



Engineers
Planners
Surveyors
Landscape Architects
Environmental Scientists

400 Columbus Avenue, Suite 180E
Valhalla, NY 10595
T: 914.347.7500
F: 914.347.7266
www.maserconsulting.com

September 7, 2017

VIA EMAIL

Mr. Lee Zimmer, P.E.
Regional Permits & Signals Manager
New York Department of Transportation
4 Burnett Boulevard
Poughkeepsie, NY 12603

Re: Bayside Apartments
SEQR #: 10-185
Route 9W, Town of Marlborough
MC Project No. 05000787A

Dear Mr. Zimmer:

The following items are in response to the letter from you dated August 24, 2017. The items are numbered according to your review comments.

1. In general, there are problems with the traffic analysis. Based on the attached HCM/Synchro evaluation, there seems to be some discrepancies. NYSDOT recommends that no decision be made until an analysis can be completed without the errors contained in the more detailed comment section attached with this cover letter.

Response: The HCM/Synchro analysis has been revised to correct the discrepancies identified in the detailed comments. The following items provide detailed information in response to each of the detailed comments contained in your letter. In addition, it should be noted that the Dockside Development which was proposed to be accessed via Dock Road and was included in our original analysis as Other Development traffic is no longer proposed. Therefore, the revised analysis contained herein no longer includes traffic for the formerly proposed Dockside Development.



2. Given the high volume of turning traffic, it is unlikely that the Young Avenue intersection would function with concurrent phasing and should be changed to a split-phase configuration.

Response: Comment noted. The Young Avenue intersection has now been analyzed with a split-phase configuration under the Build With Improvements condition and the results are summarized in Table No. 2.

General Permit Comments

1. Pedestrian infrastructure will be required on west side of Route 9W.

Response: There is an existing sidewalk along the west side of Route 9W between Young Avenue and the Marlborough Middle School driveway. As shown on the site plan (enclosed), this sidewalk will be extended north along the site frontage to the Purdy Avenue intersection and will include a signalized pedestrian crossing of the proposed driveway. Further details will be provided as part of detailed design plans for the intersection modification.

2. Sidewalk must comply with current ADA requirements. The values shown on the table "Critical Elements for the Design, Layout and Acceptance of Pedestrian Facilities" shall be used to ensure that pedestrian facilities in the public right of way are ADA compliant. Please refer to engineering directive ED15-004. The applicant will need to provide inspection services as indicated.

Engineering Directive ED15-004 - Design, Construction and Inspection of Pedestrian Facilities in the Public Right of Way

The values shown on the table "Critical Elements for the Design, Layout and Acceptance of Pedestrian Facilities" shall be used to ensure that pedestrian facilities in the public right of way are ADA compliant. Please refer to engineering directive ED15-004. When submitting proposed permit projects for NYSDOT review, the applicant's engineer will need to include a letter or statement within the transmittal letter that the submitted design is compliant with ED15-004 and all other applicable codes, standards, and specifications. The applicant will also need to provide inspection services as indicated. In particular, the applicant's engineer will perform the required pre-pour concrete form inspection, completed construction inspection, and submit a signed, sealed document confirming compliance with ED15-004 and all other applicable codes, standards, and specifications. In instances where nonstandard features cannot be avoided a justification form will need



to be completed under the process promulgated under the Highway Design Manual Chapter 2 (Refer to Exhibit 2- 15A).

Response: Comment noted. All sidewalks will comply with ADA requirements.

3. Traffic Signal will require significant modifications. Plans will have to be submitted during Highway Work Permit Process.

Response: Comment noted. Detailed traffic signal plans will be prepared for the proposed modifications as part of the Highway Work Permit process.

4. Detailed comments will follow more advanced submissions.

Response: Comment noted.

5. A Highway Work Permit will be required.

Response: Comment noted.

6. A Drainage report may be required, depending on the amount of widening in the Highway Right of Way.

Response: Comment noted. The need for a Drainage Report will be determined as part of the Highway Work Permit Application, however no widening within the NYSDOT Right of Way is currently proposed.

7. A land donation to the State of New York may be required to accommodate widening.

Response: No widening of Route 9W is currently proposed and therefore a land donation is not anticipated to be required.



Traffic Comments

1. Intersection capacity analysis software generated the following error HCM 2010 error. This error caused the software to not analyze the intersection properly and report over optimistic capacity results. The Department feels that this timing and phasing will produce much lower levels of service.

Response: All errors within the Synchro analysis have been corrected, the analysis should be considered reflective of actual conditions.

2. Concurrent phasing of side road on improved Young Avenue unlikely to work with high amount of turning traffic. This should be evaluated as split phase intersection.

Response: The Young Avenue intersection has now been analyzed with a split-phase configuration under the Build with Improvements condition and the results are summarized in Table No. 2. The analysis with concurrent phasing of the eastbound and westbound approaches at this intersection has also been maintained. See further discussion in Item 3 below.

3. See attached comments on Synchro sheets contained in the FEIS and resolve comments. Do not show V/C ratios of zero for main line traffic. Pay special attention to the queues, as 95% capacity queue may be unresolved after 2 cycles. This is usually indicative of excessive delay and on an intersection function as a LOS "A".

Response: The HCM 2010 signalized analysis printouts from Synchro only provide one V/C result for shared lanes. When this lane is a shared through/right turn lane the overall V/C result for that lane group is reported under the right turn lane slot which is the case for the northbound and southbound Route 9W approaches at Young Avenue.

The intersection of Young Avenue/Site Access and Route 9W has been analyzed under future build conditions with both concurrent phasing and with split phasing for the eastbound and westbound approaches. It is the opinion of Maser Consulting that the intersection could function efficiently with concurrent phasing of the minor road approaches since the time periods of heavy traffic exiting the Young Avenue approach are short durations coinciding with the arrival and dismissal periods of the elementary school. As shown in Table No. 2 (attached) the intersection is

expected to operate at a LOS “C” or better under future conditions both with the concurrent phasing or with the split phasing, however the queuing conditions along Route 9W are anticipated to be better under the concurrent phasing scenario than the split phasing scenario since there would be less time lost per phase with the concurrent phasing. Both scenarios have been presented for the Department’s information and determination of appropriate phasing and timings for the future intersection configuration. If agreeable to the Department, the Applicant would also agree to conduct a post-construction monitoring of this intersection in order to determine the effectiveness of the concurrent phasing and/or the need for a change to split phasing.

4. Build with mitigation models were not provided.

Response: The mitigation currently proposed as part of this project includes restriping of the median along Route 9W to provide a northbound left turn lane of approximately 100 ft. in length, the construction of the proposed driveway opposite Young Avenue, appropriate signal modifications to accommodate the proposed driveway and northbound left turn lane and installation of sidewalk on the west side of Route 9W north of Young Avenue as previously identified. These mitigation measures are included in the Build models.

5. At the intersection of Dock Road, the existing volumes for WBL is 5 and WBR is 10, the no build volumes for WBL is 21 and WBR is 21. The growth rate input into Synchro for this corridor is 1.00 however the change in volumes going from existing to no build suggests a rather large growth rate. Please provide justification for this drastic increase in volume going from existing to no build.

Response: As previously discussed, the original analysis included traffic for another proposed development, the Dockside Development, that was proposed to be accessed via Dock Road and resulted in this increase in traffic exiting Dock Road. This project is no longer proposed and therefore the traffic associated with the Dockside project has been eliminated from the analysis.

6. At the intersection of Dock Road for PM models the existing delay is 29.7 seconds with LOS D, no build shows 89.8 seconds of delay with LOS F and build shows a delay of 193.5 seconds with a LOS F. Mitigations at this location should be explored.

Response: In the updated analysis based on HCM 2010 results, the Existing delay is 33.3 seconds with a LOS D, the No-Build delay is 36.8 seconds with a LOS E and the Build delay is 43.1 seconds with a LOS E. The below table summarizes results for this intersection and additional detail is provided in Table No. 2 (attached). It should be noted that the proposed Bayside development is not anticipated to add any additional traffic to the Dock Road approach. All traffic from the project will be through traffic on Route 9W.

Approach			2015 Existing		2019 No-Build		2019 Build	
			LOS	Delay	LOS	Delay	LOS	Delay
Dock Road	WB	LR	D	33.3	E	36.8	E	43.1
U.S. Route 9W	SB	LT	A	9.7	A	9.9	B	10.2

7. At the intersection of King Street for PM models the existing delay is 92.4 seconds with LOS F, no build shows 228.4 seconds of delay with LOS F and build shows a delay of 381.1 seconds with a LOS F. Mitigations at this location should be explored.

Response: The below table summarizes the PM Peak Hour analysis results based on the revised analysis utilizing the HCM 2010 results from Synchro. It should be noted that the proposed Bayside project is expected to add approximately 10 left turning vehicles from King Street to Route 9W during the PM Peak Hour, which equates to approximately 10%. No further mitigation is proposed for this intersection as part of the Bayside project, however signalization of this intersection was previously identified as part of the Marlboro Hamlet Area Transportation Plan dated December 2008, which is discussed in further detail in our Traffic Study. It is our understanding that improvements at this location are no longer being pursued by the Town or by the State.

Approach			2015 Existing		2019 No-Build		2019 Build	
			LOS	Delay	LOS	Delay	LOS	Delay
King Street	SEB	L	F	107.8	F	161.0	F	256.8
		R	B	14.8	C	15.6	C	16.4

8. At the intersection of Birdsall Avenue for PM models the existing delay is 46.5 seconds with LOS E, no build shows 72.6 seconds of delay with LOS F and build shows a delay of 165.9 seconds with a LOS F. Mitigations at this location should be explored.

Response: The below table summarizes the PM Peak Hour analysis results based on the revised analysis utilizing the HCM 2010 results from Synchro. As indicated by the table below, the proposed project is not expected to have a significant impact on the operation of the Birdsall Road/Route 9W intersection. No further mitigations are required at this location.

Approach			2015 Existing		2019 No-Build		2019 Build	
			LOS	Delay	LOS	Delay	LOS	Delay
Birdsall Road	EB	LR	C	24.2	D	26.8	D	32.5
U.S. Route 9W	NB	LT	A	9.7	A	10.0	B	10.2

9. At the intersection of Middle School Driveway for PM models the existing delay is 52.9 seconds with LOS F, no build shows 73.78 seconds of delay with LOS F and build shows a delay of 98 seconds with a LOS F. Mitigations at this location should be explored.

Response: The below table summarizes the PM Peak Hour analysis results based on the revised analysis utilizing the HCM 2010 results from Synchro. As indicated by the table below, the proposed project is not expected to have a significant impact on the operation of the Middle School Driveway/Route 9W intersection. No further mitigations are required at this location.

Approach			2015 Existing		2019 No-Build		2019 Build	
			LOS	Delay	LOS	Delay	LOS	Delay
Middle School (Exit Driveway)	EB	L	D	28.9	D	32.1	E	35.5
		R	B	14.0	B	14.6	C	15.2

10. At the intersection of Purdy Avenue for PM models the existing delay is 31.9 seconds with LOS D, no build shows 48.1 seconds of delay with LOS E and build shows a delay of 58.7 seconds with a LOS F. Mitigations at this location should be explored.

Response: The below table summarizes the PM Peak Hour analysis results based on the revised analysis utilizing the HCM 2010 results from Synchro. As indicated by the table below, the proposed project is not expected to have a significant

impact on the operation of the Purdy Avenue/Route 9W intersection. No further mitigations are required at this location.

Approach			2015 Existing		2019 No-Build		2019 Build	
			LOS	Delay	LOS	Delay	LOS	Delay
Purdy Avenue	EB	LR	C	17.7	C	18.9	C	19.8
U.S. Route 9W	NB	LT	A	9.9	B	10.1	B	10.3

11. At the intersection of Young Avenue conflicting pedestrian movements and pedestrian calls are both set to zero for all models, please verify.

Response: The conflicting pedestrians and pedestrian calls are both set to zero because no pedestrians were observed crossing Route 9W at Young Avenue during the peak hours for which volume data was collected and analyzed.

12. Based on the Department's calculations, table two in appendix B should look more like this:

		2015 EX		2019 NO Build	2019 Build		
Intersection		AM	PM	AM	PM	AM	PM
Purdy	EB	D (25.6)	D (31.9)	D (34.8)	E (48.1)	E (35.8)	F (58.7)
Young	WB	C (33.7)	C (26.1)	C (34.4)	C (27.3)	D (37.2) *	C (27) *
	NB	C (22.8)	A (6.7)	C (32.9)	A (8)	C (32.1) *	B (11.2) *
	SB	A (6.1)	A (4)	A (7.1)	A (4.7)	A (7.9) *	A (9.8) *
Birdsall	EB	E (44.5)	E (46.5)	F (63.5)	F (72.6)	<i>f</i> (83.5)	<i>F</i> (165.9)
Dock	WB	C (20)	D (29.7)	E (38.8)	F (89.8)	E (44.6)	<i>F</i> (193.5)
King	SEL	E (41.2)	F (92.4)	F (87.5)	F (228.4)	<i>F</i> (126.4)	<i>F</i> (381.1)
Middle School	EB	F (51.8)	F (52.9)	F (71.9)	F (73.7)	F (51.6)	<i>f</i> (98)

* Due to the high volumes of turning vehicles at this intersection its questionable whether split phasing will work at this location. This intersection may need to be designed as split phasing and therefore these values could tentatively change.

Response: As indicated previously, the Synchro/HCM 2010 analyses have been revised based on the above comments. The revised HCM 2010 analysis results are summarized in Table No. 2 (attached). As discussed in response to Item 3



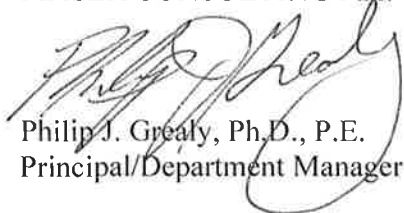
Mr. Lee Zimmer, P.E.
MC Project No. 05000787A
September 7, 2017
Page 9 of 9

above, the intersection of Route 9W and Young Avenue/Site Access has been analyzed with the eastbound and westbound approaches run as both concurrent and split phases. It is the opinion of Maser Consulting that this intersection can operate effectively with concurrent phasing since the time period of high volume exiting Young Avenue is limited to the school arrival and dismissal periods which occur for approximately 30 minutes twice a day.

If you have any questions regarding the above, please do not hesitate to contact us.

Very truly yours,

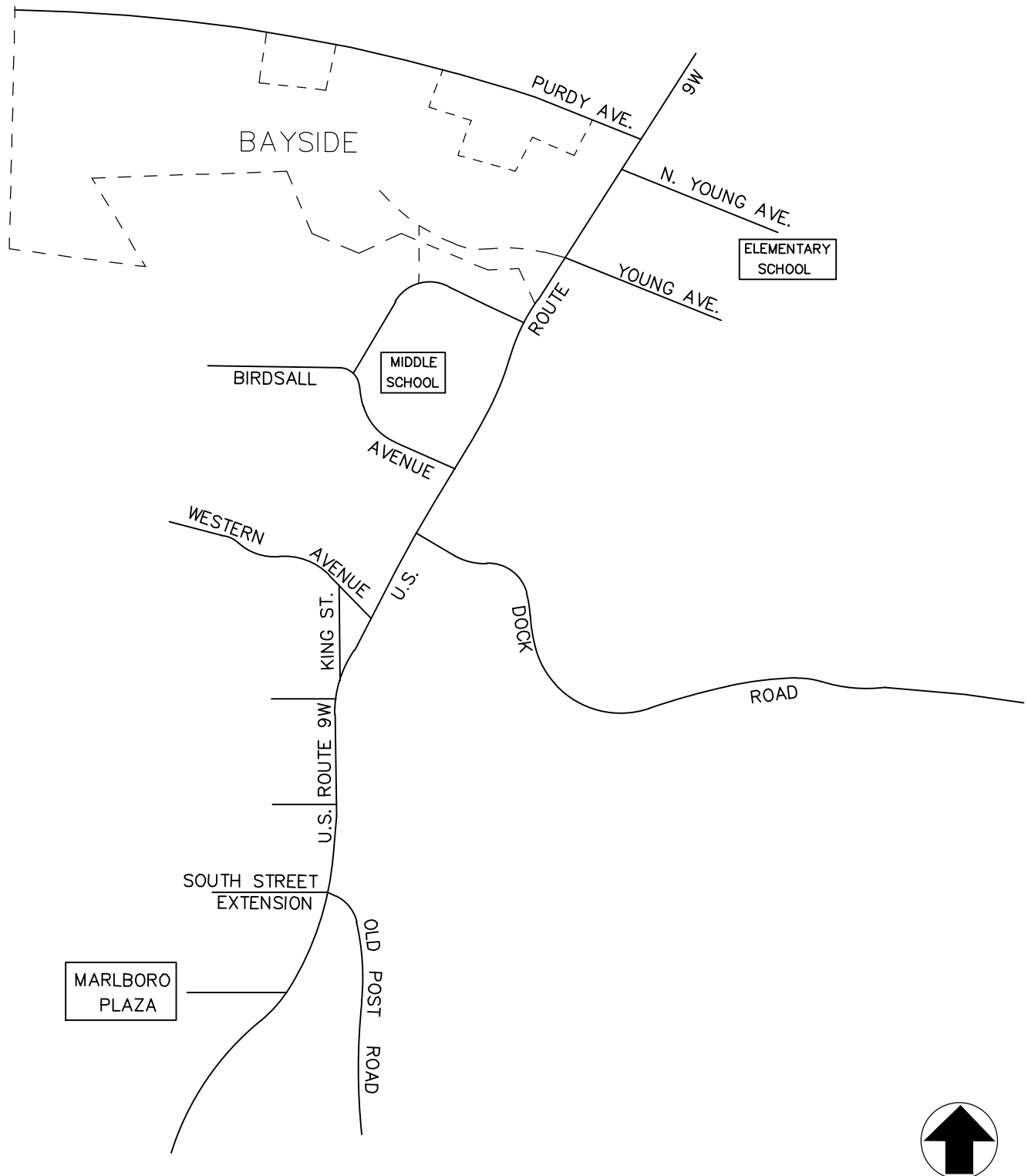
MASER CONSULTING P.A.



