C-Max	None	None
Walk Time (s)	18.0			18.0		17.0
Flash Dont Walk (s)	0.0			0.0		0.0
Pedestrian Calls (#/hr)	0			0		0
Act Effct Green (s)	50.8			50.8	19.2	19.2
Actuated g/C Ratio	0.64			0.64	0.24	0.24
v/c Ratio	0.14			0.56	0.48	0.82
Control Delay	7.7			7.7	27.9	15.2
Queue Delay	0.0			0.0	0.0	0.0
Total Delay	7.7			7.7	27.9	15.2
LOS	A			A	C	B
Approach Delay	7.7			7.7	18.7	
Approach LOS	A			A	B	
Queue Length 50th (ft)	24			135	99	52
Queue Length 95th (ft)	63			m325	116	111
Internal Link Dist (ft)	171			930	634	
Turn Bay Length (ft)					25	
Base Capacity (vph)	2077			2150	795	919
Starvation Cap Reductn	0			0	0	0
Spillback Cap Reductn	0			0	0	0
Storage Cap Reductn	0			0	0	0
Reduced v/c Ratio	0.14			0.56	0.28	0.65

Intersection Summary

Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 22 (28%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Natural Cycle: 55
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.82
Intersection Signal Delay: 11.6
Intersection Capacity Utilization 50.1%
Analysis Period (min) 15
Intersection LOS: B
ICU Level of Service A

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

Splits and Phases: 13: I-81 NB Off-Ramp & York Road (SR 0074)



HCM 2010 analysis expects stop-line detection. Detectors cannot be further than 20 feet from the stop bar.

Lanes, Volumes, Timings

Timing Plan: AM Peak Hour

14: Westminster Dr. & York Road (SR 0074)/York Rd. (SR 0074)

05/08/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	192	391	142	12	571	26	327	71	4	19	41	94
Future Volume (vph)	192	391	142	12	571	26	327	71	4	19	41	94
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	14	12	12	14	12	14	12	12	14	12
Grade (%)		1%			0%			-5%			2%	
Storage Length (ft)	120		0	75		180	130		0	130		0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						0.98						
Frt			0.850			0.850		0.993			0.895	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1620	1690	1592	1555	1698	1554	1702	1830	0	1597	1549	0
Flt Permitted	0.141			0.508			0.257			0.702		
Satd. Flow (perm)	241	1690	1592	831	1698	1519	460	1830	0	1180	1549	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			160			109		2			62	
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		1010			2320			530			721	
Travel Time (s)		19.7			45.2			14.5			19.7	
Confl. Peds. (#/hr)	1					1						
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	5%	6%	2%	10%	6%	5%	3%	7%	2%	6%	14%	8%
Adj. Flow (vph)	216	439	160	13	642	29	367	80	4	21	46	106
Shared Lane Traffic (%)												
Lane Group Flow (vph)	216	439	160	13	642	29	367	84	0	21	152	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.08	1.08	0.99	1.07	1.07	0.99	1.04	0.96	1.04	1.09	1.00	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	0	1	1	0	1	1		1	1	
Detector Template												
Leading Detector (ft)	40	256	0	40	256	0	40	45		45	45	
Trailing Detector (ft)	-5	250	0	-5	250	0	-5	-5		-5	-5	
Detector 1 Position(ft)	-5	250	0	-5	250	0	-5	-5		-5	-5	
Detector 1 Size(ft)	45	6	20	45	6	20	45	50		50	50	
Detector 1 Type	CI+Ex Extend	CI+Ex	CI+Ex	CI+Ex Extend	CI+Ex	CI+Ex	CI+Ex	CI+Ex		CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases	5	2			6		3	8			4	
Permitted Phases	2		2	6		6	8			4		

Lanes, Volumes, Timings

Timing Plan: AM Peak Hour

14: Westminster Dr. & York Road (SR 0074)/York Rd. (SR 0074)

05/08/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2	2	6	6	6	3	8		4	4	
Switch Phase												
Minimum Initial (s)	3.0	10.0	10.0	10.0	10.0	10.0	3.0	3.0		3.0	3.0	
Minimum Split (s)	9.0	33.0	33.0	33.0	33.0	33.0	9.5	31.5		31.5	31.5	
Total Split (s)	20.0	95.0	95.0	75.0	75.0	75.0	33.5	65.0		31.5	31.5	
Total Split (%)	12.5%	59.4%	59.4%	46.9%	46.9%	46.9%	20.9%	40.6%		19.7%	19.7%	
Maximum Green (s)	14.0	89.0	89.0	69.0	69.0	69.0	27.0	58.5		25.0	25.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	3.5	3.5		3.5	3.5	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	3.0	3.0		3.0	3.0	
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.5	5.5		5.5	5.5	
Lead/Lag	Lead			Lag	Lag	Lag	Lead			Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	6.0	6.0	6.0	6.0	6.0	3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	25.0	25.0	25.0	25.0	25.0	0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	10.0	10.0	10.0	10.0	10.0	0.0	0.0		0.0	0.0	
Recall Mode	Max	C-Max	C-Max	C-Max	C-Max	C-Max	None	None		None	None	
Walk Time (s)		10.0	10.0	10.0	10.0	10.0		10.0		10.0	10.0	
Flash Dont Walk (s)		17.0	17.0	17.0	17.0	17.0		15.0		15.0	15.0	
Pedestrian Calls (#/hr)		0	0	0	0	0		0		0	0	
Act Effct Green (s)	99.8	99.8	99.8	70.0	70.0	70.0	49.7	49.7		16.2	16.2	
Actuated g/C Ratio	0.62	0.62	0.62	0.44	0.44	0.44	0.31	0.31		0.10	0.10	
v/c Ratio	0.59	0.42	0.15	0.04	0.87	0.04	1.02	0.15		0.18	0.72	
Control Delay	25.2	16.1	1.4	22.3	42.6	0.1	100.2	38.0		66.1	58.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	25.2	16.1	1.4	22.3	42.6	0.1	100.2	38.0		66.1	58.6	
LOS	C	B	A	C	D	A	F	D		E	E	
Approach Delay		15.6			40.4			88.6			59.5	
Approach LOS		B			D			F			E	
Queue Length 50th (ft)	102	227	2	7	424	0	~348	62		21	93	
Queue Length 95th (ft)	#209	324	16	m12	#671	m0	#485	99		48	164	
Internal Link Dist (ft)		930			2240			450			641	
Turn Bay Length (ft)	120			75		180	130			130		
Base Capacity (vph)	364	1054	1053	363	742	725	360	681		191	303	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.59	0.42	0.15	0.04	0.87	0.04	1.02	0.12		0.11	0.50	

Intersection Summary

Area Type: Other

Cycle Length: 160

Actuated Cycle Length: 160

Offset: 14 (9%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow

Natural Cycle: 105

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.02

Intersection Signal Delay: 42.7

Intersection LOS: D

Intersection Capacity Utilization 87.9%

ICU Level of Service E

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

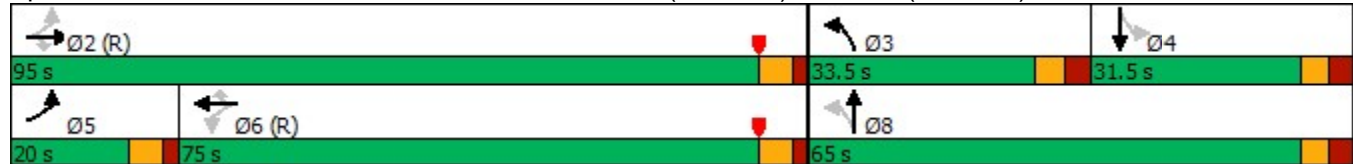
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

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

Splits and Phases: 14: Westminster Dr. & York Road (SR 0074)/York Rd. (SR 0074)



HCM 2010 analysis cannot be performed without detectors for actuated controller type.

Lanes, Volumes, Timings
15: Fairview St. & York Rd. (SR 0074)

Timing Plan: AM Peak Hour
05/08/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	319	6	7	583	98	18	229	14	34	18	46
Future Volume (vph)	25	319	6	7	583	98	18	229	14	34	18	46
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	11	11	11	11	11	9	9	9	12	12	12
Grade (%)		0%			0%			0%			1%	
Storage Length (ft)	75		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.997			0.981			0.993			0.936	
Flt Protected	0.950				0.999			0.997			0.983	
Satd. Flow (prot)	1589	1623	0	0	1618	0	0	1572	0	0	1569	0
Flt Permitted	0.337				0.996			0.977			0.783	
Satd. Flow (perm)	564	1623	0	0	1613	0	0	1541	0	0	1250	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			16			4			52	
Link Speed (mph)		35			35			25			35	
Link Distance (ft)		2320			2128			671			1479	
Travel Time (s)		45.2			41.5			18.3			28.8	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	4%	7%	2%	2%	6%	2%	2%	2%	2%	8%	2%	4%
Adj. Flow (vph)	28	358	7	8	655	110	20	257	16	38	20	52
Shared Lane Traffic (%)												
Lane Group Flow (vph)	28	365	0	0	773	0	0	293	0	0	110	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.12	1.12	1.12	1.12	1.12	1.12	1.22	1.22	1.22	1.08	1.08	1.08
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	0	1		1	1		1	1		1	1	
Detector Template				Left			Left			Left		
Leading Detector (ft)	0	256		20	256		20	40		20	40	
Trailing Detector (ft)	0	250		0	250		0	-5		0	-5	
Detector 1 Position(ft)	0	250		0	250		0	-5		0	-5	
Detector 1 Size(ft)	20	6		20	6		20	45		20	45	
Detector 1 Type	CI+Ex	Extend		CI+Ex	Extend		CI+Ex	CI+Ex		CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	
Switch Phase												

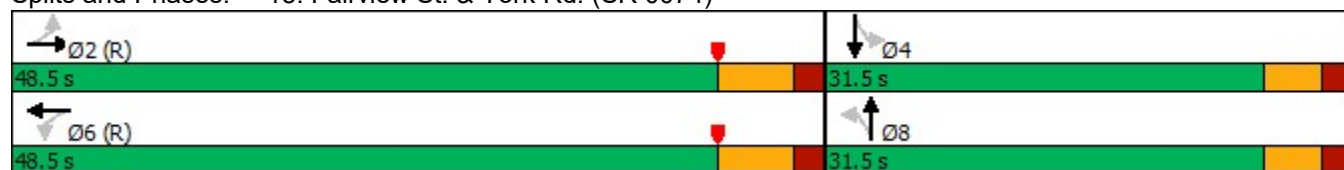
Lanes, Volumes, Timings
15: Fairview St. & York Rd. (SR 0074)

Timing Plan: AM Peak Hour
05/08/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	10.0	10.0		10.0	10.0		3.0	3.0		3.0	3.0	
Minimum Split (s)	32.5	32.5		32.5	32.5		31.5	31.5		31.5	31.5	
Total Split (s)	48.5	48.5		48.5	48.5		31.5	31.5		31.5	31.5	
Total Split (%)	60.6%	60.6%		60.6%	60.6%		39.4%	39.4%		39.4%	39.4%	
Maximum Green (s)	42.0	42.0		42.0	42.0		26.0	26.0		26.0	26.0	
Yellow Time (s)	4.5	4.5		4.5	4.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0			-1.0			-1.0			-1.0	
Total Lost Time (s)	5.5	5.5			5.5			4.5			4.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	6.0	6.0		6.0	6.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	35.0	35.0		35.0	35.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	17.0	17.0		17.0	17.0		0.0	0.0		0.0	0.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Flash Dont Walk (s)	15.0	15.0		15.0	15.0		15.0	15.0		15.0	15.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	49.1	49.1			49.1			20.9			20.9	
Actuated g/C Ratio	0.61	0.61			0.61			0.26			0.26	
v/c Ratio	0.08	0.37			0.78			0.72			0.30	
Control Delay	9.2	9.7			12.0			36.5			14.5	
Queue Delay	0.0	0.0			0.0			0.0			0.0	
Total Delay	9.2	9.7			12.0			36.5			14.5	
LOS	A	A			B			D			B	
Approach Delay		9.7			12.0			36.5			14.5	
Approach LOS		A			B			D			B	
Queue Length 50th (ft)	6	82			13			130			22	
Queue Length 95th (ft)	31	299			#557			192			56	
Internal Link Dist (ft)		2240			2048			591			1399	
Turn Bay Length (ft)	75											
Base Capacity (vph)	346	996			995			522			456	
Starvation Cap Reductn	0	0			0			0			0	
Spillback Cap Reductn	0	0			0			0			0	
Storage Cap Reductn	0	0			0			0			0	
Reduced v/c Ratio	0.08	0.37			0.78			0.56			0.24	
Intersection Summary												
Area Type: Other												
Cycle Length: 80												
Actuated Cycle Length: 80												
Offset: 58 (73%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow												
Natural Cycle: 80												
Control Type: Actuated-Coordinated												
Maximum v/c Ratio: 0.78												
Intersection Signal Delay: 16.2						Intersection LOS: B						
Intersection Capacity Utilization 70.4%						ICU Level of Service C						
Analysis Period (min) 15												

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

Splits and Phases: 15: Fairview St. & York Rd. (SR 0074)



HCM 2010 analysis cannot be performed without detectors for actuated controller type.

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↰			↱	↗	
Traffic Volume (vph)	304	12	7	533	35	27
Future Volume (vph)	304	12	7	533	35	27
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	11	11	11	12	12
Grade (%)	1%			1%	2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.995				0.941	
Flt Protected				0.999	0.973	
Satd. Flow (prot)	1578	0	0	1629	1503	0
Flt Permitted				0.999	0.973	
Satd. Flow (perm)	1578	0	0	1629	1503	0
Link Speed (mph)	50			50	35	
Link Distance (ft)	1056			3636	2008	
Travel Time (s)	14.4			49.6	39.1	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	9%	13%	17%	6%	2%	17%
Adj. Flow (vph)	342	13	8	599	39	30
Shared Lane Traffic (%)						
Lane Group Flow (vph)	355	0	0	607	69	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.13	1.13	1.13	1.13	1.09	1.09
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	46.0%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	1.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↰			↱	↰↱	
Traffic Vol, veh/h	304	12	7	533	35	27
Future Vol, veh/h	304	12	7	533	35	27
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	- None		- None		- None	
Storage Length	-	-	-	-	0	-
Veh in Median Storage	0	-	-	0	0	-
Grade, %	1	-	-	1	2	-
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	9	13	17	6	2	17
Mvmt Flow	342	13	8	599	39	30
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	355	0	964	349
Stage 1	-	-	-	-	349	-
Stage 2	-	-	-	-	615	-
Critical Hdwy	-	-	4.27	-	6.82	6.57
Critical Hdwy Stg 1	-	-	-	-	5.82	-
Critical Hdwy Stg 2	-	-	-	-	5.82	-
Follow-up Hdwy	-	-	2.353	-	3.518	3.453
Pot Cap-1 Maneuver	-	-	1125	-	254	649
Stage 1	-	-	-	-	687	-
Stage 2	-	-	-	-	504	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1125	-	251	649
Mov Cap-2 Maneuver	-	-	-	-	251	-
Stage 1	-	-	-	-	687	-
Stage 2	-	-	-	-	498	-
Approach	EB	WB		NB		
HCM Control Delay, s	0	0.1		18.2		
HCM LOS	C					
Minor Lane/Major Mvm	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	342	-	-	1125	-	
HCM Lane V/C Ratio	0.204	-	-	0.007	-	
HCM Control Delay (s)	18.2	-	-	8.2	0	
HCM Lane LOS	C	-	-	A	A	
HCM 95th %tile Q(veh)	0.8	-	-	0	-	

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↰			↱	↗	
Traffic Volume (vph)	320	24	30	548	80	75
Future Volume (vph)	320	24	30	548	80	75
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	11	11	11	10	10
Grade (%)	0%			0%	-2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.991				0.935	
Flt Protected				0.997	0.975	
Satd. Flow (prot)	1617	0	0	1685	1517	0
Flt Permitted				0.997	0.975	
Satd. Flow (perm)	1617	0	0	1685	1517	0
Link Speed (mph)	55			55	35	
Link Distance (ft)	3636			269	2688	
Travel Time (s)	45.1			3.3	52.4	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	7%	2%	2%	3%	2%	2%
Adj. Flow (vph)	344	26	32	589	86	81
Shared Lane Traffic (%)						
Lane Group Flow (vph)	370	0	0	621	167	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	10	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.12	1.12	1.12	1.12	1.16	1.16
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	71.0%			ICU Level of Service C		
Analysis Period (min)	15					

Intersection

Int Delay, s/veh 3.1

Movement EBT EBR WBL WBT NBL NBR

Lane Configurations   

Traffic Vol, veh/h 320 24 30 548 80 75

Future Vol, veh/h 320 24 30 548 80 75

Conflicting Peds, #/hr 0 0 0 0 0 0

Sign Control Free Free Free Free Stop Stop

RT Channelized - None - None - None

Storage Length - - - - 0 -

Veh in Median Storage0# - - 0 0 -

Grade, % 0 - - 0 -2 -

Peak Hour Factor 93 93 93 93 93 93

Heavy Vehicles, % 7 2 2 3 2 2

Mvmt Flow 344 26 32 589 86 81

Major/Minor Major1 Major2 Minor1

Conflicting Flow All 0 0 370 0 1010 357

Stage 1 - - - - 357 -

Stage 2 - - - - 653 -

Critical Hdwy - - 4.12 - 6.02 6.02

Critical Hdwy Stg 1 - - - - 5.02 -

Critical Hdwy Stg 2 - - - - 5.02 -

Follow-up Hdwy - -2.218 -3.518 3.318

Pot Cap-1 Maneuver - - 1189 - 297 701

Stage 1 - - - - 737 -

Stage 2 - - - - 557 -

Platoon blocked, % - - -

Mov Cap-1 Maneuver - - 1189 - 285 701

Mov Cap-2 Maneuver - - - - 285 -

Stage 1 - - - - 737 -

Stage 2 - - - - 535 -

Approach EB WB NB

HCM Control Delay, s 0 0.4 20.3

HCM LOS C

Minor Lane/Major MvmNBLn1 EBT EBR WBL WBT

Capacity (veh/h) 400 - - 1189 -

HCM Lane V/C Ratio 0.417 - - 0.027 -

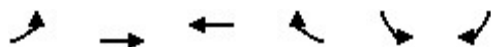
HCM Control Delay (s) 20.3 - - 8.1 0

HCM Lane LOS C - - A A

HCM 95th %tile Q(veh) 2 - - 0.1 -

Lanes, Volumes, Timings
18: York Rd. (SR 0074) & Shughart Rd.

Timing Plan: AM Peak Hour
05/08/2023



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	190	320	548	0	0	126
Future Volume (vph)	190	320	548	0	0	126
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	11	11	11	10	10
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.865	
Flt Protected		0.982				
Satd. Flow (prot)	0	1625	1689	0	1425	0
Flt Permitted		0.982				
Satd. Flow (perm)	0	1625	1689	0	1425	0
Link Speed (mph)		55	55		35	
Link Distance (ft)		269	2661		1687	
Travel Time (s)		3.3	33.0		32.9	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	2%	7%	3%	2%	2%	2%
Adj. Flow (vph)	204	344	589	0	0	135
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	548	589	0	135	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		10	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.12	1.12	1.12	1.12	1.17	1.17
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	77.6%			ICU Level of Service D		
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	3.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	190	320	548	0	0	126
Future Vol, veh/h	190	320	548	0	0	126
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	- None		- None		- None	
Storage Length	-	-	-	-	0	-
Veh in Median Storage,#	0		0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	7	3	2	2	2
Mvmt Flow	204	344	589	0	0	135
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	589	0	-	0	1341	589
Stage 1	-	-	-	-	589	-
Stage 2	-	-	-	-	752	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	986	-	-	-	168	508
Stage 1	-	-	-	-	554	-
Stage 2	-	-	-	-	466	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	986	-	-	-	125	508
Mov Cap-2 Maneuver	-	-	-	-	125	-
Stage 1	-	-	-	-	412	-
Stage 2	-	-	-	-	466	-
Approach	EB	WB		SB		
HCM Control Delay, s	3.6	0		14.6		
HCM LOS	B					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	986	-	-	-	-	508
HCM Lane V/C Ratio	0.207	-	-	-	-	0.267
HCM Control Delay (s)	9.6	0	-	-	-	14.6
HCM Lane LOS	A	A	-	-	-	B
HCM 95th %tile Q(veh)	0.8	-	-	-	-	1.1

Lanes, Volumes, Timings
19: Forge Rd. (SR 2001) & Westminster Dr.

Timing Plan: AM Peak Hour
05/08/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	21	8	178	44	9	9	8	320	12	4	2
Future Volume (vph)	1	21	8	178	44	9	9	8	320	12	4	2
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.963			0.995				0.850		0.986	
Flt Protected		0.998			0.963			0.974			0.967	
Satd. Flow (prot)	0	1696	0	0	1691	0	0	1719	1500	0	1683	0
Flt Permitted		0.998			0.963			0.974			0.967	
Satd. Flow (perm)	0	1696	0	0	1691	0	0	1719	1500	0	1683	0
Link Speed (mph)		25			25			35			35	
Link Distance (ft)		448			530			1566			758	
Travel Time (s)		12.2			14.5			30.5			14.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1	23	9	193	48	10	10	9	348	13	4	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	33	0	0	251	0	0	19	348	0	19	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	37.6%						ICU Level of Service A					
Analysis Period (min)	15											

Intersection

Intersection Delay, s/veh 10.6

Intersection LOS B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕	↕		↕	
Traffic Vol, veh/h	1	21	8	178	44	9	9	8	320	12	4	2
Future Vol, veh/h	1	21	8	178	44	9	9	8	320	12	4	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	23	9	193	48	10	10	9	348	13	4	2
Number of Lanes	0	1	0	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	1
HCM Control Delay	8.3	10.7	10.8	8.5
HCM LOS	A	B	B	A

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1
Vol Left, %	53%	0%	3%	77%	67%
Vol Thru, %	47%	0%	70%	19%	22%
Vol Right, %	0%	100%	27%	4%	11%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	17	320	30	231	18
LT Vol	9	0	1	178	12
Through Vol	8	0	21	44	4
RT Vol	0	320	8	9	2
Lane Flow Rate	18	348	33	251	20
Geometry Grp	7	7	2	2	5
Degree of Util (X)	0.028	0.442	0.045	0.348	0.029
Departure Headway (Hd)	5.548	4.577	5.015	4.996	5.265
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	645	786	709	718	676
Service Time	3.288	2.317	3.084	3.047	3.331
HCM Lane V/C Ratio	0.028	0.443	0.047	0.35	0.03
HCM Control Delay	8.4	10.9	8.3	10.7	8.5
HCM Lane LOS	A	B	A	B	A
HCM 95th-tile Q	0.1	2.3	0.1	1.6	0.1

Lanes, Volumes, Timings
20: Forge Rd. (SR 2001) & Fairview St.

Timing Plan: AM Peak Hour
05/08/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	18	7	37	16	18	7	389	150	5	127	0
Future Volume (vph)	5	18	7	37	16	18	7	389	150	5	127	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	10	10	10	10	10	11	11	11	11	11	11
Grade (%)		-2%			-1%			2%			1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.968			0.966			0.963				
Flt Protected		0.991			0.974			0.999			0.998	
Satd. Flow (prot)	0	1542	0	0	1557	0	0	1622	0	0	1618	0
Flt Permitted		0.991			0.974			0.999			0.998	
Satd. Flow (perm)	0	1542	0	0	1557	0	0	1622	0	0	1618	0
Link Speed (mph)		35			25			35			35	
Link Distance (ft)		1976			1153			1844			1566	
Travel Time (s)		38.5			31.4			35.9			30.5	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	2%	2%	17%	2%	2%	2%	17%	2%	2%	2%	7%	2%
Adj. Flow (vph)	6	20	8	42	18	20	8	437	169	6	143	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	34	0	0	80	0	0	614	0	0	149	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.16	1.16	1.16	1.16	1.16	1.16	1.13	1.13	1.13	1.13	1.13	1.13
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	51.3%				ICU Level of Service A							
Analysis Period (min)	15											

Intersection													
Int Delay, s/veh	2.2												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		↕			↕			↕			↕		
Traffic Vol, veh/h	5	18	7	37	16	18	7	389	150	5	127	0	
Future Vol, veh/h	5	18	7	37	16	18	7	389	150	5	127	0	
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None	
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-	
Veh in Median Storage, #	0	-	-	-	0	-	-	0	-	-	0	-	
Grade, %	-	-2	-	-	-1	-	-	2	-	-	1	-	
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89	
Heavy Vehicles, %	2	2	17	2	2	2	17	2	2	2	7	2	
Mvmt Flow	6	20	8	42	18	20	8	437	169	6	143	0	

Major/Minor	Minor2		Minor1		Major1		Major2							
Conflicting Flow All	712	777	143	707	693	522	143	0	0	606	0	0		
Stage 1	155	155	-	538	538	-	-	-	-	-	-	-	-	-
Stage 2	557	622	-	169	155	-	-	-	-	-	-	-	-	-
Critical Hdwy	6.72	6.12	6.17	6.92	6.32	6.12	4.27	-	-	4.12	-	-	-	-
Critical Hdwy Stg 1	5.72	5.12	-	5.92	5.32	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.72	5.12	-	5.92	5.32	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.453	3.518	4.018	3.318	2.353	-	-	2.218	-	-	-	-
Pot Cap-1 Maneuve	876	358	873	364	381	563	1353	-	-	972	-	-	-	-
Stage 1	862	783	-	543	538	-	-	-	-	-	-	-	-	-
Stage 2	548	513	-	841	776	-	-	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-	-	-
Mov Cap-1 Maneuve	845	352	873	341	375	563	1353	-	-	972	-	-	-	-
Mov Cap-2 Maneuve	845	352	-	341	375	-	-	-	-	-	-	-	-	-
Stage 1	854	778	-	538	533	-	-	-	-	-	-	-	-	-
Stage 2	506	508	-	806	771	-	-	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	14.6		16.7		0.1		0.3	
HCM LOS	B		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1353	-	-	407	388	972	-	-
HCM Lane V/C Ratio	0.006	-	-	0.083	0.206	0.006	-	-
HCM Control Delay (s)	7.7	0	-	14.6	16.7	8.7	0	-
HCM Lane LOS	A	A	-	B	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.3	0.8	0	-	-

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	492	40	48	517	0	145	0	97	0	0	0
Future Volume (vph)	0	492	40	48	517	0	145	0	97	0	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (ft)	150		350	150		0	190		0	75		0
Storage Lanes	1		1	2		0	2		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	0.97	1.00	1.00	1.00	1.00	1.00
Frt			0.850						0.850			
Flt Protected				0.950			0.950					
Satd. Flow (prot)	1765	1765	1500	3252	1765	0	3252	1500	0	1765	1765	0
Flt Permitted				0.950			0.950					
Satd. Flow (perm)	1765	1765	1500	3252	1765	0	3252	1500	0	1765	1765	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			149						437			
Link Speed (mph)		45			45			25			25	
Link Distance (ft)		462			1985			440			562	
Travel Time (s)		7.0			30.1			12.0			15.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	535	43	52	562	0	158	0	105	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	535	43	52	562	0	158	105	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Size(ft)	20	6	20	20	6		20	6		20	6	
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA		Prot		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2									



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2	2	1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	13.0	22.0	22.0	13.0	22.0		13.0	22.0		13.0	22.0	
Total Split (s)	13.0	59.0	59.0	13.0	59.0		16.0	25.0		13.0	22.0	
Total Split (%)	11.8%	53.6%	53.6%	11.8%	53.6%		14.5%	22.7%		11.8%	20.0%	
Maximum Green (s)	7.0	53.0	53.0	7.0	53.0		10.0	19.0		7.0	16.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0		-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Max	C-Max	C-Max	Max	C-Max		None	None		None	None	
Walk Time (s)		5.0	5.0		5.0			5.0			5.0	
Flash Dont Walk (s)		11.0	11.0		11.0			11.0			11.0	
Pedestrian Calls (#/hr)		0	0		0			0			0	
Act Effct Green (s)		54.0	54.0	30.6	54.0		10.4	10.4				
Actuated g/C Ratio		0.49	0.49	0.28	0.49		0.09	0.09				
v/c Ratio		0.62	0.05	0.06	0.65		0.51	0.20				
Control Delay		20.7	0.1	29.9	25.3		53.5	0.8				
Queue Delay		0.0	0.0	0.0	0.0		0.0	0.0				
Total Delay		20.7	0.1	29.9	25.3		53.5	0.8				
LOS		C	A	C	C		D	A				
Approach Delay		19.1			25.7			32.5				
Approach LOS		B			C			C				
Queue Length 50th (ft)		293	0	13	286		55	0				
Queue Length 95th (ft)		m330	m1	29	410		89	0				
Internal Link Dist (ft)		382			1905			360			482	
Turn Bay Length (ft)			350	150			190					
Base Capacity (vph)		866	812	904	866		325	630				
Starvation Cap Reductn		0	0	0	0		0	0				
Spillback Cap Reductn		0	0	0	0		0	0				
Storage Cap Reductn		0	0	0	0		0	0				
Reduced v/c Ratio		0.62	0.05	0.06	0.65		0.49	0.17				

Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 106 (96%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Natural Cycle: 80

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.65

Intersection Signal Delay: 24.3

Intersection LOS: C

Intersection Capacity Utilization 43.4%

ICU Level of Service A

Analysis Period (min) 15

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

Splits and Phases: 21: Rose Access/Pharmacy Tract & W. Trindle Rd. (SR 0641)



HCM 2010 Signalized Intersection Summary
 21: Rose Access/Pharmacy Tract & W. Trindle Rd. (SR 0641)

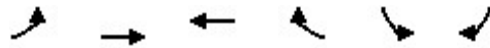
Timing Plan: AM Peak Hour
 05/08/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	492	40	48	517	0	145	0	97	0	0	0
Future Volume (veh/h)	0	492	40	48	517	0	145	0	97	0	0	0
Number	5	2	12	1	6	16	3	8	18	7	4	14
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
Adj Sat Flow, veh/h/ln	1765	1765	1765	1765	1765	1800	1765	1765	1800	1765	1765	1800
Adj Flow Rate, veh/h	0	535	0	52	562	0	158	0	105	0	0	0
Adj No. of Lanes	1	1	1	2	1	0	2	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	2	1222	1039	237	1431	0	258	0	148	2	2	0
Arrive On Green	0.00	0.69	0.00	0.07	0.81	0.00	0.08	0.00	0.09	0.00	0.00	0.00
Sat Flow, veh/h	1681	1765	1500	3261	1765	0	3261	0	1500	1681	1765	0
Grp Volume(v), veh/h	0	535	0	52	562	0	158	0	105	0	0	0
Grp Sat Flow(s),veh/h/ln	1681	1765	1500	1630	1765	0	1630	0	1500	1681	1765	0
Q Serve(g_s), s	0.0	14.7	0.0	1.7	9.7	0.0	5.2	0.0	7.5	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	14.7	0.0	1.7	9.7	0.0	5.2	0.0	7.5	0.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	2	1222	1039	237	1431	0	258	0	148	2	2	0
V/C Ratio(X)	0.00	0.44	0.00	0.22	0.39	0.00	0.61	0.00	0.71	0.00	0.00	0.00
Avail Cap(c_a), veh/h	122	1222	1039	237	1431	0	326	0	273	122	273	0
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)	0.00	1.00	0.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	7.5	0.0	48.1	2.9	0.0	49.0	0.0	48.6	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	1.1	0.0	2.1	0.8	0.0	2.4	0.0	6.2	0.0	0.0	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	0.0	12.0	0.0	1.5	8.7	0.0	4.3	0.0	6.0	0.0	0.0	0.0
LnGrp Delay(d),s/veh	0.0	8.6	0.0	50.2	3.7	0.0	51.4	0.0	54.8	0.0	0.0	0.0
LnGrp LOS		A		D	A		D		D			
Approach Vol, veh/h		535			614			263			0	
Approach Delay, s/veh		8.6			7.6			52.7			0.0	
Approach LOS		A			A			D				
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	13.0	81.2	13.7	2.1	0.0	94.2	0.0	15.8				
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0				
Max Green Setting (Gmax),s	7.0	53.0	10.0	16.0	7.0	53.0	7.0	19.0				
Max Q Clear Time (g_c+l1),s	4.0	17.2	7.7	0.0	0.0	12.2	0.0	9.5				
Green Ext Time (p_c), s	0.0	3.4	0.1	0.0	0.0	3.6	0.0	0.3				
Intersection Summary												
HCM 2010 Ctrl Delay				16.4								
HCM 2010 LOS				B								

Lanes, Volumes, Timings
22: York Rd. (SR 0074) & Heritage Village Access

Timing Plan: AM Peak Hour

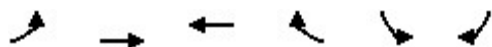
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Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↰↰	↑	↑	↱	↰	↱
Traffic Volume (vph)	32	360	636	109	59	77
Future Volume (vph)	32	360	636	109	59	77
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (ft)	175			275	0	500
Storage Lanes	2			1	1	1
Taper Length (ft)	25				25	
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00
Frt				0.850		0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	3252	1765	1765	1500	1676	1500
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	3252	1765	1765	1500	1676	1500
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				118		84
Link Speed (mph)		35	35		25	
Link Distance (ft)		2128	1056		605	
Travel Time (s)		41.5	20.6		16.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	35	391	691	118	64	84
Shared Lane Traffic (%)						
Lane Group Flow (vph)	35	391	691	118	64	84
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		24	24		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2	1	1	1
Detector Template	Left	Thru	Thru	Right	Left	Right
Leading Detector (ft)	20	100	100	20	20	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	6	20	20	20
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94	94			
Detector 2 Size(ft)		6	6			
Detector 2 Type		CI+Ex	CI+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type	Prot	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6

Lanes, Volumes, Timings
22: York Rd. (SR 0074) & Heritage Village Access

Timing Plan: AM Peak Hour
05/08/2023



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Detector Phase	7	4	8	8	6	6
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	10.0	22.0	22.0	22.0	22.0	22.0
Total Split (s)	10.0	58.0	48.0	48.0	22.0	22.0
Total Split (%)	12.5%	72.5%	60.0%	60.0%	27.5%	27.5%
Maximum Green (s)	4.0	52.0	42.0	42.0	16.0	16.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max	C-Max	C-Max	None	None
Walk Time (s)		5.0	5.0	5.0	5.0	5.0
Flash Dont Walk (s)		11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)		0	0	0	0	0
Act Effct Green (s)	7.4	63.8	56.1	56.1	9.5	9.5
Actuated g/C Ratio	0.09	0.80	0.70	0.70	0.12	0.12
v/c Ratio	0.12	0.28	0.56	0.11	0.32	0.33
Control Delay	38.1	2.5	11.8	2.0	35.9	11.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.1	2.5	11.8	2.0	35.9	11.5
LOS	D	A	B	A	D	B
Approach Delay		5.4	10.4		22.1	
Approach LOS		A	B		C	
Queue Length 50th (ft)	9	46	203	0	30	0
Queue Length 95th (ft)	m28	53	370	21	64	37
Internal Link Dist (ft)		2048	976		525	
Turn Bay Length (ft)	175			275		500
Base Capacity (vph)	300	1408	1238	1087	356	384
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.12	0.28	0.56	0.11	0.18	0.22

Intersection Summary

Area Type: Other

Cycle Length: 80

Actuated Cycle Length: 80

Offset: 16 (20%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow

Natural Cycle: 65

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.56

Intersection Signal Delay: 10.1

Intersection LOS: B

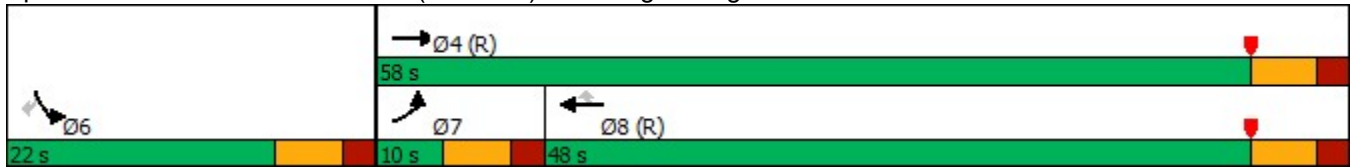
Intersection Capacity Utilization 48.7%

ICU Level of Service A

Analysis Period (min) 15

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

Splits and Phases: 22: York Rd. (SR 0074) & Heritage Village Access



HCM 2010 Signalized Intersection Summary
 22: York Rd. (SR 0074) & Heritage Village Access

Timing Plan: AM Peak Hour
 05/08/2023

								
Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations								
Traffic Volume (veh/h)	32	360	636	109	59	77		
Future Volume (veh/h)	32	360	636	109	59	77		
Number	7	4	8	18	1	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1765	1765	1765	1765	1765	1765		
Adj Flow Rate, veh/h	35	391	691	0	64	0		
Adj No. of Lanes	2	1	1	1	1	1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	129	1429	1249	1062	109	98		
Arrive On Green	0.08	1.00	0.71	0.00	0.07	0.00		
Sat Flow, veh/h	3261	1765	1765	1500	1681	1500		
Grp Volume(v), veh/h	35	391	691	0	64	0		
Grp Sat Flow(s),veh/h/ln	1630	1765	1765	1500	1681	1500		
Q Serve(g_s), s	0.8	0.0	15.0	0.0	3.0	0.0		
Cycle Q Clear(g_c), s	0.8	0.0	15.0	0.0	3.0	0.0		
Prop In Lane	1.00			1.00	1.00	1.00		
Lane Grp Cap(c), veh/h	129	1429	1249	1062	109	98		
V/C Ratio(X)	0.27	0.27	0.55	0.00	0.59	0.00		
Avail Cap(c_a), veh/h	204	1429	1249	1062	357	319		
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	0.94	0.94	1.00	0.00	1.00	0.00		
Uniform Delay (d), s/veh	35.8	0.0	5.6	0.0	36.3	0.0		
Incr Delay (d2), s/veh	1.1	0.4	1.8	0.0	4.9	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(95%),veh/ln	0.7	0.3	12.3	0.0	2.7	0.0		
LnGrp Delay(d),s/veh	36.8	0.4	7.4	0.0	41.2	0.0		
LnGrp LOS	D	A	A		D			
Approach Vol, veh/h		426	691		64			
Approach Delay, s/veh		3.4	7.4		41.2			
Approach LOS		A	A		D			
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				69.8		10.2	8.2	61.6
Change Period (Y+Rc), s				6.0		6.0	6.0	6.0
Max Green Setting (Gmax), s				52.0		16.0	4.0	42.0
Max Q Clear Time (g_c+I1), s				2.5		5.5	3.3	17.5
Green Ext Time (p_c), s				2.6		0.1	0.0	4.9
Intersection Summary								
HCM 2010 Ctrl Delay			7.8					
HCM 2010 LOS			A					

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑	↓	↑	↓	↓
Traffic Volume (vph)	660	444	26	699	272	7
Future Volume (vph)	660	444	26	699	272	7
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	16	10	13	14	14
Storage Length (ft)		0	75		0	0
Storage Lanes		1	1		1	0
Taper Length (ft)			25		25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850			0.997	
Flt Protected			0.950		0.953	
Satd. Flow (prot)	1706	1700	1565	1824	1789	0
Flt Permitted			0.305		0.953	
Satd. Flow (perm)	1706	1700	502	1824	1789	0
Right Turn on Red		No				Yes
Satd. Flow (RTOR)					2	
Link Speed (mph)	35			35	35	
Link Distance (ft)	1498			1127	625	
Travel Time (s)	29.2			22.0	12.2	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	688	463	27	728	283	7
Shared Lane Traffic (%)						
Lane Group Flow (vph)	688	463	27	728	290	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	14	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.12	0.91	1.17	1.03	0.99	0.99
Turning Speed (mph)		9	15		15	9
Number of Detectors	1	0	1	1	1	
Detector Template						
Leading Detector (ft)	37	0	37	37	37	
Trailing Detector (ft)	-3	0	-3	-3	-3	
Detector 1 Position(ft)	-3	0	-3	-3	-3	
Detector 1 Size(ft)	40	20	40	40	40	
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Turn Type	NA	Perm	Perm	NA	Prot	
Protected Phases	2			6	8	
Permitted Phases		2	6			
Detector Phase	2	2	6	6	8	
Switch Phase						
Minimum Initial (s)	30.0	30.0	30.0	30.0	10.0	
Minimum Split (s)	35.2	35.2	35.2	35.2	14.9	



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Total Split (s)	44.0	44.0	44.0	44.0	21.0	
Total Split (%)	67.7%	67.7%	67.7%	67.7%	32.3%	
Maximum Green (s)	38.8	38.8	38.8	38.8	16.1	
Yellow Time (s)	3.6	3.6	3.6	3.6	3.7	
All-Red Time (s)	1.6	1.6	1.6	1.6	1.2	
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-0.5	
Total Lost Time (s)	4.2	4.2	4.2	4.2	4.4	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	
Act Effct Green (s)	41.7	41.7	41.7	41.7	14.7	
Actuated g/C Ratio	0.64	0.64	0.64	0.64	0.23	
v/c Ratio	0.63	0.42	0.08	0.62	0.71	
Control Delay	10.8	7.7	3.7	6.5	33.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	10.8	7.7	3.7	6.5	33.2	
LOS	B	A	A	A	C	
Approach Delay	9.6			6.4	33.2	
Approach LOS	A			A	C	
Queue Length 50th (ft)	150	83	3	115	102	
Queue Length 95th (ft)	260	142	m10	255	175	
Internal Link Dist (ft)	1418			1047	545	
Turn Bay Length (ft)			75			
Base Capacity (vph)	1093	1090	322	1169	458	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.63	0.42	0.08	0.62	0.63	

Intersection Summary

Area Type: Other

Cycle Length: 65

Actuated Cycle Length: 65

Offset: 16 (25%), Referenced to phase 2:EBT and 6:WBTL, Start of Green

Natural Cycle: 55

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.71

Intersection Signal Delay: 11.6

Intersection LOS: B

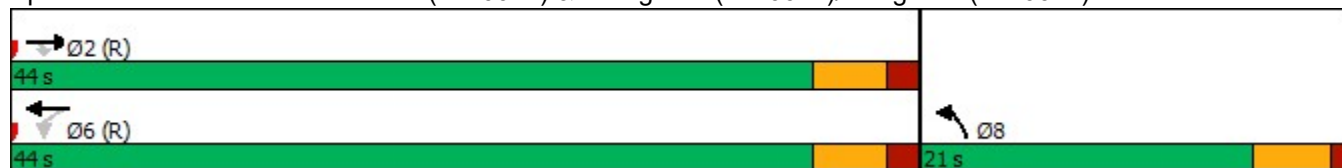
Intersection Capacity Utilization 62.4%

ICU Level of Service B

Analysis Period (min) 15

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

Splits and Phases: 1: York Road (SR 0074) & E. High St. (SR 0641)/E High St. (SR 0641)



HCM 2010 Signalized Intersection Summary

Timing Plan: PM Peak Hour

1: York Road (SR 0074) & E. High St. (SR 0641)/E High St. (SR 0641)

05/08/2023

								
Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations								
Traffic Volume (veh/h)	660	444	26	699	272	7		
Future Volume (veh/h)	660	444	26	699	272	7		
Number	2	12	1	6	3	18		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1765	1835	1765	1835	1835	1872		
Adj Flow Rate, veh/h	688	0	27	728	283	7		
Adj No. of Lanes	1	1	1	1	0	0		
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	1163	1028	442	1209	354	9		
Arrive On Green	0.66	0.00	1.00	1.00	0.21	0.20		
Sat Flow, veh/h	1765	1560	751	1835	1695	42		
Grp Volume(v), veh/h	688	0	27	728	291	0		
Grp Sat Flow(s),veh/h/ln	1765	1560	751	1835	1743	0		
Q Serve(g_s), s	14.2	0.0	0.8	0.0	10.3	0.0		
Cycle Q Clear(g_c), s	14.2	0.0	15.0	0.0	10.3	0.0		
Prop In Lane		1.00	1.00		0.97	0.02		
Lane Grp Cap(c), veh/h	1163	1028	442	1209	364	0		
V/C Ratio(X)	0.59	0.00	0.06	0.60	0.80	0.00		
Avail Cap(c_a), veh/h	1163	1028	442	1209	445	0		
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	1.00		
Upstream Filter(I)	1.00	0.00	0.80	0.80	1.00	0.00		
Uniform Delay (d), s/veh	6.2	0.0	2.5	0.0	24.4	0.0		
Incr Delay (d2), s/veh	2.2	0.0	0.2	1.8	8.3	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(95%),veh/ln	1.9	0.0	0.4	1.1	9.7	0.0		
LnGrp Delay(d),s/veh	8.4	0.0	2.7	1.8	32.7	0.0		
LnGrp LOS	A		A	A	C			
Approach Vol, veh/h	688			755	291			
Approach Delay, s/veh	8.4			1.8	32.7			
Approach LOS	A			A	C			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		47.0				47.0		18.0
Change Period (Y+Rc), s		* 5.2				* 5.2		4.9
Max Green Setting (Gmax), s		* 39				* 39		16.1
Max Q Clear Time (g_c+l1), s		16.7				17.5		12.8
Green Ext Time (p_c), s		2.7				3.2		0.3
Intersection Summary								
HCM 2010 Ctrl Delay			9.6					
HCM 2010 LOS			A					
Notes								

User approved volume balancing among the lanes for turning movement.

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Lanes, Volumes, Timings
2: Giant Ln./Carlisle Plaza Mall & York Road (SR 0074)

Timing Plan: PM Peak Hour
05/08/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	99	584	31	367	468	66	7	38	154	78	161	78
Future Volume (vph)	99	584	31	367	468	66	7	38	154	78	161	78
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	13	13	13	13	12	13	11	14	14	10	12	12
Grade (%)		1%			2%			-2%			2%	
Storage Length (ft)	210		0	210		0	110		0	65		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00										
Frt		0.992			0.981			0.880			0.951	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1724	1798	0	1715	1710	0	1637	1673	0	1549	1661	0
Flt Permitted	0.430			0.150			0.390			0.499		
Satd. Flow (perm)	780	1798	0	271	1710	0	672	1673	0	814	1661	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4			15			160			30	
Link Speed (mph)		35			35			35			25	
Link Distance (ft)		549			3632			825			544	
Travel Time (s)		10.7			70.8			16.1			14.8	
Confl. Peds. (#/hr)			2	2								
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	2%	2%	2%	2%	4%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	103	608	32	382	488	69	7	40	160	81	168	81
Shared Lane Traffic (%)												
Lane Group Flow (vph)	103	640	0	382	557	0	7	200	0	81	249	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		13			13			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.03	1.03	1.03	1.04	1.09	1.04	1.11	0.97	0.97	1.19	1.09	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1		1	1		1	1	
Detector Template												
Leading Detector (ft)	40	256		40	256		30	37		30	35	
Trailing Detector (ft)	-10	250		-10	250		-10	-3		-10	-5	
Detector 1 Position(ft)	-10	250		-10	250		-10	-3		-10	-5	
Detector 1 Size(ft)	50	6		50	6		40	40		40	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2			6			8			4		

Lanes, Volumes, Timings
2: Giant Ln./Carlisle Plaza Mall & York Road (SR 0074)

Timing Plan: PM Peak Hour

05/08/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Detector Phase	5	2		1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	3.0	10.0		3.0	10.0		3.0	3.0		3.0	3.0	
Minimum Split (s)	8.0	24.4		8.0	24.4		21.4	21.4		21.4	21.4	
Total Split (s)	8.0	36.5		17.0	45.5		21.5	21.5		21.5	21.5	
Total Split (%)	10.7%	48.7%		22.7%	60.7%		28.7%	28.7%		28.7%	28.7%	
Maximum Green (s)	4.5	31.1		13.5	40.1		16.1	16.1		16.1	16.1	
Yellow Time (s)	3.0	3.6		3.0	3.6		3.8	3.8		3.8	3.8	
All-Red Time (s)	0.5	1.8		0.5	1.8		1.6	1.6		1.6	1.6	
Lost Time Adjust (s)	-0.5	-1.0		-0.5	-1.0		-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)	3.0	4.4		3.0	4.4		4.4	4.4		4.4	4.4	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	6.0		3.0	6.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.5		3.0	3.5		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	25.0		0.0	25.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	20.0		0.0	20.0		0.0	0.0		0.0	0.0	
Recall Mode	Max	C-Max		Max	C-Max		None	None		None	None	
Walk Time (s)		19.0			19.0		16.0	16.0		16.0	16.0	
Flash Dont Walk (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Pedestrian Calls (#/hr)		0			0		0	0		0	0	
Act Effct Green (s)	40.8	32.1		52.8	41.1		14.8	14.8		14.8	14.8	
Actuated g/C Ratio	0.54	0.43		0.70	0.55		0.20	0.20		0.20	0.20	
v/c Ratio	0.20	0.83		0.76	0.59		0.05	0.44		0.51	0.71	
Control Delay	6.1	30.5		24.8	14.2		24.0	10.3		37.6	35.8	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	6.1	30.5		24.8	14.2		24.0	10.3		37.6	35.8	
LOS	A	C		C	B		C	B		D	D	
Approach Delay		27.1			18.5			10.7			36.2	
Approach LOS		C			B			B			D	
Queue Length 50th (ft)	13	253		96	155		3	15		33	93	
Queue Length 95th (ft)	29	#444		#249	249		13	66		75	166	
Internal Link Dist (ft)		469			3552			745			464	
Turn Bay Length (ft)	210			210			110			65		
Base Capacity (vph)	515	771		503	943		153	504		185	401	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.20	0.83		0.76	0.59		0.05	0.40		0.44	0.62	

Intersection Summary

Area Type: Other

Cycle Length: 75

Actuated Cycle Length: 75

Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 75

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.83

Intersection Signal Delay: 23.3

Intersection LOS: C

Intersection Capacity Utilization 87.5%

ICU Level of Service E

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 2: Giant Ln./Carlisle Plaza Mall & York Road (SR 0074)



HCM 2010 analysis expects stop-line detection. Detectors cannot be further than 20 feet from the stop bar.

Lanes, Volumes, Timings

Timing Plan: PM Peak Hour

3: Carlisle Plaza Mall/Shaffner Ave. & E High St. (SR 0641)/E. High St. (SR 0641) 05/08/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	607	64	131	636	1	54	0	84	0	0	1
Future Volume (vph)	0	607	64	131	636	1	54	0	84	0	0	1
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12	12	12	12	16	16	16
Grade (%)		0%			0%			2%			0%	
Storage Length (ft)	60		60	60		0	0		80	0		0
Storage Lanes	1		1	1		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor								1.00			0.98	
Frt			0.850						0.850		0.865	
Flt Protected				0.950				0.950				
Satd. Flow (prot)	1765	1765	1500	1676	1765	0	0	1660	1485	0	1690	0
Flt Permitted				0.286				0.757				
Satd. Flow (perm)	1765	1765	1500	505	1765	0	0	1318	1485	0	1690	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			117						118		328	
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		1127			853			544			592	
Travel Time (s)		22.0			16.6			10.6			11.5	
Confl. Peds. (#/hr)							1					1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	646	68	139	677	1	57	0	89	0	0	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	646	68	139	678	0	0	57	89	0	1	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane					Yes							
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.09	1.09	1.09	0.91	0.91	0.91
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	1	1	1		1	1	1	1	2	
Detector Template							Left			Left		
Leading Detector (ft)	45	35	35	45	35		20	45	45	20	20	
Trailing Detector (ft)	-5	-5	-5	-5	-5		0	-5	-5	0	-3	
Detector 1 Position(ft)	-5	-5	-5	-5	-5		0	-5	-5	0	-3	
Detector 1 Size(ft)	50	40	40	50	40		20	50	50	20	6	
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex		CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)											14	
Detector 2 Size(ft)											6	
Detector 2 Type											CI+Ex	
Detector 2 Channel												

Lanes, Volumes, Timings

Timing Plan: PM Peak Hour

3: Carlisle Plaza Mall/Shaffner Ave. & E High St. (SR 0641)/E. High St. (SR 0641) 05/08/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)												0.0
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Perm	NA	Perm		NA	
Protected Phases	5	2		1	6			8		8	4	
Permitted Phases	2		2	6			8		8	4		
Detector Phase	5	2	2	1	6		8	8	8	4	4	
Switch Phase												
Minimum Initial (s)	3.0	10.0	10.0	3.0	10.0		3.0	3.0	3.0	3.0	3.0	
Minimum Split (s)	8.7	27.7	27.7	8.7	27.7		26.5	26.5	26.5	26.5	26.5	
Total Split (s)	8.7	86.0	86.0	16.0	93.3		28.0	28.0	28.0	28.0	28.0	
Total Split (%)	6.7%	66.2%	66.2%	12.3%	71.8%		21.5%	21.5%	21.5%	21.5%	21.5%	
Maximum Green (s)	3.0	80.3	80.3	10.3	87.6		22.5	22.5	22.5	22.5	22.5	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.5	2.5	2.5	2.5	2.5	
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0			-1.0	-1.0		-1.0	
Total Lost Time (s)	4.7	4.7	4.7	4.7	4.7			4.5	4.5		4.5	
Lead/Lag	Lead	Lag	Lag	Lead	Lag							
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	6.0	6.0	3.0	6.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	Max	C-Max	C-Max	Max	C-Max		None	None	None	None	None	
Walk Time (s)		12.0	12.0		12.0		11.0	11.0	11.0	11.0	11.0	
Flash Dont Walk (s)		10.0	10.0		10.0		10.0	10.0	10.0	10.0	10.0	
Pedestrian Calls (#/hr)		0	0		0		0	0	0	0	0	
Act Effct Green (s)		81.3	81.3	108.7	88.6			12.1	12.1		12.1	
Actuated g/C Ratio		0.63	0.63	0.84	0.68			0.09	0.09		0.09	
v/c Ratio		0.59	0.07	0.22	0.56			0.47	0.36		0.00	
Control Delay		13.0	1.8	2.4	7.6			67.3	8.1		0.0	
Queue Delay		0.0	0.0	0.0	0.1			0.0	0.0		0.0	
Total Delay		13.0	1.8	2.4	7.8			67.3	8.1		0.0	
LOS		B	A	A	A			E	A		A	
Approach Delay		11.9			6.9			31.2				
Approach LOS		B			A			C				
Queue Length 50th (ft)		292	4	12	118			46	0		0	
Queue Length 95th (ft)		353	m11	26	143			89	27		0	
Internal Link Dist (ft)		1047			773			464			512	
Turn Bay Length (ft)			60	60					80			
Base Capacity (vph)		1103	981	627	1202			238	365		574	
Starvation Cap Reductn		0	0	0	77			0	0		0	
Spillback Cap Reductn		0	0	0	0			0	0		0	
Storage Cap Reductn		0	0	0	0			0	0		0	
Reduced v/c Ratio		0.59	0.07	0.22	0.60			0.24	0.24		0.00	

Intersection Summary

Area Type: Other

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 128 (98%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 70

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.59

Intersection Signal Delay: 11.1

Intersection LOS: B

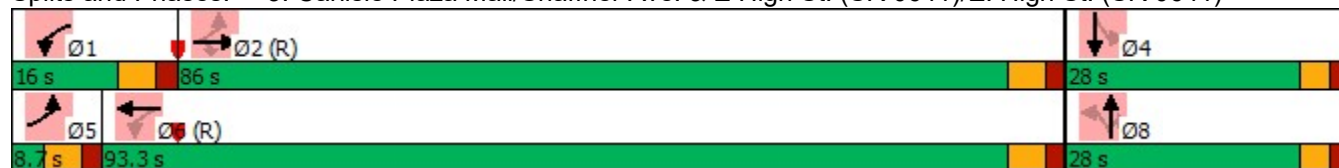
Intersection Capacity Utilization 62.8%

ICU Level of Service B

Analysis Period (min) 15

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

Splits and Phases: 3: Carlisle Plaza Mall/Shaffner Ave. & E High St. (SR 0641)/E. High St. (SR 0641)



HCM 2010 Signalized Intersection Summary

Timing Plan: PM Peak Hour

3: Carlisle Plaza Mall/Shaffner Ave. & E High St. (SR 0641)/E. High St. (SR 0641)

05/08/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	607	64	131	636	1	54	0	84	0	0	1
Future Volume (veh/h)	0	607	64	131	636	1	54	0	84	0	0	1
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	6	0	2	5	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	0.99		0.99	1.00		0.99
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
Adj Sat Flow, veh/h/ln	1765	1765	1765	1765	1765	1800	1782	1747	1747	1872	1835	1872
Adj Flow Rate, veh/h	0	646	68	139	677	1	57	0	89	0	0	1
Adj No. of Lanes	1	1	1	1	1	0	0	1	1	0	1	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	582	1263	1073	714	1477	2	175	0	134	0	0	140
Arrive On Green	0.00	1.00	1.00	0.17	1.00	1.00	0.08	0.00	0.09	0.00	0.00	0.08
Sat Flow, veh/h	1681	1765	1500	1681	1762	3	1324	0	1477	0	0	1550
Grp Volume(v), veh/h	0	646	68	139	0	678	57	0	89	0	0	1
Grp Sat Flow(s),veh/h/ln	1681	1765	1500	1681	0	1764	1324	0	1477	0	0	1551
Q Serve(g_s), s	0.0	0.0	0.0	2.1	0.0	0.0	5.1	0.0	7.6	0.0	0.0	0.1
Cycle Q Clear(g_c), s	0.0	0.0	0.0	2.1	0.0	0.0	5.6	0.0	7.6	0.0	0.0	0.1
Prop In Lane	1.00		1.00	1.00		0.00	1.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	582	1263	1073	714	0	1480	165	0	134	0	0	140
V/C Ratio(X)	0.00	0.51	0.06	0.19	0.00	0.46	0.35	0.00	0.67	0.00	0.00	0.01
Avail Cap(c_a), veh/h	650	1263	1073	726	0	1480	290	0	267	0	0	280
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.74	0.74	0.74	0.00	0.74	0.94	0.00	0.94	0.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	2.5	0.0	0.0	57.0	0.0	57.2	0.0	0.0	54.2
Incr Delay (d2), s/veh	0.0	1.1	0.1	0.4	0.0	0.8	1.2	0.0	5.3	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.3	0.0	0.1	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.0	0.8	0.0	2.5	0.0	0.6	3.7	0.0	5.9	0.0	0.0	0.1
LnGrp Delay(d),s/veh	0.0	1.4	0.1	3.0	0.0	0.9	58.2	0.0	62.5	0.0	0.0	54.3
LnGrp LOS		A	A	A		A	E		E			D
Approach Vol, veh/h		714			817			146			1	
Approach Delay, s/veh		1.3			1.3			60.8			54.3	
Approach LOS		A			A			E			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	16.0	97.7		16.3	0.0	113.7		16.3				
Change Period (Y+Rc), s	* 5.7	* 5.7		5.5	* 5.7	* 5.7		5.5				
Max Green Setting (Gmax), s	* 80			22.5	* 3	* 88		22.5				
Max Q Clear Time (g_c+I1), s	4.6	2.5		2.5	0.0	2.5		10.1				
Green Ext Time (p_c), s	0.2	11.9		0.0	0.0	11.6		0.4				
Intersection Summary												
HCM 2010 Ctrl Delay			6.5									
HCM 2010 LOS			A									
Notes												

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Lanes, Volumes, Timings

Timing Plan: PM Peak Hour

4: Lowe's Access Dr./CVS Access Dr. & E. High St. (SR 0641)/W. Trindle Rd. (SR 0641) 08/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	18	597	69	94	689	26	91	2	42	12	1	14
Future Volume (vph)	18	597	69	94	689	26	91	2	42	12	1	14
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Grade (%)		0%			-1%			-2%			0%	
Storage Length (ft)	60		60	80		0	0		50	0		0
Storage Lanes	1		1	1		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.995				0.850		0.930	
Flt Protected	0.950			0.950				0.953			0.978	
Satd. Flow (prot)	1676	1765	1500	1685	1765	0	0	1699	1515	0	1605	0
Flt Permitted	0.281			0.319				0.709			0.862	
Satd. Flow (perm)	496	1765	1500	566	1765	0	0	1264	1515	0	1415	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			69		3				70		15	
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		853			2952			142			294	
Travel Time (s)		16.6			57.5			3.9			8.0	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	19	622	72	98	718	27	95	2	44	13	1	15
Shared Lane Traffic (%)												
Lane Group Flow (vph)	19	622	72	98	745	0	0	97	44	0	29	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes										
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.06	1.06	1.06	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	1	1	1		1	1	1	1	1	
Detector Template							Left			Left		
Leading Detector (ft)	45	35	35	45	35		20	45	45	20	15	
Trailing Detector (ft)	-5	-5	-5	-5	-5		0	-5	-5	0	-5	
Detector 1 Position(ft)	-5	-5	-5	-5	-5		0	-5	-5	0	-5	
Detector 1 Size(ft)	50	40	40	50	40		20	50	50	20	20	
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex		CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Perm	NA	Perm	Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2		2	6			8		8	4		
Detector Phase	5	2	2	1	6		8	8	8	4	4	
Switch Phase												
Minimum Initial (s)	3.0	10.0	10.0	3.0	10.0		3.0	3.0	3.0	3.0	3.0	
Minimum Split (s)	8.7	27.7	27.7	8.7	27.7		26.5	26.5	26.5	26.5	26.5	

Lanes, Volumes, Timings

Timing Plan: PM Peak Hour

4: Lowe's Access Dr./CVS Access Dr. & E. High St. (SR 0641)/W. Trindle Rd. (SR 0641) 08/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (s)	9.0	89.0	89.0	12.0	92.0		29.0	29.0	29.0	29.0	29.0	
Total Split (%)	6.9%	68.5%	68.5%	9.2%	70.8%		22.3%	22.3%	22.3%	22.3%	22.3%	
Maximum Green (s)	3.3	83.3	83.3	6.3	86.3		23.5	23.5	23.5	23.5	23.5	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.5	2.5	2.5	2.5	2.5	
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0			-1.0	-1.0		-1.0	
Total Lost Time (s)	4.7	4.7	4.7	4.7	4.7			4.5	4.5		4.5	
Lead/Lag	Lead	Lag	Lag	Lead	Lag							
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	6.0	6.0	3.0	6.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	Max	C-Max	C-Max	Max	C-Max		None	None	None	None	None	
Walk Time (s)		12.0	12.0		12.0		11.0	11.0	11.0	11.0	11.0	
Flash Dont Walk (s)		10.0	10.0		10.0		10.0	10.0	10.0	10.0	10.0	
Pedestrian Calls (#/hr)		0	0		0		0	0	0	0	0	
Act Effct Green (s)	96.7	84.3	84.3	102.7	87.3		16.4	16.4			16.4	
Actuated g/C Ratio	0.74	0.65	0.65	0.79	0.67		0.13	0.13			0.13	
v/c Ratio	0.04	0.54	0.07	0.17	0.63		0.61	0.17			0.15	
Control Delay	4.4	10.1	2.3	3.9	15.0		68.8	5.3			30.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0	
Total Delay	4.4	10.1	2.3	3.9	15.0		68.8	5.3			30.5	
LOS	A	B	A	A	B		E	A			C	
Approach Delay		9.2			13.7		49.0				30.5	
Approach LOS		A			B		D				C	
Queue Length 50th (ft)	3	110	0	14	327		79	0			11	
Queue Length 95th (ft)	m8	196	m14	34	450		132	15			39	
Internal Link Dist (ft)		773			2872		62				214	
Turn Bay Length (ft)	60		60	80				50				
Base Capacity (vph)	481	1144	996	579	1186		238	342			278	
Starvation Cap Reductn	0	0	0	0	0		0	0			0	
Spillback Cap Reductn	0	0	0	0	0		0	0			0	
Storage Cap Reductn	0	0	0	0	0		0	0			0	
Reduced v/c Ratio	0.04	0.54	0.07	0.17	0.63		0.41	0.13			0.10	

Intersection Summary

Area Type: Other

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 118 (91%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 75

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.63

Intersection Signal Delay: 15.0

Intersection LOS: B

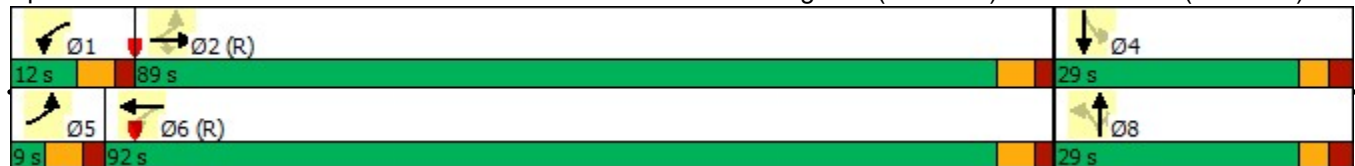
Intersection Capacity Utilization 65.3%

ICU Level of Service C

Analysis Period (min) 15

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

Splits and Phases: 4: Lowe's Access Dr./CVS Access Dr. & E. High St. (SR 0641)/W. Trindle Rd. (SR 0641)



HCM 2010 Signalized Intersection Summary

Timing Plan: PM Peak Hour

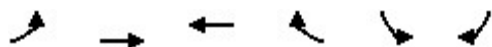
4: Lowe's Access Dr./CVS Access Dr. & E. High St. (SR 0641)/W. Trindle Rd. (SR 0641) 08/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	18	597	69	94	689	26	91	2	42	12	1	14
Future Volume (veh/h)	18	597	69	94	689	26	91	2	42	12	1	14
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	1	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
Adj Sat Flow, veh/h/ln	1765	1765	1765	1774	1774	1809	1818	1782	1782	1800	1765	1800
Adj Flow Rate, veh/h	19	622	72	98	718	27	95	2	44	12	1	15
Adj No. of Lanes	1	1	1	1	1	0	0	1	1	0	1	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	486	1238	1052	674	1231	46	178	3	205	51	17	33
Arrive On Green	0.07	1.00	1.00	0.06	0.72	0.72	0.13	0.14	0.14	0.13	0.14	0.13
Sat Flow, veh/h	1681	1765	1500	1689	1698	64	907	19	1515	82	126	240
Grp Volume(v), veh/h	19	622	72	98	0	745	97	0	44	28	0	0
Grp Sat Flow(s),veh/h/ln	1681	1765	1500	1689	0	1762	926	0	1515	448	0	0
Q Serve(g_s), s	0.4	0.0	0.0	1.9	0.0	26.2	0.0	0.0	3.4	0.2	0.0	0.0
Cycle Q Clear(g_c), s	0.4	0.0	0.0	1.9	0.0	26.2	14.4	0.0	3.4	14.6	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.04	0.98		1.00	0.43		0.54
Lane Grp Cap(c), veh/h	486	1238	1052	674	0	1277	173	0	205	97	0	0
V/C Ratio(X)	0.04	0.50	0.07	0.15	0.00	0.58	0.56	0.00	0.21	0.29	0.00	0.00
Avail Cap(c_a), veh/h	486	1238	1052	677	0	1277	248	0	286	173	0	0
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.81	0.81	0.81	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	6.4	0.0	0.0	4.1	0.0	8.6	55.3	0.0	50.0	50.4	0.0	0.0
Incr Delay (d2), s/veh	0.1	1.2	0.1	0.5	0.0	2.0	2.8	0.0	0.5	1.6	0.0	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	0.3	0.7	0.1	1.7	0.0	19.3	6.5	0.0	2.6	1.7	0.0	0.0
LnGrp Delay(d),s/veh	6.6	1.2	0.1	4.6	0.0	10.5	58.1	0.0	50.6	52.0	0.0	0.0
LnGrp LOS	A	A	A	A		B	E		D	D		
Approach Vol, veh/h		713			843			141			28	
Approach Delay, s/veh		1.2			9.8			55.7			52.0	
Approach LOS		A			A			E			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	12.0	95.9		22.1	9.0	98.9		22.1				
Change Period (Y+Rc), s	* 5.7	* 5.7		5.5	* 5.7	* 5.7		5.5				
Max Green Setting (Gmax), s	63	* 83		23.5	* 3.3	* 86		23.5				
Max Q Clear Time (g_c+I1), s	4.4	2.5		16.6	2.9	28.2		16.4				
Green Ext Time (p_c), s	0.0	11.4		0.0	0.0	13.2		0.2				
Intersection Summary												
HCM 2010 Ctrl Delay			10.7									
HCM 2010 LOS			B									
Notes												

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Lanes, Volumes, Timings
5: W. Trindle Rd. (SR 0641) & I-81 SB Off-Ramp

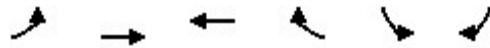
Timing Plan: PM Peak Hour
05/08/2023



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↘	↗
Traffic Volume (vph)	0	1003	582	0	340	438
Future Volume (vph)	0	1003	582	0	340	438
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	12	12	12	14	14
Grade (%)		-2%	0%		-3%	
Storage Length (ft)	0			0	0	70
Storage Lanes	0			0	1	1
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	0	3386	3353	0	1815	1624
Flt Permitted					0.950	
Satd. Flow (perm)	0	3386	3353	0	1815	1624
Right Turn on Red				No		Yes
Satd. Flow (RTOR)						176
Link Speed (mph)		35	35		25	
Link Distance (ft)		472	314		758	
Travel Time (s)		9.2	6.1		20.7	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	1045	606	0	354	456
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1045	606	0	354	456
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		14	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.11	1.06	1.07	1.07	0.97	0.97
Turning Speed (mph)	15			9	15	9
Number of Detectors		1	1		1	0
Detector Template						
Leading Detector (ft)		256	256		15	0
Trailing Detector (ft)		250	250		-10	0
Detector 1 Position(ft)		250	250		-10	0
Detector 1 Size(ft)		6	6		25	20
Detector 1 Type		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)		0.0	0.0		0.0	0.0
Detector 1 Queue (s)		0.0	0.0		0.0	0.0
Detector 1 Delay (s)		0.0	0.0		0.0	0.0
Turn Type		NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases						4
Detector Phase		2	6		4	4
Switch Phase						
Minimum Initial (s)		10.0	10.0		3.0	3.0

Lanes, Volumes, Timings
5: W. Trindle Rd. (SR 0641) & I-81 SB Off-Ramp

Timing Plan: PM Peak Hour
05/08/2023

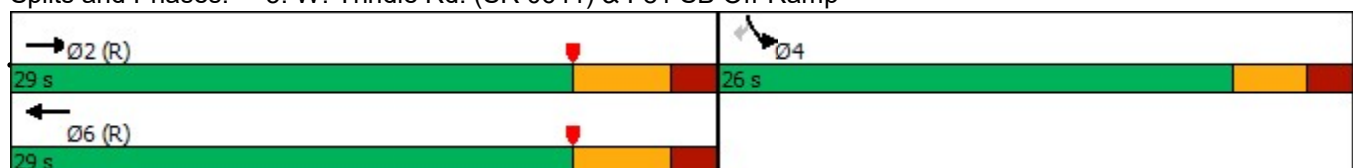


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Minimum Split (s)		16.0	16.0		22.0	22.0
Total Split (s)		29.0	29.0		26.0	26.0
Total Split (%)		52.7%	52.7%		47.3%	47.3%
Maximum Green (s)		23.0	23.0		21.0	21.0
Yellow Time (s)		4.0	4.0		3.0	3.0
All-Red Time (s)		2.0	2.0		2.0	2.0
Lost Time Adjust (s)		-1.0	-1.0		-1.0	-1.0
Total Lost Time (s)		5.0	5.0		4.0	4.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)		6.0	6.0		3.0	3.0
Recall Mode		C-Max	C-Max		None	None
Walk Time (s)		8.0	8.0		17.0	17.0
Flash Dont Walk (s)		0.0	0.0		0.0	0.0
Pedestrian Calls (#/hr)		0	0		0	0
Act Effct Green (s)		28.5	28.5		17.5	17.5
Actuated g/C Ratio		0.52	0.52		0.32	0.32
v/c Ratio		0.60	0.35		0.61	0.72
Control Delay		12.1	6.8		19.9	16.1
Queue Delay		0.0	0.0		0.0	0.0
Total Delay		12.1	6.8		19.9	16.1
LOS		B	A		B	B
Approach Delay		12.1	6.8		17.7	
Approach LOS		B	A		B	
Queue Length 50th (ft)		115	57		95	74
Queue Length 95th (ft)		200	m82		146	144
Internal Link Dist (ft)		392	234		678	
Turn Bay Length (ft)						70
Base Capacity (vph)		1752	1735		726	755
Starvation Cap Reductn		0	0		0	0
Spillback Cap Reductn		0	0		0	0
Storage Cap Reductn		0	0		0	0
Reduced v/c Ratio		0.60	0.35		0.49	0.60

Intersection Summary

Area Type: Other
Cycle Length: 55
Actuated Cycle Length: 55
Offset: 26 (47%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Natural Cycle: 50
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.72
Intersection Signal Delay: 12.7 Intersection LOS: B
Intersection Capacity Utilization 56.6% ICU Level of Service B
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: W. Trindle Rd. (SR 0641) & I-81 SB Off-Ramp



HCM 2010 analysis expects stop-line detection. Detectors cannot be further than 20 feet from the stop bar.

Lanes, Volumes, Timings
6: I-81 NB On-Ramp & W. Trindle Rd. (SR 0641)

Timing Plan: PM Peak Hour
05/08/2023

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↔↑		
Traffic Volume (vph)	938	363	191	583	0	0
Future Volume (vph)	938	363	191	583	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	11	11	11	16	14
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Frt	0.958					
Flt Protected				0.988		
Satd. Flow (prot)	2964	0	0	3074	0	0
Flt Permitted				0.988		
Satd. Flow (perm)	2964	0	0	3074	0	0
Link Speed (mph)	35			35	25	
Link Distance (ft)	466			628	326	
Travel Time (s)	9.1			12.2	8.9	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	6%	9%	7%	6%	2%	2%
Adj. Flow (vph)	977	378	199	607	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1355	0	0	806	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.12	1.12	1.12	1.12	0.91	0.99
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	69.2%			ICU Level of Service C		
Analysis Period (min)	15					

Lanes, Volumes, Timings
7: Army Heritage Dr. & W. Trindle Rd. (SR 0641)

Timing Plan: PM Peak Hour
05/08/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	183	512	219	119	423	70	185	207	105	137	335	126
Future Volume (vph)	183	512	219	119	423	70	185	207	105	137	335	126
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	13	14	12	13	14	12	13	12	11	14	12
Grade (%)		1%			-1%			-5%			4%	
Storage Length (ft)	90		95	110		155	140		0	125		150
Storage Lanes	1		1	1		1	1		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor								0.99		0.99		
Frt			0.850			0.850		0.950				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1652	1814	1592	1685	1815	1608	1718	1744	0	1588	1845	1470
Flt Permitted	0.256			0.361			0.213			0.288		
Satd. Flow (perm)	445	1814	1592	640	1815	1608	385	1744	0	478	1845	1470
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			156			228		22				129
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		628			1908			461			1667	
Travel Time (s)		12.2			37.2			9.0			32.5	
Confl. Peds. (#/hr)									6	6		
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	3%	2%	2%	2%	3%	2%	2%	2%	4%	2%	2%	2%
Adj. Flow (vph)	187	522	223	121	432	71	189	211	107	140	342	129
Shared Lane Traffic (%)												
Lane Group Flow (vph)	187	522	223	121	432	71	189	318	0	140	342	129
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane											Yes	
Headway Factor	1.08	1.03	0.99	1.07	1.02	0.98	1.04	1.00	1.04	1.15	1.01	1.10
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	0	1	1	0	1	1		1	1	1
Detector Template												Right
Leading Detector (ft)	35	231	0	35	231	0	35	40		40	35	20
Trailing Detector (ft)	-5	225	0	-5	225	0	-5	-10		-5	-5	0
Detector 1 Position(ft)	-5	225	0	-5	225	0	-5	-10		-5	-5	0
Detector 1 Size(ft)	40	6	20	40	6	20	40	50		45	40	20
Detector 1 Type	CI+Ex	Extend	CI+Ex	CI+Ex	Extend	CI+Ex	CI+Ex	CI+Ex		CI+Ex	CI+Ex	CI+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	pm+ov
Protected Phases	5	2	3	1	6		3	8		7	4	5
Permitted Phases	2		2	6		6	8			4		4

Lanes, Volumes, Timings
7: Army Heritage Dr. & W. Trindle Rd. (SR 0641)

Timing Plan: PM Peak Hour
05/08/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2	3	1	6	6	3	8		7	4	5
Switch Phase												
Minimum Initial (s)	15.0	15.0	3.0	3.0	3.0	3.0	3.0	3.0		4.0	3.0	15.0
Minimum Split (s)	21.5	25.5	9.5	9.5	25.5	25.5	9.5	31.5		10.5	31.5	21.5
Total Split (s)	21.5	54.1	14.0	10.4	43.0	43.0	14.0	32.3		13.2	31.5	21.5
Total Split (%)	19.5%	49.2%	12.7%	9.5%	39.1%	39.1%	12.7%	29.4%		12.0%	28.6%	19.5%
Maximum Green (s)	15.0	47.6	7.5	3.9	36.5	36.5	7.5	25.8		6.7	25.0	15.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5		2.5	2.5	2.5
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0		-1.0	-1.0	-1.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5		5.5	5.5	5.5
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	6.0	3.0	3.0	6.0	6.0	3.0	3.0		3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Time Before Reduce (s)	0.0	25.0	0.0	0.0	25.0	25.0	0.0	0.0		0.0	0.0	0.0
Time To Reduce (s)	0.0	15.0	0.0	0.0	15.0	15.0	0.0	0.0		0.0	0.0	0.0
Recall Mode	None	C-Max	None	None	C-Max	C-Max	None	None		None	None	None
Walk Time (s)		10.0			10.0	10.0		10.0			10.0	
Flash Dont Walk (s)		9.0			9.0	9.0		15.0			15.0	
Pedestrian Calls (#/hr)		0			0	0		0			0	
Act Effct Green (s)	60.8	49.4	63.4	45.2	39.3	39.3	33.5	25.0		31.9	24.2	45.7
Actuated g/C Ratio	0.55	0.45	0.58	0.41	0.36	0.36	0.30	0.23		0.29	0.22	0.42
v/c Ratio	0.44	0.64	0.23	0.38	0.67	0.10	0.86	0.77		0.65	0.84	0.19
Control Delay	14.8	24.2	5.8	9.1	25.4	0.7	59.8	47.5		41.5	60.1	4.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	14.8	24.2	5.8	9.1	25.4	0.7	59.8	47.5		41.5	60.1	4.0
LOS	B	C	A	A	C	A	E	D		D	E	A
Approach Delay		17.9			19.5			52.1			44.0	
Approach LOS		B			B			D			D	
Queue Length 50th (ft)	68	248	33	23	276	0	101	206		68	227	0
Queue Length 95th (ft)	114	317	68	m33	381	m0	#185	318		#119	#362	35
Internal Link Dist (ft)		548			1828			381			1587	
Turn Bay Length (ft)	90		95	110		155	140			125		150
Base Capacity (vph)	421	815	984	318	648	721	220	441		216	436	686
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.44	0.64	0.23	0.38	0.67	0.10	0.86	0.72		0.65	0.78	0.19

Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow, Master Intersection

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.86

Intersection Signal Delay: 30.7

Intersection LOS: C

Intersection Capacity Utilization 83.8% ICU Level of Service E

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

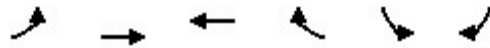
Queue shown is maximum after two cycles.

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

Splits and Phases: 7: Army Heritage Dr. & W. Trindle Rd. (SR 0641)

 Ø1	 Ø2 (R)	 Ø3	 Ø4
10.4 s	54.1 s	14 s	31.5 s
 Ø5	 Ø6 (R)	 Ø7	 Ø8
21.5 s	43 s	13.2 s	32.3 s

HCM 2010 analysis cannot be performed without detectors for actuated controller type.