Philip J. Greal, Ph.D., P.E.
Principal/Department Manager

PJG/ces
Enclosures
cc:

r:\projects\newburgh\05000787a_sussman bayside\correspondence\out\170906pjg_zimmer r2c ltr.docx



NOTE: LINE DIAGRAM NOT TO SCALE



New Jersey New York Pennsylvania Virginia
Customer Loyalty through Client Satisfaction

WESTCHESTER OFFICE

11 Bradhurst Avenue
Hawthorne, NY 10532
Phone: 914.347.7500
Fax: 914.347.7266

email: solutions @ maserconsulting.com

BAYSIDE
TOWN OF MARLBOROUGH, NY

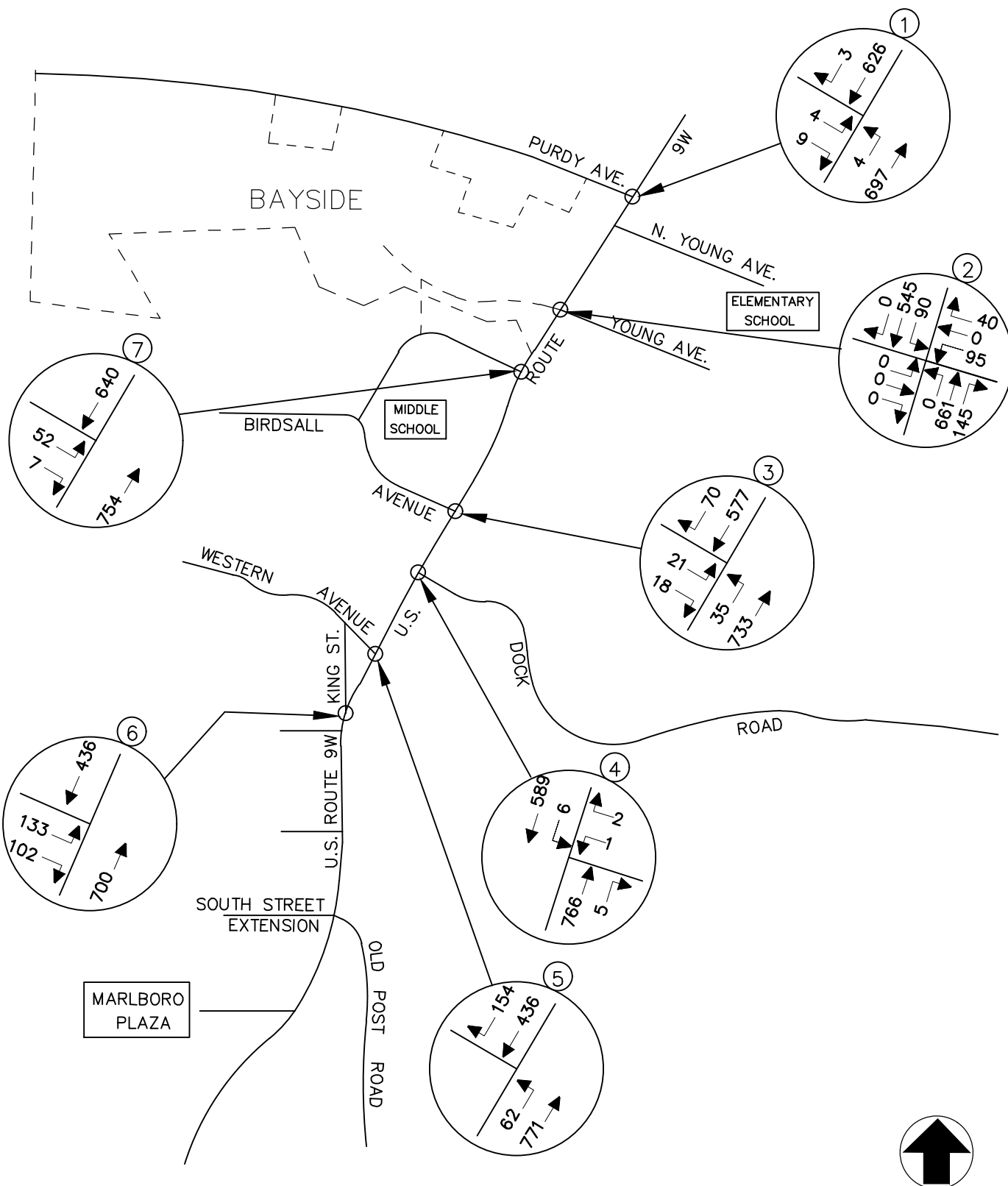
SITE LOCATION MAP



JOB NUMBER:	DATE:
05000787A	APRIL 2017

FIGURE NUMBER:

1



NOTE: LINE DIAGRAM NOT TO SCALE



Consulting, Municipal & Environmental Engineers
Planners * Surveyors * Landscape Architects
State of N.Y. Certificate of Authorization: 0008671

New Jersey New York Pennsylvania Virginia
Customer Loyalty through Client Satisfaction

WESTCHESTER OFFICE

11 Bradhurst Avenue
Hawthorne, NY 10532
Phone: 914.347.7500
Fax: 914.347.7266

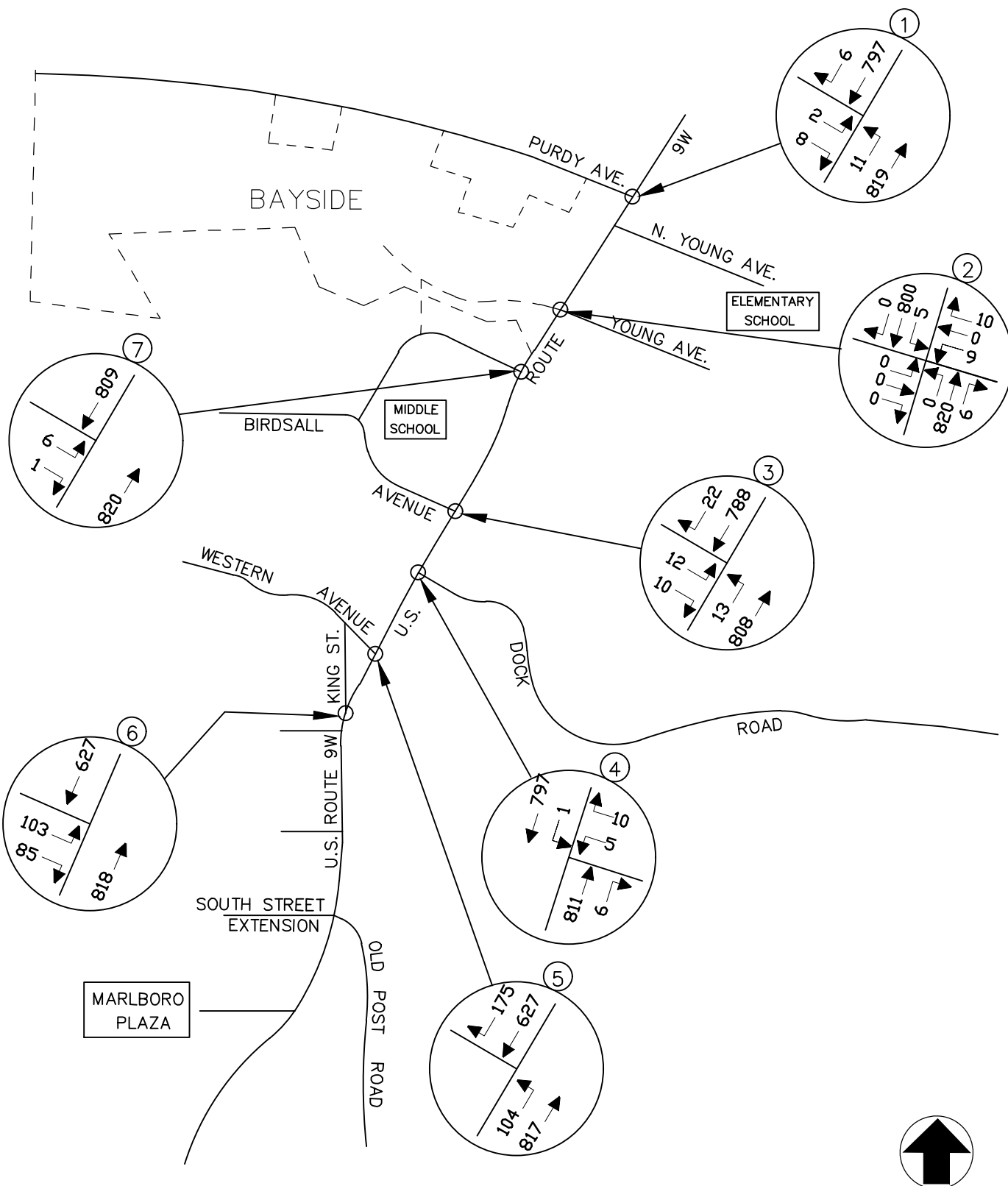
email: solutions @ maserconsulting.com

BAYSIDE
TOWN OF MARLBOROUGH, NY

2015 EXISTING TRAFFIC VOLUMES
WEEKDAY PEAK AM HOUR



JOB NUMBER:	DATE:
05000787A	APRIL 2017
FIGURE NUMBER:	
2	



NOTE: LINE DIAGRAM NOT TO SCALE



Consulting, Municipal & Environmental Engineers
Planners * Surveyors * Landscape Architects
State of N.Y. Certificate of Authorization: 0008671

New Jersey New York Pennsylvania Virginia
Customer Loyalty through Client Satisfaction

WESTCHESTER OFFICE

11 Bradhurst Avenue
Hawthorne, NY 10532
Phone: 914.347.7500
Fax: 914.347.7266

email: solutions @ maserconsulting.com

BAYSIDE
TOWN OF MARLBOROUGH, NY

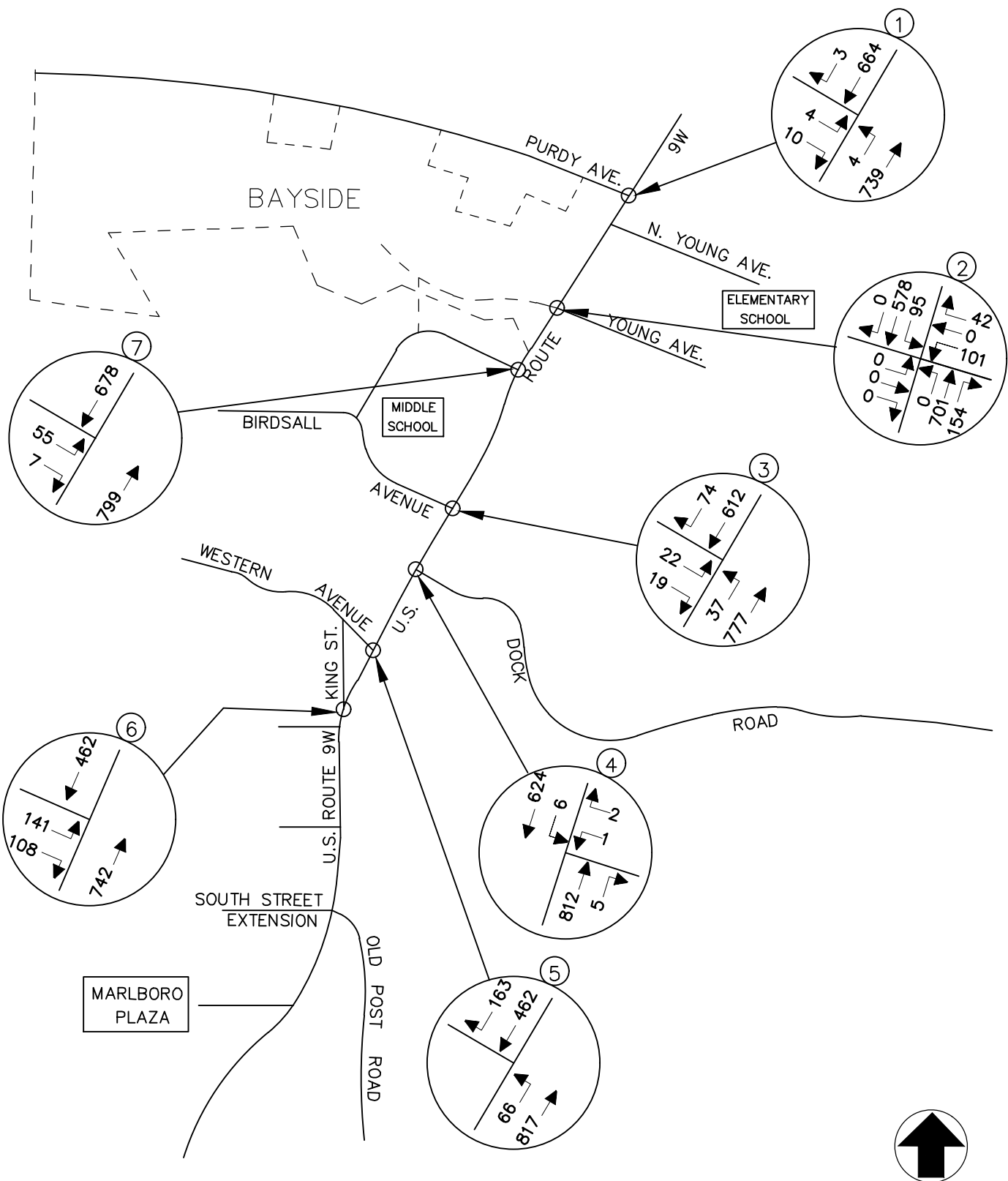
2015 EXISTING TRAFFIC VOLUMES
WEEKDAY PEAK PM HOUR



JOB NUMBER:	DATE:
05000787A	APRIL 2017

FIGURE NUMBER:

3



NOTE: LINE DIAGRAM NOT TO SCALE

MASER
CONSULTING P.A.
Consulting, Municipal & Environmental Engineers
Planners • Surveyors • Landscape Architects
State of N.Y. Certificate of Authorization: 0008671

New Jersey New York Pennsylvania Virginia
Customer Loyalty through Client Satisfaction

WESTCHESTER OFFICE

11 Bradhurst Avenue
Hawthorne, NY 10532
Phone: 914.347.7500
Fax: 914.347.7266

email: solutions @ maserconsulting.com

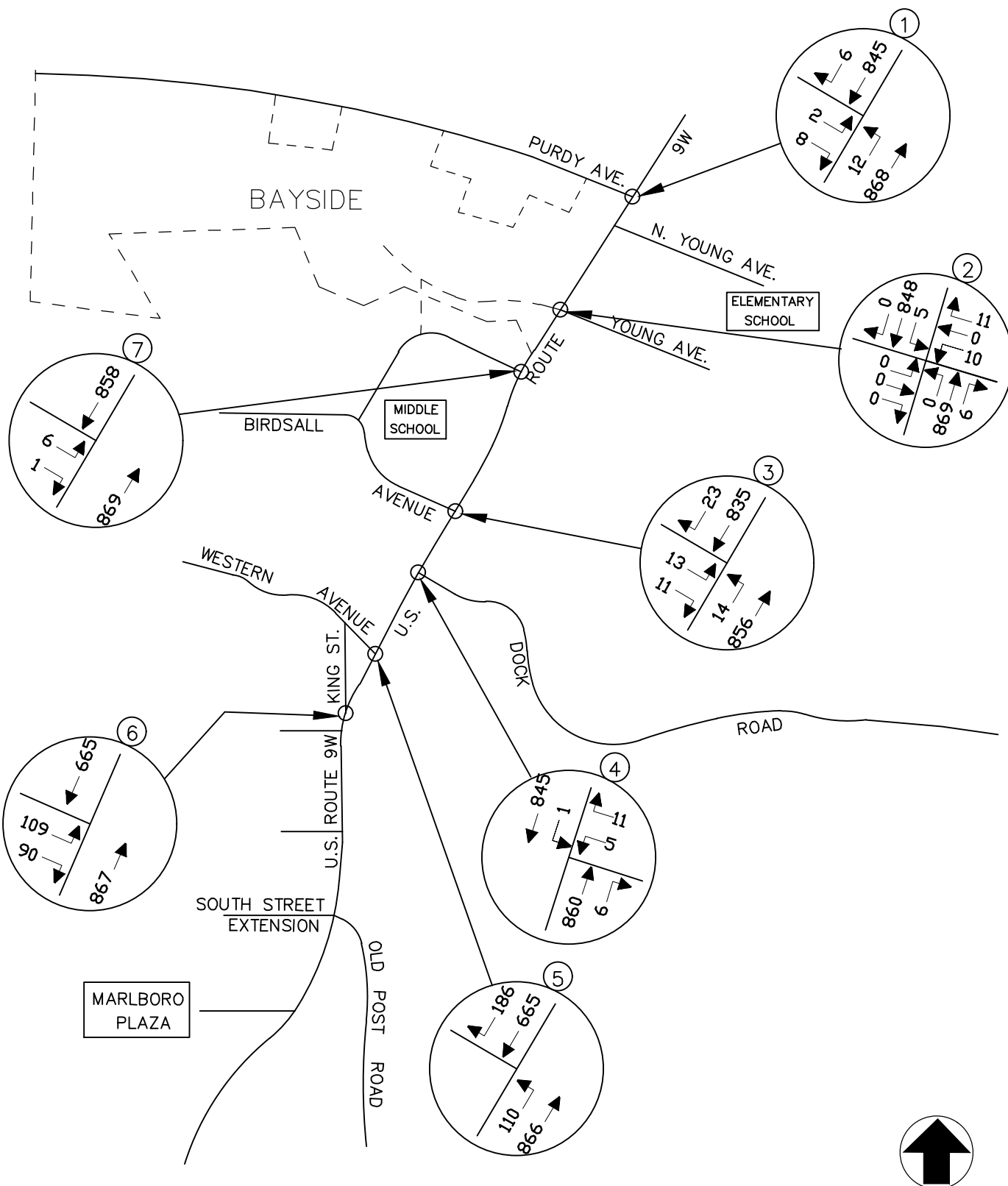
BAYSIDE
TOWN OF MARLBOROUGH, NY

2019 NO-BUILD TRAFFIC VOLUMES
WEEKDAY PEAK AM HOUR



JOB NUMBER:	DATE:
05000787A	APRIL 2017

FIGURE NUMBER:



NOTE: LINE DIAGRAM NOT TO SCALE

WESTCHESTER OFFICE

11 Bradhurst Avenue
Hawthorne, NY 10532
Phone: 914.347.7500
Fax: 914.347.7266

email: solutions @ maserconsulting.com

**BAYSIDE
TOWN OF MARLBOROUGH, NY**

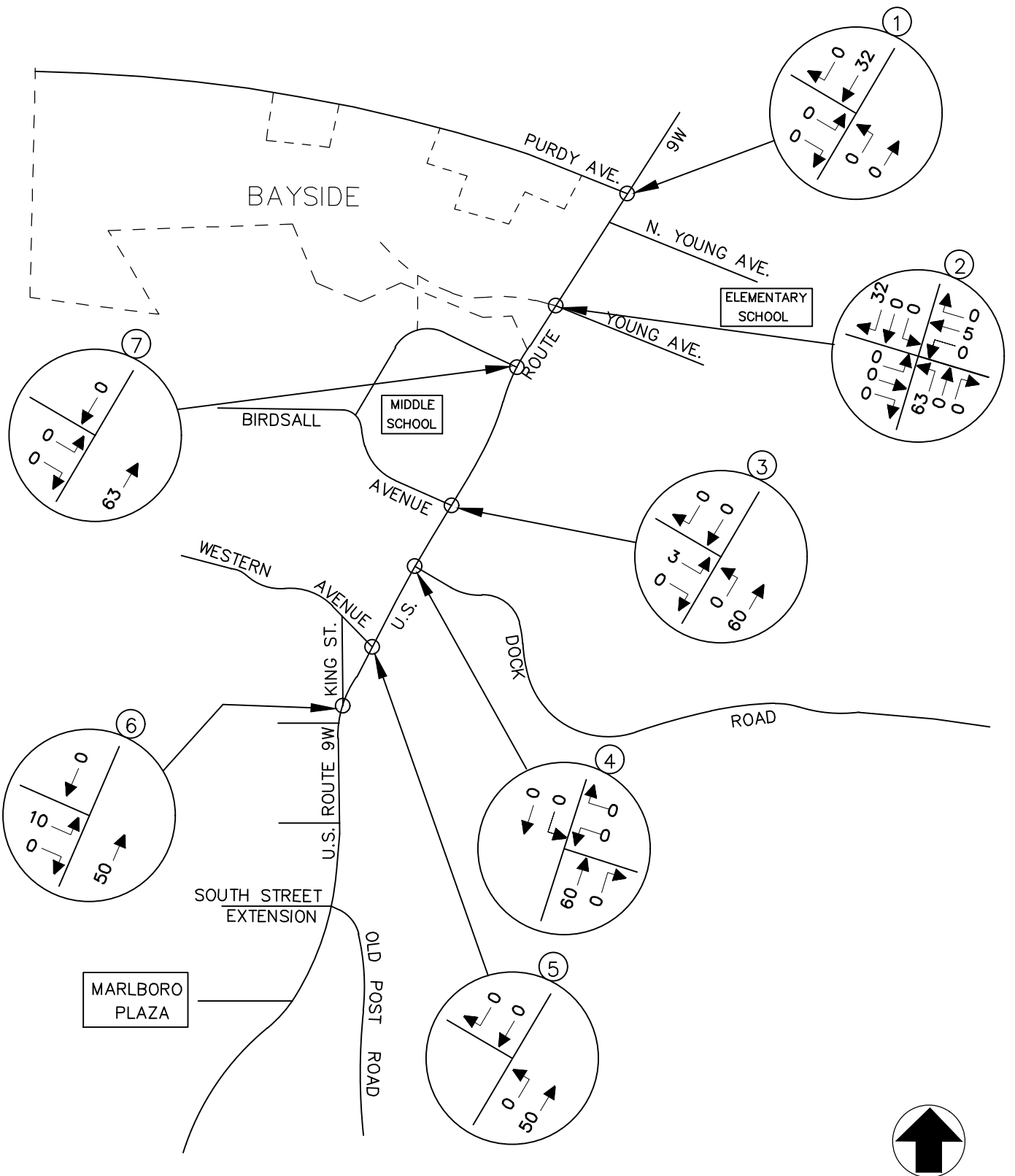
**2019 NO-BUILD TRAFFIC VOLUMES
WEEKDAY PEAK PM HOUR**



JOB NUMBER:	DATE:
05000787A	APRIL 2017

FIGURE NUMBER:

5



NOTE: LINE DIAGRAM NOT TO SCALE

WESTCHESTER OFFICE

11 Bradhurst Avenue
Hawthorne, NY 10532
Phone: 914.347.7500
Fax: 914.347.7266

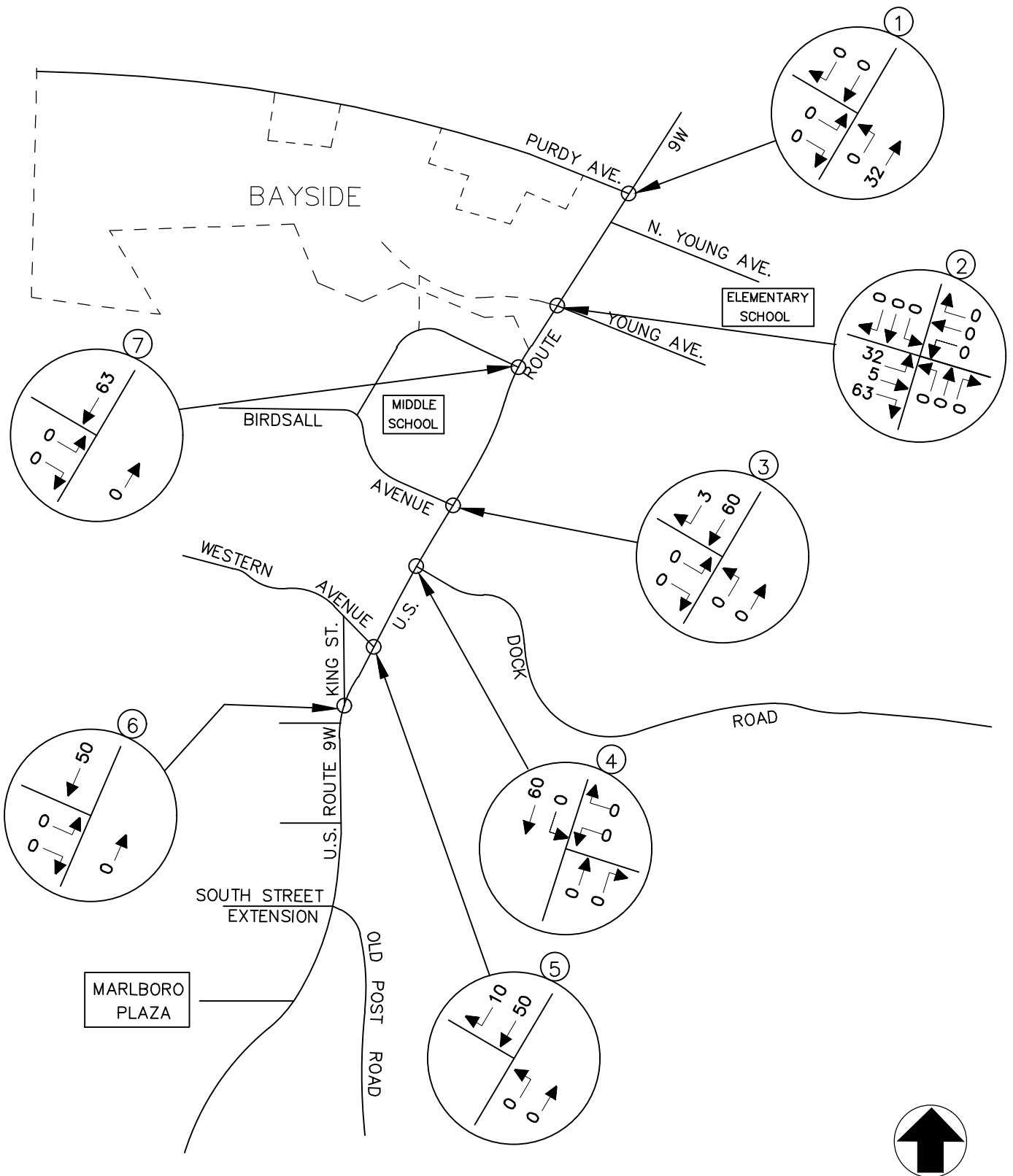
email: solutions @ maserconsulting.com

**BAYSIDE
TOWN OF MARLBOROUGH, NY**

**ARRIVAL DISTRIBUTION
(ALL VALUES ARE EXPRESSED AS %)**



JOB NUMBER:	DATE:
05000787A	APRIL 2017
FIGURE NUMBER:	
6	



NOTE: LINE DIAGRAM NOT TO SCALE

WESTCHESTER OFFICE

11 Bradhurst Avenue
Hawthorne, NY 10532
Phone: 914.347.7500
Fax: 914.347.7266

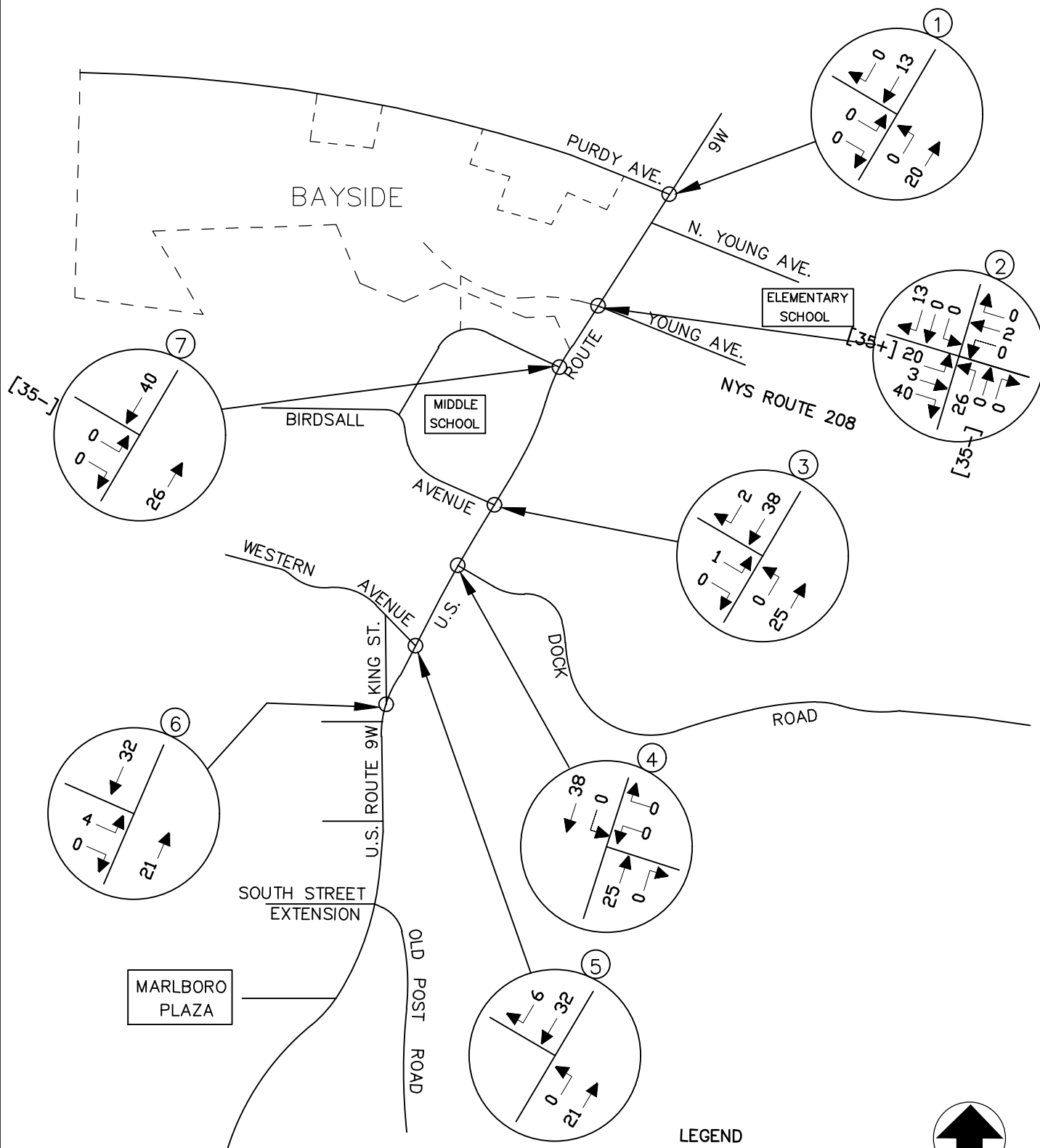
email: solutions @ maserconsulting.com

**BAYSIDE
TOWN OF MARLBOROUGH, NY**

**DEPARTURE DISTRIBUTION
(ALL VALUES ARE EXPRESSED AS A %)**



JOB NUMBER:	DATE:
05000787A	APRIL 2017
FIGURE NUMBER:	
7	



LEGEND

1) PASS-BY ARE SHOWN IN (#)

2) DIVERTED TRAFFIC ARE SHOWN IN [#]



NOTE: LINE DIAGRAM NOT TO SCALE



Consulting, Municipal & Environmental Engineers
Planners * Surveyors * Landscape Architects
State of N.Y. Certificate of Authorization: 0008671

New Jersey New York Pennsylvania Virginia
Customer Loyalty through Client Satisfaction

WESTCHESTER OFFICE

11 Bradhurst Avenue
Hawthorne, NY 10532
Phone: 914.347.7500
Fax: 914.347.7266

email: solutions @ maserconsulting.com

BAYSIDE
TOWN OF MARLBOROUGH, NY

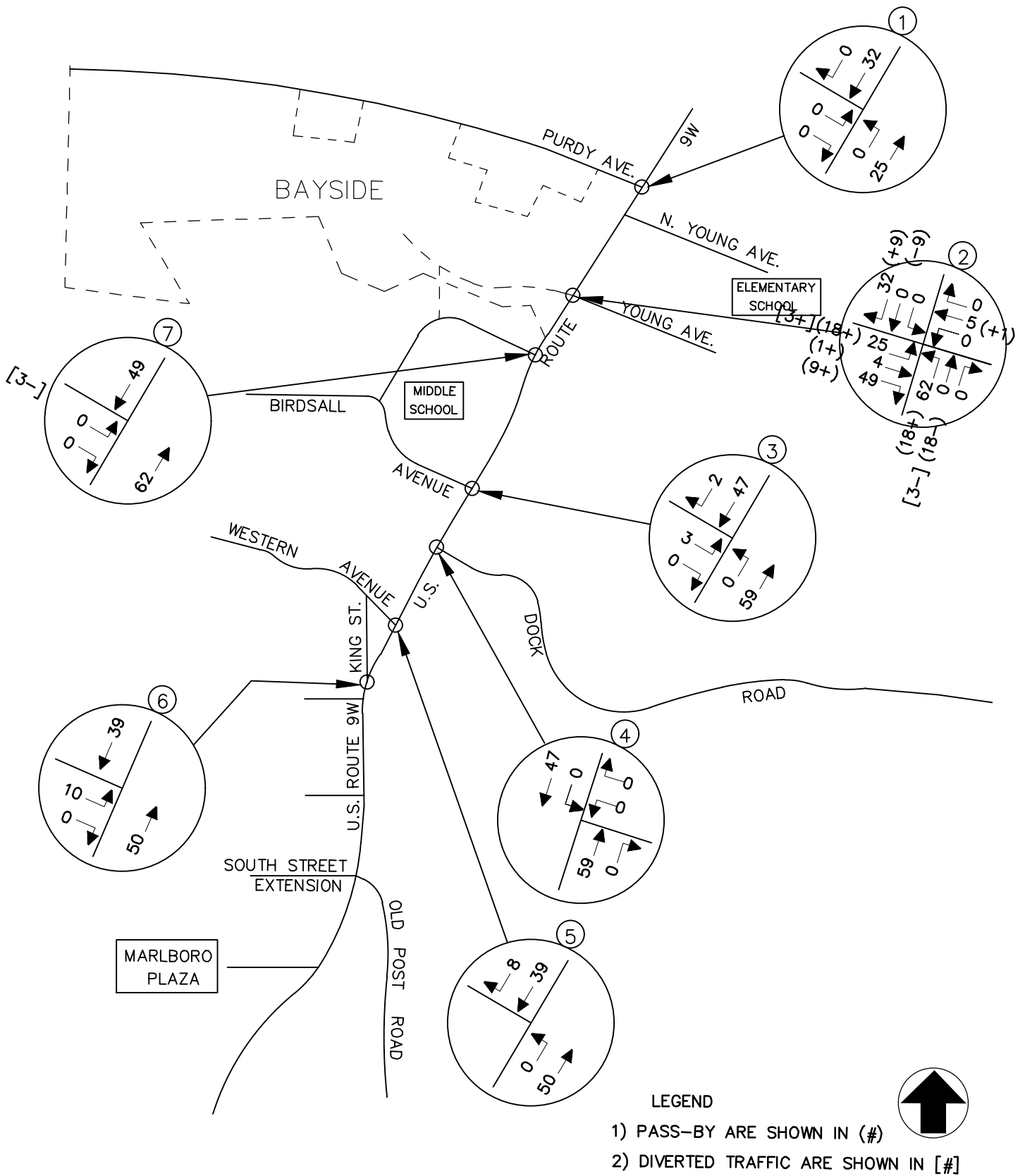
SITE GENERATED TRAFFIC VOLUMES
WEEKDAY PEAK AM HOUR

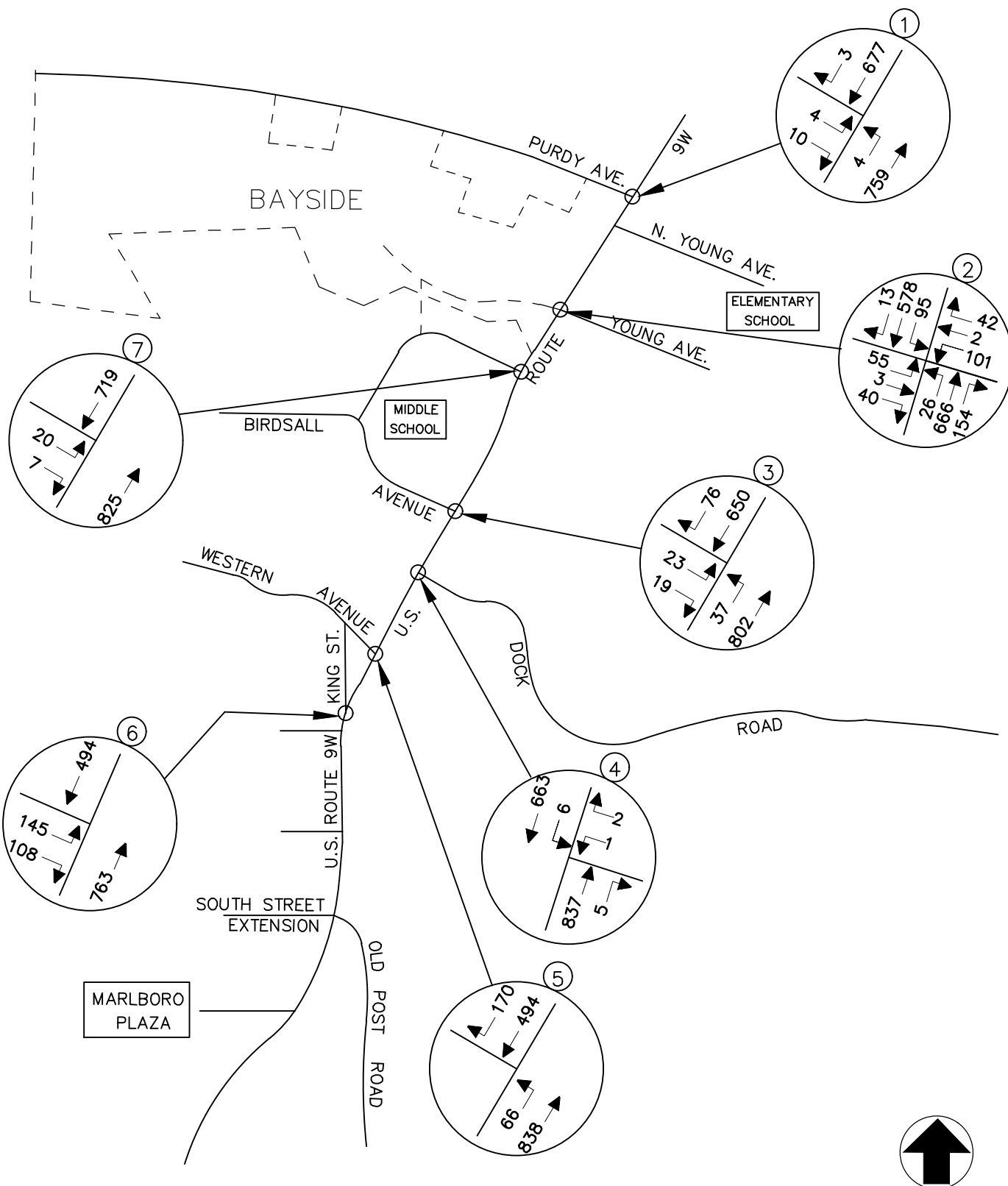


JOB NUMBER: 05000787A
DATE: APRIL 2017

FIGURE NUMBER:

8





NOTE: LINE DIAGRAM NOT TO SCALE



Consulting, Municipal & Environmental Engineers
Planners * Surveyors * Landscape Architects
State of N.Y. Certificate of Authorization: 0008671

New Jersey New York Pennsylvania Virginia
Customer Loyalty through Client Satisfaction

WESTCHESTER OFFICE

11 Bradhurst Avenue
Hawthorne, NY 10532
Phone: 914.347.7500
Fax: 914.347.7266

email: solutions @ maserconsulting.com

BAYSIDE
TOWN OF MARLBOROUGH, NY

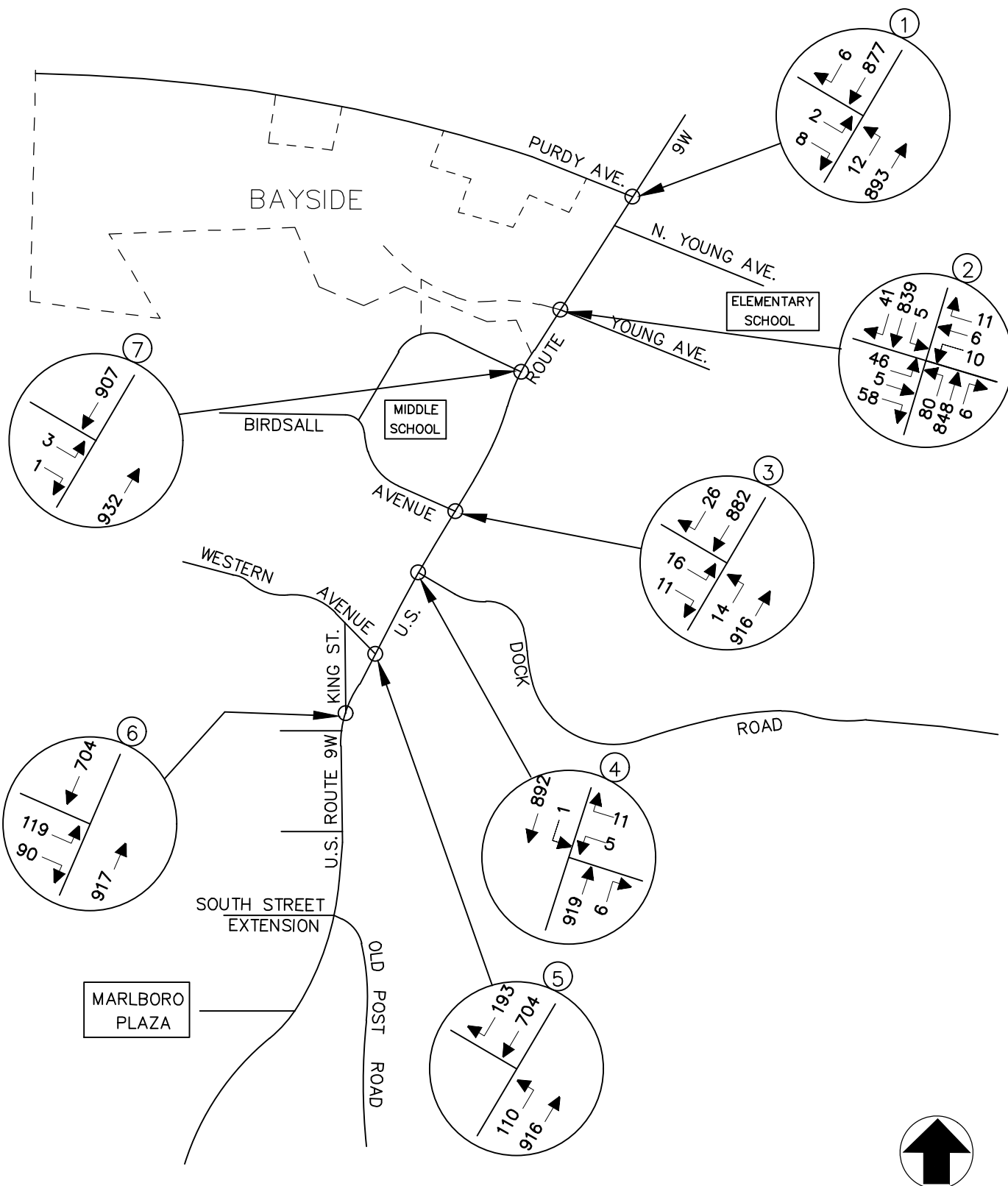
2019 BUILD TRAFFIC VOLUMES
WEEKDAY PEAK AM HOUR



JOB NUMBER:	DATE:
05000787A	APRIL 2017

FIGURE NUMBER:

10



NOTE: LINE DIAGRAM NOT TO SCALE



Consulting, Municipal & Environmental Engineers
Planners * Surveyors * Landscape Architects
State of N.Y. Certificate of Authorization: 0008671

New Jersey New York Pennsylvania Virginia
Customer Loyalty through Client Satisfaction

WESTCHESTER OFFICE

11 Bradhurst Avenue
Hawthorne, NY 10532
Phone: 914.347.7500
Fax: 914.347.7266

email: solutions @ maserconsulting.com

BAYSIDE
TOWN OF MARLBOROUGH, NY

2019 BUILD TRAFFIC VOLUMES
WEEKDAY PEAK PM HOUR



JOB NUMBER:	DATE:
05000787A	APRIL 2017

FIGURE NUMBER:

11

TABLE NO. 2
LEVEL OF SERVICE SUMMARY TABLE

				QUEUE STORAGE LENGTH	2015 EXISTING				2019 NO-BUILD				2019 BUILD			
					AM				AM				AM			
					V/C	LOS	DELAY	95TH % QUEUE	V/C	LOS	DELAY	95TH % QUEUE	V/C	LOS	DELAY	95TH % QUEUE
1	U.S. ROUTE 9W & PURDY AVENUE	UNSIGNALIZED														
	PURDY AVENUE	EB	LR	500'+	0.04	C	15.5	3'	0.05	C	16.2	3'	0.05	C	16.5	3'
	U.S. ROUTE 9W	NB	LT	130'	0.01	A	9.1	0'	0.01	A	9.2	0'	0.01	A	9.3	0'
2	U.S. ROUTE 9W & YOUNG AVENUE/PROPOSED SITE ACCESS	SIGNALIZED														
	YOUNG AVENUE	WB	L	275'	0.64	C	31.0	105'	0.66	C	33.7	111'	-	-	-	-
			R	80'	0.30	C	27.1	29'	0.31	C	29.5	30'	-	-	-	-
		WB APPROACH		-	-	C	29.9	-	-	C	32.5	-	-	-	-	-
	U.S. ROUTE 9W	NB	TR	200'	0.89	B	15.6	738'	0.91	B	19.6	823'	-	-	-	-
		NB APPROACH		-	-	B	15.6	-	-	B	19.6	-	-	-	-	-
	U.S. ROUTE 9W	SB	L	125'	0.36	B	12.6	29'	0.42	B	15.1	33'	-	-	-	-
			T	200'	0.46	A	3.6	195'	0.48	A	3.7	218'	-	-	-	-
		SB APPROACH		-	-	A	4.9	-	-	A	5.3	-	-	-	-	-
		OVERALL		-	-	B	12.5	-	-	B	14.9	-	-	-	-	-
	<u>BUILD SCENARIO W/CONCURRENT PHASING</u>															
	PROPOSED SITE ACCESS	EB	L	125'	-	-	-	-	-	-	-	-	0.23	C	27.8	60'
			TR	250'	-	-	-	-	-	-	-	-	0.20	C	25.7	28'
		EB APPROACH		-	-	-	-	-	-	-	-	-	-	C	26.9	-
	YOUNG AVENUE	WB	LT	275'	-	-	-	-	-	-	-	-	0.42	C	29.1	100'
			R	80'	-	-	-	-	-	-	-	-	0.21	C	25.7	28'
		WB APPROACH		-	-	-	-	-	-	-	-	-	-	C	28.1	-
	U.S. ROUTE 9W	NB	L	100'	-	-	-	-	-	-	-	-	0.07	A	7.9	12'
			TR	200'	-	-	-	-	-	-	-	-	0.96	C	32.6	755'
		NB APPROACH		-	-	-	-	-	-	-	-	-	-	C	31.9	-
	U.S. ROUTE 9W	SB	L	125'	-	-	-	-	-	-	-	-	0.48	B	16.3	34'
			TR	200'	-	-	-	-	-	-	-	-	0.63	B	10.6	378'
		SB APPROACH		-	-	-	-	-	-	-	-	-	-	B	11.4	-
		OVERALL		-	-	-	-	-	-	-	-	-	-	C	23.4	-
	<u>BUILD SCENARIO WITH SPLIT PHASING</u>															
	PROPOSED SITE ACCESS	EB	L	125'	-	-	-	-	-	-	-	-	0.63	D	43.2	83'
			TR	250'	-	-	-	-	-	-	-	-	0.54	D	42.4	37'
		EB APPROACH		-	-	-	-	-	-	-	-	-	-	D	42.8	-
	YOUNG AVENUE	WB	LT	275'	-	-	-	-	-	-	-	-	0.72	D	44.9	128'
			R	80'	-	-	-	-	-	-	-	-	0.35	D	39.0	35'
		WB APPROACH		-	-	-	-	-	-	-	-	-	-	D	43.1	-
	U.S. ROUTE 9W	NB	L	100'	-	-	-	-	-	-	-	-	0.08	B	10.2	20'
			TR	200'	-	-	-	-	-	-	-	-	0.95	D	37.1	999'
		NB APPROACH		-	-	-	-	-	-	-	-	-	-	D	36.3	-
	U.S. ROUTE 9W	SB	L	125'	-	-	-	-	-	-	-	-	0.54	C	20.9	85'
			TR	200'	-	-	-	-	-	-	-	-	0.62	B	14.7	549'
		SB APPROACH		-	-	-	-	-	-	-	-	-	-	B	15.5	-
		OVERALL		-	-	-	-	-	-	-	-	-	-	C	29.2	-
3	U.S. ROUTE 9W & BIRDSALL ROAD	UNSIGNALIZED														
	BIRDSALL ROAD	EB	LR	500'+	0.21	D	25.9	20'	0.25	D	29.3	23'	0.28	D	33.0	28'
	U.S. ROUTE 9W	NB	LT	280'	0.05	A	9.5	5'	0.05	A	9.7	5'	0.06	A	9.9	5'

NOTES:

- 1) THE ABOVE REPRESENTS THE LEVEL OF SERVICE AND VEHICLE DELAY IN SECONDS, C [16.2], FOR EACH KEY APPROACH OF THE UNSIGNALIZED INTERSECTIONS AS WELL AS FOR EACH APPROACH AND THE OVERALL INTERSECTION FOR THE SIGNALIZED INTERSECTIONS.
- 2) *LEFT TURN TRAFFIC SHOULD BENEFIT FROM THE INCREASED GAPS IN TRAFFIC RESULTING FROM THE PRESENCE OF THE EXISTING SIGNAL AT INTERSECTION NO. 2.
- 3) **INCLUDES REROUTING SOME OF THE LEFT TURN EXITING TRAFFIC THROUGH THE PROPOSED SITE ACCESS ROAD.

TABLE NO. 2 (CONTINUED)
LEVEL OF SERVICE SUMMARY TABLE

						2015 EXISTING				2019 NO-BUILD				2019 BUILD			
						AM				AM				AM			
						V/C	LOS	DELAY	95TH % QUEUE	V/C	LOS	DELAY	95TH % QUEUE	V/C	LOS	DELAY	95TH % QUEUE
4	U.S. ROUTE 9W & DOCK ROAD					UN SIGNALIZED											
	DOCK ROAD	WB	LR	500'+	0.02	C	24.0	3'	0.02	D	26.2	3'	0.02	D	28.2	3'	
	U.S. ROUTE 9W	SB	LT	280'	0.01	A	9.5	0'	0.01	A	9.7	0'	0.01	A	9.8	0'	
5	U.S. ROUTE 9W & WESTERN AVENUE					UN SIGNALIZED											
	U.S. ROUTE 9W	NB	LT	215'	0.07	A	9.1	5'	0.08	A	9.3'	5'	0.08	A	9.4	8'	
6	U.S. ROUTE 9W & KING STREET					UN SIGNALIZED											
	KING STREET	SEB	L	300'	0.69	F	54.8	108'	0.81	F	75.9	140'	0.90	F	98.5	165'	
			R	300'	0.18	B	12.4	18'	0.20	B	12.8	18'	0.21	B	13.2	20'	
7	U.S. ROUTE 9W & MIDDLE SCHOOL (EXIT DRIVEWAY)					UN SIGNALIZED											
	MIDDLE SCHOOL (EXIT DRIVEWAY)	EB	L	115'	0.26	D	28.4	25'	0.31	D	32.4	30'	0.12	D	28.5	10'	
			R	475'	0.02	B	12.4	0'	0.02	B	12.8	0'	0.02	B	13.2	3'	

NOTES:

- 1) THE ABOVE REPRESENTS THE LEVEL OF SERVICE AND VEHICLE DELAY IN SECONDS, C [16.2], FOR EACH KEY APPROACH OF THE UNSIGNALIZED INTERSECTIONS AS WELL AS FOR EACH APPROACH AND THE OVERALL INTERSECTION FOR THE SIGNALIZED INTERSECTIONS. SEE APPENDIX "C" FOR A DESCRIPTION OF THE LEVELS OF SERVICE.
- 2) *LEFT TURN TRAFFIC SHOULD BENEFIT FROM THE INCREASED GAPS IN TRAFFIC RESULTING FROM THE PRESENCE OF THE EXISTING SIGNAL AT INTERSECTION NO. 2.
- 3) **INCLUDES REROUTING SOME OF THE LEFT TURN EXITING TRAFFIC THROUGH THE PROPOSED SITE ACCESS ROAD.

TABLE NO. 2
LEVEL OF SERVICE SUMMARY TABLE

				QUEUE STORAGE LENGTH	2015 EXISTING				2019 NO-BUILD				2019 BUILD			
					PM				PM				PM			
					V/C	LOS	DELAY	95TH % QUEUE	V/C	LOS	DELAY	95TH % QUEUE	V/C	LOS	DELAY	95TH % QUEUE
1	U.S. ROUTE 9W & PURDY AVENUE	UNSIGNALIZED														
	PURDY AVENUE	EB	LR	500'+	0.04	C	17.7	3'	0.04	C	18.9	3'	0.04	C	19.8	3'
	U.S. ROUTE 9W	NB	LT	130'	0.02	A	9.9	3'	0.02	B	10.1	3'	0.02	B	10.3	3'
2	U.S. ROUTE 9W & YOUNG AVENUE/PROPOSED SITE ACCESS	SIGNALIZED														
	YOUNG AVENUE	WB	L	275'	0.21	C	24.1	19'	0.23	C	25.6	21'	-	-	-	-
			R	80'	0.29	C	25.8	15'	0.28	C	26.7	16'	-	-	-	-
		WB APPROACH		-	-	C	25.0	-	-	C	26.2	-	-	-	-	-
	U.S. ROUTE 9W	NB	TR	200'	0.80	A	7.6	417'	0.82	A	7.7	481'	-	-	-	-
		NB APPROACH		-	-	A	7.6	-	-	A	7.7	-	-	-	-	-
	U.S. ROUTE 9W	SB	L	125'	0.02	A	6.8	2'	0.02	A	7.4	2'	-	-	-	-
		T		200'	0.63	A	3.2	213'	0.65	A	3.2	248'	-	-	-	-
		SB APPROACH		-	-	A	3.2	-	-	A	3.3	-	-	-	-	-
		OVERALL		-	-	A	5.6	-	-	A	5.8	-	-	-	-	-
	<u>BUILD SCENARIO W/CONCURRENT PHASING</u>															
	PROPOSED SITE ACCESS	EB	L	125'	-	-	-	-	-	-	-	-	0.23	C	28.4	65'
			TR	250'	-	-	-	-	-	-	-	-	0.53	C	29.1	42'
		EB APPROACH		-	-	-	-	-	-	-	-	-	-	C	28.8	-
	YOUNG AVENUE	WB	LT	275'	-	-	-	-	-	-	-	-	0.07	C	29.3	24'
			R	80'	-	-	-	-	-	-	-	-	0.14	C	27.1	25'
		WB APPROACH		-	-	-	-	-	-	-	-	-	-	C	27.9	-
	U.S. ROUTE 9W	NB	L	100'	-	-	-	-	-	-	-	-	0.27	B	10.5	20'
			TR	200'	-	-	-	-	-	-	-	-	0.77	A	8.2	504'
		NB APPROACH		-	-	-	-	-	-	-	-	-	-	A	8.4	-
	U.S. ROUTE 9W	SB	L	125'	-	-	-	-	-	-	-	-	0.02	A	7.8	3'
			TR	200'	-	-	-	-	-	-	-	-	0.85	B	10.9	618'
		SB APPROACH		-	-	-	-	-	-	-	-	-	-	B	10.9	-
		OVERALL		-	-	-	-	-	-	-	-	-	-	B	10.9	-
	<u>BUILD SCENARIO WITH SPLIT PHASING</u>															
	PROPOSED SITE ACCESS	EB	L	125'	-	-	-	-	-	-	-	-	0.43	D	37.8	63'
			TR	250'	-	-	-	-	-	-	-	-	0.66	D	40.1	42'
		EB APPROACH		-	-	-	-	-	-	-	-	-	-	D	39.1	-
	YOUNG AVENUE	WB	LT	275'	-	-	-	-	-	-	-	-	0.21	D	40.7	24'
			R	80'	-	-	-	-	-	-	-	-	0.37	D	43.5	25'
		WB APPROACH		-	-	-	-	-	-	-	-	-	-	D	42.4	-
	U.S. ROUTE 9W	NB	L	100'	-	-	-	-	-	-	-	-	0.32	B	14.5	33'
			TR	200'	-	-	-	-	-	-	-	-	0.78	B	16.2	761'
		NB APPROACH		-	-	-	-	-	-	-	-	-	-	B	16.0	-
	U.S. ROUTE 9W	SB	L	125'	-	-	-	-	-	-	-	-	0.02	B	10.8	5'
			TR	200'	-	-	-	-	-	-	-	-	0.85	C	21.5	868'
		SB APPROACH		-	-	-	-	-	-	-	-	-	-	C	21.4	-
		OVERALL		-	-	-	-	-	-	-	-	-	-	C	20.1	-
3	U.S. ROUTE 9W & BIRDSALL ROAD	UNSIGNALIZED														
	BIRDSALL ROAD	EB	LR	500'+	0.11	C	24.2	10'	0.13	D	26.8	13'	0.18	D	32.5	15'
	U.S. ROUTE 9W	NB	LT	280'	0.02	A	9.7	3'	0.02	A	10.0	3'	0.02	B	10.2	3'

NOTES:

- 1) THE ABOVE REPRESENTS THE LEVEL OF SERVICE AND VEHICLE DELAY IN SECONDS, C [16.2], FOR EACH KEY APPROACH OF THE UNSIGNALIZED INTERSECTIONS AS WELL AS FOR EACH APPROACH AND THE OVERALL INTERSECTION FOR THE SIGNALIZED INTERSECTIONS.
- 2) *LEFT TURN TRAFFIC SHOULD BENEFIT FROM THE INCREASED GAPS IN TRAFFIC RESULTING FROM THE PRESENCE OF THE EXISTING SIGNAL AT INTERSECTION NO. 2.
- 3) **INCLUDES REROUTING SOME OF THE LEFT TURN EXITING TRAFFIC THROUGH THE PROPOSED SITE ACCESS ROAD.