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	16	498	576	2	2	16
Future Volume (vph)	16	498	576	2	2	16
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	11	11
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.879	
Flt Protected		0.998			0.995	
Satd. Flow (prot)	0	1761	1765	0	1492	0
Flt Permitted		0.998			0.995	
Satd. Flow (perm)	0	1761	1765	0	1492	0
Link Speed (mph)		45	45		35	
Link Distance (ft)		1985	3218		1923	
Travel Time (s)		30.1	48.8		37.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	17	524	606	2	2	17
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	541	608	0	19	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		24	24		11	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.07	1.07	1.07	1.07	1.12	1.12
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	51.3%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection

Int Delay, s/veh 0.3

Movement EBL EBT WBT WBR SBL SBRLane Configurations 

Traffic Vol, veh/h 16 498 576 2 2 16

Future Vol, veh/h 16 498 576 2 2 16

Conflicting Peds, #/hr 0 0 0 0 0 0

Sign Control Free Free Free Free Stop Stop

RT Channelized - None - None - None

Storage Length - - - - 0 -

Veh in Median Storage, # 0 0 - 1 -

Grade, % - 0 0 - 0 -

Peak Hour Factor 95 95 95 95 95 95

Heavy Vehicles, % 2 2 2 2 2 2

Mvmt Flow 17 524 606 2 2 17

Major/Minor Major1 Major2 Minor2

Conflicting Flow All 608 0 - 0 1165 607

Stage 1 - - - - 607 -

Stage 2 - - - - 558 -

Critical Hdwy 4.12 - - - 6.42 6.22

Critical Hdwy Stg 1 - - - - 5.42 -

Critical Hdwy Stg 2 - - - - 5.42 -

Follow-up Hdwy 2.218 - - - 3.518 3.318

Pot Cap-1 Maneuver 970 - - - 215 496

Stage 1 - - - - 544 -

Stage 2 - - - - 573 -

Platoon blocked, % - - -

Mov Cap-1 Maneuver 970 - - - 210 496

Mov Cap-2 Maneuver - - - - 347 -

Stage 1 - - - - 530 -

Stage 2 - - - - 573 -

Approach EB WB SB

HCM Control Delay, s 0.3 0 12.9

HCM LOS B

Minor Lane/Major Mvmt EBL EBT WBT WBR SBLn1

Capacity (veh/h) 970 - - - 473

HCM Lane V/C Ratio 0.017 - - - 0.04

HCM Control Delay (s) 8.8 0 - - 12.9

HCM Lane LOS A A - - B

HCM 95th %tile Q(veh) 0.1 - - - 0.1

Lanes, Volumes, Timings
9: Middlesex Rd. & W. Trindle Rd. (SR0641)

Timing Plan: PM Peak Hour
05/08/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	44	410	44	9	500	43	32	40	4	44	85	41
Future Volume (vph)	44	410	44	9	500	43	32	40	4	44	85	41
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12	11	11	11	11	11	11
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.988			0.989			0.993			0.967	
Flt Protected		0.996			0.999			0.980			0.987	
Satd. Flow (prot)	0	1723	0	0	1744	0	0	1660	0	0	1616	0
Flt Permitted		0.996			0.999			0.980			0.987	
Satd. Flow (perm)	0	1723	0	0	1744	0	0	1660	0	0	1616	0
Link Speed (mph)		45			45			35			40	
Link Distance (ft)		3218			3646			1268			2562	
Travel Time (s)		48.8			55.2			24.7			43.7	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	3%	2%	2%	2%	2%	2%	2%	2%	3%	3%	2%
Adj. Flow (vph)	46	427	46	9	521	45	33	42	4	46	89	43
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	519	0	0	575	0	0	79	0	0	178	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.12	1.12	1.12	1.12	1.12	1.12
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type: Unsignalized												
Intersection Capacity Utilization 70.4% ICU Level of Service C												
Analysis Period (min) 15												

Intersection												
Int Delay, s/veh	14.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	44	410	44	9	500	43	32	40	4	44	85	41
Future Vol, veh/h	44	410	44	9	500	43	32	40	4	44	85	41
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	-	-	0	-	-	0	-	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	3	2	2	2	2	2	2	2	3	3	2
Mvmt Flow	46	427	46	9	521	45	33	42	4	46	89	43

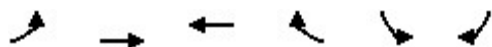
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	566	0	0	473	0	0	1170	1126	450	1127	1127	544
Stage 1	-	-	-	-	-	-	542	542	-	562	562	-
Stage 2	-	-	-	-	-	-	628	584	-	565	565	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.13	6.53	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.13	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.13	5.53	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.527	4.027	3.318
Pot Cap-1 Maneuver	1006	-	-	1089	-	-	170	205	609	181	204	539
Stage 1	-	-	-	-	-	-	525	520	-	510	508	-
Stage 2	-	-	-	-	-	-	471	498	-	508	506	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1006	-	-	1089	-	-	94	190	609	141	189	539
Mov Cap-2 Maneuver	-	-	-	-	-	-	94	190	-	141	189	-
Stage 1	-	-	-	-	-	-	492	488	-	478	502	-
Stage 2	-	-	-	-	-	-	353	492	-	433	475	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.8			0.1			63			82.3		
HCM LOS							F			F		

Minor Lane/Major Mvm	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	NBLn1	SBLn1
Capacity (veh/h)	136	1006	-	-	1089	-	-	203	
HCM Lane V/C Ratio	0.582	0.046	-	-	0.009	-	-	0.872	
HCM Control Delay (s)	63	8.7	0	-	8.3	0	-	82.3	
HCM Lane LOS	F	A	A	-	A	A	-	F	
HCM 95th %tile Q(veh)	3	0.1	-	-	0	-	-	6.7	

Lanes, Volumes, Timings
10: Westminster Dr./Fairview St. & Army Heritage Dr.

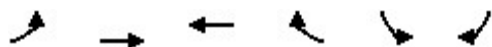
Timing Plan: PM Peak Hour
05/08/2023



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	328	21	9	164	227	371
Future Volume (vph)	328	21	9	164	227	371
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	14	14	14	14	12	14
Grade (%)		-1%	3%		1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00		0.98		0.99	
Frt			0.872			0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1797	1892	1581	0	1668	1592
Flt Permitted	0.527				0.950	
Satd. Flow (perm)	995	1892	1581	0	1660	1592
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			174			395
Link Speed (mph)		35	35		35	
Link Distance (ft)		1287	797		461	
Travel Time (s)		25.1	15.5		9.0	
Confl. Peds. (#/hr)	2			2	3	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	349	22	10	174	241	395
Shared Lane Traffic (%)						
Lane Group Flow (vph)	349	22	184	0	241	395
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		14	14		24	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	0.98	0.98	1.01	1.01	1.08	0.99
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	1	1		1	1
Detector Template					Left	Right
Leading Detector (ft)	40	40	35		20	20
Trailing Detector (ft)	-5	-5	-5		0	0
Detector 1 Position(ft)	-5	-5	-5		0	0
Detector 1 Size(ft)	45	45	40		20	20
Detector 1 Type	CI+Ex	Extend	Extend		CI+Ex	CI+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0
Turn Type	pm+pt	NA	NA		Prot	Perm
Protected Phases	5	2	6		7	
Permitted Phases	2					4
Detector Phase	5	2	6		7	4
Switch Phase						
Minimum Initial (s)	3.0	10.0	10.0		4.0	3.0
Minimum Split (s)	9.5	39.5	39.5		10.0	29.0

Lanes, Volumes, Timings
10: Westminster Dr./Fairview St. & Army Heritage Dr.

Timing Plan: PM Peak Hour
05/08/2023

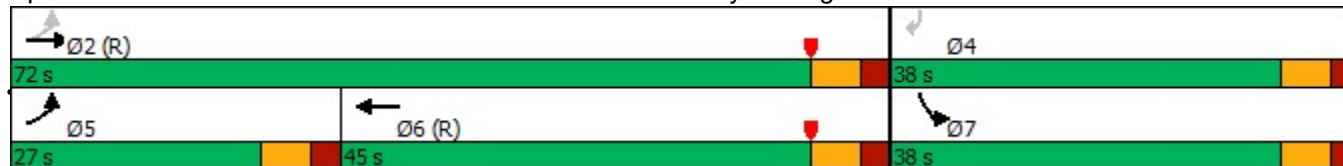


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Total Split (s)	27.0	72.0	45.0		38.0	38.0
Total Split (%)	24.5%	65.5%	40.9%		34.5%	34.5%
Maximum Green (s)	20.5	65.5	38.5		32.0	32.0
Yellow Time (s)	4.0	4.0	4.0		4.0	4.0
All-Red Time (s)	2.5	2.5	2.5		2.0	2.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0		-1.0	-1.0
Total Lost Time (s)	5.5	5.5	5.5		5.0	5.0
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	Max	C-Max	C-Max		None	None
Walk Time (s)		10.0	10.0			10.0
Flash Dont Walk (s)		23.0	23.0			13.0
Pedestrian Calls (#/hr)		0	0			0
Act Effct Green (s)	77.3	77.3	39.5		22.2	22.2
Actuated g/C Ratio	0.70	0.70	0.36		0.20	0.20
v/c Ratio	0.37	0.02	0.27		0.72	0.62
Control Delay	8.1	6.3	5.4		41.1	5.9
Queue Delay	0.0	0.0	0.0		0.0	0.1
Total Delay	8.1	6.3	5.4		41.1	6.0
LOS	A	A	A		D	A
Approach Delay		8.0	5.4		19.3	
Approach LOS		A	A		B	
Queue Length 50th (ft)	80	4	5		150	9
Queue Length 95th (ft)	152	14	51		m187	m11
Internal Link Dist (ft)		1207	717		381	
Turn Bay Length (ft)						
Base Capacity (vph)	935	1330	679		500	754
Starvation Cap Reductn	0	0	0		0	21
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.37	0.02	0.27		0.48	0.54

Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 30 (27%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.72
Intersection Signal Delay: 13.6 Intersection LOS: B
Intersection Capacity Utilization 73.3% ICU Level of Service D
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 10: Westminster Dr./Fairview St. & Army Heritage Dr.



								
Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations								
Traffic Volume (veh/h)	328	21	9	164	227	371		
Future Volume (veh/h)	328	21	9	164	227	371		
Number	5	2	6	16	7	14		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1844	1844	1808	1844	1756	1826		
Adj Flow Rate, veh/h	349	22	10	174	241	395		
Adj No. of Lanes	1	1	1	0	1	1		
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	778	1147	32	550	473	439		
Arrive On Green	0.20	0.62	0.38	0.37	0.28	0.28		
Sat Flow, veh/h	1757	1844	84	1461	1672	1552		
Grp Volume(v), veh/h	349	22	0	184	241	395		
Grp Sat Flow(s),veh/h/ln	1757	1844	0	1545	1672	1552		
Q Serve(g_s), s	11.1	0.5	0.0	9.4	13.3	26.9		
Cycle Q Clear(g_c), s	11.1	0.5	0.0	9.4	13.3	26.9		
Prop In Lane	1.00			0.95	1.00	1.00		
Lane Grp Cap(c), veh/h	778	1147	0	582	473	439		
V/C Ratio(X)	0.45	0.02	0.00	0.32	0.51	0.90		
Avail Cap(c_a), veh/h	778	1147	0	582	502	466		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.81	0.81		
Uniform Delay (d), s/veh	12.1	8.0	0.0	24.6	33.1	38.0		
Incr Delay (d2), s/veh	1.9	0.0	0.0	1.4	0.7	16.6		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(95%),veh/ln	9.5	0.5	0.0	7.6	9.9	19.0		
LnGrp Delay(d),s/veh	14.0	8.0	0.0	26.1	33.8	54.6		
LnGrp LOS	B	A		C	C	D		
Approach Vol, veh/h		371	184		636			
Approach Delay, s/veh		13.6	26.1		46.7			
Approach LOS		B	C		D			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		73.9		36.1	27.0	46.9		
Change Period (Y+Rc), s		6.5		6.0	6.5	6.5		
Max Green Setting (Gmax), s		65.5		32.0	20.5	38.5		
Max Q Clear Time (g_c+I1), s		3.0		29.4	13.6	11.4		
Green Ext Time (p_c), s		0.1		0.7	0.8	0.7		
Intersection Summary								
HCM 2010 Ctrl Delay			33.2					
HCM 2010 LOS			C					

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	0	167	1	0	254
Future Volume (vph)	0	0	167	1	0	254
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.999					
Flt Protected						
Satd. Flow (prot)	1765	0	1763	0	0	1651
Flt Permitted						
Satd. Flow (perm)	1765	0	1763	0	0	1651
Link Speed (mph)	35		35			35
Link Distance (ft)	2177		1342			797
Travel Time (s)	42.4		26.1			15.5
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	2%	2%	2%	2%	2%	9%
Adj. Flow (vph)	0	0	170	1	0	259
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	171	0	0	259
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	17.4%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W	R	T	R	L	T
Traffic Vol, veh/h	0	0	167	1	0	254
Future Vol, veh/h	0	0	167	1	0	254
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	- None		- None		- None	
Storage Length	0	-	-	-	-	-
Veh in Median Storage	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	2	2	2	2	2	9
Mvmt Flow	0	0	170	1	0	259

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	430	171	0	0	171	0
Stage 1	171	-	-	-	-	-
Stage 2	259	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuve	582	873	-	-	1406	-
Stage 1	859	-	-	-	-	-
Stage 2	784	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuve	582	873	-	-	1406	-
Mov Cap-2 Maneuve	582	-	-	-	-	-
Stage 1	859	-	-	-	-	-
Stage 2	784	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	1406	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	-	-	0	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Lanes, Volumes, Timings
12: I-81 SB On-Ramp & York Road (SR 0074)

Timing Plan: PM Peak Hour
05/08/2023

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑		
Traffic Volume (vph)	634	264	537	755	0	0
Future Volume (vph)	634	264	537	755	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	15	15
Grade (%)	2%			-2%	0%	
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Frt	0.956					
Flt Protected				0.980		
Satd. Flow (prot)	3173	0	0	3319	0	0
Flt Permitted				0.980		
Satd. Flow (perm)	3173	0	0	3319	0	0
Link Speed (mph)	35			35	30	
Link Distance (ft)	3632			216	901	
Travel Time (s)	70.8			4.2	20.5	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	654	272	554	778	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	926	0	0	1332	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	13			13	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.09	1.09	1.06	1.06	0.95	0.95
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilization	72.6%			ICU Level of Service C		
Analysis Period (min)	15					

Lanes, Volumes, Timings
13: I-81 NB Off-Ramp & York Road (SR 0074)

Timing Plan: PM Peak Hour
05/08/2023

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↘	↗
Traffic Volume (vph)	665	0	0	1078	205	674
Future Volume (vph)	665	0	0	1078	205	674
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	16	13
Grade (%)	1%			-2%	0%	
Storage Length (ft)		0	0		25	0
Storage Lanes		0	0		1	1
Taper Length (ft)			25		25	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	3336	0	0	3386	1900	1550
Flt Permitted					0.950	
Satd. Flow (perm)	3336	0	0	3386	1900	1550
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)						123
Link Speed (mph)	35			35	25	
Link Distance (ft)	251			1010	714	
Travel Time (s)	4.9			19.7	19.5	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	686	0	0	1111	211	695
Shared Lane Traffic (%)						
Lane Group Flow (vph)	686	0	0	1111	211	695
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	16	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.08	1.08	1.06	1.06	0.91	1.03
Turning Speed (mph)		9	15		15	9
Number of Detectors	1			1	1	1
Detector Template						
Leading Detector (ft)	231			256	20	40
Trailing Detector (ft)	225			250	-10	-10
Detector 1 Position(ft)	225			250	-10	-10
Detector 1 Size(ft)	6			6	30	50
Detector 1 Type	Extend			Extend	CI+Ex	CI+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0			0.0	0.0	0.0
Detector 1 Queue (s)	0.0			0.0	0.0	0.0
Detector 1 Delay (s)	0.0			0.0	0.0	0.0
Turn Type	NA			NA	Prot	Perm
Protected Phases	2			6	3	
Permitted Phases						8
Detector Phase	2			6	3	8
Switch Phase						
Minimum Initial (s)	10.0			10.0	4.0	3.0

Lanes, Volumes, Timings
13: I-81 NB Off-Ramp & York Road (SR 0074)

Timing Plan: PM Peak Hour
05/08/2023



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Minimum Split (s)	24.5			24.5	9.5	22.5
Total Split (s)	47.0			47.0	53.0	53.0
Total Split (%)	47.0%			47.0%	53.0%	53.0%
Maximum Green (s)	40.5			40.5	47.5	47.5
Yellow Time (s)	4.5			4.5	3.0	3.0
All-Red Time (s)	2.0			2.0	2.5	2.5
Lost Time Adjust (s)	-1.0			-1.0	-1.0	-1.0
Total Lost Time (s)	5.5			5.5	4.5	4.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	6.0			6.0	3.0	3.0
Minimum Gap (s)	3.0			3.0	3.0	3.0
Time Before Reduce (s)	25.0			25.0	0.0	0.0
Time To Reduce (s)	13.0			13.0	0.0	0.0
Recall Mode	C-Max			C-Max	None	None
Walk Time (s)	18.0			18.0		17.0
Flash Dont Walk (s)	0.0			0.0		0.0
Pedestrian Calls (#/hr)	0			0		0
Act Effct Green (s)	45.2			45.2	44.8	44.8
Actuated g/C Ratio	0.45			0.45	0.45	0.45
v/c Ratio	0.45			0.73	0.25	0.91
Control Delay	21.0			19.8	17.1	38.4
Queue Delay	0.0			0.0	0.0	0.0
Total Delay	21.0			19.8	17.1	38.4
LOS	C			B	B	D
Approach Delay	21.0			19.8	33.5	
Approach LOS	C			B	C	
Queue Length 50th (ft)	164			301	76	322
Queue Length 95th (ft)	219			m325	121	#561
Internal Link Dist (ft)	171			930	634	
Turn Bay Length (ft)					25	
Base Capacity (vph)	1508			1531	921	815
Starvation Cap Reductn	0			0	0	0
Spillback Cap Reductn	0			0	0	0
Storage Cap Reductn	0			0	0	0
Reduced v/c Ratio	0.45			0.73	0.23	0.85

Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 14 (14%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

Natural Cycle: 65

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.91

Intersection Signal Delay: 24.7 Intersection LOS: C

Intersection Capacity Utilization 71.8% ICU Level of Service C

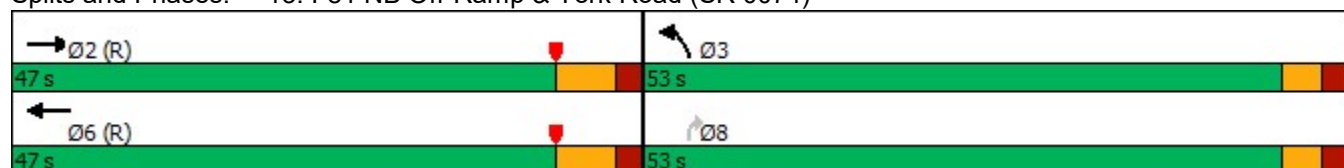
Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

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

Splits and Phases: 13: I-81 NB Off-Ramp & York Road (SR 0074)



HCM 2010 analysis expects stop-line detection. Detectors cannot be further than 20 feet from the stop bar.

Lanes, Volumes, Timings

Timing Plan: PM Peak Hour

14: Westminster Dr. & York Road (SR 0074)/York Rd. (SR 0074)

05/08/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	255	648	395	11	461	48	247	139	19	60	211	273
Future Volume (vph)	255	648	395	11	461	48	247	139	19	60	211	273
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	14	12	12	14	12	14	12	12	14	12
Grade (%)		1%			0%			-5%			2%	
Storage Length (ft)	120		0	75		180	130		0	130		0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						0.98		1.00		1.00		
Frt			0.850			0.850		0.982			0.915	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1636	1739	1592	1676	1765	1554	1718	1890	0	1660	1705	0
Flt Permitted	0.162			0.254			0.127			0.652		
Satd. Flow (perm)	279	1739	1592	448	1765	1520	230	1890	0	1137	1705	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			416			175		9			63	
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		1010			2320			530			721	
Travel Time (s)		19.7			45.2			14.5			19.7	
Confl. Peds. (#/hr)						1			1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	4%	3%	2%	2%	2%	5%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	268	682	416	12	485	51	260	146	20	63	222	287
Shared Lane Traffic (%)												
Lane Group Flow (vph)	268	682	416	12	485	51	260	166	0	63	509	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.08	1.08	0.99	1.07	1.07	0.99	1.04	0.96	1.04	1.09	1.00	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	0	1	1	0	1	1		1	1	
Detector Template												
Leading Detector (ft)	40	256	0	40	256	0	40	45		45	45	
Trailing Detector (ft)	-5	250	0	-5	250	0	-5	-5		-5	-5	
Detector 1 Position(ft)	-5	250	0	-5	250	0	-5	-5		-5	-5	
Detector 1 Size(ft)	45	6	20	45	6	20	45	50		50	50	
Detector 1 Type	CI+Ex	Extend	CI+Ex	CI+Ex	Extend	CI+Ex	CI+Ex	CI+Ex		CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases	5	2			6		3	8			4	
Permitted Phases	2		2	6		6	8			4		

Lanes, Volumes, Timings

Timing Plan: PM Peak Hour

14: Westminster Dr. & York Road (SR 0074)/York Rd. (SR 0074)

05/08/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2	2	6	6	6	3	8		4	4	
Switch Phase												
Minimum Initial (s)	3.0	10.0	10.0	10.0	10.0	10.0	3.0	3.0		3.0	3.0	
Minimum Split (s)	9.0	33.0	33.0	33.0	33.0	33.0	9.5	31.5		31.5	31.5	
Total Split (s)	15.0	52.4	52.4	37.4	37.4	37.4	16.0	47.6		31.6	31.6	
Total Split (%)	15.0%	52.4%	52.4%	37.4%	37.4%	37.4%	16.0%	47.6%		31.6%	31.6%	
Maximum Green (s)	9.0	46.4	46.4	31.4	31.4	31.4	9.5	41.1		25.1	25.1	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	3.5	3.5		3.5	3.5	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	3.0	3.0		3.0	3.0	
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.5	5.5		5.5	5.5	
Lead/Lag	Lead			Lag			Lead			Lag		
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	6.0	6.0	6.0	6.0	6.0	3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	25.0	25.0	25.0	25.0	25.0	0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	10.0	10.0	10.0	10.0	10.0	0.0	0.0		0.0	0.0	
Recall Mode	Max	C-Max	C-Max	C-Max	C-Max	C-Max	None	None		None	None	
Walk Time (s)		10.0	10.0	10.0	10.0	10.0		10.0		10.0	10.0	
Flash Dont Walk (s)		17.0	17.0	17.0	17.0	17.0		15.0		15.0	15.0	
Pedestrian Calls (#/hr)		0	0	0	0	0		0		0	0	
Act Effct Green (s)	47.4	47.4	47.4	32.4	32.4	32.4	42.1	42.1		26.1	26.1	
Actuated g/C Ratio	0.47	0.47	0.47	0.32	0.32	0.32	0.42	0.42		0.26	0.26	
v/c Ratio	1.00	0.83	0.43	0.08	0.85	0.08	1.03	0.21		0.21	1.04	
Control Delay	73.5	34.2	4.3	18.0	39.7	0.7	90.1	18.2		31.3	83.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	73.5	34.2	4.3	18.0	39.7	0.7	90.1	18.2		31.3	83.6	
LOS	E	C	A	B	D	A	F	B		C	F	
Approach Delay	32.8			35.6			62.1			77.8		
Approach LOS	C			D			E			E		
Queue Length 50th (ft)	~135	397	50	6	298	0	~128	62		31	~319	
Queue Length 95th (ft)	m#213	m512	m57	m11	#471	m2	#287	106		67	#524	
Internal Link Dist (ft)	930			2240			450			641		
Turn Bay Length (ft)	120			75		180	130			130		
Base Capacity (vph)	267	824	973	145	571	610	253	800		296	491	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	1.00	0.83	0.43	0.08	0.85	0.08	1.03	0.21		0.21	1.04	

Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 52 (52%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow

Natural Cycle: 95

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.04

Intersection Signal Delay: 46.5

Intersection LOS: D

Intersection Capacity Utilization 105.7% ICU Level of Service G

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

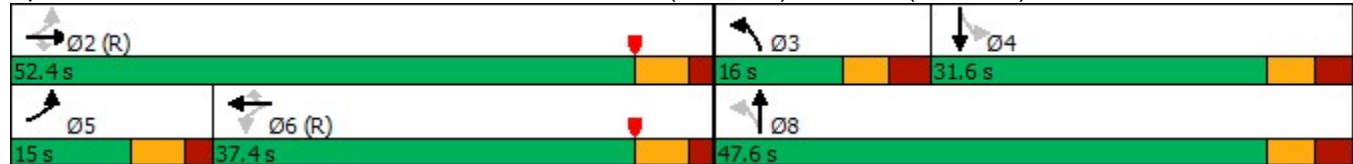
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

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

Splits and Phases: 14: Westminster Dr. & York Road (SR 0074)/York Rd. (SR 0074)



HCM 2010 analysis cannot be performed without detectors for actuated controller type.

Lanes, Volumes, Timings
15: Fairview St. & York Rd. (SR 0074)

Timing Plan: PM Peak Hour
05/08/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	54	608	16	25	419	38	12	98	8	135	87	45
Future Volume (vph)	54	608	16	25	419	38	12	98	8	135	87	45
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	11	11	11	11	11	9	9	9	12	12	12
Grade (%)		0%			0%			0%			1%	
Storage Length (ft)	75		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.996			0.989			0.990			0.977	
Flt Protected	0.950				0.997			0.995			0.975	
Satd. Flow (prot)	1605	1697	0	0	1663	0	0	1564	0	0	1664	0
Flt Permitted	0.451				0.950			0.960			0.745	
Satd. Flow (perm)	762	1697	0	0	1585	0	0	1509	0	0	1272	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			8			4			10	
Link Speed (mph)		35			35			25			35	
Link Distance (ft)		2320			2128			671			1479	
Travel Time (s)		45.2			41.5			18.3			28.8	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	3%	2%	7%	6%	3%	3%	2%	2%	2%	2%	2%	5%
Adj. Flow (vph)	58	654	17	27	451	41	13	105	9	145	94	48
Shared Lane Traffic (%)												
Lane Group Flow (vph)	58	671	0	0	519	0	0	127	0	0	287	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.12	1.12	1.12	1.12	1.12	1.12	1.22	1.22	1.22	1.08	1.08	1.08
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	0	1		1	1		1	1		1	1	
Detector Template				Left			Left			Left		
Leading Detector (ft)	0	256		20	256		20	40		20	40	
Trailing Detector (ft)	0	250		0	250		0	-5		0	-5	
Detector 1 Position(ft)	0	250		0	250		0	-5		0	-5	
Detector 1 Size(ft)	20	6		20	6		20	45		20	45	
Detector 1 Type	CI+Ex	Extend		CI+Ex	Extend		CI+Ex	CI+Ex		CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	
Switch Phase												

Lanes, Volumes, Timings
15: Fairview St. & York Rd. (SR 0074)

Timing Plan: PM Peak Hour
05/08/2023

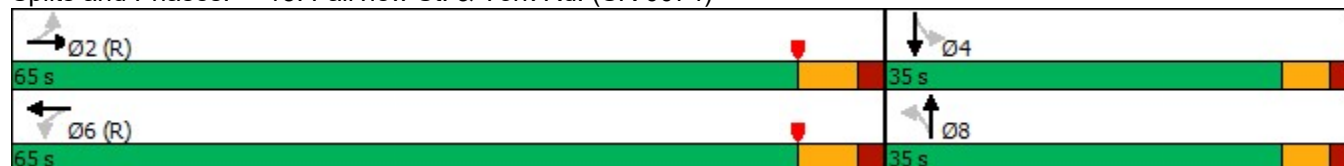
												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	10.0	10.0		10.0	10.0		3.0	3.0		3.0	3.0	
Minimum Split (s)	32.5	32.5		32.5	32.5		31.5	31.5		31.5	31.5	
Total Split (s)	65.0	65.0		65.0	65.0		35.0	35.0		35.0	35.0	
Total Split (%)	65.0%	65.0%		65.0%	65.0%		35.0%	35.0%		35.0%	35.0%	
Maximum Green (s)	58.5	58.5		58.5	58.5		29.5	29.5		29.5	29.5	
Yellow Time (s)	4.5	4.5		4.5	4.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0			-1.0			-1.0			-1.0	
Total Lost Time (s)	5.5	5.5			5.5			4.5			4.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	6.0	6.0		6.0	6.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	35.0	35.0		35.0	35.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	17.0	17.0		17.0	17.0		0.0	0.0		0.0	0.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Flash Dont Walk (s)	15.0	15.0		15.0	15.0		15.0	15.0		15.0	15.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	63.8	63.8			63.8			26.2			26.2	
Actuated g/C Ratio	0.64	0.64			0.64			0.26			0.26	
v/c Ratio	0.12	0.62			0.51			0.32			0.84	
Control Delay	2.6	4.2			4.2			29.8			55.4	
Queue Delay	0.0	0.0			0.0			0.0			0.0	
Total Delay	2.6	4.2			4.2			29.8			55.4	
LOS	A	A			A			C			E	
Approach Delay		4.1			4.2			29.8			55.4	
Approach LOS		A			A			C			E	
Queue Length 50th (ft)	4	43			26			62			164	
Queue Length 95th (ft)	m5	m56			64			108			#278	
Internal Link Dist (ft)		2240			2048			591			1399	
Turn Bay Length (ft)	75											
Base Capacity (vph)	486	1083			1014			463			394	
Starvation Cap Reductn	0	0			0			0			0	
Spillback Cap Reductn	0	0			0			0			0	
Storage Cap Reductn	0	0			0			0			0	
Reduced v/c Ratio	0.12	0.62			0.51			0.27			0.73	
Intersection Summary												
Area Type:	Other											
Cycle Length: 100												
Actuated Cycle Length: 100												
Offset: 6 (6%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow												
Natural Cycle: 70												
Control Type: Actuated-Coordinated												
Maximum v/c Ratio: 0.84												
Intersection Signal Delay: 14.9					Intersection LOS: B							
Intersection Capacity Utilization 78.1%					ICU Level of Service D							
Analysis Period (min) 15												

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

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

Splits and Phases: 15: Fairview St. & York Rd. (SR 0074)



HCM 2010 analysis cannot be performed without detectors for actuated controller type.

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↰			↱	↗	
Traffic Volume (vph)	604	98	47	463	27	24
Future Volume (vph)	604	98	47	463	27	24
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	11	11	11	12	12
Grade (%)	1%			1%	2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.981				0.937	
Flt Protected				0.995	0.974	
Satd. Flow (prot)	1665	0	0	1674	1570	0
Flt Permitted				0.995	0.974	
Satd. Flow (perm)	1665	0	0	1674	1570	0
Link Speed (mph)	50			50	35	
Link Distance (ft)	1056			3636	2008	
Travel Time (s)	14.4			49.6	39.1	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	2%	2%	2%	3%	5%	2%
Adj. Flow (vph)	686	111	53	526	31	27
Shared Lane Traffic (%)						
Lane Group Flow (vph)	797	0	0	579	58	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.13	1.13	1.13	1.13	1.09	1.09
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	77.0%			ICU Level of Service D		
Analysis Period (min)	15					

Intersection

Int Delay, s/veh 1.7

Movement EBT EBR WBL WBT NBL NBR

Lane Configurations   

Traffic Vol, veh/h 604 98 47 463 27 24

Future Vol, veh/h 604 98 47 463 27 24

Conflicting Peds, #/hr 0 0 0 0 0 0

Sign Control Free Free Free Free Stop Stop

RT Channelized - None - None - None

Storage Length - - - - 0 -

Veh in Median Storage0# - - 0 0 -

Grade, % 1 - - 1 2 -

Peak Hour Factor 88 88 88 88 88 88

Heavy Vehicles, % 2 2 2 3 5 2

Mvmt Flow 686 111 53 526 31 27

Major/Minor Major1 Major2 Minor1

Conflicting Flow All 0 0 797 0 1374 742

Stage 1 - - - - 742 -

Stage 2 - - - - 632 -

Critical Hdwy - - 4.12 - 6.85 6.42

Critical Hdwy Stg 1 - - - - 5.85 -

Critical Hdwy Stg 2 - - - - 5.85 -

Follow-up Hdwy - -2.218 -3.545 3.318

Pot Cap-1 Maneuver - - 825 - 136 399

Stage 1 - - - - 429 -

Stage 2 - - - - 488 -

Platoon blocked, % - - -

Mov Cap-1 Maneuver - - 825 - 124 399

Mov Cap-2 Maneuver - - - - 124 -

Stage 1 - - - - 429 -

Stage 2 - - - - 444 -

Approach EB WB NB

HCM Control Delay, s 0 0.9 33.3

HCM LOS D

Minor Lane/Major MvmNBLn1 EBT EBR WBL WBT

Capacity (veh/h) 184 - - 825 -

HCM Lane V/C Ratio 0.315 - -0.065 -

HCM Control Delay (s) 33.3 - - 9.7 0

HCM Lane LOS D - - A A

HCM 95th %tile Q(veh) 1.3 - - 0.2 -

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↰			↱	↰	↱
Traffic Volume (vph)	570	90	92	392	48	27
Future Volume (vph)	570	90	92	392	48	27
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	11	11	11	10	10
Grade (%)	0%			0%	-2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.982				0.951	
Flt Protected				0.991	0.969	
Satd. Flow (prot)	1675	0	0	1687	1517	0
Flt Permitted				0.991	0.969	
Satd. Flow (perm)	1675	0	0	1687	1517	0
Link Speed (mph)	55			55	35	
Link Distance (ft)	3636			269	2688	
Travel Time (s)	45.1			3.3	52.4	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles (%)	2%	2%	3%	2%	2%	5%
Adj. Flow (vph)	655	103	106	451	55	31
Shared Lane Traffic (%)						
Lane Group Flow (vph)	758	0	0	557	86	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	10	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.12	1.12	1.12	1.12	1.16	1.16
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	79.1%			ICU Level of Service D		
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	2.9					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	1			1	2	
Traffic Vol, veh/h	570	90	92	392	48	27
Future Vol, veh/h	570	90	92	392	48	27
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage	0	-	-	0	0	-
Grade, %	0	-	-	0	-2	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	2	3	2	2	5
Mvmt Flow	655	103	106	451	55	31

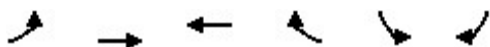
Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	758
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.13
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.227
Pot Cap-1 Maneuver	-	-	849
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	849
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.9	34.7
HCM LOS			D

Minor Lane/Major Mvm	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	205	-	-	849	-
HCM Lane V/C Ratio	0.421	-	-	0.125	-
HCM Control Delay (s)	34.7	-	-	9.8	0
HCM Lane LOS	D	-	-	A	A
HCM 95th %tile Q(veh)	1.9	-	-	0.4	-

Lanes, Volumes, Timings
18: York Rd. (SR 0074) & Shughart Rd.

Timing Plan: PM Peak Hour
05/08/2023



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	127	570	392	13	1	216
Future Volume (vph)	127	570	392	13	1	216
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	11	11	11	10	10
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.996		0.866	
Flt Protected		0.991				
Satd. Flow (prot)	0	1691	1699	0	1426	0
Flt Permitted		0.991				
Satd. Flow (perm)	0	1691	1699	0	1426	0
Link Speed (mph)		55	55		35	
Link Distance (ft)		269	2661		1687	
Travel Time (s)		3.3	33.0		32.9	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	146	655	451	15	1	248
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	801	466	0	249	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		10	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.12	1.12	1.12	1.12	1.17	1.17
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	85.9%			ICU Level of Service E		
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	3.4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Vol, veh/h	127	570	392	13	1	216
Future Vol, veh/h	127	570	392	13	1	216
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	- None		- None		- None	
Storage Length	-	-	-	-	0	-
Veh in Median Storage,#	0		0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	146	655	451	15	1	248
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	466	0	-	0	1406	459
Stage 1	-	-	-	-	459	-
Stage 2	-	-	-	-	947	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1095	-	-	-	153	602
Stage 1	-	-	-	-	636	-
Stage 2	-	-	-	-	377	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1095	-	-	-	121	602
Mov Cap-2 Maneuver	-	-	-	-	121	-
Stage 1	-	-	-	-	502	-
Stage 2	-	-	-	-	377	-
Approach	EB	WB		SB		
HCM Control Delay, s	4.6	0		15.5		
HCM LOS	C					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1095	-	-	-	-	591
HCM Lane V/C Ratio	0.133	-	-	-	-	0.422
HCM Control Delay (s)	8.8	0	-	-	-	15.5
HCM Lane LOS	A	A	-	-	-	C
HCM 95th %tile Q(veh)	0.5	-	-	-	-	2.1

Lanes, Volumes, Timings
19: Forge Rd. (SR 2001) & Westminster Dr.

Timing Plan: PM Peak Hour
05/08/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	67	14	486	81	22	5	9	285	26	22	6
Future Volume (vph)	1	67	14	486	81	22	5	9	285	26	22	6
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.977			0.995				0.850		0.984	
Flt Protected		0.999			0.960			0.984			0.977	
Satd. Flow (prot)	0	1722	0	0	1686	0	0	1736	1500	0	1697	0
Flt Permitted		0.999			0.960			0.984			0.977	
Satd. Flow (perm)	0	1722	0	0	1686	0	0	1736	1500	0	1697	0
Link Speed (mph)		25			25			35			35	
Link Distance (ft)		448			530			1566			758	
Travel Time (s)		12.2			14.5			30.5			14.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1	73	15	528	88	24	5	10	310	28	24	7
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	89	0	0	640	0	0	15	310	0	59	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	57.4%						ICU Level of Service B					
Analysis Period (min)	15											

Intersection												
Intersection Delay, s/veh	34.1											
Intersection LOS	D											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕	↕		↕	
Traffic Vol, veh/h	1	67	14	486	81	22	5	9	285	26	22	6
Future Vol, veh/h	1	67	14	486	81	22	5	9	285	26	22	6
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	73	15	528	88	24	5	10	310	28	24	7
Number of Lanes	0	1	0	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	1
HCM Control Delay	10.3	49.3	14.9	10.8
HCM LOS	B	E	B	B

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1
Vol Left, %	36%	0%	1%	83%	48%
Vol Thru, %	64%	0%	82%	14%	41%
Vol Right, %	0%	100%	17%	4%	11%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	14	285	82	589	54
LT Vol	5	0	1	486	26
Through Vol	9	0	67	81	22
RT Vol	0	285	14	22	6
Lane Flow Rate	15	310	89	640	59
Geometry Grp	7	7	2	2	5
Degree of Util (X)	0.029	0.516	0.151	0.962	0.113
Departure Headway (Hd)	6.893	5.996	6.086	5.409	6.938
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	517	598	584	666	520
Service Time	4.665	3.769	4.177	3.463	4.938
HCM Lane V/C Ratio	0.029	0.518	0.152	0.961	0.113
HCM Control Delay	9.9	15.1	10.3	49.3	10.8
HCM Lane LOS	A	C	B	E	B
HCM 95th-tile Q	0.1	3	0.5	13.9	0.4

Lanes, Volumes, Timings
20: Forge Rd. (SR 2001) & Fairview St.

Timing Plan: PM Peak Hour

05/08/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	9	21	91	38	18	21	339	56	24	487	11
Future Volume (vph)	4	9	21	91	38	18	21	339	56	24	487	11
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	10	10	10	10	10	11	11	11	11	11	11
Grade (%)		-2%			-1%			2%			1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.916			0.983			0.982			0.997	
Flt Protected		0.995			0.970			0.998			0.998	
Satd. Flow (prot)	0	1516	0	0	1570	0	0	1652	0	0	1689	0
Flt Permitted		0.995			0.970			0.998			0.998	
Satd. Flow (perm)	0	1516	0	0	1570	0	0	1652	0	0	1689	0
Link Speed (mph)		35			25			35			35	
Link Distance (ft)		1976			1153			1844			1566	
Travel Time (s)		38.5			31.4			35.9			30.5	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	2%	2%	4%	2%	6%	2%	2%	2%	2%	2%
Adj. Flow (vph)	4	10	23	101	42	20	23	377	62	27	541	12
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	37	0	0	163	0	0	462	0	0	580	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.16	1.16	1.16	1.16	1.16	1.16	1.13	1.13	1.13	1.13	1.13	1.13
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	58.2%				ICU Level of Service B							
Analysis Period (min)	15											

Intersection												
Int Delay, s/veh	9.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	4	9	21	91	38	18	21	339	56	24	487	11
Future Vol, veh/h	4	9	21	91	38	18	21	339	56	24	487	11
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	-	-	0	-	-	0	-	-
Grade, %	-	-2	-	-	-1	-	-	2	-	-	1	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	4	2	6	2	2	2	2	2
Mvmt Flow	4	10	23	101	42	20	23	377	62	27	541	12

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow	All1086	1086	547	1072	1061	408	553	0	0	439	0	0
Stage 1	601	601	-	454	454	-	-	-	-	-	-	-
Stage 2	485	485	-	618	607	-	-	-	-	-	-	-
Critical Hdwy	6.72	6.12	6.2	6.92	6.34	6.12	4.3	-	-	4.12	-	-
Critical Hdwy Stg 1	5.72	5.12	-	5.92	5.34	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.72	5.12	-	5.92	5.34	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.5	3.518	4.036	3.318	2.4	-	-	2.218	-	-
Pot Cap-1 Maneuver	219	244	517	210	235	651	926	-	-	1121	-	-
Stage 1	521	523	-	601	580	-	-	-	-	-	-	-
Stage 2	595	582	-	493	500	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	172	228	517	184	219	651	926	-	-	1121	-	-
Mov Cap-2 Maneuver	172	228	-	184	219	-	-	-	-	-	-	-
Stage 1	504	505	-	581	561	-	-	-	-	-	-	-
Stage 2	516	563	-	445	483	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	17.4	63.6	0.5	0.4
HCM LOS	C	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	926	-	-	329	211	1121	-	-
HCM Lane V/C Ratio	0.025	-	-	0.115	0.774	0.024	-	-
HCM Control Delay (s)	9	0	-	17.4	63.6	8.3	0	-
HCM Lane LOS	A	A	-	C	F	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.4	5.4	0.1	-	-

Lanes, Volumes, Timings

Timing Plan: PM Peak Hour

21: Rose Access/Pharmacy Tract & W. Trindle Rd. (SR 0641)

05/08/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	600	159	152	572	0	76	0	60	0	0	0
Future Volume (vph)	0	600	159	152	572	0	76	0	60	0	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (ft)	150		350	150		0	190		0	75		0
Storage Lanes	1		1	2		0	2		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	0.97	1.00	1.00	1.00	1.00	1.00
Frt			0.850						0.850			
Flt Protected				0.950			0.950					
Satd. Flow (prot)	1765	1765	1500	3252	1765	0	3252	1500	0	1765	1765	0
Flt Permitted				0.950			0.950					
Satd. Flow (perm)	1765	1765	1500	3252	1765	0	3252	1500	0	1765	1765	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			173						306			
Link Speed (mph)		45			45			25			25	
Link Distance (ft)		461			1985			455			562	
Travel Time (s)		7.0			30.1			12.4			15.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	652	173	165	622	0	83	0	65	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	652	173	165	622	0	83	65	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Size(ft)	20	6	20	20	6		20	6		20	6	
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2									

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2	2	1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	4.0	7.0	7.0	4.0	7.0		4.0	7.0		4.0	7.0	
Minimum Split (s)	10.0	22.0	22.0	10.0	22.0		10.0	22.0		10.0	22.0	
Total Split (s)	10.0	58.0	58.0	14.0	62.0		16.0	28.0		10.0	22.0	
Total Split (%)	9.1%	52.7%	52.7%	12.7%	56.4%		14.5%	25.5%		9.1%	20.0%	
Maximum Green (s)	4.0	52.0	52.0	8.0	56.0		10.0	22.0		4.0	16.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0		-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Max	C-Max	C-Max	Max	C-Max		None	None		None	None	
Walk Time (s)		5.0	5.0		5.0			5.0			5.0	
Flash Dont Walk (s)		11.0	11.0		11.0			11.0			11.0	
Pedestrian Calls (#/hr)		0	0		0			0			0	
Act Effct Green (s)		53.0	53.0	35.3	57.0		9.1	9.3				
Actuated g/C Ratio		0.48	0.48	0.32	0.52		0.08	0.08				
v/c Ratio		0.77	0.21	0.16	0.68		0.31	0.16				
Control Delay		25.0	1.7	28.8	24.5		50.1	0.8				
Queue Delay		0.0	0.0	0.0	0.0		0.0	0.0				
Total Delay		25.0	1.7	28.8	24.5		50.1	0.8				
LOS		C	A	C	C		D	A				
Approach Delay		20.1			25.4			28.4				
Approach LOS		C			C			C				
Queue Length 50th (ft)		406	7	44	314		28	0				
Queue Length 95th (ft)		557	m11	72	447		53	0				
Internal Link Dist (ft)		381			1905			375			482	
Turn Bay Length (ft)			350	150			190					
Base Capacity (vph)		850	812	1043	914		325	555				
Starvation Cap Reductn		0	0	0	0		0	0				
Spillback Cap Reductn		0	0	0	0		0	0				
Storage Cap Reductn		0	0	0	0		0	0				
Reduced v/c Ratio		0.77	0.21	0.16	0.68		0.26	0.12				

Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 108 (98%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Natural Cycle: 80

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.77

Intersection Signal Delay: 23.2

Intersection LOS: C

Intersection Capacity Utilization 56.2%

ICU Level of Service B

Analysis Period (min) 15

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

Splits and Phases: 21: Rose Access/Pharmacy Tract & W. Trindle Rd. (SR 0641)



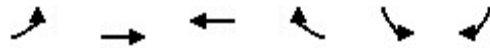
HCM 2010 Signalized Intersection Summary
 21: Rose Access/Pharmacy Tract & W. Trindle Rd. (SR 0641)

Timing Plan: PM Peak Hour
 05/08/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	600	159	152	572	0	76	0	60	0	0	0
Future Volume (veh/h)	0	600	159	152	572	0	76	0	60	0	0	0
Number	5	2	12	1	6	16	3	8	18	7	4	14
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
Adj Sat Flow, veh/h/ln	1765	1765	1765	1765	1765	1800	1765	1765	1800	1765	1765	1800
Adj Flow Rate, veh/h	0	652	0	165	622	0	83	0	65	0	0	0
Adj No. of Lanes	1	1	1	2	1	0	2	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	2	1253	1065	267	1477	0	174	0	108	2	2	0
Arrive On Green	0.00	0.71	0.00	0.08	0.84	0.00	0.05	0.00	0.06	0.00	0.00	0.00
Sat Flow, veh/h	1681	1765	1500	3261	1765	0	3261	0	1500	1681	1765	0
Grp Volume(v), veh/h	0	652	0	165	622	0	83	0	65	0	0	0
Grp Sat Flow(s),veh/h/ln	1681	1765	1500	1630	1765	0	1630	0	1500	1681	1765	0
Q Serve(g_s), s	0.0	18.7	0.0	5.4	9.8	0.0	2.7	0.0	4.6	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	18.7	0.0	5.4	9.8	0.0	2.7	0.0	4.6	0.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	2	1253	1065	267	1477	0	174	0	108	2	2	0
V/C Ratio(X)	0.00	0.52	0.00	0.62	0.42	0.00	0.48	0.00	0.60	0.00	0.00	0.00
Avail Cap(c_a), veh/h	76	1253	1065	267	1477	0	326	0	314	76	273	0
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)	0.00	1.00	0.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	7.3	0.0	48.8	2.3	0.0	50.6	0.0	50.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	1.5	0.0	10.3	0.9	0.0	2.0	0.0	5.3	0.0	0.0	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	0.0	14.7	0.0	5.1	8.7	0.0	2.3	0.0	3.7	0.0	0.0	0.0
LnGrp Delay(d),s/veh	0.0	8.9	0.0	59.2	3.1	0.0	52.6	0.0	55.3	0.0	0.0	0.0
LnGrp LOS		A		E	A		D		E			
Approach Vol, veh/h		652			787			148			0	
Approach Delay, s/veh		8.9			14.9			53.8			0.0	
Approach LOS		A			B			D				
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	14.0	83.1	10.9	2.0	0.0	97.1	0.0	12.9				
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0				
Max Green Setting (Gmax),s	80	52.0	10.0	16.0	4.0	56.0	4.0	22.0				
Max Q Clear Time (g_c+I1),s	7.9	21.2	5.2	0.0	0.0	12.3	0.0	6.6				
Green Ext Time (p_c), s	0.0	4.3	0.1	0.0	0.0	4.2	0.0	0.2				
Intersection Summary												
HCM 2010 Ctrl Delay			16.1									
HCM 2010 LOS			B									

Lanes, Volumes, Timings
22: York Rd. (SR 0074) & Heritage Village Access

Timing Plan: PM Peak Hour
05/08/2023

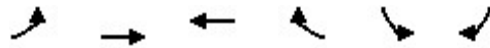


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↰↰	↑	↑	↱	↰	↱
Traffic Volume (vph)	77	770	450	73	102	129
Future Volume (vph)	77	770	450	73	102	129
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (ft)	175			275	0	500
Storage Lanes	2			1	1	1
Taper Length (ft)	25				25	
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00
Frt				0.850		0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	3252	1765	1765	1500	1676	1500
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	3252	1765	1765	1500	1676	1500
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				79		140
Link Speed (mph)		35	35		25	
Link Distance (ft)		2128	1056		605	
Travel Time (s)		41.5	20.6		16.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	84	837	489	79	111	140
Shared Lane Traffic (%)						
Lane Group Flow (vph)	84	837	489	79	111	140
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		24	24		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2	1	1	1
Detector Template	Left	Thru	Thru	Right	Left	Right
Leading Detector (ft)	20	100	100	20	20	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	6	20	20	20
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94	94			
Detector 2 Size(ft)		6	6			
Detector 2 Type		CI+Ex	CI+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type	Prot	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6

Lanes, Volumes, Timings
22: York Rd. (SR 0074) & Heritage Village Access

Timing Plan: PM Peak Hour

05/08/2023



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Detector Phase	7	4	8	8	6	6
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	10.0	22.0	22.0	22.0	25.0	25.0
Total Split (s)	15.0	73.0	58.0	58.0	27.0	27.0
Total Split (%)	15.0%	73.0%	58.0%	58.0%	27.0%	27.0%
Maximum Green (s)	9.0	67.0	52.0	52.0	21.0	21.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	Max	C-Max	C-Max	C-Max	None	None
Walk Time (s)		5.0	5.0	5.0	5.0	5.0
Flash Dont Walk (s)		11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)		0	0	0	0	0
Act Effct Green (s)	19.1	77.1	53.0	53.0	12.9	12.9
Actuated g/C Ratio	0.19	0.77	0.53	0.53	0.13	0.13
v/c Ratio	0.14	0.62	0.52	0.09	0.51	0.44
Control Delay	38.6	6.7	17.8	3.0	48.3	11.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.6	6.7	17.8	3.0	48.3	11.2
LOS	D	A	B	A	D	B
Approach Delay		9.6	15.8		27.6	
Approach LOS		A	B		C	
Queue Length 50th (ft)	19	104	193	0	67	0
Queue Length 95th (ft)	m35	526	283	21	116	51
Internal Link Dist (ft)		2048	976		525	
Turn Bay Length (ft)	175			275		500
Base Capacity (vph)	620	1360	935	832	368	439
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.14	0.62	0.52	0.09	0.30	0.32

Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 64 (64%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.62

Intersection Signal Delay: 14.2

Intersection LOS: B

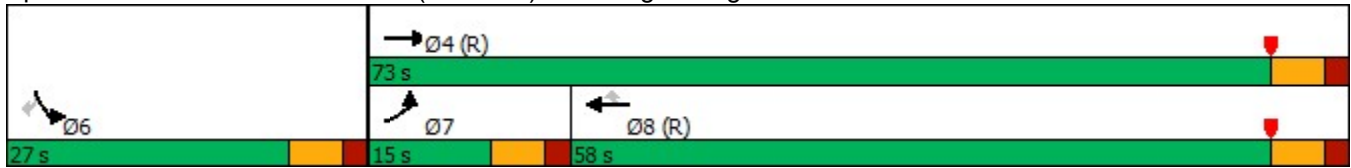
Intersection Capacity Utilization 57.1%

ICU Level of Service B

Analysis Period (min) 15

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

Splits and Phases: 22: York Rd. (SR 0074) & Heritage Village Access



HCM 2010 Signalized Intersection Summary
 22: York Rd. (SR 0074) & Heritage Village Access

Timing Plan: PM Peak Hour
 05/08/2023

								
Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations								
Traffic Volume (veh/h)	77	770	450	73	102	129		
Future Volume (veh/h)	77	770	450	73	102	129		
Number	7	4	8	18	1	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1765	1765	1765	1765	1765	1765		
Adj Flow Rate, veh/h	84	837	489	0	111	0		
Adj No. of Lanes	2	1	1	1	1	1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	326	1418	1153	980	162	145		
Arrive On Green	0.20	1.00	0.65	0.00	0.10	0.00		
Sat Flow, veh/h	3261	1765	1765	1500	1681	1500		
Grp Volume(v), veh/h	84	837	489	0	111	0		
Grp Sat Flow(s),veh/h/ln	1630	1765	1765	1500	1681	1500		
Q Serve(g_s), s	2.2	0.0	13.3	0.0	6.4	0.0		
Cycle Q Clear(g_c), s	2.2	0.0	13.3	0.0	6.4	0.0		
Prop In Lane	1.00			1.00	1.00	1.00		
Lane Grp Cap(c), veh/h	326	1418	1153	980	162	145		
V/C Ratio(X)	0.26	0.59	0.42	0.00	0.68	0.00		
Avail Cap(c_a), veh/h	326	1418	1153	980	370	330		
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	0.75	0.75	1.00	0.00	1.00	0.00		
Uniform Delay (d), s/veh	36.9	0.0	8.3	0.0	43.7	0.0		
Incr Delay (d2), s/veh	1.4	1.4	1.1	0.0	5.0	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(95%),veh/ln	1.9	1.0	11.0	0.0	5.7	0.0		
LnGrp Delay(d),s/veh	38.3	1.4	9.5	0.0	48.7	0.0		
LnGrp LOS	D	A	A		D			
Approach Vol, veh/h		921	489		111			
Approach Delay, s/veh		4.7	9.5		48.7			
Approach LOS		A	A		D			
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				85.3		14.7	15.0	70.3
Change Period (Y+Rc), s				6.0		6.0	6.0	6.0
Max Green Setting (Gmax), s				67.0		21.0	9.0	52.0
Max Q Clear Time (g_c+I1), s				2.5		8.9	4.7	15.8
Green Ext Time (p_c), s				7.7		0.2	0.1	3.3
Intersection Summary								
HCM 2010 Ctrl Delay			9.5					
HCM 2010 LOS			A					

Lanes, Volumes, Timings

Timing Plan: SAT Peak Hour

1: York Road (SR 0074) & E. High St. (SR 0641)/E High St. (SR 0641)

05/08/2023

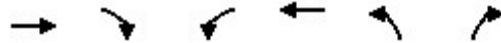
	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑	↓	↑	↘	↗
Traffic Volume (vph)	658	374	22	628	293	12
Future Volume (vph)	658	374	22	628	293	12
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	16	10	13	14	14
Storage Length (ft)		0	75		0	0
Storage Lanes		1	1		1	0
Taper Length (ft)			25		25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.98	1.00			
Frt		0.850			0.995	
Flt Protected			0.950		0.954	
Satd. Flow (prot)	1706	1700	1565	1824	1787	0
Flt Permitted			0.299		0.954	
Satd. Flow (perm)	1706	1665	492	1824	1787	0
Right Turn on Red		No				Yes
Satd. Flow (RTOR)					3	
Link Speed (mph)	35			35	35	
Link Distance (ft)	1498			1127	625	
Travel Time (s)	29.2			22.0	12.2	
Confl. Peds. (#/hr)		1	1			
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	678	386	23	647	302	12
Shared Lane Traffic (%)						
Lane Group Flow (vph)	678	386	23	647	314	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	14	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.12	0.91	1.17	1.03	0.99	0.99
Turning Speed (mph)		9	15		15	9
Number of Detectors	1	0	1	1	1	
Detector Template						
Leading Detector (ft)	37	0	37	37	37	
Trailing Detector (ft)	-3	0	-3	-3	-3	
Detector 1 Position(ft)	-3	0	-3	-3	-3	
Detector 1 Size(ft)	40	20	40	40	40	
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Turn Type	NA	Perm	Perm	NA	Prot	
Protected Phases	2			6	8	
Permitted Phases		2	6			
Detector Phase	2	2	6	6	8	
Switch Phase						

Lanes, Volumes, Timings

Timing Plan: SAT Peak Hour

1: York Road (SR 0074) & E. High St. (SR 0641)/E High St. (SR 0641)

05/08/2023



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Minimum Initial (s)	30.0	30.0	30.0	30.0	10.0	
Minimum Split (s)	35.2	35.2	35.2	35.2	14.9	
Total Split (s)	36.8	36.8	36.8	36.8	18.2	
Total Split (%)	66.9%	66.9%	66.9%	66.9%	33.1%	
Maximum Green (s)	31.6	31.6	31.6	31.6	13.3	
Yellow Time (s)	3.6	3.6	3.6	3.6	3.7	
All-Red Time (s)	1.6	1.6	1.6	1.6	1.2	
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-0.5	
Total Lost Time (s)	4.2	4.2	4.2	4.2	4.4	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	
Act Effct Green (s)	33.4	33.4	33.4	33.4	13.0	
Actuated g/C Ratio	0.61	0.61	0.61	0.61	0.24	
v/c Ratio	0.66	0.38	0.08	0.58	0.74	
Control Delay	11.2	7.2	2.7	6.0	31.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	11.2	7.2	2.7	6.0	31.4	
LOS	B	A	A	A	C	
Approach Delay	9.7			5.9	31.4	
Approach LOS	A			A	C	
Queue Length 50th (ft)	128	57	2	183	92	
Queue Length 95th (ft)	230	102	m3	190	#192	
Internal Link Dist (ft)	1418			1047	545	
Turn Bay Length (ft)			75			
Base Capacity (vph)	1034	1009	298	1106	450	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.66	0.38	0.08	0.58	0.70	

Intersection Summary

Area Type: Other

Cycle Length: 55

Actuated Cycle Length: 55

Offset: 49 (89%), Referenced to phase 2:EBT and 6:WBTL, Start of Green

Natural Cycle: 55

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.74

Intersection Signal Delay: 11.8

Intersection LOS: B

Intersection Capacity Utilization 61.6%

ICU Level of Service B

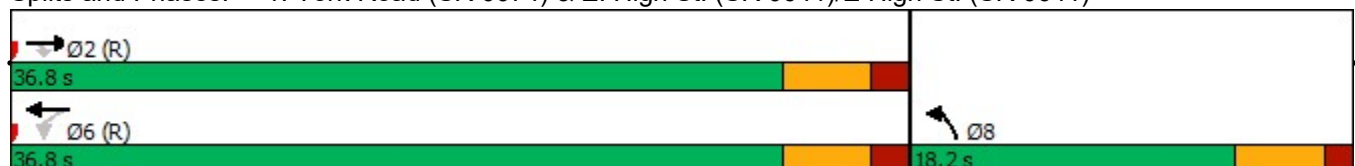
Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

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

Splits and Phases: 1: York Road (SR 0074) & E. High St. (SR 0641)/E High St. (SR 0641)



HCM 2010 Signalized Intersection Summary

Timing Plan: SAT Peak Hour

1: York Road (SR 0074) & E. High St. (SR 0641)/E High St. (SR 0641)

05/08/2023

								
Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations								
Traffic Volume (veh/h)	658	374	22	628	293	12		
Future Volume (veh/h)	658	374	22	628	293	12		
Number	2	12	1	6	3	18		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1765	1835	1765	1835	1835	1872		
Adj Flow Rate, veh/h	678	0	23	647	302	12		
Adj No. of Lanes	1	1	1	1	0	0		
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	1089	962	417	1132	378	15		
Arrive On Green	0.62	0.00	0.82	0.82	0.23	0.22		
Sat Flow, veh/h	1765	1560	758	1835	1668	66		
Grp Volume(v), veh/h	678	0	23	647	315	0		
Grp Sat Flow(s),veh/h/ln	1765	1560	758	1835	1740	0		
Q Serve(g_s), s	13.1	0.0	0.9	6.6	9.4	0.0		
Cycle Q Clear(g_c), s	13.1	0.0	14.0	6.6	9.4	0.0		
Prop In Lane		1.00	1.00		0.96	0.04		
Lane Grp Cap(c), veh/h	1089	962	417	1132	395	0		
V/C Ratio(X)	0.62	0.00	0.06	0.57	0.80	0.00		
Avail Cap(c_a), veh/h	1089	962	417	1132	437	0		
HCM Platoon Ratio	1.00	1.00	1.33	1.33	1.00	1.00		
Upstream Filter(I)	1.00	0.00	0.79	0.79	1.00	0.00		
Uniform Delay (d), s/veh	6.6	0.0	6.6	2.5	20.1	0.0		
Incr Delay (d2), s/veh	2.7	0.0	0.2	1.7	9.2	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(95%),veh/ln	1.4	0.0	0.4	6.2	9.3	0.0		
LnGrp Delay(d),s/veh	9.2	0.0	6.8	4.1	29.3	0.0		
LnGrp LOS	A		A	A	C			
Approach Vol, veh/h	678			670	315			
Approach Delay, s/veh	9.2			4.2	29.3			
Approach LOS	A			A	C			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		38.1				38.1		16.9
Change Period (Y+Rc), s		* 5.2				* 5.2		4.9
Max Green Setting (Gmax), s		* 32				* 32		13.3
Max Q Clear Time (g_c+I1), s		15.6				16.5		11.9
Green Ext Time (p_c), s		2.5				2.4		0.2
Intersection Summary								
HCM 2010 Ctrl Delay			11.0					
HCM 2010 LOS			B					
Notes								

User approved volume balancing among the lanes for turning movement.

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Lanes, Volumes, Timings
2: Giant Ln./Carlisle Plaza Mall & York Road (SR 0074)

Timing Plan: SAT Peak Hour

05/08/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	104	512	29	162	426	42	21	49	155	67	74	67
Future Volume (vph)	104	512	29	162	426	42	21	49	155	67	74	67
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	13	13	13	13	12	13	11	14	14	10	12	12
Grade (%)		1%			2%			-2%			2%	
Storage Length (ft)	210		0	210		0	110		0	65		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00		1.00								
Frt		0.992			0.987			0.886			0.929	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1724	1798	0	1715	1724	0	1637	1684	0	1549	1623	0
Flt Permitted	0.337			0.264			0.665			0.504		
Satd. Flow (perm)	611	1798	0	476	1724	0	1146	1684	0	822	1623	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		6			10			160			69	
Link Speed (mph)		35			35			35			25	
Link Distance (ft)		549			3632			825			544	
Travel Time (s)		10.7			70.8			16.1			14.8	
Confl. Peds. (#/hr)			2	2								
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	107	528	30	167	439	43	22	51	160	69	76	69
Shared Lane Traffic (%)												
Lane Group Flow (vph)	107	558	0	167	482	0	22	211	0	69	145	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		13			13			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.03	1.03	1.03	1.04	1.09	1.04	1.11	0.97	0.97	1.19	1.09	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1		1	1		1	1	
Detector Template												
Leading Detector (ft)	40	256		40	256		30	37		30	35	
Trailing Detector (ft)	-10	250		-10	250		-10	-3		-10	-5	
Detector 1 Position(ft)	-10	250		-10	250		-10	-3		-10	-5	
Detector 1 Size(ft)	50	6		50	6		40	40		40	40	
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	5	2		1	6		8	8		4	4	

Lanes, Volumes, Timings
2: Giant Ln./Carlisle Plaza Mall & York Road (SR 0074)

Timing Plan: SAT Peak Hour
05/08/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Switch Phase												
Minimum Initial (s)	3.0	10.0		3.0	10.0		3.0	3.0		3.0	3.0	
Minimum Split (s)	8.0	24.4		8.0	24.4		21.4	21.4		21.4	21.4	
Total Split (s)	8.0	30.6		8.0	30.6		21.4	21.4		21.4	21.4	
Total Split (%)	13.3%	51.0%		13.3%	51.0%		35.7%	35.7%		35.7%	35.7%	
Maximum Green (s)	4.5	25.2		4.5	25.2		16.0	16.0		16.0	16.0	
Yellow Time (s)	3.0	3.6		3.0	3.6		3.8	3.8		3.8	3.8	
All-Red Time (s)	0.5	1.8		0.5	1.8		1.6	1.6		1.6	1.6	
Lost Time Adjust (s)	-0.5	-1.0		-0.5	-1.0		-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)	3.0	4.4		3.0	4.4		4.4	4.4		4.4	4.4	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	6.0		3.0	6.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.5		3.0	3.5		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	25.0		0.0	25.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	20.0		0.0	20.0		0.0	0.0		0.0	0.0	
Recall Mode	Max	C-Max		Max	C-Max		None	None		None	None	
Walk Time (s)		19.0			19.0		16.0	16.0		16.0	16.0	
Flash Dont Walk (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Pedestrian Calls (#/hr)		0			0		0	0		0	0	
Act Effct Green (s)	38.7	26.2		38.7	26.2		10.9	10.9		10.9	10.9	
Actuated g/C Ratio	0.64	0.44		0.64	0.44		0.18	0.18		0.18	0.18	
v/c Ratio	0.18	0.71		0.31	0.64		0.11	0.48		0.46	0.41	
Control Delay	4.6	19.7		3.7	12.9		19.6	10.3		31.0	15.1	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	4.6	19.7		3.7	12.9		19.6	10.3		31.0	15.1	
LOS	A	B		A	B		B	B		C	B	
Approach Delay		17.3			10.6			11.2			20.3	
Approach LOS		B			B			B			C	
Queue Length 50th (ft)	10	154		5	205		7	16		23	24	
Queue Length 95th (ft)	29	259		m11	133		21	59		52	60	
Internal Link Dist (ft)		469			3552			745			464	
Turn Bay Length (ft)	210			210			110			65		
Base Capacity (vph)	599	788		535	758		324	591		232	509	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.18	0.71		0.31	0.64		0.07	0.36		0.30	0.28	

Intersection Summary

Area Type: Other

Cycle Length: 60

Actuated Cycle Length: 60

Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.71

Intersection Signal Delay: 14.4

Intersection LOS: B

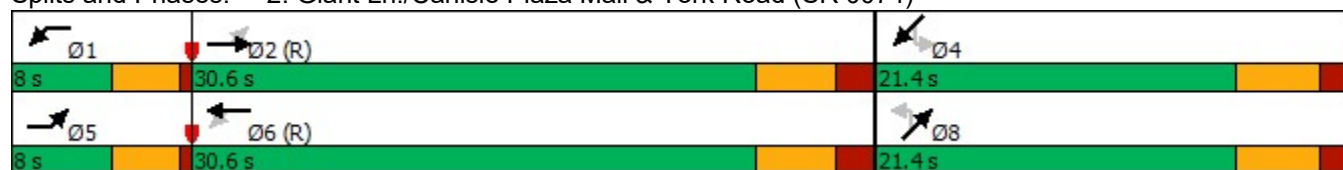
Intersection Capacity Utilization 70.8%

ICU Level of Service C

Analysis Period (min) 15

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

Splits and Phases: 2: Giant Ln./Carlisle Plaza Mall & York Road (SR 0074)



HCM 2010 analysis expects stop-line detection. Detectors cannot be further than 20 feet from the stop bar.

Lanes, Volumes, Timings

Timing Plan: SAT Peak Hour

3: Carlisle Plaza Mall/Shaffner Ave. & E High St. (SR 0641)/E. High St. (SR 0641) 05/08/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	586	142	89	561	40	87	0	117	0	0	0
Future Volume (vph)	0	586	142	89	561	40	87	0	117	0	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12	12	12	12	16	16	16
Grade (%)		0%			0%			2%			0%	
Storage Length (ft)	60		60	60		0	0		80	0		0
Storage Lanes	1		1	1		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor									0.98			
Frt			0.850		0.990				0.850			
Flt Protected				0.950				0.950				
Satd. Flow (prot)	1765	1765	1500	1676	1747	0	0	1660	1485	0	2000	0
Flt Permitted				0.293				0.757				
Satd. Flow (perm)	1765	1765	1500	517	1747	0	0	1323	1451	0	2000	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			81		6				123			
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		1127			853			544			592	
Travel Time (s)		22.0			16.6			10.6			11.5	
Confl. Peds. (#/hr)									1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	617	149	94	591	42	92	0	123	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	617	149	94	633	0	0	92	123	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane					Yes							
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.09	1.09	1.09	0.91	0.91	0.91
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	1	1	1		1	1	1	1	2	
Detector Template							Left			Left		
Leading Detector (ft)	45	35	35	45	35		20	45	45	20	20	
Trailing Detector (ft)	-5	-5	-5	-5	-5		0	-5	-5	0	-3	
Detector 1 Position(ft)	-5	-5	-5	-5	-5		0	-5	-5	0	-3	
Detector 1 Size(ft)	50	40	40	50	40		20	50	50	20	6	
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex		CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)											14	
Detector 2 Size(ft)											6	
Detector 2 Type											CI+Ex	
Detector 2 Channel												

Lanes, Volumes, Timings

Timing Plan: SAT Peak Hour

3: Carlisle Plaza Mall/Shaffner Ave. & E High St. (SR 0641)/E. High St. (SR 0641) 05/08/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)												0.0
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Perm	NA	Perm			
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2		2	6			8		8	4		
Detector Phase	5	2	2	1	6		8	8	8	4	4	
Switch Phase												
Minimum Initial (s)	3.0	10.0	10.0	3.0	10.0		3.0	3.0	3.0	3.0	3.0	
Minimum Split (s)	8.7	27.7	27.7	8.7	27.7		26.5	26.5	26.5	26.5	26.5	
Total Split (s)	8.7	70.0	70.0	12.0	73.3		28.0	28.0	28.0	28.0	28.0	
Total Split (%)	7.9%	63.6%	63.6%	10.9%	66.6%		25.5%	25.5%	25.5%	25.5%	25.5%	
Maximum Green (s)	3.0	64.3	64.3	6.3	67.6		22.5	22.5	22.5	22.5	22.5	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.5	2.5	2.5	2.5	2.5	
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0			-1.0	-1.0		-1.0	
Total Lost Time (s)	4.7	4.7	4.7	4.7	4.7			4.5	4.5		4.5	
Lead/Lag	Lead	Lag	Lag	Lead	Lag							
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	6.0	6.0	3.0	6.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	Max	C-Max	C-Max	Max	C-Max		None	None	None	None	None	
Walk Time (s)		12.0	12.0		12.0		11.0	11.0	11.0	11.0	11.0	
Flash Dont Walk (s)		10.0	10.0		10.0		10.0	10.0	10.0	10.0	10.0	
Pedestrian Calls (#/hr)		0	0		0		0	0	0	0	0	
Act Effct Green (s)		65.3	65.3	85.4	68.6			14.0	14.0			
Actuated g/C Ratio		0.59	0.59	0.78	0.62			0.13	0.13			
v/c Ratio		0.59	0.16	0.16	0.58			0.55	0.42			
Control Delay		12.4	3.9	3.0	11.6			56.2	11.8			
Queue Delay		0.0	0.0	0.0	0.0			0.0	0.0			
Total Delay		12.4	3.9	3.0	11.6			56.2	11.8			
LOS		B	A	A	B			E	B			
Approach Delay		10.8			10.5			30.8				
Approach LOS		B			B			C				
Queue Length 50th (ft)		242	29	9	225			62	0			
Queue Length 95th (ft)		304	m40	22	277			110	50			
Internal Link Dist (ft)		1047			773			464			512	
Turn Bay Length (ft)			60	60					80			
Base Capacity (vph)		1047	923	578	1091			282	406			
Starvation Cap Reductn		0	0	0	0			0	0			
Spillback Cap Reductn		0	0	0	0			0	0			
Storage Cap Reductn		0	0	0	0			0	0			
Reduced v/c Ratio		0.59	0.16	0.16	0.58			0.33	0.30			

Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 37 (34%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 70

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.59

Intersection Signal Delay: 13.2

Intersection LOS: B

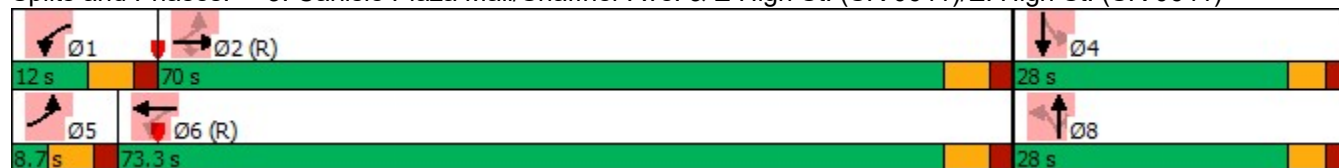
Intersection Capacity Utilization 54.8%

ICU Level of Service A

Analysis Period (min) 15

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

Splits and Phases: 3: Carlisle Plaza Mall/Shaffner Ave. & E High St. (SR 0641)/E. High St. (SR 0641)



HCM 2010 Signalized Intersection Summary

Timing Plan: SAT Peak Hour

3: Carlisle Plaza Mall/Shaffner Ave. & E High St. (SR 0641)/E. High St. (SR 0641)

05/08/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	586	142	89	561	40	87	0	117	0	0	0
Future Volume (veh/h)	0	586	142	89	561	40	87	0	117	0	0	0
Number	5	2	12	1	6	16	3	8	18	7	4	14
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
Adj Sat Flow, veh/h/ln	1765	1765	1765	1765	1765	1800	1782	1747	1747	1872	1835	1872
Adj Flow Rate, veh/h	0	617	149	94	591	42	92	0	123	0	0	0
Adj No. of Lanes	1	1	1	1	1	0	0	1	1	0	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	611	1214	1032	658	1298	92	224	0	176	0	219	0
Arrive On Green	0.00	1.00	1.00	0.13	1.00	1.00	0.11	0.00	0.12	0.00	0.00	0.00
Sat Flow, veh/h	1681	1765	1500	1681	1629	116	1328	0	1479	0	1835	0
Grp Volume(v), veh/h	0	617	149	94	0	633	92	0	123	0	0	0
Grp Sat Flow(s),veh/h/ln	1681	1765	1500	1681	0	1744	1328	0	1479	0	1835	0
Q Serve(g_s), s	0.0	0.0	0.0	1.4	0.0	0.0	7.0	0.0	8.8	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	1.4	0.0	0.0	7.5	0.0	8.8	0.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.07	1.00		1.00	0.00		0.00
Lane Grp Cap(c), veh/h	611	1214	1032	658	0	1390	212	0	176	0	219	0
V/C Ratio(X)	0.00	0.51	0.14	0.14	0.00	0.46	0.43	0.00	0.70	0.00	0.00	0.00
Avail Cap(c_a), veh/h	671	1214	1032	658	0	1390	343	0	316	0	392	0
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.71	0.71	0.87	0.00	0.87	0.93	0.00	0.93	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	2.7	0.0	0.0	46.7	0.0	46.5	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	1.1	0.2	0.4	0.0	0.9	1.3	0.0	4.6	0.0	0.0	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	0.0	0.7	0.1	1.3	0.0	0.7	5.0	0.0	6.9	0.0	0.0	0.0
LnGrp Delay(d),s/veh	0.0	1.1	0.2	3.1	0.0	0.9	48.0	0.0	51.1	0.0	0.0	0.0
LnGrp LOS		A	A	A		A	D		D			
Approach Vol, veh/h		766			727			215			0	
Approach Delay, s/veh		0.9			1.2			49.8			0.0	
Approach LOS		A			A			D				
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	12.0	80.4		17.6	0.0	92.4		17.6				
Change Period (Y+Rc), s	* 5.7	* 5.7		5.5	* 5.7	* 5.7		5.5				
Max Green Setting (Gmax), s	63	* 64		22.5	* 3	* 68		22.5				
Max Q Clear Time (g_c+I1), s	3.9	2.5		0.0	0.0	2.5		11.3				
Green Ext Time (p_c), s	0.0	12.5		0.0	0.0	10.3		0.6				
Intersection Summary												
HCM 2010 Ctrl Delay				7.2								
HCM 2010 LOS				A								
Notes												

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Lanes, Volumes, Timings

Timing Plan: SAT Peak Hour

4: Lowe's Access Dr./CVS Access Dr. & E. High St. (SR 0641)/W. Trindle Rd. (SR 0641) 08/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	22	564	145	109	491	12	149	7	115	11	2	14
Future Volume (vph)	22	564	145	109	491	12	149	7	115	11	2	14
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Grade (%)		0%			-1%			-2%			0%	
Storage Length (ft)	60		60	80		0	0		50	0		0
Storage Lanes	1		1	1		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.996				0.850		0.930	
Flt Protected	0.950			0.950				0.954			0.980	
Satd. Flow (prot)	1676	1765	1500	1685	1766	0	0	1700	1515	0	1608	0
Flt Permitted	0.401			0.309				0.716			0.875	
Satd. Flow (perm)	708	1765	1500	548	1766	0	0	1276	1515	0	1436	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			81		2				95		14	
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		853			2952			142			294	
Travel Time (s)		16.6			57.5			3.9			8.0	
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	22	570	146	110	496	12	151	7	116	11	2	14
Shared Lane Traffic (%)												
Lane Group Flow (vph)	22	570	146	110	508	0	0	158	116	0	27	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes										
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.06	1.06	1.06	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	1	1	1		1	1	1	1	1	
Detector Template							Left			Left		
Leading Detector (ft)	45	35	35	45	35		20	45	45	20	15	
Trailing Detector (ft)	-5	-5	-5	-5	-5		0	-5	-5	0	-5	
Detector 1 Position(ft)	-5	-5	-5	-5	-5		0	-5	-5	0	-5	
Detector 1 Size(ft)	50	40	40	50	40		20	50	50	20	20	
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex		CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Perm	NA	Perm	Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2		2	6			8		8	4		
Detector Phase	5	2	2	1	6		8	8	8	4	4	
Switch Phase												
Minimum Initial (s)	3.0	10.0	10.0	3.0	10.0		3.0	3.0	3.0	3.0	3.0	
Minimum Split (s)	8.7	27.7	27.7	8.7	27.7		26.5	26.5	26.5	26.5	26.5	

Lanes, Volumes, Timings

Timing Plan: SAT Peak Hour

4: Lowe's Access Dr./CVS Access Dr. & E. High St. (SR 0641)/W. Trindle Rd. (SR 0641) 08/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (s)	9.0	67.0	67.0	12.0	70.0		31.0	31.0	31.0	31.0	31.0	
Total Split (%)	8.2%	60.9%	60.9%	10.9%	63.6%		28.2%	28.2%	28.2%	28.2%	28.2%	
Maximum Green (s)	3.3	61.3	61.3	6.3	64.3		25.5	25.5	25.5	25.5	25.5	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.5	2.5	2.5	2.5	2.5	
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0			-1.0	-1.0		-1.0	
Total Lost Time (s)	4.7	4.7	4.7	4.7	4.7			4.5	4.5		4.5	
Lead/Lag	Lead	Lag	Lag	Lead	Lag							
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	6.0	6.0	3.0	6.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	Max	C-Max	C-Max	Max	C-Max		None	None	None	None	None	
Walk Time (s)		12.0	12.0		12.0		11.0	11.0	11.0	11.0	11.0	
Flash Dont Walk (s)		10.0	10.0		10.0		10.0	10.0	10.0	10.0	10.0	
Pedestrian Calls (#/hr)		0	0		0		0	0	0	0	0	
Act Effct Green (s)	73.4	62.3	62.3	79.4	65.3		19.7	19.7			19.7	
Actuated g/C Ratio	0.67	0.57	0.57	0.72	0.59		0.18	0.18			0.18	
v/c Ratio	0.04	0.57	0.17	0.20	0.48		0.69	0.33			0.10	
Control Delay	2.0	6.8	0.7	5.8	14.6		57.2	13.0			22.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0	
Total Delay	2.0	6.8	0.7	5.8	14.6		57.2	13.0			22.5	
LOS	A	A	A	A	B		E	B			C	
Approach Delay		5.4			13.1		38.5				22.5	
Approach LOS		A			B		D				C	
Queue Length 50th (ft)	1	29	0	19	191		105	12			8	
Queue Length 95th (ft)	m3	158	0	44	274		166	58			30	
Internal Link Dist (ft)		773			2872		62				214	
Turn Bay Length (ft)	60		60	80				50				
Base Capacity (vph)	569	999	884	540	1049		307	437			356	
Starvation Cap Reductn	0	0	0	0	0		0	0			0	
Spillback Cap Reductn	0	0	0	0	0		0	0			0	
Storage Cap Reductn	0	0	0	0	0		0	0			0	
Reduced v/c Ratio	0.04	0.57	0.17	0.20	0.48		0.51	0.27			0.08	

Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 57 (52%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 65

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.69

Intersection Signal Delay: 14.0

Intersection LOS: B

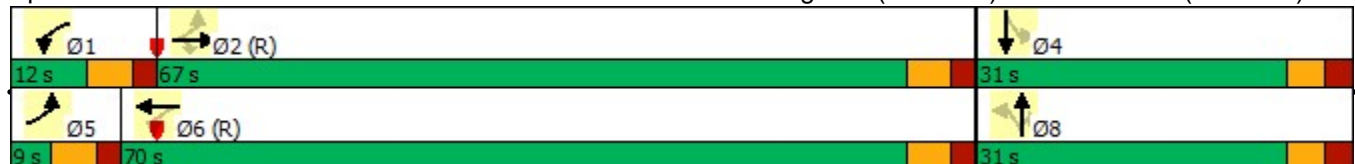
Intersection Capacity Utilization 65.1%

ICU Level of Service C

Analysis Period (min) 15

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

Splits and Phases: 4: Lowe's Access Dr./CVS Access Dr. & E. High St. (SR 0641)/W. Trindle Rd. (SR 0641)



HCM 2010 Signalized Intersection Summary

Timing Plan: SAT Peak Hour

4: Lowe's Access Dr./CVS Access Dr. & E. High St. (SR 0641)/W. Trindle Rd. (SR 0641) 08/2023

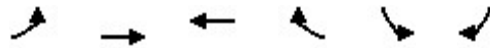
												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	22	564	145	109	491	12	149	7	115	11	2	14
Future Volume (veh/h)	22	564	145	109	491	12	149	7	115	11	2	14
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	1	0	0	0
Ped-Bike 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
Adj Sat Flow, veh/h/ln	1765	1765	1765	1774	1774	1809	1818	1782	1782	1800	1765	1800
Adj Flow Rate, veh/h	22	570	146	110	496	12	151	7	116	11	2	14
Adj No. of Lanes	1	1	1	1	1	0	0	1	1	0	1	0
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	530	1018	866	602	1042	25	246	8	349	59	24	39
Arrive On Green	0.08	1.00	1.00	0.07	0.60	0.60	0.22	0.23	0.23	0.22	0.23	0.22
Sat Flow, veh/h	1681	1765	1500	1689	1724	42	792	37	1515	56	103	172
Grp Volume(v), veh/h	22	570	146	110	0	508	158	0	116	27	0	0
Grp Sat Flow(s),veh/h/ln	1681	1765	1500	1689	0	1766	828	0	1515	331	0	0
Q Serve(g_s), s	0.5	0.0	0.0	2.7	0.0	17.6	0.0	0.0	7.0	0.4	0.0	0.0
Cycle Q Clear(g_c), s	0.5	0.0	0.0	2.7	0.0	17.6	21.9	0.0	7.0	22.3	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.02	0.96		1.00	0.41		0.52
Lane Grp Cap(c), veh/h	530	1018	866	602	0	1067	247	0	349	119	0	0
V/C Ratio(X)	0.04	0.56	0.17	0.18	0.00	0.48	0.64	0.00	0.33	0.23	0.00	0.00
Avail Cap(c_a), veh/h	530	1019	866	602	0	1068	262	0	365	134	0	0
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.81	0.81	0.81	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	8.8	0.0	0.0	7.2	0.0	12.1	41.5	0.0	35.4	35.2	0.0	0.0
Incr Delay (d2), s/veh	0.1	1.8	0.3	0.7	0.0	1.5	4.7	0.0	0.6	1.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.5	0.9	0.1	2.4	0.0	13.8	8.8	0.0	5.6	1.2	0.0	0.0
LnGrp Delay(d),s/veh	8.9	1.8	0.3	7.8	0.0	13.6	46.2	0.0	36.1	36.2	0.0	0.0
LnGrp LOS	A	A	A	A		B	D		D	D		
Approach Vol, veh/h	738				618			274			27	
Approach Delay, s/veh	1.7				12.6			41.9			36.2	
Approach LOS	A				B			D			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	12.0	68.2		29.8	9.0	71.2		29.8				
Change Period (Y+Rc), s	* 5.7	* 5.7		5.5	* 5.7	* 5.7		5.5				
Max Green Setting (Gmax),s	63	* 61		25.5	* 3.3	* 64		25.5				
Max Q Clear Time (g_c+I1),s	5.2	2.5		24.3	3.0	19.6		23.9				
Green Ext Time (p_c), s	0.0	11.2		0.0	0.0	7.1		0.2				
Intersection Summary												
HCM 2010 Ctrl Delay	13.0											
HCM 2010 LOS	B											
Notes												

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Lanes, Volumes, Timings
5: W. Trindle Rd. (SR 0641) & I-81 SB Off-Ramp

Timing Plan: SAT Peak Hour

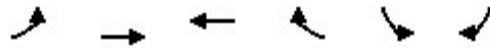
05/08/2023



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↘	↗
Traffic Volume (vph)	0	724	432	0	201	198
Future Volume (vph)	0	724	432	0	201	198
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	12	12	12	14	14
Grade (%)		-2%	0%		-3%	
Storage Length (ft)	0			0	0	70
Storage Lanes	0			0	1	1
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	0	3386	3353	0	1815	1624
Flt Permitted					0.950	
Satd. Flow (perm)	0	3386	3353	0	1815	1624
Right Turn on Red				No		Yes
Satd. Flow (RTOR)						213
Link Speed (mph)		35	35		25	
Link Distance (ft)		472	314		758	
Travel Time (s)		9.2	6.1		20.7	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	0	778	465	0	216	213
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	778	465	0	216	213
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		14	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.11	1.06	1.07	1.07	0.97	0.97
Turning Speed (mph)	15			9	15	9
Number of Detectors		1	1		1	0
Detector Template						
Leading Detector (ft)		256	256		15	0
Trailing Detector (ft)		250	250		-10	0
Detector 1 Position(ft)		250	250		-10	0
Detector 1 Size(ft)		6	6		25	20
Detector 1 Type		CI+Ex	CI+Ex		CI+Ex	CI+Ex
Detector 1 Channel						
Detector 1 Extend (s)		0.0	0.0		0.0	0.0
Detector 1 Queue (s)		0.0	0.0		0.0	0.0
Detector 1 Delay (s)		0.0	0.0		0.0	0.0
Turn Type		NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases						4
Detector Phase		2	6		4	4
Switch Phase						
Minimum Initial (s)		10.0	10.0		3.0	3.0

Lanes, Volumes, Timings
5: W. Trindle Rd. (SR 0641) & I-81 SB Off-Ramp

Timing Plan: SAT Peak Hour
05/08/2023

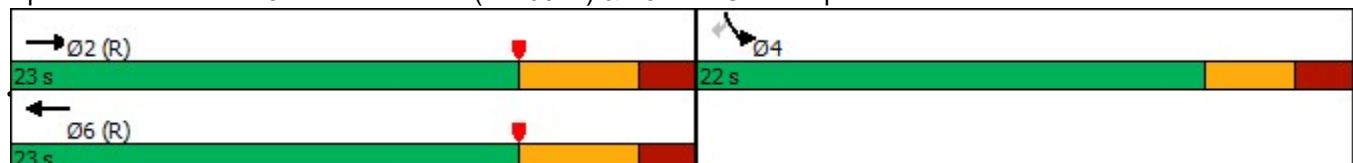


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Minimum Split (s)		16.0	16.0		22.0	22.0
Total Split (s)		23.0	23.0		22.0	22.0
Total Split (%)		51.1%	51.1%		48.9%	48.9%
Maximum Green (s)		17.0	17.0		17.0	17.0
Yellow Time (s)		4.0	4.0		3.0	3.0
All-Red Time (s)		2.0	2.0		2.0	2.0
Lost Time Adjust (s)		-1.0	-1.0		-1.0	-1.0
Total Lost Time (s)		5.0	5.0		4.0	4.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)		6.0	6.0		3.0	3.0
Recall Mode		C-Max	C-Max		None	None
Walk Time (s)		8.0	8.0		17.0	17.0
Flash Dont Walk (s)		0.0	0.0		0.0	0.0
Pedestrian Calls (#/hr)		0	0		0	0
Act Effct Green (s)		24.0	24.0		12.0	12.0
Actuated g/C Ratio		0.53	0.53		0.27	0.27
v/c Ratio		0.43	0.26		0.45	0.36
Control Delay		8.1	4.2		16.0	4.1
Queue Delay		0.0	0.0		0.0	0.0
Total Delay		8.1	4.2		16.0	4.1
LOS		A	A		B	A
Approach Delay		8.1	4.2		10.1	
Approach LOS		A	A		B	
Queue Length 50th (ft)		54	29		46	0
Queue Length 95th (ft)		111	60		77	30
Internal Link Dist (ft)		392	234		678	
Turn Bay Length (ft)						70
Base Capacity (vph)		1808	1791		726	777
Starvation Cap Reductn		0	0		0	0
Spillback Cap Reductn		0	0		0	0
Storage Cap Reductn		0	0		0	0
Reduced v/c Ratio		0.43	0.26		0.30	0.27

Intersection Summary

Area Type: Other
Cycle Length: 45
Actuated Cycle Length: 45
Offset: 25 (56%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Natural Cycle: 40
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.45
Intersection Signal Delay: 7.5
Intersection LOS: A
Intersection Capacity Utilization 40.4%
ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 5: W. Trindle Rd. (SR 0641) & I-81 SB Off-Ramp



HCM 2010 analysis expects stop-line detection. Detectors cannot be further than 20 feet from the stop bar.