TABLE NO. 2 (CONTINUED)
LEVEL OF SERVICE SUMMARY TABLE

						2015 EXISTING				2019 NO-BUILD				2019 BUILD			
						PM				PM				PM			
						V/C	LOS	DELAY	95TH % QUEUE	V/C	LOS	DELAY	95TH % QUEUE	V/C	LOS	DELAY	95TH % QUEUE
4	U.S. ROUTE 9W & DOCK ROAD					UN SIGNALIZED											
	DOCK ROAD	WB	LR	500'+ 280'	0.11 0.00	D A	33.3 9.7	10' 0'	0.13 0.00	E A	36.8 9.9	10' 0'	0.15 0.00	E B	43.1 10.2	13' 0'	
5	U.S. ROUTE 9W & WESTERN AVENUE					UN SIGNALIZED											
	U.S. ROUTE 9W	NB	LT	215'	0.14	B	10.4	13'	0.16	B	10.7	13'	0.16	B	11.0	15'	
6	U.S. ROUTE 9W & KING STREET					UN SIGNALIZED											
	KING STREET	SEB	L R	300' 300'	0.85 0.20	F B	107.8 14.8	133' 18'	1.02 0.22	F C	161.0 15.6	168' 20'	1.27 0.23	F C	256.8 16.4	218' 23'	
7	U.S. ROUTE 9W & MIDDLE SCHOOL (EXIT DRIVEWAY)					UN SIGNALIZED											
	MIDDLE SCHOOL (EXIT DRIVEWAY)	EB	L R	115' 475'	0.04 0.00	D B	28.9 14.0	3' 0'	0.05 0.00	D B	32.1 14.6	3' 0'	0.03 0.00	E C	35.5 15.2	3' 0'	

NOTES:

- 1) THE ABOVE REPRESENTS THE LEVEL OF SERVICE AND VEHICLE DELAY IN SECONDS, C [16.2], FOR EACH KEY APPROACH OF THE UNSIGNALIZED INTERSECTIONS AS WELL AS FOR EACH APPROACH AND THE OVERALL INTERSECTION FOR THE SIGNALIZED INTERSECTIONS. SEE APPENDIX "C" FOR A DESCRIPTION OF THE LEVELS OF SERVICE.
- 2) *LEFT TURN TRAFFIC SHOULD BENEFIT FROM THE INCREASED GAPS IN TRAFFIC RESULTING FROM THE PRESENCE OF THE EXISTING SIGNAL AT INTERSECTION NO. 2.
- 3) **INCLUDES REROUTING SOME OF THE LEFT TURN EXITING TRAFFIC THROUGH THE PROPOSED SITE ACCESS ROAD.

2015 Existing Traffic Volumes
1: U.S. Route 9W & Purdy Avenue

Peak AM Hour
12/6/2016



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	4	9	4	697	626	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	12	12	12	12	12
Grade (%)	-6%			0%	0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.904				0.999	
Flt Protected	0.986					
Satd. Flow (prot)	1551	0	0	1810	1808	0
Flt Permitted	0.986					
Satd. Flow (perm)	1551	0	0	1810	1808	0
Link Speed (mph)	30			40	30	
Link Distance (ft)	1246			469	274	
Travel Time (s)	28.3			8.0	6.2	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	4	10	4	774	696	3
Shared Lane Traffic (%)						
Lane Group Flow (vph)	14	0	0	778	699	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	10			11	11	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.05	0.96	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other
Control Type: Unsignalized

2015 Existing Traffic Volumes
1: U.S. Route 9W & Purdy Avenue

Peak AM Hour
12/6/2016

Intersection

Int Delay, s/veh 0.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	4	9	4	697	626	3
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, %	-6	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	4	10	4	774	696	3

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	1480	697	699 0
Stage 1	697	-	- -
Stage 2	783	-	- -
Critical Hdwy	5.25	5.65	4.15 -
Critical Hdwy Stg 1	4.25	-	- -
Critical Hdwy Stg 2	4.25	-	- -
Follow-up Hdwy	3.545	3.345	2.245 -
Pot Cap-1 Maneuver	223	490	884 -
Stage 1	616	-	- -
Stage 2	578	-	- -
Platoon blocked, %			- -
Mov Cap-1 Maneuver	221	490	884 -
Mov Cap-2 Maneuver	221	-	- -
Stage 1	616	-	- -
Stage 2	573	-	- -

Approach	EB	NB	SB
HCM Control Delay, s	15.5	0.1	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	884	-	356	-	-
HCM Lane V/C Ratio	0.005	-	0.041	-	-
HCM Control Delay (s)	9.1	0	15.5	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

2015 Existing Traffic Volumes
2: U.S. Route 9W & Young Avenue

Peak AM Hour
12/6/2016

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	95	40	661	145	90	545
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	12	12	11	11
Grade (%)	0%		3%			1%
Storage Length (ft)	80	0		0	125	
Storage Lanes	1	1		0	1	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850	0.976			
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1719	1487	1740	0	1653	1740
Flt Permitted	0.950				0.148	
Satd. Flow (perm)	1719	1487	1740	0	258	1740
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		44	13			
Link Speed (mph)	30		40			30
Link Distance (ft)	629		278			469
Travel Time (s)	14.3		4.7			10.7
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	106	44	734	161	100	606
Shared Lane Traffic (%)						
Lane Group Flow (vph)	106	44	895	0	100	606
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		11			11
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.04	1.02	1.02	1.05	1.05
Turning Speed (mph)	15	9		9	15	
Number of Detectors	2	2	2		2	2
Detector Template						
Leading Detector (ft)	83	83	83		83	83
Trailing Detector (ft)	-5	-5	-5		-5	-5
Detector 1 Position(ft)	-5	-5	-5		-5	-5
Detector 1 Size(ft)	40	40	40		40	40
Detector 1 Type	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
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
Detector 2 Position(ft)	43	43	43		43	43
Detector 2 Size(ft)	40	40	40		40	40
Detector 2 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)	0.0	0.0	0.0		0.0	0.0
Turn Type	Prot	Perm	NA		pm+pt	NA

2015 Existing Traffic Volumes
2: U.S. Route 9W & Young Avenue

Peak AM Hour
12/6/2016

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Protected Phases	4		2		1	6
Permitted Phases		4			6	
Detector Phase	4	4	2		1	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	10.0		3.0	10.0
Minimum Split (s)	10.0	10.0	16.0		9.0	16.0
Total Split (s)	35.0	35.0	56.0		21.0	77.0
Total Split (%)	31.3%	31.3%	50.0%		18.8%	68.8%
Maximum Green (s)	30.0	30.0	50.0		15.0	71.0
Yellow Time (s)	3.0	3.0	4.0		4.0	4.0
All-Red Time (s)	2.0	2.0	2.0		2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	5.0	5.0	6.0		6.0	6.0
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	2.0		2.0	2.0
Recall Mode	None	None	Min		None	Min
Walk Time (s)	7.0	7.0				
Flash Dont Walk (s)	13.0	13.0				
Pedestrian Calls (#/hr)	0	0				
v/c Ratio	0.49	0.19	0.82		0.34	0.47
Control Delay	42.5	12.8	22.8		6.5	6.0
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	42.5	12.8	22.8		6.5	6.0
Queue Length 50th (ft)	53	0	347		12	101
Queue Length 95th (ft)	105	29	#738		29	195
Internal Link Dist (ft)	549		198			389
Turn Bay Length (ft)	80				125	
Base Capacity (vph)	605	552	1090		438	1451
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	0.18	0.08	0.82		0.23	0.42

Intersection Summary

Area Type: Other
 Cycle Length: 112
 Actuated Cycle Length: 85.2
 Natural Cycle: 60
 Control Type: Actuated-Uncoordinated
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 2: U.S. Route 9W & Young Avenue

 p1	 p2	 p4
21 s	56 s	35 s
 p6		
77 s		

2015 Existing Traffic Volumes
2: U.S. Route 9W & Young Avenue

Peak AM Hour
12/6/2016

								
Movement	WBL	WBR	NBT	NBR	SBL	SBT		
Lane Configurations								
Volume (veh/h)	95	40	661	145	90	545		
Number	7	14	2	12	1	6		
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	1810	1810	1782	1872	1800	1800		
Adj Flow Rate, veh/h	106	44	734	161	100	606		
Adj No. of Lanes	1	1	1	0	1	1		
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90		
Percent Heavy Veh, %	5	5	5	5	5	5		
Cap, veh/h	165	147	825	181	276	1307		
Arrive On Green	0.10	0.10	0.58	0.58	0.05	0.73		
Sat Flow, veh/h	1723	1538	1417	311	1715	1800		
Grp Volume(v), veh/h	106	44	0	895	100	606		
Grp Sat Flow(s),veh/h/ln	1723	1538	0	1728	1715	1800		
Q Serve(g_s), s	3.7	1.6	0.0	27.7	1.3	8.6		
Cycle Q Clear(g_c), s	3.7	1.6	0.0	27.7	1.3	8.6		
Prop In Lane	1.00	1.00		0.18	1.00			
Lane Grp Cap(c), veh/h	165	147	0	1006	276	1307		
V/C Ratio(X)	0.64	0.30	0.00	0.89	0.36	0.46		
Avail Cap(c_a), veh/h	839	749	0	1402	614	2075		
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	1.00	1.00		
Uniform Delay (d), s/veh	26.9	25.9	0.0	11.1	12.3	3.5		
Incr Delay (d2), s/veh	4.2	1.1	0.0	4.4	0.3	0.1		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	1.9	0.7	0.0	14.2	1.0	4.1		
LnGrp Delay(d),s/veh	31.0	27.1	0.0	15.6	12.6	3.6		
LnGrp LOS	C	C		B	B	A		
Approach Vol, veh/h	150		895			706		
Approach Delay, s/veh	29.9		15.6			4.9		
Approach LOS	C		B			A		
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	8.8	41.9		10.9		50.7		
Change Period (Y+Rc), s	6.0	6.0		5.0		6.0		
Max Green Setting (Gmax), s	15.0	50.0		30.0		71.0		
Max Q Clear Time (g_c+l1), s	3.3	29.7		5.7		10.6		
Green Ext Time (p_c), s	0.2	6.2		0.7		7.2		
Intersection Summary								
HCM 2010 Ctrl Delay			12.5					
HCM 2010 LOS			B					

Two Way Analysis cannot be performed on Signalized Intersection.

2015 Existing Traffic Volumes
3: U.S. Route 9W & Birdsall Avenue

Peak AM Hour
12/6/2016



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	21	18	35	733	577	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	-5%			0%	-2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.938				0.985	
Flt Protected	0.974			0.998		
Satd. Flow (prot)	1695	0	0	1806	1800	0
Flt Permitted	0.974			0.998		
Satd. Flow (perm)	1695	0	0	1806	1800	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	621			334	419	
Travel Time (s)	14.1			7.6	9.5	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	25	21	41	862	679	82
Shared Lane Traffic (%)						
Lane Group Flow (vph)	46	0	0	903	761	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
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	0.97	0.97	1.00	1.00	0.99	0.99
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

2015 Existing Traffic Volumes
3: U.S. Route 9W & Birdsall Avenue

Peak AM Hour
12/6/2016

Intersection

Int Delay, s/veh 0.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	21	18	35	733	577	70
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, %	-5	-	-	0	-2	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	25	21	41	862	679	82

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	1665	720	761 0
Stage 1	720	-	- -
Stage 2	945	-	- -
Critical Hdwy	5.45	5.75	4.15 -
Critical Hdwy Stg 1	4.45	-	- -
Critical Hdwy Stg 2	4.45	-	- -
Follow-up Hdwy	3.545	3.345	2.245 -
Pot Cap-1 Maneuver	166	467	838 -
Stage 1	582	-	- -
Stage 2	485	-	- -
Platoon blocked, %			- -
Mov Cap-1 Maneuver	150	467	838 -
Mov Cap-2 Maneuver	150	-	- -
Stage 1	582	-	- -
Stage 2	439	-	- -

Approach	EB	NB	SB
HCM Control Delay, s	25.9	0.4	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	838	-	218	-	-
HCM Lane V/C Ratio	0.049	-	0.21	-	-
HCM Control Delay (s)	9.5	0	25.9	-	-
HCM Lane LOS	A	A	D	-	-
HCM 95th %tile Q(veh)	0.2	-	0.8	-	-

2015 Existing Traffic Volumes
4: U.S. Route 9W & Dock Road

Peak AM Hour
12/6/2016

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	1	2	766	5	6	589
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	14	12	12	12
Grade (%)	4%		-2%			-4%
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.910		0.999			
Flt Protected	0.984					
Satd. Flow (prot)	1588	0	1948	0	0	1846
Flt Permitted	0.984					
Satd. Flow (perm)	1588	0	1948	0	0	1846
Link Speed (mph)	30		30			30
Link Distance (ft)	543		398			334
Travel Time (s)	12.3		9.0			7.6
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	1	2	806	5	6	620
Shared Lane Traffic (%)						
Lane Group Flow (vph)	3	0	811	0	0	626
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	1.03	1.03	0.91	0.99	0.97	0.97
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

2015 Existing Traffic Volumes
4: U.S. Route 9W & Dock Road

Peak AM Hour
12/6/2016

Intersection

Int Delay, s/veh 0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	1	2	766	5	6	589
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, %	4	-	-2	-	-	-4
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	1	2	806	5	6	620

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	1442	809	0 0 812 0
Stage 1	809	-	- - - -
Stage 2	633	-	- - - -
Critical Hdwy	7.25	6.65	- - 4.15 -
Critical Hdwy Stg 1	6.25	-	- - - -
Critical Hdwy Stg 2	6.25	-	- - - -
Follow-up Hdwy	3.545	3.345	- - 2.245 -
Pot Cap-1 Maneuver	104	344	- - 801 -
Stage 1	362	-	- - - -
Stage 2	455	-	- - - -
Platoon blocked, %			- - - -
Mov Cap-1 Maneuver	103	344	- - 801 -
Mov Cap-2 Maneuver	103	-	- - - -
Stage 1	362	-	- - - -
Stage 2	450	-	- - - -

Approach	WB	NB	SB
HCM Control Delay, s	24	0	0.1
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	- 193	801	-
HCM Lane V/C Ratio	-	- 0.016	0.008	-
HCM Control Delay (s)	-	- 24	9.5	0
HCM Lane LOS	-	- C	A	A
HCM 95th %tile Q(veh)	-	- 0.1	0	-

2015 Existing Traffic Volumes
5: U.S. Route 9W & Western Avenue

Peak AM Hour
12/6/2016

						
Lane Group	NBL	NBT	SBT	SBR	SEL	SER
Lane Configurations						
Volume (vph)	62	771	436	154	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	12	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.965			
Flt Protected		0.996				
Satd. Flow (prot)	0	1862	1746	0	1810	0
Flt Permitted		0.996				
Satd. Flow (perm)	0	1862	1746	0	1810	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		356	398		297	
Travel Time (s)		8.1	9.0		6.8	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	65	812	459	162	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	877	621	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	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	1.00	0.96	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

2015 Existing Traffic Volumes
5: U.S. Route 9W & Western Avenue

Peak AM Hour
12/6/2016

Intersection						
Int Delay, s/veh	0.4					
Movement	NBL	NBT	SBT	SBR	SEL	SER
Vol, veh/h	62	771	436	154	0	0
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	95	95	95	95	95	95
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	65	812	459	162	0	0
Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	621	0	-	0	1482	540
Stage 1	-	-	-	-	540	-
Stage 2	-	-	-	-	942	-
Critical Hdwy	4.15	-	-	-	6.45	6.25
Critical Hdwy Stg 1	-	-	-	-	5.45	-
Critical Hdwy Stg 2	-	-	-	-	5.45	-
Follow-up Hdwy	2.245	-	-	-	3.545	3.345
Pot Cap-1 Maneuver	945	-	-	-	136	536
Stage 1	-	-	-	-	578	-
Stage 2	-	-	-	-	374	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	945	-	-	-	119	536
Mov Cap-2 Maneuver	-	-	-	-	119	-
Stage 1	-	-	-	-	578	-
Stage 2	-	-	-	-	327	-
Approach	NB		SB		SE	
HCM Control Delay, s	0.7		0		0	
HCM LOS					A	
Minor Lane/Major Mvmt	NBL	NBT	SELn1	SBT	SBR	
Capacity (veh/h)	945	-	-	-	-	
HCM Lane V/C Ratio	0.069	-	-	-	-	
HCM Control Delay (s)	9.1	0	0	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0.2	-	-	-	-	

2015 Existing Traffic Volumes
6: U.S. Route 9W & King Street

Peak AM Hour
12/6/2016

						
Lane Group	NBL	NBT	SBT	SBR	SEL	SER
Lane Configurations						
Volume (vph)	0	700	436	0	133	102
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	10	10
Storage Length (ft)	0			0	0	50
Storage Lanes	0			0	1	1
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	0	1870	1810	0	1604	1436
Flt Permitted					0.950	
Satd. Flow (perm)	0	1870	1810	0	1604	1436
Link Speed (mph)		30	30		30	
Link Distance (ft)		755	356		216	
Travel Time (s)		17.2	8.1		4.9	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	0	737	459	0	140	107
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	737	459	0	140	107
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	1.00	0.96	1.00	1.00	1.09	1.09
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

2015 Existing Traffic Volumes
6: U.S. Route 9W & King Street

Peak AM Hour
12/6/2016

Intersection

Int Delay, s/veh 6.2

Movement	NBL	NBT	SBT	SBR	SEL	SER
Vol, veh/h	0	700	436	0	133	102
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	50
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	0	737	459	0	140	107

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	459	0	1196
Stage 1	-	-	459
Stage 2	-	-	737
Critical Hdwy	4.15	-	6.45
Critical Hdwy Stg 1	-	-	5.45
Critical Hdwy Stg 2	-	-	5.45
Follow-up Hdwy	2.245	-	3.545
Pot Cap-1 Maneuver	1086	-	203
Stage 1	-	-	630
Stage 2	-	-	468
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1086	-	203
Mov Cap-2 Maneuver	-	-	203
Stage 1	-	-	630
Stage 2	-	-	468

Approach	NB	SB	SE
HCM Control Delay, s	0	0	36.4
HCM LOS			E

Minor Lane/Major Mvmt	NBL	NBT	SELn1	SELn2	SBT	SBR
Capacity (veh/h)	1086	-	203	596	-	-
HCM Lane V/C Ratio	-	-	0.69	0.18	-	-
HCM Control Delay (s)	0	-	54.8	12.4	-	-
HCM Lane LOS	A	-	F	B	-	-
HCM 95th %tile Q(veh)	0	-	4.3	0.7	-	-