Lanes, Volumes, Timings
6: I-81 NB On-Ramp & W. Trindle Rd. (SR 0641)

Timing Plan: SAT Peak Hour
05/08/2023

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↔↑		
Traffic Volume (vph)	737	214	180	421	0	0
Future Volume (vph)	737	214	180	421	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	11	11	11	16	14
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Frt	0.966					
Flt Protected				0.985		
Satd. Flow (prot)	3124	0	0	3193	0	0
Flt Permitted				0.985		
Satd. Flow (perm)	3124	0	0	3193	0	0
Link Speed (mph)	35			35	25	
Link Distance (ft)	466			628	326	
Travel Time (s)	9.1			12.2	8.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	3%	2%	2%	2%	2%
Adj. Flow (vph)	801	233	196	458	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1034	0	0	654	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.12	1.12	1.12	1.12	0.91	0.99
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	53.2%			ICU Level of Service A		
Analysis Period (min)	15					

Lanes, Volumes, Timings
7: Army Heritage Dr. & W. Trindle Rd. (SR 0641)

Timing Plan: SAT Peak Hour
05/08/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	196	319	239	87	267	103	192	253	76	95	222	119
Future Volume (vph)	196	319	239	87	267	103	192	253	76	95	222	119
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	13	14	12	13	14	12	13	12	11	14	12
Grade (%)		1%			-1%			-5%			4%	
Storage Length (ft)	90		95	110		155	140		0	125		150
Storage Lanes	1		1	1		1	1		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.965				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1668	1814	1592	1685	1833	1608	1702	1800	0	1588	1845	1470
Flt Permitted	0.339			0.555			0.469			0.308		
Satd. Flow (perm)	595	1814	1592	984	1833	1608	840	1800	0	515	1845	1470
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			257			279		17				128
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		628			1918			461			1667	
Travel Time (s)		12.2			37.4			9.0			32.5	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	3%	2%	3%	2%	2%	2%
Adj. Flow (vph)	211	343	257	94	287	111	206	272	82	102	239	128
Shared Lane Traffic (%)												
Lane Group Flow (vph)	211	343	257	94	287	111	206	354	0	102	239	128
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane											Yes	
Headway Factor	1.08	1.03	0.99	1.07	1.02	0.98	1.04	1.00	1.04	1.15	1.01	1.10
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	0	1	1	0	1	1		1	1	1
Detector Template												Right
Leading Detector (ft)	35	231	0	35	231	0	35	40		40	35	20
Trailing Detector (ft)	-5	225	0	-5	225	0	-5	-10		-5	-5	0
Detector 1 Position(ft)	-5	225	0	-5	225	0	-5	-10		-5	-5	0
Detector 1 Size(ft)	40	6	20	40	6	20	40	50		45	40	20
Detector 1 Type	CI+Ex	Extend	CI+Ex	CI+Ex	Extend	CI+Ex	CI+Ex	CI+Ex		CI+Ex	CI+Ex	CI+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	pm+ov
Protected Phases	5	2	3	1	6		3	8		7	4	5
Permitted Phases	2		2	6		6	8			4		4
Detector Phase	5	2	3	1	6	6	3	8		7	4	5
Switch Phase												

Lanes, Volumes, Timings
7: Army Heritage Dr. & W. Trindle Rd. (SR 0641)

Timing Plan: SAT Peak Hour
05/08/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	15.0	15.0	3.0	3.0	3.0	3.0	3.0	3.0		4.0	3.0	15.0
Minimum Split (s)	21.5	25.5	9.5	9.5	25.5	25.5	9.5	31.5		10.5	31.5	21.5
Total Split (s)	21.5	38.4	10.4	9.6	26.5	26.5	10.4	31.5		10.5	31.6	21.5
Total Split (%)	23.9%	42.7%	11.6%	10.7%	29.4%	29.4%	11.6%	35.0%		11.7%	35.1%	23.9%
Maximum Green (s)	15.0	31.9	3.9	3.1	20.0	20.0	3.9	25.0		4.0	25.1	15.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5		2.5	2.5	2.5
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0		-1.0	-1.0	-1.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5		5.5	5.5	5.5
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	6.0	3.0	3.0	6.0	6.0	3.0	3.0		3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Time Before Reduce (s)	0.0	25.0	0.0	0.0	25.0	25.0	0.0	0.0		0.0	0.0	0.0
Time To Reduce (s)	0.0	15.0	0.0	0.0	15.0	15.0	0.0	0.0		0.0	0.0	0.0
Recall Mode	None	C-Max	None	None	C-Max	C-Max	None	None		None	None	None
Walk Time (s)		10.0			10.0	10.0		10.0			10.0	
Flash Dont Walk (s)		9.0			9.0	9.0		15.0			15.0	
Pedestrian Calls (#/hr)		0			0	0		0			0	
Act Effct Green (s)	47.0	38.0	48.4	31.6	25.5	25.5	27.5	23.6		26.6	21.6	43.1
Actuated g/C Ratio	0.52	0.42	0.54	0.35	0.28	0.28	0.31	0.26		0.30	0.24	0.48
v/c Ratio	0.42	0.45	0.26	0.24	0.55	0.17	0.68	0.73		0.48	0.54	0.17
Control Delay	15.1	20.1	4.2	7.1	18.4	3.6	32.6	35.7		27.3	33.7	2.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	15.1	20.1	4.2	7.1	18.4	3.6	32.6	35.7		27.3	33.7	2.6
LOS	B	C	A	A	B	A	C	D		C	C	A
Approach Delay		13.8			12.9			34.6			23.8	
Approach LOS		B			B			C			C	
Queue Length 50th (ft)	65	140	1	21	142	9	82	176		38	116	0
Queue Length 95th (ft)	132	207	56	m36	219	m22	132	268		69	180	25
Internal Link Dist (ft)		548			1838			381			1587	
Turn Bay Length (ft)	90		95	110		155	140			125		150
Base Capacity (vph)	501	766	974	391	519	656	303	532		211	535	770
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.42	0.45	0.26	0.24	0.55	0.17	0.68	0.67		0.48	0.45	0.17

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow, Master Intersection

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.73

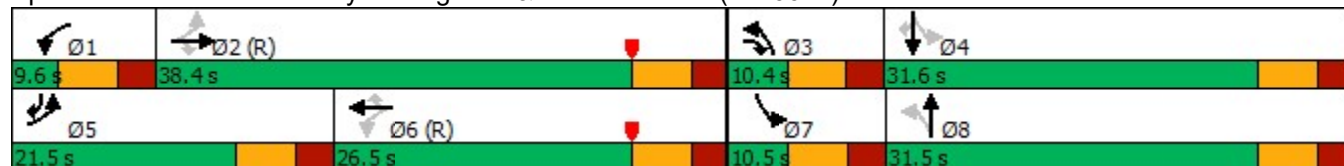
Intersection Signal Delay: 20.6 Intersection LOS: C

Intersection Capacity Utilization 70.2% ICU Level of Service C

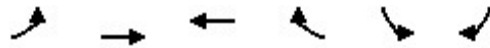
Analysis Period (min) 15

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

Splits and Phases: 7: Army Heritage Dr. & W. Trindle Rd. (SR 0641)



HCM 2010 analysis cannot be performed without detectors for actuated controller type.



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	17	362	379	0	0	26
Future Volume (vph)	17	362	379	0	0	26
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	11	11
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.865	
Flt Protected		0.998				
Satd. Flow (prot)	0	1761	1765	0	1476	0
Flt Permitted		0.998				
Satd. Flow (perm)	0	1761	1765	0	1476	0
Link Speed (mph)		45	45		35	
Link Distance (ft)		1985	3218		1923	
Travel Time (s)		30.1	48.8		37.5	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	18	385	403	0	0	28
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	403	403	0	28	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		24	24		11	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.07	1.07	1.07	1.07	1.12	1.12
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 44.7% ICU Level of Service A

Analysis Period (min) 15

Intersection

Int Delay, s/veh 0.6

Movement EBL EBT WBT WBR SBL SBRLane Configurations 

Traffic Vol, veh/h 17 362 379 0 0 26

Future Vol, veh/h 17 362 379 0 0 26

Conflicting Peds, #/hr 0 0 0 0 0 0

Sign Control Free Free Free Free Stop Stop

RT Channelized - None - None - None

Storage Length - - - - 0 -

Veh in Median Storage, # 0 0 - 1 -

Grade, % - 0 0 - 0 -

Peak Hour Factor 94 94 94 94 94 94

Heavy Vehicles, % 2 2 2 2 2 2

Mvmt Flow 18 385 403 0 0 28

Major/Minor Major1 Major2 Minor2

Conflicting Flow All 403 0 - 0 824 403

Stage 1 - - - - 403 -

Stage 2 - - - - 421 -

Critical Hdwy 4.12 - - - 7.1 6.22

Critical Hdwy Stg 1 - - - - 5.42 -

Critical Hdwy Stg 2 - - - - 5.42 -

Follow-up Hdwy 2.218 - - - 3.518 3.318

Pot Cap-1 Maneuver 156 - - - 293 647

Stage 1 - - - - 675 -

Stage 2 - - - - 662 -

Platoon blocked, % - - - -

Mov Cap-1 Maneuver 156 - - - 287 647

Mov Cap-2 Maneuver - - - - 433 -

Stage 1 - - - - 662 -

Stage 2 - - - - 662 -

Approach EB WB SB

HCM Control Delay, s 0.4 0 10.8

HCM LOS B

Minor Lane/Major Mvmt EBL EBT WBT WBR SBLn1

Capacity (veh/h) 1156 - - - 647

HCM Lane V/C Ratio 0.016 - - - 0.043

HCM Control Delay (s) 8.2 0 - - 10.8

HCM Lane LOS A A - - B

HCM 95th %tile Q(veh) 0 - - - 0.1

Lanes, Volumes, Timings
9: Middlesex Rd. & W. Trindle Rd. (SR0641)

Timing Plan: SAT Peak Hour
05/08/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	17	306	26	7	315	20	31	35	5	15	22	32
Future Volume (vph)	17	306	26	7	315	20	31	35	5	15	22	32
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12	11	11	11	11	11	11
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.990			0.992			0.991			0.937	
Flt Protected		0.998			0.999			0.979			0.990	
Satd. Flow (prot)	0	1744	0	0	1744	0	0	1655	0	0	1582	0
Flt Permitted		0.998			0.999			0.979			0.990	
Satd. Flow (perm)	0	1744	0	0	1744	0	0	1655	0	0	1582	0
Link Speed (mph)		45			45			35			40	
Link Distance (ft)		3218			3646			1268			2562	
Travel Time (s)		48.8			55.2			24.7			43.7	
Confl. Peds. (#/hr)	2					2						
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	2%	2%	2%	17%	2%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	18	315	27	7	325	21	32	36	5	15	23	33
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	360	0	0	353	0	0	73	0	0	71	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.12	1.12	1.12	1.12	1.12	1.12
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	42.3%						ICU Level of Service A					
Analysis Period (min)	15											

Intersection												
Int Delay, s/veh	3.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	17	306	26	7	315	20	31	35	5	15	22	32
Future Vol, veh/h	17	306	26	7	315	20	31	35	5	15	22	32
Conflicting Peds, #/hr	2	0	0	0	0	2	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	-	-	0	-	-	0	-	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	2	2	2	17	2	2	2	2	2	2	2	2
Mvmt Flow	18	315	27	7	325	21	32	36	5	15	23	33

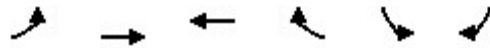
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	348	0	0	342	0	0	743	727	329	737	730	338
Stage 1	-	-	-	-	-	-	365	365	-	352	352	-
Stage 2	-	-	-	-	-	-	378	362	-	385	378	-
Critical Hdwy	4.2	-	-	4.1	-	-	7.12	6.52	6.22	7.12	6.7	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.3	-	-	2.2	-	-	3.518	4.018	3.318	3.518	4.23	3.318
Pot Cap-1 Maneuver	163	-	-	1228	-	-	331	351	712	334	327	704
Stage 1	-	-	-	-	-	-	654	623	-	665	609	-
Stage 2	-	-	-	-	-	-	644	625	-	638	594	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	161	-	-	1228	-	-	293	341	712	298	318	703
Mov Cap-2 Maneuver	-	-	-	-	-	-	293	341	-	298	318	-
Stage 1	-	-	-	-	-	-	642	611	-	652	604	-
Stage 2	-	-	-	-	-	-	587	619	-	585	583	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0.2	19	15.4
HCM LOS			C	C

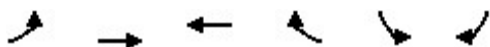
Minor Lane/Major Mvm	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	330	1161	-	-	1228	-	-	418
HCM Lane V/C Ratio	0.222	0.015	-	-	0.006	-	-	0.17
HCM Control Delay (s)	19	8.1	0	-	7.9	0	-	15.4
HCM Lane LOS	C	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.8	0	-	-	0	-	-	0.6

Lanes, Volumes, Timings
46: Westminster Dr./Fairview St. & Army Heritage Dr.

Timing Plan: SAT Peak Hour
05/08/2023



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	279	9	16	91	123	266
Future Volume (vph)	279	9	16	91	123	266
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	14	14	14	14	12	14
Grade (%)		-1%	3%		1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.885			0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1797	1892	1616	0	1636	1577
Flt Permitted	0.597				0.950	
Satd. Flow (perm)	1129	1892	1616	0	1636	1577
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			96			280
Link Speed (mph)		35	35		35	
Link Distance (ft)		1287	797		461	
Travel Time (s)		25.1	15.5		9.0	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	2%	2%	7%	3%	4%	3%
Adj. Flow (vph)	294	9	17	96	129	280
Shared Lane Traffic (%)						
Lane Group Flow (vph)	294	9	113	0	129	280
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		14	14		24	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	0.98	0.98	1.01	1.01	1.08	0.99
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	1	1		1	1
Detector Template					Left	Right
Leading Detector (ft)	40	40	35		20	20
Trailing Detector (ft)	-5	-5	-5		0	0
Detector 1 Position(ft)	-5	-5	-5		0	0
Detector 1 Size(ft)	45	45	40		20	20
Detector 1 Type	CI+Ex	Extend	Extend		CI+Ex	CI+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0
Turn Type	pm+pt	NA	NA		Prot	Perm
Protected Phases	5	2	6		7	
Permitted Phases	2					4
Detector Phase	5	2	6		7	4
Switch Phase						
Minimum Initial (s)	3.0	10.0	10.0		4.0	3.0
Minimum Split (s)	9.5	39.5	39.5		10.0	29.0
Total Split (s)	17.0	60.0	43.0		30.0	30.0

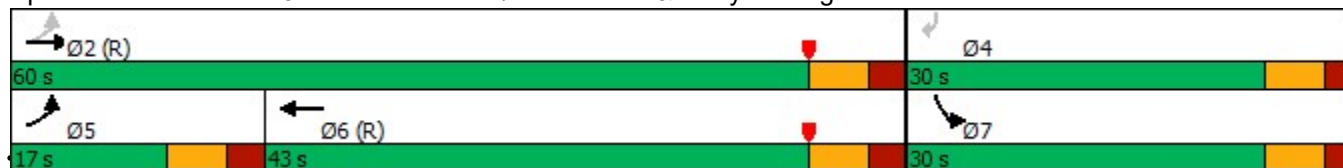


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Total Split (%)	18.9%	66.7%	47.8%		33.3%	33.3%
Maximum Green (s)	10.5	53.5	36.5		24.0	24.0
Yellow Time (s)	4.0	4.0	4.0		4.0	4.0
All-Red Time (s)	2.5	2.5	2.5		2.0	2.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0		-1.0	-1.0
Total Lost Time (s)	5.5	5.5	5.5		5.0	5.0
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	Max	C-Max	C-Max		None	None
Walk Time (s)		10.0	10.0			10.0
Flash Dont Walk (s)		23.0	23.0			13.0
Pedestrian Calls (#/hr)		0	0			0
Act Effct Green (s)	66.1	66.1	37.5		13.4	13.4
Actuated g/C Ratio	0.73	0.73	0.42		0.15	0.15
v/c Ratio	0.29	0.01	0.16		0.53	0.59
Control Delay	5.1	4.2	5.4		38.5	10.2
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	5.1	4.2	5.4		38.5	10.2
LOS	A	A	A		D	B
Approach Delay		5.1	5.4		19.1	
Approach LOS		A	A		B	
Queue Length 50th (ft)	44	1	6		72	36
Queue Length 95th (ft)	89	6	37		128	90
Internal Link Dist (ft)		1207	717		381	
Turn Bay Length (ft)						
Base Capacity (vph)	1000	1389	729		454	640
Starvation Cap Reductn	0	0	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.29	0.01	0.16		0.28	0.44

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 32 (36%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.59
Intersection Signal Delay: 12.1
Intersection LOS: B
Intersection Capacity Utilization 38.9%
ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 46: Westminster Dr./Fairview St. & Army Heritage Dr.



								
Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations								
Traffic Volume (veh/h)	279	9	16	91	123	266		
Future Volume (veh/h)	279	9	16	91	123	266		
Number	5	2	6	16	7	14		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1844	1844	1780	1844	1722	1808		
Adj Flow Rate, veh/h	294	9	17	96	129	280		
Adj No. of Lanes	1	1	1	0	1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	7	3	4	3		
Cap, veh/h	887	1222	110	623	362	339		
Arrive On Green	0.13	0.66	0.47	0.46	0.22	0.22		
Sat Flow, veh/h	1757	1844	233	1315	1640	1537		
Grp Volume(v), veh/h	294	9	0	113	129	280		
Grp Sat Flow(s),veh/h/ln	1757	1844	0	1548	1640	1537		
Q Serve(g_s), s	6.7	0.1	0.0	3.8	6.0	15.6		
Cycle Q Clear(g_c), s	6.7	0.1	0.0	3.8	6.0	15.6		
Prop In Lane	1.00			0.85	1.00	1.00		
Lane Grp Cap(c), veh/h	887	1222	0	733	362	339		
V/C Ratio(X)	0.33	0.01	0.00	0.15	0.36	0.83		
Avail Cap(c_a), veh/h	887	1222	0	733	456	427		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.94	0.94		
Uniform Delay (d), s/veh	7.7	5.1	0.0	13.7	29.7	33.4		
Incr Delay (d2), s/veh	1.0	0.0	0.0	0.4	0.6	9.7		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(95%),veh/ln	6.0	0.1	0.0	3.1	5.0	11.9		
LnGrp Delay(d),s/veh	8.7	5.2	0.0	14.1	30.2	43.1		
LnGrp LOS	A	A		B	C	D		
Approach Vol, veh/h		303	113		409			
Approach Delay, s/veh		8.6	14.1		39.0			
Approach LOS		A	B		D			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		65.1		24.9	17.0	48.1		
Change Period (Y+Rc), s		6.5		6.0	6.5	6.5		
Max Green Setting (Gmax), s		53.5		24.0	10.5	36.5		
Max Q Clear Time (g_c+I1), s		2.6		18.1	9.2	5.8		
Green Ext Time (p_c), s		0.0		0.7	0.1	0.4		
Intersection Summary								
HCM 2010 Ctrl Delay			24.4					
HCM 2010 LOS			C					

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	0	168	1	2	143
Future Volume (vph)	0	0	168	1	2	143
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.999					
Flt Protected						0.999
Satd. Flow (prot)	1765	0	1763	0	0	1763
Flt Permitted						0.999
Satd. Flow (perm)	1765	0	1763	0	0	1763
Link Speed (mph)	35	35		35		
Link Distance (ft)	2177	1342		797		
Travel Time (s)	42.4	26.1		15.5		
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	0	173	1	2	147
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	174	0	0	149
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12	0		0		
Link Offset(ft)	0	0		0		
Crosswalk Width(ft)	16	16		16		
Two way Left Turn Lane						
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15	9	9		15	
Sign Control	Stop	Free		Free		
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilization 13.0%			ICU Level of Service A			
Analysis Period (min) 15						

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W	W	T	T	T	T
Traffic Vol, veh/h	0	0	168	1	2	143
Future Vol, veh/h	0	0	168	1	2	143
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	- None		- None		- None	
Storage Length	0	-	-	-	-	-
Veh in Median Storage	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	173	1	2	147

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	325	174	0
Stage 1	174	-	-
Stage 2	151	-	-
Critical Hdwy	7.1	6.22	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	-
Pot Cap-1 Maneuver	629	869	-
Stage 1	856	-	-
Stage 2	877	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	628	869	-
Mov Cap-2 Maneuver	628	-	-
Stage 1	856	-	-
Stage 2	875	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0.1
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	1403	-
HCM Lane V/C Ratio	-	-	-	0.001	-
HCM Control Delay (s)	-	-	0	7.6	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	-	0	-

Lanes, Volumes, Timings
12: I-81 SB On-Ramp & York Road (SR 0074)

Timing Plan: SAT Peak Hour
05/08/2023

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑		
Traffic Volume (vph)	565	230	441	771	0	0
Future Volume (vph)	565	230	441	771	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	15	15
Grade (%)	2%			-2%	0%	
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Frt	0.957					
Flt Protected				0.982		
Satd. Flow (prot)	3177	0	0	3326	0	0
Flt Permitted				0.982		
Satd. Flow (perm)	3177	0	0	3326	0	0
Link Speed (mph)	35			35	30	
Link Distance (ft)	3632			216	901	
Travel Time (s)	70.8			4.2	20.5	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	589	240	459	803	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	829	0	0	1262	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	13			13	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.09	1.09	1.06	1.06	0.95	0.95
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilization 66.9%						
ICU Level of Service C						
Analysis Period (min) 15						

Lanes, Volumes, Timings
13: I-81 NB Off-Ramp & York Road (SR 0074)

Timing Plan: SAT Peak Hour
05/08/2023

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↘	↗
Traffic Volume (vph)	550	0	0	1046	157	417
Future Volume (vph)	550	0	0	1046	157	417
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	16	13
Grade (%)	1%			-2%	0%	
Storage Length (ft)		0	0		25	0
Storage Lanes		0	0		1	1
Taper Length (ft)			25		25	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	3336	0	0	3386	1900	1550
Flt Permitted					0.950	
Satd. Flow (perm)	3336	0	0	3386	1900	1550
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)						182
Link Speed (mph)	35			35	25	
Link Distance (ft)	251			1010	758	
Travel Time (s)	4.9			19.7	20.7	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	625	0	0	1189	178	474
Shared Lane Traffic (%)						
Lane Group Flow (vph)	625	0	0	1189	178	474
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	16	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.08	1.08	1.06	1.06	0.91	1.03
Turning Speed (mph)		9	15		15	9
Number of Detectors	1			1	1	1
Detector Template						
Leading Detector (ft)	231			256	20	40
Trailing Detector (ft)	225			250	-10	-10
Detector 1 Position(ft)	225			250	-10	-10
Detector 1 Size(ft)	6			6	30	50
Detector 1 Type	Extend			Extend	CI+Ex	CI+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0			0.0	0.0	0.0
Detector 1 Queue (s)	0.0			0.0	0.0	0.0
Detector 1 Delay (s)	0.0			0.0	0.0	0.0
Turn Type	NA			NA	Prot	Perm
Protected Phases	2			6	3	
Permitted Phases						8
Detector Phase	2			6	3	8
Switch Phase						
Minimum Initial (s)	10.0			10.0	4.0	3.0

Lanes, Volumes, Timings
13: I-81 NB Off-Ramp & York Road (SR 0074)

Timing Plan: SAT Peak Hour
05/08/2023



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Minimum Split (s)	24.5			24.5	9.5	22.5
Total Split (s)	33.0			33.0	27.0	27.0
Total Split (%)	55.0%			55.0%	45.0%	45.0%
Maximum Green (s)	26.5			26.5	21.5	21.5
Yellow Time (s)	4.5			4.5	3.0	3.0
All-Red Time (s)	2.0			2.0	2.5	2.5
Lost Time Adjust (s)	-1.0			-1.0	-1.0	-1.0
Total Lost Time (s)	5.5			5.5	4.5	4.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	6.0			6.0	3.0	3.0
Minimum Gap (s)	3.0			3.0	3.0	3.0
Time Before Reduce (s)	25.0			25.0	0.0	0.0
Time To Reduce (s)	13.0			13.0	0.0	0.0
Recall Mode	C-Max			C-Max	None	None
Walk Time (s)	18.0			18.0		17.0
Flash Dont Walk (s)	0.0			0.0		0.0
Pedestrian Calls (#/hr)	0			0		0
Act Effct Green (s)	32.1			32.1	17.5	17.9
Actuated g/C Ratio	0.54			0.54	0.29	0.30
v/c Ratio	0.35			0.66	0.32	0.80
Control Delay	5.4			10.1	16.6	22.3
Queue Delay	0.0			0.0	0.0	0.0
Total Delay	5.4			10.1	16.6	22.3
LOS	A			B	B	C
Approach Delay	5.4			10.1	20.7	
Approach LOS	A			B	C	
Queue Length 50th (ft)	38			216	48	91
Queue Length 95th (ft)	74			m257	80	170
Internal Link Dist (ft)	171			930	678	
Turn Bay Length (ft)					25	
Base Capacity (vph)	1786			1812	712	695
Starvation Cap Reductn	0			0	0	0
Spillback Cap Reductn	0			0	0	0
Storage Cap Reductn	0			0	0	0
Reduced v/c Ratio	0.35			0.66	0.25	0.68

Intersection Summary

Area Type: Other

Cycle Length: 60

Actuated Cycle Length: 60

Offset: 58 (97%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

Natural Cycle: 55

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.80

Intersection Signal Delay: 11.7

Intersection LOS: B

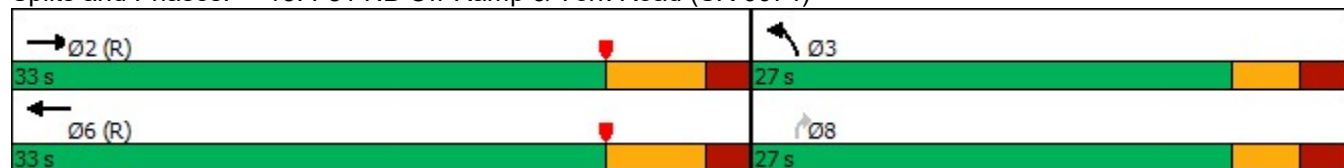
Intersection Capacity Utilization 51.6%

ICU Level of Service A

Analysis Period (min) 15

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

Splits and Phases: 13: I-81 NB Off-Ramp & York Road (SR 0074)



HCM 2010 analysis expects stop-line detection. Detectors cannot be further than 20 feet from the stop bar.

Lanes, Volumes, Timings

Timing Plan: SAT Peak Hour

14: Westminster Dr. & York Road (SR 0074)/York Rd. (SR 0074)

05/08/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	348	344	194	8	374	51	347	127	8	62	115	368
Future Volume (vph)	348	344	194	8	374	51	347	127	8	62	115	368
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	14	12	12	14	12	14	12	12	14	12
Grade (%)		1%			0%			-5%			2%	
Storage Length (ft)	120		0	75		180	130		0	130		0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.991			0.886	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1668	1756	1592	1676	1748	1525	1718	1912	0	1660	1651	0
Flt Permitted	0.195			0.547			0.121			0.668		
Satd. Flow (perm)	342	1756	1592	965	1748	1525	219	1912	0	1167	1651	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			202			145		3			124	
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		1010			2320			530			721	
Travel Time (s)		19.7			45.2			14.5			19.7	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	2%	2%	2%	3%	7%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	363	358	202	8	390	53	361	132	8	65	120	383
Shared Lane Traffic (%)												
Lane Group Flow (vph)	363	358	202	8	390	53	361	140	0	65	503	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.08	1.08	0.99	1.07	1.07	0.99	1.04	0.96	1.04	1.09	1.00	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	0	1	1	0	1	1		1	1	
Detector Template												
Leading Detector (ft)	40	256	0	40	256	0	40	45		45	45	
Trailing Detector (ft)	-5	250	0	-5	250	0	-5	-5		-5	-5	
Detector 1 Position(ft)	-5	250	0	-5	250	0	-5	-5		-5	-5	
Detector 1 Size(ft)	45	6	20	45	6	20	45	50		50	50	
Detector 1 Type	CI+Ex	Extend	CI+Ex	CI+Ex	Extend	CI+Ex	CI+Ex	CI+Ex		CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases	5	2			6		3	8			4	
Permitted Phases	2		2	6		6	8			4		
Detector Phase	5	2	2	6	6	6	3	8		4	4	
Switch Phase												



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	3.0	10.0	10.0	10.0	10.0	10.0	3.0	3.0		3.0	3.0	
Minimum Split (s)	9.0	33.0	33.0	33.0	33.0	33.0	9.5	31.5		31.5	31.5	
Total Split (s)	24.0	62.0	62.0	38.0	38.0	38.0	25.0	58.0		33.0	33.0	
Total Split (%)	20.0%	51.7%	51.7%	31.7%	31.7%	31.7%	20.8%	48.3%		27.5%	27.5%	
Maximum Green (s)	18.0	56.0	56.0	32.0	32.0	32.0	18.5	51.5		26.5	26.5	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	3.5	3.5		3.5	3.5	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	3.0	3.0		3.0	3.0	
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.5	5.5		5.5	5.5	
Lead/Lag	Lead			Lag	Lag	Lag	Lead			Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	6.0	6.0	6.0	6.0	6.0	3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	25.0	25.0	25.0	25.0	25.0	0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	10.0	10.0	10.0	10.0	10.0	0.0	0.0		0.0	0.0	
Recall Mode	Max	C-Max	C-Max	C-Max	C-Max	C-Max	None	None		None	None	
Walk Time (s)		10.0	10.0	10.0	10.0	10.0		10.0		10.0	10.0	
Flash Dont Walk (s)		17.0	17.0	17.0	17.0	17.0		15.0		15.0	15.0	
Pedestrian Calls (#/hr)		0	0	0	0	0		0		0	0	
Act Effct Green (s)	57.0	57.0	57.0	33.0	33.0	33.0	52.5	52.5		27.5	27.5	
Actuated g/C Ratio	0.48	0.48	0.48	0.28	0.28	0.28	0.44	0.44		0.23	0.23	
v/c Ratio	0.98	0.43	0.23	0.03	0.81	0.10	1.06	0.17		0.24	1.06	
Control Delay	66.2	24.5	5.4	24.1	42.8	1.6	100.4	20.7		40.7	93.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	66.2	24.5	5.4	24.1	42.8	1.6	100.4	20.7		40.7	93.1	
LOS	E	C	A	C	D	A	F	C		D	F	
Approach Delay		36.7			37.6			78.2			87.1	
Approach LOS		D			D			E			F	
Queue Length 50th (ft)	227	179	7	4	208	1	~259	63		41	~350	
Queue Length 95th (ft)	#373	286	m38	m12	#423	9	#452	106		83	#566	
Internal Link Dist (ft)		930			2240			450			641	
Turn Bay Length (ft)	120			75		180	130			130		
Base Capacity (vph)	372	834	862	265	480	524	339	838		267	473	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.98	0.43	0.23	0.03	0.81	0.10	1.06	0.17		0.24	1.06	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 38 (32%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow

Natural Cycle: 115

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.06

Intersection Signal Delay: 57.1

Intersection LOS: E

Intersection Capacity Utilization 109.2%

ICU Level of Service H

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

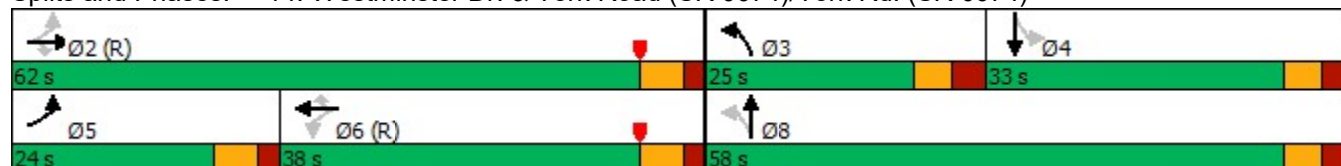
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

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

Splits and Phases: 14: Westminster Dr. & York Road (SR 0074)/York Rd. (SR 0074)



HCM 2010 analysis cannot be performed without detectors for actuated controller type.

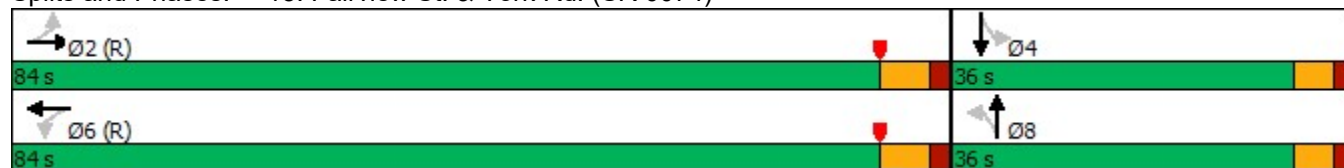
Lanes, Volumes, Timings
15: Fairview St. & York Rd. (SR 0074)

Timing Plan: SAT Peak Hour
05/08/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	39	395	15	8	373	39	20	73	14	52	51	36
Future Volume (vph)	39	395	15	8	373	39	20	73	14	52	51	36
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	11	11	11	11	11	9	9	9	12	12	12
Grade (%)		0%			0%			0%			1%	
Storage Length (ft)	75		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.995			0.988			0.983			0.965	
Flt Protected	0.950				0.999			0.991			0.982	
Satd. Flow (prot)	1605	1697	0	0	1684	0	0	1547	0	0	1664	0
Flt Permitted	0.520				0.992			0.901			0.750	
Satd. Flow (perm)	878	1697	0	0	1672	0	0	1407	0	0	1271	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			9			6			14	
Link Speed (mph)		35			35			25			35	
Link Distance (ft)		2320			2128			671			1479	
Travel Time (s)		45.2			41.5			18.3			28.8	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	3%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	40	407	15	8	385	40	21	75	14	54	53	37
Shared Lane Traffic (%)												
Lane Group Flow (vph)	40	422	0	0	433	0	0	110	0	0	144	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.12	1.12	1.12	1.12	1.12	1.12	1.22	1.22	1.22	1.08	1.08	1.08
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	0	1		1	1		1	1		1	1	
Detector Template				Left			Left			Left		
Leading Detector (ft)	0	256		20	256		20	40		20	40	
Trailing Detector (ft)	0	250		0	250		0	-5		0	-5	
Detector 1 Position(ft)	0	250		0	250		0	-5		0	-5	
Detector 1 Size(ft)	20	6		20	6		20	45		20	45	
Detector 1 Type	CI+Ex	Extend		CI+Ex	Extend		CI+Ex	CI+Ex		CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	
Switch Phase												

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	10.0	10.0		10.0	10.0		3.0	3.0		3.0	3.0	
Minimum Split (s)	32.5	32.5		32.5	32.5		31.5	31.5		31.5	31.5	
Total Split (s)	84.0	84.0		84.0	84.0		36.0	36.0		36.0	36.0	
Total Split (%)	70.0%	70.0%		70.0%	70.0%		30.0%	30.0%		30.0%	30.0%	
Maximum Green (s)	77.5	77.5		77.5	77.5		30.5	30.5		30.5	30.5	
Yellow Time (s)	4.5	4.5		4.5	4.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0			-1.0			-1.0			-1.0	
Total Lost Time (s)	5.5	5.5			5.5			4.5			4.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	6.0	6.0		6.0	6.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	35.0	35.0		35.0	35.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	17.0	17.0		17.0	17.0		0.0	0.0		0.0	0.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Flash Dont Walk (s)	15.0	15.0		15.0	15.0		15.0	15.0		15.0	15.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	92.8	92.8			92.8			17.2			17.2	
Actuated g/C Ratio	0.77	0.77			0.77			0.14			0.14	
v/c Ratio	0.06	0.32			0.33			0.53			0.75	
Control Delay	2.8	3.2			1.7			53.4			66.3	
Queue Delay	0.0	0.0			0.0			0.0			0.0	
Total Delay	2.8	3.2			1.7			53.4			66.3	
LOS	A	A			A			D			E	
Approach Delay		3.2			1.7			53.4			66.3	
Approach LOS		A			A			D			E	
Queue Length 50th (ft)	5	55			13			76			98	
Queue Length 95th (ft)	11	71			32			128			161	
Internal Link Dist (ft)		2240			2048			591			1399	
Turn Bay Length (ft)	75											
Base Capacity (vph)	679	1313			1295			373			343	
Starvation Cap Reductn	0	0			0			0			0	
Spillback Cap Reductn	0	0			0			0			0	
Storage Cap Reductn	0	0			0			0			0	
Reduced v/c Ratio	0.06	0.32			0.33			0.29			0.42	
Intersection Summary												
Area Type:	Other											
Cycle Length: 120												
Actuated Cycle Length: 120												
Offset: 56 (47%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow												
Natural Cycle: 65												
Control Type: Actuated-Coordinated												
Maximum v/c Ratio: 0.75												
Intersection Signal Delay: 15.4												

Splits and Phases: 15: Fairview St. & York Rd. (SR 0074)



HCM 2010 analysis cannot be performed without detectors for actuated controller type.

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↰			↱	↰	↱
Traffic Volume (vph)	421	55	22	425	25	28
Future Volume (vph)	421	55	22	425	25	28
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	11	11	11	12	12
Grade (%)	1%			1%	2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.984				0.929	
Flt Protected				0.998	0.977	
Satd. Flow (prot)	1670	0	0	1694	1586	0
Flt Permitted				0.998	0.977	
Satd. Flow (perm)	1670	0	0	1694	1586	0
Link Speed (mph)	50			50	35	
Link Distance (ft)	1056			3636	2008	
Travel Time (s)	14.4			49.6	39.1	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	473	62	25	478	28	31
Shared Lane Traffic (%)						
Lane Group Flow (vph)	535	0	0	503	59	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.13	1.13	1.13	1.13	1.09	1.09
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilization 52.5%						
ICU Level of Service A						
Analysis Period (min) 15						

Intersection

Int Delay, s/veh 1.4

Movement EBT EBR WBL WBT NBL NBR

Lane Configurations 

Traffic Vol, veh/h 421 55 22 425 25 28

Future Vol, veh/h 421 55 22 425 25 28

Conflicting Peds, #/hr 0 0 0 0 0 0

Sign Control Free Free Free Free Stop Stop

RT Channelized - None - None - None

Storage Length - - - - 0 -

Veh in Median Storage0# - - 0 0 -

Grade, % 1 - - 1 2 -

Peak Hour Factor 89 89 89 89 89 89

Heavy Vehicles, % 2 2 2 2 2 2

Mvmt Flow 473 62 25 478 28 31

Major/Minor Major1 Major2 Minor1

Conflicting Flow All 0 0 535 0 1032 504

Stage 1 - - - - 504 -

Stage 2 - - - - 528 -

Critical Hdwy - - 4.3 - 7.5 6.6

Critical Hdwy Stg 1 - - - - 5.82 -

Critical Hdwy Stg 2 - - - - 5.82 -

Follow-up Hdwy - - 2.4 -3.518 3.5

Pot Cap-1 Maneuver - - 941 - 189 516

Stage 1 - - - - 574 -

Stage 2 - - - - 558 -

Platoon blocked, % - - -

Mov Cap-1 Maneuver - - 941 - 182 516

Mov Cap-2 Maneuver - - - - 182 -

Stage 1 - - - - 574 -

Stage 2 - - - - 538 -

Approach EB WB NB

HCM Control Delay, s 0 0.4 21.5

HCM LOS C

Minor Lane/Major MvmNBLn1 EBT EBR WBL WBT

Capacity (veh/h) 277 - - 941 -

HCM Lane V/C Ratio 0.215 - -0.026 -

HCM Control Delay (s) 21.5 - - 8.9 0

HCM Lane LOS C - - A A

HCM 95th %tile Q(veh) 0.8 - - 0.1 -

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↰			↱	↗	
Traffic Volume (vph)	353	53	44	379	43	27
Future Volume (vph)	353	53	44	379	43	27
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	11	11	11	10	10
Grade (%)	0%			0%	-2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.982				0.948	
Flt Protected				0.995	0.970	
Satd. Flow (prot)	1675	0	0	1697	1521	0
Flt Permitted				0.995	0.970	
Satd. Flow (perm)	1675	0	0	1697	1521	0
Link Speed (mph)	55			55	35	
Link Distance (ft)	3636			269	2688	
Travel Time (s)	45.1			3.3	52.4	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	2%	2%	2%	2%	3%	2%
Adj. Flow (vph)	397	60	49	426	48	30
Shared Lane Traffic (%)						
Lane Group Flow (vph)	457	0	0	475	78	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	10	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.12	1.12	1.12	1.12	1.16	1.16
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	60.9%			ICU Level of Service B		
Analysis Period (min)	15					

Intersection

Int Delay, s/veh 1.9

Movement EBT EBR WBL WBT NBL NBR

Lane Configurations   

Traffic Vol, veh/h 353 53 44 379 43 27

Future Vol, veh/h 353 53 44 379 43 27

Conflicting Peds, #/hr 0 0 0 0 0 0

Sign Control Free Free Free Free Stop Stop

RT Channelized - None - None - None

Storage Length - - - - 0 -

Veh in Median Storage0# - - 0 0 -

Grade, % 0 - - 0 -2 -

Peak Hour Factor 89 89 89 89 89 89

Heavy Vehicles, % 2 2 2 2 3 2

Mvmt Flow 397 60 49 426 48 30

Major/Minor Major1 Major2 Minor1

Conflicting Flow All 0 0 457 0 951 427

Stage 1 - - - - 427 -

Stage 2 - - - - 524 -

Critical Hdwy - - 4.12 - 6.7 6.02

Critical Hdwy Stg 1 - - - - 5.03 -

Critical Hdwy Stg 2 - - - - 5.03 -

Follow-up Hdwy - -2.218 -3.527 3.318

Pot Cap-1 Maneuver - - 1104 - 267 643

Stage 1 - - - - 688 -

Stage 2 - - - - 628 -

Platoon blocked, % - - -

Mov Cap-1 Maneuver - - 1104 - 252 643

Mov Cap-2 Maneuver - - - - 252 -

Stage 1 - - - - 688 -

Stage 2 - - - - 592 -

Approach EB WB NB

HCM Control Delay, s 0 0.9 19.3

HCM LOS C

Minor Lane/Major MvmNBLn1 EBT EBR WBL WBT

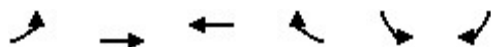
Capacity (veh/h) 329 - - 1104 -

HCM Lane V/C Ratio 0.239 - -0.045 -

HCM Control Delay (s) 19.3 - - 8.4 0

HCM Lane LOS C - - A A

HCM 95th %tile Q(veh) 0.9 - - 0.1 -



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↰	↰		↰	
Traffic Volume (vph)	86	353	379	0	0	122
Future Volume (vph)	86	353	379	0	0	122
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	11	11	11	10	10
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.865	
Flt Protected		0.990				
Satd. Flow (prot)	0	1682	1706	0	1425	0
Flt Permitted		0.990				
Satd. Flow (perm)	0	1682	1706	0	1425	0
Link Speed (mph)		55	55		35	
Link Distance (ft)		269	2661		1687	
Travel Time (s)		3.3	33.0		32.9	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	4%	2%	2%	2%	2%	2%
Adj. Flow (vph)	97	397	426	0	0	137
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	494	426	0	137	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		10	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.12	1.12	1.12	1.12	1.17	1.17
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 63.7% ICU Level of Service B
Analysis Period (min) 15

Intersection						
Int Delay, s/veh	2.4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	86	353	379	0	0	122
Future Vol, veh/h	86	353	379	0	0	122
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	- None		- None		- None	
Storage Length	-	-	-	-	0	-
Veh in Median Storage,#	0	0	-	0	-	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	4	2	2	2	2	2
Mvmt Flow	97	397	426	0	0	137
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	426	0	-	0	1017	426
Stage 1	-	-	-	-	426	-
Stage 2	-	-	-	-	591	-
Critical Hdwy	4.14	-	-	-	7.1	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.236	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	123	-	-	-	217	628
Stage 1	-	-	-	-	659	-
Stage 2	-	-	-	-	553	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	123	-	-	-	193	628
Mov Cap-2 Maneuver	-	-	-	-	193	-
Stage 1	-	-	-	-	586	-
Stage 2	-	-	-	-	553	-
Approach	EB	WB		SB		
HCM Control Delay, s	1.7	0		12.3		
HCM LOS	B					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1123	-	-	-	-	628
HCM Lane V/C Ratio	0.086	-	-	-	-	0.218
HCM Control Delay (s)	8.5	0	-	-	-	12.3
HCM Lane LOS	A	A	-	-	-	B
HCM 95th %tile Q(veh)	0.3	-	-	-	-	0.8

Lanes, Volumes, Timings
19: Forge Rd. (SR 2001) & Westminster Dr.

Timing Plan: SAT Peak Hour
05/08/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	35	6	313	39	8	1	13	348	31	14	1
Future Volume (vph)	1	35	6	313	39	8	1	13	348	31	14	1
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.979			0.997				0.850		0.997	
Flt Protected		0.999			0.958			0.997			0.967	
Satd. Flow (prot)	0	1726	0	0	1686	0	0	1759	1500	0	1701	0
Flt Permitted		0.999			0.958			0.997			0.967	
Satd. Flow (perm)	0	1726	0	0	1686	0	0	1759	1500	0	1701	0
Link Speed (mph)		25			25			35			35	
Link Distance (ft)		448			530			1566			758	
Travel Time (s)		12.2			14.5			30.5			14.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1	38	7	340	42	9	1	14	378	34	15	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	46	0	0	391	0	0	15	378	0	50	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	43.6%				ICU Level of Service A							
Analysis Period (min)	15											

Intersection

Intersection Delay, s/veh 14
Intersection LOS B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕	↕		↕	
Traffic Vol, veh/h	1	35	6	313	39	8	1	13	348	31	14	1
Future Vol, veh/h	1	35	6	313	39	8	1	13	348	31	14	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	38	7	340	42	9	1	14	378	34	15	1
Number of Lanes	0	1	0	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	1
HCM Control Delay	9.2	15.6	13.6	9.6
HCM LOS	A	C	B	A

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1
Vol Left, %	7%	0%	2%	87%	67%
Vol Thru, %	93%	0%	83%	11%	30%
Vol Right, %	0%	100%	14%	2%	2%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	14	348	42	360	46
LT Vol	1	0	1	313	31
Through Vol	13	0	35	39	14
RT Vol	0	348	6	8	1
Lane Flow Rate	15	378	46	391	50
Geometry Grp	7	7	2	2	5
Degree of Util (X)	0.025	0.543	0.072	0.582	0.084
Departure Headway (Hd)	5.916	5.172	5.689	5.353	6.017
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	609	704	628	673	595
Service Time	3.616	2.872	3.738	3.386	4.063
HCM Lane V/C Ratio	0.025	0.537	0.073	0.581	0.084
HCM Control Delay	8.8	13.8	9.2	15.6	9.6
HCM Lane LOS	A	B	A	C	A
HCM 95th-tile Q	0.1	3.3	0.2	3.8	0.3

Lanes, Volumes, Timings
20: Forge Rd. (SR 2001) & Fairview St.

Timing Plan: SAT Peak Hour
05/08/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	14	13	50	24	13	20	350	43	12	354	6
Future Volume (vph)	11	14	13	50	24	13	20	350	43	12	354	6
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	10	10	10	10	10	11	11	11	11	11	11
Grade (%)		-2%			-1%			2%			1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.954			0.979			0.986			0.998	
Flt Protected		0.986			0.972			0.998			0.998	
Satd. Flow (prot)	0	1497	0	0	1486	0	0	1659	0	0	1671	0
Flt Permitted		0.986			0.972			0.998			0.998	
Satd. Flow (perm)	0	1497	0	0	1486	0	0	1659	0	0	1671	0
Link Speed (mph)		35			25			35			35	
Link Distance (ft)		1976			1153			1844			1566	
Travel Time (s)		38.5			31.4			35.9			30.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	2%	8%	9%	8%	8%	9%	6%	2%	2%	10%	3%	2%
Adj. Flow (vph)	12	15	14	53	25	14	21	368	45	13	373	6
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	41	0	0	92	0	0	434	0	0	392	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.16	1.16	1.16	1.16	1.16	1.16	1.13	1.13	1.13	1.13	1.13	1.13
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	47.5%				ICU Level of Service A							
Analysis Period (min)	15											

Intersection												
Int Delay, s/veh	3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	11	14	13	50	24	13	20	350	43	12	354	6
Future Vol, veh/h	11	14	13	50	24	13	20	350	43	12	354	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-2	-	-	-1	-	-	2	-	-	1	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	8	9	8	8	9	6	2	2	10	3	2
Mvmt Flow	12	15	14	53	25	14	21	368	45	13	373	6

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	854	857	376	850	838	391	379	0	0	413	0	0
Stage 1	402	402	-	433	433	-	-	-	-	-	-	-
Stage 2	452	455	-	417	405	-	-	-	-	-	-	-
Critical Hdwy	6.72	6.1	6.2	6.9	6.3	6.1	4.3	-	-	4.1	-	-
Critical Hdwy Stg 1	5.72	5.18	-	5.98	5.38	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.72	5.18	-	5.98	5.38	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4	3.5	3.5	4	3.3	2.4	-	-	2.2	-	-
Pot Cap-1 Maneuver	806	327	643	296	319	669	1079	-	-	1157	-	-
Stage 1	653	626	-	614	594	-	-	-	-	-	-	-
Stage 2	617	596	-	626	610	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	273	314	643	271	307	669	1079	-	-	1157	-	-
Mov Cap-2 Maneuver	273	314	-	271	307	-	-	-	-	-	-	-
Stage 1	637	617	-	599	579	-	-	-	-	-	-	-
Stage 2	564	581	-	590	601	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	16.2	21.6	0.4	0.3
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1079	-	-	362	308	1157	-	-
HCM Lane V/C Ratio	0.02	-	-	0.11	0.297	0.011	-	-
HCM Control Delay (s)	8.4	0	-	16.2	21.6	8.1	0	-
HCM Lane LOS	A	A	-	C	C	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.4	1.2	0	-	-

Lanes, Volumes, Timings

Timing Plan: SAT Peak Hour

21: Rose Access/Pharmacy Tract & W. Trindle Rd. (SR 0641)

05/08/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	385	99	80	408	0	79	0	59	0	0	0
Future Volume (vph)	0	385	99	80	408	0	79	0	59	0	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (ft)	150		350	150		0	190		0	75		0
Storage Lanes	1		1	2		0	2		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	0.97	1.00	1.00	1.00	1.00	1.00
Frt			0.850						0.850			
Flt Protected				0.950			0.950					
Satd. Flow (prot)	1765	1765	1500	3252	1765	0	3252	1500	0	1765	1765	0
Flt Permitted				0.950			0.950					
Satd. Flow (perm)	1765	1765	1500	3252	1765	0	3252	1500	0	1765	1765	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			182						504			
Link Speed (mph)		45			45			25			25	
Link Distance (ft)		452			1985			450			562	
Travel Time (s)		6.8			30.1			12.3			15.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	418	108	87	443	0	86	0	64	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	418	108	87	443	0	86	64	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Size(ft)	20	6	20	20	6		20	6		20	6	
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA		Prot		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2									



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2	2	1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	13.0	22.0	22.0	13.0	22.0		13.0	22.0		13.0	22.0	
Total Split (s)	13.0	38.0	38.0	14.0	39.0		16.0	25.0		13.0	22.0	
Total Split (%)	14.4%	42.2%	42.2%	15.6%	43.3%		17.8%	27.8%		14.4%	24.4%	
Maximum Green (s)	7.0	32.0	32.0	8.0	33.0		10.0	19.0		7.0	16.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0		-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Max	C-Max	C-Max	Max	C-Max		None	None		None	None	
Walk Time (s)		5.0	5.0		5.0			5.0			5.0	
Flash Dont Walk (s)		11.0	11.0		11.0			11.0			11.0	
Pedestrian Calls (#/hr)		0	0		0			0			0	
Act Effct Green (s)		33.0	33.0	35.6	34.0		9.0	9.0				
Actuated g/C Ratio		0.37	0.37	0.40	0.38		0.10	0.10				
v/c Ratio		0.65	0.16	0.07	0.67		0.26	0.11				
Control Delay		22.9	0.8	19.1	29.2		39.2	0.4				
Queue Delay		0.0	0.0	0.0	0.0		0.0	0.0				
Total Delay		22.9	0.8	19.1	29.2		39.2	0.4				
LOS		C	A	B	C		D	A				
Approach Delay		18.3			27.5			22.6				
Approach LOS		B			C			C				
Queue Length 50th (ft)		97	0	16	205		23	0				
Queue Length 95th (ft)		233	m1	32	313		45	0				
Internal Link Dist (ft)		372			1905			370			482	
Turn Bay Length (ft)			350	150			190					
Base Capacity (vph)		647	665	1284	666		397	725				
Starvation Cap Reductn		0	0	0	0		0	0				
Spillback Cap Reductn		0	0	0	0		0	0				
Storage Cap Reductn		0	0	0	0		0	0				
Reduced v/c Ratio		0.65	0.16	0.07	0.67		0.22	0.09				

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Natural Cycle: 70

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.67

Intersection Signal Delay: 22.9

Intersection LOS: C

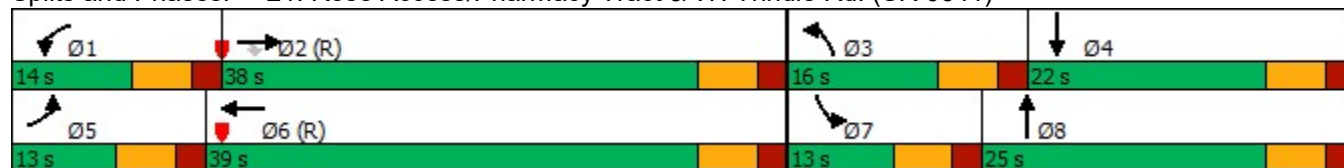
Intersection Capacity Utilization 46.8%

ICU Level of Service A

Analysis Period (min) 15

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

Splits and Phases: 21: Rose Access/Pharmacy Tract & W. Trindle Rd. (SR 0641)



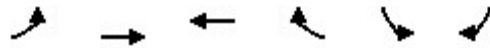
HCM 2010 Signalized Intersection Summary
 21: Rose Access/Pharmacy Tract & W. Trindle Rd. (SR 0641)

Timing Plan: SAT Peak Hour
 05/08/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	385	99	80	408	0	79	0	59	0	0	0
Future Volume (veh/h)	0	385	99	80	408	0	79	0	59	0	0	0
Number	5	2	12	1	6	16	3	8	18	7	4	14
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
Adj Sat Flow, veh/h/ln	1765	1765	1765	1765	1765	1800	1765	1765	1800	1765	1765	1800
Adj Flow Rate, veh/h	0	418	0	87	443	0	86	0	64	0	0	0
Adj No. of Lanes	1	1	1	2	1	0	2	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	2	1140	969	326	1415	0	260	0	131	2	2	0
Arrive On Green	0.00	0.65	0.00	0.10	0.80	0.00	0.08	0.00	0.08	0.00	0.00	0.00
Sat Flow, veh/h	1681	1765	1500	3261	1765	0	3261	0	1500	1681	1765	0
Grp Volume(v), veh/h	0	418	0	87	443	0	86	0	64	0	0	0
Grp Sat Flow(s),veh/h/ln	1681	1765	1500	1630	1765	0	1630	0	1500	1681	1765	0
Q Serve(g_s), s	0.0	9.9	0.0	2.2	6.0	0.0	2.2	0.0	3.7	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	9.9	0.0	2.2	6.0	0.0	2.2	0.0	3.7	0.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	2	1140	969	326	1415	0	260	0	131	2	2	0
V/C Ratio(X)	0.00	0.37	0.00	0.27	0.31	0.00	0.33	0.00	0.49	0.00	0.00	0.00
Avail Cap(c_a), veh/h	149	1140	969	326	1415	0	399	0	333	149	333	0
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)	0.00	1.00	0.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	7.4	0.0	37.4	2.4	0.0	39.1	0.0	39.7	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.9	0.0	2.0	0.6	0.0	0.7	0.0	2.8	0.0	0.0	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	0.0	8.7	0.0	2.0	5.5	0.0	1.9	0.0	2.9	0.0	0.0	0.0
LnGrp Delay(d),s/veh	0.0	8.3	0.0	39.4	2.9	0.0	39.9	0.0	42.5	0.0	0.0	0.0
LnGrp LOS		A		D	A		D		D			
Approach Vol, veh/h		418			530			150			0	
Approach Delay, s/veh		8.3			8.9			41.0			0.0	
Approach LOS		A			A			D				
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	14.0	63.2	12.2	0.7	0.0	77.2	0.0	12.8				
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0				
Max Green Setting (Gmax),s	80	32.0	10.0	16.0	7.0	33.0	7.0	19.0				
Max Q Clear Time (g_c+l1),s	4.7	12.4	4.7	0.0	0.0	8.5	0.0	5.7				
Green Ext Time (p_c), s	0.1	2.2	0.1	0.0	0.0	2.5	0.0	0.2				
Intersection Summary												
HCM 2010 Ctrl Delay			13.1									
HCM 2010 LOS			B									

Lanes, Volumes, Timings
22: York Rd. (SR 0074) & Heritage Village Access

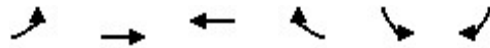
Timing Plan: SAT Peak Hour
05/08/2023



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	←←	→	←	→	←	→
Traffic Volume (vph)	54	446	385	62	73	74
Future Volume (vph)	54	446	385	62	73	74
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (ft)	175			275	0	500
Storage Lanes	2			1	1	1
Taper Length (ft)	25				25	
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00
Frt				0.850		0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	3252	1765	1765	1500	1676	1500
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	3252	1765	1765	1500	1676	1500
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				67		80
Link Speed (mph)		35	35		25	
Link Distance (ft)		2128	1056		605	
Travel Time (s)		41.5	20.6		16.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	59	485	418	67	79	80
Shared Lane Traffic (%)						
Lane Group Flow (vph)	59	485	418	67	79	80
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		24	24		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2	1	1	1
Detector Template	Left	Thru	Thru	Right	Left	Right
Leading Detector (ft)	20	100	100	20	20	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	6	20	20	20
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94	94			
Detector 2 Size(ft)		6	6			
Detector 2 Type		CI+Ex	CI+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type	Prot	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6

Lanes, Volumes, Timings
22: York Rd. (SR 0074) & Heritage Village Access

Timing Plan: SAT Peak Hour
05/08/2023

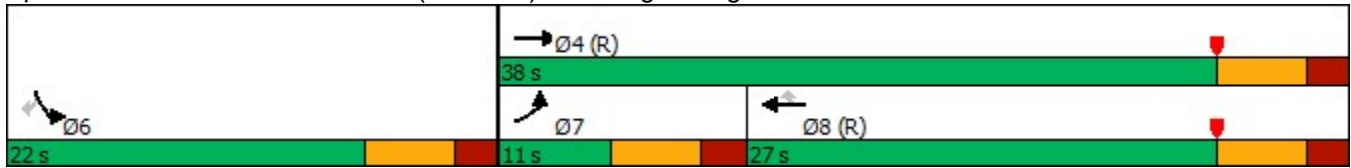


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Detector Phase	7	4	8	8	6	6
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	10.0	22.0	22.0	22.0	22.0	22.0
Total Split (s)	11.0	38.0	27.0	27.0	22.0	22.0
Total Split (%)	18.3%	63.3%	45.0%	45.0%	36.7%	36.7%
Maximum Green (s)	5.0	32.0	21.0	21.0	16.0	16.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	Max	C-Max	C-Max	C-Max	None	None
Walk Time (s)		5.0	5.0	5.0	5.0	5.0
Flash Dont Walk (s)		11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)		0	0	0	0	0
Act Effct Green (s)	16.1	44.1	22.0	22.0	9.2	9.2
Actuated g/C Ratio	0.27	0.74	0.37	0.37	0.15	0.15
v/c Ratio	0.07	0.37	0.65	0.11	0.31	0.27
Control Delay	18.6	7.0	21.4	4.5	24.9	8.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.6	7.0	21.4	4.5	24.9	8.5
LOS	B	A	C	A	C	A
Approach Delay		8.3	19.1		16.6	
Approach LOS		A	B		B	
Queue Length 50th (ft)	13	125	122	0	26	0
Queue Length 95th (ft)	27	219	208	21	56	29
Internal Link Dist (ft)		2048	976		525	
Turn Bay Length (ft)	175			275		500
Base Capacity (vph)	870	1296	647	592	474	482
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.07	0.37	0.65	0.11	0.17	0.17

Intersection Summary

Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 16 (27%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow
Natural Cycle: 55
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.65
Intersection Signal Delay: 13.8
Intersection LOS: B
Intersection Capacity Utilization 37.4%
ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 22: York Rd. (SR 0074) & Heritage Village Access



								
Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations	 							
Traffic Volume (veh/h)	54	446	385	62	73	74		
Future Volume (veh/h)	54	446	385	62	73	74		
Number	7	4	8	18	1	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1765	1765	1765	1765	1765	1765		
Adj Flow Rate, veh/h	59	485	418	0	79	0		
Adj No. of Lanes	2	1	1	1	1	1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	326	1326	1003	852	137	123		
Arrive On Green	0.10	0.75	0.57	0.00	0.08	0.00		
Sat Flow, veh/h	3261	1765	1765	1500	1681	1500		
Grp Volume(v), veh/h	59	485	418	0	79	0		
Grp Sat Flow(s),veh/h/ln	1630	1765	1765	1500	1681	1500		
Q Serve(g_s), s	1.0	5.6	8.0	0.0	2.7	0.0		
Cycle Q Clear(g_c), s	1.0	5.6	8.0	0.0	2.7	0.0		
Prop In Lane	1.00			1.00	1.00	1.00		
Lane Grp Cap(c), veh/h	326	1326	1003	852	137	123		
V/C Ratio(X)	0.18	0.37	0.42	0.00	0.58	0.00		
Avail Cap(c_a), veh/h	326	1326	1003	852	476	425		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	0.96	0.96	1.00	0.00	1.00	0.00		
Uniform Delay (d), s/veh	24.7	2.6	7.3	0.0	26.5	0.0		
Incr Delay (d2), s/veh	1.2	0.7	1.3	0.0	3.8	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(95%),veh/ln	0.9	5.3	7.5	0.0	2.5	0.0		
LnGrp Delay(d),s/veh	25.9	3.3	8.6	0.0	30.3	0.0		
LnGrp LOS	C	A	A		C			
Approach Vol, veh/h		544	418		79			
Approach Delay, s/veh		5.8	8.6		30.3			
Approach LOS		A	A		C			
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				50.1		9.9	11.0	39.1
Change Period (Y+Rc), s				6.0		6.0	6.0	6.0
Max Green Setting (Gmax), s				32.0		16.0	5.0	21.0
Max Q Clear Time (g_c+I1), s				8.1		5.2	3.5	10.5
Green Ext Time (p_c), s				3.0		0.1	0.0	1.8
Intersection Summary								
HCM 2010 Ctrl Delay			8.8					
HCM 2010 LOS			A					

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑	↓	↑	↓	↓
Traffic Volume (vph)	616	235	6	568	311	9
Future Volume (vph)	616	235	6	568	311	9
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	16	10	13	14	14
Storage Length (ft)		0	75		0	0
Storage Lanes		1	1		1	0
Taper Length (ft)			25		25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850			0.996	
Flt Protected			0.950		0.954	
Satd. Flow (prot)	1673	1683	1330	1771	1742	0
Flt Permitted			0.296		0.954	
Satd. Flow (perm)	1673	1683	414	1771	1742	0
Right Turn on Red		No				Yes
Satd. Flow (RTOR)					2	
Link Speed (mph)	35			35	35	
Link Distance (ft)	1498			1127	625	
Travel Time (s)	29.2			22.0	12.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	4%	3%	20%	5%	4%	29%
Adj. Flow (vph)	670	255	7	617	338	10
Shared Lane Traffic (%)						
Lane Group Flow (vph)	670	255	7	617	348	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	14	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.12	0.91	1.17	1.03	0.99	0.99
Turning Speed (mph)		9	15		15	9
Number of Detectors	1	0	1	1	1	
Detector Template						
Leading Detector (ft)	37	0	37	37	37	
Trailing Detector (ft)	-3	0	-3	-3	-3	
Detector 1 Position(ft)	-3	0	-3	-3	-3	
Detector 1 Size(ft)	40	20	40	40	40	
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Turn Type	NA	Perm	Perm	NA	Prot	
Protected Phases	2			6	8	
Permitted Phases		2	6			
Detector Phase	2	2	6	6	8	
Switch Phase						
Minimum Initial (s)	30.0	30.0	30.0	30.0	10.0	



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Minimum Split (s)	35.2	35.2	35.2	35.2	14.9	
Total Split (s)	39.0	39.0	39.0	39.0	21.0	
Total Split (%)	65.0%	65.0%	65.0%	65.0%	35.0%	
Maximum Green (s)	33.8	33.8	33.8	33.8	16.1	
Yellow Time (s)	3.6	3.6	3.6	3.6	3.7	
All-Red Time (s)	1.6	1.6	1.6	1.6	1.2	
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-0.5	
Total Lost Time (s)	4.2	4.2	4.2	4.2	4.4	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	
Act Effct Green (s)	36.0	36.0	36.0	36.0	15.4	
Actuated g/C Ratio	0.60	0.60	0.60	0.60	0.26	
v/c Ratio	0.67	0.25	0.03	0.58	0.78	
Control Delay	12.6	6.8	4.7	7.3	16.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	12.6	6.8	4.7	7.3	16.2	
LOS	B	A	A	A	B	
Approach Delay	11.0			7.2	16.2	
Approach LOS	B			A	B	
Queue Length 50th (ft)	150	40	1	109	35	
Queue Length 95th (ft)	260	73	m4	233	m77	
Internal Link Dist (ft)	1418			1047	545	
Turn Bay Length (ft)			75			
Base Capacity (vph)	1003	1009	248	1062	483	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.67	0.25	0.03	0.58	0.72	

Intersection Summary

Area Type: Other

Cycle Length: 60

Actuated Cycle Length: 60

Offset: 2 (3%), Referenced to phase 2:EBT and 6:WBTL, Start of Green

Natural Cycle: 55

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.78

Intersection Signal Delay: 10.7

Intersection LOS: B

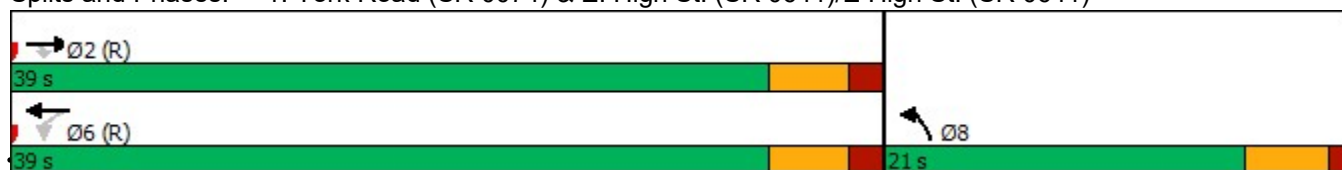
Intersection Capacity Utilization 60.2%

ICU Level of Service B

Analysis Period (min) 15

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

Splits and Phases: 1: York Road (SR 0074) & E. High St. (SR 0641)/E High St. (SR 0641)



HCM 2010 Signalized Intersection Summary

Timing Plan: AM Peak Hour

1: York Road (SR 0074) & E. High St. (SR 0641)/E High St. (SR 0641)

05/08/2023

								
Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations								
Traffic Volume (veh/h)	616	235	6	568	311	9		
Future Volume (veh/h)	616	235	6	568	311	9		
Number	2	12	1	6	3	18		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1731	1817	1500	1783	1788	1872		
Adj Flow Rate, veh/h	670	0	7	617	338	10		
Adj No. of Lanes	1	1	1	1	0	0		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	4	3	20	5	4	29		
Cap, veh/h	1053	940	354	1085	408	12		
Arrive On Green	0.61	0.00	1.00	1.00	0.25	0.24		
Sat Flow, veh/h	1731	1545	650	1783	1643	49		
Grp Volume(v), veh/h	670	0	7	617	349	0		
Grp Sat Flow(s),veh/h/ln	1731	1545	650	1783	1697	0		
Q Serve(g_s), s	14.8	0.0	0.3	0.0	11.7	0.0		
Cycle Q Clear(g_c), s	14.8	0.0	15.1	0.0	11.7	0.0		
Prop In Lane		1.00	1.00		0.97	0.03		
Lane Grp Cap(c), veh/h	1053	940	354	1085	421	0		
V/C Ratio(X)	0.64	0.00	0.02	0.57	0.83	0.00		
Avail Cap(c_a), veh/h	1053	940	354	1085	469	0		
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	1.00		
Upstream Filter(I)	1.00	0.00	0.87	0.87	1.00	0.00		
Uniform Delay (d), s/veh	7.5	0.0	3.1	0.0	21.3	0.0		
Incr Delay (d2), s/veh	2.9	0.0	0.1	1.9	10.8	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(95%),veh/ln	2.3	0.0	0.1	1.0	10.9	0.0		
LnGrp Delay(d),s/veh	10.4	0.0	3.2	1.9	32.1	0.0		
LnGrp LOS	B		A	A	C			
Approach Vol, veh/h	670			624	349			
Approach Delay, s/veh	10.4			1.9	32.1			
Approach LOS	B			A	C			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		40.7				40.7		19.3
Change Period (Y+Rc), s		* 5.2				* 5.2		4.9
Max Green Setting (Gmax), s		* 34				* 34		16.1
Max Q Clear Time (g_c+l1), s		17.3				17.6		14.2
Green Ext Time (p_c), s		2.5				2.3		0.3
Intersection Summary								
HCM 2010 Ctrl Delay			11.8					
HCM 2010 LOS			B					
Notes								

User approved volume balancing among the lanes for turning movement.