2015 Existing Traffic Volumes
7: U.S. Route 9W & Middle School Exit Driveway

Peak AM Hour
12/6/2016



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	52	7	0	754	640	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	-5%			0%	-2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.850					
Flt Protected	0.950					
Satd. Flow (prot)	1762	1577	0	1810	1828	0
Flt Permitted	0.950					
Satd. Flow (perm)	1762	1577	0	1810	1828	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	522			419	278	
Travel Time (s)	11.9			9.5	6.3	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	55	7	0	794	674	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	55	7	0	794	674	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
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	0.97	0.97	1.00	1.00	0.99	0.99
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

2015 Existing Traffic Volumes
7: U.S. Route 9W & Middle School Exit Driveway

Peak AM Hour
12/6/2016

Intersection

Int Delay, s/veh 1.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	52	7	0	754	640	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-5	-	-	0	-2	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	55	7	0	794	674	0

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	1468	674	0
Stage 1	674	-	-
Stage 2	794	-	-
Critical Hdwy	5.45	5.75	4.15
Critical Hdwy Stg 1	4.45	-	-
Critical Hdwy Stg 2	4.45	-	-
Follow-up Hdwy	3.545	3.345	2.245
Pot Cap-1 Maneuver	208	494	903
Stage 1	604	-	-
Stage 2	549	-	-
Platoon blocked, %			-
Mov Cap-1 Maneuver	208	494	903
Mov Cap-2 Maneuver	208	-	-
Stage 1	604	-	-
Stage 2	549	-	-

Approach	EB	NB	SB
HCM Control Delay, s	26.5	0	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	903	-	208	494	-	-
HCM Lane V/C Ratio	-	-	0.263	0.015	-	-
HCM Control Delay (s)	0	-	28.4	12.4	-	-
HCM Lane LOS	A	-	D	B	-	-
HCM 95th %tile Q(veh)	0	-	1	0	-	-

2015 Existing Traffic Volumes
1: U.S. Route 9W & Purdy Avenue

Peak PM Hour
8/30/2017



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	2	8	11	819	797	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	12	12	12	12	12
Grade (%)	-6%			0%	0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.890				0.999	
Flt Protected	0.991			0.999		
Satd. Flow (prot)	1534	0	0	1808	1808	0
Flt Permitted	0.991			0.999		
Satd. Flow (perm)	1534	0	0	1808	1808	0
Link Speed (mph)	30			40	30	
Link Distance (ft)	1246			469	274	
Travel Time (s)	28.3			8.0	6.2	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	2	9	12	910	886	7
Shared Lane Traffic (%)						
Lane Group Flow (vph)	11	0	0	922	893	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	10			11	11	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.05	0.96	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other
Control Type: Unsignalized

2015 Existing Traffic Volumes
1: U.S. Route 9W & Purdy Avenue

Peak PM Hour
8/30/2017

Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	2	8	11	819	797	6
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, %	-6	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	2	9	12	910	886	7
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	1823	889	892	0	-	0
Stage 1	889	-	-	-	-	-
Stage 2	934	-	-	-	-	-
Critical Hdwy	5.25	5.65	4.15	-	-	-
Critical Hdwy Stg 1	4.25	-	-	-	-	-
Critical Hdwy Stg 2	4.25	-	-	-	-	-
Follow-up Hdwy	3.545	3.345	2.245	-	-	-
Pot Cap-1 Maneuver	153	392	748	-	-	-
Stage 1	534	-	-	-	-	-
Stage 2	516	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	148	392	748	-	-	-
Mov Cap-2 Maneuver	148	-	-	-	-	-
Stage 1	534	-	-	-	-	-
Stage 2	499	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	17.7	0.1		0		
HCM LOS	C					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	748	-	295	-	-	
HCM Lane V/C Ratio	0.016	-	0.038	-	-	
HCM Control Delay (s)	9.9	0	17.7	-	-	
HCM Lane LOS	A	A	C	-	-	
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-	

2015 Existing Traffic Volumes
2: U.S. Route 9W & Young Avenue

Peak PM Hour
8/30/2017

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	9	10	820	6	5	800
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	12	12	11	11
Grade (%)	0%		3%			1%
Storage Length (ft)	80	0		0	125	
Storage Lanes	1	1		0	1	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850	0.999			
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1752	1516	1815	0	1686	1774
Flt Permitted	0.950				0.235	
Satd. Flow (perm)	1752	1516	1815	0	417	1774
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		11				
Link Speed (mph)	30		40			30
Link Distance (ft)	629		278			469
Travel Time (s)	14.3		4.7			10.7
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%
Adj. Flow (vph)	9	11	863	6	5	842
Shared Lane Traffic (%)						
Lane Group Flow (vph)	9	11	869	0	5	842
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		11			11
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.04	1.02	1.02	1.05	1.05
Turning Speed (mph)	15	9		9	15	
Number of Detectors	2	2	2		2	2
Detector Template						
Leading Detector (ft)	83	83	83		83	83
Trailing Detector (ft)	-5	-5	-5		-5	-5
Detector 1 Position(ft)	-5	-5	-5		-5	-5
Detector 1 Size(ft)	40	40	40		40	40
Detector 1 Type	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
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
Detector 2 Position(ft)	43	43	43		43	43
Detector 2 Size(ft)	40	40	40		40	40
Detector 2 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)	0.0	0.0	0.0		0.0	0.0
Turn Type	Prot	Perm	NA		pm+pt	NA

2015 Existing Traffic Volumes
2: U.S. Route 9W & Young Avenue

Peak PM Hour
8/30/2017



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Protected Phases	4		2		1	6
Permitted Phases		4			6	
Detector Phase	4	4	2		1	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	10.0		3.0	10.0
Minimum Split (s)	10.0	10.0	16.0		9.0	16.0
Total Split (s)	35.0	35.0	56.0		21.0	77.0
Total Split (%)	31.3%	31.3%	50.0%		18.8%	68.8%
Maximum Green (s)	30.0	30.0	50.0		15.0	71.0
Yellow Time (s)	3.0	3.0	4.0		4.0	4.0
All-Red Time (s)	2.0	2.0	2.0		2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	5.0	5.0	6.0		6.0	6.0
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	2.0		2.0	2.0
Recall Mode	None	None	Min		None	Min
Walk Time (s)	7.0	7.0				
Flash Dont Walk (s)	13.0	13.0				
Pedestrian Calls (#/hr)	0	0				
v/c Ratio	0.06	0.07	0.54		0.01	0.52
Control Delay	31.6	19.2	5.9		2.0	3.6
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	31.6	19.2	5.9		2.0	3.6
Queue Length 50th (ft)	3	0	0		0	0
Queue Length 95th (ft)	19	15	417		2	213
Internal Link Dist (ft)	549		198			389
Turn Bay Length (ft)	80				125	
Base Capacity (vph)	806	703	1582		644	1726
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	0.01	0.02	0.55		0.01	0.49

Intersection Summary

Area Type: Other
Cycle Length: 112
Actuated Cycle Length: 66.8
Natural Cycle: 60
Control Type: Actuated-Uncoordinated

Splits and Phases: 2: U.S. Route 9W & Young Avenue



2015 Existing Traffic Volumes
2: U.S. Route 9W & Young Avenue

Peak PM Hour
8/30/2017

								
Movement	WBL	WBR	NBT	NBR	SBL	SBT		
Lane Configurations								
Volume (veh/h)	9	10	820	6	5	800		
Number	7	14	2	12	1	6		
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	1845	1845	1817	1872	1835	1835		
Adj Flow Rate, veh/h	9	11	863	6	5	842		
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, %	3	3	3	3	3	3		
Cap, veh/h	43	38	1077	7	308	1346		
Arrive On Green	0.02	0.02	0.60	0.60	0.00	0.73		
Sat Flow, veh/h	1757	1568	1802	13	1748	1835		
Grp Volume(v), veh/h	9	11	0	869	5	842		
Grp Sat Flow(s),veh/h/ln	1757	1568	0	1815	1748	1835		
Q Serve(g_s), s	0.2	0.3	0.0	16.8	0.0	10.3		
Cycle Q Clear(g_c), s	0.2	0.3	0.0	16.8	0.0	10.3		
Prop In Lane	1.00	1.00		0.01	1.00			
Lane Grp Cap(c), veh/h	43	38	0	1084	308	1346		
V/C Ratio(X)	0.21	0.29	0.00	0.80	0.02	0.63		
Avail Cap(c_a), veh/h	1159	1035	0	1996	877	2866		
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	1.00	1.00		
Uniform Delay (d), s/veh	21.7	21.8	0.0	7.1	6.8	3.0		
Incr Delay (d2), s/veh	2.4	4.0	0.0	0.5	0.0	0.2		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.1	0.2	0.0	8.4	0.0	5.0		
LnGrp Delay(d),s/veh	24.1	25.8	0.0	7.6	6.8	3.2		
LnGrp LOS	C	C		A	A	A		
Approach Vol, veh/h	20		869			847		
Approach Delay, s/veh	25.0		7.6			3.2		
Approach LOS	C		A			A		
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	6.2	33.2		6.1		39.4		
Change Period (Y+Rc), s	6.0	6.0		5.0		6.0		
Max Green Setting (Gmax), s	15.0	50.0		30.0		71.0		
Max Q Clear Time (g_c+l1), s	2.0	18.8		2.3		12.3		
Green Ext Time (p_c), s	0.0	8.4		0.0		8.9		
Intersection Summary								
HCM 2010 Ctrl Delay			5.6					
HCM 2010 LOS			A					

Two Way Analysis cannot be performed on Signalized Intersection.

2015 Existing Traffic Volumes
3: U.S. Route 9W & Birdsall Avenue

Peak PM Hour
8/30/2017



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	12	10	13	808	788	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	-5%			0%	-2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.938				0.996	
Flt Protected	0.974			0.999		
Satd. Flow (prot)	1695	0	0	1808	1820	0
Flt Permitted	0.974			0.999		
Satd. Flow (perm)	1695	0	0	1808	1820	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	621			334	419	
Travel Time (s)	14.1			7.6	9.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	13	11	14	851	829	23
Shared Lane Traffic (%)						
Lane Group Flow (vph)	24	0	0	865	852	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
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	0.97	0.97	1.00	1.00	0.99	0.99
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

2015 Existing Traffic Volumes
3: U.S. Route 9W & Birdsall Avenue

Peak PM Hour
8/30/2017

Intersection						
Int Delay, s/veh	0.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	12	10	13	808	788	22
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, %	-5	-	-	0	-2	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	13	11	14	851	829	23
Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1719	841	853	0	-	0
Stage 1	841	-	-	-	-	-
Stage 2	878	-	-	-	-	-
Critical Hdwy	5.45	5.75	4.15	-	-	-
Critical Hdwy Stg 1	4.45	-	-	-	-	-
Critical Hdwy Stg 2	4.45	-	-	-	-	-
Follow-up Hdwy	3.545	3.345	2.245	-	-	-
Pot Cap-1 Maneuver	156	405	773	-	-	-
Stage 1	528	-	-	-	-	-
Stage 2	512	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	151	405	773	-	-	-
Mov Cap-2 Maneuver	151	-	-	-	-	-
Stage 1	528	-	-	-	-	-
Stage 2	495	-	-	-	-	-
Approach	EB		NB		SB	
HCM Control Delay, s	24.2		0.2		0	
HCM LOS	C					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	773	-	211	-	-	
HCM Lane V/C Ratio	0.018	-	0.11	-	-	
HCM Control Delay (s)	9.7	0	24.2	-	-	
HCM Lane LOS	A	A	C	-	-	
HCM 95th %tile Q(veh)	0.1	-	0.4	-	-	

2015 Existing Traffic Volumes
4: U.S. Route 9W & Dock Road

Peak PM Hour
8/30/2017

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	5	10	811	6	1	797
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	14	12	12	12
Grade (%)	4%		-2%			-4%
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.907		0.999			
Flt Protected	0.985					
Satd. Flow (prot)	1584	0	1948	0	0	1846
Flt Permitted	0.985					
Satd. Flow (perm)	1584	0	1948	0	0	1846
Link Speed (mph)	30		30			30
Link Distance (ft)	543		398			334
Travel Time (s)	12.3		9.0			7.6
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	5	11	854	6	1	839
Shared Lane Traffic (%)						
Lane Group Flow (vph)	16	0	860	0	0	840
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	1.03	1.03	0.91	0.99	0.97	0.97
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

2015 Existing Traffic Volumes
4: U.S. Route 9W & Dock Road

Peak PM Hour
8/30/2017

Intersection						
Int Delay, s/veh	0.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	5	10	811	6	1	797
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, %	4	-	-2	-	-	-4
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	5	11	854	6	1	839
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	1698	857	0	0	860	0
Stage 1	857	-	-	-	-	-
Stage 2	841	-	-	-	-	-
Critical Hdwy	7.25	6.65	-	-	4.15	-
Critical Hdwy Stg 1	6.25	-	-	-	-	-
Critical Hdwy Stg 2	6.25	-	-	-	-	-
Follow-up Hdwy	3.545	3.345	-	-	2.245	-
Pot Cap-1 Maneuver	68	321	-	-	769	-
Stage 1	340	-	-	-	-	-
Stage 2	347	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	68	321	-	-	769	-
Mov Cap-2 Maneuver	68	-	-	-	-	-
Stage 1	340	-	-	-	-	-
Stage 2	346	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	33.3	0		0		
HCM LOS	D					
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT	
Capacity (veh/h)	-	-	143	769	-	
HCM Lane V/C Ratio	-	-	0.11	0.001	-	
HCM Control Delay (s)	-	-	33.3	9.7	0	
HCM Lane LOS	-	-	D	A	A	
HCM 95th %tile Q(veh)	-	-	0.4	0	-	

2015 Existing Traffic Volumes
5: U.S. Route 9W & Western Avenue

Peak PM Hour
8/30/2017

						
Lane Group	NBL	NBT	SBT	SBR	SEL	SER
Lane Configurations						
Volume (vph)	104	817	627	175	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	12	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.971				
Flt Protected		0.994				
Satd. Flow (prot)	0	1859	1757	0	1810	0
Flt Permitted		0.994				
Satd. Flow (perm)	0	1859	1757	0	1810	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		356	398		297	
Travel Time (s)		8.1	9.0		6.8	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	109	860	660	184	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	969	844	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	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	1.00	0.96	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

2015 Existing Traffic Volumes
5: U.S. Route 9W & Western Avenue

Peak PM Hour
8/30/2017

Intersection						
Int Delay, s/veh	0.6					
Movement	NBL	NBT	SBT	SBR	SEL	SER
Vol, veh/h	104	817	627	175	0	0
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	95	95	95	95	95	95
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	109	860	660	184	0	0
Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	844	0	-	0	1831	752
Stage 1	-	-	-	-	752	-
Stage 2	-	-	-	-	1079	-
Critical Hdwy	4.15	-	-	-	6.45	6.25
Critical Hdwy Stg 1	-	-	-	-	5.45	-
Critical Hdwy Stg 2	-	-	-	-	5.45	-
Follow-up Hdwy	2.245	-	-	-	3.545	3.345
Pot Cap-1 Maneuver	780	-	-	-	82	405
Stage 1	-	-	-	-	460	-
Stage 2	-	-	-	-	322	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	780	-	-	-	60	405
Mov Cap-2 Maneuver	-	-	-	-	60	-
Stage 1	-	-	-	-	460	-
Stage 2	-	-	-	-	236	-
Approach	NB		SB		SE	
HCM Control Delay, s	1.2		0		0	
HCM LOS					A	
Minor Lane/Major Mvmt	NBL	NBT	SELn1	SBT	SBR	
Capacity (veh/h)	780	-	-	-	-	
HCM Lane V/C Ratio	0.14	-	-	-	-	
HCM Control Delay (s)	10.4	0	0	-	-	
HCM Lane LOS	B	A	A	-	-	
HCM 95th %tile Q(veh)	0.5	-	-	-	-	

2015 Existing Traffic Volumes
6: U.S. Route 9W & King Street

Peak PM Hour
8/30/2017

						
Lane Group	NBL	NBT	SBT	SBR	SEL	SER
Lane Configurations						
Volume (vph)	0	818	627	0	103	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	10	10
Storage Length (ft)	0			0	0	50
Storage Lanes	0			0	1	1
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	0	1870	1810	0	1604	1436
Flt Permitted					0.950	
Satd. Flow (perm)	0	1870	1810	0	1604	1436
Link Speed (mph)		30	30		30	
Link Distance (ft)		755	356		216	
Travel Time (s)		17.2	8.1		4.9	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	0	861	660	0	108	89
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	861	660	0	108	89
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	1.00	0.96	1.00	1.00	1.09	1.09
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

Intersection						
Int Delay, s/veh	7.6					
Movement	NBL	NBT	SBT	SBR	SEL	SER
Vol, veh/h	0	818	627	0	103	85
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	50
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	0	861	660	0	108	89
Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	660	0	-	0	1521	660
Stage 1	-	-	-	-	660	-
Stage 2	-	-	-	-	861	-
Critical Hdwy	4.15	-	-	-	6.45	6.25
Critical Hdwy Stg 1	-	-	-	-	5.45	-
Critical Hdwy Stg 2	-	-	-	-	5.45	-
Follow-up Hdwy	2.245	-	-	-	3.545	3.345
Pot Cap-1 Maneuver	914	-	-	-	128	458
Stage 1	-	-	-	-	508	-
Stage 2	-	-	-	-	409	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	914	-	-	-	128	458
Mov Cap-2 Maneuver	-	-	-	-	128	-
Stage 1	-	-	-	-	508	-
Stage 2	-	-	-	-	409	-
Approach	NB		SB		SE	
HCM Control Delay, s	0		0		65.8	
HCM LOS	F					
Minor Lane/Major Mvmt	NBL	NBT	SELn1	SELn2	SBT	SBR
Capacity (veh/h)	914	-	128	458	-	-
HCM Lane V/C Ratio	-	-	0.847	0.195	-	-
HCM Control Delay (s)	0	-	107.8	14.8	-	-
HCM Lane LOS	A	-	F	B	-	-
HCM 95th %tile Q(veh)	0	-	5.3	0.7	-	-

2015 Existing Traffic Volumes
7: U.S. Route 9W & Middle School Exit Driveway

Peak PM Hour
8/30/2017



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↰	↱		↱	↱	
Volume (vph)	6	1	0	820	809	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	-5%			0%	-2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.850					
Flt Protected	0.950					
Satd. Flow (prot)	1762	1577	0	1810	1828	0
Flt Permitted	0.950					
Satd. Flow (perm)	1762	1577	0	1810	1828	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	522			419	278	
Travel Time (s)	11.9			9.5	6.3	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	6	1	0	863	852	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	6	1	0	863	852	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
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	0.97	0.97	1.00	1.00	0.99	0.99
Turning Speed (mph)	15	9	15	9		
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

2015 Existing Traffic Volumes
7: U.S. Route 9W & Middle School Exit Driveway

Peak PM Hour
8/30/2017

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	6	1	0	820	809	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-5	-	-	0	-2	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	6	1	0	863	852	0
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	1715	852	852	0	-	0
Stage 1	852	-	-	-	-	-
Stage 2	863	-	-	-	-	-
Critical Hdwy	5.45	5.75	4.15	-	-	-
Critical Hdwy Stg 1	4.45	-	-	-	-	-
Critical Hdwy Stg 2	4.45	-	-	-	-	-
Follow-up Hdwy	3.545	3.345	2.245	-	-	-
Pot Cap-1 Maneuver	157	400	774	-	-	-
Stage 1	523	-	-	-	-	-
Stage 2	519	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	157	400	774	-	-	-
Mov Cap-2 Maneuver	157	-	-	-	-	-
Stage 1	523	-	-	-	-	-
Stage 2	519	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	26.8	0		0		
HCM LOS	D					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	774	-	157	400	-	-
HCM Lane V/C Ratio	-	-	0.04	0.003	-	-
HCM Control Delay (s)	0	-	28.9	14	-	-
HCM Lane LOS	A	-	D	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	0	-	-

2019 No-Build Traffic Volumes
1: U.S. Route 9W & Purdy Avenue

Peak AM Hour
8/25/2017



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	4	10	4	739	664	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	12	12	12	12	12
Grade (%)	-6%			0%	0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.901				0.999	
Flt Protected	0.987					
Satd. Flow (prot)	1547	0	0	1810	1808	0
Flt Permitted	0.987					
Satd. Flow (perm)	1547	0	0	1810	1808	0
Link Speed (mph)	30			40	30	
Link Distance (ft)	1246			469	274	
Travel Time (s)	28.3			8.0	6.2	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	4	11	4	821	738	3
Shared Lane Traffic (%)						
Lane Group Flow (vph)	15	0	0	825	741	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	10			11	11	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.05	0.96	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other
Control Type: Unsignalized

2019 No-Build Traffic Volumes
1: U.S. Route 9W & Purdy Avenue

Peak AM Hour
8/25/2017

Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	4	10	4	739	664	3
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, %	-6	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	4	11	4	821	738	3
Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1569	739	741	0	-	0
Stage 1	739	-	-	-	-	-
Stage 2	830	-	-	-	-	-
Critical Hdwy	5.25	5.65	4.15	-	-	-
Critical Hdwy Stg 1	4.25	-	-	-	-	-
Critical Hdwy Stg 2	4.25	-	-	-	-	-
Follow-up Hdwy	3.545	3.345	2.245	-	-	-
Pot Cap-1 Maneuver	202	466	852	-	-	-
Stage 1	597	-	-	-	-	-
Stage 2	558	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	200	466	852	-	-	-
Mov Cap-2 Maneuver	200	-	-	-	-	-
Stage 1	597	-	-	-	-	-
Stage 2	553	-	-	-	-	-
Approach	EB		NB		SB	
HCM Control Delay, s	16.2		0		0	
HCM LOS	C					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	852	-	338	-	-	
HCM Lane V/C Ratio	0.005	-	0.046	-	-	
HCM Control Delay (s)	9.2	0	16.2	-	-	
HCM Lane LOS	A	A	C	-	-	
HCM 95th %tile Q(veh)	0	-	0.1	-	-	

2019 No-Build Traffic Volumes
2: U.S. Route 9W & Young Avenue

Peak AM Hour
8/25/2017

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	101	42	701	154	95	578
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	12	12	11	11
Grade (%)	0%		3%			1%
Storage Length (ft)	80	0		0	125	
Storage Lanes	1	1		0	1	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850	0.976			
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1719	1487	1740	0	1653	1740
Flt Permitted	0.950				0.107	
Satd. Flow (perm)	1719	1487	1740	0	186	1740
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		47	13			
Link Speed (mph)	30		40			30
Link Distance (ft)	629		278			469
Travel Time (s)	14.3		4.7			10.7
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	112	47	779	171	106	642
Shared Lane Traffic (%)						
Lane Group Flow (vph)	112	47	950	0	106	642
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		11			11
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.04	1.02	1.02	1.05	1.05
Turning Speed (mph)	15	9		9	15	
Number of Detectors	2	2	2		2	2
Detector Template						
Leading Detector (ft)	83	83	83		83	83
Trailing Detector (ft)	-5	-5	-5		-5	-5
Detector 1 Position(ft)	-5	-5	-5		-5	-5
Detector 1 Size(ft)	40	40	40		40	40
Detector 1 Type	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
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
Detector 2 Position(ft)	43	43	43		43	43
Detector 2 Size(ft)	40	40	40		40	40
Detector 2 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)	0.0	0.0	0.0		0.0	0.0
Turn Type	Prot	Perm	NA		pm+pt	NA

2019 No-Build Traffic Volumes
2: U.S. Route 9W & Young Avenue

Peak AM Hour
8/25/2017



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Protected Phases	4		2		1	6
Permitted Phases		4			6	
Detector Phase	4	4	2		1	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	10.0		3.0	10.0
Minimum Split (s)	10.0	10.0	16.0		9.0	16.0
Total Split (s)	35.0	35.0	56.0		21.0	77.0
Total Split (%)	31.3%	31.3%	50.0%		18.8%	68.8%
Maximum Green (s)	30.0	30.0	50.0		15.0	71.0
Yellow Time (s)	3.0	3.0	4.0		4.0	4.0
All-Red Time (s)	2.0	2.0	2.0		2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	5.0	5.0	6.0		6.0	6.0
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	2.0		2.0	2.0
Recall Mode	None	None	Min		None	Min
Walk Time (s)	7.0	7.0				
Flash Dont Walk (s)	13.0	13.0				
Pedestrian Calls (#/hr)	0	0				
v/c Ratio	0.51	0.20	0.90		0.42	0.49
Control Delay	43.5	12.6	30.4		8.8	6.4
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	43.5	12.6	30.4		8.8	6.4
Queue Length 50th (ft)	56	0	401		13	113
Queue Length 95th (ft)	111	30	#823		33	218
Internal Link Dist (ft)	549		198			389
Turn Bay Length (ft)	80				125	
Base Capacity (vph)	588	540	1051		390	1426
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	0.19	0.09	0.90		0.27	0.45

Intersection Summary

Area Type: Other

Cycle Length: 112

Actuated Cycle Length: 87.8

Natural Cycle: 65

Control Type: Actuated-Uncoordinated

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

Queue shown is maximum after two cycles.

Splits and Phases: 2: U.S. Route 9W & Young Avenue



2019 No-Build Traffic Volumes
2: U.S. Route 9W & Young Avenue

Peak AM Hour
8/25/2017

								
Movement	WBL	WBR	NBT	NBR	SBL	SBT		
Lane Configurations								
Volume (veh/h)	101	42	701	154	95	578		
Number	7	14	2	12	1	6		
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	1810	1810	1782	1872	1800	1800		
Adj Flow Rate, veh/h	112	47	779	171	106	642		
Adj No. of Lanes	1	1	1	0	1	1		
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90		
Percent Heavy Veh, %	5	5	5	5	5	5		
Cap, veh/h	169	151	855	188	254	1330		
Arrive On Green	0.10	0.10	0.60	0.60	0.05	0.74		
Sat Flow, veh/h	1723	1538	1417	311	1715	1800		
Grp Volume(v), veh/h	112	47	0	950	106	642		
Grp Sat Flow(s),veh/h/ln	1723	1538	0	1728	1715	1800		
Q Serve(g_s), s	4.2	1.9	0.0	32.7	1.4	9.8		
Cycle Q Clear(g_c), s	4.2	1.9	0.0	32.7	1.4	9.8		
Prop In Lane	1.00	1.00		0.18	1.00			
Lane Grp Cap(c), veh/h	169	151	0	1043	254	1330		
V/C Ratio(X)	0.66	0.31	0.00	0.91	0.42	0.48		
Avail Cap(c_a), veh/h	765	683	0	1278	555	1892		
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	1.00	1.00		
Uniform Delay (d), s/veh	29.4	28.3	0.0	11.8	14.7	3.6		
Incr Delay (d2), s/veh	4.3	1.2	0.0	7.8	0.4	0.1		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	2.2	0.9	0.0	17.6	1.3	4.7		
LnGrp Delay(d),s/veh	33.7	29.5	0.0	19.6	15.1	3.7		
LnGrp LOS	C	C		B	B	A		
Approach Vol, veh/h	159		950			748		
Approach Delay, s/veh	32.5		19.6			5.3		
Approach LOS	C		B			A		
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	9.1	46.8		11.6		55.9		
Change Period (Y+Rc), s	6.0	6.0		5.0		6.0		
Max Green Setting (Gmax), s	15.0	50.0		30.0		71.0		
Max Q Clear Time (g_c+I1), s	3.4	34.7		6.2		11.8		
Green Ext Time (p_c), s	0.2	6.1		0.8		8.1		
Intersection Summary								
HCM 2010 Ctrl Delay			14.9					
HCM 2010 LOS			B					

Two Way Analysis cannot be performed on Signalized Intersection.

2019 No-Build Traffic Volumes
3: U.S. Route 9W & Birdsall Avenue

Peak AM Hour

8/25/2017



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	22	19	37	777	612	74
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	-5%			0%	-2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.938				0.985	
Flt Protected	0.974			0.998		
Satd. Flow (prot)	1695	0	0	1806	1800	0
Flt Permitted	0.974			0.998		
Satd. Flow (perm)	1695	0	0	1806	1800	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	621			334	419	
Travel Time (s)	14.1			7.6	9.5	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	26	22	44	914	720	87
Shared Lane Traffic (%)						
Lane Group Flow (vph)	48	0	0	958	807	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
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	0.97	0.97	1.00	1.00	0.99	0.99
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

2019 No-Build Traffic Volumes
3: U.S. Route 9W & Birdsall Avenue

Peak AM Hour
8/25/2017

Intersection						
Int Delay, s/veh	1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	22	19	37	777	612	74
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, %	-5	-	-	0	-2	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	26	22	44	914	720	87
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	1765	764	807	0	-	0
Stage 1	764	-	-	-	-	-
Stage 2	1001	-	-	-	-	-
Critical Hdwy	5.45	5.75	4.15	-	-	-
Critical Hdwy Stg 1	4.45	-	-	-	-	-
Critical Hdwy Stg 2	4.45	-	-	-	-	-
Follow-up Hdwy	3.545	3.345	2.245	-	-	-
Pot Cap-1 Maneuver	148	444	805	-	-	-
Stage 1	562	-	-	-	-	-
Stage 2	463	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	132	444	805	-	-	-
Mov Cap-2 Maneuver	132	-	-	-	-	-
Stage 1	562	-	-	-	-	-
Stage 2	412	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	29.3	0.4		0		
HCM LOS	D					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	805	-	196	-	-	
HCM Lane V/C Ratio	0.054	-	0.246	-	-	
HCM Control Delay (s)	9.7	0	29.3	-	-	
HCM Lane LOS	A	A	D	-	-	
HCM 95th %tile Q(veh)	0.2	-	0.9	-	-	

2019 No-Build Traffic Volumes
4: U.S. Route 9W & Dock Road

Peak AM Hour
8/25/2017

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	1	2	812	5	6	624
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	14	12	12	12
Grade (%)	4%		-2%			-4%
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.910		0.999			
Flt Protected	0.984					
Satd. Flow (prot)	1588	0	1948	0	0	1846
Flt Permitted	0.984					
Satd. Flow (perm)	1588	0	1948	0	0	1846
Link Speed (mph)	30		30			30
Link Distance (ft)	543		398			334
Travel Time (s)	12.3		9.0			7.6
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	1	2	855	5	6	657
Shared Lane Traffic (%)						
Lane Group Flow (vph)	3	0	860	0	0	663
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	1.03	1.03	0.91	0.99	0.97	0.97
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

2019 No-Build Traffic Volumes
4: U.S. Route 9W & Dock Road

Peak AM Hour
8/25/2017

Intersection						
Int Delay, s/veh	0.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	1	2	812	5	6	624
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, %	4	-	-2	-	-	-4
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	1	2	855	5	6	657
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	1526	857	0	0	860	0
Stage 1	857	-	-	-	-	-
Stage 2	669	-	-	-	-	-
Critical Hdwy	7.25	6.65	-	-	4.15	-
Critical Hdwy Stg 1	6.25	-	-	-	-	-
Critical Hdwy Stg 2	6.25	-	-	-	-	-
Follow-up Hdwy	3.545	3.345	-	-	2.245	-
Pot Cap-1 Maneuver	91	321	-	-	769	-
Stage 1	340	-	-	-	-	-
Stage 2	434	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	90	321	-	-	769	-
Mov Cap-2 Maneuver	90	-	-	-	-	-
Stage 1	340	-	-	-	-	-
Stage 2	429	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	26.2	0		0.1		
HCM LOS	D					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	- 173	769	-		
HCM Lane V/C Ratio	-	- 0.018	0.008	-		
HCM Control Delay (s)	-	- 26.2	9.7	0		
HCM Lane LOS	-	- D	A	A		
HCM 95th %tile Q(veh)	-	- 0.1	0	-		

2019 No-Build Traffic Volumes
5: U.S. Route 9W & Western Avenue

Peak AM Hour

8/25/2017

						
Lane Group	NBL	NBT	SBT	SBR	SEL	SER
Lane Configurations						
Volume (vph)	66	817	462	163	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	12	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.965				
Flt Protected		0.996				
Satd. Flow (prot)	0	1862	1746	0	1810	0
Flt Permitted		0.996				
Satd. Flow (perm)	0	1862	1746	0	1810	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		356	398		297	
Travel Time (s)		8.1	9.0		6.8	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	69	860	486	172	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	929	658	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	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	1.00	0.96	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

2019 No-Build Traffic Volumes
5: U.S. Route 9W & Western Avenue

Peak AM Hour
8/25/2017

Intersection						
Int Delay, s/veh	0.4					
Movement	NBL	NBT	SBT	SBR	SEL	SER
Vol, veh/h	66	817	462	163	0	0
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	95	95	95	95	95	95
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	69	860	486	172	0	0
Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	658	0	-	0	1571	572
Stage 1	-	-	-	-	572	-
Stage 2	-	-	-	-	999	-
Critical Hdwy	4.15	-	-	-	6.45	6.25
Critical Hdwy Stg 1	-	-	-	-	5.45	-
Critical Hdwy Stg 2	-	-	-	-	5.45	-
Follow-up Hdwy	2.245	-	-	-	3.545	3.345
Pot Cap-1 Maneuver	916	-	-	-	120	514
Stage 1	-	-	-	-	559	-
Stage 2	-	-	-	-	352	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	916	-	-	-	103	514
Mov Cap-2 Maneuver	-	-	-	-	103	-
Stage 1	-	-	-	-	559	-
Stage 2	-	-	-	-	301	-
Approach	NB		SB		SE	
HCM Control Delay, s	0.7		0		0	
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	SELn1	SBT	SBR	
Capacity (veh/h)	916	-	-	-	-	
HCM Lane V/C Ratio	0.076	-	-	-	-	
HCM Control Delay (s)	9.3	0	0	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0.2	-	-	-	-	

2019 No-Build Traffic Volumes
6: U.S. Route 9W & King Street

Peak AM Hour
8/25/2017

						
Lane Group	NBL	NBT	SBT	SBR	SEL	SER
Lane Configurations						
Volume (vph)	0	742	462	0	141	108
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	10	10
Storage Length (ft)	0			0	0	50
Storage Lanes	0			0	1	1
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	0	1870	1810	0	1604	1436
Flt Permitted					0.950	
Satd. Flow (perm)	0	1870	1810	0	1604	1436
Link Speed (mph)		30	30		30	
Link Distance (ft)		755	356		216	
Travel Time (s)		17.2	8.1		4.9	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	0	781	486	0	148	114
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	781	486	0	148	114
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	1.00	0.96	1.00	1.00	1.09	1.09
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

2019 No-Build Traffic Volumes
6: U.S. Route 9W & King Street

Peak AM Hour
8/25/2017

Intersection						
Int Delay, s/veh	8.3					
Movement	NBL	NBT	SBT	SBR	SEL	SER
Vol, veh/h	0	742	462	0	141	108
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	50
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	0	781	486	0	148	114
Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	486	0	-	0	1267	486
Stage 1	-	-	-	-	486	-
Stage 2	-	-	-	-	781	-
Critical Hdwy	4.15	-	-	-	6.45	6.25
Critical Hdwy Stg 1	-	-	-	-	5.45	-
Critical Hdwy Stg 2	-	-	-	-	5.45	-
Follow-up Hdwy	2.245	-	-	-	3.545	3.345
Pot Cap-1 Maneuver	1062	-	-	-	184	575
Stage 1	-	-	-	-	612	-
Stage 2	-	-	-	-	446	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1062	-	-	-	184	575
Mov Cap-2 Maneuver	-	-	-	-	184	-
Stage 1	-	-	-	-	612	-
Stage 2	-	-	-	-	446	-
Approach	NB		SB		SE	
HCM Control Delay, s	0		0		48.5	
HCM LOS	E					
Minor Lane/Major Mvmt	NBL	NBT	SELn1	SELn2	SBT	SBR
Capacity (veh/h)	1062	-	184	575	-	-
HCM Lane V/C Ratio	-	-	0.807	0.198	-	-
HCM Control Delay (s)	0	-	75.9	12.8	-	-
HCM Lane LOS	A	-	F	B	-	-
HCM 95th %tile Q(veh)	0	-	5.6	0.7	-	-

2019 No-Build Traffic Volumes
7: U.S. Route 9W & Middle School Exit Driveway

Peak AM Hour

8/25/2017



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	55	7	0	799	678	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	-5%			0%	-2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.850					
Flt Protected	0.950					
Satd. Flow (prot)	1762	1577	0	1810	1828	0
Flt Permitted	0.950					
Satd. Flow (perm)	1762	1577	0	1810	1828	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	522			419	278	
Travel Time (s)	11.9			9.5	6.3	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	58	7	0	841	714	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	58	7	0	841	714	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
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	0.97	0.97	1.00	1.00	0.99	0.99
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

2019 No-Build Traffic Volumes
7: U.S. Route 9W & Middle School Exit Driveway

Peak AM Hour
8/25/2017

Intersection						
Int Delay, s/veh	1.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	55	7	0	799	678	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-5	-	-	0	-2	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	58	7	0	841	714	0
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	1555	714	714	0	-	0
Stage 1	714	-	-	-	-	-
Stage 2	841	-	-	-	-	-
Critical Hdwy	5.45	5.75	4.15	-	-	-
Critical Hdwy Stg 1	4.45	-	-	-	-	-
Critical Hdwy Stg 2	4.45	-	-	-	-	-
Follow-up Hdwy	3.545	3.345	2.245	-	-	-
Pot Cap-1 Maneuver	188	471	872	-	-	-
Stage 1	585	-	-	-	-	-
Stage 2	528	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	188	471	872	-	-	-
Mov Cap-2 Maneuver	188	-	-	-	-	-
Stage 1	585	-	-	-	-	-
Stage 2	528	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	30.2	0		0		
HCM LOS	D					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	872	-	188	471	-	-
HCM Lane V/C Ratio	-	-	0.308	0.016	-	-
HCM Control Delay (s)	0	-	32.4	12.8	-	-
HCM Lane LOS	A	-	D	B	-	-
HCM 95th %tile Q(veh)	0	-	1.2	0	-	-