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	28	325	9	66	498	11	6	28	73	37	24	18
Future Volume (vph)	28	325	9	66	498	11	6	28	73	37	24	18
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	13	13	13	13	12	13	11	14	14	10	12	12
Grade (%)		1%			2%			-2%			2%	
Storage Length (ft)	210		0	210		0	110		0	65		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.996			0.997			0.892			0.936	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1724	1807	0	1715	1678	0	1637	1696	0	1477	1602	0
Flt Permitted	0.228			0.431			0.726			0.683		
Satd. Flow (perm)	414	1807	0	778	1678	0	1251	1696	0	1062	1602	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			2			83			20	
Link Speed (mph)		35			35			35			25	
Link Distance (ft)		549			3632			825			544	
Travel Time (s)		10.7			70.8			16.1			14.8	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	2%	2%	2%	2%	6%	2%	2%	2%	2%	7%	2%	7%
Adj. Flow (vph)	32	369	10	75	566	13	7	32	83	42	27	20
Shared Lane Traffic (%)												
Lane Group Flow (vph)	32	379	0	75	579	0	7	115	0	42	47	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		13			13			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.03	1.03	1.03	1.04	1.09	1.04	1.11	0.97	0.97	1.19	1.09	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1		1	1		1	1	
Detector Template												
Leading Detector (ft)	40	256		40	256		30	37		30	35	
Trailing Detector (ft)	-10	250		-10	250		-10	-3		-10	-5	
Detector 1 Position(ft)	-10	250		-10	250		-10	-3		-10	-5	
Detector 1 Size(ft)	50	6		50	6		40	40		40	40	
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	5	2		1	6		8	8		4	4	
Switch Phase												

Lanes, Volumes, Timings
2: Giant Ln./Carlisle Plaza Mall & York Road (SR 0074)

Timing Plan: AM Peak Hour

05/08/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Minimum Initial (s)	3.0	10.0		3.0	10.0		3.0	3.0		3.0	3.0	
Minimum Split (s)	8.0	24.4		8.0	24.4		21.4	21.4		21.4	21.4	
Total Split (s)	8.0	30.6		8.0	30.6		21.4	21.4		21.4	21.4	
Total Split (%)	13.3%	51.0%		13.3%	51.0%		35.7%	35.7%		35.7%	35.7%	
Maximum Green (s)	4.5	25.2		4.5	25.2		16.0	16.0		16.0	16.0	
Yellow Time (s)	3.0	3.6		3.0	3.6		3.8	3.8		3.8	3.8	
All-Red Time (s)	0.5	1.8		0.5	1.8		1.6	1.6		1.6	1.6	
Lost Time Adjust (s)	-0.5	-1.0		-0.5	-1.0		-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)	3.0	4.4		3.0	4.4		4.4	4.4		4.4	4.4	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	6.0		3.0	6.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.5		3.0	3.5		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	25.0		0.0	25.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	20.0		0.0	20.0		0.0	0.0		0.0	0.0	
Recall Mode	Max	C-Max		Max	C-Max		None	None		None	None	
Walk Time (s)		19.0			19.0		16.0	16.0		16.0	16.0	
Flash Dont Walk (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Pedestrian Calls (#/hr)		0			0		0	0		0	0	
Act Effct Green (s)	42.7	26.2		42.7	26.2		9.1	9.1		9.1	9.1	
Actuated g/C Ratio	0.71	0.44		0.71	0.44		0.15	0.15		0.15	0.15	
v/c Ratio	0.05	0.48		0.09	0.79		0.04	0.35		0.26	0.18	
Control Delay	3.0	12.9		3.2	24.7		20.5	12.0		28.2	17.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	3.0	12.9		3.2	24.7		20.5	12.0		28.2	17.9	
LOS	A	B		A	C		C	B		C	B	
Approach Delay		12.1			22.2			12.5			22.7	
Approach LOS		B			C			B			C	
Queue Length 50th (ft)	2	76		6	170		2	10		15	10	
Queue Length 95th (ft)	7	100		17	#322		11	44		36	31	
Internal Link Dist (ft)		469			3552			745			464	
Turn Bay Length (ft)	210			210			110			65		
Base Capacity (vph)	625	790		790	733		354	540		300	468	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.05	0.48		0.09	0.79		0.02	0.21		0.14	0.10	
Intersection Summary												
Area Type:	Other											
Cycle Length:	60											
Actuated Cycle Length:	60											
Offset:	10 (17%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green											
Natural Cycle:	60											
Control Type:	Actuated-Coordinated											
Maximum v/c Ratio:	0.79											
Intersection Signal Delay:	18.1					Intersection LOS: B						
Intersection Capacity Utilization	51.2%					ICU Level of Service A						
Analysis Period (min)	15											

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 2: Giant Ln./Carlisle Plaza Mall & York Road (SR 0074)

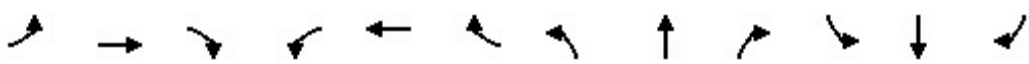


HCM 2010 analysis expects stop-line detection. Detectors cannot be further than 20 feet from the stop bar.

Lanes, Volumes, Timings

Timing Plan: AM Peak Hour

3: Carlisle Plaza Mall/Shaffner Ave. & E High St. (SR 0641)/E. High St. (SR 0641) 05/08/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	369	43	35	405	1	24	0	30	3	0	1
Future Volume (vph)	3	369	43	35	405	1	24	0	30	3	0	1
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12	12	12	12	16	16	16
Grade (%)		0%			0%			2%			0%	
Storage Length (ft)	60		60	60		0	0		80	0		0
Storage Lanes	1		1	1		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850						0.850		0.966	
Flt Protected	0.950			0.950				0.950			0.964	
Satd. Flow (prot)	1676	1731	1443	1644	1513	0	0	1660	1402	0	1169	0
Flt Permitted	0.419			0.449				0.755			0.800	
Satd. Flow (perm)	739	1731	1443	777	1513	0	0	1319	1402	0	970	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			75						76		76	
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		1127			853			544			592	
Travel Time (s)		22.0			16.6			10.6			11.5	
Peak Hour Factor	1.00	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	2%	4%	6%	4%	19%	2%	2%	2%	8%	50%	2%	100%
Adj. Flow (vph)	3	429	50	41	471	1	28	0	35	3	0	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	3	429	50	41	472	0	0	28	35	0	4	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane					Yes							
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.09	1.09	1.09	0.91	0.91	0.91
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	1	1	1		1	1	1	1	2	
Detector Template							Left			Left		
Leading Detector (ft)	45	35	35	45	35		20	45	45	20	20	
Trailing Detector (ft)	-5	-5	-5	-5	-5		0	-5	-5	0	-3	
Detector 1 Position(ft)	-5	-5	-5	-5	-5		0	-5	-5	0	-3	
Detector 1 Size(ft)	50	40	40	50	40		20	50	50	20	6	
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex		CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)											14	
Detector 2 Size(ft)											6	
Detector 2 Type											CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)											0.0	

Lanes, Volumes, Timings

Timing Plan: AM Peak Hour

3: Carlisle Plaza Mall/Shaffner Ave. & E High St. (SR 0641)/E. High St. (SR 0641) 05/08/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Perm	NA	Perm	Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2		2	6			8		8	4		
Detector Phase	5	2	2	1	6		8	8	8	4	4	
Switch Phase												
Minimum Initial (s)	3.0	10.0	10.0	3.0	10.0		3.0	3.0	3.0	3.0	3.0	
Minimum Split (s)	8.7	27.7	27.7	8.7	27.7		26.5	26.5	26.5	26.5	26.5	
Total Split (s)	11.0	81.0	81.0	11.0	81.0		28.0	28.0	28.0	28.0	28.0	
Total Split (%)	9.2%	67.5%	67.5%	9.2%	67.5%		23.3%	23.3%	23.3%	23.3%	23.3%	
Maximum Green (s)	5.3	75.3	75.3	5.3	75.3		22.5	22.5	22.5	22.5	22.5	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.5	2.5	2.5	2.5	2.5	
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0			-1.0	-1.0		-1.0	
Total Lost Time (s)	4.7	4.7	4.7	4.7	4.7			4.5	4.5		4.5	
Lead/Lag	Lead	Lag	Lag	Lead	Lag							
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	6.0	6.0	3.0	6.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	Max	C-Max	C-Max	Max	C-Max		None	None	None	None	None	
Walk Time (s)		12.0	12.0		12.0		11.0	11.0	11.0	11.0	11.0	
Flash Dont Walk (s)		10.0	10.0		10.0		10.0	10.0	10.0	10.0	10.0	
Pedestrian Calls (#/hr)		0	0		0		0	0	0	0	0	
Act Effct Green (s)	99.1	76.3	76.3	99.1	76.3			9.2	9.2		9.2	
Actuated g/C Ratio	0.83	0.64	0.64	0.83	0.64			0.08	0.08		0.08	
v/c Ratio	0.00	0.39	0.05	0.05	0.49			0.28	0.20		0.03	
Control Delay	0.3	7.3	1.4	1.5	6.9			58.3	4.8		0.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0			0.0	0.0		0.0	
Total Delay	0.3	7.3	1.4	1.5	6.9			58.3	4.8		0.3	
LOS	A	A	A	A	A			E	A		A	
Approach Delay		6.6			6.5			28.6			0.3	
Approach LOS		A			A			C			A	
Queue Length 50th (ft)	0	150	4	3	61			22	0		0	
Queue Length 95th (ft)	m0	184	m5	m6	74			m47	m1		0	
Internal Link Dist (ft)		1047			773			464			512	
Turn Bay Length (ft)	60		60	60					80			
Base Capacity (vph)	788	1100	944	806	962			258	335		251	
Starvation Cap Reductn	0	0	0	0	0			0	0		0	
Spillback Cap Reductn	0	0	0	0	0			0	0		0	
Storage Cap Reductn	0	0	0	0	0			0	0		0	
Reduced v/c Ratio	0.00	0.39	0.05	0.05	0.49			0.11	0.10		0.02	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 102 (85%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 65

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.49

Intersection Signal Delay: 7.8

Intersection LOS: A

Intersection Capacity Utilization 40.8%

ICU Level of Service A

Analysis Period (min) 15

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

Splits and Phases: 3: Carlisle Plaza Mall/Shaffner Ave. & E High St. (SR 0641)/E. High St. (SR 0641)



HCM 2010 Signalized Intersection Summary

Timing Plan: AM Peak Hour

3: Carlisle Plaza Mall/Shaffner Ave. & E High St. (SR 0641)/E. High St. (SR 0641)

05/08/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	369	43	35	405	1	24	0	30	3	0	1
Future Volume (veh/h)	3	369	43	35	405	1	24	0	30	3	0	1
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	2	0	0	4	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
Adj Sat Flow, veh/h/ln	1765	1731	1698	1731	1513	1800	1782	1747	1650	1872	1152	1872
Adj Flow Rate, veh/h	3	429	50	41	471	1	28	0	35	3	0	1
Adj No. of Lanes	1	1	1	1	1	0	0	1	1	0	1	0
Peak Hour Factor	1.00	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	2	4	6	4	19	2	2	2	8	50	2	100
Cap, veh/h	855	1353	1129	835	1180	2	135	0	70	73	5	9
Arrive On Green	0.11	1.00	1.00	0.11	1.00	1.00	0.04	0.00	0.05	0.04	0.00	0.04
Sat Flow, veh/h	1681	1731	1443	1648	1509	3	1503	0	1403	413	108	174
Grp Volume(v), veh/h	3	429	50	41	0	472	28	0	35	4	0	0
Grp Sat Flow(s),veh/h/ln	1681	1731	1443	1648	0	1512	1503	0	1403	694	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	2.9	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.5	0.0	0.0	2.0	0.0	2.9	2.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.00	1.00		1.00	0.75		0.25
Lane Grp Cap(c), veh/h	855	1353	1129	835	0	1183	122	0	70	81	0	0
V/C Ratio(X)	0.00	0.32	0.04	0.05	0.00	0.40	0.23	0.00	0.50	0.05	0.00	0.00
Avail Cap(c_a), veh/h	866	1353	1129	846	0	1183	326	0	275	215	0	0
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.69	0.69	0.69	0.84	0.00	0.84	0.97	0.00	0.97	1.00	0.00	0.00
Uniform Delay (d), s/veh	2.1	0.0	0.0	2.1	0.0	0.0	55.6	0.0	55.6	54.9	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.4	0.1	0.1	0.0	0.8	0.9	0.0	5.3	0.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.0	0.3	0.0	0.5	0.0	0.5	1.7	0.0	2.2	0.2	0.0	0.0
LnGrp Delay(d),s/veh	2.1	0.4	0.1	2.2	0.0	1.0	56.5	0.0	60.9	55.1	0.0	0.0
LnGrp LOS	A	A	A	A		A	E		E	E		
Approach Vol, veh/h		482			513			63			4	
Approach Delay, s/veh		0.4			1.1			59.0			55.1	
Approach LOS		A			A			E			E	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.0	98.5		10.5	11.0	98.5		10.5				
Change Period (Y+Rc), s	* 5.7	* 5.7		5.5	* 5.7	* 5.7		5.5				
Max Green Setting (Gmax), s	53	* 75		22.5	* 5.3	* 75		22.5				
Max Q Clear Time (g_c+I1), s	3.0	2.5		4.0	2.5	2.5		5.4				
Green Ext Time (p_c), s	0.0	6.6		0.0	0.0	6.8		0.1				
Intersection Summary												
HCM 2010 Ctrl Delay			4.4									
HCM 2010 LOS			A									
Notes												

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Lanes, Volumes, Timings

Timing Plan: AM Peak Hour

4: Lowe's Access Dr./CVS Access Dr. & E. High St. (SR 0641)/W. Trindle Rd. (SR 0641) 08/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	8	542	54	34	562	9	38	0	25	1	1	0
Future Volume (vph)	8	542	54	34	562	9	38	0	25	1	1	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Grade (%)		0%			-1%			-2%			0%	
Storage Length (ft)	60		60	80		0	0		50	0		0
Storage Lanes	1		1	1		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.998				0.850			
Flt Protected	0.950			0.950				0.950			0.976	
Satd. Flow (prot)	1676	1748	1500	1606	1736	0	0	1693	1515	0	1722	0
Flt Permitted	0.350			0.369				0.757			0.876	
Satd. Flow (perm)	618	1748	1500	624	1736	0	0	1349	1515	0	1546	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			75		1				76			
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		853			2952			142			294	
Travel Time (s)		16.6			57.5			3.9			8.0	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	2%	3%	2%	7%	4%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	8	553	55	35	573	9	39	0	26	1	1	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	8	553	55	35	582	0	0	39	26	0	2	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes										
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.06	1.06	1.06	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	1	1	1		1	1	1	1	1	
Detector Template							Left			Left		
Leading Detector (ft)	45	35	35	45	35		20	45	45	20	15	
Trailing Detector (ft)	-5	-5	-5	-5	-5		0	-5	-5	0	-5	
Detector 1 Position(ft)	-5	-5	-5	-5	-5		0	-5	-5	0	-5	
Detector 1 Size(ft)	50	40	40	50	40		20	50	50	20	20	
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex		CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Perm	NA	Perm	Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2		2	6			8		8	4		
Detector Phase	5	2	2	1	6		8	8	8	4	4	
Switch Phase												
Minimum Initial (s)	3.0	10.0	10.0	3.0	10.0		3.0	3.0	3.0	3.0	3.0	

Lanes, Volumes, Timings

Timing Plan: AM Peak Hour

4: Lowe's Access Dr./CVS Access Dr. & E. High St. (SR 0641)/W. Trindle Rd. (SR 0641) 08/2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)	8.7	27.7	27.7	8.7	27.7		26.5	26.5	26.5	26.5	26.5	
Total Split (s)	10.0	82.0	82.0	10.0	82.0		28.0	28.0	28.0	28.0	28.0	
Total Split (%)	8.3%	68.3%	68.3%	8.3%	68.3%		23.3%	23.3%	23.3%	23.3%	23.3%	
Maximum Green (s)	4.3	76.3	76.3	4.3	76.3		22.5	22.5	22.5	22.5	22.5	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.5	2.5	2.5	2.5	2.5	
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0			-1.0	-1.0		-1.0	
Total Lost Time (s)	4.7	4.7	4.7	4.7	4.7			4.5	4.5		4.5	
Lead/Lag	Lead	Lag	Lag	Lead	Lag							
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	6.0	6.0	3.0	6.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	Max	C-Max	C-Max	Max	C-Max		None	None	None	None	None	
Walk Time (s)		12.0	12.0		12.0		11.0	11.0	11.0	11.0	11.0	
Flash Dont Walk (s)		10.0	10.0		10.0		10.0	10.0	10.0	10.0	10.0	
Pedestrian Calls (#/hr)		0	0		0		0	0	0	0	0	
Act Effct Green (s)	98.2	77.3	77.3	98.2	77.3		10.1	10.1			10.1	
Actuated g/C Ratio	0.82	0.64	0.64	0.82	0.64		0.08	0.08			0.08	
v/c Ratio	0.01	0.49	0.06	0.05	0.52		0.34	0.13			0.02	
Control Delay	3.2	11.1	2.0	2.2	13.5		59.0	1.4			48.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0	
Total Delay	3.2	11.1	2.0	2.2	13.5		59.0	1.4			48.5	
LOS	A	B	A	A	B		E	A			D	
Approach Delay		10.2			12.8		36.0				48.5	
Approach LOS		B			B		D				D	
Queue Length 50th (ft)	1	129	0	3	223		29	0			1	
Queue Length 95th (ft)	m4	198	11	10	313		64	0			10	
Internal Link Dist (ft)		773			2872		62				214	
Turn Bay Length (ft)	60		60	80				50				
Base Capacity (vph)	690	1126	992	681	1118		264	357			302	
Starvation Cap Reductn	0	0	0	0	0		0	0			0	
Spillback Cap Reductn	0	0	0	0	0		0	0			0	
Storage Cap Reductn	0	0	0	0	0		0	0			0	
Reduced v/c Ratio	0.01	0.49	0.06	0.05	0.52		0.15	0.07			0.01	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 96 (80%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 65

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.52

Intersection Signal Delay: 12.8

Intersection LOS: B

Intersection Capacity Utilization 48.2%

ICU Level of Service A

Analysis Period (min) 15

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

Splits and Phases: 4: Lowe's Access Dr./CVS Access Dr. & E. High St. (SR 0641)/W. Trindle Rd. (SR 0641)



HCM 2010 Signalized Intersection Summary

Timing Plan: AM Peak Hour

4: Lowe's Access Dr./CVS Access Dr. & E. High St. (SR 0641)/W. Trindle Rd. (SR 0641) 08/2023

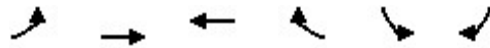
												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	542	54	34	562	9	38	0	25	1	1	0
Future Volume (veh/h)	8	542	54	34	562	9	38	0	25	1	1	0
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	2	0	0	2	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		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
Adj Sat Flow, veh/h/ln	1765	1748	1765	1691	1740	1809	1818	1782	1782	1800	1765	1800
Adj Flow Rate, veh/h	8	553	55	35	573	9	39	0	26	1	1	0
Adj No. of Lanes	1	1	1	1	1	0	0	1	1	0	1	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	3	2	7	4	2	2	2	2	2	2	2
Cap, veh/h	706	1390	1193	744	1359	21	131	0	68	58	41	0
Arrive On Green	0.09	1.00	1.00	0.04	0.80	0.79	0.04	0.00	0.04	0.04	0.04	0.00
Sat Flow, veh/h	1681	1748	1500	1610	1708	27	1595	0	1515	290	922	0
Grp Volume(v), veh/h	8	553	55	35	0	582	39	0	26	2	0	0
Grp Sat Flow(s),veh/h/ln	1681	1748	1500	1610	0	1735	1595	0	1515	1212	0	0
Q Serve(g_s), s	0.1	0.0	0.0	0.4	0.0	12.4	0.0	0.0	2.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.1	0.0	0.0	0.4	0.0	12.4	2.7	0.0	2.0	2.7	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.02	1.00		1.00	0.50		0.00
Lane Grp Cap(c), veh/h	706	1390	1193	744	0	1380	118	0	68	89	0	0
V/C Ratio(X)	0.01	0.40	0.05	0.05	0.00	0.42	0.33	0.00	0.38	0.02	0.00	0.00
Avail Cap(c_a), veh/h	712	1390	1193	748	0	1380	333	0	297	323	0	0
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.93	0.93	0.93	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	2.4	0.0	0.0	1.6	0.0	3.9	56.6	0.0	55.7	55.1	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.8	0.1	0.1	0.0	0.9	1.6	0.0	3.6	0.1	0.0	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	0.1	0.6	0.0	0.4	0.0	10.8	2.4	0.0	1.6	0.1	0.0	0.0
LnGrp Delay(d),s/veh	2.4	0.8	0.1	1.7	0.0	4.8	58.2	0.0	59.3	55.2	0.0	0.0
LnGrp LOS	A	A	A	A		A	E		E	E		
Approach Vol, veh/h		616			617			65			2	
Approach Delay, s/veh		0.8			4.7			58.6			55.2	
Approach LOS		A			A			E			E	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.0	100.1		9.9	10.0	100.1		9.9				
Change Period (Y+Rc), s	* 5.7	* 5.7		5.5	* 5.7	* 5.7		5.5				
Max Green Setting (Gmax),s	4s	* 76		22.5	* 4.3	* 76		22.5				
Max Q Clear Time (g_c+I1)2s	2.5	2.5		4.7	2.6	14.4		4.7				
Green Ext Time (p_c), s	0.0	9.3		0.0	0.0	9.0		0.2				
Intersection Summary												
HCM 2010 Ctrl Delay			5.6									
HCM 2010 LOS			A									
Notes												

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Lanes, Volumes, Timings
5: W. Trindle Rd. (SR 0641) & I-81 SB Off-Ramp

Timing Plan: AM Peak Hour

05/08/2023

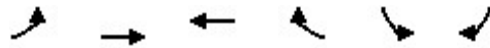


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↘	↗
Traffic Volume (vph)	0	864	490	0	183	442
Future Volume (vph)	0	864	490	0	183	442
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	12	12	12	14	14
Grade (%)		-2%	0%		-3%	
Storage Length (ft)	0			0	0	70
Storage Lanes	0			0	1	1
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	0	3354	3353	0	1747	1608
Flt Permitted					0.950	
Satd. Flow (perm)	0	3354	3353	0	1747	1608
Right Turn on Red				No		Yes
Satd. Flow (RTOR)						214
Link Speed (mph)		35	35		25	
Link Distance (ft)		472	314		758	
Travel Time (s)		9.2	6.1		20.7	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	2%	3%	2%	2%	6%	3%
Adj. Flow (vph)	0	919	521	0	195	470
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	919	521	0	195	470
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		14	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.11	1.06	1.07	1.07	0.97	0.97
Turning Speed (mph)	15			9	15	9
Number of Detectors		1	1		1	0
Detector Template						
Leading Detector (ft)		256	256		15	0
Trailing Detector (ft)		250	250		-10	0
Detector 1 Position(ft)		250	250		-10	0
Detector 1 Size(ft)		6	6		25	20
Detector 1 Type		CI+Ex	CI+Ex		CI+Ex	CI+Ex
Detector 1 Channel						
Detector 1 Extend (s)		0.0	0.0		0.0	0.0
Detector 1 Queue (s)		0.0	0.0		0.0	0.0
Detector 1 Delay (s)		0.0	0.0		0.0	0.0
Turn Type		NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases						4
Detector Phase		2	6		4	4
Switch Phase						

Lanes, Volumes, Timings
5: W. Trindle Rd. (SR 0641) & I-81 SB Off-Ramp

Timing Plan: AM Peak Hour

05/08/2023



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Minimum Initial (s)		10.0	10.0		3.0	3.0
Minimum Split (s)		16.0	16.0		22.0	22.0
Total Split (s)		28.0	28.0		27.0	27.0
Total Split (%)		50.9%	50.9%		49.1%	49.1%
Maximum Green (s)		22.0	22.0		22.0	22.0
Yellow Time (s)		4.0	4.0		3.0	3.0
All-Red Time (s)		2.0	2.0		2.0	2.0
Lost Time Adjust (s)		-1.0	-1.0		-1.0	-1.0
Total Lost Time (s)		5.0	5.0		4.0	4.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)		6.0	6.0		3.0	3.0
Recall Mode		C-Max	C-Max		None	None
Walk Time (s)		8.0	8.0		17.0	17.0
Flash Dont Walk (s)		0.0	0.0		0.0	0.0
Pedestrian Calls (#/hr)		0	0		0	0
Act Effct Green (s)		29.7	29.7		16.3	16.3
Actuated g/C Ratio		0.54	0.54		0.30	0.30
v/c Ratio		0.51	0.29		0.38	0.75
Control Delay		10.7	5.6		15.9	16.4
Queue Delay		0.0	0.0		0.0	0.0
Total Delay		10.7	5.6		15.9	16.4
LOS		B	A		B	B
Approach Delay		10.7	5.6		16.2	
Approach LOS		B	A		B	
Queue Length 50th (ft)		91	52		50	69
Queue Length 95th (ft)		175	m70		77	132
Internal Link Dist (ft)		392	234		678	
Turn Bay Length (ft)						70
Base Capacity (vph)		1811	1810		730	796
Starvation Cap Reductn		0	0		0	0
Spillback Cap Reductn		0	0		0	0
Storage Cap Reductn		0	0		0	0
Reduced v/c Ratio		0.51	0.29		0.27	0.59

Intersection Summary

Area Type: Other

Cycle Length: 55

Actuated Cycle Length: 55

Offset: 29 (53%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

Natural Cycle: 45

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.75

Intersection Signal Delay: 11.2

Intersection LOS: B

Intersection Capacity Utilization 50.7%

ICU Level of Service A

Analysis Period (min) 15

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

Splits and Phases: 5: W. Trindle Rd. (SR 0641) & I-81 SB Off-Ramp

→ Ø2 (R) 28 s	← Ø4 27 s
← Ø6 (R) 28 s	

HCM 2010 analysis expects stop-line detection. Detectors cannot be further than 20 feet from the stop bar.

Lanes, Volumes, Timings
6: I-81 NB On-Ramp & W. Trindle Rd. (SR 0641)

Timing Plan: AM Peak Hour
05/08/2023

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↔↑		
Traffic Volume (vph)	678	329	319	478	0	0
Future Volume (vph)	678	329	319	478	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	11	11	11	16	14
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Frt	0.951					
Flt Protected				0.980		
Satd. Flow (prot)	3073	0	0	3176	0	0
Flt Permitted				0.980		
Satd. Flow (perm)	3073	0	0	3176	0	0
Link Speed (mph)	35			35	25	
Link Distance (ft)	466			628	326	
Travel Time (s)	9.1			12.2	8.9	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	2%	3%	2%	2%	2%	2%
Adj. Flow (vph)	714	346	336	503	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1060	0	0	839	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.12	1.12	1.12	1.12	0.91	0.99
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	61.3%			ICU Level of Service B		
Analysis Period (min)	15					

Lanes, Volumes, Timings
7: Army Heritage Dr. & W. Trindle Rd. (SR 0641)

Timing Plan: AM Peak Hour
05/08/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	290	334	64	50	455	111	227	398	119	103	131	73
Future Volume (vph)	290	334	64	50	455	111	227	398	119	103	131	73
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	13	14	12	13	14	12	13	12	11	14	12
Grade (%)		1%			-1%			-5%			4%	
Storage Length (ft)	90		95	110		155	140		0	125		150
Storage Lanes	1		1	1		1	1		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor								0.99		1.00		
Frt			0.850			0.850		0.966				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1636	1763	1476	1534	1833	1478	1718	1776	0	1500	1680	1282
Flt Permitted	0.105			0.541			0.510			0.152		
Satd. Flow (perm)	181	1763	1476	874	1833	1478	922	1776	0	239	1680	1282
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			99			228			14			99
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		628			1908			461			1667	
Travel Time (s)		12.2			37.2			9.0			32.5	
Confl. Peds. (#/hr)									6	6		
Peak Hour Factor	0.90	0.90	1.00	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.92
Heavy Vehicles (%)	4%	5%	10%	12%	2%	11%	2%	2%	6%	8%	12%	17%
Adj. Flow (vph)	322	371	64	56	506	123	252	442	132	114	146	79
Shared Lane Traffic (%)												
Lane Group Flow (vph)	322	371	64	56	506	123	252	574	0	114	146	79
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane											Yes	
Headway Factor	1.08	1.03	0.99	1.07	1.02	0.98	1.04	1.00	1.04	1.15	1.01	1.10
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	0	1	1	0	1	1		1	1	1
Detector Template												Right
Leading Detector (ft)	35	231	0	35	231	0	35	40		40	35	20
Trailing Detector (ft)	-5	225	0	-5	225	0	-5	-10		-5	-5	0
Detector 1 Position(ft)	-5	225	0	-5	225	0	-5	-10		-5	-5	0
Detector 1 Size(ft)	40	6	20	40	6	20	40	50		45	40	20
Detector 1 Type	CI+Ex	Extend	CI+Ex	CI+Ex	Extend	CI+Ex	CI+Ex	CI+Ex		CI+Ex	CI+Ex	CI+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	pm+ov
Protected Phases	5	2	3	1	6		3	8		7	4	5
Permitted Phases	2		2	6		6	8			4		4

Lanes, Volumes, Timings
7: Army Heritage Dr. & W. Trindle Rd. (SR 0641)

Timing Plan: AM Peak Hour
05/08/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2	3	1	6	6	3	8		7	4	5
Switch Phase												
Minimum Initial (s)	15.0	15.0	3.0	3.0	3.0	3.0	3.0	3.0		4.0	3.0	15.0
Minimum Split (s)	21.5	25.5	9.5	9.5	25.5	25.5	9.5	31.5		10.5	31.5	21.5
Total Split (s)	22.0	50.6	18.0	9.6	38.2	38.2	18.0	38.0		11.8	31.8	22.0
Total Split (%)	20.0%	46.0%	16.4%	8.7%	34.7%	34.7%	16.4%	34.5%		10.7%	28.9%	20.0%
Maximum Green (s)	15.5	44.1	11.5	3.1	31.7	31.7	11.5	31.5		5.3	25.3	15.5
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5		2.5	2.5	2.5
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0		-1.0	-1.0	-1.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5		5.5	5.5	5.5
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	6.0	3.0	3.0	6.0	6.0	3.0	3.0		3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Time Before Reduce (s)	0.0	25.0	0.0	0.0	25.0	25.0	0.0	0.0		0.0	0.0	0.0
Time To Reduce (s)	0.0	15.0	0.0	0.0	15.0	15.0	0.0	0.0		0.0	0.0	0.0
Recall Mode	None	C-Max	None	None	C-Max	C-Max	None	None		None	None	None
Walk Time (s)		10.0			10.0	10.0		10.0			10.0	
Flash Dont Walk (s)		9.0			9.0	9.0		15.0			15.0	
Pedestrian Calls (#/hr)		0			0	0		0			0	
Act Effct Green (s)	54.7	47.0	65.0	36.8	32.7	32.7	44.3	32.5		32.7	26.4	48.4
Actuated g/C Ratio	0.50	0.43	0.59	0.33	0.30	0.30	0.40	0.30		0.30	0.24	0.44
v/c Ratio	1.05	0.49	0.07	0.18	0.93	0.21	0.55	1.07		0.80	0.36	0.13
Control Delay	97.5	22.1	3.5	18.5	61.0	1.8	25.9	95.6		62.5	38.0	2.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.3		0.0	0.0	0.0
Total Delay	97.5	22.1	3.5	18.5	61.0	1.8	25.9	101.9		62.5	38.0	2.8
LOS	F	C	A	B	E	A	C	F		E	D	A
Approach Delay		52.6			46.9			78.7			38.0	
Approach LOS		D			D			E			D	
Queue Length 50th (ft)	~206	170	2	20	305	2	122	~445		51	86	0
Queue Length 95th (ft)	#384	228	22	m42	#538	11	167	#664		#134	147	19
Internal Link Dist (ft)		548			1828			381			1587	
Turn Bay Length (ft)	90		95	110		155	140			125		150
Base Capacity (vph)	308	753	912	316	544	599	461	534		143	402	619
Starvation Cap Reductn	0	0	0	0	0	0	0	8		0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	1.05	0.49	0.07	0.18	0.93	0.21	0.55	1.09		0.80	0.36	0.13

Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow, Master Intersection

Natural Cycle: 110

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.07

Intersection Signal Delay: 57.5

Intersection LOS: E

Intersection Capacity Utilization 96.5% ICU Level of Service F

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

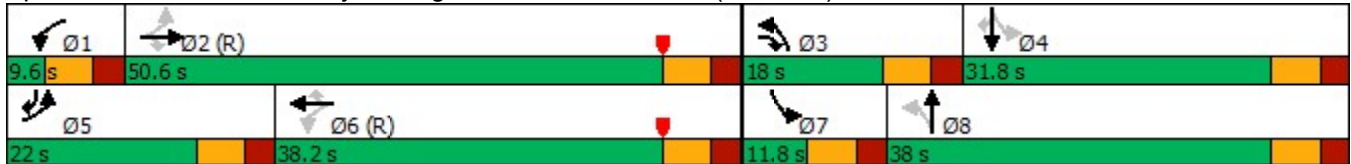
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

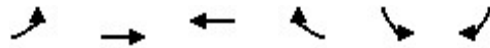
Queue shown is maximum after two cycles.

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

Splits and Phases: 7: Army Heritage Dr. & W. Trindle Rd. (SR 0641)



HCM 2010 analysis cannot be performed without detectors for actuated controller type.



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↰	↰		↰	
Traffic Volume (vph)	8	504	496	0	3	24
Future Volume (vph)	8	504	496	0	3	24
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	11	11
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.878	
Flt Protected		0.999			0.995	
Satd. Flow (prot)	0	1746	1765	0	1490	0
Flt Permitted		0.999			0.995	
Satd. Flow (perm)	0	1746	1765	0	1490	0
Link Speed (mph)		45	45		35	
Link Distance (ft)		1985	3218		1923	
Travel Time (s)		30.1	48.8		37.5	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	3%	2%	2%	2%	2%
Adj. Flow (vph)	9	560	551	0	3	27
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	569	551	0	30	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		24	24		11	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.07	1.07	1.07	1.07	1.12	1.12
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 44.8% ICU Level of Service A

Analysis Period (min) 15

Intersection

Int Delay, s/veh 0.4

Movement EBL EBT WBT WBR SBL SBRLane Configurations 

Traffic Vol, veh/h 8 504 496 0 3 24

Future Vol, veh/h 8 504 496 0 3 24

Conflicting Peds, #/hr 0 0 0 0 0 0

Sign Control Free Free Free Free Stop Stop

RT Channelized - None - None - None

Storage Length - - - - 0 -

Veh in Median Storage, # 0 0 - 1 -

Grade, % - 0 0 - 0 -

Peak Hour Factor 90 90 90 90 90 90

Heavy Vehicles, % 2 3 2 2 2 2

Mvmt Flow 9 560 551 0 3 27

Major/Minor Major1 Major2 Minor2

Conflicting Flow All 551 0 - 0 1129 551

Stage 1 - - - - 551 -

Stage 2 - - - - 578 -

Critical Hdwy 4.12 - - - 7.1 6.22

Critical Hdwy Stg 1 - - - - 5.42 -

Critical Hdwy Stg 2 - - - - 5.42 -

Follow-up Hdwy 2.218 - - - 3.518 3.318

Pot Cap-1 Maneuver 1019 - - - 182 534

Stage 1 - - - - 577 -

Stage 2 - - - - 561 -

Platoon blocked, % - - -

Mov Cap-1 Maneuver 1019 - - - 180 534

Mov Cap-2 Maneuver - - - - 340 -

Stage 1 - - - - 569 -

Stage 2 - - - - 561 -

Approach EB WB SB

HCM Control Delay, s 0.1 0 12.6

HCM LOS B

Minor Lane/Major Mvmt EBL EBT WBT WBR SBLn1

Capacity (veh/h) 1019 - - - 502

HCM Lane V/C Ratio 0.009 - - - 0.06

HCM Control Delay (s) 8.6 0 - - 12.6

HCM Lane LOS A A - - B

HCM 95th %tile Q(veh) 0 - - - 0.2

Lanes, Volumes, Timings
9: Middlesex Rd. & W. Trindle Rd. (SR0641)

Timing Plan: AM Peak Hour
05/08/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	421	18	0	428	21	58	90	4	36	30	39
Future Volume (vph)	35	421	18	0	428	21	58	90	4	36	30	39
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12	11	11	11	11	11	11
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.995			0.994			0.997			0.950	
Flt Protected		0.996						0.981			0.983	
Satd. Flow (prot)	0	1681	0	0	1749	0	0	1656	0	0	1529	0
Flt Permitted		0.996						0.981			0.983	
Satd. Flow (perm)	0	1681	0	0	1749	0	0	1656	0	0	1529	0
Link Speed (mph)		45			45			35			40	
Link Distance (ft)		3218			3646			1268			2562	
Travel Time (s)		48.8			55.2			24.7			43.7	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	7%	6%	7%	2%	2%	8%	4%	2%	2%	2%	17%	2%
Adj. Flow (vph)	36	430	18	0	437	21	59	92	4	37	31	40
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	484	0	0	458	0	0	155	0	0	108	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.12	1.12	1.12	1.12	1.12	1.12
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type: Unsignalized												
Intersection Capacity Utilization 73.5% ICU Level of Service D												
Analysis Period (min) 15												

Intersection												
Int Delay, s/veh	10.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	35	421	18	0	428	21	58	90	4	36	30	39
Future Vol, veh/h	35	421	18	0	428	21	58	90	4	36	30	39
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	-	-	0	-	-	0	-	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	98	98	98	98	98	98	98	98	98	98	98	98
Heavy Vehicles, %	7	6	7	2	2	8	4	2	2	2	17	2
Mvmt Flow	36	430	18	0	437	21	59	92	4	37	31	40

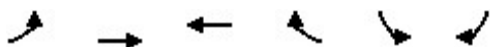
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	458	0	0	448	0	0	994	969	439	1007	968	448
Stage 1	-	-	-	-	-	-	511	511	-	448	448	-
Stage 2	-	-	-	-	-	-	483	458	-	559	520	-
Critical Hdwy	4.17	-	-	4.12	-	-	7.14	6.52	6.22	7.12	6.67	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.14	5.52	-	6.12	5.67	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.14	5.52	-	6.12	5.67	-
Follow-up Hdwy	2.263	-	-	2.218	-	-	3.536	4.018	3.318	3.518	4.153	3.318
Pot Cap-1 Maneuver	1077	-	-	1112	-	-	222	254	618	219	239	611
Stage 1	-	-	-	-	-	-	542	537	-	590	548	-
Stage 2	-	-	-	-	-	-	561	567	-	513	508	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1077	-	-	1112	-	-	180	243	618	149	228	611
Mov Cap-2 Maneuver	-	-	-	-	-	-	180	243	-	149	228	-
Stage 1	-	-	-	-	-	-	518	513	-	563	548	-
Stage 2	-	-	-	-	-	-	495	567	-	400	485	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	0	54.6	31.6
HCM LOS			F	D

Minor Lane/Major Mvm	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	217	1077	-	-	1112	-	-	240
HCM Lane V/C Ratio	0.715	0.033	-	-	-	-	-	0.446
HCM Control Delay (s)	54.6	8.5	0	-	0	-	-	31.6
HCM Lane LOS	F	A	A	-	A	-	-	D
HCM 95th %tile Q(veh)	4.7	0.1	-	-	0	-	-	2.1

Lanes, Volumes, Timings
10: Westminster Dr./Fairview St. & Army Heritage Dr.

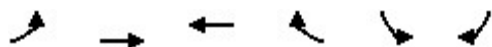
Timing Plan: AM Peak Hour
05/08/2023



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	300	8	3	302	66	95
Future Volume (vph)	300	8	3	302	66	95
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	14	14	14	14	12	14
Grade (%)		-1%	3%		1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00		0.98		0.99	
Frt			0.866			0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1729	1892	1569	0	1533	1388
Flt Permitted	0.384				0.950	
Satd. Flow (perm)	698	1892	1569	0	1523	1388
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			321			101
Link Speed (mph)		35	35		35	
Link Distance (ft)		1287	797		461	
Travel Time (s)		25.1	15.5		9.0	
Confl. Peds. (#/hr)	2			2	3	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	6%	2%	2%	2%	11%	17%
Adj. Flow (vph)	319	9	3	321	70	101
Shared Lane Traffic (%)						
Lane Group Flow (vph)	319	9	324	0	70	101
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		14	14		24	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	0.98	0.98	1.01	1.01	1.08	0.99
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	1	1		1	1
Detector Template					Left	Right
Leading Detector (ft)	40	40	35		20	20
Trailing Detector (ft)	-5	-5	-5		0	0
Detector 1 Position(ft)	-5	-5	-5		0	0
Detector 1 Size(ft)	45	45	40		20	20
Detector 1 Type	CI+Ex	Extend	Extend		CI+Ex	CI+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0
Turn Type	pm+pt	NA	NA		Prot	Perm
Protected Phases	5	2	6		7	
Permitted Phases	2					4
Detector Phase	5	2	6		7	4
Switch Phase						
Minimum Initial (s)	3.0	10.0	10.0		4.0	3.0

Lanes, Volumes, Timings
10: Westminster Dr./Fairview St. & Army Heritage Dr.

Timing Plan: AM Peak Hour
05/08/2023

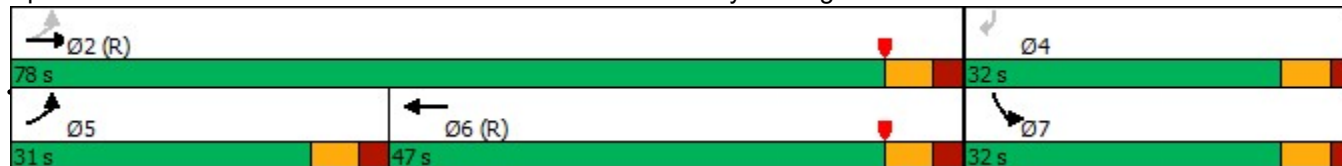


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Minimum Split (s)	9.5	39.5	39.5		10.0	29.0
Total Split (s)	31.0	78.0	47.0		32.0	32.0
Total Split (%)	28.2%	70.9%	42.7%		29.1%	29.1%
Maximum Green (s)	24.5	71.5	40.5		26.0	26.0
Yellow Time (s)	4.0	4.0	4.0		4.0	4.0
All-Red Time (s)	2.5	2.5	2.5		2.0	2.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0		-1.0	-1.0
Total Lost Time (s)	5.5	5.5	5.5		5.0	5.0
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	Max	C-Max	C-Max		None	None
Walk Time (s)		10.0	10.0			10.0
Flash Dont Walk (s)		23.0	23.0			13.0
Pedestrian Calls (#/hr)		0	0			0
Act Effct Green (s)	88.2	88.2	41.5		11.4	11.3
Actuated g/C Ratio	0.80	0.80	0.38		0.10	0.10
v/c Ratio	0.34	0.01	0.41		0.44	0.44
Control Delay	4.0	2.9	4.4		39.7	14.7
Queue Delay	0.1	0.0	0.9		0.0	0.0
Total Delay	4.1	2.9	5.3		39.7	14.7
LOS	A	A	A		D	B
Approach Delay		4.0	5.3		24.9	
Approach LOS		A	A		C	
Queue Length 50th (ft)	43	1	1		45	12
Queue Length 95th (ft)	82	5	58		89	60
Internal Link Dist (ft)		1207	717		381	
Turn Bay Length (ft)						
Base Capacity (vph)	946	1517	791		376	416
Starvation Cap Reductn	0	0	0		0	0
Spillback Cap Reductn	107	0	242		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.38	0.01	0.59		0.19	0.24

Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 52 (47%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.44
Intersection Signal Delay: 8.9
Intersection LOS: A
Intersection Capacity Utilization 62.2%
ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 10: Westminster Dr./Fairview St. & Army Heritage Dr.



HCM 2010 Signalized Intersection Summary
10: Westminster Dr./Fairview St. & Army Heritage Dr.

Timing Plan: AM Peak Hour
05/08/2023

								
Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations								
Traffic Volume (veh/h)	300	8	3	302	66	95		
Future Volume (veh/h)	300	8	3	302	66	95		
Number	5	2	6	16	7	14		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1775	1844	1808	1844	1614	1592		
Adj Flow Rate, veh/h	319	9	3	321	70	101		
Adj No. of Lanes	1	1	1	0	1	1		
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94		
Percent Heavy Veh, %	6	2	2	2	11	17		
Cap, veh/h	868	1471	7	785	165	145		
Arrive On Green	0.23	0.80	0.52	0.51	0.11	0.11		
Sat Flow, veh/h	1690	1844	14	1522	1537	1353		
Grp Volume(v), veh/h	319	9	0	324	70	101		
Grp Sat Flow(s),veh/h/ln	1690	1844	0	1536	1537	1353		
Q Serve(g_s), s	5.9	0.1	0.0	14.4	4.7	7.9		
Cycle Q Clear(g_c), s	5.9	0.1	0.0	14.4	4.7	7.9		
Prop In Lane	1.00			0.99	1.00	1.00		
Lane Grp Cap(c), veh/h	868	1471	0	792	165	145		
V/C Ratio(X)	0.37	0.01	0.00	0.41	0.43	0.70		
Avail Cap(c_a), veh/h	868	1471	0	792	377	332		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.98	0.98		
Uniform Delay (d), s/veh	5.3	2.3	0.0	16.7	45.9	47.4		
Incr Delay (d2), s/veh	1.2	0.0	0.0	1.6	1.7	5.8		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(95%),veh/ln	5.3	0.1	0.0	10.6	3.7	5.8		
LnGrp Delay(d),s/veh	6.5	2.3	0.0	18.3	47.6	53.2		
LnGrp LOS	A	A		B	D	D		
Approach Vol, veh/h		328	324		171			
Approach Delay, s/veh		6.4	18.3		50.9			
Approach LOS		A	B		D			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		93.2		16.8	31.0	62.2		
Change Period (Y+Rc), s		6.5		6.0	6.5	6.5		
Max Green Setting (Gmax), s		71.5		26.0	24.5	40.5		
Max Q Clear Time (g_c+I1), s		2.6		10.4	8.4	16.4		
Green Ext Time (p_c), s		0.0		0.4	1.0	1.3		
Intersection Summary								
HCM 2010 Ctrl Delay			20.3					
HCM 2010 LOS			C					

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	1	0	449	0	1	80
Future Volume (vph)	1	0	449	0	1	80
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected	0.950					
Satd. Flow (prot)	1676	0	1765	0	0	1652
Flt Permitted	0.950					
Satd. Flow (perm)	1676	0	1765	0	0	1652
Link Speed (mph)	35		35			35
Link Distance (ft)	2177		1342			797
Travel Time (s)	42.4		26.1			15.5
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Heavy Vehicles (%)	2%	2%	2%	2%	2%	9%
Adj. Flow (vph)	1	0	561	0	1	100
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1	0	561	0	0	101
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	34.9%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W	W	T	T	T	T
Traffic Vol, veh/h	1	0	449	0	1	80
Future Vol, veh/h	1	0	449	0	1	80
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	9
Mvmt Flow	1	0	561	0	1	100

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	663	561	0	0	561	0
Stage 1	561	-	-	-	-	-
Stage 2	102	-	-	-	-	-
Critical Hdwy	7.1	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuve	876	527	-	-	1010	-
Stage 1	571	-	-	-	-	-
Stage 2	922	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuve	876	527	-	-	1010	-
Mov Cap-2 Maneuve	876	-	-	-	-	-
Stage 1	571	-	-	-	-	-
Stage 2	921	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	14.6	0	0.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBLn1	SBL	SBT
Capacity (veh/h)	-	-	376	1010
HCM Lane V/C Ratio	-	-	0.003	0.001
HCM Control Delay (s)	-	-	14.6	8.6
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0	0

Lanes, Volumes, Timings
12: I-81 SB On-Ramp & York Road (SR 0074)

Timing Plan: AM Peak Hour
05/08/2023

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑		
Traffic Volume (vph)	270	189	578	695	0	0
Future Volume (vph)	270	189	578	695	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	15	15
Grade (%)	2%			-2%	0%	
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Frt	0.938					
Flt Protected				0.978		
Satd. Flow (prot)	2945	0	0	3248	0	0
Flt Permitted				0.978		
Satd. Flow (perm)	2945	0	0	3248	0	0
Link Speed (mph)	35			35	30	
Link Distance (ft)	3632			216	901	
Travel Time (s)	70.8			4.2	20.5	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	7%	9%	4%	4%	2%	2%
Adj. Flow (vph)	303	212	649	781	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	515	0	0	1430	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	13			13	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.09	1.09	1.06	1.06	0.95	0.95
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	58.9%			ICU Level of Service B		
Analysis Period (min)	15					

Lanes, Volumes, Timings
13: I-81 NB Off-Ramp & York Road (SR 0074)

Timing Plan: AM Peak Hour
05/08/2023

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↘	↗
Traffic Volume (vph)	270	0	0	1094	203	547
Future Volume (vph)	270	0	0	1094	203	547
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	16	13
Grade (%)	1%			-2%	0%	
Storage Length (ft)		0	0		25	0
Storage Lanes		0	0		1	1
Taper Length (ft)			25		25	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	3272	0	0	3386	1900	1535
Flt Permitted					0.950	
Satd. Flow (perm)	3272	0	0	3386	1900	1535
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)						451
Link Speed (mph)	35			35	25	
Link Distance (ft)	251			1010	714	
Travel Time (s)	4.9			19.7	19.5	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	4%	2%	2%	2%	2%	3%
Adj. Flow (vph)	314	0	0	1272	236	636
Shared Lane Traffic (%)						
Lane Group Flow (vph)	314	0	0	1272	236	636
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	16	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.08	1.08	1.06	1.06	0.91	1.03
Turning Speed (mph)		9	15		15	9
Number of Detectors	1			1	1	1
Detector Template						
Leading Detector (ft)	231			256	20	40
Trailing Detector (ft)	225			250	-10	-10
Detector 1 Position(ft)	225			250	-10	-10
Detector 1 Size(ft)	6			6	30	50
Detector 1 Type	Extend			Extend	CI+Ex	CI+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0			0.0	0.0	0.0
Detector 1 Queue (s)	0.0			0.0	0.0	0.0
Detector 1 Delay (s)	0.0			0.0	0.0	0.0
Turn Type	NA			NA	Prot	Perm
Protected Phases	2			6	3	
Permitted Phases						8
Detector Phase	2			6	3	8
Switch Phase						

Lanes, Volumes, Timings
13: I-81 NB Off-Ramp & York Road (SR 0074)

Timing Plan: AM Peak Hour
05/08/2023



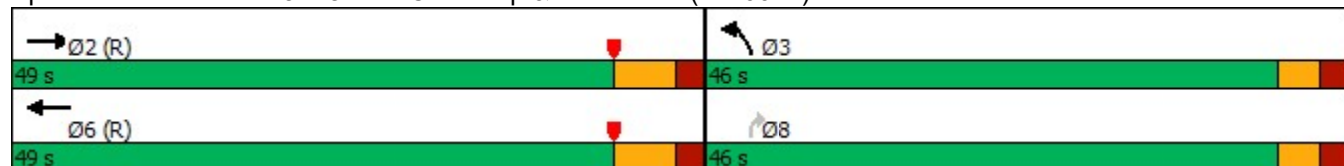
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Minimum Initial (s)	10.0			10.0	4.0	3.0
Minimum Split (s)	24.5			24.5	9.5	22.5
Total Split (s)	49.0			49.0	46.0	46.0
Total Split (%)	51.6%			51.6%	48.4%	48.4%
Maximum Green (s)	42.5			42.5	40.5	40.5
Yellow Time (s)	4.5			4.5	3.0	3.0
All-Red Time (s)	2.0			2.0	2.5	2.5
Lost Time Adjust (s)	-1.0			-1.0	-1.0	-1.0
Total Lost Time (s)	5.5			5.5	4.5	4.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	6.0			6.0	3.0	3.0
Minimum Gap (s)	3.0			3.0	3.0	3.0
Time Before Reduce (s)	25.0			25.0	0.0	0.0
Time To Reduce (s)	13.0			13.0	0.0	0.0
Recall Mode	C-Max			C-Max	None	None
Walk Time (s)	18.0			18.0		17.0
Flash Dont Walk (s)	0.0			0.0		0.0
Pedestrian Calls (#/hr)	0			0		0
Act Effct Green (s)	60.1			60.1	24.9	24.9
Actuated g/C Ratio	0.63			0.63	0.26	0.26
v/c Ratio	0.15			0.59	0.47	0.87
Control Delay	9.4			10.8	30.6	21.3
Queue Delay	0.0			0.0	0.0	0.0
Total Delay	9.4			10.8	30.6	21.3
LOS	A			B	C	C
Approach Delay	9.4			10.8	23.8	
Approach LOS	A			B	C	
Queue Length 50th (ft)	35			242	122	111
Queue Length 95th (ft)	80			m415	137	174
Internal Link Dist (ft)	171			930	634	
Turn Bay Length (ft)					25	
Base Capacity (vph)	2069			2142	830	924
Starvation Cap Reductn	0			0	0	0
Spillback Cap Reductn	0			0	0	0
Storage Cap Reductn	0			0	0	0
Reduced v/c Ratio	0.15			0.59	0.28	0.69

Intersection Summary

Area Type: Other
Cycle Length: 95
Actuated Cycle Length: 95
Offset: 22 (23%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.87
Intersection Signal Delay: 15.2
Intersection Capacity Utilization 52.4%
Analysis Period (min) 15
Intersection LOS: B
ICU Level of Service A

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

Splits and Phases: 13: I-81 NB Off-Ramp & York Road (SR 0074)



HCM 2010 analysis expects stop-line detection. Detectors cannot be further than 20 feet from the stop bar.

Lanes, Volumes, Timings

Timing Plan: AM Peak Hour

14: Westminster Dr. & York Road (SR 0074)/York Rd. (SR 0074)

05/08/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	205	417	152	13	606	28	350	76	4	20	44	101
Future Volume (vph)	205	417	152	13	606	28	350	76	4	20	44	101
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	14	12	12	14	12	14	12	12	14	12
Grade (%)		1%			0%			-5%			2%	
Storage Length (ft)	120		0	75		180	130		0	130		0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						0.98						
Frt			0.850			0.850		0.993			0.895	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1620	1690	1592	1555	1698	1554	1702	1830	0	1597	1549	0
Flt Permitted	0.132			0.494			0.219			0.699		
Satd. Flow (perm)	225	1690	1592	808	1698	1518	392	1830	0	1175	1549	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			171			92		1			51	
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		1010			2320			530			721	
Travel Time (s)		19.7			45.2			14.5			19.7	
Confl. Peds. (#/hr)	1					1						
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	5%	6%	2%	10%	6%	5%	3%	7%	2%	6%	14%	8%
Adj. Flow (vph)	230	469	171	15	681	31	393	85	4	22	49	113
Shared Lane Traffic (%)												
Lane Group Flow (vph)	230	469	171	15	681	31	393	89	0	22	162	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.08	1.08	0.99	1.07	1.07	0.99	1.04	0.96	1.04	1.09	1.00	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	0	1	1	0	1	1		1	1	
Detector Template												
Leading Detector (ft)	40	256	0	40	256	0	40	45		45	45	
Trailing Detector (ft)	-5	250	0	-5	250	0	-5	-5		-5	-5	
Detector 1 Position(ft)	-5	250	0	-5	250	0	-5	-5		-5	-5	
Detector 1 Size(ft)	45	6	20	45	6	20	45	50		50	50	
Detector 1 Type	CI+Ex	Extend	CI+Ex	CI+Ex	Extend	CI+Ex	CI+Ex	CI+Ex		CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases	5	2			6		3	8			4	
Permitted Phases	2		2	6		6	8			4		

Lanes, Volumes, Timings

Timing Plan: AM Peak Hour

14: Westminster Dr. & York Road (SR 0074)/York Rd. (SR 0074)

05/08/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2	2	6	6	6	3	8		4	4	
Switch Phase												
Minimum Initial (s)	3.0	10.0	10.0	10.0	10.0	10.0	3.0	3.0		3.0	3.0	
Minimum Split (s)	9.0	33.0	33.0	33.0	33.0	33.0	9.5	31.5		31.5	31.5	
Total Split (s)	23.0	115.5	115.5	92.5	92.5	92.5	43.0	74.5		31.5	31.5	
Total Split (%)	12.1%	60.8%	60.8%	48.7%	48.7%	48.7%	22.6%	39.2%		16.6%	16.6%	
Maximum Green (s)	17.0	109.5	109.5	86.5	86.5	86.5	36.5	68.0		25.0	25.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	3.5	3.5		3.5	3.5	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	3.0	3.0		3.0	3.0	
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.5	5.5		5.5	5.5	
Lead/Lag	Lead			Lag			Lead			Lag		
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	6.0	6.0	6.0	6.0	6.0	3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	25.0	25.0	25.0	25.0	25.0	0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	10.0	10.0	10.0	10.0	10.0	0.0	0.0		0.0	0.0	
Recall Mode	Max	C-Max	C-Max	C-Max	C-Max	C-Max	None	None		None	None	
Walk Time (s)		10.0	10.0	10.0	10.0	10.0		10.0		10.0	10.0	
Flash Dont Walk (s)		17.0	17.0	17.0	17.0	17.0		15.0		15.0	15.0	
Pedestrian Calls (#/hr)		0	0	0	0	0		0		0	0	
Act Effct Green (s)	116.7	116.7	116.7	87.5	87.5	87.5	62.8	62.8		19.8	19.8	
Actuated g/C Ratio	0.61	0.61	0.61	0.46	0.46	0.46	0.33	0.33		0.10	0.10	
v/c Ratio	0.73	0.45	0.16	0.04	0.87	0.04	1.01	0.15		0.18	0.78	
Control Delay	38.4	20.5	2.1	22.5	43.3	0.1	103.0	43.6		78.3	80.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	38.4	20.5	2.1	22.5	43.3	0.1	103.0	43.6		78.3	80.7	
LOS	D	C	A	C	D	A	F	D		E	F	
Approach Delay		21.6			41.1			92.0			80.4	
Approach LOS		C			D			F			F	
Queue Length 50th (ft)	149	308	7	10	581	0	~434	77		25	138	
Queue Length 95th (ft)	#299	401	21	m14	847	m0	#628	120		57	221	
Internal Link Dist (ft)		930			2240			450			641	
Turn Bay Length (ft)	120			75		180	130			130		
Base Capacity (vph)	315	1037	1043	372	781	748	388	665		160	255	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.73	0.45	0.16	0.04	0.87	0.04	1.01	0.13		0.14	0.64	

Intersection Summary

Area Type: Other

Cycle Length: 190

Actuated Cycle Length: 190

Offset: 14 (7%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow

Natural Cycle: 125

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.01

Intersection Signal Delay: 47.6

Intersection LOS: D

Intersection Capacity Utilization 92.6%

ICU Level of Service F

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

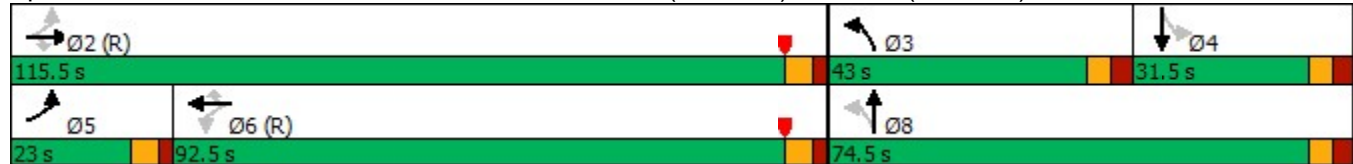
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

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

Splits and Phases: 14: Westminster Dr. & York Road (SR 0074)/York Rd. (SR 0074)



HCM 2010 analysis cannot be performed without detectors for actuated controller type.

Lanes, Volumes, Timings
15: Fairview St. & York Rd. (SR 0074)

Timing Plan: AM Peak Hour
05/08/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	26	340	6	7	621	105	19	245	15	37	19	48
Future Volume (vph)	26	340	6	7	621	105	19	245	15	37	19	48
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	11	11	11	11	11	9	9	9	12	12	12
Grade (%)		0%			0%			0%			1%	
Storage Length (ft)	75		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.997			0.981			0.993			0.938	
Flt Protected	0.950							0.997			0.982	
Satd. Flow (prot)	1589	1623	0	0	1620	0	0	1572	0	0	1570	0
Flt Permitted	0.321				0.996			0.976			0.695	
Satd. Flow (perm)	537	1623	0	0	1613	0	0	1539	0	0	1111	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			16			3			45	
Link Speed (mph)		35			35			25			35	
Link Distance (ft)		2320			2128			671			1479	
Travel Time (s)		45.2			41.5			18.3			28.8	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	4%	7%	2%	2%	6%	2%	2%	2%	2%	8%	2%	4%
Adj. Flow (vph)	29	382	7	8	698	118	21	275	17	42	21	54
Shared Lane Traffic (%)												
Lane Group Flow (vph)	29	389	0	0	824	0	0	313	0	0	117	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.12	1.12	1.12	1.12	1.12	1.12	1.22	1.22	1.22	1.08	1.08	1.08
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	0	1		1	1		1	1		1	1	
Detector Template				Left			Left			Left		
Leading Detector (ft)	0	256		20	256		20	40		20	40	
Trailing Detector (ft)	0	250		0	250		0	-5		0	-5	
Detector 1 Position(ft)	0	250		0	250		0	-5		0	-5	
Detector 1 Size(ft)	20	6		20	6		20	45		20	45	
Detector 1 Type	CI+Ex	Extend		CI+Ex	Extend		CI+Ex	CI+Ex		CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	
Switch Phase												

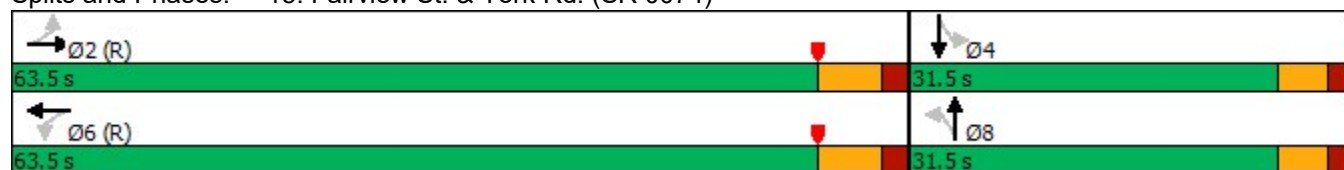
Lanes, Volumes, Timings
15: Fairview St. & York Rd. (SR 0074)

Timing Plan: AM Peak Hour
05/08/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	10.0	10.0		10.0	10.0		3.0	3.0		3.0	3.0	
Minimum Split (s)	32.5	32.5		32.5	32.5		31.5	31.5		31.5	31.5	
Total Split (s)	63.5	63.5		63.5	63.5		31.5	31.5		31.5	31.5	
Total Split (%)	66.8%	66.8%		66.8%	66.8%		33.2%	33.2%		33.2%	33.2%	
Maximum Green (s)	57.0	57.0		57.0	57.0		26.0	26.0		26.0	26.0	
Yellow Time (s)	4.5	4.5		4.5	4.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0			-1.0			-1.0			-1.0	
Total Lost Time (s)	5.5	5.5			5.5			4.5			4.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	6.0	6.0		6.0	6.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	35.0	35.0		35.0	35.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	17.0	17.0		17.0	17.0		0.0	0.0		0.0	0.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Flash Dont Walk (s)	15.0	15.0		15.0	15.0		15.0	15.0		15.0	15.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	61.3	61.3			61.3			23.7			23.7	
Actuated g/C Ratio	0.65	0.65			0.65			0.25			0.25	
v/c Ratio	0.08	0.37			0.79			0.81			0.38	
Control Delay	7.5	8.3			8.3			49.8			21.3	
Queue Delay	0.0	0.0			0.0			0.0			0.0	
Total Delay	7.5	8.3			8.3			49.8			21.3	
LOS	A	A			A			D			C	
Approach Delay		8.3			8.3			49.8			21.3	
Approach LOS		A			A			D			C	
Queue Length 50th (ft)	6	116			45			172			34	
Queue Length 95th (ft)	28	290			#62			262			80	
Internal Link Dist (ft)		2240			2048			591			1399	
Turn Bay Length (ft)	75											
Base Capacity (vph)	346	1047			1046			439			347	
Starvation Cap Reductn	0	0			0			0			0	
Spillback Cap Reductn	0	0			0			0			0	
Storage Cap Reductn	0	0			0			0			0	
Reduced v/c Ratio	0.08	0.37			0.79			0.71			0.34	
Intersection Summary												
Area Type:	Other											
Cycle Length: 95												
Actuated Cycle Length: 95												
Offset: 64 (67%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow												
Natural Cycle: 80												
Control Type: Actuated-Coordinated												
Maximum v/c Ratio: 0.81												
Intersection Signal Delay: 17.0					Intersection LOS: B							
Intersection Capacity Utilization 74.5%					ICU Level of Service D							
Analysis Period (min) 15												

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

Splits and Phases: 15: Fairview St. & York Rd. (SR 0074)



HCM 2010 analysis cannot be performed without detectors for actuated controller type.

Lanes, Volumes, Timings
16: Mayapple Dr. & York Rd. (SR 0074)

Timing Plan: AM Peak Hour
05/08/2023

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↰			↱	↲	
Traffic Volume (vph)	323	13	8	570	38	29
Future Volume (vph)	323	13	8	570	38	29
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	11	11	11	12	12
Grade (%)	1%			1%	2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.995				0.941	
Flt Protected				0.999	0.972	
Satd. Flow (prot)	1578	0	0	1629	1502	0
Flt Permitted				0.999	0.972	
Satd. Flow (perm)	1578	0	0	1629	1502	0
Link Speed (mph)	50			50	35	
Link Distance (ft)	1056			3636	2008	
Travel Time (s)	14.4			49.6	39.1	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	9%	13%	17%	6%	2%	17%
Adj. Flow (vph)	363	15	9	640	43	33
Shared Lane Traffic (%)						
Lane Group Flow (vph)	378	0	0	649	76	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.13	1.13	1.13	1.13	1.09	1.09
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	49.2%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	1.7					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	1			1	2	
Traffic Vol, veh/h	323	13	8	570	38	29
Future Vol, veh/h	323	13	8	570	38	29
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage	0	-	-	0	0	-
Grade, %	1	-	-	1	2	-
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	9	13	17	6	2	17
Mvmt Flow	363	15	9	640	43	33

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	378
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.27
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.353
Pot Cap-1 Maneuver	-	-	1103
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1103
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	23.4
HCM LOS			C

Minor Lane/Major Mvm	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	270	-	-	1103	-
HCM Lane V/C Ratio	0.279	-	-	0.008	-
HCM Control Delay (s)	23.4	-	-	8.3	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	1.1	-	-	0	-

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↰			↱	↗	
Traffic Volume (vph)	341	25	32	586	85	80
Future Volume (vph)	341	25	32	586	85	80
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	11	11	11	10	10
Grade (%)	0%			0%	-2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.991				0.934	
Flt Protected				0.997	0.975	
Satd. Flow (prot)	1617	0	0	1685	1515	0
Flt Permitted				0.997	0.975	
Satd. Flow (perm)	1617	0	0	1685	1515	0
Link Speed (mph)	55			55	35	
Link Distance (ft)	3636			269	2688	
Travel Time (s)	45.1			3.3	52.4	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	7%	2%	2%	3%	2%	2%
Adj. Flow (vph)	367	27	34	630	91	86
Shared Lane Traffic (%)						
Lane Group Flow (vph)	394	0	0	664	177	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	10	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.12	1.12	1.12	1.12	1.16	1.16
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	75.1%			ICU Level of Service D		
Analysis Period (min)	15					

Intersection

Int Delay, s/veh 4.5

Movement EBT EBR WBL WBT NBL NBR

Lane Configurations 

Traffic Vol, veh/h 341 25 32 586 85 80

Future Vol, veh/h 341 25 32 586 85 80

Conflicting Peds, #/hr 0 0 0 0 0 0

Sign Control Free Free Free Free Stop Stop

RT Channelized - None - None - None

Storage Length - - - - 0 -

Veh in Median Storage0# - - 0 0 -

Grade, % 0 - - 0 -2 -

Peak Hour Factor 93 93 93 93 93 93

Heavy Vehicles, % 7 2 2 3 2 2

Mvmt Flow 367 27 34 630 91 86

Major/Minor Major1 Major2 Minor1

Conflicting Flow All 0 0 394 0 1079 381

Stage 1 - - - - 381 -

Stage 2 - - - - 698 -

Critical Hdwy - - 4.12 - 6.7 6.02

Critical Hdwy Stg 1 - - - - 5.02 -

Critical Hdwy Stg 2 - - - - 5.02 -

Follow-up Hdwy - -2.218 -3.518 3.318

Pot Cap-1 Maneuver - - 1165 - 222 680

Stage 1 - - - - 720 -

Stage 2 - - - - 533 -

Platoon blocked, % - - -

Mov Cap-1 Maneuver - - 1165 - 212 680

Mov Cap-2 Maneuver - - - - 212 -

Stage 1 - - - - 720 -

Stage 2 - - - - 509 -

Approach EB WB NB

HCM Control Delay, s 0 0.4 29.7

HCM LOS D

Minor Lane/Major MvmNBLn1 EBT EBR WBL WBT

Capacity (veh/h) 318 - - 1165 -

HCM Lane V/C Ratio 0.558 - - 0.03 -

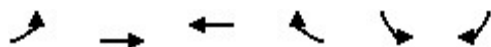
HCM Control Delay (s) 29.7 - - 8.2 0

HCM Lane LOS D - - A A

HCM 95th %tile Q(veh) 3.2 - - 0.1 -

Lanes, Volumes, Timings
18: York Rd. (SR 0074) & Shughart Rd.

Timing Plan: AM Peak Hour
05/08/2023



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↰	↰		↰	
Traffic Volume (vph)	203	341	586	0	0	135
Future Volume (vph)	203	341	586	0	0	135
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	11	11	11	10	10
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.865	
Flt Protected		0.982				
Satd. Flow (prot)	0	1625	1689	0	1425	0
Flt Permitted		0.982				
Satd. Flow (perm)	0	1625	1689	0	1425	0
Link Speed (mph)		55	55		35	
Link Distance (ft)		269	2661		1687	
Travel Time (s)		3.3	33.0		32.9	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	2%	7%	3%	2%	2%	2%
Adj. Flow (vph)	218	367	630	0	0	145
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	585	630	0	145	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		10	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.12	1.12	1.12	1.12	1.17	1.17
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilization 82.2%						
ICU Level of Service E						
Analysis Period (min) 15						

Intersection						
Int Delay, s/veh	3.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↰	↱		↰	↱
Traffic Vol, veh/h	203	341	586	0	0	135
Future Vol, veh/h	203	341	586	0	0	135
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	0	-	0	-	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	7	3	2	2	2
Mvmt Flow	218	367	630	0	0	145
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	630	0	-	0	1433	630
Stage 1	-	-	-	-	630	-
Stage 2	-	-	-	-	803	-
Critical Hdwy	4.12	-	-	-	7.1	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	952	-	-	-	113	482
Stage 1	-	-	-	-	531	-
Stage 2	-	-	-	-	441	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	952	-	-	-	80	482
Mov Cap-2 Maneuver	-	-	-	-	80	-
Stage 1	-	-	-	-	378	-
Stage 2	-	-	-	-	441	-
Approach	EB	WB		SB		
HCM Control Delay, s	7	0		15.7		
HCM LOS	C					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	952	-	-	-	-	482
HCM Lane V/C Ratio	0.229	-	-	-	-	0.301
HCM Control Delay (s)	9.9	0	-	-	-	15.7
HCM Lane LOS	A	A	-	-	-	C
HCM 95th %tile Q(veh)	0.9	-	-	-	-	1.3

Lanes, Volumes, Timings
19: Forge Rd. (SR 2001) & Westminster Dr.

Timing Plan: AM Peak Hour
05/08/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	23	9	190	47	10	10	9	343	13	4	3
Future Volume (vph)	1	23	9	190	47	10	10	9	343	13	4	3
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.962			0.994				0.850		0.981	
Flt Protected		0.999			0.963			0.974			0.968	
Satd. Flow (prot)	0	1696	0	0	1689	0	0	1719	1500	0	1676	0
Flt Permitted		0.999			0.963			0.974			0.968	
Satd. Flow (perm)	0	1696	0	0	1689	0	0	1719	1500	0	1676	0
Link Speed (mph)		25			25			35			35	
Link Distance (ft)		448			530			1566			758	
Travel Time (s)		12.2			14.5			30.5			14.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1	25	10	207	51	11	11	10	373	14	4	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	36	0	0	269	0	0	21	373	0	21	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	39.1%				ICU Level of Service A							
Analysis Period (min)	15											

Intersection

Intersection Delay, s/veh 11.1

Intersection LOS B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕	↕		↕	
Traffic Vol, veh/h	1	23	9	190	47	10	10	9	343	13	4	3
Future Vol, veh/h	1	23	9	190	47	10	10	9	343	13	4	3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	25	10	207	51	11	11	10	373	14	4	3
Number of Lanes	0	1	0	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	1
HCM Control Delay	8.5	11.2	11.4	8.6
HCM LOS	A	B	B	A

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1
Vol Left, %	53%	0%	3%	77%	65%
Vol Thru, %	47%	0%	70%	19%	20%
Vol Right, %	0%	100%	27%	4%	15%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	19	343	33	247	20
LT Vol	10	0	1	190	13
Through Vol	9	0	23	47	4
RT Vol	0	343	9	10	3
Lane Flow Rate	21	373	36	268	22
Geometry Grp	7	7	2	2	5
Degree of Util (X)	0.032	0.48	0.051	0.378	0.032
Departure Headway (Hd)	5.609	4.639	5.117	5.074	5.34
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	636	772	693	706	664
Service Time	3.359	2.388	3.2	3.133	3.422
HCM Lane V/C Ratio	0.033	0.483	0.052	0.38	0.033
HCM Control Delay	8.5	11.6	8.5	11.2	8.6
HCM Lane LOS	A	B	A	B	A
HCM 95th-tile Q	0.1	2.6	0.2	1.8	0.1

Lanes, Volumes, Timings
20: Forge Rd. (SR 2001) & Fairview St.

Timing Plan: AM Peak Hour
05/08/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	19	8	39	17	19	8	413	161	5	135	0
Future Volume (vph)	5	19	8	39	17	19	8	413	161	5	135	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	10	10	10	10	10	11	11	11	11	11	11
Grade (%)		-2%			-1%			2%			1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.966			0.966			0.963				
Flt Protected		0.992			0.974			0.999			0.998	
Satd. Flow (prot)	0	1538	0	0	1557	0	0	1621	0	0	1618	0
Flt Permitted		0.992			0.974			0.999			0.998	
Satd. Flow (perm)	0	1538	0	0	1557	0	0	1621	0	0	1618	0
Link Speed (mph)		35			25			35			35	
Link Distance (ft)		1976			1153			1844			1566	
Travel Time (s)		38.5			31.4			35.9			30.5	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	2%	2%	17%	2%	2%	2%	17%	2%	2%	2%	7%	2%
Adj. Flow (vph)	6	21	9	44	19	21	9	464	181	6	152	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	36	0	0	84	0	0	654	0	0	158	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.16	1.16	1.16	1.16	1.16	1.16	1.13	1.13	1.13	1.13	1.13	1.13
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Area Type:	Other											
Control Type: Unsignalized												
Intersection Capacity Utilization 54.5% ICU Level of Service A												
Analysis Period (min) 15												

Intersection												
Int Delay, s/veh	2.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	5	19	8	39	17	19	8	413	161	5	135	0
Future Vol, veh/h	5	19	8	39	17	19	8	413	161	5	135	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-2	-	-	-1	-	-	2	-	-	1	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	2	2	17	2	2	2	17	2	2	2	7	2
Mvmt Flow	6	21	9	44	19	21	9	464	181	6	152	0

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	757	827	152	752	737	555	152	0	0	645	0	0
Stage 1	164	164	-	573	573	-	-	-	-	-	-	-
Stage 2	593	663	-	179	164	-	-	-	-	-	-	-
Critical Hdwy	6.72	6.12	6.17	6.92	6.32	6.12	4.27	-	-	4.12	-	-
Critical Hdwy Stg 1	5.72	5.12	-	5.92	5.32	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.72	5.12	-	5.92	5.32	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.3	3.518	4.018	3.318	2.2	-	-	2.218	-	-
Pot Cap-1 Maneuve	852	336	901	340	360	540	1431	-	-	940	-	-
Stage 1	853	776	-	521	520	-	-	-	-	-	-	-
Stage 2	526	494	-	831	769	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuve	820	330	901	316	354	540	1431	-	-	940	-	-
Mov Cap-2 Maneuve	820	330	-	316	354	-	-	-	-	-	-	-
Stage 1	844	771	-	516	515	-	-	-	-	-	-	-
Stage 2	482	489	-	794	764	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	15.2		17.9		0.1		0.3	
HCM LOS	C		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1431	-	-	390	363	940	-	-
HCM Lane V/C Ratio	0.006	-	-	0.092	0.232	0.006	-	-
HCM Control Delay (s)	7.5	0	-	15.2	17.9	8.9	0	-
HCM Lane LOS	A	A	-	C	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.3	0.9	0	-	-

Lanes, Volumes, Timings

Timing Plan: AM Peak Hour

21: Rose Access/Pharmacy Tract & W. Trindle Rd. (SR 0641)

05/08/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	527	42	50	553	0	151	0	98	0	0	0
Future Volume (vph)	0	527	42	50	553	0	151	0	98	0	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (ft)	150		350	150		0	190		0	75		0
Storage Lanes	1		1	2		0	2		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	0.97	1.00	1.00	1.00	1.00	1.00
Frt			0.850						0.850			
Flt Protected				0.950			0.950					
Satd. Flow (prot)	1765	1765	1500	3252	1765	0	3252	1500	0	1765	1765	0
Flt Permitted				0.950			0.950					
Satd. Flow (perm)	1765	1765	1500	3252	1765	0	3252	1500	0	1765	1765	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			149						333			
Link Speed (mph)		45			45			25			25	
Link Distance (ft)		461			1985			448			562	
Travel Time (s)		7.0			30.1			12.2			15.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	573	46	54	601	0	164	0	107	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	573	46	54	601	0	164	107	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Size(ft)	20	6	20	20	6		20	6		20	6	
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2									

Lanes, Volumes, Timings

21: Rose Access/Pharmacy Tract & W. Trindle Rd. (SR 0641)

Timing Plan: AM Peak Hour

05/08/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2	2	1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	4.0	7.0	7.0	4.0	7.0		4.0	7.0		4.0	7.0	
Minimum Split (s)	10.0	25.0	25.0	10.0	25.0		10.0	28.0		10.0	28.0	
Total Split (s)	10.0	55.0	55.0	11.0	56.0		16.0	34.0		10.0	28.0	
Total Split (%)	9.1%	50.0%	50.0%	10.0%	50.9%		14.5%	30.9%		9.1%	25.5%	
Maximum Green (s)	4.0	49.0	49.0	5.0	50.0		10.0	28.0		4.0	22.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0		-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max	C-Max	None	C-Max		None	None		None	None	
Walk Time (s)		7.0	7.0		7.0			7.0			7.0	
Flash Dont Walk (s)		12.0	12.0		12.0			15.0			15.0	
Pedestrian Calls (#/hr)		0	0		0			0			0	
Act Effct Green (s)		78.6	78.6	8.2	89.5		10.5	10.5				
Actuated g/C Ratio		0.71	0.71	0.07	0.81		0.10	0.10				
v/c Ratio		0.45	0.04	0.22	0.42		0.53	0.24				
Control Delay		6.4	0.0	49.6	3.9		53.9	1.3				
Queue Delay		0.0	0.0	0.0	0.0		0.0	0.0				
Total Delay		6.4	0.0	49.6	3.9		53.9	1.3				
LOS		A	A	D	A		D	A				
Approach Delay		5.9			7.7			33.1				
Approach LOS		A			A			C				
Queue Length 50th (ft)		120	0	19	95		57	0				
Queue Length 95th (ft)		m148	m0	38	136		92	0				
Internal Link Dist (ft)		381			1905			368			482	
Turn Bay Length (ft)			350	150			190					
Base Capacity (vph)		1260	1114	243	1436		325	640				
Starvation Cap Reductn		0	0	0	0		0	0				
Spillback Cap Reductn		0	0	0	0		0	0				
Storage Cap Reductn		0	0	0	0		0	0				
Reduced v/c Ratio		0.45	0.04	0.22	0.42		0.50	0.17				

Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 2 (2%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Natural Cycle: 80

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.53

Intersection Signal Delay: 11.4

Intersection LOS: B

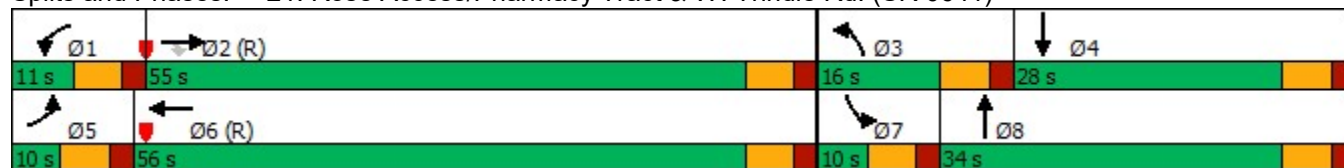
Intersection Capacity Utilization 45.5%

ICU Level of Service A

Analysis Period (min) 15

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

Splits and Phases: 21: Rose Access/Pharmacy Tract & W. Trindle Rd. (SR 0641)



HCM 2010 Signalized Intersection Summary
 21: Rose Access/Pharmacy Tract & W. Trindle Rd. (SR 0641)

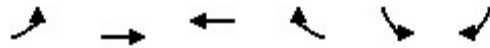
Timing Plan: AM Peak Hour
 05/08/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	527	42	50	553	0	151	0	98	0	0	0
Future Volume (veh/h)	0	527	42	50	553	0	151	0	98	0	0	0
Number	5	2	12	1	6	16	3	8	18	7	4	14
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
Adj Sat Flow, veh/h/ln	1765	1765	1765	1765	1765	1800	1765	1765	1800	1765	1765	1800
Adj Flow Rate, veh/h	0	573	0	54	601	0	164	0	107	0	0	0
Adj No. of Lanes	1	1	1	2	1	0	2	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	2	1274	1083	132	1425	0	264	0	152	2	2	0
Arrive On Green	0.00	0.72	0.00	0.04	0.81	0.00	0.08	0.00	0.09	0.00	0.00	0.00
Sat Flow, veh/h	1681	1765	1500	3261	1765	0	3261	0	1500	1681	1765	0
Grp Volume(v), veh/h	0	573	0	54	601	0	164	0	107	0	0	0
Grp Sat Flow(s),veh/h/ln	1681	1765	1500	1630	1765	0	1630	0	1500	1681	1765	0
Q Serve(g_s), s	0.0	14.7	0.0	1.8	10.9	0.0	5.4	0.0	7.6	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	14.7	0.0	1.8	10.9	0.0	5.4	0.0	7.6	0.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	2	1274	1083	132	1425	0	264	0	152	2	2	0
V/C Ratio(X)	0.00	0.45	0.00	0.41	0.42	0.00	0.62	0.00	0.70	0.00	0.00	0.00
Avail Cap(c_a), veh/h	76	1274	1083	178	1425	0	326	0	395	76	369	0
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)	0.00	1.00	0.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	6.3	0.0	51.5	3.1	0.0	48.9	0.0	48.3	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	1.2	0.0	2.0	0.9	0.0	2.4	0.0	5.8	0.0	0.0	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	0.0	11.9	0.0	1.5	9.4	0.0	4.5	0.0	6.1	0.0	0.0	0.0
LnGrp Delay(d),s/veh	0.0	7.5	0.0	53.5	4.0	0.0	51.4	0.0	54.2	0.0	0.0	0.0
LnGrp LOS		A		D	A		D		D			
Approach Vol, veh/h		573			655			271			0	
Approach Delay, s/veh		7.5			8.1			52.5			0.0	
Approach LOS		A			A			D				
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.5	84.4	13.9	2.2	0.0	93.9	0.0	16.1				
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0				
Max Green Setting (Gmax),s	50	49.0	10.0	22.0	4.0	50.0	4.0	28.0				
Max Q Clear Time (g_c+l1),s	4.5	17.2	7.9	0.0	0.0	13.4	0.0	9.6				
Green Ext Time (p_c), s	0.0	3.6	0.1	0.0	0.0	4.0	0.0	0.5				
Intersection Summary												
HCM 2010 Ctrl Delay				15.9								
HCM 2010 LOS				B								

Lanes, Volumes, Timings
22: York Rd. (SR 0074) & Heritage Village Access

Timing Plan: AM Peak Hour

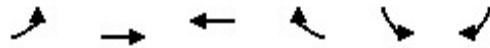
05/08/2023



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↰↰	↑	↑	↱	↰	↱
Traffic Volume (vph)	33	385	681	116	60	79
Future Volume (vph)	33	385	681	116	60	79
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (ft)	175			275	0	500
Storage Lanes	2			1	1	1
Taper Length (ft)	25				25	
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00
Frt				0.850		0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	3252	1765	1765	1500	1676	1500
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	3252	1765	1765	1500	1676	1500
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				126		86
Link Speed (mph)		35	35		25	
Link Distance (ft)		2128	1056		605	
Travel Time (s)		41.5	20.6		16.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	36	418	740	126	65	86
Shared Lane Traffic (%)						
Lane Group Flow (vph)	36	418	740	126	65	86
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		24	24		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2	1	1	1
Detector Template	Left	Thru	Thru	Right	Left	Right
Leading Detector (ft)	20	100	100	20	20	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	6	20	20	20
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94	94			
Detector 2 Size(ft)		6	6			
Detector 2 Type		CI+Ex	CI+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type	Prot	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6

Lanes, Volumes, Timings
22: York Rd. (SR 0074) & Heritage Village Access

Timing Plan: AM Peak Hour
05/08/2023

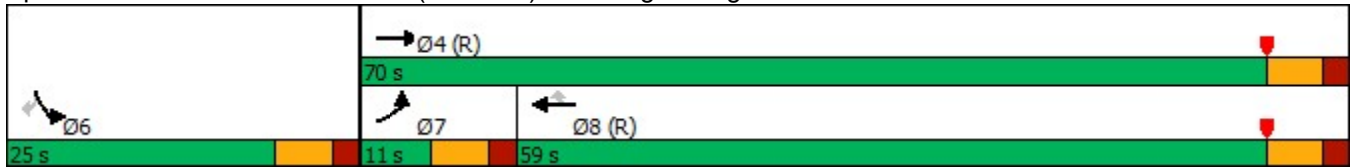


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Detector Phase	7	4	8	8	6	6
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	10.0	21.0	21.0	21.0	25.0	25.0
Total Split (s)	11.0	70.0	59.0	59.0	25.0	25.0
Total Split (%)	11.6%	73.7%	62.1%	62.1%	26.3%	26.3%
Maximum Green (s)	5.0	64.0	53.0	53.0	19.0	19.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	Max	C-Max	C-Max	C-Max	None	None
Walk Time (s)		7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		8.0	8.0	8.0	12.0	12.0
Pedestrian Calls (#/hr)		0	0	0	0	0
Act Effct Green (s)	18.3	78.3	54.0	54.0	10.0	10.0
Actuated g/C Ratio	0.19	0.82	0.57	0.57	0.11	0.11
v/c Ratio	0.06	0.29	0.74	0.14	0.37	0.37
Control Delay	39.5	1.2	20.9	2.2	44.5	13.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.5	1.2	20.9	2.2	44.5	13.2
LOS	D	A	C	A	D	B
Approach Delay		4.2	18.1		26.7	
Approach LOS		A	B		C	
Queue Length 50th (ft)	11	11	310	0	37	0
Queue Length 95th (ft)	m22	23	462	23	75	42
Internal Link Dist (ft)		2048	976		525	
Turn Bay Length (ft)	175			275		500
Base Capacity (vph)	625	1454	1003	907	352	383
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.29	0.74	0.14	0.18	0.22

Intersection Summary

Area Type: Other
Cycle Length: 95
Actuated Cycle Length: 95
Offset: 24 (25%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.74
Intersection Signal Delay: 14.7
Intersection LOS: B
Intersection Capacity Utilization 51.3%
ICU Level of Service A
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 22: York Rd. (SR 0074) & Heritage Village Access



HCM 2010 Signalized Intersection Summary
 22: York Rd. (SR 0074) & Heritage Village Access

Timing Plan: AM Peak Hour
 05/08/2023

								
Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations	 							
Traffic Volume (veh/h)	33	385	681	116	60	79		
Future Volume (veh/h)	33	385	681	116	60	79		
Number	7	4	8	18	1	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1765	1765	1765	1765	1765	1765		
Adj Flow Rate, veh/h	36	418	740	0	65	0		
Adj No. of Lanes	2	1	1	1	1	1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	206	1466	1262	1073	107	96		
Arrive On Green	0.13	1.00	0.72	0.00	0.06	0.00		
Sat Flow, veh/h	3261	1765	1765	1500	1681	1500		
Grp Volume(v), veh/h	36	418	740	0	65	0		
Grp Sat Flow(s),veh/h/ln	1630	1765	1765	1500	1681	1500		
Q Serve(g_s), s	0.9	0.0	19.5	0.0	3.6	0.0		
Cycle Q Clear(g_c), s	0.9	0.0	19.5	0.0	3.6	0.0		
Prop In Lane	1.00			1.00	1.00	1.00		
Lane Grp Cap(c), veh/h	206	1466	1262	1073	107	96		
V/C Ratio(X)	0.17	0.29	0.59	0.00	0.61	0.00		
Avail Cap(c_a), veh/h	206	1466	1262	1073	354	316		
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	0.94	0.94	1.00	0.00	1.00	0.00		
Uniform Delay (d), s/veh	39.3	0.0	6.6	0.0	43.3	0.0		
Incr Delay (d2), s/veh	1.7	0.5	2.0	0.0	5.4	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(95%),veh/ln	0.8	0.3	15.1	0.0	3.3	0.0		
LnGrp Delay(d),s/veh	41.0	0.5	8.6	0.0	48.7	0.0		
LnGrp LOS	D	A	A		D			
Approach Vol, veh/h		454	740		65			
Approach Delay, s/veh		3.7	8.6		48.7			
Approach LOS		A	A		D			
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				83.9		11.1	11.0	72.9
Change Period (Y+Rc), s				6.0		6.0	6.0	6.0
Max Green Setting (Gmax), s				64.0		19.0	5.0	53.0
Max Q Clear Time (g_c+I1), s				2.5		6.1	3.4	22.0
Green Ext Time (p_c), s				2.8		0.1	0.0	5.8
Intersection Summary								
HCM 2010 Ctrl Delay			8.9					
HCM 2010 LOS			A					

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑	↓	↑	↘	↗
Traffic Volume (vph)	705	473	28	748	290	8
Future Volume (vph)	705	473	28	748	290	8
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	16	10	13	14	14
Storage Length (ft)		0	75		0	0
Storage Lanes		1	1		1	0
Taper Length (ft)			25		25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850			0.997	
Flt Protected			0.950		0.954	
Satd. Flow (prot)	1706	1700	1565	1824	1790	0
Flt Permitted			0.293		0.954	
Satd. Flow (perm)	1706	1700	483	1824	1790	0
Right Turn on Red		No				Yes
Satd. Flow (RTOR)					1	
Link Speed (mph)	35			35	35	
Link Distance (ft)	1498			1127	625	
Travel Time (s)	29.2			22.0	12.2	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	734	493	29	779	302	8
Shared Lane Traffic (%)						
Lane Group Flow (vph)	734	493	29	779	310	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	14	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.12	0.91	1.17	1.03	0.99	0.99
Turning Speed (mph)		9	15		15	9
Number of Detectors	1	0	1	1	1	
Detector Template						
Leading Detector (ft)	37	0	37	37	37	
Trailing Detector (ft)	-3	0	-3	-3	-3	
Detector 1 Position(ft)	-3	0	-3	-3	-3	
Detector 1 Size(ft)	40	20	40	40	40	
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Turn Type	NA	Perm	Perm	NA	Prot	
Protected Phases	2			6	8	
Permitted Phases		2	6			
Detector Phase	2	2	6	6	8	
Switch Phase						
Minimum Initial (s)	30.0	30.0	30.0	30.0	10.0	
Minimum Split (s)	35.2	35.2	35.2	35.2	14.9	



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Total Split (s)	74.0	74.0	74.0	74.0	36.0	
Total Split (%)	67.3%	67.3%	67.3%	67.3%	32.7%	
Maximum Green (s)	68.8	68.8	68.8	68.8	31.1	
Yellow Time (s)	3.6	3.6	3.6	3.6	3.7	
All-Red Time (s)	1.6	1.6	1.6	1.6	1.2	
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-0.5	
Total Lost Time (s)	4.2	4.2	4.2	4.2	4.4	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	
Act Effct Green (s)	76.8	76.8	76.8	76.8	24.6	
Actuated g/C Ratio	0.70	0.70	0.70	0.70	0.22	
v/c Ratio	0.62	0.42	0.09	0.61	0.78	
Control Delay	12.7	9.2	6.9	8.2	52.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	12.7	9.2	6.9	8.2	52.9	
LOS	B	A	A	A	D	
Approach Delay	11.3			8.1	52.9	
Approach LOS	B			A	D	
Queue Length 50th (ft)	245	132	3	137	206	
Queue Length 95th (ft)	443	239	m12	242	282	
Internal Link Dist (ft)	1418			1047	545	
Turn Bay Length (ft)			75			
Base Capacity (vph)	1191	1187	337	1273	514	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.62	0.42	0.09	0.61	0.60	

Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 60 (55%), Referenced to phase 2:EBT and 6:WBTL, Start of Green

Natural Cycle: 55

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.78

Intersection Signal Delay: 15.7

Intersection LOS: B

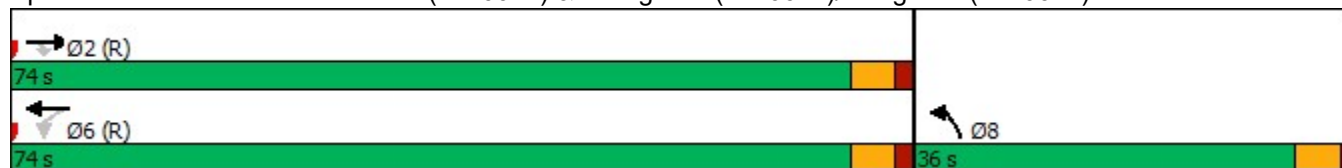
Intersection Capacity Utilization 66.2%

ICU Level of Service C

Analysis Period (min) 15

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

Splits and Phases: 1: York Road (SR 0074) & E. High St. (SR 0641)/E High St. (SR 0641)



HCM 2010 Signalized Intersection Summary

Timing Plan: PM Peak Hour

1: York Road (SR 0074) & E. High St. (SR 0641)/E High St. (SR 0641)

05/08/2023

									
Movement	EBT	EBR	WBL	WBT	NBL	NBR			
Lane Configurations									
Traffic Volume (veh/h)	705	473	28	748	290	8			
Future Volume (veh/h)	705	473	28	748	290	8			
Number	2	12	1	6	3	18			
Initial Q (Qb), veh	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1765	1835	1765	1835	1835	1872			
Adj Flow Rate, veh/h	734	0	29	779	302	8			
Adj No. of Lanes	1	1	1	1	0	0			
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96			
Percent Heavy Veh, %	2	2	2	2	2	2			
Cap, veh/h	1262	1116	434	1313	350	9			
Arrive On Green	0.72	0.00	1.00	1.00	0.21	0.20			
Sat Flow, veh/h	1765	1560	720	1835	1692	45			
Grp Volume(v), veh/h	734	0	29	779	311	0			
Grp Sat Flow(s),veh/h/ln	1765	1560	720	1835	1743	0			
Q Serve(g_s), s	22.3	0.0	1.3	0.0	19.0	0.0			
Cycle Q Clear(g_c), s	22.3	0.0	23.6	0.0	19.0	0.0			
Prop In Lane		1.00	1.00		0.97	0.03			
Lane Grp Cap(c), veh/h	1262	1116	434	1313	360	0			
V/C Ratio(X)	0.58	0.00	0.07	0.59	0.86	0.00			
Avail Cap(c_a), veh/h	1262	1116	434	1313	501	0			
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	1.00			
Upstream Filter(I)	1.00	0.00	0.72	0.72	1.00	0.00			
Uniform Delay (d), s/veh	7.6	0.0	3.4	0.0	42.1	0.0			
Incr Delay (d2), s/veh	2.0	0.0	0.2	1.4	10.9	0.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(95%),veh/ln	7.1	0.0	0.5	0.9	15.5	0.0			
LnGrp Delay(d),s/veh	9.6	0.0	3.6	1.4	53.1	0.0			
LnGrp LOS	A		A	A	D				
Approach Vol, veh/h	734			808	311				
Approach Delay, s/veh	9.6			1.5	53.1				
Approach LOS	A			A	D				
Timer	1	2	3	4	5	6	7	8	
Assigned Phs		2				6		8	
Phs Duration (G+Y+Rc), s		82.9				82.9		27.1	
Change Period (Y+Rc), s		* 5.2				* 5.2		4.9	
Max Green Setting (Gmax), s		* 69				* 69		31.1	
Max Q Clear Time (g_c+I1), s		24.8				26.1		21.5	
Green Ext Time (p_c), s		3.2				3.8		0.8	
Intersection Summary									
HCM 2010 Ctrl Delay			13.4						
HCM 2010 LOS			B						
Notes									

User approved volume balancing among the lanes for turning movement.

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Lanes, Volumes, Timings
2: Giant Ln./Carlisle Plaza Mall & York Road (SR 0074)

Timing Plan: PM Peak Hour

05/08/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	106	623	33	393	500	71	8	40	165	83	173	83
Future Volume (vph)	106	623	33	393	500	71	8	40	165	83	173	83
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	13	13	13	13	12	13	11	14	14	10	12	12
Grade (%)		1%			2%			-2%			2%	
Storage Length (ft)	210		0	210		0	110		0	65		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00										
Frt		0.993			0.981			0.879			0.952	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1724	1800	0	1715	1710	0	1637	1671	0	1549	1663	0
Flt Permitted	0.435			0.110			0.339			0.454		
Satd. Flow (perm)	789	1800	0	199	1710	0	584	1671	0	740	1663	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4			15			172			27	
Link Speed (mph)		35			35			35			25	
Link Distance (ft)		549			3632			825			544	
Travel Time (s)		10.7			70.8			16.1			14.8	
Confl. Peds. (#/hr)			2	2								
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	2%	2%	2%	2%	4%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	110	649	34	409	521	74	8	42	172	86	180	86
Shared Lane Traffic (%)												
Lane Group Flow (vph)	110	683	0	409	595	0	8	214	0	86	266	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		13			13			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.03	1.03	1.03	1.04	1.09	1.04	1.11	0.97	0.97	1.19	1.09	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1		1	1		1	1	
Detector Template												
Leading Detector (ft)	40	256		40	256		30	37		30	35	
Trailing Detector (ft)	-10	250		-10	250		-10	-3		-10	-5	
Detector 1 Position(ft)	-10	250		-10	250		-10	-3		-10	-5	
Detector 1 Size(ft)	50	6		50	6		40	40		40	40	
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2			6			8			4		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Detector Phase	5	2		1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	3.0	10.0		3.0	10.0		3.0	3.0		3.0	3.0	
Minimum Split (s)	8.0	24.4		8.0	24.4		21.4	21.4		21.4	21.4	
Total Split (s)	8.0	38.5		20.0	50.5		21.5	21.5		21.5	21.5	
Total Split (%)	10.0%	48.1%		25.0%	63.1%		26.9%	26.9%		26.9%	26.9%	
Maximum Green (s)	4.5	33.1		16.5	45.1		16.1	16.1		16.1	16.1	
Yellow Time (s)	3.0	3.6		3.0	3.6		3.8	3.8		3.8	3.8	
All-Red Time (s)	0.5	1.8		0.5	1.8		1.6	1.6		1.6	1.6	
Lost Time Adjust (s)	-0.5	-1.0		-0.5	-1.0		-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)	3.0	4.4		3.0	4.4		4.4	4.4		4.4	4.4	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	6.0		3.0	6.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.5		3.0	3.5		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	25.0		0.0	25.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	20.0		0.0	20.0		0.0	0.0		0.0	0.0	
Recall Mode	Max	C-Max		Max	C-Max		None	None		None	None	
Walk Time (s)		19.0			19.0		16.0	16.0		16.0	16.0	
Flash Dont Walk (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Pedestrian Calls (#/hr)		0			0		0	0		0	0	
Act Effct Green (s)	41.9	34.1		56.9	46.1		15.7	15.7		15.7	15.7	
Actuated g/C Ratio	0.52	0.43		0.71	0.58		0.20	0.20		0.20	0.20	
v/c Ratio	0.23	0.89		0.83	0.60		0.07	0.46		0.59	0.77	
Control Delay	6.8	37.2		35.4	13.9		27.0	10.9		46.9	42.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	6.8	37.2		35.4	13.9		27.0	10.9		46.9	42.7	
LOS	A	D		D	B		C	B		D	D	
Approach Delay		33.0			22.6			11.5			43.8	
Approach LOS		C			C			B			D	
Queue Length 50th (ft)	15	303		143	171		3	17		38	111	
Queue Length 95th (ft)	30	#518		#308	271		15	73		#95	#214	
Internal Link Dist (ft)		469			3552			745			464	
Turn Bay Length (ft)	210			210			110			65		
Base Capacity (vph)	488	769		490	991		124	492		158	376	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.23	0.89		0.83	0.60		0.06	0.43		0.54	0.71	

Intersection Summary

Area Type: Other

Cycle Length: 80

Actuated Cycle Length: 80

Offset: 46 (58%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 80

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.89

Intersection Signal Delay: 28.2

Intersection LOS: C

Intersection Capacity Utilization 92.3%

ICU Level of Service F

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 2: Giant Ln./Carlisle Plaza Mall & York Road (SR 0074)



HCM 2010 analysis expects stop-line detection. Detectors cannot be further than 20 feet from the stop bar.

Lanes, Volumes, Timings

Timing Plan: PM Peak Hour

3: Carlisle Plaza Mall/Shaffner Ave. & E High St. (SR 0641)/E. High St. (SR 0641) 05/08/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	649	68	140	680	1	58	0	89	0	0	1
Future Volume (vph)	0	649	68	140	680	1	58	0	89	0	0	1
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12	12	12	12	16	16	16
Grade (%)		0%			0%			2%			0%	
Storage Length (ft)	60		60	60		0	0		80	0		0
Storage Lanes	1		1	1		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor								1.00			0.98	
Frt			0.850						0.850		0.865	
Flt Protected				0.950				0.950				
Satd. Flow (prot)	1765	1765	1500	1676	1765	0	0	1660	1485	0	1691	0
Flt Permitted				0.239				0.757				
Satd. Flow (perm)	1765	1765	1500	422	1765	0	0	1319	1485	0	1691	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			81						95		286	
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		1127			853			544			592	
Travel Time (s)		22.0			16.6			10.6			11.5	
Confl. Peds. (#/hr)							1					1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	690	72	149	723	1	62	0	95	0	0	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	690	72	149	724	0	0	62	95	0	1	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane					Yes							
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.09	1.09	1.09	0.91	0.91	0.91
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	1	1	1		1	1	1	1	2	
Detector Template							Left			Left		
Leading Detector (ft)	45	35	35	45	35		20	45	45	20	20	
Trailing Detector (ft)	-5	-5	-5	-5	-5		0	-5	-5	0	-3	
Detector 1 Position(ft)	-5	-5	-5	-5	-5		0	-5	-5	0	-3	
Detector 1 Size(ft)	50	40	40	50	40		20	50	50	20	6	
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex		CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)											14	
Detector 2 Size(ft)											6	
Detector 2 Type											CI+Ex	
Detector 2 Channel												

Lanes, Volumes, Timings

Timing Plan: PM Peak Hour

3: Carlisle Plaza Mall/Shaffner Ave. & E High St. (SR 0641)/E. High St. (SR 0641) 05/08/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)												0.0
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Perm	NA	Perm		NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2		2	6			8		8	4		
Detector Phase	5	2	2	1	6		8	8	8	4	4	
Switch Phase												
Minimum Initial (s)	3.0	10.0	10.0	3.0	10.0		3.0	3.0	3.0	3.0	3.0	
Minimum Split (s)	8.7	27.7	27.7	8.7	27.7		26.5	26.5	26.5	26.5	26.5	
Total Split (s)	8.7	69.3	69.3	14.2	74.8		26.5	26.5	26.5	26.5	26.5	
Total Split (%)	7.9%	63.0%	63.0%	12.9%	68.0%		24.1%	24.1%	24.1%	24.1%	24.1%	
Maximum Green (s)	3.0	63.6	63.6	8.5	69.1		21.0	21.0	21.0	21.0	21.0	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.5	2.5	2.5	2.5	2.5	
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0			-1.0	-1.0		-1.0	
Total Lost Time (s)	4.7	4.7	4.7	4.7	4.7			4.5	4.5		4.5	
Lead/Lag	Lead	Lag	Lag	Lead	Lag							
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	6.0	6.0	3.0	6.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	Max	C-Max	C-Max	Max	C-Max		None	None	None	None	None	
Walk Time (s)		12.0	12.0		12.0		11.0	11.0	11.0	11.0	11.0	
Flash Dont Walk (s)		10.0	10.0		10.0		10.0	10.0	10.0	10.0	10.0	
Pedestrian Calls (#/hr)		0	0		0		0	0	0	0	0	
Act Effct Green (s)		64.6	64.6	89.2	70.1			11.6	11.6		11.6	
Actuated g/C Ratio		0.59	0.59	0.81	0.64			0.11	0.11		0.11	
v/c Ratio		0.67	0.08	0.26	0.64			0.45	0.39		0.00	
Control Delay		10.4	0.6	2.4	7.4			55.2	13.7		0.0	
Queue Delay		0.0	0.0	0.0	0.0			0.0	0.0		0.0	
Total Delay		10.4	0.6	2.4	7.4			55.2	13.7		0.0	
LOS		B	A	A	A			E	B		A	
Approach Delay		9.5			6.5			30.1				
Approach LOS		A			A			C				
Queue Length 50th (ft)		100	0	11	80			42	0		0	
Queue Length 95th (ft)		122	m3	m23	117			82	47		0	
Internal Link Dist (ft)		1047			773			464			512	
Turn Bay Length (ft)			60	60					80			
Base Capacity (vph)		1036	914	569	1124			263	373		567	
Starvation Cap Reductn		0	0	0	0			0	0		0	
Spillback Cap Reductn		0	0	0	0			0	0		0	
Storage Cap Reductn		0	0	0	0			0	0		0	
Reduced v/c Ratio		0.67	0.08	0.26	0.64			0.24	0.25		0.00	

Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 68 (62%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 75

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.67

Intersection Signal Delay: 9.8

Intersection LOS: A

Intersection Capacity Utilization 65.9%

ICU Level of Service C

Analysis Period (min) 15

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

Splits and Phases: 3: Carlisle Plaza Mall/Shaffner Ave. & E High St. (SR 0641)/E. High St. (SR 0641)

 Ø1	 Ø2 (R)	 Ø4
14.2 s	69.3 s	26.5 s
 Ø5	 Ø6 (R)	 Ø8
8.7 s	74.8 s	26.5 s

HCM 2010 Signalized Intersection Summary

Timing Plan: PM Peak Hour

3: Carlisle Plaza Mall/Shaffner Ave. & E High St. (SR 0641)/E. High St. (SR 0641)

05/08/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	649	68	140	680	1	58	0	89	0	0	1
Future Volume (veh/h)	0	649	68	140	680	1	58	0	89	0	0	1
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	6	0	2	5	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	0.99		0.99	1.00		0.99
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
Adj Sat Flow, veh/h/ln	1765	1765	1765	1765	1765	1800	1782	1747	1747	1872	1835	1872
Adj Flow Rate, veh/h	0	690	72	149	723	1	62	0	95	0	0	1
Adj No. of Lanes	1	1	1	1	1	0	0	1	1	0	1	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	533	1213	1031	630	1439	2	197	0	147	0	0	155
Arrive On Green	0.00	1.00	1.00	0.17	1.00	1.00	0.09	0.00	0.10	0.00	0.00	0.09
Sat Flow, veh/h	1681	1765	1500	1681	1762	2	1319	0	1478	0	0	1551
Grp Volume(v), veh/h	0	690	72	149	0	724	62	0	95	0	0	1
Grp Sat Flow(s),veh/h/ln	1681	1765	1500	1681	0	1764	1319	0	1478	0	0	1551
Q Serve(g_s), s	0.0	0.0	0.0	2.2	0.0	0.0	4.7	0.0	6.8	0.0	0.0	0.1
Cycle Q Clear(g_c), s	0.0	0.0	0.0	2.2	0.0	0.0	5.2	0.0	6.8	0.0	0.0	0.1
Prop In Lane	1.00		1.00	1.00		0.00	1.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	533	1213	1031	630	0	1441	185	0	147	0	0	155
V/C Ratio(X)	0.00	0.57	0.07	0.24	0.00	0.50	0.34	0.00	0.65	0.00	0.00	0.01
Avail Cap(c_a), veh/h	626	1213	1031	693	0	1441	324	0	296	0	0	310
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.75	0.75	0.64	0.00	0.64	0.93	0.00	0.93	0.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	6.8	0.0	0.0	47.6	0.0	47.6	0.0	0.0	45.1
Incr Delay (d2), s/veh	0.0	1.5	0.1	0.6	0.0	0.8	1.0	0.0	4.4	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.4	0.0	0.1	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.0	1.0	0.1	3.1	0.0	0.6	3.4	0.0	5.3	0.0	0.0	0.1
LnGrp Delay(d),s/veh	0.0	1.9	0.1	7.5	0.0	1.0	48.6	0.0	52.0	0.0	0.0	45.1
LnGrp LOS		A	A	A		A	D		D			D
Approach Vol, veh/h		762			873			157			1	
Approach Delay, s/veh		1.7			2.1			50.7			45.1	
Approach LOS		A			A			D			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	14.2	80.3		15.5	0.0	94.5		15.5				
Change Period (Y+Rc), s	* 5.7	* 5.7		5.5	* 5.7	* 5.7		5.5				
Max Green Setting (Gmax),s	85	* 64		21.0	* 3	* 69		21.0				
Max Q Clear Time (g_c+I1),s	4.7	2.5		2.5	0.0	2.5		9.3				
Green Ext Time (p_c), s	0.2	13.0		0.0	0.0	12.8		0.4				
Intersection Summary												
HCM 2010 Ctrl Delay				6.2								
HCM 2010 LOS				A								
Notes												

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Lanes, Volumes, Timings

Timing Plan: PM Peak Hour

4: Lowe's Access Dr./CVS Access Dr. & E. High St. (SR 0641)/W. Trindle Rd. (SR 0641) 08/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	19	637	74	101	736	28	97	3	45	13	1	15
Future Volume (vph)	19	637	74	101	736	28	97	3	45	13	1	15
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Grade (%)		0%			-1%			-2%			0%	
Storage Length (ft)	60		60	80		0	0		50	0		0
Storage Lanes	1		1	1		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.995				0.850		0.930	
Flt Protected	0.950			0.950				0.954			0.978	
Satd. Flow (prot)	1676	1765	1500	1685	1765	0	0	1700	1515	0	1605	0
Flt Permitted	0.231			0.280				0.709			0.859	
Satd. Flow (perm)	408	1765	1500	497	1765	0	0	1264	1515	0	1410	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			81		3				83		16	
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		853			2952			142			294	
Travel Time (s)		16.6			57.5			3.9			8.0	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	20	664	77	105	767	29	101	3	47	14	1	16
Shared Lane Traffic (%)												
Lane Group Flow (vph)	20	664	77	105	796	0	0	104	47	0	31	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes										
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.06	1.06	1.06	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	1	1	1		1	1	1	1	1	
Detector Template							Left			Left		
Leading Detector (ft)	45	35	35	45	35		20	45	45	20	15	
Trailing Detector (ft)	-5	-5	-5	-5	-5		0	-5	-5	0	-5	
Detector 1 Position(ft)	-5	-5	-5	-5	-5		0	-5	-5	0	-5	
Detector 1 Size(ft)	50	40	40	50	40		20	50	50	20	20	
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex		CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Perm	NA	Perm	Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2		2	6			8		8	4		
Detector Phase	5	2	2	1	6		8	8	8	4	4	
Switch Phase												
Minimum Initial (s)	3.0	10.0	10.0	3.0	10.0		3.0	3.0	3.0	3.0	3.0	
Minimum Split (s)	8.7	27.7	27.7	8.7	27.7		26.5	26.5	26.5	26.5	26.5	

Lanes, Volumes, Timings

Timing Plan: PM Peak Hour

4: Lowe's Access Dr./CVS Access Dr. & E. High St. (SR 0641)/W. Trindle Rd. (SR 0641) 08/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (s)	8.8	72.3	72.3	11.1	74.6		26.6	26.6	26.6	26.6	26.6	
Total Split (%)	8.0%	65.7%	65.7%	10.1%	67.8%		24.2%	24.2%	24.2%	24.2%	24.2%	
Maximum Green (s)	3.1	66.6	66.6	5.4	68.9		21.1	21.1	21.1	21.1	21.1	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.5	2.5	2.5	2.5	2.5	
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0			-1.0	-1.0		-1.0	
Total Lost Time (s)	4.7	4.7	4.7	4.7	4.7			4.5	4.5		4.5	
Lead/Lag	Lead	Lag	Lag	Lead	Lag							
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	6.0	6.0	3.0	6.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	Max	C-Max	C-Max	Max	C-Max		None	None	None	None	None	
Walk Time (s)		12.0	12.0		12.0		11.0	11.0	11.0	11.0	11.0	
Flash Dont Walk (s)		10.0	10.0		10.0		10.0	10.0	10.0	10.0	10.0	
Pedestrian Calls (#/hr)		0	0		0		0	0	0	0	0	
Act Effct Green (s)	78.3	67.6	67.6	82.9	69.9		15.5	15.5			15.5	
Actuated g/C Ratio	0.71	0.61	0.61	0.75	0.64		0.14	0.14			0.14	
v/c Ratio	0.05	0.61	0.08	0.20	0.71		0.59	0.17			0.15	
Control Delay	5.7	13.8	3.8	5.1	16.4		56.6	3.4			25.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0	
Total Delay	5.7	13.8	3.8	5.1	16.4		56.6	3.4			25.3	
LOS	A	B	A	A	B		E	A			C	
Approach Delay		12.6			15.1		40.0				25.3	
Approach LOS		B			B		D				C	
Queue Length 50th (ft)	3	137	0	17	449		70	0			9	
Queue Length 95th (ft)	m10	294	m19	m31	561		120	10			35	
Internal Link Dist (ft)		773			2872		62				214	
Turn Bay Length (ft)	60		60	80				50				
Base Capacity (vph)	414	1084	953	515	1122		253	370			296	
Starvation Cap Reductn	0	0	0	0	0		0	0			0	
Spillback Cap Reductn	0	0	0	0	0		0	0			0	
Storage Cap Reductn	0	0	0	0	0		0	0			0	
Reduced v/c Ratio	0.05	0.61	0.08	0.20	0.71		0.41	0.13			0.10	

Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 54 (49%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 80

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.71

Intersection Signal Delay: 16.3

Intersection LOS: B

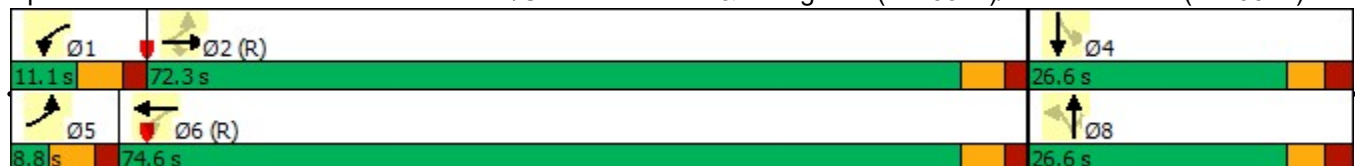
Intersection Capacity Utilization 68.7%

ICU Level of Service C

Analysis Period (min) 15

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

Splits and Phases: 4: Lowe's Access Dr./CVS Access Dr. & E. High St. (SR 0641)/W. Trindle Rd. (SR 0641)



HCM 2010 Signalized Intersection Summary

Timing Plan: PM Peak Hour

4: Lowe's Access Dr./CVS Access Dr. & E. High St. (SR 0641)/W. Trindle Rd. (SR 0641) 08/2023

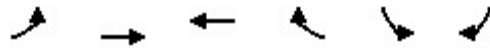
												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	19	637	74	101	736	28	97	3	45	13	1	15
Future Volume (veh/h)	19	637	74	101	736	28	97	3	45	13	1	15
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	1	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	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
Adj Sat Flow, veh/h/ln	1765	1765	1765	1774	1774	1809	1818	1782	1782	1800	1765	1800
Adj Flow Rate, veh/h	20	664	77	105	767	29	101	3	47	14	1	16
Adj No. of Lanes	1	1	1	1	1	0	0	1	1	0	1	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	437	1196	1017	647	1187	45	199	4	208	61	19	35
Arrive On Green	0.07	1.00	1.00	0.06	0.70	0.69	0.13	0.14	0.14	0.13	0.14	0.13
Sat Flow, veh/h	1681	1765	1500	1689	1698	64	978	29	1515	102	140	258
Grp Volume(v), veh/h	20	664	77	105	0	796	104	0	47	31	0	0
Grp Sat Flow(s),veh/h/ln	1681	1765	1500	1689	0	1762	1007	0	1515	499	0	0
Q Serve(g_s), s	0.4	0.0	0.0	1.9	0.0	27.3	0.0	0.0	3.0	0.2	0.0	0.0
Cycle Q Clear(g_c), s	0.4	0.0	0.0	1.9	0.0	27.3	11.9	0.0	3.0	12.1	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.04	0.97		1.00	0.45		0.52
Lane Grp Cap(c), veh/h	437	1196	1017	647	0	1231	194	0	208	112	0	0
V/C Ratio(X)	0.05	0.56	0.08	0.16	0.00	0.65	0.54	0.00	0.23	0.28	0.00	0.00
Avail Cap(c_a), veh/h	437	1196	1017	651	0	1231	283	0	304	202	0	0
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.73	0.73	0.73	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	7.0	0.0	0.0	4.3	0.0	9.1	46.5	0.0	42.2	42.6	0.0	0.0
Incr Delay (d2), s/veh	0.1	1.4	0.1	0.5	0.0	2.6	2.3	0.0	0.5	1.3	0.0	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	0.3	0.8	0.1	1.8	0.0	20.1	5.8	0.0	2.3	1.6	0.0	0.0
LnGrp Delay(d),s/veh	7.2	1.4	0.1	4.8	0.0	11.7	48.8	0.0	42.8	43.9	0.0	0.0
LnGrp LOS	A	A	A	A		B	D		D	D		
Approach Vol, veh/h		761			901			151			31	
Approach Delay, s/veh		1.4			10.9			46.9			43.9	
Approach LOS		A			B			D			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.1	79.3		19.6	8.8	81.6		19.6				
Change Period (Y+Rc), s	* 5.7	* 5.7		5.5	* 5.7	* 5.7		5.5				
Max Green Setting (Gmax), s	54	* 67		21.1	* 3.1	* 69		21.1				
Max Q Clear Time (g_c+I1), s	4.4	2.5		14.1	2.9	29.3		13.9				
Green Ext Time (p_c), s	0.0	12.4		0.0	0.0	13.4		0.3				
Intersection Summary												
HCM 2010 Ctrl Delay				10.5								
HCM 2010 LOS				B								
Notes												

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Lanes, Volumes, Timings
5: W. Trindle Rd. (SR 0641) & I-81 SB Off-Ramp

Timing Plan: PM Peak Hour

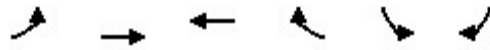
05/08/2023



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↘	↗
Traffic Volume (vph)	0	1072	622	0	360	469
Future Volume (vph)	0	1072	622	0	360	469
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	12	12	12	14	14
Grade (%)		-2%	0%		-3%	
Storage Length (ft)	0			0	0	70
Storage Lanes	0			0	1	1
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	0	3386	3353	0	1815	1624
Flt Permitted					0.950	
Satd. Flow (perm)	0	3386	3353	0	1815	1624
Right Turn on Red				No		Yes
Satd. Flow (RTOR)						168
Link Speed (mph)		35	35		25	
Link Distance (ft)		472	314		758	
Travel Time (s)		9.2	6.1		20.7	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	1117	648	0	375	489
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1117	648	0	375	489
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		14	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.11	1.06	1.07	1.07	0.97	0.97
Turning Speed (mph)	15			9	15	9
Number of Detectors		1	1		1	0
Detector Template						
Leading Detector (ft)		256	256		15	0
Trailing Detector (ft)		250	250		-10	0
Detector 1 Position(ft)		250	250		-10	0
Detector 1 Size(ft)		6	6		25	20
Detector 1 Type		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)		0.0	0.0		0.0	0.0
Detector 1 Queue (s)		0.0	0.0		0.0	0.0
Detector 1 Delay (s)		0.0	0.0		0.0	0.0
Turn Type		NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases						4
Detector Phase		2	6		4	4
Switch Phase						
Minimum Initial (s)		10.0	10.0		3.0	3.0

Lanes, Volumes, Timings
5: W. Trindle Rd. (SR 0641) & I-81 SB Off-Ramp

Timing Plan: PM Peak Hour
05/08/2023

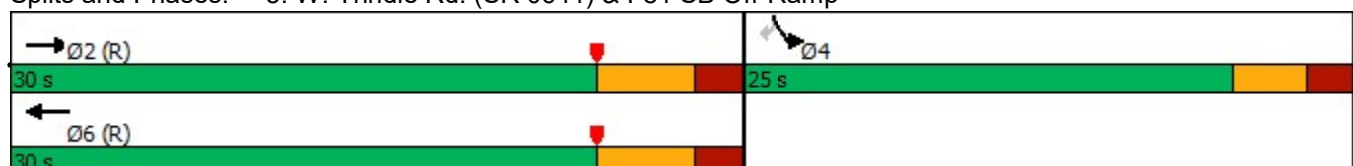


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Minimum Split (s)		16.0	16.0		22.0	22.0
Total Split (s)		30.0	30.0		25.0	25.0
Total Split (%)		54.5%	54.5%		45.5%	45.5%
Maximum Green (s)		24.0	24.0		20.0	20.0
Yellow Time (s)		4.0	4.0		3.0	3.0
All-Red Time (s)		2.0	2.0		2.0	2.0
Lost Time Adjust (s)		-1.0	-1.0		-1.0	-1.0
Total Lost Time (s)		5.0	5.0		4.0	4.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)		6.0	6.0		3.0	3.0
Recall Mode		C-Max	C-Max		None	None
Walk Time (s)		8.0	8.0		17.0	17.0
Flash Dont Walk (s)		0.0	0.0		0.0	0.0
Pedestrian Calls (#/hr)		0	0		0	0
Act Effct Green (s)		28.2	28.2		17.8	17.8
Actuated g/C Ratio		0.51	0.51		0.32	0.32
v/c Ratio		0.64	0.38		0.64	0.77
Control Delay		10.7	8.2		20.6	19.0
Queue Delay		0.0	0.0		0.0	0.0
Total Delay		10.7	8.2		20.6	19.0
LOS		B	A		C	B
Approach Delay		10.7	8.2		19.7	
Approach LOS		B	A		B	
Queue Length 50th (ft)		232	66		98	86
Queue Length 95th (ft)		268	m85		162	173
Internal Link Dist (ft)		392	234		678	
Turn Bay Length (ft)						70
Base Capacity (vph)		1736	1719		693	723
Starvation Cap Reductn		0	0		0	0
Spillback Cap Reductn		0	0		0	0
Storage Cap Reductn		0	0		0	0
Reduced v/c Ratio		0.64	0.38		0.54	0.68

Intersection Summary

Area Type: Other
Cycle Length: 55
Actuated Cycle Length: 55
Offset: 29 (53%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Natural Cycle: 55
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.77
Intersection Signal Delay: 13.0 Intersection LOS: B
Intersection Capacity Utilization 59.8% ICU Level of Service B
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: W. Trindle Rd. (SR 0641) & I-81 SB Off-Ramp



HCM 2010 analysis expects stop-line detection. Detectors cannot be further than 20 feet from the stop bar.

Lanes, Volumes, Timings
6: I-81 NB On-Ramp & W. Trindle Rd. (SR 0641)

Timing Plan: PM Peak Hour
05/08/2023

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑		
Traffic Volume (vph)	998	388	202	623	0	0
Future Volume (vph)	998	388	202	623	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	11	11	11	16	14
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Frt	0.958					
Flt Protected				0.988		
Satd. Flow (prot)	2964	0	0	3074	0	0
Flt Permitted				0.988		
Satd. Flow (perm)	2964	0	0	3074	0	0
Link Speed (mph)	35			35	25	
Link Distance (ft)	466			628	326	
Travel Time (s)	9.1			12.2	8.9	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	6%	9%	7%	6%	2%	2%
Adj. Flow (vph)	1040	404	210	649	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1444	0	0	859	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.12	1.12	1.12	1.12	0.91	0.99
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	73.3%			ICU Level of Service D		
Analysis Period (min)	15					

Lanes, Volumes, Timings
7: Army Heritage Dr. & W. Trindle Rd. (SR 0641)

Timing Plan: PM Peak Hour
05/08/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	195	545	231	127	451	74	196	221	112	145	357	135
Future Volume (vph)	195	545	231	127	451	74	196	221	112	145	357	135
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	13	14	12	13	14	12	13	12	11	14	12
Grade (%)		1%			-1%			-5%			4%	
Storage Length (ft)	90		95	110		155	140		0	125		150
Storage Lanes	1		1	1		1	1		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor								0.99		0.99		
Frt			0.850			0.850		0.950				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1652	1814	1592	1685	1815	1608	1718	1745	0	1588	1845	1470
Flt Permitted	0.222			0.304			0.189			0.240		
Satd. Flow (perm)	386	1814	1592	539	1815	1608	342	1745	0	399	1845	1470
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			150			228		22				138
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		628			1888			461			1667	
Travel Time (s)		12.2			36.8			9.0			32.5	
Confl. Peds. (#/hr)									6	6		
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	3%	2%	2%	2%	3%	2%	2%	2%	4%	2%	2%	2%
Adj. Flow (vph)	199	556	236	130	460	76	200	226	114	148	364	138
Shared Lane Traffic (%)												
Lane Group Flow (vph)	199	556	236	130	460	76	200	340	0	148	364	138
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane											Yes	
Headway Factor	1.08	1.03	0.99	1.07	1.02	0.98	1.04	1.00	1.04	1.15	1.01	1.10
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	0	1	1	0	1	1		1	1	1
Detector Template												Right
Leading Detector (ft)	35	231	0	35	231	0	35	40		40	35	20
Trailing Detector (ft)	-5	225	0	-5	225	0	-5	-10		-5	-5	0
Detector 1 Position(ft)	-5	225	0	-5	225	0	-5	-10		-5	-5	0
Detector 1 Size(ft)	40	6	20	40	6	20	40	50		45	40	20
Detector 1 Type	CI+Ex	Extend	CI+Ex	CI+Ex	Extend	CI+Ex	CI+Ex	CI+Ex		CI+Ex	CI+Ex	CI+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	pm+ov
Protected Phases	5	2	3	1	6		3	8		7	4	5
Permitted Phases	2		2	6		6	8			4		4

Lanes, Volumes, Timings
7: Army Heritage Dr. & W. Trindle Rd. (SR 0641)

Timing Plan: PM Peak Hour
05/08/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2	3	1	6	6	3	8		7	4	5
Switch Phase												
Minimum Initial (s)	15.0	15.0	3.0	3.0	3.0	3.0	3.0	3.0		4.0	3.0	15.0
Minimum Split (s)	21.5	25.5	9.5	9.5	25.5	25.5	9.5	31.5		10.5	31.5	21.5
Total Split (s)	21.5	52.7	14.0	11.8	43.0	43.0	14.0	31.7		13.8	31.5	21.5
Total Split (%)	19.5%	47.9%	12.7%	10.7%	39.1%	39.1%	12.7%	28.8%		12.5%	28.6%	19.5%
Maximum Green (s)	15.0	46.2	7.5	5.3	36.5	36.5	7.5	25.2		7.3	25.0	15.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5		2.5	2.5	2.5
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0		-1.0	-1.0	-1.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5		5.5	5.5	5.5
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	6.0	3.0	3.0	6.0	6.0	3.0	3.0		3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Time Before Reduce (s)	0.0	25.0	0.0	0.0	25.0	25.0	0.0	0.0		0.0	0.0	0.0
Time To Reduce (s)	0.0	15.0	0.0	0.0	15.0	15.0	0.0	0.0		0.0	0.0	0.0
Recall Mode	None	C-Max	None	None	C-Max	C-Max	None	None		None	None	None
Walk Time (s)		10.0			10.0	10.0		10.0			10.0	
Flash Dont Walk (s)		9.0			9.0	9.0		15.0			15.0	
Pedestrian Calls (#/hr)		0			0	0		0			0	
Act Effct Green (s)	60.2	48.0	62.0	45.4	38.7	38.7	33.5	25.0		33.1	24.8	46.3
Actuated g/C Ratio	0.55	0.44	0.56	0.41	0.35	0.35	0.30	0.23		0.30	0.23	0.42
v/c Ratio	0.50	0.70	0.25	0.45	0.72	0.11	0.95	0.82		0.71	0.88	0.20
Control Delay	17.6	23.0	4.4	22.7	42.5	0.4	74.7	48.3		45.9	63.3	3.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	17.6	23.0	4.4	22.7	42.5	0.4	74.7	48.3		45.9	63.3	3.9
LOS	B	C	A	C	D	A	E	D		D	E	A
Approach Delay		17.5			33.8			58.1			46.7	
Approach LOS		B			C			E			D	
Queue Length 50th (ft)	64	222	15	51	297	0	101	214		73	246	0
Queue Length 95th (ft)	138	345	68	89	403	3	#220	#354		#141	#401	36
Internal Link Dist (ft)		548			1808			381			1587	
Turn Bay Length (ft)	90		95	110		155	140			125		150
Base Capacity (vph)	395	791	962	292	638	713	210	432		209	436	699
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.50	0.70	0.25	0.45	0.72	0.11	0.95	0.79		0.71	0.83	0.20

Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow, Master Intersection

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.95

Intersection Signal Delay: 35.7

Intersection LOS: D

Intersection Capacity Utilization 87.3% ICU Level of Service E

Analysis Period (min) 15

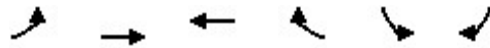
95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 7: Army Heritage Dr. & W. Trindle Rd. (SR 0641)

 Ø1	 Ø2 (R)	 Ø3	 Ø4
11.8 s	52.7 s	14 s	31.5 s
 Ø5	 Ø6 (R)	 Ø7	 Ø8
21.5 s	43 s	13.8 s	31.7 s

HCM 2010 analysis cannot be performed without detectors for actuated controller type.



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	17	530	611	3	3	17
Future Volume (vph)	17	530	611	3	3	17
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	11	11
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.999		0.884	
Flt Protected		0.998			0.993	
Satd. Flow (prot)	0	1761	1763	0	1497	0
Flt Permitted		0.998			0.993	
Satd. Flow (perm)	0	1761	1763	0	1497	0
Link Speed (mph)		45	45		35	
Link Distance (ft)		1985	3218		1923	
Travel Time (s)		30.1	48.8		37.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	18	558	643	3	3	18
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	576	646	0	21	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		24	24		11	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.07	1.07	1.07	1.07	1.12	1.12
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	53.9%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection

Int Delay, s/veh 0.4

Movement EBL EBT WBT WBR SBL SBRLane Configurations 

Traffic Vol, veh/h 17 530 611 3 3 17

Future Vol, veh/h 17 530 611 3 3 17

Conflicting Peds, #/hr 0 0 0 0 0 0

Sign Control Free Free Free Free Stop Stop

RT Channelized - None - None - None

Storage Length - - - - 0 -

Veh in Median Storage, # 0 0 - 1 -

Grade, % - 0 0 - 0 -

Peak Hour Factor 95 95 95 95 95 95

Heavy Vehicles, % 2 2 2 2 2 2

Mvmt Flow 18 558 643 3 3 18

Major/Minor Major1 Major2 Minor2

Conflicting Flow All 646 0 - 0 1239 645

Stage 1 - - - - 645 -

Stage 2 - - - - 594 -

Critical Hdwy 4.12 - - - 7.1 6.22

Critical Hdwy Stg 1 - - - - 5.42 -

Critical Hdwy Stg 2 - - - - 5.42 -

Follow-up Hdwy 2.218 - - - 3.518 3.318

Pot Cap-1 Maneuver 939 - - - 153 472

Stage 1 - - - - 522 -

Stage 2 - - - - 552 -

Platoon blocked, % - - - -

Mov Cap-1 Maneuver 939 - - - 149 472

Mov Cap-2 Maneuver - - - - 309 -

Stage 1 - - - - 507 -

Stage 2 - - - - 552 -

Approach EB WB SB

HCM Control Delay, s 0.3 0 13.7

HCM LOS B

Minor Lane/Major Mvmt EBL EBT WBT WBR SBLn1

Capacity (veh/h) 939 - - - 437

HCM Lane V/C Ratio 0.019 - - - 0.048

HCM Control Delay (s) 8.9 0 - - 13.7

HCM Lane LOS A A - - B

HCM 95th %tile Q(veh) 0.1 - - - 0.2

Lanes, Volumes, Timings
9: Middlesex Rd. & W. Trindle Rd. (SR0641)

Timing Plan: PM Peak Hour
05/08/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	436	47	10	530	45	34	42	4	47	90	42
Future Volume (vph)	45	436	47	10	530	45	34	42	4	47	90	42
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12	11	11	11	11	11	11
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.988			0.990			0.993			0.968	
Flt Protected		0.996			0.999			0.979			0.987	
Satd. Flow (prot)	0	1723	0	0	1745	0	0	1658	0	0	1618	0
Flt Permitted		0.996			0.999			0.979			0.987	
Satd. Flow (perm)	0	1723	0	0	1745	0	0	1658	0	0	1618	0
Link Speed (mph)		45			45			35			40	
Link Distance (ft)		3218			3646			1268			2562	
Travel Time (s)		48.8			55.2			24.7			43.7	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	3%	2%	2%	2%	2%	2%	2%	2%	3%	3%	2%
Adj. Flow (vph)	47	454	49	10	552	47	35	44	4	49	94	44
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	550	0	0	609	0	0	83	0	0	187	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.12	1.12	1.12	1.12	1.12	1.12
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type: Unsignalized												
Intersection Capacity Utilization 72.8% ICU Level of Service C												
Analysis Period (min) 15												

Intersection												
Int Delay, s/veh	25.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	45	436	47	10	530	45	34	42	4	47	90	42
Future Vol, veh/h	45	436	47	10	530	45	34	42	4	47	90	42
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	-	-	0	-	-	0	-	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	3	2	2	2	2	2	2	2	3	3	2
Mvmt Flow	47	454	49	10	552	47	35	44	4	49	94	44

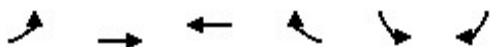
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	599	0	0	503	0	0	1238	1192	479	1193	1193	576
Stage 1	-	-	-	-	-	-	573	573	-	596	596	-
Stage 2	-	-	-	-	-	-	665	619	-	597	597	-
Critical Hdwy	4.2	-	-	4.12	-	-	7.12	6.52	6.22	7.13	6.7	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.13	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.13	5.53	-
Follow-up Hdwy	2.3	-	-	2.218	-	-	3.518	4.018	3.318	3.527	4.23	3.318
Pot Cap-1 Maneuver	937	-	-	1061	-	-	152	187	587	163	172	517
Stage 1	-	-	-	-	-	-	505	504	-	488	476	-
Stage 2	-	-	-	-	-	-	449	480	-	488	476	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	937	-	-	1061	-	-	69	171	587	122	158	517
Mov Cap-2 Maneuver	-	-	-	-	-	-	69	171	-	122	158	-
Stage 1	-	-	-	-	-	-	470	469	-	454	469	-
Stage 2	-	-	-	-	-	-	324	473	-	409	443	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.8	0.1	108.3	145.3
HCM LOS			F	F

Minor Lane/Major Mvm	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	107	937	-	-	1061	-	-	173
HCM Lane V/C Ratio	0.779	0.05	-	-	0.01	-	-	1.078
HCM Control Delay (s)	108.3	9	0	-	8.4	0	-	145.3
HCM Lane LOS	F	A	A	-	A	A	-	F
HCM 95th %tile Q(veh)	4.3	0.2	-	-	0	-	-	9.2

Lanes, Volumes, Timings
10: Westminster Dr./Fairview St. & Army Heritage Dr.

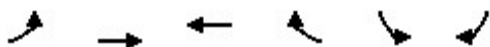
Timing Plan: PM Peak Hour
05/08/2023



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	352	23	10	173	240	397
Future Volume (vph)	352	23	10	173	240	397
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	14	14	14	14	12	14
Grade (%)		-1%	3%		1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00		0.98		0.99	
Frt			0.873			0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1797	1892	1583	0	1668	1592
Flt Permitted	0.514				0.950	
Satd. Flow (perm)	970	1892	1583	0	1659	1592
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			184			422
Link Speed (mph)		35	35		35	
Link Distance (ft)		1287	797		461	
Travel Time (s)		25.1	15.5		9.0	
Confl. Peds. (#/hr)	2			2	3	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	374	24	11	184	255	422
Shared Lane Traffic (%)						
Lane Group Flow (vph)	374	24	195	0	255	422
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		14	14		24	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	0.98	0.98	1.01	1.01	1.08	0.99
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	1	1		1	1
Detector Template					Left	Right
Leading Detector (ft)	40	40	35		20	20
Trailing Detector (ft)	-5	-5	-5		0	0
Detector 1 Position(ft)	-5	-5	-5		0	0
Detector 1 Size(ft)	45	45	40		20	20
Detector 1 Type	CI+Ex	Extend	Extend		CI+Ex	CI+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0
Turn Type	pm+pt	NA	NA		Prot	Perm
Protected Phases	5	2	6		7	
Permitted Phases	2					4
Detector Phase	5	2	6		7	4
Switch Phase						
Minimum Initial (s)	3.0	10.0	10.0		4.0	3.0
Minimum Split (s)	9.5	39.5	39.5		10.0	29.0

Lanes, Volumes, Timings
10: Westminster Dr./Fairview St. & Army Heritage Dr.

Timing Plan: PM Peak Hour
05/08/2023

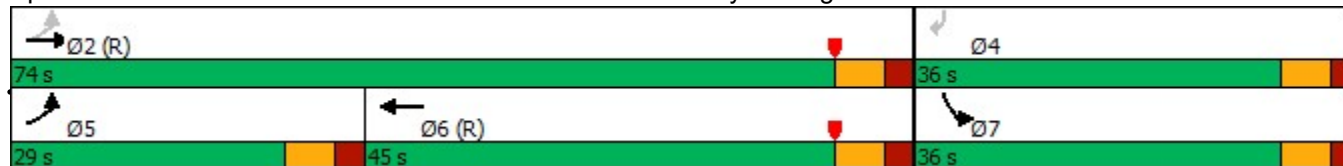


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Total Split (s)	29.0	74.0	45.0		36.0	36.0
Total Split (%)	26.4%	67.3%	40.9%		32.7%	32.7%
Maximum Green (s)	22.5	67.5	38.5		30.0	30.0
Yellow Time (s)	4.0	4.0	4.0		4.0	4.0
All-Red Time (s)	2.5	2.5	2.5		2.0	2.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0		-1.0	-1.0
Total Lost Time (s)	5.5	5.5	5.5		5.0	5.0
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	Max	C-Max	C-Max		None	None
Walk Time (s)		10.0	10.0			10.0
Flash Dont Walk (s)		23.0	23.0			13.0
Pedestrian Calls (#/hr)		0	0			0
Act Effct Green (s)	76.5	76.5	39.5		23.0	23.0
Actuated g/C Ratio	0.70	0.70	0.36		0.21	0.21
v/c Ratio	0.41	0.02	0.28		0.73	0.63
Control Delay	8.8	6.7	5.4		38.8	7.1
Queue Delay	0.0	0.0	0.0		0.0	0.1
Total Delay	8.8	6.7	5.4		38.8	7.2
LOS	A	A	A		D	A
Approach Delay		8.6	5.4		19.1	
Approach LOS		A	A		B	
Queue Length 50th (ft)	91	5	5		166	58
Queue Length 95th (ft)	168	16	52		m230	m82
Internal Link Dist (ft)		1207	717		381	
Turn Bay Length (ft)						
Base Capacity (vph)	911	1315	686		470	751
Starvation Cap Reductn	0	0	0		0	19
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.41	0.02	0.28		0.54	0.58

Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 36 (33%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.73
Intersection Signal Delay: 13.7
Intersection LOS: B
Intersection Capacity Utilization 75.5%
ICU Level of Service D
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 10: Westminster Dr./Fairview St. & Army Heritage Dr.



								
Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations								
Traffic Volume (veh/h)	352	23	10	173	240	397		
Future Volume (veh/h)	352	23	10	173	240	397		
Number	5	2	6	16	7	14		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1844	1844	1808	1844	1756	1826		
Adj Flow Rate, veh/h	374	24	11	184	255	422		
Adj No. of Lanes	1	1	1	0	1	1		
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	774	1149	31	524	471	437		
Arrive On Green	0.21	0.62	0.36	0.35	0.28	0.28		
Sat Flow, veh/h	1757	1844	87	1458	1672	1552		
Grp Volume(v), veh/h	374	24	0	195	255	422		
Grp Sat Flow(s),veh/h/ln	1757	1844	0	1545	1672	1552		
Q Serve(g_s), s	12.0	0.5	0.0	10.3	14.2	29.5		
Cycle Q Clear(g_c), s	12.0	0.5	0.0	10.3	14.2	29.5		
Prop In Lane	1.00			0.94	1.00	1.00		
Lane Grp Cap(c), veh/h	774	1149	0	555	471	437		
V/C Ratio(X)	0.48	0.02	0.00	0.35	0.54	0.96		
Avail Cap(c_a), veh/h	774	1149	0	555	471	437		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.77	0.77		
Uniform Delay (d), s/veh	12.4	7.9	0.0	26.2	33.5	39.0		
Incr Delay (d2), s/veh	2.2	0.0	0.0	1.7	1.0	29.1		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(95%),veh/ln	10.3	0.5	0.0	8.2	10.5	22.0		
LnGrp Delay(d),s/veh	14.6	8.0	0.0	28.0	34.4	68.0		
LnGrp LOS	B	A		C	C	E		
Approach Vol, veh/h		398	195		677			
Approach Delay, s/veh		14.2	28.0		55.4			
Approach LOS		B	C		E			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		74.0		36.0	29.0	45.0		
Change Period (Y+Rc), s		6.5		6.0	6.5	6.5		
Max Green Setting (Gmax), s		67.5		30.0	22.5	38.5		
Max Q Clear Time (g_c+I1), s		3.0		32.0	14.5	12.3		
Green Ext Time (p_c), s		0.1		0.0	0.9	0.7		
Intersection Summary								
HCM 2010 Ctrl Delay			38.3					
HCM 2010 LOS			D					

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	0	177	1	0	269
Future Volume (vph)	0	0	177	1	0	269
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.999					
Flt Protected						
Satd. Flow (prot)	1765	0	1763	0	0	1651
Flt Permitted						
Satd. Flow (perm)	1765	0	1763	0	0	1651
Link Speed (mph)	35		35			35
Link Distance (ft)	2177		1342			797
Travel Time (s)	42.4		26.1			15.5
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	2%	2%	2%	2%	2%	9%
Adj. Flow (vph)	0	0	181	1	0	274
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	182	0	0	274
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	18.3%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W	W	T	T	T	T
Traffic Vol, veh/h	0	0	177	1	0	269
Future Vol, veh/h	0	0	177	1	0	269
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	- None		- None		- None	
Storage Length	0	-	-	-	-	-
Veh in Median Storage	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	2	2	2	2	2	9
Mvmt Flow	0	0	181	1	0	274

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	456	182	0	0	182	0
Stage 1	182	-	-	-	-	-
Stage 2	274	-	-	-	-	-
Critical Hdwy	7.1	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuve	516	861	-	-	1393	-
Stage 1	849	-	-	-	-	-
Stage 2	772	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuve	516	861	-	-	1393	-
Mov Cap-2 Maneuve	516	-	-	-	-	-
Stage 1	849	-	-	-	-	-
Stage 2	772	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBL	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	1393	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	-	-	0	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Lanes, Volumes, Timings
12: I-81 SB On-Ramp & York Road (SR 0074)

Timing Plan: PM Peak Hour
05/08/2023

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑		
Traffic Volume (vph)	677	282	573	808	0	0
Future Volume (vph)	677	282	573	808	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	15	15
Grade (%)	2%			-2%	0%	
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Frt	0.956					
Flt Protected				0.980		
Satd. Flow (prot)	3173	0	0	3319	0	0
Flt Permitted				0.980		
Satd. Flow (perm)	3173	0	0	3319	0	0
Link Speed (mph)	35			35	30	
Link Distance (ft)	3632			216	901	
Travel Time (s)	70.8			4.2	20.5	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	698	291	591	833	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	989	0	0	1424	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	13			13	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.09	1.09	1.06	1.06	0.95	0.95
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilization 77.1%						
ICU Level of Service D						
Analysis Period (min) 15						

Lanes, Volumes, Timings
13: I-81 NB Off-Ramp & York Road (SR 0074)

Timing Plan: PM Peak Hour
05/08/2023

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↘	↗
Traffic Volume (vph)	710	0	0	1151	219	717
Future Volume (vph)	710	0	0	1151	219	717
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	16	13
Grade (%)	1%			-2%	0%	
Storage Length (ft)		0	0		25	0
Storage Lanes		0	0		1	1
Taper Length (ft)			25		25	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	3336	0	0	3386	1900	1550
Flt Permitted					0.950	
Satd. Flow (perm)	3336	0	0	3386	1900	1550
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)						112
Link Speed (mph)	35			35	25	
Link Distance (ft)	251			1010	711	
Travel Time (s)	4.9			19.7	19.4	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	732	0	0	1187	226	739
Shared Lane Traffic (%)						
Lane Group Flow (vph)	732	0	0	1187	226	739
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	16	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.08	1.08	1.06	1.06	0.91	1.03
Turning Speed (mph)		9	15		15	9
Number of Detectors	1			1	1	1
Detector Template						
Leading Detector (ft)	231			256	20	40
Trailing Detector (ft)	225			250	-10	-10
Detector 1 Position(ft)	225			250	-10	-10
Detector 1 Size(ft)	6			6	30	50
Detector 1 Type	Extend			Extend	CI+Ex	CI+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0			0.0	0.0	0.0
Detector 1 Queue (s)	0.0			0.0	0.0	0.0
Detector 1 Delay (s)	0.0			0.0	0.0	0.0
Turn Type	NA			NA	Prot	Perm
Protected Phases	2			6	3	
Permitted Phases						8
Detector Phase	2			6	3	8
Switch Phase						
Minimum Initial (s)	10.0			10.0	4.0	3.0

Lanes, Volumes, Timings
13: I-81 NB Off-Ramp & York Road (SR 0074)

Timing Plan: PM Peak Hour
05/08/2023



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Minimum Split (s)	24.5			24.5	9.5	22.5
Total Split (s)	48.0			48.0	52.0	52.0
Total Split (%)	48.0%			48.0%	52.0%	52.0%
Maximum Green (s)	41.5			41.5	46.5	46.5
Yellow Time (s)	4.5			4.5	3.0	3.0
All-Red Time (s)	2.0			2.0	2.5	2.5
Lost Time Adjust (s)	-1.0			-1.0	-1.0	-1.0
Total Lost Time (s)	5.5			5.5	4.5	4.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	6.0			6.0	3.0	3.0
Minimum Gap (s)	3.0			3.0	3.0	3.0
Time Before Reduce (s)	25.0			25.0	0.0	0.0
Time To Reduce (s)	13.0			13.0	0.0	0.0
Recall Mode	C-Max			C-Max	None	None
Walk Time (s)	18.0			18.0		17.0
Flash Dont Walk (s)	0.0			0.0		0.0
Pedestrian Calls (#/hr)	0			0		0
Act Effct Green (s)	43.9			43.9	46.1	46.1
Actuated g/C Ratio	0.44			0.44	0.46	0.46
v/c Ratio	0.50			0.80	0.26	0.95
Control Delay	22.1			21.3	17.0	45.6
Queue Delay	0.0			0.0	0.0	0.0
Total Delay	22.1			21.3	17.0	45.6
LOS	C			C	B	D
Approach Delay	22.1			21.3	38.9	
Approach LOS	C			C	D	
Queue Length 50th (ft)	176			316	83	378
Queue Length 95th (ft)	231			m326	132	#641
Internal Link Dist (ft)	171			930	631	
Turn Bay Length (ft)					25	
Base Capacity (vph)	1462			1485	902	795
Starvation Cap Reductn	0			0	0	0
Spillback Cap Reductn	0			0	0	0
Storage Cap Reductn	0			0	0	0
Reduced v/c Ratio	0.50			0.80	0.25	0.93

Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 14 (14%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

Natural Cycle: 75

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.95

Intersection Signal Delay: 27.4

Intersection LOS: C

Intersection Capacity Utilization 75.9%

ICU Level of Service D

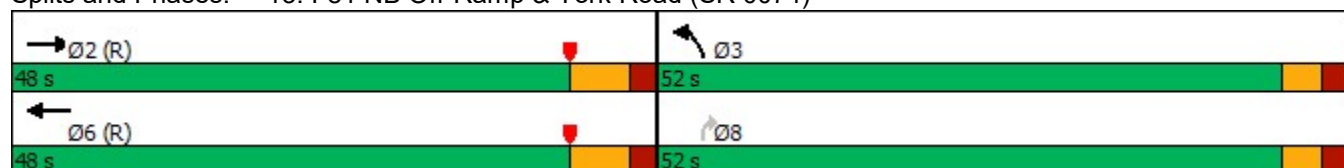
Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

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

Splits and Phases: 13: I-81 NB Off-Ramp & York Road (SR 0074)



HCM 2010 analysis expects stop-line detection. Detectors cannot be further than 20 feet from the stop bar.

Lanes, Volumes, Timings

Timing Plan: PM Peak Hour

14: Westminster Dr. & York Road (SR 0074)/York Rd. (SR 0074)

05/08/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	273	688	423	11	491	52	265	149	20	64	226	292
Future Volume (vph)	273	688	423	11	491	52	265	149	20	64	226	292
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	14	12	12	14	12	14	12	12	14	12
Grade (%)		1%			0%			-5%			2%	
Storage Length (ft)	120		0	75		180	130		0	130		0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						0.98		1.00		1.00		
Frt			0.850			0.850		0.982			0.916	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1636	1739	1592	1676	1765	1554	1718	1890	0	1660	1707	0
Flt Permitted	0.157			0.213			0.127			0.645		
Satd. Flow (perm)	270	1739	1592	376	1765	1520	230	1890	0	1125	1707	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			445			175		8			63	
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		1010			2320			530			721	
Travel Time (s)		19.7			45.2			14.5			19.7	
Confl. Peds. (#/hr)						1			1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	4%	3%	2%	2%	2%	5%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	287	724	445	12	517	55	279	157	21	67	238	307
Shared Lane Traffic (%)												
Lane Group Flow (vph)	287	724	445	12	517	55	279	178	0	67	545	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.08	1.08	0.99	1.07	1.07	0.99	1.04	0.96	1.04	1.09	1.00	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	0	1	1	0	1	1		1	1	
Detector Template												
Leading Detector (ft)	40	256	0	40	256	0	40	45		45	45	
Trailing Detector (ft)	-5	250	0	-5	250	0	-5	-5		-5	-5	
Detector 1 Position(ft)	-5	250	0	-5	250	0	-5	-5		-5	-5	
Detector 1 Size(ft)	45	6	20	45	6	20	45	50		50	50	
Detector 1 Type	CI+Ex	Extend	CI+Ex	CI+Ex	Extend	CI+Ex	CI+Ex	CI+Ex		CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases	5	2			6		3	8			4	
Permitted Phases	2		2	6		6	8			4		

Lanes, Volumes, Timings

Timing Plan: PM Peak Hour

14: Westminster Dr. & York Road (SR 0074)/York Rd. (SR 0074)

05/08/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2	2	6	6	6	3	8		4	4	
Switch Phase												
Minimum Initial (s)	3.0	10.0	10.0	10.0	10.0	10.0	3.0	3.0		3.0	3.0	
Minimum Split (s)	9.0	33.0	33.0	33.0	33.0	33.0	9.5	31.5		31.5	31.5	
Total Split (s)	14.0	53.5	53.5	39.5	39.5	39.5	15.0	46.5		31.5	31.5	
Total Split (%)	14.0%	53.5%	53.5%	39.5%	39.5%	39.5%	15.0%	46.5%		31.5%	31.5%	
Maximum Green (s)	8.0	47.5	47.5	33.5	33.5	33.5	8.5	40.0		25.0	25.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	3.5	3.5		3.5	3.5	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	3.0	3.0		3.0	3.0	
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.5	5.5		5.5	5.5	
Lead/Lag	Lead			Lag			Lead			Lag		
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	6.0	6.0	6.0	6.0	6.0	3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	25.0	25.0	25.0	25.0	25.0	0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	10.0	10.0	10.0	10.0	10.0	0.0	0.0		0.0	0.0	
Recall Mode	Max	C-Max	C-Max	C-Max	C-Max	C-Max	None	None		None	None	
Walk Time (s)		10.0	10.0	10.0	10.0	10.0		10.0		10.0	10.0	
Flash Dont Walk (s)		17.0	17.0	17.0	17.0	17.0		15.0		15.0	15.0	
Pedestrian Calls (#/hr)		0	0	0	0	0		0		0	0	
Act Effct Green (s)	48.5	48.5	48.5	34.5	34.5	34.5	41.0	41.0		26.0	26.0	
Actuated g/C Ratio	0.48	0.48	0.48	0.34	0.34	0.34	0.41	0.41		0.26	0.26	
v/c Ratio	1.13	0.86	0.44	0.09	0.85	0.09	1.19	0.23		0.23	1.11	
Control Delay	112.4	35.2	3.3	20.8	41.7	0.8	143.4	19.3		31.7	107.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	112.4	35.2	3.3	20.8	41.7	0.8	143.4	19.3		31.7	107.2	
LOS	F	D	A	C	D	A	F	B		C	F	
Approach Delay		40.7			37.4			95.0			98.9	
Approach LOS		D			D			F			F	
Queue Length 50th (ft)	~177	444	16	6	334	0	~166	69		34	~369	
Queue Length 95th (ft)	m#230	m529	m20	m11	m#495	m1	#331	117		71	#577	
Internal Link Dist (ft)		930			2240			450			641	
Turn Bay Length (ft)	120			75		180	130			130		
Base Capacity (vph)	253	843	1001	129	608	639	235	779		292	490	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	1.13	0.86	0.44	0.09	0.85	0.09	1.19	0.23		0.23	1.11	

Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 48 (48%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow

Natural Cycle: 105

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.19

Intersection Signal Delay: 59.5

Intersection LOS: E

Intersection Capacity Utilization 111.0%

ICU Level of Service H

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

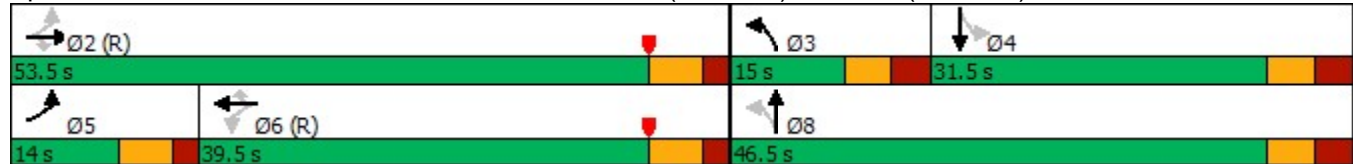
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

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

Splits and Phases: 14: Westminster Dr. & York Road (SR 0074)/York Rd. (SR 0074)



HCM 2010 analysis cannot be performed without detectors for actuated controller type.

Lanes, Volumes, Timings
15: Fairview St. & York Rd. (SR 0074)

Timing Plan: PM Peak Hour
05/08/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	56	648	18	26	447	40	13	105	8	144	93	47
Future Volume (vph)	56	648	18	26	447	40	13	105	8	144	93	47
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	11	11	11	11	11	9	9	9	12	12	12
Grade (%)		0%			0%			0%			1%	
Storage Length (ft)	75		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.996			0.989			0.991			0.977	
Flt Protected	0.950				0.997			0.995			0.975	
Satd. Flow (prot)	1605	1697	0	0	1663	0	0	1566	0	0	1664	0
Flt Permitted	0.432				0.947			0.958			0.734	
Satd. Flow (perm)	730	1697	0	0	1580	0	0	1508	0	0	1253	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			8			4			10	
Link Speed (mph)		35			35			25			35	
Link Distance (ft)		2320			2128			671			1479	
Travel Time (s)		45.2			41.5			18.3			28.8	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	3%	2%	7%	6%	3%	3%	2%	2%	2%	2%	2%	5%
Adj. Flow (vph)	60	697	19	28	481	43	14	113	9	155	100	51
Shared Lane Traffic (%)												
Lane Group Flow (vph)	60	716	0	0	552	0	0	136	0	0	306	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.12	1.12	1.12	1.12	1.12	1.12	1.22	1.22	1.22	1.08	1.08	1.08
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	0	1		1	1		1	1		1	1	
Detector Template				Left			Left			Left		
Leading Detector (ft)	0	256		20	256		20	40		20	40	
Trailing Detector (ft)	0	250		0	250		0	-5		0	-5	
Detector 1 Position(ft)	0	250		0	250		0	-5		0	-5	
Detector 1 Size(ft)	20	6		20	6		20	45		20	45	
Detector 1 Type	CI+Ex	Extend		CI+Ex	Extend		CI+Ex	CI+Ex		CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	
Switch Phase												

Lanes, Volumes, Timings
15: Fairview St. & York Rd. (SR 0074)

Timing Plan: PM Peak Hour
05/08/2023

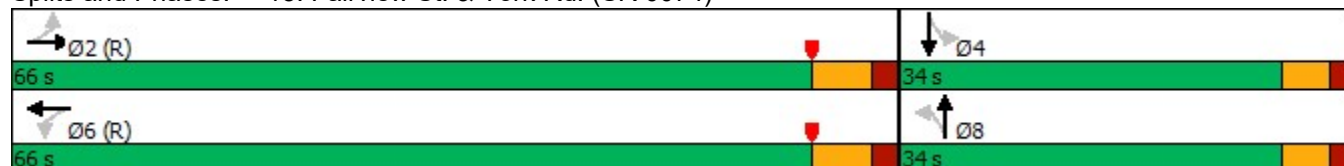
												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	10.0	10.0		10.0	10.0		3.0	3.0		3.0	3.0	
Minimum Split (s)	32.5	32.5		32.5	32.5		31.5	31.5		31.5	31.5	
Total Split (s)	66.0	66.0		66.0	66.0		34.0	34.0		34.0	34.0	
Total Split (%)	66.0%	66.0%		66.0%	66.0%		34.0%	34.0%		34.0%	34.0%	
Maximum Green (s)	59.5	59.5		59.5	59.5		28.5	28.5		28.5	28.5	
Yellow Time (s)	4.5	4.5		4.5	4.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0			-1.0			-1.0			-1.0	
Total Lost Time (s)	5.5	5.5			5.5			4.5			4.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	6.0	6.0		6.0	6.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	35.0	35.0		35.0	35.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	17.0	17.0		17.0	17.0		0.0	0.0		0.0	0.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Flash Dont Walk (s)	15.0	15.0		15.0	15.0		15.0	15.0		15.0	15.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	62.9	62.9			62.9			27.1			27.1	
Actuated g/C Ratio	0.63	0.63			0.63			0.27			0.27	
v/c Ratio	0.13	0.67			0.55			0.33			0.88	
Control Delay	2.4	4.1			4.8			30.0			60.8	
Queue Delay	0.0	0.0			0.0			0.0			0.0	
Total Delay	2.4	4.1			4.8			30.0			60.8	
LOS	A	A			A			C			E	
Approach Delay		4.0			4.8			30.0			60.8	
Approach LOS		A			A			C			E	
Queue Length 50th (ft)	4	50			33			65			175	
Queue Length 95th (ft)	m5	m60			72			117			#320	
Internal Link Dist (ft)		2240			2048			591			1399	
Turn Bay Length (ft)	75											
Base Capacity (vph)	459	1068			997			447			376	
Starvation Cap Reductn	0	0			0			0			0	
Spillback Cap Reductn	0	0			0			0			0	
Storage Cap Reductn	0	0			0			0			0	
Reduced v/c Ratio	0.13	0.67			0.55			0.30			0.81	
Intersection Summary												
Area Type: Other												
Cycle Length: 100												
Actuated Cycle Length: 100												
Offset: 96 (96%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow												
Natural Cycle: 70												
Control Type: Actuated-Coordinated												
Maximum v/c Ratio: 0.88												
Intersection Signal Delay: 16.1												
Intersection LOS: B												
Intersection Capacity Utilization 81.6%												
ICU Level of Service D												
Analysis Period (min) 15												

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

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

Splits and Phases: 15: Fairview St. & York Rd. (SR 0074)



HCM 2010 analysis cannot be performed without detectors for actuated controller type.

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↰			↱	↰	↱
Traffic Volume (vph)	645	105	50	493	28	25
Future Volume (vph)	645	105	50	493	28	25
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	11	11	11	12	12
Grade (%)	1%			1%	2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.981				0.937	
Flt Protected				0.995	0.974	
Satd. Flow (prot)	1665	0	0	1674	1570	0
Flt Permitted				0.995	0.974	
Satd. Flow (perm)	1665	0	0	1674	1570	0
Link Speed (mph)	50			50	35	
Link Distance (ft)	1056			3636	2008	
Travel Time (s)	14.4			49.6	39.1	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	2%	2%	2%	3%	5%	2%
Adj. Flow (vph)	733	119	57	560	32	28
Shared Lane Traffic (%)						
Lane Group Flow (vph)	852	0	0	617	60	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.13	1.13	1.13	1.13	1.09	1.09
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	81.3%			ICU Level of Service D		
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	2.7					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	↑	↑
Traffic Vol, veh/h	645	105	50	493	28	25
Future Vol, veh/h	645	105	50	493	28	25
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage	0	-	-	0	0	-
Grade, %	1	-	-	1	2	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	3	5	2
Mvmt Flow	733	119	57	560	32	28

Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	852	0	1467	793
Stage 1	-	-	-	-	793	-
Stage 2	-	-	-	-	674	-
Critical Hdwy	-	-	4.3	-	7.5	6.6
Critical Hdwy Stg 1	-	-	-	-	5.85	-
Critical Hdwy Stg 2	-	-	-	-	5.85	-
Follow-up Hdwy	-	-	2.4	-	3.545	3.5
Pot Cap-1 Maneuver	-	-	711	-	90	345
Stage 1	-	-	-	-	403	-
Stage 2	-	-	-	-	465	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	711	-	80	345
Mov Cap-2 Maneuver	-	-	-	-	80	-
Stage 1	-	-	-	-	403	-
Stage 2	-	-	-	-	411	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1	58.1
HCM LOS			F

Minor Lane/Major Mvm	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	125	-	-	711	-
HCM Lane V/C Ratio	0.482	-	-	0.08	-
HCM Control Delay (s)	58.1	-	-	10.5	0
HCM Lane LOS	F	-	-	B	A
HCM 95th %tile Q(veh)	2.2	-	-	0.3	-

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↰			↱	↗	
Traffic Volume (vph)	608	96	97	418	51	29
Future Volume (vph)	608	96	97	418	51	29
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	11	11	11	10	10
Grade (%)	0%			0%	-2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.982				0.952	
Flt Protected				0.991	0.969	
Satd. Flow (prot)	1675	0	0	1687	1519	0
Flt Permitted				0.991	0.969	
Satd. Flow (perm)	1675	0	0	1687	1519	0
Link Speed (mph)	55			55	35	
Link Distance (ft)	3636			269	2688	
Travel Time (s)	45.1			3.3	52.4	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles (%)	2%	2%	3%	2%	2%	5%
Adj. Flow (vph)	699	110	111	480	59	33
Shared Lane Traffic (%)						
Lane Group Flow (vph)	809	0	0	591	92	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	10	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.12	1.12	1.12	1.12	1.16	1.16
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	83.7%			ICU Level of Service E		
Analysis Period (min)	15					

Intersection

Int Delay, s/veh 4.9

Movement EBT EBR WBL WBT NBL NBR

Lane Configurations   

Traffic Vol, veh/h 608 96 97 418 51 29

Future Vol, veh/h 608 96 97 418 51 29

Conflicting Peds, #/hr 0 0 0 0 0 0

Sign Control Free Free Free Free Stop Stop

RT Channelized - None - None - None

Storage Length - - - - 0 -

Veh in Median Storage0# - - 0 0 -

Grade, % 0 - - 0 -2 -

Peak Hour Factor 87 87 87 87 87 87

Heavy Vehicles, % 2 2 3 2 2 5

Mvmt Flow 699 110 111 480 59 33

Major/Minor Major1 Major2 Minor1

Conflicting Flow All 0 0 809 0 1456 754

Stage 1 - - - - 754 -

Stage 2 - - - - 702 -

Critical Hdwy - - 4.13 - 6.7 6.05

Critical Hdwy Stg 1 - - - - 5.02 -

Critical Hdwy Stg 2 - - - - 5.02 -

Follow-up Hdwy - -2.227 -3.518 3.345

Pot Cap-1 Maneuver - - 812 - 128 422

Stage 1 - - - - 505 -

Stage 2 - - - - 531 -

Platoon blocked, % - - -

Mov Cap-1 Maneuver - - 812 - 104 422

Mov Cap-2 Maneuver - - - - 104 -

Stage 1 - - - - 505 -

Stage 2 - - - - 432 -

Approach EB WB NB

HCM Control Delay, s 0 1.9 67.1

HCM LOS F

Minor Lane/Major MvmNBLn1 EBT EBR WBL WBT

Capacity (veh/h) 143 - - 812 -

HCM Lane V/C Ratio 0.643 - -0.137 -

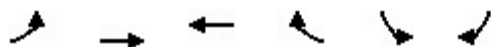
HCM Control Delay (s) 67.1 - - 10.1 0

HCM Lane LOS F - - B A

HCM 95th %tile Q(veh) 3.5 - - 0.5 -

Lanes, Volumes, Timings
18: York Rd. (SR 0074) & Shughart Rd.

Timing Plan: PM Peak Hour
05/08/2023



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↰	↰		↰	
Traffic Volume (vph)	135	608	418	14	1	231
Future Volume (vph)	135	608	418	14	1	231
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	11	11	11	10	10
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.996		0.866	
Flt Protected		0.991				
Satd. Flow (prot)	0	1691	1699	0	1426	0
Flt Permitted		0.991				
Satd. Flow (perm)	0	1691	1699	0	1426	0
Link Speed (mph)		55	55		35	
Link Distance (ft)		269	2661		1687	
Travel Time (s)		3.3	33.0		32.9	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	155	699	480	16	1	266
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	854	496	0	267	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		10	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.12	1.12	1.12	1.12	1.17	1.17
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	90.9%			ICU Level of Service E		
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	3.6					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	135	608	418	14	1	231
Future Vol, veh/h	135	608	418	14	1	231
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	- None		- None		- None	
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	0	-	0	-	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	155	699	480	16	1	266
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	496	0	-	0	1497	488
Stage 1	-	-	-	-	488	-
Stage 2	-	-	-	-	1009	-
Critical Hdwy	4.12	-	-	-	7.1	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1068	-	-	-	102	580
Stage 1	-	-	-	-	617	-
Stage 2	-	-	-	-	352	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	1068	-	-	-	78	580
Mov Cap-2 Maneuver	-	-	-	-	78	-
Stage 1	-	-	-	-	471	-
Stage 2	-	-	-	-	352	-
Approach	EB	WB		SB		
HCM Control Delay, s	4.6	0		17		
HCM LOS				C		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1068	-	-	-	-	564
HCM Lane V/C Ratio	0.145	-	-	-	-	0.473
HCM Control Delay (s)	8.9	0	-	-	-	17
HCM Lane LOS	A	A	-	-	-	C
HCM 95th %tile Q(veh)	0.5	-	-	-	-	2.5

Lanes, Volumes, Timings
19: Forge Rd. (SR 2001) & Westminster Dr.

Timing Plan: PM Peak Hour
05/08/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	72	15	520	87	24	5	10	305	28	24	6
Future Volume (vph)	1	72	15	520	87	24	5	10	305	28	24	6
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.977			0.995				0.850		0.985	
Flt Protected		0.999			0.960			0.985			0.977	
Satd. Flow (prot)	0	1722	0	0	1686	0	0	1738	1500	0	1698	0
Flt Permitted		0.999			0.960			0.985			0.977	
Satd. Flow (perm)	0	1722	0	0	1686	0	0	1738	1500	0	1698	0
Link Speed (mph)		25			25			35			35	
Link Distance (ft)		448			530			1566			758	
Travel Time (s)		12.2			14.5			30.5			14.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1	78	16	565	95	26	5	11	332	30	26	7
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	95	0	0	686	0	0	16	332	0	63	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	60.1%				ICU Level of Service B							
Analysis Period (min)	15											

Intersection

Intersection Delay, s/veh 49.1

Intersection LOS E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	72	15	520	87	24	5	10	305	28	24	6
Future Vol, veh/h	1	72	15	520	87	24	5	10	305	28	24	6
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	78	16	565	95	26	5	11	332	30	26	7
Number of Lanes	0	1	0	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	1
HCM Control Delay	10.7	74.5	16.4	11.3
HCM LOS	B	F	C	B

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1
Vol Left, %	33%	0%	1%	82%	48%
Vol Thru, %	67%	0%	82%	14%	41%
Vol Right, %	0%	100%	17%	4%	10%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	15	305	88	631	58
LT Vol	5	0	1	520	28
Through Vol	10	0	72	87	24
RT Vol	0	305	15	24	6
Lane Flow Rate	16	332	96	686	63
Geometry Grp	7	7	2	2	5
Degree of Util (X)	0.031	0.56	0.165	1.057	0.122
Departure Headway (Hd)	7.171	6.285	6.42	5.548	7.247
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	502	577	562	658	497
Service Time	4.871	3.985	4.42	3.58	5.247
HCM Lane V/C Ratio	0.032	0.575	0.171	1.043	0.127
HCM Control Delay	10.1	16.7	10.7	74.5	11.3
HCM Lane LOS	B	C	B	F	B
HCM 95th-tile Q	0.1	3.4	0.6	18.5	0.4

Lanes, Volumes, Timings
20: Forge Rd. (SR 2001) & Fairview St.

Timing Plan: PM Peak Hour
05/08/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	10	23	97	40	19	23	361	59	25	519	11
Future Volume (vph)	4	10	23	97	40	19	23	361	59	25	519	11
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	10	10	10	10	10	11	11	11	11	11	11
Grade (%)		-2%			-1%			2%			1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.914			0.984			0.982			0.997	
Flt Protected		0.995			0.970			0.997			0.998	
Satd. Flow (prot)	0	1513	0	0	1572	0	0	1650	0	0	1689	0
Flt Permitted		0.995			0.970			0.997			0.998	
Satd. Flow (perm)	0	1513	0	0	1572	0	0	1650	0	0	1689	0
Link Speed (mph)		35			25			35			35	
Link Distance (ft)		1976			1153			1844			1566	
Travel Time (s)		38.5			31.4			35.9			30.5	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	2%	2%	4%	2%	6%	2%	2%	2%	2%	2%
Adj. Flow (vph)	4	11	26	108	44	21	26	401	66	28	577	12
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	41	0	0	173	0	0	493	0	0	617	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.16	1.16	1.16	1.16	1.16	1.16	1.13	1.13	1.13	1.13	1.13	1.13
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	60.7%				ICU Level of Service B							
Analysis Period (min)	15											

Intersection												
Int Delay, s/veh		13.7										
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	4	10	23	97	40	19	23	361	59	25	519	11
Future Vol, veh/h	4	10	23	97	40	19	23	361	59	25	519	11
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	-	-	0	-	-	0	-	-
Grade, %	-	-2	-	-	-1	-	-	2	-	-	1	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	4	2	6	2	2	2	2	2
Mvmt Flow	4	11	26	108	44	21	26	401	66	28	577	12

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow	All1158	1158	583	1144	1131	434	589	0	0	467	0	0
Stage 1	639	639	-	486	486	-	-	-	-	-	-	-
Stage 2	519	519	-	658	645	-	-	-	-	-	-	-
Critical Hdwy	6.72	6.12	6.2	6.92	6.34	6.12	4.3	-	-	4.12	-	-
Critical Hdwy Stg 1	5.72	5.12	-	5.92	5.34	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.72	5.12	-	5.92	5.34	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.5	3.518	4.036	3.318	2.4	-	-	2.218	-	-
Pot Cap-1 Maneuver	197	223	494	189	215	629	897	-	-	1094	-	-
Stage 1	498	505	-	578	563	-	-	-	-	-	-	-
Stage 2	572	564	-	470	481	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	149	206	494	162	199	629	897	-	-	1094	-	-
Mov Cap-2 Maneuver	149	206	-	162	199	-	-	-	-	-	-	-
Stage 1	478	486	-	555	540	-	-	-	-	-	-	-
Stage 2	487	541	-	419	463	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	13.7	97.4	0.5	0.4
HCM LOS	C	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	897	-	-	303	188	1094	-	-
HCM Lane V/C Ratio	0.028	-	-	0.136	0.922	0.025	-	-
HCM Control Delay (s)	9.1	0	-	18.7	97.4	8.4	0	-
HCM Lane LOS	A	A	-	C	F	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.5	7.2	0.1	-	-

Lanes, Volumes, Timings

Timing Plan: PM Peak Hour

21: Rose Access/Pharmacy Tract & W. Trindle Rd. (SR 0641)

05/08/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	643	167	157	613	0	79	0	61	0	0	0
Future Volume (vph)	0	643	167	157	613	0	79	0	61	0	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (ft)	150		350	150		175	190		0	75		0
Storage Lanes	1		1	2		0	2		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	0.97	1.00	1.00	1.00	1.00	1.00
Frt			0.850					0.850				
Flt Protected				0.950			0.950					
Satd. Flow (prot)	1765	1765	1500	3252	1765	0	3252	1500	0	1765	1765	0
Flt Permitted				0.950			0.950					
Satd. Flow (perm)	1765	1765	1500	3252	1765	0	3252	1500	0	1765	1765	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			182					271				
Link Speed (mph)		45			45			25			25	
Link Distance (ft)		482			1985			451			562	
Travel Time (s)		7.3			30.1			12.3			15.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	699	182	171	666	0	86	0	66	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	699	182	171	666	0	86	66	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Size(ft)	20	6	20	20	6		20	6		20	6	
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA		Prot		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2									



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2	2	1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	4.0	7.0	7.0	4.0	7.0		4.0	7.0		4.0	7.0	
Minimum Split (s)	10.0	25.0	25.0	10.0	25.0		10.0	28.0		10.0	28.0	
Total Split (s)	10.0	53.0	53.0	14.0	57.0		15.0	33.0		10.0	28.0	
Total Split (%)	9.1%	48.2%	48.2%	12.7%	51.8%		13.6%	30.0%		9.1%	25.5%	
Maximum Green (s)	4.0	47.0	47.0	8.0	51.0		9.0	27.0		4.0	22.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0		-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max	C-Max	None	C-Max		None	None		None	None	
Walk Time (s)		7.0	7.0		7.0			7.0			7.0	
Flash Dont Walk (s)		12.0	12.0		12.0			15.0			15.0	
Pedestrian Calls (#/hr)		0	0		0			0			0	
Act Effct Green (s)		76.4	76.4	12.1	94.5		8.9	9.1				
Actuated g/C Ratio		0.69	0.69	0.11	0.86		0.08	0.08				
v/c Ratio		0.57	0.17	0.48	0.44		0.33	0.18				
Control Delay		6.8	0.7	50.2	3.5		50.8	1.0				
Queue Delay		0.0	0.0	0.0	0.0		0.0	0.0				
Total Delay		6.8	0.7	50.2	3.5		50.8	1.0				
LOS		A	A	D	A		D	A				
Approach Delay		5.6			13.0			29.2				
Approach LOS		A			B			C				
Queue Length 50th (ft)		106	1	59	99		29	0				
Queue Length 95th (ft)		150	m7	91	149		55	0				
Internal Link Dist (ft)		402			1905			371			482	
Turn Bay Length (ft)			350	150			190					
Base Capacity (vph)		1225	1097	357	1515		295	583				
Starvation Cap Reductn		0	0	0	0		0	0				
Spillback Cap Reductn		0	0	0	0		0	0				
Storage Cap Reductn		0	0	0	0		0	0				
Reduced v/c Ratio		0.57	0.17	0.48	0.44		0.29	0.11				

Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 4 (4%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.57

Intersection Signal Delay: 10.8

Intersection LOS: B

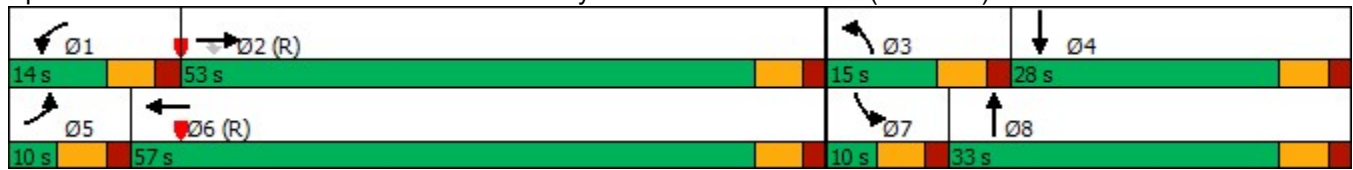
Intersection Capacity Utilization 58.8%

ICU Level of Service B

Analysis Period (min) 15

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

Splits and Phases: 21: Rose Access/Pharmacy Tract & W. Trindle Rd. (SR 0641)



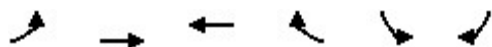
HCM 2010 Signalized Intersection Summary
 21: Rose Access/Pharmacy Tract & W. Trindle Rd. (SR 0641)

Timing Plan: PM Peak Hour
 05/08/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	643	167	157	613	0	79	0	61	0	0	0
Future Volume (veh/h)	0	643	167	157	613	0	79	0	61	0	0	0
Number	5	2	12	1	6	16	3	8	18	7	4	14
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
Adj Sat Flow, veh/h/ln	1765	1765	1765	1765	1765	1800	1765	1765	1800	1765	1765	1800
Adj Flow Rate, veh/h	0	699	0	171	666	0	86	0	66	0	0	0
Adj No. of Lanes	1	1	1	2	1	0	2	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	2	1252	1064	267	1477	0	178	0	108	2	2	0
Arrive On Green	0.00	0.71	0.00	0.08	0.84	0.00	0.05	0.00	0.06	0.00	0.00	0.00
Sat Flow, veh/h	1681	1765	1500	3261	1765	0	3261	0	1500	1681	1765	0
Grp Volume(v), veh/h	0	699	0	171	666	0	86	0	66	0	0	0
Grp Sat Flow(s),veh/h/ln	1681	1765	1500	1630	1765	0	1630	0	1500	1681	1765	0
Q Serve(g_s), s	0.0	20.9	0.0	5.6	10.9	0.0	2.8	0.0	4.7	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	20.9	0.0	5.6	10.9	0.0	2.8	0.0	4.7	0.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	2	1252	1064	267	1477	0	178	0	108	2	2	0
V/C Ratio(X)	0.00	0.56	0.00	0.64	0.45	0.00	0.48	0.00	0.61	0.00	0.00	0.00
Avail Cap(c_a), veh/h	76	1252	1064	267	1477	0	296	0	382	76	369	0
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)	0.00	1.00	0.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	7.7	0.0	48.9	2.3	0.0	50.5	0.0	50.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	1.8	0.0	5.1	1.0	0.0	2.0	0.0	5.4	0.0	0.0	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	0.0	16.1	0.0	4.9	9.5	0.0	2.4	0.0	3.8	0.0	0.0	0.0
LnGrp Delay(d),s/veh	0.0	9.5	0.0	54.0	3.3	0.0	52.5	0.0	55.5	0.0	0.0	0.0
LnGrp LOS		A		D	A		D		E			
Approach Vol, veh/h		699			837			152			0	
Approach Delay, s/veh		9.5			13.7			53.8			0.0	
Approach LOS		A			B			D				
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	14.0	83.1	11.0	1.9	0.0	97.1	0.0	12.9				
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0				
Max Green Setting (Gmax),s	80	47.0	9.0	22.0	4.0	51.0	4.0	27.0				
Max Q Clear Time (g_c+I1)s	8	23.4	5.3	0.0	0.0	13.4	0.0	6.7				
Green Ext Time (p_c), s	0.0	4.5	0.1	0.0	0.0	4.6	0.0	0.3				
Intersection Summary												
HCM 2010 Ctrl Delay				15.6								
HCM 2010 LOS				B								

Lanes, Volumes, Timings
22: York Rd. (SR 0074) & Heritage Village Access

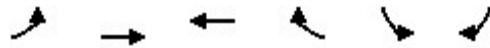
Timing Plan: PM Peak Hour
05/08/2023



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	←←	↑	↑	↑	←	↑
Traffic Volume (vph)	79	825	481	76	107	135
Future Volume (vph)	79	825	481	76	107	135
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (ft)	175			275	0	500
Storage Lanes	2			1	1	1
Taper Length (ft)	25				25	
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00
Frt				0.850		0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	3252	1765	1765	1500	1676	1500
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	3252	1765	1765	1500	1676	1500
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				83		147
Link Speed (mph)		35	35		25	
Link Distance (ft)		2128	1056		625	
Travel Time (s)		41.5	20.6		17.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	86	897	523	83	116	147
Shared Lane Traffic (%)						
Lane Group Flow (vph)	86	897	523	83	116	147
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		24	24		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2	1	1	1
Detector Template	Left	Thru	Thru	Right	Left	Right
Leading Detector (ft)	20	100	100	20	20	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	6	20	20	20
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94	94			
Detector 2 Size(ft)		6	6			
Detector 2 Type		CI+Ex	CI+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type	Prot	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6

Lanes, Volumes, Timings
22: York Rd. (SR 0074) & Heritage Village Access

Timing Plan: PM Peak Hour
05/08/2023

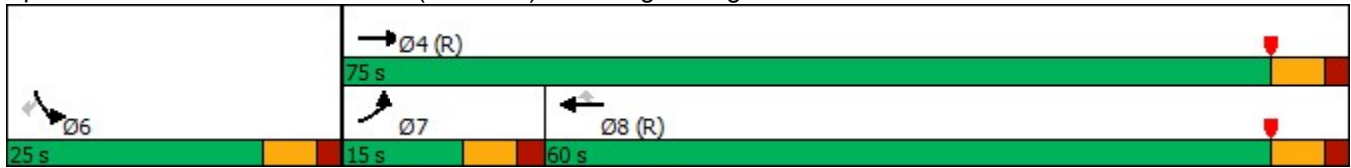


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Detector Phase	7	4	8	8	6	6
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	10.0	21.0	21.0	21.0	25.0	25.0
Total Split (s)	15.0	75.0	60.0	60.0	25.0	25.0
Total Split (%)	15.0%	75.0%	60.0%	60.0%	25.0%	25.0%
Maximum Green (s)	9.0	69.0	54.0	54.0	19.0	19.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	Max	C-Max	C-Max	C-Max	None	None
Walk Time (s)		7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		8.0	8.0	8.0	12.0	12.0
Pedestrian Calls (#/hr)		0	0	0	0	0
Act Effct Green (s)	16.8	76.8	55.0	55.0	13.2	13.2
Actuated g/C Ratio	0.17	0.77	0.55	0.55	0.13	0.13
v/c Ratio	0.16	0.66	0.54	0.10	0.52	0.45
Control Delay	44.0	6.7	17.0	2.7	48.4	11.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.0	6.7	17.0	2.7	48.4	11.0
LOS	D	A	B	A	D	B
Approach Delay		10.0	15.0		27.5	
Approach LOS		A	B		C	
Queue Length 50th (ft)	22	114	201	0	70	0
Queue Length 95th (ft)	m38	526	296	21	120	52
Internal Link Dist (ft)		2048	976		545	
Turn Bay Length (ft)	175			275		500
Base Capacity (vph)	546	1355	970	862	335	417
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.16	0.66	0.54	0.10	0.35	0.35

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 56 (56%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow
Natural Cycle: 65
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.66
Intersection Signal Delay: 14.1 Intersection LOS: B
Intersection Capacity Utilization 60.4% ICU Level of Service B
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 22: York Rd. (SR 0074) & Heritage Village Access



HCM 2010 Signalized Intersection Summary
 22: York Rd. (SR 0074) & Heritage Village Access

Timing Plan: PM Peak Hour
 05/08/2023

								
Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations	 				 			
Traffic Volume (veh/h)	79	825	481	76	107	135		
Future Volume (veh/h)	79	825	481	76	107	135		
Number	7	4	8	18	1	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1765	1765	1765	1765	1765	1765		
Adj Flow Rate, veh/h	86	897	523	0	116	0		
Adj No. of Lanes	2	1	1	1	1	1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	326	1412	1147	975	168	150		
Arrive On Green	0.20	1.00	0.65	0.00	0.10	0.00		
Sat Flow, veh/h	3261	1765	1765	1500	1681	1500		
Grp Volume(v), veh/h	86	897	523	0	116	0		
Grp Sat Flow(s),veh/h/ln	1630	1765	1765	1500	1681	1500		
Q Serve(g_s), s	2.2	0.0	14.7	0.0	6.7	0.0		
Cycle Q Clear(g_c), s	2.2	0.0	14.7	0.0	6.7	0.0		
Prop In Lane	1.00			1.00	1.00	1.00		
Lane Grp Cap(c), veh/h	326	1412	1147	975	168	150		
V/C Ratio(X)	0.26	0.64	0.46	0.00	0.69	0.00		
Avail Cap(c_a), veh/h	326	1412	1147	975	336	300		
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	0.69	0.69	1.00	0.00	1.00	0.00		
Uniform Delay (d), s/veh	36.9	0.0	8.7	0.0	43.5	0.0		
Incr Delay (d2), s/veh	1.4	1.5	1.3	0.0	5.0	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(95%),veh/ln	1.9	1.1	12.0	0.0	6.0	0.0		
LnGrp Delay(d),s/veh	38.2	1.5	10.0	0.0	48.5	0.0		
LnGrp LOS	D	A	B		D			
Approach Vol, veh/h		983	523		116			
Approach Delay, s/veh		4.7	10.0		48.5			
Approach LOS		A	B		D			
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				85.0		15.0	15.0	70.0
Change Period (Y+Rc), s				6.0		6.0	6.0	6.0
Max Green Setting (Gmax), s				69.0		19.0	9.0	54.0
Max Q Clear Time (g_c+I1), s				2.5		9.2	4.7	17.2
Green Ext Time (p_c), s				8.8		0.2	0.1	3.6
Intersection Summary								
HCM 2010 Ctrl Delay			9.6					
HCM 2010 LOS			A					

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Volume (vph)	703	399	24	672	312	13
Future Volume (vph)	703	399	24	672	312	13
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	16	10	13	14	14
Storage Length (ft)		0	75		0	0
Storage Lanes		1	1		1	0
Taper Length (ft)			25		25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850			0.994	
Flt Protected			0.950		0.954	
Satd. Flow (prot)	1706	1700	1565	1824	1785	0
Flt Permitted			0.283		0.954	
Satd. Flow (perm)	1706	1700	466	1824	1785	0
Right Turn on Red		No				Yes
Satd. Flow (RTOR)					2	
Link Speed (mph)	35			35	35	
Link Distance (ft)	1498			1127	625	
Travel Time (s)	29.2			22.0	12.2	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	732	416	25	700	325	14
Shared Lane Traffic (%)						
Lane Group Flow (vph)	732	416	25	700	339	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	14	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.12	0.91	1.17	1.03	0.99	0.99
Turning Speed (mph)		9	15		15	9
Number of Detectors	1	0	1	1	1	
Detector Template						
Leading Detector (ft)	37	0	37	37	37	
Trailing Detector (ft)	-3	0	-3	-3	-3	
Detector 1 Position(ft)	-3	0	-3	-3	-3	
Detector 1 Size(ft)	40	20	40	40	40	
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Turn Type	NA	Perm	Perm	NA	Prot	
Protected Phases	2			6	8	
Permitted Phases		2	6			
Detector Phase	2	2	6	6	8	
Switch Phase						
Minimum Initial (s)	30.0	30.0	30.0	30.0	10.0	
Minimum Split (s)	35.2	35.2	35.2	35.2	14.9	



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Total Split (s)	66.0	66.0	66.0	66.0	34.0	
Total Split (%)	66.0%	66.0%	66.0%	66.0%	34.0%	
Maximum Green (s)	60.8	60.8	60.8	60.8	29.1	
Yellow Time (s)	3.6	3.6	3.6	3.6	3.7	
All-Red Time (s)	1.6	1.6	1.6	1.6	1.2	
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-0.5	
Total Lost Time (s)	4.2	4.2	4.2	4.2	4.4	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	
Act Effct Green (s)	67.4	67.4	67.4	67.4	24.0	
Actuated g/C Ratio	0.67	0.67	0.67	0.67	0.24	
v/c Ratio	0.64	0.36	0.08	0.57	0.79	
Control Delay	13.6	8.9	8.2	11.4	48.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	13.6	8.9	8.2	11.4	48.5	
LOS	B	A	A	B	D	
Approach Delay	11.9			11.3	48.5	
Approach LOS	B			B	D	
Queue Length 50th (ft)	243	104	5	189	200	
Queue Length 95th (ft)	425	184	m13	372	283	
Internal Link Dist (ft)	1418			1047	545	
Turn Bay Length (ft)			75			
Base Capacity (vph)	1149	1145	313	1228	529	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.64	0.36	0.08	0.57	0.64	

Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 38 (38%), Referenced to phase 2:EBT and 6:WBTL, Start of Green

Natural Cycle: 55

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.79

Intersection Signal Delay: 17.3

Intersection LOS: B

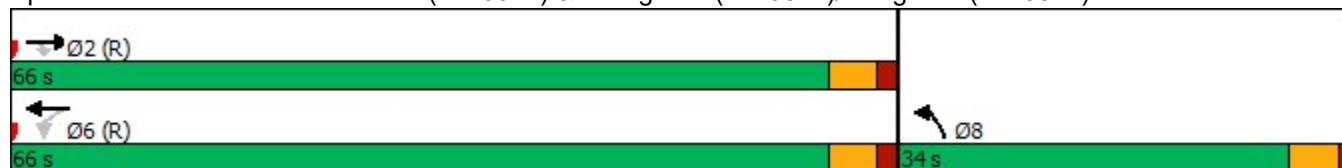
Intersection Capacity Utilization 65.3%

ICU Level of Service C

Analysis Period (min) 15

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

Splits and Phases: 1: York Road (SR 0074) & E. High St. (SR 0641)/E High St. (SR 0641)



HCM 2010 Signalized Intersection Summary

Timing Plan: SAT Peak Hour

1: York Road (SR 0074) & E. High St. (SR 0641)/E High St. (SR 0641)

05/08/2023

	→	↘	↙	←	↖	↗		
Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations	↑	↑	↑	↑	↑	↑		
Traffic Volume (veh/h)	703	399	24	672	312	13		
Future Volume (veh/h)	703	399	24	672	312	13		
Number	2	12	1	6	3	18		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1765	1835	1765	1835	1835	1872		
Adj Flow Rate, veh/h	732	0	25	700	325	14		
Adj No. of Lanes	1	1	1	1	0	0		
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	1215	1074	409	1263	375	16		
Arrive On Green	0.69	0.00	1.00	1.00	0.23	0.22		
Sat Flow, veh/h	1765	1560	721	1835	1663	72		
Grp Volume(v), veh/h	732	0	25	700	340	0		
Grp Sat Flow(s),veh/h/ln	1765	1560	721	1835	1740	0		
Q Serve(g_s), s	22.1	0.0	1.2	0.0	18.8	0.0		
Cycle Q Clear(g_c), s	22.1	0.0	23.3	0.0	18.8	0.0		
Prop In Lane		1.00	1.00		0.96	0.04		
Lane Grp Cap(c), veh/h	1215	1074	409	1263	393	0		
V/C Ratio(X)	0.60	0.00	0.06	0.55	0.87	0.00		
Avail Cap(c_a), veh/h	1215	1074	409	1263	515	0		
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	1.00		
Upstream Filter(I)	1.00	0.00	0.71	0.71	1.00	0.00		
Uniform Delay (d), s/veh	8.3	0.0	3.7	0.0	37.3	0.0		
Incr Delay (d2), s/veh	2.2	0.0	0.2	1.3	11.6	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(95%),veh/ln	16.8	0.0	0.5	0.8	15.6	0.0		
LnGrp Delay(d),s/veh	10.5	0.0	3.9	1.3	48.9	0.0		
LnGrp LOS	B		A	A	D			
Approach Vol, veh/h	732			725	340			
Approach Delay, s/veh	10.5			1.3	48.9			
Approach LOS	B			A	D			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		73.0				73.0		27.0
Change Period (Y+Rc), s		* 5.2				* 5.2		4.9
Max Green Setting (Gmax), s		* 61				* 61		29.1
Max Q Clear Time (g_c+I1), s		24.6				25.8		21.3
Green Ext Time (p_c), s		3.2				3.2		0.8
Intersection Summary								
HCM 2010 Ctrl Delay			14.1					
HCM 2010 LOS			B					
Notes								

User approved volume balancing among the lanes for turning movement.

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Lanes, Volumes, Timings
2: Giant Ln./Carlisle Plaza Mall & York Road (SR 0074)

Timing Plan: SAT Peak Hour

05/08/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	111	546	32	174	455	45	23	53	166	72	79	72
Future Volume (vph)	111	546	32	174	455	45	23	53	166	72	79	72
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	13	13	13	13	12	13	11	14	14	10	12	12
Grade (%)		1%			2%			-2%			2%	
Storage Length (ft)	210		0	210		0	110		0	65		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00		1.00								
Frt		0.992			0.986			0.886			0.928	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1724	1798	0	1715	1720	0	1637	1684	0	1549	1621	0
Flt Permitted	0.299			0.223			0.644			0.475		
Satd. Flow (perm)	543	1798	0	402	1720	0	1110	1684	0	775	1621	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		6			11			173			75	
Link Speed (mph)		35			35			35			25	
Link Distance (ft)		549			3632			825			544	
Travel Time (s)		10.7			70.8			16.1			14.8	
Confl. Peds. (#/hr)			2	2								
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	2%	2%	2%	2%	4%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	116	569	33	181	474	47	24	55	173	75	82	75
Shared Lane Traffic (%)												
Lane Group Flow (vph)	116	602	0	181	521	0	24	228	0	75	157	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		13			13			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.03	1.03	1.03	1.04	1.09	1.04	1.11	0.97	0.97	1.19	1.09	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1		1	1		1	1	
Detector Template												
Leading Detector (ft)	40	256		40	256		30	37		30	35	
Trailing Detector (ft)	-10	250		-10	250		-10	-3		-10	-5	
Detector 1 Position(ft)	-10	250		-10	250		-10	-3		-10	-5	
Detector 1 Size(ft)	50	6		50	6		40	40		40	40	
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2			6			8			4		

Lanes, Volumes, Timings
2: Giant Ln./Carlisle Plaza Mall & York Road (SR 0074)

Timing Plan: SAT Peak Hour
05/08/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Detector Phase	5	2		1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	3.0	10.0		3.0	10.0		3.0	3.0		3.0	3.0	
Minimum Split (s)	8.0	24.4		8.0	24.4		21.4	21.4		21.4	21.4	
Total Split (s)	8.0	30.6		8.0	30.6		21.4	21.4		21.4	21.4	
Total Split (%)	13.3%	51.0%		13.3%	51.0%		35.7%	35.7%		35.7%	35.7%	
Maximum Green (s)	4.5	25.2		4.5	25.2		16.0	16.0		16.0	16.0	
Yellow Time (s)	3.0	3.6		3.0	3.6		3.8	3.8		3.8	3.8	
All-Red Time (s)	0.5	1.8		0.5	1.8		1.6	1.6		1.6	1.6	
Lost Time Adjust (s)	-0.5	-1.0		-0.5	-1.0		-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)	3.0	4.4		3.0	4.4		4.4	4.4		4.4	4.4	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	6.0		3.0	6.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.5		3.0	3.5		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	25.0		0.0	25.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	20.0		0.0	20.0		0.0	0.0		0.0	0.0	
Recall Mode	Max	C-Max		Max	C-Max		None	None		None	None	
Walk Time (s)		19.0			19.0		16.0	16.0		16.0	16.0	
Flash Dont Walk (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Pedestrian Calls (#/hr)		0			0		0	0		0	0	
Act Effct Green (s)	38.1	26.2		38.1	26.2		11.5	11.5		11.5	11.5	
Actuated g/C Ratio	0.64	0.44		0.64	0.44		0.19	0.19		0.19	0.19	
v/c Ratio	0.21	0.76		0.37	0.69		0.11	0.49		0.51	0.42	
Control Delay	5.2	22.4		6.8	19.1		19.0	9.9		32.5	14.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	5.2	22.4		6.8	19.1		19.0	9.9		32.5	14.6	
LOS	A	C		A	B		B	A		C	B	
Approach Delay		19.7			15.9			10.8			20.4	
Approach LOS		B			B			B			C	
Queue Length 50th (ft)	11	173		18	141		7	17		25	26	
Queue Length 95th (ft)	33	#334		49	241		21	60		55	62	
Internal Link Dist (ft)		469			3552			745			464	
Turn Bay Length (ft)	210			210			110			65		
Base Capacity (vph)	551	788		485	757		314	601		219	513	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.21	0.76		0.37	0.69		0.08	0.38		0.34	0.31	

Intersection Summary

Area Type: Other

Cycle Length: 60

Actuated Cycle Length: 60

Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.76

Intersection Signal Delay: 17.2

Intersection LOS: B

Intersection Capacity Utilization 74.8%

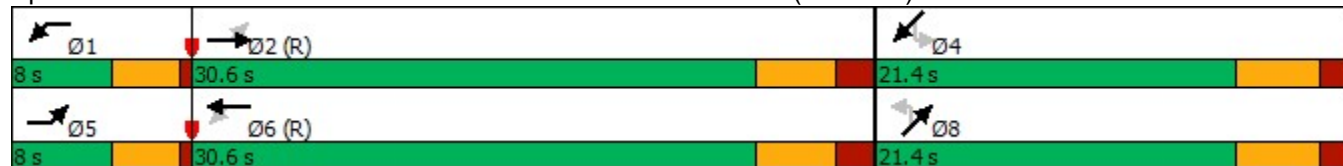
ICU Level of Service D

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 2: Giant Ln./Carlisle Plaza Mall & York Road (SR 0074)



HCM 2010 analysis expects stop-line detection. Detectors cannot be further than 20 feet from the stop bar.

Lanes, Volumes, Timings

Timing Plan: SAT Peak Hour

3: Carlisle Plaza Mall/Shaffner Ave. & E High St. (SR 0641)/E. High St. (SR 0641) 05/08/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	626	152	96	600	43	93	0	125	0	0	0
Future Volume (vph)	0	626	152	96	600	43	93	0	125	0	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12	12	12	12	16	16	16
Grade (%)		0%			0%			2%			0%	
Storage Length (ft)	60		60	60		0	0		80	0		0
Storage Lanes	1		1	1		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor								1.00				
Frt			0.850		0.990				0.850			
Flt Protected				0.950				0.950				
Satd. Flow (prot)	1765	1765	1500	1676	1747	0	0	1660	1485	0	2000	0
Flt Permitted				0.257				0.757				
Satd. Flow (perm)	1765	1765	1500	454	1747	0	0	1319	1485	0	2000	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			89		7				133			
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		1127			853			544			592	
Travel Time (s)		22.0			16.6			10.6			11.5	
Confl. Peds. (#/hr)							1					1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	666	162	102	638	46	99	0	133	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	666	162	102	684	0	0	99	133	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane					Yes							
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.09	1.09	1.09	0.91	0.91	0.91
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	1	1	1		1	1	1	1	2	
Detector Template							Left			Left		
Leading Detector (ft)	45	35	35	45	35		20	45	45	20	20	
Trailing Detector (ft)	-5	-5	-5	-5	-5		0	-5	-5	0	-3	
Detector 1 Position(ft)	-5	-5	-5	-5	-5		0	-5	-5	0	-3	
Detector 1 Size(ft)	50	40	40	50	40		20	50	50	20	6	
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex		CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)											14	
Detector 2 Size(ft)											6	
Detector 2 Type											CI+Ex	
Detector 2 Channel												

Lanes, Volumes, Timings

Timing Plan: SAT Peak Hour

3: Carlisle Plaza Mall/Shaffner Ave. & E High St. (SR 0641)/E. High St. (SR 0641) 05/08/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)												0.0
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Perm	NA	Perm			
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2		2	6			8		8	4		
Detector Phase	5	2	2	1	6		8	8	8	4	4	
Switch Phase												
Minimum Initial (s)	3.0	10.0	10.0	3.0	10.0		3.0	3.0	3.0	3.0	3.0	
Minimum Split (s)	8.7	27.7	27.7	8.7	27.7		26.5	26.5	26.5	26.5	26.5	
Total Split (s)	8.7	62.4	62.4	11.1	64.8		26.5	26.5	26.5	26.5	26.5	
Total Split (%)	8.7%	62.4%	62.4%	11.1%	64.8%		26.5%	26.5%	26.5%	26.5%	26.5%	
Maximum Green (s)	3.0	56.7	56.7	5.4	59.1		21.0	21.0	21.0	21.0	21.0	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.5	2.5	2.5	2.5	2.5	
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0			-1.0	-1.0		-1.0	
Total Lost Time (s)	4.7	4.7	4.7	4.7	4.7			4.5	4.5		4.5	
Lead/Lag	Lead	Lag	Lag	Lead	Lag							
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	6.0	6.0	3.0	6.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	Max	C-Max	C-Max	Max	C-Max		None	None	None	None	None	
Walk Time (s)		12.0	12.0		12.0		11.0	11.0	11.0	11.0	11.0	
Flash Dont Walk (s)		10.0	10.0		10.0		10.0	10.0	10.0	10.0	10.0	
Pedestrian Calls (#/hr)		0	0		0		0	0	0	0	0	
Act Effct Green (s)		57.7	57.7	74.6	60.1			13.9	13.9			
Actuated g/C Ratio		0.58	0.58	0.75	0.60			0.14	0.14			
v/c Ratio		0.65	0.18	0.20	0.65			0.54	0.42			
Control Delay		8.7	0.8	3.5	14.1			50.1	10.5			
Queue Delay		0.0	0.0	0.0	0.0			0.0	0.0			
Total Delay		8.7	0.8	3.5	14.1			50.1	10.5			
LOS		A	A	A	B			D	B			
Approach Delay		7.1			12.7			27.4				
Approach LOS		A			B			C				
Queue Length 50th (ft)		116	0	12	249			60	0			
Queue Length 95th (ft)		65	m0	29	332			106	49			
Internal Link Dist (ft)		1047			773			464			512	
Turn Bay Length (ft)			60	60					80			
Base Capacity (vph)		1018	903	516	1052			290	430			
Starvation Cap Reductn		0	0	0	0			0	0			
Spillback Cap Reductn		0	0	0	0			0	0			
Storage Cap Reductn		0	0	0	0			0	0			
Reduced v/c Ratio		0.65	0.18	0.20	0.65			0.34	0.31			

Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 58 (58%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 70

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.65

Intersection Signal Delay: 12.1

Intersection LOS: B

Intersection Capacity Utilization 61.6%

ICU Level of Service B

Analysis Period (min) 15

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

Splits and Phases: 3: Carlisle Plaza Mall/Shaffner Ave. & E High St. (SR 0641)/E. High St. (SR 0641)

 Ø1	 Ø2 (R)	 Ø4
11.1 s	62.4 s	26.5 s
 Ø5	 Ø6 (R)	 Ø8
8.7 s	64.8 s	26.5 s

HCM 2010 Signalized Intersection Summary

Timing Plan: SAT Peak Hour

3: Carlisle Plaza Mall/Shaffner Ave. & E High St. (SR 0641)/E. High St. (SR 0641)

05/08/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	626	152	96	600	43	93	0	125	0	0	0
Future Volume (veh/h)	0	626	152	96	600	43	93	0	125	0	0	0
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	6	0	2	5	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
Adj Sat Flow, veh/h/ln	1765	1765	1765	1765	1765	1800	1782	1747	1747	1872	1835	1872
Adj Flow Rate, veh/h	0	666	162	102	638	46	99	0	133	0	0	0
Adj No. of Lanes	1	1	1	1	1	0	0	1	1	0	1	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	547	1178	1002	574	1271	90	244	0	191	0	237	0
Arrive On Green	0.00	1.00	1.00	0.13	1.00	1.00	0.12	0.00	0.13	0.00	0.00	0.00
Sat Flow, veh/h	1681	1765	1500	1681	1627	117	1328	0	1479	0	1835	0
Grp Volume(v), veh/h	0	666	162	102	0	684	99	0	133	0	0	0
Grp Sat Flow(s),veh/h/ln	1681	1765	1500	1681	0	1744	1328	0	1479	0	1835	0
Q Serve(g_s), s	0.0	0.0	0.0	1.6	0.0	0.0	6.8	0.0	8.6	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	1.6	0.0	0.0	7.3	0.0	8.6	0.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.07	1.00		1.00	0.00		0.00
Lane Grp Cap(c), veh/h	547	1178	1002	574	0	1358	230	0	191	0	237	0
V/C Ratio(X)	0.00	0.57	0.16	0.18	0.00	0.50	0.43	0.00	0.70	0.00	0.00	0.00
Avail Cap(c_a), veh/h	643	1178	1002	620	0	1358	356	0	325	0	404	0
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.73	0.73	0.82	0.00	0.82	0.92	0.00	0.92	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	6.0	0.0	0.0	41.8	0.0	41.7	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	1.4	0.3	0.6	0.0	1.1	1.2	0.0	4.2	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.4	0.0	0.1	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.0	1.0	0.1	2.2	0.0	0.8	4.9	0.0	6.7	0.0	0.0	0.0
LnGrp Delay(d),s/veh	0.0	1.9	0.3	6.7	0.0	1.3	43.0	0.0	45.8	0.0	0.0	0.0
LnGrp LOS		A	A	A		A	D		D			
Approach Vol, veh/h	828				786				232		0	
Approach Delay, s/veh	1.5				2.0				44.6		0.0	
Approach LOS	A				A				D			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.1	71.5		17.4	0.0	82.6		17.4				
Change Period (Y+Rc), s	* 5.7	* 5.7		5.5	* 5.7	* 5.7		5.5				
Max Green Setting (Gmax), s	54	* 57		21.0	* 3	* 59		21.0				
Max Q Clear Time (g_c+I1), s	4.1	2.5		0.0	0.0	2.5		11.1				
Green Ext Time (p_c), s	0.0	13.8		0.0	0.0	11.5		0.6				
Intersection Summary												
HCM 2010 Ctrl Delay			7.1									
HCM 2010 LOS			A									
Notes												

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Lanes, Volumes, Timings

Timing Plan: SAT Peak Hour

4: Lowe's Access Dr./CVS Access Dr. & E. High St. (SR 0641)/W. Trindle Rd. (SR 0641) 08/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	24	602	155	117	524	13	160	8	123	11	3	15
Future Volume (vph)	24	602	155	117	524	13	160	8	123	11	3	15
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Grade (%)		0%			-1%			-2%			0%	
Storage Length (ft)	60		60	80		0	0		50	0		0
Storage Lanes	1		1	1		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.996				0.850		0.928	
Flt Protected	0.950			0.950				0.954			0.982	
Satd. Flow (prot)	1676	1765	1500	1685	1766	0	0	1700	1515	0	1608	0
Flt Permitted	0.359			0.258				0.714			0.884	
Satd. Flow (perm)	634	1765	1500	458	1766	0	0	1273	1515	0	1448	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			89		2				105		16	
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		853			2952			142			294	
Travel Time (s)		16.6			57.5			3.9			8.0	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	25	627	161	122	546	14	167	8	128	11	3	16
Shared Lane Traffic (%)												
Lane Group Flow (vph)	25	627	161	122	560	0	0	175	128	0	30	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes										
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.06	1.06	1.06	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	1	1	1		1	1	1	1	1	
Detector Template							Left			Left		
Leading Detector (ft)	45	35	35	45	35		20	45	45	20	15	
Trailing Detector (ft)	-5	-5	-5	-5	-5		0	-5	-5	0	-5	
Detector 1 Position(ft)	-5	-5	-5	-5	-5		0	-5	-5	0	-5	
Detector 1 Size(ft)	50	40	40	50	40		20	50	50	20	20	
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex		CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Perm	NA	Perm	Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2		2	6			8		8	4		
Detector Phase	5	2	2	1	6		8	8	8	4	4	
Switch Phase												
Minimum Initial (s)	3.0	10.0	10.0	3.0	10.0		3.0	3.0	3.0	3.0	3.0	
Minimum Split (s)	8.7	27.7	27.7	8.7	27.7		26.5	26.5	26.5	26.5	26.5	

Lanes, Volumes, Timings

Timing Plan: SAT Peak Hour

4: Lowe's Access Dr./CVS Access Dr. & E. High St. (SR 0641)/W. Trindle Rd. (SR 0641) 08/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (s)	8.7	59.1	59.1	11.8	62.2		29.1	29.1	29.1	29.1	29.1	
Total Split (%)	8.7%	59.1%	59.1%	11.8%	62.2%		29.1%	29.1%	29.1%	29.1%	29.1%	
Maximum Green (s)	3.0	53.4	53.4	6.1	56.5		23.6	23.6	23.6	23.6	23.6	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.5	2.5	2.5	2.5	2.5	
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0			-1.0	-1.0		-1.0	
Total Lost Time (s)	4.7	4.7	4.7	4.7	4.7			4.5	4.5		4.5	
Lead/Lag	Lead	Lag	Lag	Lead	Lag							
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	6.0	6.0	3.0	6.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	Max	C-Max	C-Max	Max	C-Max		None	None	None	None	None	
Walk Time (s)		12.0	12.0		12.0		11.0	11.0	11.0	11.0	11.0	
Flash Dont Walk (s)		10.0	10.0		10.0		10.0	10.0	10.0	10.0	10.0	
Pedestrian Calls (#/hr)		0	0		0		0	0	0	0	0	
Act Effct Green (s)	63.6	54.4	54.4	69.8	57.5		19.4	19.4			19.4	
Actuated g/C Ratio	0.64	0.54	0.54	0.70	0.58		0.19	0.19			0.19	
v/c Ratio	0.05	0.65	0.19	0.26	0.55		0.71	0.34			0.10	
Control Delay	2.1	8.3	0.8	4.5	12.5		52.8	11.7			19.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0	
Total Delay	2.1	8.3	0.8	4.5	12.5		52.8	11.7			19.4	
LOS	A	A	A	A	B		D	B			B	
Approach Delay		6.6			11.1		35.4				19.4	
Approach LOS		A			B		D				B	
Queue Length 50th (ft)	1	45	0	9	219		104	12			7	
Queue Length 95th (ft)	m3	188	m0	24	287		169	58			30	
Internal Link Dist (ft)		773			2872		62				214	
Turn Bay Length (ft)	60		60	80				50				
Base Capacity (vph)	498	960	856	470	1016		313	451			368	
Starvation Cap Reductn	0	0	0	0	0		0	0			0	
Spillback Cap Reductn	0	0	0	0	0		0	0			0	
Storage Cap Reductn	0	0	0	0	0		0	0			0	
Reduced v/c Ratio	0.05	0.65	0.19	0.26	0.55		0.56	0.28			0.08	

Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 78 (78%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 70

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.71

Intersection Signal Delay: 13.2

Intersection LOS: B

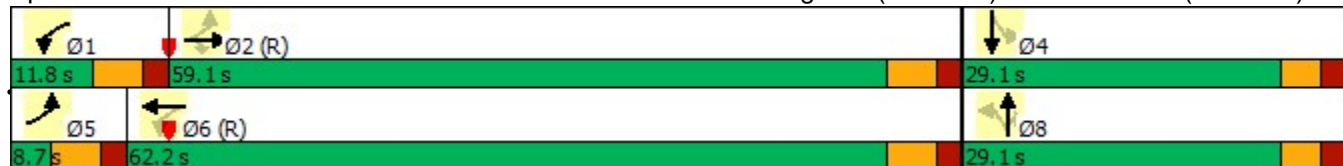
Intersection Capacity Utilization 68.3%

ICU Level of Service C

Analysis Period (min) 15

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

Splits and Phases: 4: Lowe's Access Dr./CVS Access Dr. & E. High St. (SR 0641)/W. Trindle Rd. (SR 0641)



HCM 2010 Signalized Intersection Summary

Timing Plan: SAT Peak Hour

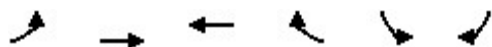
4: Lowe's Access Dr./CVS Access Dr. & E. High St. (SR 0641)/W. Trindle Rd. (SR 0641) 08/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	24	602	155	117	524	13	160	8	123	11	3	15
Future Volume (veh/h)	24	602	155	117	524	13	160	8	123	11	3	15
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	1	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
Adj Sat Flow, veh/h/ln	1765	1765	1765	1774	1774	1809	1818	1782	1782	1800	1765	1800
Adj Flow Rate, veh/h	25	627	161	122	546	14	167	8	128	11	3	16
Adj No. of Lanes	1	1	1	1	1	0	0	1	1	0	1	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	463	960	816	562	990	25	237	8	373	49	27	31
Arrive On Green	0.08	1.00	1.00	0.07	0.58	0.57	0.24	0.25	0.25	0.24	0.25	0.24
Sat Flow, veh/h	1681	1765	1500	1689	1722	44	675	32	1515	0	110	125
Grp Volume(v), veh/h	25	627	161	122	0	560	175	0	128	30	0	0
Grp Sat Flow(s),veh/h/ln	1681	1765	1500	1689	0	1766	708	0	1515	235	0	0
Q Serve(g_s), s	0.6	0.0	0.0	2.9	0.0	19.7	0.0	0.0	7.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.6	0.0	0.0	2.9	0.0	19.7	23.6	0.0	7.0	23.6	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.03	0.95		1.00	0.37		0.53
Lane Grp Cap(c), veh/h	463	960	816	562	0	1015	237	0	373	105	0	0
V/C Ratio(X)	0.05	0.65	0.20	0.22	0.00	0.55	0.74	0.00	0.34	0.29	0.00	0.00
Avail Cap(c_a), veh/h	463	960	816	566	0	1015	237	0	373	105	0	0
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.75	0.75	0.75	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	9.7	0.0	0.0	7.8	0.0	13.2	38.3	0.0	31.0	31.4	0.0	0.0
Incr Delay (d2), s/veh	0.2	2.6	0.4	0.9	0.0	2.2	11.4	0.0	0.5	1.5	0.0	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	0.5	1.3	0.2	2.6	0.0	15.3	9.5	0.0	5.3	1.2	0.0	0.0
LnGrp Delay(d),s/veh	9.9	2.6	0.4	8.7	0.0	15.4	49.7	0.0	31.6	32.8	0.0	0.0
LnGrp LOS	A	A	A	A		B	D		C	C		
Approach Vol, veh/h		813			682			303			30	
Approach Delay, s/veh		2.4			14.2			42.1			32.8	
Approach LOS		A			B			D			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.8	59.1		29.1	8.7	62.2		29.1				
Change Period (Y+Rc), s	* 5.7			5.5	* 5.7	* 5.7		5.5				
Max Green Setting (Gmax), s	61	* 53		23.6	* 3	* 57		23.6				
Max Q Clear Time (g_c+I1), s	54	2.5		25.6	3.1	21.7		25.6				
Green Ext Time (p_c), s	0.0	12.6		0.0	0.0	7.7		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay			13.9									
HCM 2010 LOS			B									
Notes												

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Lanes, Volumes, Timings
5: W. Trindle Rd. (SR 0641) & I-81 SB Off-Ramp

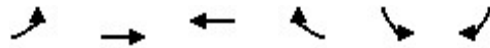
Timing Plan: SAT Peak Hour
05/08/2023



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↑	↑
Traffic Volume (vph)	0	774	461	0	211	212
Future Volume (vph)	0	774	461	0	211	212
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	12	12	12	14	14
Grade (%)		-2%	0%		-3%	
Storage Length (ft)	0			0	0	70
Storage Lanes	0			0	1	1
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	0	3386	3353	0	1815	1624
Flt Permitted					0.950	
Satd. Flow (perm)	0	3386	3353	0	1815	1624
Right Turn on Red				No		Yes
Satd. Flow (RTOR)						221
Link Speed (mph)		35	35		25	
Link Distance (ft)		472	314		758	
Travel Time (s)		9.2	6.1		20.7	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	806	480	0	220	221
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	806	480	0	220	221
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		14	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.11	1.06	1.07	1.07	0.97	0.97
Turning Speed (mph)	15			9	15	9
Number of Detectors		1	1		1	0
Detector Template						
Leading Detector (ft)		256	256		15	0
Trailing Detector (ft)		250	250		-10	0
Detector 1 Position(ft)		250	250		-10	0
Detector 1 Size(ft)		6	6		25	20
Detector 1 Type		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)		0.0	0.0		0.0	0.0
Detector 1 Queue (s)		0.0	0.0		0.0	0.0
Detector 1 Delay (s)		0.0	0.0		0.0	0.0
Turn Type		NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases						4
Detector Phase		2	6		4	4
Switch Phase						
Minimum Initial (s)		10.0	10.0		3.0	3.0

Lanes, Volumes, Timings
5: W. Trindle Rd. (SR 0641) & I-81 SB Off-Ramp

Timing Plan: SAT Peak Hour
05/08/2023

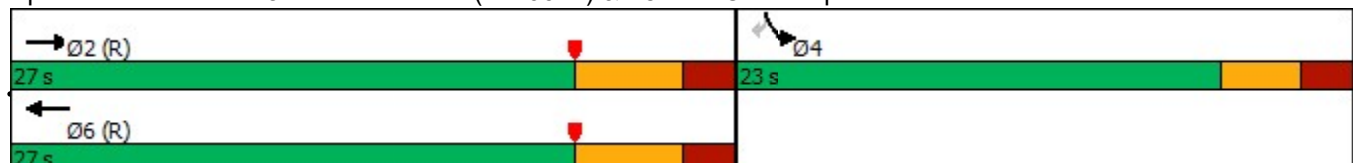


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Minimum Split (s)		16.0	16.0		22.0	22.0
Total Split (s)		27.0	27.0		23.0	23.0
Total Split (%)		54.0%	54.0%		46.0%	46.0%
Maximum Green (s)		21.0	21.0		18.0	18.0
Yellow Time (s)		4.0	4.0		3.0	3.0
All-Red Time (s)		2.0	2.0		2.0	2.0
Lost Time Adjust (s)		-1.0	-1.0		-1.0	-1.0
Total Lost Time (s)		5.0	5.0		4.0	4.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)		6.0	6.0		3.0	3.0
Recall Mode		C-Max	C-Max		None	None
Walk Time (s)		8.0	8.0		17.0	17.0
Flash Dont Walk (s)		0.0	0.0		0.0	0.0
Pedestrian Calls (#/hr)		0	0		0	0
Act Effct Green (s)		28.3	28.3		12.7	12.7
Actuated g/C Ratio		0.57	0.57		0.25	0.25
v/c Ratio		0.42	0.25		0.48	0.38
Control Delay		5.3	3.5		18.6	4.5
Queue Delay		0.0	0.0		0.0	0.0
Total Delay		5.3	3.5		18.6	4.5
LOS		A	A		B	A
Approach Delay		5.3	3.5		11.5	
Approach LOS		A	A		B	
Queue Length 50th (ft)		56	35		55	0
Queue Length 95th (ft)		122	44		90	34
Internal Link Dist (ft)		392	234		678	
Turn Bay Length (ft)						70
Base Capacity (vph)		1918	1899		689	754
Starvation Cap Reductn		0	0		0	0
Spillback Cap Reductn		0	0		0	0
Storage Cap Reductn		0	0		0	0
Reduced v/c Ratio		0.42	0.25		0.32	0.29

Intersection Summary

Area Type: Other
Cycle Length: 50
Actuated Cycle Length: 50
Offset: 22 (44%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Natural Cycle: 40
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.48
Intersection Signal Delay: 6.4
Intersection LOS: A
Intersection Capacity Utilization 42.4%
ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 5: W. Trindle Rd. (SR 0641) & I-81 SB Off-Ramp



HCM 2010 analysis expects stop-line detection. Detectors cannot be further than 20 feet from the stop bar.

Lanes, Volumes, Timings
6: I-81 NB On-Ramp & W. Trindle Rd. (SR 0641)

Timing Plan: SAT Peak Hour
05/08/2023

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑		
Traffic Volume (vph)	785	229	190	450	0	0
Future Volume (vph)	785	229	190	450	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	11	11	11	16	14
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Frt	0.966					
Flt Protected				0.985		
Satd. Flow (prot)	2994	0	0	3064	0	0
Flt Permitted				0.985		
Satd. Flow (perm)	2994	0	0	3064	0	0
Link Speed (mph)	35			35	25	
Link Distance (ft)	466			628	326	
Travel Time (s)	9.1			12.2	8.9	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	6%	9%	7%	6%	2%	2%
Adj. Flow (vph)	818	239	198	469	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1057	0	0	667	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.12	1.12	1.12	1.12	0.91	0.99
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	56.2%			ICU Level of Service B		
Analysis Period (min)	15					

Lanes, Volumes, Timings
7: Army Heritage Dr. & W. Trindle Rd. (SR 0641)

Timing Plan: SAT Peak Hour
05/08/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	208	340	254	93	283	110	204	270	82	100	236	127
Future Volume (vph)	208	340	254	93	283	110	204	270	82	100	236	127
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	13	14	12	13	14	12	13	12	11	14	12
Grade (%)		1%			-1%			-5%			4%	
Storage Length (ft)	90		95	110		155	140		0	125		150
Storage Lanes	1		1	1		1	1		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor								0.99		0.99		
Frt			0.850			0.850		0.965				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1652	1814	1592	1685	1815	1608	1718	1782	0	1588	1845	1470
Flt Permitted	0.376			0.553			0.398			0.302		
Satd. Flow (perm)	654	1814	1592	981	1815	1608	720	1782	0	502	1845	1470
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			259			251		15				130
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		628			1908			461			1667	
Travel Time (s)		12.2			37.2			9.0			32.5	
Confl. Peds. (#/hr)									6	6		
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	3%	2%	2%	2%	3%	2%	2%	2%	4%	2%	2%	2%
Adj. Flow (vph)	212	347	259	95	289	112	208	276	84	102	241	130
Shared Lane Traffic (%)												
Lane Group Flow (vph)	212	347	259	95	289	112	208	360	0	102	241	130
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane											Yes	
Headway Factor	1.08	1.03	0.99	1.07	1.02	0.98	1.04	1.00	1.04	1.15	1.01	1.10
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	0	1	1	0	1	1		1	1	1
Detector Template												Right
Leading Detector (ft)	35	231	0	35	231	0	35	40		40	35	20
Trailing Detector (ft)	-5	225	0	-5	225	0	-5	-10		-5	-5	0
Detector 1 Position(ft)	-5	225	0	-5	225	0	-5	-10		-5	-5	0
Detector 1 Size(ft)	40	6	20	40	6	20	40	50		45	40	20
Detector 1 Type	CI+Ex	Extend	CI+Ex	CI+Ex	Extend	CI+Ex	CI+Ex	CI+Ex		CI+Ex	CI+Ex	CI+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	pm+ov
Protected Phases	5	2	3	1	6		3	8		7	4	5
Permitted Phases	2		2	6		6	8			4		4

Lanes, Volumes, Timings
7: Army Heritage Dr. & W. Trindle Rd. (SR 0641)

Timing Plan: SAT Peak Hour
05/08/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2	3	1	6	6	3	8		7	4	5
Switch Phase												
Minimum Initial (s)	15.0	15.0	3.0	3.0	3.0	3.0	3.0	3.0		4.0	3.0	15.0
Minimum Split (s)	21.5	25.5	9.5	9.5	25.5	25.5	9.5	31.5		10.5	31.5	21.5
Total Split (s)	21.5	46.1	12.8	9.6	34.2	34.2	12.8	33.2		11.1	31.5	21.5
Total Split (%)	21.5%	46.1%	12.8%	9.6%	34.2%	34.2%	12.8%	33.2%		11.1%	31.5%	21.5%
Maximum Green (s)	15.0	39.6	6.3	3.1	27.7	27.7	6.3	26.7		4.6	25.0	15.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5		2.5	2.5	2.5
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0		-1.0	-1.0	-1.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5		5.5	5.5	5.5
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	6.0	3.0	3.0	6.0	6.0	3.0	3.0		3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Time Before Reduce (s)	0.0	25.0	0.0	0.0	25.0	25.0	0.0	0.0		0.0	0.0	0.0
Time To Reduce (s)	0.0	15.0	0.0	0.0	15.0	15.0	0.0	0.0		0.0	0.0	0.0
Recall Mode	None	C-Max	None	None	C-Max	C-Max	None	None		None	None	None
Walk Time (s)		10.0			10.0	10.0		10.0			10.0	
Flash Dont Walk (s)		9.0			9.0	9.0		15.0			15.0	
Pedestrian Calls (#/hr)		0			0	0		0			0	
Act Effct Green (s)	54.2	45.3	58.1	38.7	32.7	32.7	31.7	25.9		27.6	22.0	43.5
Actuated g/C Ratio	0.54	0.45	0.58	0.39	0.33	0.33	0.32	0.26		0.28	0.22	0.44
v/c Ratio	0.41	0.42	0.25	0.23	0.49	0.16	0.69	0.76		0.51	0.60	0.18
Control Delay	13.2	17.6	3.7	20.5	35.8	1.6	34.4	40.9		32.0	40.6	3.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	13.2	17.6	3.7	20.5	35.8	1.6	34.4	40.9		32.0	40.6	3.3
LOS	B	B	A	C	D	A	C	D		C	D	A
Approach Delay		12.1			25.1			38.5			28.5	
Approach LOS		B			C			D			C	
Queue Length 50th (ft)	54	113	0	34	156	1	92	205		43	135	0
Queue Length 95th (ft)	105	190	59	67	240	9	140	303		79	208	31
Internal Link Dist (ft)		548			1828			381			1587	
Turn Bay Length (ft)	90		95	110		155	140			125		150
Base Capacity (vph)	514	822	1033	420	594	695	301	504		199	479	712
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.41	0.42	0.25	0.23	0.49	0.16	0.69	0.71		0.51	0.50	0.18

Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow, Master Intersection

Natural Cycle: 90

Control Type: Actuated-Coordinated

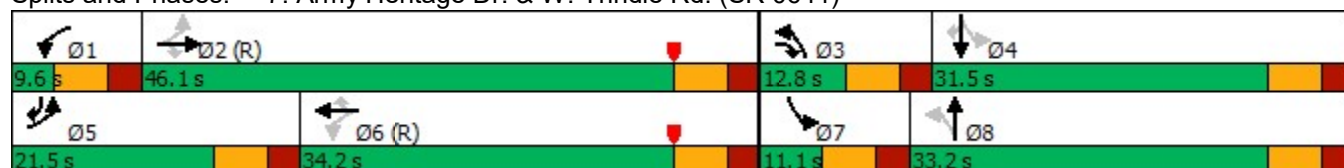
Maximum v/c Ratio: 0.76

Intersection Signal Delay: 24.5

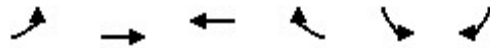
Intersection LOS: C

Intersection Capacity Utilization 72.9%
 Analysis Period (min) 15
 ICU Level of Service C

Splits and Phases: 7: Army Heritage Dr. & W. Trindle Rd. (SR 0641)



HCM 2010 analysis cannot be performed without detectors for actuated controller type.



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	18	385	402	0	0	27
Future Volume (vph)	18	385	402	0	0	27
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	11	11
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.865	
Flt Protected		0.998				
Satd. Flow (prot)	0	1761	1765	0	1476	0
Flt Permitted		0.998				
Satd. Flow (perm)	0	1761	1765	0	1476	0
Link Speed (mph)		45	45		35	
Link Distance (ft)		1985	3218		1923	
Travel Time (s)		30.1	48.8		37.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	19	405	423	0	0	28
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	424	423	0	28	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		24	24		11	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.07	1.07	1.07	1.07	1.12	1.12
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	46.8%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection

Int Delay, s/veh 0.6

Movement EBL EBT WBT WBR SBL SBRLane Configurations 

Traffic Vol, veh/h 18 385 402 0 0 0 27

Future Vol, veh/h 18 385 402 0 0 0 27

Conflicting Peds, #/hr 0 0 0 0 0 0 0

Sign Control Free Free Free Free Stop Stop

RT Channelized - None - None - None

Storage Length - - - - 0 -

Veh in Median Storage, # 0 0 - 1 -

Grade, % - 0 0 - 0 -

Peak Hour Factor 95 95 95 95 95 95

Heavy Vehicles, % 2 2 2 2 2 2

Mvmt Flow 19 405 423 0 0 28

Major/Minor Major1 Major2 Minor2

Conflicting Flow All 423 0 - 0 866 423

Stage 1 - - - - 423 -

Stage 2 - - - - 443 -

Critical Hdwy 4.12 - - - 7.1 6.22

Critical Hdwy Stg 1 - - - - 5.42 -

Critical Hdwy Stg 2 - - - - 5.42 -

Follow-up Hdwy 2.218 - - - 3.518 3.318

Pot Cap-1 Maneuver 136 - - - 275 631

Stage 1 - - - - 661 -

Stage 2 - - - - 647 -

Platoon blocked, % - - - -

Mov Cap-1 Maneuver 136 - - - 269 631

Mov Cap-2 Maneuver - - - - 418 -

Stage 1 - - - - 646 -

Stage 2 - - - - 647 -

Approach EB WB SB

HCM Control Delay, s 0.4 0 11

HCM LOS B

Minor Lane/Major Mvmt EBL EBT WBT WBR SBLn1

Capacity (veh/h) 1136 - - - 631

HCM Lane V/C Ratio 0.017 - - - 0.045

HCM Control Delay (s) 8.2 0 - - 11

HCM Lane LOS A A - - B

HCM 95th %tile Q(veh) 0.1 - - - 0.1

Lanes, Volumes, Timings
9: Middlesex Rd. & W. Trindle Rd. (SR0641)

Timing Plan: SAT Peak Hour
05/08/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	18	325	28	8	334	21	33	38	5	16	24	34
Future Volume (vph)	18	325	28	8	334	21	33	38	5	16	24	34
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12	11	11	11	11	11	11
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.990			0.992			0.991			0.939	
Flt Protected		0.998			0.999			0.979			0.989	
Satd. Flow (prot)	0	1729	0	0	1749	0	0	1655	0	0	1576	0
Flt Permitted		0.998			0.999			0.979			0.989	
Satd. Flow (perm)	0	1729	0	0	1749	0	0	1655	0	0	1576	0
Link Speed (mph)		45			45			35			40	
Link Distance (ft)		3218			3646			1268			2562	
Travel Time (s)		48.8			55.2			24.7			43.7	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	3%	2%	2%	2%	2%	2%	2%	2%	3%	3%	2%
Adj. Flow (vph)	19	339	29	8	348	22	34	40	5	17	25	35
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	387	0	0	378	0	0	79	0	0	77	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.12	1.12	1.12	1.12	1.12	1.12
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type: Unsignalized												
Intersection Capacity Utilization 44.3%												
ICU Level of Service A												
Analysis Period (min) 15												

Intersection												
Int Delay, s/veh	3.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	18	325	28	8	334	21	33	38	5	16	24	34
Future Vol, veh/h	18	325	28	8	334	21	33	38	5	16	24	34
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	-	-	0	-	-	0	-	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	3	2	2	2	2	2	2	2	3	3	2
Mvmt Flow	19	339	29	8	348	22	34	40	5	17	25	35

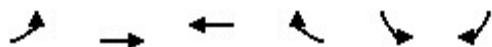
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	370	0	0	368	0	0	797	778	354	789	781	359
Stage 1	-	-	-	-	-	-	392	392	-	375	375	-
Stage 2	-	-	-	-	-	-	405	386	-	414	406	-
Critical Hdwy	4.2	-	-	4.12	-	-	7.12	6.52	6.22	7.13	6.7	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.13	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.13	5.53	-
Follow-up Hdwy	2.3	-	-	2.218	-	-	3.518	4.018	3.318	3.527	4.23	3.318
Pot Cap-1 Maneuver	141	-	-	1191	-	-	305	328	690	307	305	685
Stage 1	-	-	-	-	-	-	633	606	-	644	595	-
Stage 2	-	-	-	-	-	-	622	610	-	614	577	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	141	-	-	1191	-	-	265	318	690	270	296	685
Mov Cap-2 Maneuver	-	-	-	-	-	-	265	318	-	270	296	-
Stage 1	-	-	-	-	-	-	620	593	-	630	590	-
Stage 2	-	-	-	-	-	-	560	605	-	557	565	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0.2	21.1	16.5
HCM LOS			C	C

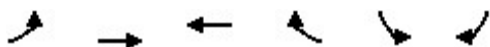
Minor Lane/Major Mvm	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	NBLn1	SBLn1
Capacity (veh/h)	302	1141	-	-	1191	-	-	390	
HCM Lane V/C Ratio	0.262	0.016	-	-	0.007	-	-	0.198	
HCM Control Delay (s)	21.1	8.2	0	-	8	0	-	16.5	
HCM Lane LOS	C	A	A	-	A	A	-	C	
HCM 95th %tile Q(veh)	1	0.1	-	-	0	-	-	0.7	

Lanes, Volumes, Timings
10: Westminster Dr./Fairview St. & Army Heritage Dr.

Timing Plan: SAT Peak Hour
05/08/2023



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	299	10	18	95	130	285
Future Volume (vph)	299	10	18	95	130	285
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	14	14	14	14	12	14
Grade (%)		-1%	3%		1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00		0.98		0.99	
Frt			0.886			0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1797	1892	1611	0	1668	1592
Flt Permitted	0.597				0.950	
Satd. Flow (perm)	1127	1892	1611	0	1659	1592
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			101			303
Link Speed (mph)		35	35		35	
Link Distance (ft)		1287	797		461	
Travel Time (s)		25.1	15.5		9.0	
Confl. Peds. (#/hr)	2			2	3	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	318	11	19	101	138	303
Shared Lane Traffic (%)						
Lane Group Flow (vph)	318	11	120	0	138	303
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		14	14		24	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	0.98	0.98	1.01	1.01	1.08	0.99
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	1	1		1	1
Detector Template					Left	Right
Leading Detector (ft)	40	40	35		20	20
Trailing Detector (ft)	-5	-5	-5		0	0
Detector 1 Position(ft)	-5	-5	-5		0	0
Detector 1 Size(ft)	45	45	40		20	20
Detector 1 Type	CI+Ex	Extend	Extend		CI+Ex	CI+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0
Turn Type	pm+pt	NA	NA		Prot	Perm
Protected Phases	5	2	6		7	
Permitted Phases	2					4
Detector Phase	5	2	6		7	4
Switch Phase						
Minimum Initial (s)	3.0	10.0	10.0		4.0	3.0
Minimum Split (s)	9.5	39.5	39.5		10.0	29.0



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Total Split (s)	22.0	67.0	45.0		33.0	33.0
Total Split (%)	22.0%	67.0%	45.0%		33.0%	33.0%
Maximum Green (s)	15.5	60.5	38.5		27.0	27.0
Yellow Time (s)	4.0	4.0	4.0		4.0	4.0
All-Red Time (s)	2.5	2.5	2.5		2.0	2.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0		-1.0	-1.0
Total Lost Time (s)	5.5	5.5	5.5		5.0	5.0
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	Max	C-Max	C-Max		None	None
Walk Time (s)		10.0	10.0			10.0
Flash Dont Walk (s)		23.0	23.0			13.0
Pedestrian Calls (#/hr)		0	0			0
Act Effct Green (s)	74.9	74.9	39.5		14.6	14.6
Actuated g/C Ratio	0.75	0.75	0.40		0.15	0.15
v/c Ratio	0.30	0.01	0.17		0.57	0.62
Control Delay	5.1	4.2	6.2		40.3	11.1
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	5.1	4.2	6.2		40.3	11.1
LOS	A	A	A		D	B
Approach Delay		5.1	6.2		20.3	
Approach LOS		A	A		C	
Queue Length 50th (ft)	51	2	7		81	51
Queue Length 95th (ft)	101	7	42		142	90
Internal Link Dist (ft)		1207	717		381	
Turn Bay Length (ft)						
Base Capacity (vph)	1044	1417	697		467	663
Starvation Cap Reductn	0	0	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.30	0.01	0.17		0.30	0.46

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 40 (40%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.62
Intersection Signal Delay: 12.8
Intersection LOS: B
Intersection Capacity Utilization 54.9%
ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 10: Westminster Dr./Fairview St. & Army Heritage Dr.



HCM 2010 Signalized Intersection Summary
10: Westminster Dr./Fairview St. & Army Heritage Dr.

Timing Plan: SAT Peak Hour
05/08/2023

								
Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations								
Traffic Volume (veh/h)	299	10	18	95	130	285		
Future Volume (veh/h)	299	10	18	95	130	285		
Number	5	2	6	16	7	14		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1844	1844	1808	1844	1756	1826		
Adj Flow Rate, veh/h	318	11	19	101	138	303		
Adj No. of Lanes	1	1	1	0	1	1		
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	895	1227	111	589	384	357		
Arrive On Green	0.17	0.67	0.45	0.44	0.23	0.23		
Sat Flow, veh/h	1757	1844	249	1322	1672	1552		
Grp Volume(v), veh/h	318	11	0	120	138	303		
Grp Sat Flow(s),veh/h/ln	1757	1844	0	1571	1672	1552		
Q Serve(g_s), s	8.1	0.2	0.0	4.7	6.9	18.7		
Cycle Q Clear(g_c), s	8.1	0.2	0.0	4.7	6.9	18.7		
Prop In Lane	1.00			0.84	1.00	1.00		
Lane Grp Cap(c), veh/h	895	1227	0	699	384	357		
V/C Ratio(X)	0.36	0.01	0.00	0.17	0.36	0.85		
Avail Cap(c_a), veh/h	895	1227	0	699	468	435		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.93	0.93		
Uniform Delay (d), s/veh	8.4	5.6	0.0	16.9	32.3	36.9		
Incr Delay (d2), s/veh	1.1	0.0	0.0	0.5	0.5	11.8		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(95%),veh/ln	7.3	0.2	0.0	3.8	5.8	14.0		
LnGrp Delay(d),s/veh	9.5	5.7	0.0	17.5	32.9	48.7		
LnGrp LOS	A	A		B	C	D		
Approach Vol, veh/h		329	120		441			
Approach Delay, s/veh		9.4	17.5		43.7			
Approach LOS		A	B		D			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		72.0		28.0	22.0	50.0		
Change Period (Y+Rc), s		6.5		6.0	6.5	6.5		
Max Green Setting (Gmax), s		60.5		27.0	15.5	38.5		
Max Q Clear Time (g_c+I1), s		2.7		21.2	10.6	6.7		
Green Ext Time (p_c), s		0.0		0.8	0.5	0.4		
Intersection Summary								
HCM 2010 Ctrl Delay			27.5					
HCM 2010 LOS			C					

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	0	177	1	3	151
Future Volume (vph)	0	0	177	1	3	151
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.999					
Flt Protected	0.999					
Satd. Flow (prot)	1765	0	1763	0	0	1652
Flt Permitted	0.999					
Satd. Flow (perm)	1765	0	1763	0	0	1652
Link Speed (mph)	35		35			35
Link Distance (ft)	2177		1342			797
Travel Time (s)	42.4		26.1			15.5
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	2%	2%	2%	2%	2%	9%
Adj. Flow (vph)	0	0	181	1	3	154
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	182	0	0	157
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	14.3%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W	W	T	T	T	T
Traffic Vol, veh/h	0	0	177	1	3	151
Future Vol, veh/h	0	0	177	1	3	151
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	- None		- None		- None	
Storage Length	0	-	-	-	-	-
Veh in Median Storage	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	2	2	2	2	2	9
Mvmt Flow	0	0	181	1	3	154

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	342	182	0
Stage 1	182	-	-
Stage 2	160	-	-
Critical Hdwy	7.1	6.22	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	-
Pot Cap-1 Maneuver	613	861	-
Stage 1	849	-	-
Stage 2	869	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	612	861	-
Mov Cap-2 Maneuver	612	-	-
Stage 1	849	-	-
Stage 2	867	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0.1
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	SBL	SBT
Capacity (veh/h)	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	-	0	7.6
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	-	0

Lanes, Volumes, Timings
12: I-81 SB On-Ramp & York Road (SR 0074)

Timing Plan: SAT Peak Hour
05/08/2023

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑		
Traffic Volume (vph)	603	246	470	824	0	0
Future Volume (vph)	603	246	470	824	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	15	15
Grade (%)	2%			-2%	0%	
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Frt	0.957					
Flt Protected				0.982		
Satd. Flow (prot)	3177	0	0	3326	0	0
Flt Permitted				0.982		
Satd. Flow (perm)	3177	0	0	3326	0	0
Link Speed (mph)	35			35	30	
Link Distance (ft)	3632			216	901	
Travel Time (s)	70.8			4.2	20.5	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	622	254	485	849	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	876	0	0	1334	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	13			13	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.09	1.09	1.06	1.06	0.95	0.95
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	71.0%			ICU Level of Service C		
Analysis Period (min)	15					

Lanes, Volumes, Timings
13: I-81 NB Off-Ramp & York Road (SR 0074)

Timing Plan: SAT Peak Hour
05/08/2023

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↘	↗
Traffic Volume (vph)	588	0	0	1116	168	444
Future Volume (vph)	588	0	0	1116	168	444
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	16	13
Grade (%)	1%			-2%	0%	
Storage Length (ft)		0	0		25	0
Storage Lanes		0	0		1	1
Taper Length (ft)			25		25	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	3336	0	0	3386	1900	1550
Flt Permitted					0.950	
Satd. Flow (perm)	3336	0	0	3386	1900	1550
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)						187
Link Speed (mph)	35			35	25	
Link Distance (ft)	251			1010	778	
Travel Time (s)	4.9			19.7	21.2	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	606	0	0	1151	173	458
Shared Lane Traffic (%)						
Lane Group Flow (vph)	606	0	0	1151	173	458
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	16	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.08	1.08	1.06	1.06	0.91	1.03
Turning Speed (mph)		9	15		15	9
Number of Detectors	1			1	1	1
Detector Template						
Leading Detector (ft)	231			256	20	40
Trailing Detector (ft)	225			250	-10	-10
Detector 1 Position(ft)	225			250	-10	-10
Detector 1 Size(ft)	6			6	30	50
Detector 1 Type	Extend			Extend	CI+Ex	CI+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0			0.0	0.0	0.0
Detector 1 Queue (s)	0.0			0.0	0.0	0.0
Detector 1 Delay (s)	0.0			0.0	0.0	0.0
Turn Type	NA			NA	Prot	Perm
Protected Phases	2			6	3	
Permitted Phases						8
Detector Phase	2			6	3	8
Switch Phase						
Minimum Initial (s)	10.0			10.0	4.0	3.0

Lanes, Volumes, Timings
13: I-81 NB Off-Ramp & York Road (SR 0074)

Timing Plan: SAT Peak Hour
05/08/2023



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Minimum Split (s)	24.5			24.5	9.5	22.5
Total Split (s)	37.0			37.0	33.0	33.0
Total Split (%)	52.9%			52.9%	47.1%	47.1%
Maximum Green (s)	30.5			30.5	27.5	27.5
Yellow Time (s)	4.5			4.5	3.0	3.0
All-Red Time (s)	2.0			2.0	2.5	2.5
Lost Time Adjust (s)	-1.0			-1.0	-1.0	-1.0
Total Lost Time (s)	5.5			5.5	4.5	4.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	6.0			6.0	3.0	3.0
Minimum Gap (s)	3.0			3.0	3.0	3.0
Time Before Reduce (s)	25.0			25.0	0.0	0.0
Time To Reduce (s)	13.0			13.0	0.0	0.0
Recall Mode	C-Max			C-Max	None	None
Walk Time (s)	18.0			18.0		17.0
Flash Dont Walk (s)	0.0			0.0		0.0
Pedestrian Calls (#/hr)	0			0		0
Act Effct Green (s)	39.9			39.9	20.1	20.1
Actuated g/C Ratio	0.57			0.57	0.29	0.29
v/c Ratio	0.32			0.60	0.32	0.79
Control Delay	9.8			11.9	19.3	23.1
Queue Delay	0.0			0.0	0.0	0.0
Total Delay	9.8			11.9	19.3	23.1
LOS	A			B	B	C
Approach Delay	9.8			11.9	22.0	
Approach LOS	A			B	C	
Queue Length 50th (ft)	66			266	58	105
Queue Length 95th (ft)	126			m307	86	176
Internal Link Dist (ft)	171			930	698	
Turn Bay Length (ft)					25	
Base Capacity (vph)	1903			1931	773	741
Starvation Cap Reductn	0			0	0	0
Spillback Cap Reductn	0			0	0	0
Storage Cap Reductn	0			0	0	0
Reduced v/c Ratio	0.32			0.60	0.22	0.62

Intersection Summary

Area Type: Other

Cycle Length: 70

Actuated Cycle Length: 70

Offset: 6 (9%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

Natural Cycle: 55

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.79

Intersection Signal Delay: 14.1

Intersection LOS: B

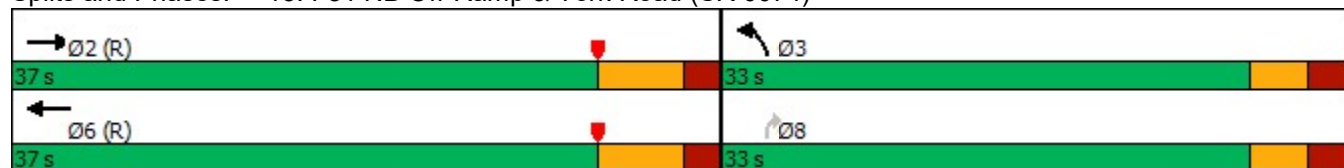
Intersection Capacity Utilization 54.5%

ICU Level of Service A

Analysis Period (min) 15

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

Splits and Phases: 13: I-81 NB Off-Ramp & York Road (SR 0074)



HCM 2010 analysis expects stop-line detection. Detectors cannot be further than 20 feet from the stop bar.

Lanes, Volumes, Timings

Timing Plan: SAT Peak Hour

14: Westminster Dr. & York Road (SR 0074)/York Rd. (SR 0074)

05/08/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	373	365	208	9	397	54	372	136	9	67	123	394
Future Volume (vph)	373	365	208	9	397	54	372	136	9	67	123	394
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	14	12	12	14	12	14	12	12	14	12
Grade (%)		1%			0%			-5%			2%	
Storage Length (ft)	120		0	75		180	130		0	130		0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						0.98		1.00		1.00		
Frt			0.850			0.850		0.991			0.886	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1636	1739	1592	1676	1765	1554	1718	1909	0	1660	1651	0
Flt Permitted	0.170			0.534			0.103			0.660		
Satd. Flow (perm)	293	1739	1592	942	1765	1519	186	1909	0	1150	1651	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			219			125		3			109	
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		1010			2320			530			721	
Travel Time (s)		19.7			45.2			14.5			19.7	
Confl. Peds. (#/hr)						1			1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	4%	3%	2%	2%	2%	5%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	393	384	219	9	418	57	392	143	9	71	129	415
Shared Lane Traffic (%)												
Lane Group Flow (vph)	393	384	219	9	418	57	392	152	0	71	544	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.08	1.08	0.99	1.07	1.07	0.99	1.04	0.96	1.04	1.09	1.00	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	0	1	1	0	1	1		1	1	
Detector Template												
Leading Detector (ft)	40	256	0	40	256	0	40	45		45	45	
Trailing Detector (ft)	-5	250	0	-5	250	0	-5	-5		-5	-5	
Detector 1 Position(ft)	-5	250	0	-5	250	0	-5	-5		-5	-5	
Detector 1 Size(ft)	45	6	20	45	6	20	45	50		50	50	
Detector 1 Type	CI+Ex	Extend	CI+Ex	CI+Ex	Extend	CI+Ex	CI+Ex	CI+Ex		CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases	5	2			6		3	8			4	
Permitted Phases	2		2	6		6	8			4		

Lanes, Volumes, Timings

Timing Plan: SAT Peak Hour

14: Westminster Dr. & York Road (SR 0074)/York Rd. (SR 0074)

05/08/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2	2	6	6	6	3	8		4	4	
Switch Phase												
Minimum Initial (s)	3.0	10.0	10.0	10.0	10.0	10.0	3.0	3.0		3.0	3.0	
Minimum Split (s)	9.0	33.0	33.0	33.0	33.0	33.0	9.5	31.5		31.5	31.5	
Total Split (s)	28.0	73.0	73.0	45.0	45.0	45.0	28.0	67.0		39.0	39.0	
Total Split (%)	20.0%	52.1%	52.1%	32.1%	32.1%	32.1%	20.0%	47.9%		27.9%	27.9%	
Maximum Green (s)	22.0	67.0	67.0	39.0	39.0	39.0	21.5	60.5		32.5	32.5	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	3.5	3.5		3.5	3.5	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	3.0	3.0		3.0	3.0	
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.5	5.5		5.5	5.5	
Lead/Lag	Lead			Lag	Lag	Lag	Lead			Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	6.0	6.0	6.0	6.0	6.0	3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	25.0	25.0	25.0	25.0	25.0	0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	10.0	10.0	10.0	10.0	10.0	0.0	0.0		0.0	0.0	
Recall Mode	Max	C-Max	C-Max	C-Max	C-Max	C-Max	None	None		None	None	
Walk Time (s)		10.0	10.0	10.0	10.0	10.0		10.0		10.0	10.0	
Flash Dont Walk (s)		17.0	17.0	17.0	17.0	17.0		15.0		15.0	15.0	
Pedestrian Calls (#/hr)		0	0	0	0	0		0		0	0	
Act Effct Green (s)	68.0	68.0	68.0	40.0	40.0	40.0	61.5	61.5		33.5	33.5	
Actuated g/C Ratio	0.49	0.49	0.49	0.29	0.29	0.29	0.44	0.44		0.24	0.24	
v/c Ratio	1.09	0.45	0.25	0.03	0.83	0.11	1.20	0.18		0.26	1.14	
Control Delay	101.3	27.3	5.5	30.6	50.4	2.6	152.1	24.2		46.3	123.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	101.3	27.3	5.5	30.6	50.4	2.6	152.1	24.2		46.3	123.7	
LOS	F	C	A	C	D	A	F	C		D	F	
Approach Delay		51.7			44.4			116.4			114.7	
Approach LOS		D			D			F			F	
Queue Length 50th (ft)	~312	256	7	5	258	3	~382	81		53	~498	
Queue Length 95th (ft)	#499	293	44	m12	#517	12	#591	130		100	#730	
Internal Link Dist (ft)		930			2240			450			641	
Turn Bay Length (ft)	120			75		180	130			130		
Base Capacity (vph)	362	844	885	269	504	523	327	840		275	477	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	1.09	0.45	0.25	0.03	0.83	0.11	1.20	0.18		0.26	1.14	

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 46 (33%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow

Natural Cycle: 125

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.20

Intersection Signal Delay: 78.4

Intersection LOS: E

Intersection Capacity Utilization 116.0%

ICU Level of Service H

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

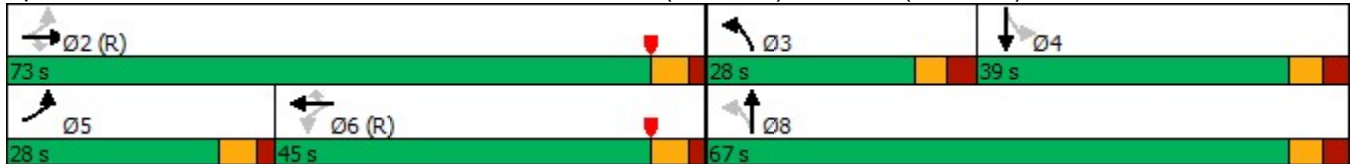
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

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

Splits and Phases: 14: Westminster Dr. & York Road (SR 0074)/York Rd. (SR 0074)



HCM 2010 analysis cannot be performed without detectors for actuated controller type.

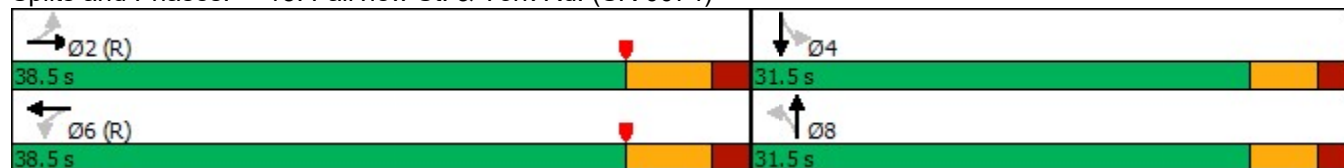
Lanes, Volumes, Timings
15: Fairview St. & York Rd. (SR 0074)

Timing Plan: SAT Peak Hour
05/08/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	420	16	8	397	41	21	77	14	55	54	37
Future Volume (vph)	40	420	16	8	397	41	21	77	14	55	54	37
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	11	11	11	11	11	9	9	9	12	12	12
Grade (%)		0%			0%			0%			1%	
Storage Length (ft)	75		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.995			0.988			0.983			0.966	
Flt Protected	0.950				0.999			0.991			0.982	
Satd. Flow (prot)	1605	1694	0	0	1666	0	0	1547	0	0	1653	0
Flt Permitted	0.504				0.991			0.929			0.833	
Satd. Flow (perm)	851	1694	0	0	1653	0	0	1450	0	0	1402	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4			10			12			29	
Link Speed (mph)		35			35			25			35	
Link Distance (ft)		2320			2128			671			1479	
Travel Time (s)		45.2			41.5			18.3			28.8	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	3%	2%	7%	6%	3%	3%	2%	2%	2%	2%	2%	5%
Adj. Flow (vph)	43	452	17	9	427	44	23	83	15	59	58	40
Shared Lane Traffic (%)												
Lane Group Flow (vph)	43	469	0	0	480	0	0	121	0	0	157	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.12	1.12	1.12	1.12	1.12	1.12	1.22	1.22	1.22	1.08	1.08	1.08
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	0	1		1	1		1	1		1	1	
Detector Template				Left			Left			Left		
Leading Detector (ft)	0	256		20	256		20	40		20	40	
Trailing Detector (ft)	0	250		0	250		0	-5		0	-5	
Detector 1 Position(ft)	0	250		0	250		0	-5		0	-5	
Detector 1 Size(ft)	20	6		20	6		20	45		20	45	
Detector 1 Type	CI+Ex	Extend		CI+Ex	Extend		CI+Ex	CI+Ex		CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	
Switch Phase												

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	10.0	10.0		10.0	10.0		3.0	3.0		3.0	3.0	
Minimum Split (s)	32.5	32.5		32.5	32.5		31.5	31.5		31.5	31.5	
Total Split (s)	38.5	38.5		38.5	38.5		31.5	31.5		31.5	31.5	
Total Split (%)	55.0%	55.0%		55.0%	55.0%		45.0%	45.0%		45.0%	45.0%	
Maximum Green (s)	32.0	32.0		32.0	32.0		26.0	26.0		26.0	26.0	
Yellow Time (s)	4.5	4.5		4.5	4.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0			-1.0			-1.0			-1.0	
Total Lost Time (s)	5.5	5.5			5.5			4.5			4.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	6.0	6.0		6.0	6.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	35.0	35.0		35.0	35.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	17.0	17.0		17.0	17.0		0.0	0.0		0.0	0.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Flash Dont Walk (s)	15.0	15.0		15.0	15.0		15.0	15.0		15.0	15.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	47.3	47.3			47.3			12.7			12.7	
Actuated g/C Ratio	0.68	0.68			0.68			0.18			0.18	
v/c Ratio	0.07	0.41			0.43			0.44			0.56	
Control Delay	2.5	4.6			4.1			26.8			28.2	
Queue Delay	0.0	0.0			0.0			0.0			0.0	
Total Delay	2.5	4.6			4.1			26.8			28.2	
LOS	A	A			A			C			C	
Approach Delay		4.4			4.1			26.8			28.2	
Approach LOS		A			A			C			C	
Queue Length 50th (ft)	4	56			24			42			50	
Queue Length 95th (ft)	9	135			76			80			96	
Internal Link Dist (ft)		2240			2048			591			1399	
Turn Bay Length (ft)	75											
Base Capacity (vph)	574	1144			1119			566			558	
Starvation Cap Reductn	0	0			0			0			0	
Spillback Cap Reductn	0	0			0			0			0	
Storage Cap Reductn	0	0			0			0			0	
Reduced v/c Ratio	0.07	0.41			0.43			0.21			0.28	
Intersection Summary												
Area Type:	Other											
Cycle Length: 70												
Actuated Cycle Length: 70												
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow												
Natural Cycle: 65												
Control Type: Actuated-Coordinated												
Maximum v/c Ratio: 0.56												
Intersection Signal Delay: 9.4												

Splits and Phases: 15: Fairview St. & York Rd. (SR 0074)



HCM 2010 analysis cannot be performed without detectors for actuated controller type.

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↰			↱	↗	
Traffic Volume (vph)	449	59	24	453	26	30
Future Volume (vph)	449	59	24	453	26	30
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	11	11	11	12	12
Grade (%)	1%			1%	2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.984				0.928	
Flt Protected				0.998	0.977	
Satd. Flow (prot)	1670	0	0	1678	1562	0
Flt Permitted				0.998	0.977	
Satd. Flow (perm)	1670	0	0	1678	1562	0
Link Speed (mph)	50			50	35	
Link Distance (ft)	1056			3636	2008	
Travel Time (s)	14.4			49.6	39.1	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	2%	2%	2%	3%	5%	2%
Adj. Flow (vph)	510	67	27	515	30	34
Shared Lane Traffic (%)						
Lane Group Flow (vph)	577	0	0	542	64	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.13	1.13	1.13	1.13	1.09	1.09
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	56.0%			ICU Level of Service B		
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	1.6					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	↑	↑
Traffic Vol, veh/h	449	59	24	453	26	30
Future Vol, veh/h	449	59	24	453	26	30
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage	0	-	-	0	0	-
Grade, %	1	-	-	1	2	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	3	5	2
Mvmt Flow	510	67	27	515	30	34

Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	577	0	1113	544
Stage 1	-	-	-	-	544	-
Stage 2	-	-	-	-	569	-
Critical Hdwy	-	-	4.3	-	7.5	6.6
Critical Hdwy Stg 1	-	-	-	-	5.85	-
Critical Hdwy Stg 2	-	-	-	-	5.85	-
Follow-up Hdwy	-	-	2.4	-	3.545	3.5
Pot Cap-1 Maneuver	-	-	907	-	164	489
Stage 1	-	-	-	-	542	-
Stage 2	-	-	-	-	526	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	907	-	157	489
Mov Cap-2 Maneuver	-	-	-	-	157	-
Stage 1	-	-	-	-	542	-
Stage 2	-	-	-	-	504	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.5	24.6
HCM LOS			C

Minor Lane/Major Mvm	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	247	-	-	907	-
HCM Lane V/C Ratio	0.258	-	-	0.03	-
HCM Control Delay (s)	24.6	-	-	9.1	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	1	-	-	0.1	-

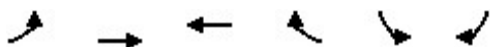
	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↰			↱	↰	↱
Traffic Volume (vph)	377	56	47	405	46	29
Future Volume (vph)	377	56	47	405	46	29
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	11	11	11	10	10
Grade (%)	0%			0%	-2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.983				0.948	
Flt Protected				0.995	0.970	
Satd. Flow (prot)	1677	0	0	1696	1513	0
Flt Permitted				0.995	0.970	
Satd. Flow (perm)	1677	0	0	1696	1513	0
Link Speed (mph)	55			55	35	
Link Distance (ft)	3636			269	2688	
Travel Time (s)	45.1			3.3	52.4	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles (%)	2%	2%	3%	2%	2%	5%
Adj. Flow (vph)	433	64	54	466	53	33
Shared Lane Traffic (%)						
Lane Group Flow (vph)	497	0	0	520	86	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	10	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.12	1.12	1.12	1.12	1.16	1.16
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	64.3%			ICU Level of Service C		
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	2.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	↑	↑
Traffic Vol, veh/h	377	56	47	405	46	29
Future Vol, veh/h	377	56	47	405	46	29
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage	0	-	-	0	0	-
Grade, %	0	-	-	0	-2	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	2	3	2	2	5
Mvmt Flow	433	64	54	466	53	33

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	497
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.13
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.227
Pot Cap-1 Maneuver	-	-	1062
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1062
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.9	22.4
HCM LOS			C

Minor Lane/Major Mvm	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)		292	-	-	1062
HCM Lane V/C Ratio		0.295	-	-	0.051
HCM Control Delay (s)		22.4	-	-	8.6
HCM Lane LOS		C	-	-	A
HCM 95th %tile Q(veh)		1.2	-	-	0.2



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	91	377	405	0	0	131
Future Volume (vph)	91	377	405	0	0	131
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	11	11	11	10	10
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.865	
Flt Protected		0.990				
Satd. Flow (prot)	0	1689	1706	0	1425	0
Flt Permitted		0.990				
Satd. Flow (perm)	0	1689	1706	0	1425	0
Link Speed (mph)		55	55		35	
Link Distance (ft)		269	2661		1687	
Travel Time (s)		3.3	33.0		32.9	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	105	433	466	0	0	151
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	538	466	0	151	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		10	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.12	1.12	1.12	1.12	1.17	1.17
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	67.3%			ICU Level of Service C		
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	2.5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	91	377	405	0	0	131
Future Vol, veh/h	91	377	405	0	0	131
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	- None		- None		- None	
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	0	-	0	-	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	105	433	466	0	0	151

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	466	0	0 1109 466
Stage 1	-	-	- 466 -
Stage 2	-	-	- 643 -
Critical Hdwy	4.12	-	- 7.1 6.22
Critical Hdwy Stg 1	-	-	- 5.42 -
Critical Hdwy Stg 2	-	-	- 5.42 -
Follow-up Hdwy	2.218	-	- 3.518 3.318
Pot Cap-1 Maneuver	1095	-	- 188 597
Stage 1	-	-	- 632 -
Stage 2	-	-	- 523 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1095	-	- 164 597
Mov Cap-2 Maneuver	-	-	- 164 -
Stage 1	-	-	- 552 -
Stage 2	-	-	- 523 -

Approach	EB	WB	SB
HCM Control Delay, s	7	0	13.1
HCM LOS	B		

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1095	-	-	-	597
HCM Lane V/C Ratio	0.096	-	-	-	0.252
HCM Control Delay (s)	8.6	0	-	-	13.1
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.3	-	-	-	1

Lanes, Volumes, Timings
19: Forge Rd. (SR 2001) & Westminster Dr.

Timing Plan: SAT Peak Hour
05/08/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	38	6	335	42	9	1	14	373	33	15	1
Future Volume (vph)	1	38	6	335	42	9	1	14	373	33	15	1
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.981			0.997				0.850		0.997	
Flt Protected		0.999			0.958			0.997			0.967	
Satd. Flow (prot)	0	1729	0	0	1686	0	0	1759	1500	0	1701	0
Flt Permitted		0.999			0.958			0.997			0.967	
Satd. Flow (perm)	0	1729	0	0	1686	0	0	1759	1500	0	1701	0
Link Speed (mph)		25			25			35			35	
Link Distance (ft)		448			530			1566			758	
Travel Time (s)		12.2			14.5			30.5			14.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1	41	7	364	46	10	1	15	405	36	16	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	49	0	0	420	0	0	16	405	0	53	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	45.3%				ICU Level of Service A							
Analysis Period (min)	15											

Intersection

Intersection Delay, s/veh 15.7

Intersection LOS C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	38	6	335	42	9	1	14	373	33	15	1
Future Vol, veh/h	1	38	6	335	42	9	1	14	373	33	15	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	41	7	364	46	10	1	15	405	36	16	1
Number of Lanes	0	1	0	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	1
HCM Control Delay	9.5	17.7	15.1	9.9
HCM LOS	A	C	C	A

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1
Vol Left, %	7%	0%	2%	87%	67%
Vol Thru, %	93%	0%	84%	11%	31%
Vol Right, %	0%	100%	13%	2%	2%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	15	373	45	386	49
LT Vol	1	0	1	335	33
Through Vol	14	0	38	42	15
RT Vol	0	373	6	9	1
Lane Flow Rate	16	405	49	420	53
Geometry Grp	7	7	2	2	5
Degree of Util (X)	0.027	0.593	0.08	0.638	0.092
Departure Headway (Hd)	6.009	5.266	5.884	5.47	6.209
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	596	685	607	659	576
Service Time	3.746	3.003	3.937	3.503	4.264
HCM Lane V/C Ratio	0.027	0.591	0.081	0.637	0.092
HCM Control Delay	8.9	15.4	9.5	17.7	9.9
HCM Lane LOS	A	C	A	C	A
HCM 95th-tile Q	0.1	3.9	0.3	4.6	0.3

Lanes, Volumes, Timings
20: Forge Rd. (SR 2001) & Fairview St.

Timing Plan: SAT Peak Hour
05/08/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	15	14	53	25	14	21	374	46	13	379	6
Future Volume (vph)	11	15	14	53	25	14	21	374	46	13	379	6
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	10	10	10	10	10	11	11	11	11	11	11
Grade (%)		-2%			-1%			2%			1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.952			0.979			0.986			0.998	
Flt Protected		0.987			0.972			0.998			0.998	
Satd. Flow (prot)	0	1563	0	0	1567	0	0	1659	0	0	1691	0
Flt Permitted		0.987			0.972			0.998			0.998	
Satd. Flow (perm)	0	1563	0	0	1567	0	0	1659	0	0	1691	0
Link Speed (mph)		35			25			35			35	
Link Distance (ft)		1976			1153			1844			1566	
Travel Time (s)		38.5			31.4			35.9			30.5	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	2%	2%	4%	2%	6%	2%	2%	2%	2%	2%
Adj. Flow (vph)	12	17	16	59	28	16	23	416	51	14	421	7
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	45	0	0	103	0	0	490	0	0	442	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.16	1.16	1.16	1.16	1.16	1.16	1.13	1.13	1.13	1.13	1.13	1.13
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	50.3%				ICU Level of Service A							
Analysis Period (min)	15											

Intersection												
Int Delay, s/veh	3.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	11	15	14	53	25	14	21	374	46	13	379	6
Future Vol, veh/h	11	15	14	53	25	14	21	374	46	13	379	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	-	-	0	-	-	0	-	-
Grade, %	-	-2	-	-	-1	-	-	2	-	-	1	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	4	2	6	2	2	2	2	2
Mvmt Flow	12	17	16	59	28	16	23	416	51	14	421	7

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	963	966	425	957	944	442	428	0	0	467	0	0
Stage 1	453	453	-	488	488	-	-	-	-	-	-	-
Stage 2	510	513	-	469	456	-	-	-	-	-	-	-
Critical Hdwy	6.72	6.12	6.2	6.92	6.34	6.12	4.3	-	-	4.12	-	-
Critical Hdwy Stg 1	5.72	5.12	-	5.92	5.34	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.72	5.12	-	5.92	5.34	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.5	3.518	4.036	3.318	2.4	-	-	2.218	-	-
Pot Cap-1 Maneuve	262	283	604	250	274	623	1034	-	-	1094	-	-
Stage 1	617	599	-	577	562	-	-	-	-	-	-	-
Stage 2	578	567	-	590	579	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuve	226	270	604	224	261	623	1034	-	-	1094	-	-
Mov Cap-2 Maneuve	226	270	-	224	261	-	-	-	-	-	-	-
Stage 1	598	589	-	560	545	-	-	-	-	-	-	-
Stage 2	519	550	-	549	569	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	18.3		27.7		0.4		0.3	
HCM LOS	C		D					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1034	-	-	314	259	1094	-	-
HCM Lane V/C Ratio	0.023	-	-	0.142	0.395	0.013	-	-
HCM Control Delay (s)	8.6	0	-	18.3	27.7	8.3	0	-
HCM Lane LOS	A	A	-	C	D	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.5	1.8	0	-	-

Lanes, Volumes, Timings

Timing Plan: SAT Peak Hour

21: Rose Access/Pharmacy Tract & W. Trindle Rd. (SR 0641)

05/08/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	412	103	82	437	0	83	0	60	0	0	0
Future Volume (vph)	0	412	103	82	437	0	83	0	60	0	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (ft)	150		350	150		0	190		0	75		0
Storage Lanes	1		1	2		0	2		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	0.97	1.00	1.00	1.00	1.00	1.00
Frt			0.850						0.850			
Flt Protected				0.950			0.950					
Satd. Flow (prot)	1765	1765	1500	3252	1765	0	3252	1500	0	1765	1765	0
Flt Permitted				0.950			0.950					
Satd. Flow (perm)	1765	1765	1500	3252	1765	0	3252	1500	0	1765	1765	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			164						386			
Link Speed (mph)		45			45			25			25	
Link Distance (ft)		462			1985			445			562	
Travel Time (s)		7.0			30.1			12.1			15.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	448	112	89	475	0	90	0	65	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	448	112	89	475	0	90	65	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Size(ft)	20	6	20	20	6		20	6		20	6	
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2									

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2	2	1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	4.0	7.0	7.0	4.0	7.0		4.0	7.0		4.0	7.0	
Minimum Split (s)	10.0	25.0	25.0	10.0	25.0		10.0	28.0		10.0	28.0	
Total Split (s)	10.0	43.0	43.0	13.0	46.0		16.0	34.0		10.0	28.0	
Total Split (%)	10.0%	43.0%	43.0%	13.0%	46.0%		16.0%	34.0%		10.0%	28.0%	
Maximum Green (s)	4.0	37.0	37.0	7.0	40.0		10.0	28.0		4.0	22.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0		-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max	C-Max	None	C-Max		None	None		None	None	
Walk Time (s)		7.0	7.0		7.0			7.0			7.0	
Flash Dont Walk (s)		12.0	12.0		12.0			15.0			15.0	
Pedestrian Calls (#/hr)		0	0		0			0			0	
Act Effct Green (s)		72.6	72.6	9.1	84.3		9.1	9.3				
Actuated g/C Ratio		0.73	0.73	0.09	0.84		0.09	0.09				
v/c Ratio		0.35	0.10	0.30	0.32		0.31	0.13				
Control Delay		7.3	0.6	44.6	3.0		44.8	0.6				
Queue Delay		0.0	0.0	0.0	0.0		0.0	0.0				
Total Delay		7.3	0.6	44.6	3.0		44.8	0.6				
LOS		A	A	D	A		D	A				
Approach Delay		5.9			9.6			26.3				
Approach LOS		A			A			C				
Queue Length 50th (ft)		104	0	27	59		28	0				
Queue Length 95th (ft)		144	m2	51	100		52	0				
Internal Link Dist (ft)		382			1905			365			482	
Turn Bay Length (ft)			350	150			190					
Base Capacity (vph)		1281	1134	303	1488		357	709				
Starvation Cap Reductn		0	0	0	0		0	0				
Spillback Cap Reductn		0	0	0	0		0	0				
Storage Cap Reductn		0	0	0	0		0	0				
Reduced v/c Ratio		0.35	0.10	0.29	0.32		0.25	0.09				

Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 2 (2%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Natural Cycle: 75

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.35

Intersection Signal Delay: 10.0

Intersection LOS: B

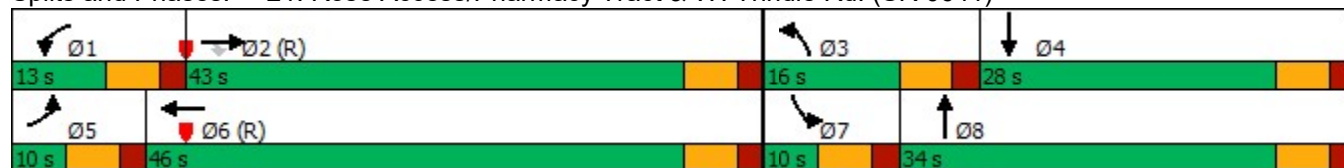
Intersection Capacity Utilization 45.9%

ICU Level of Service A

Analysis Period (min) 15

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

Splits and Phases: 21: Rose Access/Pharmacy Tract & W. Trindle Rd. (SR 0641)



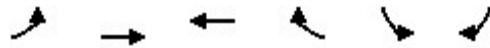
HCM 2010 Signalized Intersection Summary
 21: Rose Access/Pharmacy Tract & W. Trindle Rd. (SR 0641)

Timing Plan: SAT Peak Hour
 05/08/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	412	103	82	437	0	83	0	60	0	0	0
Future Volume (veh/h)	0	412	103	82	437	0	83	0	60	0	0	0
Number	5	2	12	1	6	16	3	8	18	7	4	14
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
Adj Sat Flow, veh/h/ln	1765	1765	1765	1765	1765	1800	1765	1765	1800	1765	1765	1800
Adj Flow Rate, veh/h	0	448	0	89	475	0	90	0	65	0	0	0
Adj No. of Lanes	1	1	1	2	1	0	2	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	2	1259	1070	187	1449	0	190	0	119	2	2	0
Arrive On Green	0.00	0.71	0.00	0.06	0.82	0.00	0.06	0.00	0.07	0.00	0.00	0.00
Sat Flow, veh/h	1681	1765	1500	3261	1765	0	3261	0	1500	1681	1765	0
Grp Volume(v), veh/h	0	448	0	89	475	0	90	0	65	0	0	0
Grp Sat Flow(s),veh/h/ln	1681	1765	1500	1630	1765	0	1630	0	1500	1681	1765	0
Q Serve(g_s), s	0.0	9.7	0.0	2.6	6.6	0.0	2.7	0.0	4.2	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	9.7	0.0	2.6	6.6	0.0	2.7	0.0	4.2	0.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	2	1259	1070	187	1449	0	190	0	119	2	2	0
V/C Ratio(X)	0.00	0.36	0.00	0.48	0.33	0.00	0.47	0.00	0.55	0.00	0.00	0.00
Avail Cap(c_a), veh/h	84	1259	1070	261	1449	0	359	0	435	84	406	0
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)	0.00	1.00	0.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	5.5	0.0	45.7	2.2	0.0	45.6	0.0	44.8	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.8	0.0	1.9	0.6	0.0	1.8	0.0	3.9	0.0	0.0	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	0.0	8.7	0.0	2.2	6.1	0.0	2.2	0.0	3.4	0.0	0.0	0.0
LnGrp Delay(d),s/veh	0.0	6.3	0.0	47.5	2.8	0.0	47.4	0.0	48.7	0.0	0.0	0.0
LnGrp LOS		A		D	A		D		D			
Approach Vol, veh/h		448			564			155			0	
Approach Delay, s/veh		6.3			9.9			48.0			0.0	
Approach LOS		A			A			D				
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.7	76.4	10.8	2.1	0.0	87.1	0.0	12.9				
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0				
Max Green Setting (Gmax),s	37.0	10.0	22.0	4.0	40.0	4.0	28.0					
Max Q Clear Time (g_c+I1),s	12.2	5.2	0.0	0.0	9.1	0.0	6.2					
Green Ext Time (p_c), s	0.0	2.5	0.1	0.0	0.0	2.8	0.0	0.3				
Intersection Summary												
HCM 2010 Ctrl Delay			13.5									
HCM 2010 LOS			B									

Lanes, Volumes, Timings
22: York Rd. (SR 0074) & Heritage Village Access

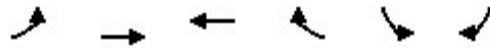
Timing Plan: SAT Peak Hour
05/08/2023



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	←←	↑	↑	↑	←	↑
Traffic Volume (vph)	55	477	412	65	77	76
Future Volume (vph)	55	477	412	65	77	76
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (ft)	175			275	0	500
Storage Lanes	2			1	1	1
Taper Length (ft)	25				25	
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00
Frt				0.850		0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	3252	1765	1765	1500	1676	1500
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	3252	1765	1765	1500	1676	1500
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				71		83
Link Speed (mph)		35	35		25	
Link Distance (ft)		2128	1056		625	
Travel Time (s)		41.5	20.6		17.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	60	518	448	71	84	83
Shared Lane Traffic (%)						
Lane Group Flow (vph)	60	518	448	71	84	83
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		24	24		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2	1	1	1
Detector Template	Left	Thru	Thru	Right	Left	Right
Leading Detector (ft)	20	100	100	20	20	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	6	20	20	20
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94	94			
Detector 2 Size(ft)		6	6			
Detector 2 Type		CI+Ex	CI+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type	Prot	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6

Lanes, Volumes, Timings
22: York Rd. (SR 0074) & Heritage Village Access

Timing Plan: SAT Peak Hour
05/08/2023

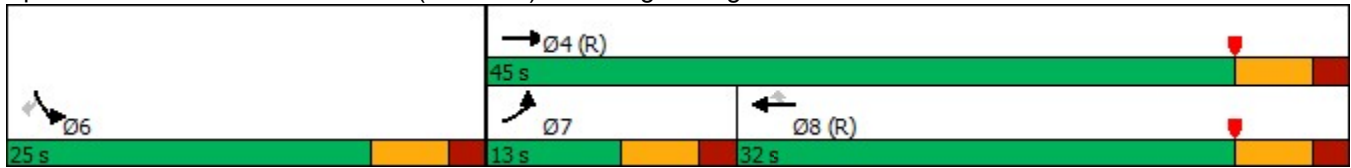


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Detector Phase	7	4	8	8	6	6
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	10.0	21.0	21.0	21.0	25.0	25.0
Total Split (s)	13.0	45.0	32.0	32.0	25.0	25.0
Total Split (%)	18.6%	64.3%	45.7%	45.7%	35.7%	35.7%
Maximum Green (s)	7.0	39.0	26.0	26.0	19.0	19.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	Max	C-Max	C-Max	C-Max	None	None
Walk Time (s)		7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		8.0	8.0	8.0	12.0	12.0
Pedestrian Calls (#/hr)		0	0	0	0	0
Act Effct Green (s)	20.4	53.4	27.0	27.0	9.9	9.9
Actuated g/C Ratio	0.29	0.76	0.39	0.39	0.14	0.14
v/c Ratio	0.06	0.38	0.66	0.11	0.36	0.29
Control Delay	25.3	3.0	23.4	4.5	30.6	9.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.3	3.0	23.4	4.5	30.6	9.6
LOS	C	A	C	A	C	A
Approach Delay		5.3	20.8		20.2	
Approach LOS		A	C		C	
Queue Length 50th (ft)	13	38	154	0	33	0
Queue Length 95th (ft)	34	98	251	22	68	33
Internal Link Dist (ft)		2048	976		545	
Turn Bay Length (ft)	175			275		500
Base Capacity (vph)	949	1347	680	622	478	487
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.38	0.66	0.11	0.18	0.17

Intersection Summary

Area Type: Other
Cycle Length: 70
Actuated Cycle Length: 70
Offset: 34 (49%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.66
Intersection Signal Delay: 13.6
Intersection Capacity Utilization 39.3%
Analysis Period (min) 15
Intersection LOS: B
ICU Level of Service A

Splits and Phases: 22: York Rd. (SR 0074) & Heritage Village Access



								
Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations	 				 			
Traffic Volume (veh/h)	55	477	412	65	77	76		
Future Volume (veh/h)	55	477	412	65	77	76		
Number	7	4	8	18	1	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1765	1765	1765	1765	1765	1765		
Adj Flow Rate, veh/h	60	518	448	0	84	0		
Adj No. of Lanes	2	1	1	1	1	1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	373	1365	1038	882	140	125		
Arrive On Green	0.23	1.00	0.59	0.00	0.08	0.00		
Sat Flow, veh/h	3261	1765	1765	1500	1681	1500		
Grp Volume(v), veh/h	60	518	448	0	84	0		
Grp Sat Flow(s),veh/h/ln	1630	1765	1765	1500	1681	1500		
Q Serve(g_s), s	1.0	0.0	9.8	0.0	3.4	0.0		
Cycle Q Clear(g_c), s	1.0	0.0	9.8	0.0	3.4	0.0		
Prop In Lane	1.00			1.00	1.00	1.00		
Lane Grp Cap(c), veh/h	373	1365	1038	882	140	125		
V/C Ratio(X)	0.16	0.38	0.43	0.00	0.60	0.00		
Avail Cap(c_a), veh/h	373	1365	1038	882	480	429		
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	0.92	0.92	1.00	0.00	1.00	0.00		
Uniform Delay (d), s/veh	24.3	0.0	8.0	0.0	31.0	0.0		
Incr Delay (d2), s/veh	0.8	0.7	1.3	0.0	4.1	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(95%),veh/ln	0.9	0.5	8.8	0.0	3.1	0.0		
LnGrp Delay(d),s/veh	25.2	0.7	9.3	0.0	35.0	0.0		
LnGrp LOS	C	A	A		D			
Approach Vol, veh/h		578	448		84			
Approach Delay, s/veh		3.3	9.3		35.0			
Approach LOS		A	A		D			
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				59.2		10.8	13.0	46.2
Change Period (Y+Rc), s				6.0		6.0	6.0	6.0
Max Green Setting (Gmax), s				39.0		19.0	7.0	26.0
Max Q Clear Time (g_c+I1), s				2.5		5.9	3.5	12.3
Green Ext Time (p_c), s				3.6		0.1	0.0	2.3
Intersection Summary								
HCM 2010 Ctrl Delay			8.1					
HCM 2010 LOS			A					

ATTACHMENT 4

INTERSECTION MITIGATION MATRIX / LOS & QUEUE MITIGATION TABLES



BERKS DEVELOPMENT MITIGATION INTERSECTIONS

Type / Degree	2026 Build Opening				2031 Horizon Year		
	AM	PM	SAT		AM	PM	SAT
LOS Mitigation						SR 0641 / S. Middlesex Rd.	SR 0641 / Mall / Shaffner - **
Movement Mitigation	SR 0641 / Mall / Shaffner - **	SR 0641 / Mall / Shaffner - **					
	SR 0641 / CVS / Lowe's - **	SR 0641 / CVS / Lowe's - **					
		SR 0641 / Army Heritage Dr.				SR 0641 / Army Heritage Dr.	
						Army Heritage / Westminster / Fairview	
	SR 0641 / S. Middlesex Rd. - **	SR 0641 / S. Middlesex Rd.			SR 0641 / S. Middlesex Rd. - **		
	SR 0074 / Westminster Rd. - **	SR 0074 / Westminster Rd. - **	SR 0074 / Westminster Rd.		SR 0074 / Westminster Rd. - **	SR 0074 / Westminster Rd.	SR 0074 / Westminster Rd.
		SR 0074 / Fairview St. - **				SR 0074 / Fairview St. - **	
						SR 0074 / Mayapple Dr - **	
		Forge Rd. / Fairview St. - **				Forge Rd. / Fairview St. - **	

Queue Mitigation						
	2026			2031		
	AM	PM	SAT	AM	PM	SAT
SR 0074 / Giant / Mall – A	C	C/(Q)		C	C/(Q)	C
SR 0641 / I-81 NB On-Ramp	(Q)			(Q)		
SR 0641 / Army Heritage	C/Q	C/Q		C/Q	C/Q	
SR 0074 / Westminster	C/Q		C	C/Q	C	C
SR 0641 / Shaffner / Mall - A		(Q)	(Q)			(Q)
SR 0641 / CVS / Lowe's - A		(Q)	(Q)			
SR 0074 / I-81 Off-Ramp		C/(Q)			C / (Q)	
Forge / Fairview		(Q)			(Q)	
SR 0074 / I-81 NB Off-Ramp			(Q)			

- Shading designates Mitigation Required
- ** designates minor impact <20 sec. Reviewing agencies may overlook this.
- "A" designates interconnected signals with Adaptive Traffic Signal Control (InSync)
- "C" designates capacity needs denoted with (#) in Synchro percentile methodology.
- "Q" designates 95th percentile queue length is significantly greater than the Existing Storage or the Without Development scenario (whichever is longer)
- "(Q)" designates 95th percentile queue length less than 2 car lengths. (Reviewing agencies likely to permit these minor changes).

TABLE C: LEVEL OF SERVICE WITH MITIGATION						
AM PEAK						
INTERSECTION		2026 WITH DEV. & MITIGATION		2031 WITH DEV. & MITIGATION		
		DELAY	LOS	DELAY	LOS	
TRINDLE ROAD (SR 0641) AT ARMY HERITAGE DRIVE {Signalized}	EB	L	E	116.3	F	
		T	C	25.0	C	
		R	A	4.1	A	
		A	D	62.1	E	
	WB	L	C	13.6	B	
		T	E	47.5	D	
		R	B	2.7	A	
		A	D	36.7	D	
	NB	L	C	27.9	C	
		TR	F	113.8	F	
		T	-	-	-	
		R	-	-	-	
	SB	A	E	87.6	F	
		L	D	44.4	D	
		TR	-	-	-	
		T	C	33.8	C	
	OVERALL	R	A	2.7	A	
		A	C	30.1	C	
	OVERALL	54.0	D	59.3	E	
TRINDLE ROAD (SR 0641) AT SOUTH MIDDLESEX ROAD (T-590) {Unsignalized}	EB	LTR	-	-	-	
		A	-	-	-	
	WB	LTR	-	-	-	
		A	-	-	-	
	NB	LTR	-	-	-	
		A	-	-	-	
	SB	LTR	-	-	-	
		A	-	-	-	
	OVERALL	-	-	-	-	

TABLE C: LEVEL OF SERVICE WITH MITIGATION						
AM PEAK						
INTERSECTION		2026 WITH DEV. & MITIGATION		2031 WITH DEV. & MITIGATION		
		DELAY	LOS	DELAY	LOS	
ARMY HERITAGE DRIVE AT WESTMINSTER DRIVE / FAIRVIEW STREET {Signalized}	L	-	-	-	-	-
	T	-	-	-	-	-
	A	-	-	-	-	-
	TR	-	-	-	-	-
	A	-	-	-	-	-
	L	-	-	-	-	-
	R	-	-	-	-	-
	A	-	-	-	-	-
	OVERALL	-	-	-	-	-
	TR	-	-	-	-	-
YORK ROAD (SR 0074) AT I-81 NORTHBOUND OFF- RAMP {Signalized}	A	-	-	-	-	-
	LT	-	-	-	-	-
	A	-	-	-	-	-
	L	-	-	-	-	-
	R	-	-	-	-	-
	A	-	-	-	-	-
	OVERALL	-	-	-	-	-
	TR	-	-	-	-	-
	A	-	-	-	-	-
	LT	-	-	-	-	-

TABLE C: LEVEL OF SERVICE WITH MITIGATION						
AM PEAK						
INTERSECTION		2026 WITH DEV. & MITIGATION			2031 WITH DEV. & MITIGATION	
		DELAY	LOS		DELAY	LOS
YORK ROAD (SR 0074) AT WESTMINSTER ROAD {Signalized}	EB	L	24.5	C	41.8	D
		T	15.1	B	17.0	B
		R	1.8	A	1.9	A
		A	15.0	B	20.6	C
	WB	L	16.2	B	16.7	B
		T	33.0	C	37.3	D
		R	0.1	A	0.1	A
		A	31.3	C	35.3	D
	NB	L	100.7	F	97.4	F
		TR	33.5	C	31.5	C
		A	88.1	F	85.2	F
		L	58.1	E	57.0	E
	SB	TR	46.9	D	48.6	D
		T	-	-	-	-
		R	-	-	-	-
		A	48.3	D	49.6	D
OVERALL		38.5	D	41.4	D	

TABLE C: LEVEL OF SERVICE WITH MITIGATION						
PM PEAK						
INTERSECTION		2026 WITH DEV. & MITIGATION		2031 WITH DEV. & MITIGATION		
		DELAY	LOS	DELAY	LOS	
TRINDLE ROAD (SR 0641) AT ARMY HERITAGE DRIVE {Signalized}	EB	L	B	21.7	C	
		T	C	38.7	D	
		R	A	9.3	A	
	WB	A	C	28.3	C	
		L	C	22.4	C	
		T	D	40.6	D	
	NB	R	A	0.3	A	
		A	D	32.4	C	
		L	D	61.7	E	
	SB	TR	D	54.0	D	
		T	-	-	-	
		R	-	-	-	
OVERALL		A	D	56.9	E	
		L	C	40.7	D	
		TR	-	-	-	
		T	D	59.1	E	
		R	A	3.9	A	
		A	D	43.2	D	
			34.0	C	38.1	D

TABLE C: LEVEL OF SERVICE WITH MITIGATION						
PM PEAK INTERSECTION						
		2026 WITH DEV. & MITIGATION		2031 WITH DEV. & MITIGATION		
		DELAY	LOS	DELAY	LOS	
TRINDLE ROAD (SR 0641) AT SOUTH MIDDLESEX ROAD (T-590) {Unsignalized}	LTR	5.4	A	5.5	A	
	EB	5.4	A	5.5	A	
	LTR	5.7	A	5.8	A	
	WB	5.7	A	5.8	A	
	LTR	8.6	A	9.1	A	
	NB	8.6	A	9.1	A	
	LTR	9.5	A	10.0	B	
	SB	9.5	A	10.0	B	
	OVERALL	6.2	A	6.5	A	
	L	-	-	16.1	B	
	T	-	-	8.6	A	
	A	-	-	15.7	B	
ARMY HERITAGE DRIVE AT WESTMINSTER DRIVE / FAIRVIEW STREET {Signalized}	TR	-	-	23.2	C	
	WB	-	-	23.2	C	
	L	-	-	29.0	C	
	R	-	-	45.5	D	
	A	-	-	39.2	D	
	OVERALL	-	-	29.4	C	
	TR	19.5	B	17.4	B	
	A	19.5	B	17.4	B	
	LT	32.3	C	27.2	C	
	WB	32.3	C	27.2	C	
	L	9.9	A	12.0	B	
	R	29.1	C	47.1	D	
YORK ROAD (SR 0074) AT I-81 NORTHBOUND OFF- RAMP {Signalized}	A	24.7	C	38.9	D	
	OVERALL	26.5	C	28.6	C	
	TR	19.5	B	17.4	B	
	A	19.5	B	17.4	B	
	LT	32.3	C	27.2	C	
	WB	32.3	C	27.2	C	
	L	9.9	A	12.0	B	
	R	29.1	C	47.1	D	
	A	24.7	C	38.9	D	
	OVERALL	26.5	C	28.6	C	

TABLE C: LEVEL OF SERVICE WITH MITIGATION					
PM PEAK INTERSECTION					
		2026 WITH DEV. & MITIGATION		2031 WITH DEV. & MITIGATION	
		DELAY	LOS	DELAY	LOS
YORK ROAD (SR 0074) AT WESTMINSTER ROAD {Signalized}	EB	L	-	121.6	F
		T	-	45.7	D
		R	-	7.9	A
		A	-	49.1	D
	WB	L	-	39.1	D
		T	-	70.2	E
		R	-	2.2	A
		A	-	63.1	E
	NB	L	-	90.4	F
		TR	-	21.0	C
		A	-	63.4	E
		L	-	37.5	D
	SB	TR	-	92.3	F
		T	-	-	-
		R	-	-	-
		A	-	86.3	F
OVERALL		-	-	61.2	E

TABLE C: LEVEL OF SERVICE WITH MITIGATION						
SATURDAY PEAK INTERSECTION						
		2026 WITH DEV. & MITIGATION		2031 WITH DEV. & MITIGATION		
		DELAY	LOS	DELAY	LOS	
TRINDLE ROAD (SR 0641) AT ARMY HERITAGE DRIVE {Signalized}	EB	L	-	-	-	
		T	-	-	-	
		R	-	-	-	
	WB	A	-	-	-	-
		L	-	-	-	-
		T	-	-	-	-
		R	-	-	-	-
		A	-	-	-	-
	NB	L	-	-	-	-
		TR	-	-	-	-
		T	-	-	-	-
		R	-	-	-	-
	SB	A	-	-	-	-
		L	-	-	-	-
		TR	-	-	-	-
		T	-	-	-	-
		R	-	-	-	-
	OVERALL		-	-	-	-

TABLE C: LEVEL OF SERVICE WITH MITIGATION						
SATURDAY PEAK						
INTERSECTION		2026 WITH DEV. & MITIGATION		2031 WITH DEV. & MITIGATION		
		DELAY	LOS	DELAY	LOS	
TRINDLE ROAD (SR 0641) AT SOUTH MIDDLESEX ROAD (T-590) {Unsignalized}	LTR	-	-	-	-	-
	EB	-	-	-	-	-
	A	-	-	-	-	-
	LTR	-	-	-	-	-
	WB	-	-	-	-	-
	A	-	-	-	-	-
	LTR	-	-	-	-	-
	NB	-	-	-	-	-
	A	-	-	-	-	-
	LTR	-	-	-	-	-
	SB	-	-	-	-	-
	A	-	-	-	-	-
OVERALL		-	-	-	-	-
ARMY HERITAGE DRIVE AT WESTMINSTER DRIVE / FAIRVIEW STREET {Signalized}	L	-	-	-	-	-
	EB	-	-	-	-	-
	T	-	-	-	-	-
	A	-	-	-	-	-
	TR	-	-	-	-	-
	WB	-	-	-	-	-
	A	-	-	-	-	-
	L	-	-	-	-	-
	R	-	-	-	-	-
	A	-	-	-	-	-
OVERALL		-	-	-	-	-
YORK ROAD (SR 0074) AT I-81 NORTHBOUND OFF- RAMP {Signalized}	TR	-	-	-	-	-
	EB	-	-	-	-	-
	A	-	-	-	-	-
	LT	-	-	-	-	-
	WB	-	-	-	-	-
	A	-	-	-	-	-
	L	-	-	-	-	-
	R	-	-	-	-	-
	A	-	-	-	-	-
	OVERALL	-	-	-	-	-

TABLE C: LEVEL OF SERVICE WITH MITIGATION					
SATURDAY PEAK					
INTERSECTION		2026 WITH DEV. & MITIGATION		2031 WITH DEV. & MITIGATION	
		DELAY	LOS	DELAY	LOS
YORK ROAD (SR 0074) AT WESTMINSTER ROAD {Signalized}	EB	L	F	116.9	F
		T	C	23.8	C
		R	A	5.1	A
		A	D	56.4	E
	WB	L	C	30.7	C
		T	E	67.3	E
		R	A	1.9	A
		A	D	58.9	E
	NB	L	F	107.9	F
		TR	B	18.9	B
		A	E	83.0	F
		L	D	39.1	D
SB	TR	79.4	E	121.6	F
		T	-	-	-
		R	-	-	-
		A	E	112.1	F
	OVERALL		E	75.3	E
			56.5		

TABLE B: QUEUE RESULTS																	
AM PEAK		INTERSECTION		2026 WITHOUT DEVELOPMENT		2026 WITH DEVELOPMENT		2031 WITHOUT DEVELOPMENT		2031 WITH DEVELOPMENT		EXISTING AVAILABLE STORAGE	PROPOSED AVAILABLE STORAGE	2026 WITH DEVELOPMENT & MITIGATION	2031 WITH DEVELOPMENT & MITIGATION	Mitigation Required?	
				QUEUE	QUEUE	QUEUE	QUEUE	QUEUE	QUEUE								
ARMY HERITAGE DRIVE AT WESTMINSTER DRIVE / FAIRVIEW STREET (Signalized)		EB	L	110	120	135	133	3029	-	-	-	-	-	-	-	No	
		WB	T	3	3	3	3	3029	-	-	-	-	-	-	-		
		TR		273	240	333	265	760	-	-	-	-	-	-	-		
		SB	L	108	90	128	93	400	-	-	-	-	-	-	-		
FAIRVIEW STREET AT LISBURN ROAD (Unsignalized)			R	193	135	223	145	400	-	-	-	-	-	-	-	No	
		WB	LR	0	0	0	0	-	-	-	-	-	-	-	-		
		NB	TR	0	0	0	0	2780	-	-	-	-	-	-	-		
		SB	LT	0	0	0	0	760	-	-	-	-	-	-	-		
YORK ROAD (SR 0074) AT I-81 SOUTHBOUND ON-RAMP (Signalized)		WB	L	-	-	-	-	-	-	-	-	-	-	-	-	-	
YORK ROAD (SR 0074) AT I-81 NORTHBOUND OFF-RAMP (Signalized)		EB	TR	58	63	72	80	670	-	-	-	-	-	-	-	No	
		WB	T	296	m325	371	m415	970	-	-	-	-	-	-	-		
		NB	L	121	116	135	137	25	-	-	-	-	-	-	-		
			R	97	111	145	174	1300	200	-	-	-	-	-	-		
YORK ROAD (SR 0074) AT WESTMINSTER DRIVE (Signalized)			L	183	#209	#234	#299	120	500	#205	#319	353	m21	m9	m#745	Yes	
		EB	T	310	324	374	401	945	401	945	316	316	353	21	m9		0
			R	15	16	20	21	945	21	945	21	316	353	m21	m9		0
			L	12	m12	14	m14	75	m14	75	21	316	353	m21	m9		0
		WB	T	501	#671	672	847	2220	847	2220	422	m#745	353	m9	m#745		0
			R	0	0	0	0	180	0	180	0	0	316	21	0		0
		NB	L	#456	#485	#551	#628	130	#628	130	#438	#469	316	21	#469		0
			TR	97	99	109	120	460	120	460	88	90	316	21	88		90
			L	48	48	55	57	130	57	130	43	44	316	21	43		44
			TR	164	164	207	221	650	221	650	138	149	316	21	138		149
		SB	T	-	-	-	-	650	-	650	-	-	316	21	-		-
			R	-	-	-	-	-	-	-	-	-	316	21	-		-
YORK ROAD (SR 0074) AT FAIRVIEW STREET (T-512) (Signalized)		EB	L	38	31	39	28	75	-	-	-	-	-	-	-	No	
		TR		256	299	266	290	2220	290	2220	-	-	-	-	-		
		WB	LTR	#603	#557	#688	#62	1645	#62	1645	-	-	-	-	-		
		NB	LTR	189	192	241	262	290	262	290	-	-	-	-	-		
YORK ROAD (SR 0074) AT MAYAPPLE DRIVE (Unsignalized)		SB	LTR	76	56	101	80	2780	-	-	-	-	-	-	-	No	
		EB	TR	0	0	0	0	1500	0	1500	-	-	-	-	-		
		WB	LT	0	0	0	0	3600	0	3600	-	-	-	-	-		
		NB	LR	20	20	25	28	500	28	500	-	-	-	-	-		
YORK ROAD (SR 0074) AT SPRINGVILLE ROAD (Unsignalized)		EB	TR	0	0	0	0	3600	0	3600	-	-	-	-	-	No	
		WB	LT	3	3	3	3	330	3	330	-	-	-	-	-		
		NB	LR	68	50	88	80	3030	80	3030	-	-	-	-	-		
		EB	LT	20	20	23	23	330	23	330	-	-	-	-	-		
YORK ROAD (SR 0074) AT SHUGHART ROAD (Unsignalized)		WB	TR	0	0	0	0	2600	0	2600	-	-	-	-	-	No	
		WB	TR	0	0	0	0	2600	0	2600	-	-	-	-	-		
		SB	LR	25	28	30	33	2050	33	2050	-	-	-	-	-		

TABLE B: QUEUE RESULTS

AM PEAK															Mitigation Required?
INTERSECTION															
YORK ROAD (SR 0074) AT HERITAGE VILLAGE CONNECTOR (Signalized)	2026 WITHOUT DEVELOPMENT		2026 WITH DEVELOPMENT		2031 WITHOUT DEVELOPMENT		2031 WITH DEVELOPMENT		EXISTING AVAILABLE STORAGE	PROPOSED AVAILABLE STORAGE	2026 WITH DEVELOPMENT & MITIGATION		2031 WITH DEVELOPMENT & MITIGATION		
	QUEUE		QUEUE		QUEUE		QUEUE				QUEUE		QUEUE		
	L	-	18		-		20		-		150		-		No
	T	-	8		-		8		1645		-		-		
	WB	T	308		-		378		1500		-		-		
		R	-	0		-		0		-	275		-		
	SB	L	-	68		-		83		-	150		-		
		R	-	0		-		0		-	-		-		

TABLE B: QUEUE RESULTS															
PM PEAK	INTERSECTION		2026 WITHOUT DEVELOPMENT		2026 WITH DEVELOPMENT		2031 WITHOUT DEVELOPMENT		2031 WITH DEVELOPMENT		EXISTING AVAILABLE STORAGE	PROPOSED AVAILABLE STORAGE	2026 WITH DEVELOPMENT & MITIGATION		Mitigation Required?
			QUEUE		QUEUE		QUEUE		QUEUE				2031 WITH DEVELOPMENT & MITIGATION		
EAST HIGH STREET (SR 0641) AT YORK ROAD (SR 0074) (Signalized)	EB	T	260	298	340	428	500	-	-	-	-	-	-	-	No
	R		0	0	0	0	500	-	-	-	-	-	-	-	
	WB	L	8	10	10	13	75	-	-	-	-	-	-	-	
	T		28	28	28	23	1070	-	-	-	-	-	-	-	
	NB	LR	203	243	290	388	1070	-	-	-	-	-	-	-	
	L		29	29	30	30	210	-	-	-	-	-	-	-	
YORK ROAD (SR 0074) AT GIANT LANE / CARLISLE PLAZA MALL (Signalized)	EB	TR	#415	#444	#475	#518	1070	-	-	-	-	-	-	-	No
	WB	L	#246	#249	#281	#308	210	-	-	-	-	-	-	-	
	TR		242	249	259	271	1415	-	-	-	-	-	-	-	
	L		12	13	15	15	110	-	-	-	-	-	-	-	
	NB	TR	62	66	73	73	2091	-	-	-	-	-	-	-	
	SB	L	68	75	#95	#95	65	-	-	-	-	-	-	-	
EAST HIGH STREET (SR 0641) AT SHAFFNER AVE / CARLISLE PLAZA MALL (Signalized)	TR		152	166	#214	#214	480	-	-	-	-	-	-	-	Yes
	L		0	0	0	0	60	-	-	-	-	-	-	-	
	EB	T	23	20	20	25	1070	-	-	-	-	-	-	-	
	R		0	0	0	3	60	-	-	-	-	-	-	-	
	WB	L	65	63	108	78	60	-	-	-	-	-	-	-	
	TR		15	15	18	15	800	-	-	-	-	-	-	-	
EAST HIGH STREET (SR 0641) AT CVS ACCESS DRIVE / LOWE'S ACCESS DRIVE (Signalized)	NB	LT	68	93	128	85	480	-	-	-	-	-	-	-	No
	R		110	148	198	133	80	-	-	-	-	-	-	-	
	SB	LTR	0	3	3	3	575	-	-	-	-	-	-	-	
	L		8	8	13	8	60	-	-	-	-	-	-	-	
	EB	T	20	18	20	20	800	-	-	-	-	-	-	-	
	R		3	3	3	3	60	-	-	-	-	-	-	-	
TRINDLE ROAD (SR 0641) AT I-81 SOUTHBOUND OFF-RAMP (Signalized)	WB	L	40	43	55	45	80	-	-	-	-	-	-	-	No
	TR		453	483	628	503	3366	-	-	-	-	-	-	-	
	LT		125	163	223	145	425	-	-	-	-	-	-	-	
	NB	R	50	65	93	58	50	-	-	-	-	-	-	-	
	SB	LTR	33	43	70	40	220	-	-	-	-	-	-	-	
	EB	LT	171	200	212	268	3366	-	-	-	-	-	-	-	
Trindle Road (SR 0641) AT I-81 NORTHBOUND ON-RAMP (Signalized)	WB	TR	81	m82	116	m85	1420	-	-	-	-	-	-	-	-
	L		95	146	192	162	800	-	-	-	-	-	-	-	
	SB	R	125	144	229	173	70	250	-	-	-	-	-	-	

TABLE B: QUEUE RESULTS												
PM PEAK INTERSECTION												
				2026 WITHOUT DEVELOPMENT	2026 WITH DEVELOPMENT	2031 WITHOUT DEVELOPMENT	2031 WITH DEVELOPMENT	EXISTING AVAILABLE STORAGE	PROPOSED AVAILABLE STORAGE	2026 WITH DEVELOPMENT & MITIGATION	2031 WITH DEVELOPMENT & MITIGATION	Mitigation Required?
				QUEUE	QUEUE	QUEUE	QUEUE			QUEUE	QUEUE	
ARMY HERITAGE DRIVE AT WESTMINSTER DRIVE / FAIRVIEW STREET {Signalized}	EB	L		220	238	118	258	3029	-	-	0	Yes
	T			10	13	13	13	3029	-	-	0	
	WB	TR		173	190	193	205	760	-	-	235	
	SB	L		335	248	365	263	400	-	-	260	
	R			608	475	658	550	400	-	-	0	
FAIRVIEW STREET AT LISBURN ROAD {Unsignalized}	WB	LR		0	0	0	0	-	-	-	-	No
	NB	TR		0	0	0	0	2780	-	-	-	
	SB	LT		0	0	0	0	760	-	-	-	
	WB	L		-	-	-	-	-	-	-	-	
YORK ROAD (SR 0074) AT I-81 SOUTHBOUND ON-RAMP {Signalized}	WB	L		-	-	-	-	-	-	-	-	-
	EB	TR		172	219	225	231	670	-	170	164	
	WB	T		298	m325	325	m326	970	-	m#576	m283	
	NB	L		103	121	130	132	25	-	76	94	
YORK ROAD (SR 0074) AT WESTMINSTER DRIVE {Signalized}	R			#415	#561	#550	#641	1300	200	#412	#482	Yes
	L			#347	m#213	#272	m#230	120	500	-	m#331	
	EB	T		693	m512	#516	m529	945	-	-	m693	
	TR			140	m57	22	m20	945	-	-	m86	
	L			13	m11	7	m11	75	-	-	m13	
	WB	T		#624	#471	#484	m#495	2220	-	-	#649	
	R			8	m2	0	m1	180	-	-	m6	
	L			#371	#287	#305	#331	130	-	-	#377	
	TR			141	106	108	117	460	-	-	133	
	NB			92	67	70	71	130	-	-	84	
	TR			#715	#524	#560	#577	650	-	-	#691	
	SB	T		-	-	-	-	650	-	-	-	
	R			-	-	-	-	-	150	-	-	
YORK ROAD (SR 0074) AT FAIRVIEW STREET (T-512) {Signalized}	L			29	m5	6	m5	75	-	-	-	No
	TR			298	m56	65	m60	2220	-	-	-	
	WB	LTR		311	64	421	72	1645	-	-	-	
	NB	LTR		67	108	85	117	290	-	-	-	
	SB	LTR		#346	#278	#459	#320	2780	-	-	-	
YORK ROAD (SR 0074) AT MAYAPPLE DRIVE {Unsignalized}	EB	TR		0	0	0	0	1500	-	-	-	No
	WB	LT		5	5	8	8	3600	-	-	-	
	NB	LR		33	33	43	55	500	-	-	-	
	EB	TR		0	0	0	0	3600	-	-	-	
YORK ROAD (SR 0074) AT SPRINGVILLE ROAD {Unsignalized}	WB	LT		10	10	13	13	330	-	-	-	No
	NB	LR		70	48	95	88	3030	-	-	-	
	EB	LT		10	13	13	13	330	-	-	-	
	WB	TR		0	0	0	0	2600	-	-	-	
YORK ROAD (SR 0074) AT SHUGHART ROAD {Unsignalized}	SB	LR		48	53	58	63	2050	-	-	-	No

TABLE B: QUEUE RESULTS												
PM PEAK INTERSECTION			2026 WITHOUT DEVELOPMENT		2026 WITH DEVELOPMENT		2031 WITHOUT DEVELOPMENT		2031 WITH DEVELOPMENT		PROPOSED AVAILABLE STORAGE	Mitigation Required?
			QUEUE		QUEUE		QUEUE		QUEUE			
YORK ROAD (SR 0074) AT HERITAGE VILLAGE CONNECTOR (Signalized)	EB	L	-	-	48	-	-	48	-	150	-	No
		T	-	-	25	-	-	28	-	-	-	
	WB	T	-	-	275	-	-	300	-	-	-	
		R	-	-	0	-	-	0	-	275	-	
	SB	L	-	-	143	-	-	150	-	150	-	
		R	-	-	0	-	-	0	-	-	-	

TABLE B: QUEUE RESULTS

SAT PEAK																Mitigation Required?	
		INTERSECTION															
		2026 WITHOUT DEVELOPMENT		2026 WITH DEVELOPMENT		2031 WITHOUT DEVELOPMENT		2031 WITH DEVELOPMENT		EXISTING STORAGE AVAILABLE STORAGE		PROPOSED AVAILABLE STORAGE		2026 WITH DEVELOPMENT & MITIGATION			2031 WITH DEVELOPMENT & MITIGATION
		QUEUE	127	132	138	105	375	375									
TRINDLE ROAD (SR 0641) AT ARMY HERITAGE DRIVE (Signalized)	EB	L	127	132	138	105	375	375									
		T	152	207	157	190		-	-								
		R	63	56	67	59		95	-								
		L	70	m36	75	67		110	-								
	WB	T	211	219	225	240		-	-								
		R	0	m22	0	9		155	-								
		L	117	132	117	140		140	260								
	NB	TR	#296	268	#349	303		400	-								
		T	-	-	-	-		-	-								
		R	-	-	-	-		-	290								
		L	66	69	69	79		125	195								
		TR	-	-	-	-		-	-								
TRINDLE ROAD (SR 0641) AT HORNERS ROAD (T-590) {Unsignalized}	SB	T	176	180	187	208		214									
		R	25	25	26	31		150	-								
	EB		0	0	0	3		1993	-								
	WB	TR	0	0	0	0		3207	-								
TRINDLE ROAD (SR 0641) AT SOUTH MIDDLESEX ROAD (T-590) {Unsignalized}	SB	L	3	3	3	3		-	-								
		EB	L	TR		0	3		3207	-							
		WB	L	TR		0	0		3600	-							
		NB	L	TR		18	20		3021	-							
		SB	L	TR		13	15		2045	-							

TABLE B: QUEUE RESULTS																				
SAT PEAK INTERSECTION				2026 WITHOUT DEVELOPMENT		2026 WITH DEVELOPMENT		2031 WITHOUT DEVELOPMENT		2031 WITH DEVELOPMENT		EXISTING AVAILABLE STORAGE		PROPOSED AVAILABLE STORAGE		2026 WITH DEVELOPMENT & MITIGATION		2031 WITH DEVELOPMENT & MITIGATION		Mitigation Required?
				QUEUE		QUEUE		QUEUE		QUEUE		QUEUE		QUEUE		QUEUE		QUEUE		
ARMY HERITAGE DRIVE AT WESTMINSTER DRIVE / FAIRVIEW STREET {Signalized}	EB	L	148	150	168	183	3029	-	-	-	-	-	-	-	-	-	-	-	No	
	T		3	3	5	5	3029	-	-	-	-	-	-	-	-	-	-			
	WB	TR	93	78	105	95	760	-	-	-	-	-	-	-	-	-	-			
	SB	L	175	125	188	145	400	-	-	-	-	-	-	-	-	-	-			
FAIRVIEW STREET AT LISBURN ROAD {Unsignalized}	R		445	298	490	350	400	-	-	-	-	-	-	-	-	-	-	No		
	WB	LR	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-			
	NB	TR	0	0	0	0	2780	-	-	-	-	-	-	-	-	-	-			
	SB	LT	0	0	0	0	760	-	-	-	-	-	-	-	-	-	-			
YORK ROAD (SR 0074) AT I-81 SOUTHBOUND ON-RAMP {Signalized}	WB	L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
YORK ROAD (SR 0074) AT I-81 NORTHBOUND OFF-RAMP {Signalized}	EB	TR	97	74	118	126	670	-	-	-	-	-	-	-	-	-	-	No		
	WB	T	222	m257	287	m307	970	-	-	-	-	-	-	-	-	-	-			
	L		74	80	90	86	25	-	-	-	-	-	-	-	-	-	-			
	NB	R	134	170	175	176	1300	200	-	-	-	-	-	-	-	-	-			
YORK ROAD (SR 0074) AT WESTMINSTER DRIVE {Signalized}	L		#336	#373	#489	#499	120	500	-	-	-	-	-	-	-	-	-	Yes		
	EB	T	207	286	253	293	945	-	-	-	-	-	-	-	-	-	-			
	R		39	m38	48	44	945	-	-	-	-	-	-	-	-	-	-			
	L		13	m12	12	m12	75	-	-	-	-	-	-	-	-	-	-			
YORK ROAD (SR 0074) AT FAIRVIEW STREET (T-512) {Signalized}	WB	T	#339	#423	#468	#517	2220	-	-	-	-	-	-	-	-	-	-	No		
	R		13	9	12	12	180	-	-	-	-	-	-	-	-	-	-			
	L		#404	#452	#512	#591	130	-	-	-	-	-	-	-	-	-	-			
	NB	TR	93	106	111	130	460	-	-	-	-	-	-	-	-	-	-			
YORK ROAD (SR 0074) AT MAYAPPLE DRIVE {Unsignalized}	L		77	83	91	100	130	-	-	-	-	-	-	-	-	-	-	No		
	TR		#501	#566	#639	#730	650	-	-	-	-	-	-	-	-	-	-			
	T		-	-	-	-	650	-	-	-	-	-	-	-	-	-	-			
	R		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
YORK ROAD (SR 0074) AT SPRINGVILLE ROAD {Unsignalized}	L		12	11	6	9	75	-	-	-	-	-	-	-	-	-	-	No		
	TR		73	71	133	135	2220	-	-	-	-	-	-	-	-	-	-			
	WB	LTR	197	32	190	76	1645	-	-	-	-	-	-	-	-	-	-			
	NB	LTR	99	128	59	80	290	-	-	-	-	-	-	-	-	-	-			
YORK ROAD (SR 0074) AT SHUGHART ROAD {Unsignalized}	SB	LTR	201	161	118	96	2780	-	-	-	-	-	-	-	-	-	-	No		
	EB	TR	0	0	0	0	1500	-	-	-	-	-	-	-	-	-	-			
	WB	LT	3	3	3	3	3600	-	-	-	-	-	-	-	-	-	-			
	NB	LR	18	20	20	25	500	-	-	-	-	-	-	-	-	-	-			
YORK ROAD (SR 0074) AT SHUGHART ROAD {Unsignalized}	EB	TR	0	0	0	0	3600	-	-	-	-	-	-	-	-	-	-	No		
	WB	LT	3	3	5	5	330	-	-	-	-	-	-	-	-	-	-			
	NB	LR	23	23	28	30	3030	-	-	-	-	-	-	-	-	-	-			
	EB	LT	8	8	8	8	330	-	-	-	-	-	-	-	-	-	-			
YORK ROAD (SR 0074) AT SHUGHART ROAD {Unsignalized}	WB	TR	0	0	0	0	2600	-	-	-	-	-	-	-	-	-	-	No		
	SB	LR	20	20	23	25	2050	-	-	-	-	-	-	-	-	-	-			

TABLE B: QUEUE RESULTS

SAT PEAK																	
INTERSECTION		2026 WITHOUT DEVELOPMENT		2026 WITH DEVELOPMENT		2031 WITHOUT DEVELOPMENT		2031 WITH DEVELOPMENT		EXISTING AVAILABLE STORAGE	PROPOSED AVAILABLE STORAGE	2026 WITH DEVELOPMENT & MITIGATION		2031 WITH DEVELOPMENT & MITIGATION		Mitigation Required?	
		QUEUE		QUEUE		QUEUE		QUEUE				QUEUE		QUEUE			
FORGE ROAD (SR 203) AT WESTMINSTER DRIVE {Unsignalized}	EB	LTR	8		5		9		8		480	-	-		-		
	WB	LTR	70		95		83		115		2000	-	-		-		
	NB	LT	0		3		0		3		1550	-	-		-		
		R	-		-		-		-		100	-	-		-		
	SB	LTR	2		8		3		8		-	-	-		-		
FORGE ROAD (SR 203) AT FAIRVIEW STREET {Unsignalized}	EB	LTR	10		10		10		13		2125	-	-		-		
	WB	LTR	25		30		30		45		130	-	-		-		
	NB	LTR	3		3		3		3		500	-	-		-		
	SB	LTR	0		0		0		0		1550	-	-		-		
		L	-		0		-		0		-	150	-	-		-	
TRINDLE ROAD (SR 0641) AT ROSE BUSINESS PARK CONNECTOR / PHARMACY TRACT {Signalized}	EB	T	-		218		-		218		2300	-	-		-		
		R	-		0		-		0		-	475	-	-		-	
	L		-		50		-		55		-	200	-	-		-	
	TR		-		138		-		153		1993	-	-		-	-	
	L		-		48		-		55		-	150	-	-		-	
	TR		-		73		-		85		-	-	-		-	-	
	L		-		0		-		0		-	75	-	-		-	
	SB	TR	-		0		-		0		-	-	-		-	-	

TABLE B: QUEUE RESULTS

SAT PEAK																
INTERSECTION																
YORK ROAD (SR 0074) AT HERITAGE VILLAGE CONNECTOR {Signalized}	EB	2026 WITHOUT DEVELOPMENT		2026 WITH DEVELOPMENT		2031 WITHOUT DEVELOPMENT		2031 WITH DEVELOPMENT		EXISTING AVAILABLE STORAGE	PROPOSED AVAILABLE STORAGE	2028 WITH DEVELOPMENT & MITIGATION		2031 WITH DEVELOPMENT & MITIGATION		No
		QUEUE		QUEUE		QUEUE		QUEUE				QUEUE				
	L	-		23	-			23	-	-	150	-	-	-		
	T	-		133	-			13	-	1645	-	-	-	-		
	T	-		188	-			220	-	1500	-	-	-	-		
	R	-		0	-			0	-	-	275	-	-	-		
	L	-			-				-	-	150	-	-	-		
	R	-		0	-			78	-	-	-	-	-	-		

2026 AM (MITIGATION)

Lanes, Volumes, Timings

7: Army Heritage Dr. & W. Trindle Rd. (SR 0641)

05/22/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	272	313	60	46	428	105	215	373	111	98	123	68
Future Volume (vph)	272	313	60	46	428	105	215	373	111	98	123	68
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	13	14	12	13	14	12	13	12	11	14	12
Grade (%)		1%			-1%			-5%			4%	
Storage Length (ft)	90		95	110		155	380		0	125		150
Storage Lanes	1		1	1		1	1		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor								0.99				
Frt			0.850			0.850		0.966				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1636	1763	1476	1534	1833	1478	1718	1776	0	1500	1680	1282
Flt Permitted	0.182			0.506			0.646			0.131		
Satd. Flow (perm)	313	1763	1476	817	1833	1478	1168	1776	0	207	1680	1282
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			99			164			13			99
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		628			1908			461			1667	
Travel Time (s)		12.2			37.2			9.0			32.5	
Confl. Peds. (#/hr)									6	6		
Peak Hour Factor	0.90	0.90	1.00	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.92
Heavy Vehicles (%)	4%	5%	10%	12%	2%	11%	2%	2%	6%	8%	12%	17%
Adj. Flow (vph)	302	348	60	51	476	117	239	414	123	109	137	74
Shared Lane Traffic (%)												
Lane Group Flow (vph)	302	348	60	51	476	117	239	537	0	109	137	74
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane											Yes	
Headway Factor	1.08	1.03	0.99	1.07	1.02	0.98	1.04	1.00	1.04	1.15	1.01	1.10
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	0	1	1	0	1	1		1	1	1
Detector Template												Right
Leading Detector (ft)	35	231	0	35	231	0	35	40		40	35	20
Trailing Detector (ft)	-5	225	0	-5	225	0	-5	-10		-5	-5	0
Detector 1 Position(ft)	-5	225	0	-5	225	0	-5	-10		-5	-5	0
Detector 1 Size(ft)	40	6	20	40	6	20	40	50		45	40	20
Detector 1 Type	CI+Ex	Extend	CI+Ex	CI+Ex	Extend	CI+Ex	CI+Ex	CI+Ex		CI+Ex	CI+Ex	CI+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	pm+ov
Protected Phases	5	2	3	1	6		3	8		7	4	5
Permitted Phases	2		2	6		6	8			4		4

2026 AM (MITIGATION)

Lanes, Volumes, Timings

7: Army Heritage Dr. & W. Trindle Rd. (SR 0641)

05/22/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2	3	1	6	6	3	8		7	4	5
Switch Phase												
Minimum Initial (s)	15.0	15.0	3.0	3.0	3.0	3.0	3.0	3.0		4.0	3.0	15.0
Minimum Split (s)	21.5	25.5	9.5	9.5	25.5	25.5	9.5	31.5		10.5	31.5	21.5
Total Split (s)	19.0	48.0	13.0	13.0	42.0	42.0	13.0	36.0		13.0	36.0	19.0
Total Split (%)	17.3%	43.6%	11.8%	11.8%	38.2%	38.2%	11.8%	32.7%		11.8%	32.7%	17.3%
Maximum Green (s)	12.5	41.5	6.5	6.5	35.5	35.5	6.5	29.5		6.5	29.5	12.5
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5		2.5	2.5	2.5
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0		-1.0	-1.0	-1.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5		5.5	5.5	5.5
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	6.0	3.0	3.0	6.0	6.0	3.0	3.0		3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Time Before Reduce (s)	0.0	25.0	0.0	0.0	25.0	25.0	0.0	0.0		0.0	0.0	0.0
Time To Reduce (s)	0.0	15.0	0.0	0.0	15.0	15.0	0.0	0.0		0.0	0.0	0.0
Recall Mode	None	C-Max	None	None	C-Max	C-Max	None	None		None	None	None
Walk Time (s)		10.0			10.0	10.0		10.0			10.0	
Flash Dont Walk (s)		9.0			9.0	9.0		15.0			15.0	
Pedestrian Calls (#/hr)		0			0	0		0			0	
Act Effct Green (s)	55.5	45.1	58.1	43.8	36.5	36.5	38.0	30.5		38.0	30.5	49.5
Actuated g/C Ratio	0.50	0.41	0.53	0.40	0.33	0.33	0.35	0.28		0.35	0.28	0.45
v/c Ratio	0.94	0.48	0.07	0.14	0.78	0.20	0.54	1.07		0.69	0.29	0.12
Control Delay	64.4	24.2	3.7	29.8	66.5	16.2	28.6	97.0		45.9	33.4	2.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8		0.0	0.0	0.0
Total Delay	64.4	24.2	3.7	29.8	66.5	16.2	28.6	97.8		45.9	33.4	2.2
LOS	E	C	A	C	E	B	C	F		D	C	A
Approach Delay		39.6			54.5			76.5			30.4	
Approach LOS		D			D			E			C	
Queue Length 50th (ft)	142	161	1	33	350	21	117	~417		49	76	0
Queue Length 95th (ft)	#295	217	20	m49	#458	m41	161	#630		#112	131	16
Internal Link Dist (ft)		548			1828			381			1587	
Turn Bay Length (ft)	90		95	110		155	380			125		150
Base Capacity (vph)	320	723	826	375	608	600	440	501		159	465	631
Starvation Cap Reductn	0	0	0	0	0	0	0	1		0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.94	0.48	0.07	0.14	0.78	0.20	0.54	1.07		0.69	0.29	0.12
Intersection Summary												
Area Type:	Other											
Cycle Length:	110											
Actuated Cycle Length:	110											
Offset:	0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow, Master Intersection											
Natural Cycle:	100											
Control Type:	Actuated-Coordinated											
Maximum v/c Ratio:	1.07											
Intersection Signal Delay:	54.0						Intersection LOS: D					

Intersection Capacity Utilization 91.7% ICU Level of Service F

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

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

Splits and Phases: 7: Army Heritage Dr. & W. Trindle Rd. (SR 0641)



2026 AM (MITIGATION)

Lanes, Volumes, Timings

14: Westminster Dr. & York Road (SR 0074)/York Rd. (SR 0074)

05/22/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	192	391	142	12	571	26	327	71	4	19	41	94
Future Volume (vph)	192	391	142	12	571	26	327	71	4	19	41	94
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	14	12	12	14	12	14	12	12	14	12
Grade (%)		1%			0%			-5%			2%	
Storage Length (ft)	120		0	75		180	130		0	130		0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						0.98						
Frt			0.850			0.850		0.993			0.895	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1620	1690	1592	1555	1698	1554	1702	1830	0	1597	1549	0
Flt Permitted	0.157			0.508			0.269			0.702		
Satd. Flow (perm)	268	1690	1592	831	1698	1519	482	1830	0	1180	1549	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			160			125		2			72	
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		1010			2320			530			721	
Travel Time (s)		19.7			45.2			14.5			19.7	
Confl. Peds. (#/hr)	1					1						
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	5%	6%	2%	10%	6%	5%	3%	7%	2%	6%	14%	8%
Adj. Flow (vph)	216	439	160	13	642	29	367	80	4	21	46	106
Shared Lane Traffic (%)												
Lane Group Flow (vph)	216	439	160	13	642	29	367	84	0	21	152	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.08	1.08	0.99	1.07	1.07	0.99	1.04	0.96	1.04	1.09	1.00	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	0	1	1	0	1	1		1	1	
Detector Template												
Leading Detector (ft)	40	256	0	40	256	0	40	45		45	45	
Trailing Detector (ft)	-5	250	0	-5	250	0	-5	-5		-5	-5	
Detector 1 Position(ft)	-5	250	0	-5	250	0	-5	-5		-5	-5	
Detector 1 Size(ft)	45	6	20	45	6	20	45	50		50	50	
Detector 1 Type	CI+Ex	Extend	CI+Ex	CI+Ex	Extend	CI+Ex	CI+Ex	CI+Ex		CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases	5	2			6		3	8			4	
Permitted Phases	2		2	6		6	8			4		

2026 AM (MITIGATION)

Lanes, Volumes, Timings

14: Westminster Dr. & York Road (SR 0074)/York Rd. (SR 0074)

05/22/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2	2	6	6	6	3	8		4	4	
Switch Phase												
Minimum Initial (s)	3.0	10.0	10.0	10.0	10.0	10.0	3.0	3.0		3.0	3.0	
Minimum Split (s)	9.0	33.0	33.0	33.0	33.0	33.0	9.5	31.5		31.5	31.5	
Total Split (s)	13.0	81.0	81.0	68.0	68.0	68.0	29.0	59.0		30.0	30.0	
Total Split (%)	9.3%	57.9%	57.9%	48.6%	48.6%	48.6%	20.7%	42.1%		21.4%	21.4%	
Maximum Green (s)	7.0	75.0	75.0	62.0	62.0	62.0	22.5	52.5		23.5	23.5	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	3.5	3.5		3.5	3.5	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	3.0	3.0		3.0	3.0	
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.5	5.5		5.5	5.5	
Lead/Lag	Lead			Lag			Lag			Lag		
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	6.0	6.0	6.0	6.0	6.0	3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	25.0	25.0	25.0	25.0	25.0	0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	10.0	10.0	10.0	10.0	10.0	0.0	0.0		0.0	0.0	
Recall Mode	Max	C-Max	C-Max	C-Max	C-Max	C-Max	None	None		None	None	
Walk Time (s)		10.0	10.0	10.0	10.0	10.0		10.0		10.0	10.0	
Flash Dont Walk (s)		17.0	17.0	17.0	17.0	17.0		15.0		15.0	15.0	
Pedestrian Calls (#/hr)		0	0	0	0	0		0		0	0	
Act Effct Green (s)	86.4	86.4	86.4	63.0	63.0	63.0	43.1	43.1		14.1	14.1	
Actuated g/C Ratio	0.62	0.62	0.62	0.45	0.45	0.45	0.31	0.31		0.10	0.10	
v/c Ratio	0.63	0.42	0.15	0.03	0.84	0.04	1.04	0.15		0.18	0.69	
Control Delay	24.5	15.1	1.8	16.2	33.0	0.1	100.7	33.5		58.1	46.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	24.5	15.1	1.8	16.2	33.0	0.1	100.7	33.5		58.1	46.9	
LOS	C	B	A	B	C	A	F	C		E	D	
Approach Delay		15.0			31.3			88.1			48.3	
Approach LOS		B			C			F			D	
Queue Length 50th (ft)	87	199	1	6	374	0	~311	54		18	71	
Queue Length 95th (ft)	#205	316	21	m9	422	m0	#438	88		43	138	
Internal Link Dist (ft)		930			2240			450			641	
Turn Bay Length (ft)	120			75		180	130			130		
Base Capacity (vph)	343	1042	1043	373	764	752	353	700		206	330	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.63	0.42	0.15	0.03	0.84	0.04	1.04	0.12		0.10	0.46	
Intersection Summary												
Area Type:	Other											
Cycle Length:	140											
Actuated Cycle Length:	140											
Offset:	86 (61%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow											
Natural Cycle:	105											
Control Type:	Actuated-Coordinated											
Maximum v/c Ratio:	1.04											
Intersection Signal Delay:	38.5						Intersection LOS: D					

Lanes, Volumes, Timings

14: Westminster Dr. & York Road (SR 0074)/York Rd. (SR 0074)

05/22/2023

Intersection Capacity Utilization 87.9%

ICU Level of Service E

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

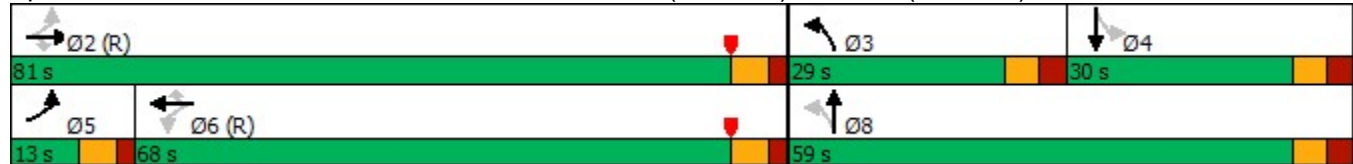
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

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

Splits and Phases: 14: Westminster Dr. & York Road (SR 0074)/York Rd. (SR 0074)



2026 PM (MITIGATION)

Lanes, Volumes, Timings

7: Army Heritage Dr. & W. Trindle Rd. (SR 0641)

05/22/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	183	512	219	119	423	70	185	207	105	137	335	126
Future Volume (vph)	183	512	219	119	423	70	185	207	105	137	335	126
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	13	14	12	13	14	12	13	12	11	14	12
Grade (%)		1%			-1%			-5%			4%	
Storage Length (ft)	90		95	110		155	140		0	125		150
Storage Lanes	1		1	1		1	1		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor								0.99		0.99		
Frt			0.850			0.850		0.950				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1652	1814	1592	1685	1815	1608	1718	1745	0	1588	1845	1470
Flt Permitted	0.245			0.271			0.243			0.327		
Satd. Flow (perm)	426	1814	1592	481	1815	1608	440	1745	0	543	1845	1470
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			154			180			25			129
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		628			1908			461			1667	
Travel Time (s)		12.2			37.2			9.0			32.5	
Confl. Peds. (#/hr)									6	6		
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	3%	2%	2%	2%	3%	2%	2%	2%	4%	2%	2%	2%
Adj. Flow (vph)	187	522	223	121	432	71	189	211	107	140	342	129
Shared Lane Traffic (%)												
Lane Group Flow (vph)	187	522	223	121	432	71	189	318	0	140	342	129
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane											Yes	
Headway Factor	1.08	1.03	0.99	1.07	1.02	0.98	1.04	1.00	1.04	1.15	1.01	1.10
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	0	1	1	0	1	1		1	1	1
Detector Template												Right
Leading Detector (ft)	35	231	0	35	231	0	35	40		40	35	20
Trailing Detector (ft)	-5	225	0	-5	225	0	-5	-10		-5	-5	0
Detector 1 Position(ft)	-5	225	0	-5	225	0	-5	-10		-5	-5	0
Detector 1 Size(ft)	40	6	20	40	6	20	40	50		45	40	20
Detector 1 Type	CI+Ex	Extend	CI+Ex	CI+Ex	Extend	CI+Ex	CI+Ex	CI+Ex		CI+Ex	CI+Ex	CI+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	pm+ov
Protected Phases	5	2	3	1	6		3	8		7	4	5
Permitted Phases	2		2	6		6	8			4		4

2026 PM (MITIGATION)

Lanes, Volumes, Timings

7: Army Heritage Dr. & W. Trindle Rd. (SR 0641)

05/22/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2	3	1	6	6	3	8		7	4	5
Switch Phase												
Minimum Initial (s)	15.0	15.0	3.0	3.0	3.0	3.0	3.0	3.0		4.0	3.0	15.0
Minimum Split (s)	21.5	25.5	9.5	9.5	25.5	25.5	9.5	31.5		10.5	31.5	21.5
Total Split (s)	15.0	43.0	14.5	11.0	39.0	39.0	14.5	32.5		13.5	31.5	15.0
Total Split (%)	15.0%	43.0%	14.5%	11.0%	39.0%	39.0%	14.5%	32.5%		13.5%	31.5%	15.0%
Maximum Green (s)	8.5	36.5	8.0	4.5	32.5	32.5	8.0	26.0		7.0	25.0	8.5
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5		2.5	2.5	2.5
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0		-1.0	-1.0	-1.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5		5.5	5.5	5.5
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	6.0	3.0	3.0	6.0	6.0	3.0	3.0		3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Time Before Reduce (s)	0.0	25.0	0.0	0.0	25.0	25.0	0.0	0.0		0.0	0.0	0.0
Time To Reduce (s)	0.0	15.0	0.0	0.0	15.0	15.0	0.0	0.0		0.0	0.0	0.0
Recall Mode	None	C-Max	None	None	C-Max	C-Max	None	None		None	None	None
Walk Time (s)		10.0			10.0	10.0		10.0			10.0	
Flash Dont Walk (s)		9.0			9.0	9.0		15.0			15.0	
Pedestrian Calls (#/hr)		0			0	0		0			0	
Act Effct Green (s)	50.3	39.0	53.5	40.8	33.9	33.9	33.1	24.1		31.1	23.1	40.6
Actuated g/C Ratio	0.50	0.39	0.54	0.41	0.34	0.34	0.33	0.24		0.31	0.23	0.41
v/c Ratio	0.52	0.74	0.24	0.43	0.70	0.11	0.73	0.72		0.56	0.80	0.19
Control Delay	17.4	30.1	6.9	33.2	53.7	7.7	38.6	41.8		30.3	50.8	4.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	17.4	30.1	6.9	33.2	53.7	7.7	38.6	41.8		30.3	50.8	4.1
LOS	B	C	A	C	D	A	D	D		C	D	A
Approach Delay		22.0			44.5			40.6			36.3	
Approach LOS		C			D			D			D	
Queue Length 50th (ft)	65	228	31	82	300	0	91	187		58	202	0
Queue Length 95th (ft)	103	411	60	m91	m317	m3	#169	291		101	300	34
Internal Link Dist (ft)		548			1828			381			1587	
Turn Bay Length (ft)	90		95	110		155	140			125		150
Base Capacity (vph)	360	707	922	279	616	664	260	489		252	479	672
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.52	0.74	0.24	0.43	0.70	0.11	0.73	0.65		0.56	0.71	0.19

Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow, Master Intersection

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.80

Intersection Signal Delay: 34.0

Intersection LOS: C

Intersection Capacity Utilization 83.8%

ICU Level of Service E

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

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

Splits and Phases: 7: Army Heritage Dr. & W. Trindle Rd. (SR 0641)

 Ø1	 Ø2 (R)	 Ø3	 Ø4
11 s	43 s	14.5 s	31.5 s
 Ø5	 Ø6 (R)	 Ø7	 Ø8
15 s	39 s	13.5 s	32.5 s

2026 PM (MITIGATION)
 HCM 2010 Signalized Intersection Capacity Analysis
 9: Middlesex Rd. & W. Trindle Rd. (SR0641)

05/22/2023

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	44	410	44	9	500	43	32	40	4	44	85	41
Future Volume (veh/h)	44	410	44	9	500	43	32	40	4	44	85	41
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q, 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
Adj Sat Flow, veh/h/ln	1800	1751	1800	1800	1765	1800	1800	1765	1800	1800	1752	1800
Adj Flow Rate, veh/h	46	427	46	9	521	45	33	42	4	46	89	43
Adj No. of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	3	2	2	2	2	2	2	2	3	3	2
Opposing Right Turn Influence	Yes			Yes			Yes			Yes		
Cap, veh/h	188	692	71	147	766	65	289	224	17	238	187	79
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
Prop Arrive On Green	0.48	0.48	0.48	0.48	0.48	0.48	0.20	0.20	0.20	0.20	0.20	0.20
Ln Grp Delay, s/veh	5.4	0.0	0.0	5.7	0.0	0.0	8.6	0.0	0.0	9.5	0.0	0.0
Ln Grp LOS	A			A			A			A		
Approach Vol, veh/h		519			575			79			178	
Approach Delay, s/veh		5.4			5.7			8.6			9.5	
Approach LOS		A			A			A			A	
Timer:		1	2	3	4	5	6	7	8			
Assigned Phs			2		4		6		8			
Case No			8.0		8.0		8.0		8.0			
Phs Duration (G+Y+Rc), s			9.2		16.3		9.2		16.3			
Change Period (Y+Rc), s			4.0		4.0		4.0		4.0			
Max Green (Gmax), s			19.0		43.0		19.0		43.0			
Max Allow Headway (MAH), s			5.3		5.1		5.1		5.0			
Max Q Clear (g_c+I1), s			3.0		7.7		4.5		8.5			
Green Ext Time (g_e), s			0.3		3.5		0.7		3.8			
Prob of Phs Call (p_c)			1.00		1.00		1.00		1.00			
Prob of Max Out (p_x)			0.00		0.00		0.01		0.00			
Left-Turn Movement Data												
Assigned Mvmt			5		7		1		3			
Mvmt Sat Flow, veh/h			437		72		295		8			
Through Movement Data												
Assigned Mvmt			2		4		6		8			
Mvmt Sat Flow, veh/h			1095		1436		915		1589			
Right-Turn Movement Data												
Assigned Mvmt			12		14		16		18			
Mvmt Sat Flow, veh/h			82		147		385		136			
Left Lane Group Data												
Assigned Mvmt		0	5	0	7	0	1	0	3			
Lane Assignment		L+T+R		L+T+R		L+T+R		L+T+R				

2026 PM (MITIGATION)
 HCM 2010 Signalized Intersection Capacity Analysis
 9: Middlesex Rd. & W. Trindle Rd. (SR0641)

05/22/2023

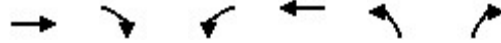
Lanes in Grp	0	1	0	1	0	1	0	1
Grp Vol (v), veh/h	0	79	0	519	0	178	0	575
Grp Sat Flow (s), veh/h/ln	0	1614	0	1654	0	1594	0	1733
Q Serve Time (g_s), s	0.0	0.0	0.0	0.0	0.0	1.1	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	1.0	0.0	5.7	0.0	2.5	0.0	6.5
Perm LT Sat Flow (s_l), veh/h/ln	0	1278	0	858	0	1381	0	935
Shared LT Sat Flow (s_sh), veh/h/ln	0	1729	0	1743	0	1729	0	1763
Perm LT Eff Green (g_p), s	0.0	5.2	0.0	12.3	0.0	5.2	0.0	12.3
Perm LT Serve Time (g_u), s	0.0	2.7	0.0	5.8	0.0	4.3	0.0	6.6
Perm LT Q Serve Time (g_ps), s	0.0	0.0	0.0	0.0	0.0	1.1	0.0	0.0
Time to First Blk (g_f), s	0.0	1.7	0.0	6.0	0.0	1.4	0.0	8.6
Serve Time pre Blk (g_fs), s	0.0	1.0	0.0	5.7	0.0	1.4	0.0	6.5
Prop LT Inside Lane (P_L)	0.00	0.42	0.00	0.09	0.00	0.26	0.00	0.02
Lane Grp Cap (c), veh/h	0	530	0	951	0	503	0	979
V/C Ratio (X)	0.00	0.15	0.00	0.55	0.00	0.35	0.00	0.59
Avail Cap (c_a), veh/h	0	1338	0	2843	0	1348	0	3043
Upstream Filter (I)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	8.5	0.0	4.9	0.0	9.0	0.0	5.1
Incr Delay (d2), s/veh	0.0	0.1	0.0	0.5	0.0	0.4	0.0	0.6
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	8.6	0.0	5.4	0.0	9.5	0.0	5.7
1st-Term Q (Q1), veh/ln	0.0	0.5	0.0	2.6	0.0	1.1	0.0	3.0
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.2
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.80	0.00	1.80	0.00	1.80	0.00	1.80
%ile Back of Q (95%), veh/ln	0.0	0.9	0.0	4.9	0.0	2.1	0.0	5.7
%ile Storage Ratio (RQ%)	0.00	0.02	0.00	0.04	0.00	0.02	0.00	0.04
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Middle Lane Group Data								
Assigned Mvmt	0	2	0	4	0	6	0	8
Lane Assignment								
Lanes in Grp	0	0	0	0	0	0	0	0
Grp Vol (v), veh/h	0	0	0	0	0	0	0	0
Grp Sat Flow (s), veh/h/ln	0	0	0	0	0	0	0	0
Q Serve Time (g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane Grp Cap (c), veh/h	0	0	0	0	0	0	0	0
V/C Ratio (X)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Avail Cap (c_a), veh/h	0	0	0	0	0	0	0	0
Upstream Filter (I)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

2026 PM (MITIGATION)
 HCM 2010 Signalized Intersection Capacity Analysis
 9: Middlesex Rd. & W. Trindle Rd. (SR0641)

05/22/2023

2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (95%), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Right Lane Group Data								
Assigned Mvmt	0	12	0	14	0	16	0	18
Lane Assignment								
Lanes in Grp	0	0	0	0	0	0	0	0
Grp Vol (v), veh/h	0	0	0	0	0	0	0	0
Grp Sat Flow (s), veh/h/ln	0	0	0	0	0	0	0	0
Q Serve Time (g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	0.00	0.05	0.00	0.09	0.00	0.24	0.00	0.08
Lane Grp Cap (c), veh/h	0	0	0	0	0	0	0	0
V/C Ratio (X)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Avail Cap (c_a), veh/h	0	0	0	0	0	0	0	0
Upstream Filter (I)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (95%), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Intersection Summary								
HCM 2010 Ctrl Delay	6.2							
HCM 2010 LOS	A							

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↘	↗
Traffic Volume (vph)	665	0	0	1078	205	674
Future Volume (vph)	665	0	0	1078	205	674
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	16	13
Grade (%)	1%			-2%	0%	
Storage Length (ft)		0	0		25	0
Storage Lanes		0	0		1	1
Taper Length (ft)			25		25	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	3336	0	0	3386	1900	1550
Flt Permitted					0.950	
Satd. Flow (perm)	3336	0	0	3386	1900	1550
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)						68
Link Speed (mph)	35			35	25	
Link Distance (ft)	251			1010	714	
Travel Time (s)	4.9			19.7	19.5	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	686	0	0	1111	211	695
Shared Lane Traffic (%)						
Lane Group Flow (vph)	686	0	0	1111	211	695
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	16	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.08	1.08	1.06	1.06	0.91	1.03
Turning Speed (mph)		9	15		15	9
Number of Detectors	1			1	1	1
Detector Template						
Leading Detector (ft)	231			256	20	40
Trailing Detector (ft)	225			250	-10	-10
Detector 1 Position(ft)	225			250	-10	-10
Detector 1 Size(ft)	6			6	30	50
Detector 1 Type	Extend			Extend	CI+Ex	CI+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0			0.0	0.0	0.0
Detector 1 Queue (s)	0.0			0.0	0.0	0.0
Detector 1 Delay (s)	0.0			0.0	0.0	0.0
Turn Type	NA			NA	Prot	Perm
Protected Phases	2			6	3	
Permitted Phases						8
Detector Phase	2			6	3	8
Switch Phase						
Minimum Initial (s)	10.0			10.0	4.0	3.0



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Minimum Split (s)	24.5			24.5	9.5	22.5
Total Split (s)	27.0			27.0	38.0	38.0
Total Split (%)	41.5%			41.5%	58.5%	58.5%
Maximum Green (s)	20.5			20.5	32.5	32.5
Yellow Time (s)	4.5			4.5	3.0	3.0
All-Red Time (s)	2.0			2.0	2.5	2.5
Lost Time Adjust (s)	-1.0			-1.0	-1.0	-1.0
Total Lost Time (s)	5.5			5.5	4.5	4.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	6.0			6.0	3.0	3.0
Minimum Gap (s)	3.0			3.0	3.0	3.0
Time Before Reduce (s)	25.0			25.0	0.0	0.0
Time To Reduce (s)	13.0			13.0	0.0	0.0
Recall Mode	C-Max			C-Max	None	None
Walk Time (s)	18.0			18.0		17.0
Flash Dont Walk (s)	0.0			0.0		0.0
Pedestrian Calls (#/hr)	0			0		0
Act Effct Green (s)	23.7			23.7	31.3	31.3
Actuated g/C Ratio	0.36			0.36	0.48	0.48
v/c Ratio	0.57			0.90	0.23	0.89
Control Delay	19.5			32.3	9.9	29.1
Queue Delay	0.0			0.0	0.0	0.0
Total Delay	19.5			32.3	9.9	29.1
LOS	B			C	A	C
Approach Delay	19.5			32.3	24.7	
Approach LOS	B			C	C	
Queue Length 50th (ft)	118			278	42	196
Queue Length 95th (ft)	170			m#376	76	#412
Internal Link Dist (ft)	171			930	634	
Turn Bay Length (ft)					25	
Base Capacity (vph)	1214			1232	979	831
Starvation Cap Reductn	0			0	0	0
Spillback Cap Reductn	0			0	0	0
Storage Cap Reductn	0			0	0	0
Reduced v/c Ratio	0.57			0.90	0.22	0.84

Intersection Summary

Area Type: Other

Cycle Length: 65

Actuated Cycle Length: 65

Offset: 60 (92%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

Natural Cycle: 65

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.90

Intersection Signal Delay: 26.5 Intersection LOS: C

Intersection Capacity Utilization 71.8% ICU Level of Service C

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Lanes, Volumes, Timings

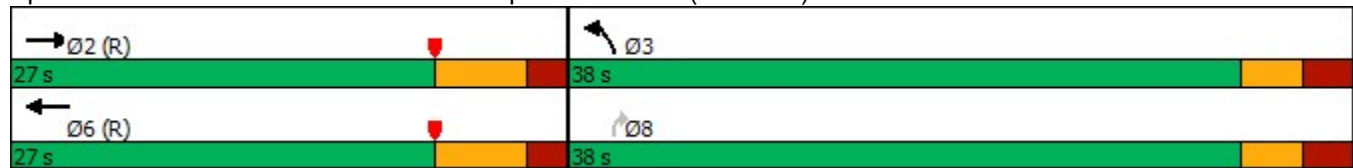
13: I-81 NB Off-Ramp & York Road (SR 0074)

05/22/2023

Queue shown is maximum after two cycles.

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

Splits and Phases: 13: I-81 NB Off-Ramp & York Road (SR 0074)



2026 SAT (MITIGATION)

Lanes, Volumes, Timings

14: Westminster Dr. & York Road (SR 0074)/York Rd. (SR 0074)

05/22/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	348	344	194	8	374	51	347	127	8	62	115	368
Future Volume (vph)	348	344	194	8	374	51	347	127	8	62	115	368
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	14	12	12	14	12	14	12	12	14	12
Grade (%)		1%			0%			-5%			2%	
Storage Length (ft)	120		0	75		180	130		0	130		0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.991			0.886	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1668	1756	1592	1676	1748	1525	1718	1912	0	1660	1651	0
Flt Permitted	0.150			0.547			0.128			0.668		
Satd. Flow (perm)	263	1756	1592	965	1748	1525	232	1912	0	1167	1651	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			202			159		4			136	
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		1010			2320			530			721	
Travel Time (s)		19.7			45.2			14.5			19.7	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	2%	2%	2%	3%	7%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	363	358	202	8	390	53	361	132	8	65	120	383
Shared Lane Traffic (%)												
Lane Group Flow (vph)	363	358	202	8	390	53	361	140	0	65	503	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.08	1.08	0.99	1.07	1.07	0.99	1.04	0.96	1.04	1.09	1.00	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	0	1	1	0	1	1		1	1	
Detector Template												
Leading Detector (ft)	40	256	0	40	256	0	40	45		45	45	
Trailing Detector (ft)	-5	250	0	-5	250	0	-5	-5		-5	-5	
Detector 1 Position(ft)	-5	250	0	-5	250	0	-5	-5		-5	-5	
Detector 1 Size(ft)	45	6	20	45	6	20	45	50		50	50	
Detector 1 Type	CI+Ex	Extend	CI+Ex	CI+Ex	Extend	CI+Ex	CI+Ex	CI+Ex		CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases	5	2			6		3	8			4	
Permitted Phases	2		2	6		6	8			4		
Detector Phase	5	2	2	6	6	6	3	8		4	4	
Switch Phase												

2026 SAT (MITIGATION)

Lanes, Volumes, Timings

14: Westminster Dr. & York Road (SR 0074)/York Rd. (SR 0074)

05/22/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	3.0	10.0	10.0	10.0	10.0	10.0	3.0	3.0		3.0	3.0	
Minimum Split (s)	9.0	33.0	33.0	33.0	33.0	33.0	9.5	31.5		31.5	31.5	
Total Split (s)	23.0	55.0	55.0	32.0	32.0	32.0	23.8	55.0		31.2	31.2	
Total Split (%)	20.9%	50.0%	50.0%	29.1%	29.1%	29.1%	21.6%	50.0%		28.4%	28.4%	
Maximum Green (s)	17.0	49.0	49.0	26.0	26.0	26.0	17.3	48.5		24.7	24.7	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	3.5	3.5		3.5	3.5	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	3.0	3.0		3.0	3.0	
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.5	5.5		5.5	5.5	
Lead/Lag	Lead			Lag		Lag	Lag	Lead		Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	6.0	6.0	6.0	6.0	6.0	3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	25.0	25.0	25.0	25.0	25.0	0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	10.0	10.0	10.0	10.0	10.0	0.0	0.0		0.0	0.0	
Recall Mode	Max	C-Max	C-Max	C-Max	C-Max	C-Max	None	None		None	None	
Walk Time (s)		10.0	10.0	10.0	10.0	10.0		10.0		10.0	10.0	
Flash Dont Walk (s)		17.0	17.0	17.0	17.0	17.0		15.0		15.0	15.0	
Pedestrian Calls (#/hr)		0	0	0	0	0		0		0	0	
Act Effct Green (s)	50.0	50.0	50.0	27.0	27.0	27.0	49.5	49.5		25.7	25.7	
Actuated g/C Ratio	0.45	0.45	0.45	0.25	0.25	0.25	0.45	0.45		0.23	0.23	
v/c Ratio	1.04	0.45	0.24	0.03	0.91	0.11	1.03	0.16		0.24	1.03	
Control Delay	84.0	23.6	5.2	27.0	55.8	1.5	86.4	18.1		37.1	79.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	84.0	23.6	5.2	27.0	55.8	1.5	86.4	18.1		37.1	79.4	
LOS	F	C	A	C	E	A	F	B		D	E	
Approach Delay	43.3		48.9				67.3		74.5			
Approach LOS	D		D				E		E			
Queue Length 50th (ft)	~222	146	6	3	183	1	~223	55		37	~301	
Queue Length 95th (ft)	#390	271	m37	m12	#428	8	#410	95		78	#511	
Internal Link Dist (ft)	930		2240				450		641			
Turn Bay Length (ft)	120			75		180	130			130		
Base Capacity (vph)	349	798	833	236	429	494	351	862		272	489	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	1.04	0.45	0.24	0.03	0.91	0.11	1.03	0.16		0.24	1.03	
Intersection Summary												
Area Type:	Other											
Cycle Length: 110												
Actuated Cycle Length: 110												
Offset: 86 (78%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow												
Natural Cycle: 115												
Control Type: Actuated-Coordinated												
Maximum v/c Ratio: 1.04												
Intersection Signal Delay: 56.5					Intersection LOS: E							
Intersection Capacity Utilization 109.2%					ICU Level of Service H							
Analysis Period (min) 15												

Lanes, Volumes, Timings

14: Westminster Dr. & York Road (SR 0074)/York Rd. (SR 0074)

05/22/2023

~ Volume exceeds capacity, queue is theoretically infinite.

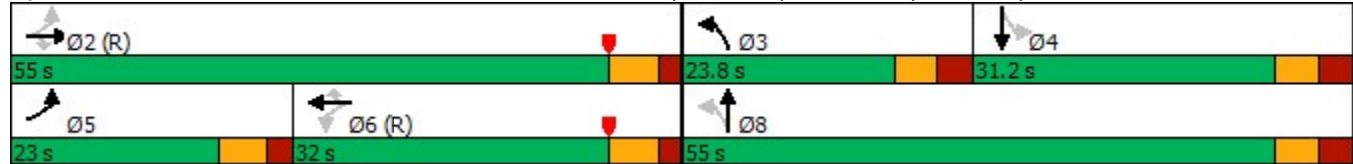
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

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

Splits and Phases: 14: Westminster Dr. & York Road (SR 0074)/York Rd. (SR 0074)



2031 AM (MITIGATION)

Lanes, Volumes, Timings

7: Army Heritage Dr. & W. Trindle Rd. (SR 0641)

05/22/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	290	334	64	50	455	111	227	398	119	103	131	73
Future Volume (vph)	290	334	64	50	455	111	227	398	119	103	131	73
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	13	14	12	13	14	12	13	12	11	14	12
Grade (%)		1%			-1%			-5%			4%	
Storage Length (ft)	90		95	110		155	140		0	125		150
Storage Lanes	1		1	1		1	1		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor								0.99				
Frt			0.850			0.850		0.966				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1636	1763	1476	1534	1833	1478	1718	1776	0	1500	1680	1282
Flt Permitted	0.138			0.470			0.621			0.131		
Satd. Flow (perm)	238	1763	1476	759	1833	1478	1123	1776	0	207	1680	1282
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			99			164			14			99
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		628			1908			461			1667	
Travel Time (s)		12.2			37.2			9.0			32.5	
Confl. Peds. (#/hr)									6	6		
Peak Hour Factor	0.90	0.90	1.00	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.92
Heavy Vehicles (%)	4%	5%	10%	12%	2%	11%	2%	2%	6%	8%	12%	17%
Adj. Flow (vph)	322	371	64	56	506	123	252	442	132	114	146	79
Shared Lane Traffic (%)												
Lane Group Flow (vph)	322	371	64	56	506	123	252	574	0	114	146	79
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane											Yes	
Headway Factor	1.08	1.03	0.99	1.07	1.02	0.98	1.04	1.00	1.04	1.15	1.01	1.10
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	0	1	1	0	1	1		1	1	1
Detector Template												Right
Leading Detector (ft)	35	231	0	35	231	0	35	40		40	35	20
Trailing Detector (ft)	-5	225	0	-5	225	0	-5	-10		-5	-5	0
Detector 1 Position(ft)	-5	225	0	-5	225	0	-5	-10		-5	-5	0
Detector 1 Size(ft)	40	6	20	40	6	20	40	50		45	40	20
Detector 1 Type	CI+Ex	Extend	CI+Ex	CI+Ex	Extend	CI+Ex	CI+Ex	CI+Ex		CI+Ex	CI+Ex	CI+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	pm+ov
Protected Phases	5	2	3	1	6		3	8		7	4	5
Permitted Phases	2		2	6		6	8			4		4

2031 AM (MITIGATION)

Lanes, Volumes, Timings

7: Army Heritage Dr. & W. Trindle Rd. (SR 0641)

05/22/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2	3	1	6	6	3	8		7	4	5
Switch Phase												
Minimum Initial (s)	15.0	15.0	3.0	3.0	3.0	3.0	3.0	3.0		4.0	3.0	15.0
Minimum Split (s)	21.5	25.5	9.5	9.5	25.5	25.5	9.5	31.5		10.5	31.5	21.5
Total Split (s)	19.0	47.0	14.0	13.0	41.0	41.0	14.0	36.5		13.5	36.0	19.0
Total Split (%)	17.3%	42.7%	12.7%	11.8%	37.3%	37.3%	12.7%	33.2%		12.3%	32.7%	17.3%
Maximum Green (s)	12.5	40.5	7.5	6.5	34.5	34.5	7.5	30.0		7.0	29.5	12.5
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5		2.5	2.5	2.5
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0		-1.0	-1.0	-1.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5		5.5	5.5	5.5
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	6.0	3.0	3.0	6.0	6.0	3.0	3.0		3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Time Before Reduce (s)	0.0	25.0	0.0	0.0	25.0	25.0	0.0	0.0		0.0	0.0	0.0
Time To Reduce (s)	0.0	15.0	0.0	0.0	15.0	15.0	0.0	0.0		0.0	0.0	0.0
Recall Mode	None	C-Max	None	None	C-Max	C-Max	None	None		None	None	None
Walk Time (s)		10.0			10.0	10.0		10.0			10.0	
Flash Dont Walk (s)		9.0			9.0	9.0		15.0			15.0	
Pedestrian Calls (#/hr)		0			0	0		0			0	
Act Effct Green (s)	54.5	44.1	58.1	42.8	35.5	35.5	39.5	31.0		38.5	30.5	49.5
Actuated g/C Ratio	0.50	0.40	0.53	0.39	0.32	0.32	0.36	0.28		0.35	0.28	0.45
v/c Ratio	1.11	0.52	0.08	0.16	0.86	0.21	0.56	1.13		0.69	0.31	0.13
Control Delay	116.3	25.0	4.1	13.6	47.5	2.7	27.9	113.8		44.4	33.8	2.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	116.3	25.0	4.1	13.6	47.5	2.7	27.9	113.8		44.4	33.8	2.7
LOS	F	C	A	B	D	A	C	F		D	C	A
Approach Delay		62.1			36.7			87.6			30.1	
Approach LOS		E			D			F			C	
Queue Length 50th (ft)	~197	171	2	17	348	3	122	~464		51	82	0
Queue Length 95th (ft)	#375	229	21	35	#522	8	167	#682		#117	139	19
Internal Link Dist (ft)		548			1828			381			1587	
Turn Bay Length (ft)	90		95	110		155	140			125		150
Base Capacity (vph)	289	707	826	349	591	588	449	510		166	465	631
Starvation Cap Reductn	0	0	0	0	0	0	0	2		0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	1.11	0.52	0.08	0.16	0.86	0.21	0.56	1.13		0.69	0.31	0.13

Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow, Master Intersection

Natural Cycle: 110

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.13

Intersection Signal Delay: 59.3

Intersection LOS: E

Lanes, Volumes, Timings

7: Army Heritage Dr. & W. Trindle Rd. (SR 0641)

05/22/2023

Intersection Capacity Utilization 96.5%

ICU Level of Service F

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 7: Army Heritage Dr. & W. Trindle Rd. (SR 0641)

 Ø1	 Ø2 (R)	 Ø3	 Ø4
13 s	47 s	14 s	36 s
 Ø5	 Ø6 (R)	 Ø7	 Ø8
19 s	41 s	13.5 s	36.5 s

2031 AM (MITIGATION)

Lanes, Volumes, Timings

14: Westminster Dr. & York Road (SR 0074)/York Rd. (SR 0074)

05/22/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	205	417	152	13	606	28	350	76	4	20	44	101
Future Volume (vph)	205	417	152	13	606	28	350	76	4	20	44	101
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	14	12	12	14	12	14	12	12	14	12
Grade (%)		1%			0%			-5%			2%	
Storage Length (ft)	120		0	75		180	130		0	130		0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						0.98						
Frt			0.850			0.850		0.993			0.895	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1620	1690	1592	1555	1698	1554	1702	1830	0	1597	1549	0
Flt Permitted	0.110			0.494			0.260			0.699		
Satd. Flow (perm)	188	1690	1592	808	1698	1519	466	1830	0	1175	1549	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			171			125		2			72	
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		1010			2320			530			721	
Travel Time (s)		19.7			45.2			14.5			19.7	
Confl. Peds. (#/hr)	1					1						
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	5%	6%	2%	10%	6%	5%	3%	7%	2%	6%	14%	8%
Adj. Flow (vph)	230	469	171	15	681	31	393	85	4	22	49	113
Shared Lane Traffic (%)												
Lane Group Flow (vph)	230	469	171	15	681	31	393	89	0	22	162	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.08	1.08	0.99	1.07	1.07	0.99	1.04	0.96	1.04	1.09	1.00	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	0	1	1	0	1	1		1	1	
Detector Template												
Leading Detector (ft)	40	256	0	40	256	0	40	45		45	45	
Trailing Detector (ft)	-5	250	0	-5	250	0	-5	-5		-5	-5	
Detector 1 Position(ft)	-5	250	0	-5	250	0	-5	-5		-5	-5	
Detector 1 Size(ft)	45	6	20	45	6	20	45	50		50	50	
Detector 1 Type	CI+Ex	Extend	CI+Ex	CI+Ex	Extend	CI+Ex	CI+Ex	CI+Ex		CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases	5	2			6		3	8			4	
Permitted Phases	2		2	6		6	8			4		

2031 AM (MITIGATION)

Lanes, Volumes, Timings

14: Westminster Dr. & York Road (SR 0074)/York Rd. (SR 0074)

05/22/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2	2	6	6	6	3	8		4	4	
Switch Phase												
Minimum Initial (s)	3.0	10.0	10.0	10.0	10.0	10.0	3.0	3.0		3.0	3.0	
Minimum Split (s)	9.0	33.0	33.0	33.0	33.0	33.0	9.5	31.5		31.5	31.5	
Total Split (s)	13.0	79.0	79.0	66.0	66.0	66.0	31.0	61.0		30.0	30.0	
Total Split (%)	9.3%	56.4%	56.4%	47.1%	47.1%	47.1%	22.1%	43.6%		21.4%	21.4%	
Maximum Green (s)	7.0	73.0	73.0	60.0	60.0	60.0	24.5	54.5		23.5	23.5	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	3.5	3.5		3.5	3.5	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	3.0	3.0		3.0	3.0	
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.5	5.5		5.5	5.5	
Lead/Lag	Lead			Lag			Lag			Lag		
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	6.0	6.0	6.0	6.0	6.0	3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	25.0	25.0	25.0	25.0	25.0	0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	10.0	10.0	10.0	10.0	10.0	0.0	0.0		0.0	0.0	
Recall Mode	Max	C-Max	C-Max	C-Max	C-Max	C-Max	None	None		None	None	
Walk Time (s)		10.0	10.0	10.0	10.0	10.0		10.0		10.0	10.0	
Flash Dont Walk (s)		17.0	17.0	17.0	17.0	17.0		15.0		15.0	15.0	
Pedestrian Calls (#/hr)		0	0	0	0	0		0		0	0	
Act Effct Green (s)	83.5	83.5	83.5	61.0	61.0	61.0	46.0	46.0		15.0	15.0	
Actuated g/C Ratio	0.60	0.60	0.60	0.44	0.44	0.44	0.33	0.33		0.11	0.11	
v/c Ratio	0.79	0.47	0.17	0.04	0.92	0.04	1.04	0.15		0.18	0.70	
Control Delay	41.8	17.0	1.9	16.7	37.3	0.1	97.4	31.5		57.0	48.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	41.8	17.0	1.9	16.7	37.3	0.1	97.4	31.5		57.0	48.6	
LOS	D	B	A	B	D	A	F	C		E	D	
Approach Delay		20.6			35.3			85.2			49.6	
Approach LOS		C			D			F			D	
Queue Length 50th (ft)	126	228	4	7	426	0	~319	56		19	80	
Queue Length 95th (ft)	#319	353	m21	m9	m#745	m0	#469	90		44	149	
Internal Link Dist (ft)		930			2240			450			641	
Turn Bay Length (ft)	120			75		180	130			130		
Base Capacity (vph)	291	1007	1018	352	739	732	378	726		205	330	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.79	0.47	0.17	0.04	0.92	0.04	1.04	0.12		0.11	0.49	
Intersection Summary												
Area Type:	Other											
Cycle Length:	140											
Actuated Cycle Length:	140											
Offset:	86 (61%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow											
Natural Cycle:	125											
Control Type:	Actuated-Coordinated											
Maximum v/c Ratio:	1.04											
Intersection Signal Delay:	41.4						Intersection LOS: D					

Lanes, Volumes, Timings

14: Westminster Dr. & York Road (SR 0074)/York Rd. (SR 0074)

05/22/2023

Intersection Capacity Utilization 92.6%

ICU Level of Service F

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

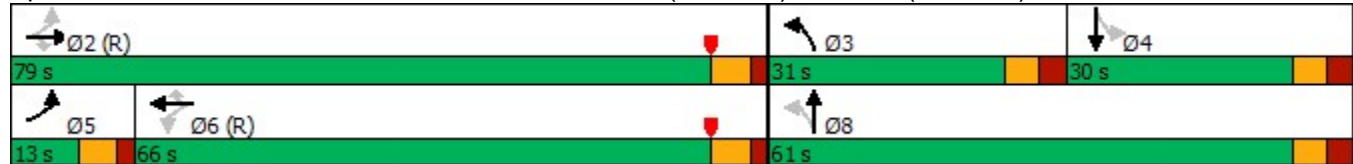
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

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

Splits and Phases: 14: Westminster Dr. & York Road (SR 0074)/York Rd. (SR 0074)



2031 PM (MITIGATION)

Lanes, Volumes, Timings

7: Army Heritage Dr. & W. Trindle Rd. (SR 0641)

05/22/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	195	545	231	127	451	74	196	221	112	145	357	135
Future Volume (vph)	195	545	231	127	451	74	196	221	112	145	357	135
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	13	14	12	13	14	12	13	12	11	14	12
Grade (%)		1%			-1%			-5%			4%	
Storage Length (ft)	90		95	110		155	140		0	125		150
Storage Lanes	1		1	1		1	1		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor								0.99		0.99		
Frt			0.850			0.850		0.950				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1652	1814	1592	1685	1815	1608	1718	1743	0	1588	1845	1470
Flt Permitted	0.249			0.256			0.215			0.255		
Satd. Flow (perm)	433	1814	1592	454	1815	1608	389	1743	0	423	1845	1470
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			114			193		21				137
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		628			1888			461			1667	
Travel Time (s)		12.2			36.8			9.0			32.5	
Confl. Peds. (#/hr)									6	6		
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	3%	2%	2%	2%	3%	2%	2%	2%	4%	2%	2%	2%
Adj. Flow (vph)	199	556	236	130	460	76	200	226	114	148	364	138
Shared Lane Traffic (%)												
Lane Group Flow (vph)	199	556	236	130	460	76	200	340	0	148	364	138
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane											Yes	
Headway Factor	1.08	1.03	0.99	1.07	1.02	0.98	1.04	1.00	1.04	1.15	1.01	1.10
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	0	1	1	0	1	1		1	1	1
Detector Template												Right
Leading Detector (ft)	35	231	0	35	231	0	35	40		40	35	20
Trailing Detector (ft)	-5	225	0	-5	225	0	-5	-10		-5	-5	0
Detector 1 Position(ft)	-5	225	0	-5	225	0	-5	-10		-5	-5	0
Detector 1 Size(ft)	40	6	20	40	6	20	40	50		45	40	20
Detector 1 Type	CI+Ex	Extend	CI+Ex	CI+Ex	Extend	CI+Ex	CI+Ex	CI+Ex		CI+Ex	CI+Ex	CI+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	pm+ov
Protected Phases	5	2	3	1	6		3	8		7	4	5
Permitted Phases	2		2	6		6	8			4		4

2031 PM (MITIGATION)

Lanes, Volumes, Timings

7: Army Heritage Dr. & W. Trindle Rd. (SR 0641)

05/22/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2	3	1	6	6	3	8		7	4	5
Switch Phase												
Minimum Initial (s)	15.0	15.0	3.0	3.0	3.0	3.0	3.0	3.0		4.0	3.0	15.0
Minimum Split (s)	21.5	25.5	9.5	9.5	25.5	25.5	9.5	31.5		10.5	31.5	21.5
Total Split (s)	19.0	55.0	16.0	12.0	48.0	48.0	16.0	47.0		16.0	47.0	19.0
Total Split (%)	14.6%	42.3%	12.3%	9.2%	36.9%	36.9%	12.3%	36.2%		12.3%	36.2%	14.6%
Maximum Green (s)	12.5	48.5	9.5	5.5	41.5	41.5	9.5	40.5		9.5	40.5	12.5
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5		2.5	2.5	2.5
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0		-1.0	-1.0	-1.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5		5.5	5.5	5.5
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	6.0	3.0	3.0	6.0	6.0	3.0	3.0		3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Time Before Reduce (s)	0.0	25.0	0.0	0.0	25.0	25.0	0.0	0.0		0.0	0.0	0.0
Time To Reduce (s)	0.0	15.0	0.0	0.0	15.0	15.0	0.0	0.0		0.0	0.0	0.0
Recall Mode	None	C-Max	None	None	C-Max	C-Max	None	None		None	None	None
Walk Time (s)		10.0			10.0	10.0		10.0			10.0	
Flash Dont Walk (s)		9.0			9.0	9.0		15.0			15.0	
Pedestrian Calls (#/hr)		0			0	0		0			0	
Act Effct Green (s)	70.6	55.5	71.5	59.5	49.5	49.5	42.5	32.0		42.5	32.0	53.5
Actuated g/C Ratio	0.54	0.43	0.55	0.46	0.38	0.38	0.33	0.25		0.33	0.25	0.41
v/c Ratio	0.52	0.72	0.25	0.43	0.67	0.10	0.85	0.76		0.64	0.80	0.20
Control Delay	21.7	38.7	9.3	22.4	40.6	0.3	61.7	53.6		40.7	59.1	3.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4		0.0	0.0	0.0
Total Delay	21.7	38.7	9.3	22.4	40.6	0.3	61.7	54.0		40.7	59.1	3.9
LOS	C	D	A	C	D	A	E	D		D	E	A
Approach Delay		28.3			32.4			56.9			43.2	
Approach LOS		C			C			E			D	
Queue Length 50th (ft)	84	392	50	52	320	0	119	252		86	289	1
Queue Length 95th (ft)	150	568	106	100	484	0	#171	334		125	371	37
Internal Link Dist (ft)		548			1808			381			1587	
Turn Bay Length (ft)	90		95	110		155	140			125		150
Base Capacity (vph)	384	774	927	301	691	732	234	570		232	588	685
Starvation Cap Reductn	0	0	0	0	0	0	0	40		0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.52	0.72	0.25	0.43	0.67	0.10	0.85	0.64		0.64	0.62	0.20

Intersection Summary

Area Type: Other

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow, Master Intersection

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.85

Intersection Signal Delay: 38.1

Intersection LOS: D

Lanes, Volumes, Timings

7: Army Heritage Dr. & W. Trindle Rd. (SR 0641)

05/22/2023

Intersection Capacity Utilization 87.3%

ICU Level of Service E

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 7: Army Heritage Dr. & W. Trindle Rd. (SR 0641)

 Ø1	 Ø2 (R)	 Ø3	 Ø4
12 s	55 s	16 s	47 s
 Ø5	 Ø6 (R)	 Ø7	 Ø8
19 s	48 s	16 s	47 s

2031 PM (MITIGATION)
 HCM 2010 Signalized Intersection Capacity Analysis
 10: Westminster Dr./Fairview St. & Army Heritage Dr.

05/22/2023

									
Movement	EBL	EBT	WBT	WBR	SBL	SBR			
Lane Configurations									
Traffic Volume (veh/h)	352	23	10	173	240	397			
Future Volume (veh/h)	352	23	10	173	240	397			
Number	5	2	6	16	7	14			
Initial Q, veh	0	0	0	0	0	0			
Ped-Bike Adj (A_pbT)	1.00			1.00	1.00	1.00			
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1844	1844	1808	1844	1756	1826			
Adj Flow Rate, veh/h	374	24	11	184	255	422			
Adj No. of Lanes	1	1	1	0	1	1			
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94			
Percent Heavy Veh, %	2	2	2	2	2	2			
Opposing Right Turn Influence	Yes			No					
Cap, veh/h	702	1085	34	566	513	476			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00			
Prop Arrive On Green	0.14	0.59	0.39	0.38	0.31	0.31			
Ln Grp Delay, s/veh	16.1	8.6	0.0	23.2	29.0	45.5			
Ln Grp LOS	B	A		C	C	D			
Approach Vol, veh/h		398	195		677				
Approach Delay, s/veh		15.7	23.2		39.2				
Approach LOS		B	C		D				
Timer:		1	2	3	4	5	6	7	8
Assigned Phs			2		4	5	6		
Case No			4.0		9.0	1.2	8.0		
Phs Duration (G+Y+Rc), s			64.3		35.7	20.0	44.3		
Change Period (Y+Rc), s			6.5		6.0	6.5	6.5		
Max Green (Gmax), s			53.5		34.0	13.5	33.5		
Max Allow Headway (MAH), s			4.0		3.9	4.1	4.3		
Max Q Clear (g_c+I1), s			3.0		28.4	14.4	10.9		
Green Ext Time (g_e), s			0.1		1.3	0.0	0.7		
Prob of Phs Call (p_c)			1.00		1.00	1.00	1.00		
Prob of Max Out (p_x)			0.00		0.58	0.00	0.00		
Left-Turn Movement Data									
Assigned Mvmt					7	5	1		
Mvmt Sat Flow, veh/h					1672	1757	0		
Through Movement Data									
Assigned Mvmt			2		4		6		
Mvmt Sat Flow, veh/h			1844		0		87		
Right-Turn Movement Data									
Assigned Mvmt			12		14		16		
Mvmt Sat Flow, veh/h			0		1552		1459		
Left Lane Group Data									
Assigned Mvmt		0	0	0	7	5	1	0	0
Lane Assignment		(Pr/Pm)							

2031 PM (MITIGATION)
 HCM 2010 Signalized Intersection Capacity Analysis
 10: Westminster Dr./Fairview St. & Army Heritage Dr.

05/22/2023

Lanes in Grp	0	0	0	1	1	0	0	0
Grp Vol (v), veh/h	0	0	0	255	374	0	0	0
Grp Sat Flow (s), veh/h/ln	0	0	0	1672	1757	0	0	0
Q Serve Time (g_s), s	0.0	0.0	0.0	12.5	11.9	0.0	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	0.0	0.0	12.5	11.9	0.0	0.0	0.0
Perm LT Sat Flow (s_l), veh/h/ln	0	0	0	1672	1235	0	0	0
Shared LT Sat Flow (s_sh), veh/h/ln	0	0	0	0	0	0	0	0
Perm LT Eff Green (g_p), s	0.0	0.0	0.0	0.0	41.3	0.0	0.0	0.0
Perm LT Serve Time (g_u), s	0.0	0.0	0.0	0.0	30.4	0.0	0.0	0.0
Perm LT Q Serve Time (g_ps), s	0.0	0.0	0.0	0.0	4.8	0.0	0.0	0.0
Time to First Blk (g_f), s	0.0	0.0	0.0	0.0	0.0	38.8	0.0	0.0
Serve Time pre Blk (g_fs), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop LT Inside Lane (P_L)	0.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00
Lane Grp Cap (c), veh/h	0	0	0	513	702	0	0	0
V/C Ratio (X)	0.00	0.00	0.00	0.50	0.53	0.00	0.00	0.00
Avail Cap (c_a), veh/h	0	0	0	585	702	0	0	0
Upstream Filter (I)	0.00	0.00	0.00	0.81	1.00	0.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	0.0	0.0	28.4	13.3	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.6	2.9	0.0	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	0.0	0.0	29.0	16.1	0.0	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	5.7	5.7	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.1	0.6	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	0.00	0.00	1.61	1.65	1.00	0.00	0.00
%ile Back of Q (95%), veh/ln	0.0	0.0	0.0	9.4	10.4	0.0	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.00	0.00	0.64	0.22	0.00	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Middle Lane Group Data								
Assigned Mvmt	0	2	0	4	0	6	0	0
Lane Assignment	T							
Lanes in Grp	0	1	0	0	0	0	0	0
Grp Vol (v), veh/h	0	24	0	0	0	0	0	0
Grp Sat Flow (s), veh/h/ln	0	1844	0	0	0	0	0	0
Q Serve Time (g_s), s	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0
Lane Grp Cap (c), veh/h	0	1085	0	0	0	0	0	0
V/C Ratio (X)	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00
Avail Cap (c_a), veh/h	0	1085	0	0	0	0	0	0
Upstream Filter (I)	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	8.6	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	8.6	0.0	0.0	0.0	0.0	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0

2031 PM (MITIGATION)
 HCM 2010 Signalized Intersection Capacity Analysis
 10: Westminster Dr./Fairview St. & Army Heritage Dr.

05/22/2023

2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.80	0.00	1.00	0.00	1.00	0.00	0.00
%ile Back of Q (95%), veh/ln	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Right Lane Group Data								
Assigned Mvmt	0	12	0	14	0	16	0	0
Lane Assignment				R	T+R			
Lanes in Grp	0	0	0	1	0	1	0	0
Grp Vol (v), veh/h	0	0	0	422	0	195	0	0
Grp Sat Flow (s), veh/h/ln	0	0	0	1552	0	1546	0	0
Q Serve Time (g_s), s	0.0	0.0	0.0	25.9	0.0	8.9	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	0.0	0.0	25.9	0.0	8.9	0.0	0.0
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	0.00	0.00	0.00	1.00	0.00	0.94	0.00	0.00
Lane Grp Cap (c), veh/h	0	0	0	476	0	600	0	0
V/C Ratio (X)	0.00	0.00	0.00	0.89	0.00	0.32	0.00	0.00
Avail Cap (c_a), veh/h	0	0	0	543	0	600	0	0
Upstream Filter (I)	0.00	0.00	0.00	0.81	0.00	1.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	0.0	0.0	33.0	0.0	21.8	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	12.5	0.0	1.4	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	0.0	0.0	45.5	0.0	23.2	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	19.7	0.0	3.8	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	1.6	0.0	0.2	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.32	0.00	1.80	0.00	0.00
%ile Back of Q (95%), veh/ln	0.0	0.0	0.0	28.2	0.0	7.2	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.00	0.00	1.93	0.00	0.25	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Intersection Summary								
HCM 2010 Ctrl Delay	29.4							
HCM 2010 LOS	C							

2031 PM (MITIGATION)
 HCM 2010 Signalized Intersection Capacity Analysis
 9: Middlesex Rd. & W. Trindle Rd. (SR0641)

05/22/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	45	436	47	10	530	45	34	42	4	47	90	42
Future Volume (veh/h)	45	436	47	10	530	45	34	42	4	47	90	42
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q, 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
Adj Sat Flow, veh/h/ln	1800	1751	1800	1800	1765	1800	1800	1765	1800	1800	1752	1800
Adj Flow Rate, veh/h	47	454	49	10	552	47	35	44	4	49	94	44
Adj No. of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	3	2	2	2	2	2	2	2	3	3	2
Opposing Right Turn Influence	Yes			Yes			Yes			Yes		
Cap, veh/h	179	715	73	140	790	66	280	227	16	230	190	77
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
Prop Arrive On Green	0.50	0.50	0.50	0.50	0.50	0.50	0.21	0.21	0.21	0.21	0.21	0.21
Ln Grp Delay, s/veh	5.5	0.0	0.0	5.8	0.0	0.0	9.1	0.0	0.0	10.0	0.0	0.0
Ln Grp LOS	A			A			A			B		
Approach Vol, veh/h		550			609			83			187	
Approach Delay, s/veh		5.5			5.8			9.1			10.0	
Approach LOS		A			A			A			B	
Timer:		1	2	3	4	5	6	7	8			
Assigned Phs			2		4		6		8			
Case No			8.0		8.0		8.0		8.0			
Phs Duration (G+Y+Rc), s			9.5		17.4		9.5		17.4			
Change Period (Y+Rc), s			4.0		4.0		4.0		4.0			
Max Green (Gmax), s			19.0		43.0		19.0		43.0			
Max Allow Headway (MAH), s			5.3		5.1		5.1		5.0			
Max Q Clear (g_c+I1), s			3.1		8.3		4.8		9.3			
Green Ext Time (g_e), s			0.3		3.8		0.8		4.1			
Prob of Phs Call (p_c)			1.00		1.00		1.00		1.00			
Prob of Max Out (p_x)			0.00		0.00		0.01		0.00			
Left-Turn Movement Data												
Assigned Mvmt			5		7		1		3			
Mvmt Sat Flow, veh/h			438		69		298		9			
Through Movement Data												
Assigned Mvmt			2		4		6		8			
Mvmt Sat Flow, veh/h			1100		1438		921		1590			
Right-Turn Movement Data												
Assigned Mvmt			12		14		16		18			
Mvmt Sat Flow, veh/h			78		147		375		134			
Left Lane Group Data												
Assigned Mvmt		0	5	0	7	0	1	0	3			
Lane Assignment		L+T+R		L+T+R		L+T+R		L+T+R				

2031 PM (MITIGATION)
 HCM 2010 Signalized Intersection Capacity Analysis
 9: Middlesex Rd. & W. Trindle Rd. (SR0641)

05/22/2023

Lanes in Grp	0	1	0	1	0	1	0	1
Grp Vol (v), veh/h	0	83	0	550	0	187	0	609
Grp Sat Flow (s), veh/h/ln	0	1617	0	1655	0	1594	0	1733
Q Serve Time (g_s), s	0.0	0.0	0.0	0.0	0.0	1.3	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	1.1	0.0	6.3	0.0	2.8	0.0	7.3
Perm LT Sat Flow (s_l), veh/h/ln	0	1271	0	833	0	1379	0	910
Shared LT Sat Flow (s_sh), veh/h/ln	0	1728	0	1743	0	1729	0	1763
Perm LT Eff Green (g_p), s	0.0	5.5	0.0	13.4	0.0	5.5	0.0	13.4
Perm LT Serve Time (g_u), s	0.0	2.8	0.0	6.1	0.0	4.5	0.0	7.0
Perm LT Q Serve Time (g_ps), s	0.0	0.0	0.0	0.0	0.0	1.3	0.0	0.0
Time to First Blk (g_f), s	0.0	1.8	0.0	6.6	0.0	1.5	0.0	9.3
Serve Time pre Blk (g_fs), s	0.0	1.1	0.0	6.3	0.0	1.5	0.0	7.3
Prop LT Inside Lane (P_L)	0.00	0.42	0.00	0.09	0.00	0.26	0.00	0.02
Lane Grp Cap (c), veh/h	0	523	0	967	0	497	0	997
V/C Ratio (X)	0.00	0.16	0.00	0.57	0.00	0.38	0.00	0.61
Avail Cap (c_a), veh/h	0	1268	0	2695	0	1278	0	2883
Upstream Filter (I)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	8.9	0.0	5.0	0.0	9.6	0.0	5.2
Incr Delay (d2), s/veh	0.0	0.1	0.0	0.5	0.0	0.5	0.0	0.6
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	9.1	0.0	5.5	0.0	10.0	0.0	5.8
1st-Term Q (Q1), veh/ln	0.0	0.5	0.0	2.9	0.0	1.2	0.0	3.4
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.2
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.80	0.00	1.80	0.00	1.80	0.00	1.80
%ile Back of Q (95%), veh/ln	0.0	0.9	0.0	5.5	0.0	2.4	0.0	6.4
%ile Storage Ratio (RQ%)	0.00	0.02	0.00	0.04	0.00	0.02	0.00	0.05
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Middle Lane Group Data								
Assigned Mvmt	0	2	0	4	0	6	0	8
Lane Assignment								
Lanes in Grp	0	0	0	0	0	0	0	0
Grp Vol (v), veh/h	0	0	0	0	0	0	0	0
Grp Sat Flow (s), veh/h/ln	0	0	0	0	0	0	0	0
Q Serve Time (g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane Grp Cap (c), veh/h	0	0	0	0	0	0	0	0
V/C Ratio (X)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Avail Cap (c_a), veh/h	0	0	0	0	0	0	0	0
Upstream Filter (I)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

2031 PM (MITIGATION)
 HCM 2010 Signalized Intersection Capacity Analysis
 9: Middlesex Rd. & W. Trindle Rd. (SR0641)

05/22/2023

2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (95%), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Right Lane Group Data								
Assigned Mvmt	0	12	0	14	0	16	0	18
Lane Assignment								
Lanes in Grp	0	0	0	0	0	0	0	0
Grp Vol (v), veh/h	0	0	0	0	0	0	0	0
Grp Sat Flow (s), veh/h/ln	0	0	0	0	0	0	0	0
Q Serve Time (g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	0.00	0.05	0.00	0.09	0.00	0.24	0.00	0.08
Lane Grp Cap (c), veh/h	0	0	0	0	0	0	0	0
V/C Ratio (X)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Avail Cap (c_a), veh/h	0	0	0	0	0	0	0	0
Upstream Filter (I)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (95%), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Intersection Summary								
HCM 2010 Ctrl Delay	6.5							
HCM 2010 LOS	A							

2031 PM (MITIGATION)

Lanes, Volumes, Timings

14: Westminster Dr. & York Road (SR 0074)/York Rd. (SR 0074)

05/22/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	273	688	423	11	491	52	265	149	20	64	226	292
Future Volume (vph)	273	688	423	11	491	52	265	149	20	64	226	292
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	14	12	12	14	12	14	12	12	14	12
Grade (%)		1%			0%			-5%			2%	
Storage Length (ft)	120		0	75		180	130		0	130		0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						0.98		1.00		1.00		
Frt			0.850			0.850		0.982			0.916	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1636	1739	1592	1676	1765	1554	1718	1890	0	1660	1707	0
Flt Permitted	0.091			0.179			0.094			0.645		
Satd. Flow (perm)	157	1739	1592	316	1765	1520	170	1890	0	1125	1707	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			348			134		7			50	
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		1010			2320			530			721	
Travel Time (s)		19.7			45.2			14.5			19.7	
Confl. Peds. (#/hr)						1			1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	4%	3%	2%	2%	2%	5%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	287	724	445	12	517	55	279	157	21	67	238	307
Shared Lane Traffic (%)												
Lane Group Flow (vph)	287	724	445	12	517	55	279	178	0	67	545	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.08	1.08	0.99	1.07	1.07	0.99	1.04	0.96	1.04	1.09	1.00	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	0	1	1	0	1	1		1	1	
Detector Template												
Leading Detector (ft)	40	256	0	40	256	0	40	45		45	45	
Trailing Detector (ft)	-5	250	0	-5	250	0	-5	-5		-5	-5	
Detector 1 Position(ft)	-5	250	0	-5	250	0	-5	-5		-5	-5	
Detector 1 Size(ft)	45	6	20	45	6	20	45	50		50	50	
Detector 1 Type	CI+Ex	Extend	CI+Ex	CI+Ex	Extend	CI+Ex	CI+Ex	CI+Ex		CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases	5	2			6		3	8			4	
Permitted Phases	2		2	6		6	8			4		

2031 PM (MITIGATION)

Lanes, Volumes, Timings

14: Westminster Dr. & York Road (SR 0074)/York Rd. (SR 0074)

05/22/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2	2	6	6	6	3	8		4	4	
Switch Phase												
Minimum Initial (s)	3.0	10.0	10.0	10.0	10.0	10.0	3.0	3.0		3.0	3.0	
Minimum Split (s)	9.0	33.0	33.0	33.0	33.0	33.0	9.5	31.5		31.5	31.5	
Total Split (s)	21.0	65.0	65.0	44.0	44.0	44.0	22.4	65.0		42.6	42.6	
Total Split (%)	16.2%	50.0%	50.0%	33.8%	33.8%	33.8%	17.2%	50.0%		32.8%	32.8%	
Maximum Green (s)	15.0	59.0	59.0	38.0	38.0	38.0	15.9	58.5		36.1	36.1	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	3.5	3.5		3.5	3.5	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	3.0	3.0		3.0	3.0	
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.5	5.5		5.5	5.5	
Lead/Lag	Lead			Lag			Lag	Lag		Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	6.0	6.0	6.0	6.0	6.0	3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	25.0	25.0	25.0	25.0	25.0	0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	10.0	10.0	10.0	10.0	10.0	0.0	0.0		0.0	0.0	
Recall Mode	Max	C-Max	C-Max	C-Max	C-Max	C-Max	None	None		None	None	
Walk Time (s)		10.0	10.0	10.0	10.0	10.0		10.0		10.0	10.0	
Flash Dont Walk (s)		17.0	17.0	17.0	17.0	17.0		15.0		15.0	15.0	
Pedestrian Calls (#/hr)		0	0	0	0	0		0		0	0	
Act Effct Green (s)	60.0	60.0	60.0	39.0	39.0	39.0	59.5	59.5		37.1	37.1	
Actuated g/C Ratio	0.46	0.46	0.46	0.30	0.30	0.30	0.46	0.46		0.29	0.29	
v/c Ratio	1.13	0.90	0.48	0.13	0.98	0.10	1.00	0.21		0.21	1.04	
Control Delay	121.6	45.7	7.9	39.1	70.2	2.2	90.4	21.0		37.5	92.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	121.6	45.7	7.9	39.1	70.2	2.2	90.4	21.0		37.5	92.3	
LOS	F	D	A	D	E	A	F	C		D	F	
Approach Delay	49.1		63.1				63.4		86.3			
Approach LOS	D		E				E		F			
Queue Length 50th (ft)	~233	613	58	7	316	0	188	84		43	~465	
Queue Length 95th (ft)	m#331	m693	m86	m13	#649	m6	#377	133		84	#691	
Internal Link Dist (ft)	930		2240				450		641			
Turn Bay Length (ft)	120			75	180		130			130		
Base Capacity (vph)	254	802	922	94	529	549	279	868		321	522	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	1.13	0.90	0.48	0.13	0.98	0.10	1.00	0.21		0.21	1.04	
Intersection Summary												
Area Type:	Other											
Cycle Length: 130												
Actuated Cycle Length: 130												
Offset: 25 (19%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow												
Natural Cycle: 105												
Control Type: Actuated-Coordinated												
Maximum v/c Ratio: 1.13												
Intersection Signal Delay: 61.2												
Intersection LOS: E												

Lanes, Volumes, Timings

14: Westminster Dr. & York Road (SR 0074)/York Rd. (SR 0074)

05/22/2023

Intersection Capacity Utilization 111.0%

ICU Level of Service H

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

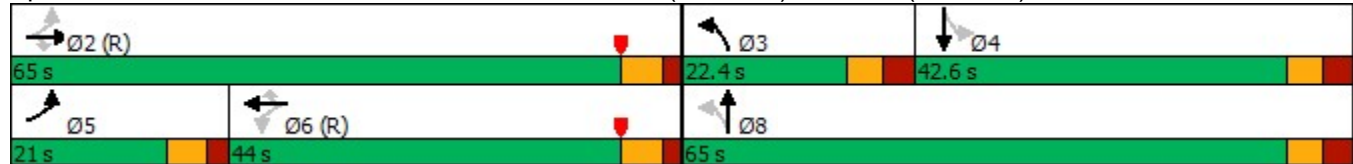
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

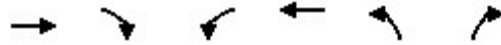
Queue shown is maximum after two cycles.

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

Splits and Phases: 14: Westminster Dr. & York Road (SR 0074)/York Rd. (SR 0074)



	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↘	↗
Traffic Volume (vph)	710	0	0	1151	219	717
Future Volume (vph)	710	0	0	1151	219	717
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	16	13
Grade (%)	1%			-2%	0%	
Storage Length (ft)		0	0		25	0
Storage Lanes		0	0		1	1
Taper Length (ft)			25		25	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	3336	0	0	3386	1900	1550
Flt Permitted					0.950	
Satd. Flow (perm)	3336	0	0	3386	1900	1550
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)						91
Link Speed (mph)	35			35	25	
Link Distance (ft)	251			1010	711	
Travel Time (s)	4.9			19.7	19.4	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	732	0	0	1187	226	739
Shared Lane Traffic (%)						
Lane Group Flow (vph)	732	0	0	1187	226	739
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	16	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.08	1.08	1.06	1.06	0.91	1.03
Turning Speed (mph)		9	15		15	9
Number of Detectors	1			1	1	1
Detector Template						
Leading Detector (ft)	231			256	20	40
Trailing Detector (ft)	225			250	-10	-10
Detector 1 Position(ft)	225			250	-10	-10
Detector 1 Size(ft)	6			6	30	50
Detector 1 Type	Extend			Extend	CI+Ex	CI+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0			0.0	0.0	0.0
Detector 1 Queue (s)	0.0			0.0	0.0	0.0
Detector 1 Delay (s)	0.0			0.0	0.0	0.0
Turn Type	NA			NA	Prot	Perm
Protected Phases	2			6	3	
Permitted Phases						8
Detector Phase	2			6	3	8
Switch Phase						
Minimum Initial (s)	10.0			10.0	4.0	3.0



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Minimum Split (s)	24.5			24.5	9.5	22.5
Total Split (s)	31.0			31.0	34.0	34.0
Total Split (%)	47.7%			47.7%	52.3%	52.3%
Maximum Green (s)	24.5			24.5	28.5	28.5
Yellow Time (s)	4.5			4.5	3.0	3.0
All-Red Time (s)	2.0			2.0	2.5	2.5
Lost Time Adjust (s)	-1.0			-1.0	-1.0	-1.0
Total Lost Time (s)	5.5			5.5	4.5	4.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	6.0			6.0	3.0	3.0
Minimum Gap (s)	3.0			3.0	3.0	3.0
Time Before Reduce (s)	25.0			25.0	0.0	0.0
Time To Reduce (s)	13.0			13.0	0.0	0.0
Recall Mode	C-Max			C-Max	None	None
Walk Time (s)	18.0			18.0		17.0
Flash Dont Walk (s)	0.0			0.0		0.0
Pedestrian Calls (#/hr)	0			0		0
Act Effct Green (s)	25.5			25.5	29.5	29.5
Actuated g/C Ratio	0.39			0.39	0.45	0.45
v/c Ratio	0.56			0.89	0.26	0.98
Control Delay	17.4			27.2	12.0	47.1
Queue Delay	0.0			0.0	0.0	0.0
Total Delay	17.4			27.2	12.0	47.1
LOS	B			C	B	D
Approach Delay	17.4			27.2	38.9	
Approach LOS	B			C	D	
Queue Length 50th (ft)	114			276	53	247
Queue Length 95th (ft)	164			m283	94	#482
Internal Link Dist (ft)	171			930	631	
Turn Bay Length (ft)					25	
Base Capacity (vph)	1308			1328	862	753
Starvation Cap Reductn	0			0	0	0
Spillback Cap Reductn	0			0	0	0
Storage Cap Reductn	0			0	0	0
Reduced v/c Ratio	0.56			0.89	0.26	0.98

Intersection Summary

Area Type: Other

Cycle Length: 65

Actuated Cycle Length: 65

Offset: 60 (92%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

Natural Cycle: 75

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.98

Intersection Signal Delay: 28.6 Intersection LOS: C

Intersection Capacity Utilization 75.9% ICU Level of Service D

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Lanes, Volumes, Timings

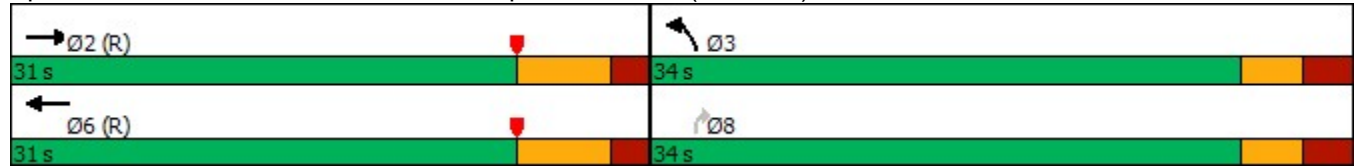
13: I-81 NB Off-Ramp & York Road (SR 0074)

05/22/2023

Queue shown is maximum after two cycles.

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

Splits and Phases: 13: I-81 NB Off-Ramp & York Road (SR 0074)



2031 SAT (MITIGATION)

Lanes, Volumes, Timings

14: Westminster Dr. & York Road (SR 0074)/York Rd. (SR 0074)

05/22/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	373	365	208	9	397	54	372	136	9	67	123	394
Future Volume (vph)	373	365	208	9	397	54	372	136	9	67	123	394
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	14	12	12	14	12	14	12	12	14	12
Grade (%)		1%			0%			-5%			2%	
Storage Length (ft)	120		0	75		180	130		0	130		0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						0.98		1.00		1.00		
Frt			0.850			0.850		0.991			0.886	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1636	1739	1592	1676	1765	1554	1718	1910	0	1660	1651	0
Flt Permitted	0.125			0.534			0.134			0.660		
Satd. Flow (perm)	215	1739	1592	942	1765	1520	242	1910	0	1151	1651	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			219			159		4			135	
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		1010			2320			530			721	
Travel Time (s)		19.7			45.2			14.5			19.7	
Confl. Peds. (#/hr)						1			1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	4%	3%	2%	2%	2%	5%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	393	384	219	9	418	57	392	143	9	71	129	415
Shared Lane Traffic (%)												
Lane Group Flow (vph)	393	384	219	9	418	57	392	152	0	71	544	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.08	1.08	0.99	1.07	1.07	0.99	1.04	0.96	1.04	1.09	1.00	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	0	1	1	0	1	1		1	1	
Detector Template												
Leading Detector (ft)	40	256	0	40	256	0	40	45		45	45	
Trailing Detector (ft)	-5	250	0	-5	250	0	-5	-5		-5	-5	
Detector 1 Position(ft)	-5	250	0	-5	250	0	-5	-5		-5	-5	
Detector 1 Size(ft)	45	6	20	45	6	20	45	50		50	50	
Detector 1 Type	CI+Ex	Extend	CI+Ex	CI+Ex	Extend	CI+Ex	CI+Ex	CI+Ex		CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases	5	2			6		3	8			4	
Permitted Phases	2		2	6		6	8			4		

2031 SAT (MITIGATION)

Lanes, Volumes, Timings

14: Westminster Dr. & York Road (SR 0074)/York Rd. (SR 0074)

05/22/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2	2	6	6	6	3	8		4	4	
Switch Phase												
Minimum Initial (s)	3.0	10.0	10.0	10.0	10.0	10.0	3.0	3.0		3.0	3.0	
Minimum Split (s)	9.0	33.0	33.0	33.0	33.0	33.0	9.5	31.5		31.5	31.5	
Total Split (s)	24.0	56.0	56.0	32.0	32.0	32.0	24.1	54.0		29.9	29.9	
Total Split (%)	21.8%	50.9%	50.9%	29.1%	29.1%	29.1%	21.9%	49.1%		27.2%	27.2%	
Maximum Green (s)	18.0	50.0	50.0	26.0	26.0	26.0	17.6	47.5		23.4	23.4	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	3.5	3.5		3.5	3.5	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	3.0	3.0		3.0	3.0	
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.5	5.5		5.5	5.5	
Lead/Lag	Lead			Lag			Lag			Lag		
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	6.0	6.0	6.0	6.0	6.0	3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	25.0	25.0	25.0	25.0	25.0	0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	10.0	10.0	10.0	10.0	10.0	0.0	0.0		0.0	0.0	
Recall Mode	Max	C-Max	C-Max	C-Max	C-Max	C-Max	None	None		None	None	
Walk Time (s)		10.0	10.0	10.0	10.0	10.0		10.0		10.0	10.0	
Flash Dont Walk (s)		17.0	17.0	17.0	17.0	17.0		15.0		15.0	15.0	
Pedestrian Calls (#/hr)		0	0	0	0	0		0		0	0	
Act Effct Green (s)	51.0	51.0	51.0	27.0	27.0	27.0	48.5	48.5		24.4	24.4	
Actuated g/C Ratio	0.46	0.46	0.46	0.25	0.25	0.25	0.44	0.44		0.22	0.22	
v/c Ratio	1.14	0.48	0.26	0.04	0.97	0.12	1.10	0.18		0.28	1.15	
Control Delay	116.9	23.8	5.1	30.7	67.3	1.9	107.9	18.9		39.1	121.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	116.9	23.8	5.1	30.7	67.3	1.9	107.9	18.9		39.1	121.6	
LOS	F	C	A	C	E	A	F	B		D	F	
Approach Delay		56.4			58.9			83.0			112.1	
Approach LOS		E			E			F			F	
Queue Length 50th (ft)	~282	156	5	4	186	1	~266	62		42	~376	
Queue Length 95th (ft)	#454	301	39	m13	#475	9	#458	104		85	#590	
Internal Link Dist (ft)		930			2240			450			641	
Turn Bay Length (ft)	120			75		180	130			130		
Base Capacity (vph)	345	806	855	231	433	493	356	844		255	471	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	1.14	0.48	0.26	0.04	0.97	0.12	1.10	0.18		0.28	1.15	
Intersection Summary												
Area Type:	Other											
Cycle Length:	110											
Actuated Cycle Length:	110											
Offset:	86 (78%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow											
Natural Cycle:	125											
Control Type:	Actuated-Coordinated											
Maximum v/c Ratio:	1.15											
Intersection Signal Delay:	75.3						Intersection LOS: E					

Lanes, Volumes, Timings

14: Westminster Dr. & York Road (SR 0074)/York Rd. (SR 0074)

05/22/2023

Intersection Capacity Utilization 116.0%

ICU Level of Service H

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

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

Splits and Phases: 14: Westminster Dr. & York Road (SR 0074)/York Rd. (SR 0074)