2019 Build Traffic Volumes
1: U.S. Route 9W & Purdy Avenue

Peak PM Hour
8/30/2017



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	2	8	12	893	877	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	12	12	12	12	12
Grade (%)	-6%			0%	0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.890				0.999	
Flt Protected	0.991			0.999		
Satd. Flow (prot)	1534	0	0	1808	1808	0
Flt Permitted	0.991			0.999		
Satd. Flow (perm)	1534	0	0	1808	1808	0
Link Speed (mph)	30			40	30	
Link Distance (ft)	1246			469	274	
Travel Time (s)	28.3			8.0	6.2	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	2	9	13	992	974	7
Shared Lane Traffic (%)						
Lane Group Flow (vph)	11	0	0	1005	981	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	10			11	11	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.05	0.96	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other
Control Type: Unsignalized

2019 Build Traffic Volumes
1: U.S. Route 9W & Purdy Avenue

Peak PM Hour
8/30/2017

Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	2	8	12	893	877	6
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, %	-6	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	2	9	13	992	974	7
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	1997	978	981	0	-	0
Stage 1	978	-	-	-	-	-
Stage 2	1019	-	-	-	-	-
Critical Hdwy	5.25	5.65	4.15	-	-	-
Critical Hdwy Stg 1	4.25	-	-	-	-	-
Critical Hdwy Stg 2	4.25	-	-	-	-	-
Follow-up Hdwy	3.545	3.345	2.245	-	-	-
Pot Cap-1 Maneuver	126	353	692	-	-	-
Stage 1	499	-	-	-	-	-
Stage 2	483	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	121	353	692	-	-	-
Mov Cap-2 Maneuver	121	-	-	-	-	-
Stage 1	499	-	-	-	-	-
Stage 2	463	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	19.8	0.1		0		
HCM LOS	C					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	692	-	255	-	-	
HCM Lane V/C Ratio	0.019	-	0.044	-	-	
HCM Control Delay (s)	10.3	0	19.8	-	-	
HCM Lane LOS	B	A	C	-	-	
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-	

2019 Build Traffic Volumes
2: U.S. Route 9W & Site Access/Young Avenue

Peak PM Hour

8/30/2017

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	46	5	58	10	6	11	80	848	6	5	839	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	11	11	12	12	12	11	11	12
Grade (%)		0%			0%			3%			1%	
Storage Length (ft)	125		0	80		0	100		0	125		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		0.861			0.900			0.999			0.993	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1752	1588	0	1752	1605	0	1726	1815	0	1686	1762	0
Flt Permitted	0.746			0.714			0.201			0.223		
Satd. Flow (perm)	1376	1588	0	1317	1605	0	365	1815	0	396	1762	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		61			12						4	
Link Speed (mph)		30			30			40			30	
Link Distance (ft)		303			629			278			469	
Travel Time (s)		6.9			14.3			4.7			10.7	
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 (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Adj. Flow (vph)	48	5	61	11	6	12	84	893	6	5	883	43
Shared Lane Traffic (%)												
Lane Group Flow (vph)	48	66	0	11	18	0	84	899	0	5	926	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	1.00	1.00	1.00	1.00	1.04	1.04	1.02	1.02	1.02	1.05	1.05	1.01
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		2	2		1	2		2	2	
Detector Template	Left	Thru			Thru		Left					
Leading Detector (ft)	20	100		83	100		20	83		83	83	
Trailing Detector (ft)	0	0		-5	0		0	-5		-5	-5	
Detector 1 Position(ft)	0	0		-5	0		0	-5		-5	-5	
Detector 1 Size(ft)	20	6		40	6		20	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	
Detector 2 Position(ft)		94		43	94			43		43	43	
Detector 2 Size(ft)		6		40	6			40		40	40	
Detector 2 Type		Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0		0.0	0.0			0.0		0.0	0.0	
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	

2019 Build Traffic Volumes
2: U.S. Route 9W & Site Access/Young Avenue

Peak PM Hour
8/30/2017

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		8			4		5	2		1	6	
Permitted Phases	8			4			2			6		
Detector Phase	8	8		4	4		5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		4.0	10.0		3.0	10.0	
Minimum Split (s)	10.0	10.0		10.0	10.0		8.0	16.0		9.0	16.0	
Total Split (s)	35.0	35.0		35.0	35.0		8.0	56.0		21.0	77.0	
Total Split (%)	29.2%	29.2%		29.2%	29.2%		6.7%	46.7%		17.5%	64.2%	
Maximum Green (s)	30.0	30.0		30.0	30.0		4.0	50.0		15.0	71.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.5	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		0.5	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0		4.0	6.0		6.0	6.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	2.0		2.0	2.0	
Recall Mode	None	None		None	None		None	Min		None	Min	
Walk Time (s)	5.0	5.0		7.0	7.0							
Flash Dont Walk (s)	11.0	11.0		13.0	13.0							
Pedestrian Calls (#/hr)	0	0		0	0							
v/c Ratio	0.31	0.28		0.07	0.09		0.23	0.65		0.01	0.74	
Control Delay	40.3	15.2		36.4	24.0		4.1	9.5		2.8	14.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	40.3	15.2		36.4	24.0		4.1	9.5		2.8	14.6	
Queue Length 50th (ft)	20	2		4	2		7	169		1	292	
Queue Length 95th (ft)	65	42		24	25		19	518		3	521	
Internal Link Dist (ft)		223			549			198			389	
Turn Bay Length (ft)	125			80			100			125		
Base Capacity (vph)	561	683		537	661		360	1477		568	1608	
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	0.09	0.10		0.02	0.03		0.23	0.61		0.01	0.58	

Intersection Summary

Area Type: Other

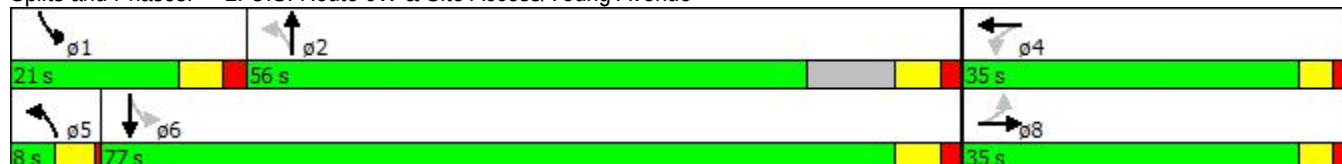
Cycle Length: 120

Actuated Cycle Length: 76

Natural Cycle: 60

Control Type: Actuated-Uncoordinated

Splits and Phases: 2: U.S. Route 9W & Site Access/Young Avenue



2019 Build Traffic Volumes
2: U.S. Route 9W & Site Access/Young Avenue

Peak PM Hour
8/30/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	46	5	58	10	6	11	80	848	6	5	839	41
Number	3	8	18	7	4	14	5	2	12	1	6	16
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	1845	1845	1900	1845	1845	1900	1817	1817	1872	1835	1835	1890
Adj Flow Rate, veh/h	48	5	61	11	6	12	84	893	6	5	883	43
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	1	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, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	224	10	123	180	46	92	332	1123	8	283	1060	52
Arrive On Green	0.08	0.08	0.08	0.08	0.08	0.08	0.05	0.62	0.62	0.00	0.61	0.61
Sat Flow, veh/h	1376	120	1466	1317	550	1100	1730	1803	12	1748	1736	85
Grp Volume(v), veh/h	48	0	66	11	0	18	84	0	899	5	0	926
Grp Sat Flow(s),veh/h/ln	1376	0	1586	1317	0	1650	1730	0	1815	1748	0	1821
Q Serve(g_s), s	2.0	0.0	2.3	0.5	0.0	0.6	1.0	0.0	21.8	0.1	0.0	23.7
Cycle Q Clear(g_c), s	2.6	0.0	2.3	2.8	0.0	0.6	1.0	0.0	21.8	0.1	0.0	23.7
Prop In Lane	1.00		0.92	1.00		0.67	1.00		0.01	1.00		0.05
Lane Grp Cap(c), veh/h	224	0	133	180	0	138	332	0	1131	283	0	1111
V/C Ratio(X)	0.21	0.00	0.50	0.06	0.00	0.13	0.25	0.00	0.79	0.02	0.00	0.83
Avail Cap(c_a), veh/h	810	0	809	742	0	842	362	0	1543	722	0	2198
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	26.1	0.0	25.8	27.1	0.0	25.0	9.1	0.0	8.3	8.2	0.0	9.1
Incr Delay (d2), s/veh	0.5	0.0	2.9	0.1	0.0	0.4	0.4	0.0	1.4	0.0	0.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	1.1	0.2	0.0	0.3	0.7	0.0	11.2	0.0	0.0	11.8
LnGrp Delay(d),s/veh	26.6	0.0	28.6	27.2	0.0	25.4	9.5	0.0	9.7	8.2	0.0	9.7
LnGrp LOS	C		C	C		C	A		A	A		A
Approach Vol, veh/h		114			29			983			931	
Approach Delay, s/veh		27.8			26.1			9.7			9.7	
Approach LOS		C			C			A			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.2	42.6		9.9	7.0	41.9		9.9				
Change Period (Y+Rc), s	6.0	6.0		5.0	4.0	6.0		5.0				
Max Green Setting (Gmax), s	15.0	50.0		30.0	4.0	71.0		30.0				
Max Q Clear Time (g_c+I1), s	2.1	23.8		4.8	3.0	25.7		4.6				
Green Ext Time (p_c), s	0.0	9.1		0.6	0.0	10.2		0.6				
Intersection Summary												
HCM 2010 Ctrl Delay			10.9									
HCM 2010 LOS			B									

Two Way Analysis cannot be performed on Signalized Intersection.

2019 Build Traffic Volumes
3: U.S. Route 9W & Birdsall Avenue

Peak PM Hour
8/30/2017



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	16	11	14	916	882	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	-5%			0%	-2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.944				0.996	
Flt Protected	0.972			0.999		
Satd. Flow (prot)	1702	0	0	1808	1820	0
Flt Permitted	0.972			0.999		
Satd. Flow (perm)	1702	0	0	1808	1820	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	621			334	419	
Travel Time (s)	14.1			7.6	9.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	17	12	15	964	928	27
Shared Lane Traffic (%)						
Lane Group Flow (vph)	29	0	0	979	955	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
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	0.97	0.97	1.00	1.00	0.99	0.99
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

2019 Build Traffic Volumes
3: U.S. Route 9W & Birdsall Avenue

Peak PM Hour
8/30/2017

Intersection						
Int Delay, s/veh	0.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	16	11	14	916	882	26
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, %	-5	-	-	0	-2	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	17	12	15	964	928	27
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	1936	942	956	0	-	0
Stage 1	942	-	-	-	-	-
Stage 2	994	-	-	-	-	-
Critical Hdwy	5.45	5.75	4.15	-	-	-
Critical Hdwy Stg 1	4.45	-	-	-	-	-
Critical Hdwy Stg 2	4.45	-	-	-	-	-
Follow-up Hdwy	3.545	3.345	2.245	-	-	-
Pot Cap-1 Maneuver	121	359	707	-	-	-
Stage 1	486	-	-	-	-	-
Stage 2	466	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	115	359	707	-	-	-
Mov Cap-2 Maneuver	115	-	-	-	-	-
Stage 1	486	-	-	-	-	-
Stage 2	445	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	32.5	0.2		0		
HCM LOS	D					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	707	-	159	-	-	
HCM Lane V/C Ratio	0.021	-	0.179	-	-	
HCM Control Delay (s)	10.2	0	32.5	-	-	
HCM Lane LOS	B	A	D	-	-	
HCM 95th %tile Q(veh)	0.1	-	0.6	-	-	

2019 Build Traffic Volumes
4: U.S. Route 9W & Dock Road

Peak PM Hour
8/30/2017

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	5	11	919	6	1	892
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	14	12	12	12
Grade (%)	4%		-2%			-4%
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.905		0.999			
Flt Protected	0.986					
Satd. Flow (prot)	1582	0	1948	0	0	1846
Flt Permitted	0.986					
Satd. Flow (perm)	1582	0	1948	0	0	1846
Link Speed (mph)	30		30			30
Link Distance (ft)	543		398			334
Travel Time (s)	12.3		9.0			7.6
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	5	12	967	6	1	939
Shared Lane Traffic (%)						
Lane Group Flow (vph)	17	0	973	0	0	940
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	1.03	1.03	0.91	0.99	0.97	0.97
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

2019 Build Traffic Volumes
4: U.S. Route 9W & Dock Road

Peak PM Hour
8/30/2017

Intersection						
Int Delay, s/veh	0.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	5	11	919	6	1	892
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, %	4	-	-2	-	-	-4
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	5	12	967	6	1	939
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	1912	971	0	0	974	0
Stage 1	971	-	-	-	-	-
Stage 2	941	-	-	-	-	-
Critical Hdwy	7.25	6.65	-	-	4.15	-
Critical Hdwy Stg 1	6.25	-	-	-	-	-
Critical Hdwy Stg 2	6.25	-	-	-	-	-
Follow-up Hdwy	3.545	3.345	-	-	2.245	-
Pot Cap-1 Maneuver	48	272	-	-	696	-
Stage 1	292	-	-	-	-	-
Stage 2	304	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	48	272	-	-	696	-
Mov Cap-2 Maneuver	48	-	-	-	-	-
Stage 1	292	-	-	-	-	-
Stage 2	303	-	-	-	-	-
Approach	WB		NB		SB	
HCM Control Delay, s	43.1		0		0	
HCM LOS	E					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	- 111	696	-		
HCM Lane V/C Ratio	-	- 0.152	0.002	-		
HCM Control Delay (s)	-	- 43.1	10.2	0		
HCM Lane LOS	-	- E	B	A		
HCM 95th %tile Q(veh)	-	- 0.5	0	-		

2019 Build Traffic Volumes
5: U.S. Route 9W & Western Avenue

Peak PM Hour
8/30/2017

						
Lane Group	NBL	NBT	SBT	SBR	SEL	SER
Lane Configurations						
Volume (vph)	110	916	704	193	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	12	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.971				
Flt Protected		0.995				
Satd. Flow (prot)	0	1860	1757	0	1810	0
Flt Permitted		0.995				
Satd. Flow (perm)	0	1860	1757	0	1810	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		356	398		297	
Travel Time (s)		8.1	9.0		6.8	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	116	964	741	203	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1080	944	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	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	1.00	0.96	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

2019 Build Traffic Volumes
5: U.S. Route 9W & Western Avenue

Peak PM Hour
8/30/2017

Intersection						
Int Delay, s/veh	0.6					
Movement	NBL	NBT	SBT	SBR	SEL	SER
Vol, veh/h	110	916	704	193	0	0
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	95	95	95	95	95	95
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	116	964	741	203	0	0
Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	944	0	-	0	2039	843
Stage 1	-	-	-	-	843	-
Stage 2	-	-	-	-	1196	-
Critical Hdwy	4.15	-	-	-	6.45	6.25
Critical Hdwy Stg 1	-	-	-	-	5.45	-
Critical Hdwy Stg 2	-	-	-	-	5.45	-
Follow-up Hdwy	2.245	-	-	-	3.545	3.345
Pot Cap-1 Maneuver	715	-	-	-	61	359
Stage 1	-	-	-	-	417	-
Stage 2	-	-	-	-	283	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	715	-	-	-	40	359
Mov Cap-2 Maneuver	-	-	-	-	40	-
Stage 1	-	-	-	-	417	-
Stage 2	-	-	-	-	184	-
Approach	NB		SB		SE	
HCM Control Delay, s	1.2		0		0	
HCM LOS					A	
Minor Lane/Major Mvmt	NBL	NBT	SELn1	SBT	SBR	
Capacity (veh/h)	715	-	-	-	-	
HCM Lane V/C Ratio	0.162	-	-	-	-	
HCM Control Delay (s)	11	0	0	-	-	
HCM Lane LOS	B	A	A	-	-	
HCM 95th %tile Q(veh)	0.6	-	-	-	-	

2019 Build Traffic Volumes
6: U.S. Route 9W & King Street

Peak PM Hour
8/30/2017

						
Lane Group	NBL	NBT	SBT	SBR	SEL	SER
Lane Configurations						
Volume (vph)	0	917	704	0	119	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	10	10
Storage Length (ft)	0			0	0	50
Storage Lanes	0			0	1	1
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	0	1870	1810	0	1604	1436
Flt Permitted					0.950	
Satd. Flow (perm)	0	1870	1810	0	1604	1436
Link Speed (mph)		30	30		30	
Link Distance (ft)		755	356		216	
Travel Time (s)		17.2	8.1		4.9	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	0	965	741	0	125	95
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	965	741	0	125	95
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	1.00	0.96	1.00	1.00	1.09	1.09
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

2019 Build Traffic Volumes
6: U.S. Route 9W & King Street

Peak PM Hour
8/30/2017

Intersection						
Int Delay, s/veh	17.5					
Movement	NBL	NBT	SBT	SBR	SEL	SER
Vol, veh/h	0	917	704	0	119	90
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	50
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	0	965	741	0	125	95
Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	741	0	-	0	1706	741
Stage 1	-	-	-	-	741	-
Stage 2	-	-	-	-	965	-
Critical Hdwy	4.15	-	-	-	6.45	6.25
Critical Hdwy Stg 1	-	-	-	-	5.45	-
Critical Hdwy Stg 2	-	-	-	-	5.45	-
Follow-up Hdwy	2.245	-	-	-	3.545	3.345
Pot Cap-1 Maneuver	852	-	-	-	~ 99	411
Stage 1	-	-	-	-	466	-
Stage 2	-	-	-	-	365	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	852	-	-	-	~ 99	411
Mov Cap-2 Maneuver	-	-	-	-	~ 99	-
Stage 1	-	-	-	-	466	-
Stage 2	-	-	-	-	365	-
Approach	NB		SB		SE	
HCM Control Delay, s	0		0		153.3	
HCM LOS	F					
Minor Lane/Major Mvmt	NBL	NBT	SELn1	SELn2	SBT	SBR
Capacity (veh/h)	852	-	99	411	-	-
HCM Lane V/C Ratio	-	-	1.265	0.231	-	-
HCM Control Delay (s)	0	-	256.8	16.4	-	-
HCM Lane LOS	A	-	F	C	-	-
HCM 95th %tile Q(veh)	0	-	8.7	0.9	-	-
Notes						
~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon						

2019 Build Traffic Volumes
7: U.S. Route 9W & Middle School Exit Driveway

Peak PM Hour
8/30/2017



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	3	1	0	932	907	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	-5%			0%	-2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.850					
Flt Protected	0.950					
Satd. Flow (prot)	1762	1577	0	1810	1828	0
Flt Permitted	0.950					
Satd. Flow (perm)	1762	1577	0	1810	1828	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	522			419	278	
Travel Time (s)	11.9			9.5	6.3	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	3	1	0	981	955	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	3	1	0	981	955	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	0.97	0.97	1.00	1.00	0.99	0.99
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

2019 Build Traffic Volumes
7: U.S. Route 9W & Middle School Exit Driveway

Peak PM Hour
8/30/2017

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	3	1	0	932	907	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-5	-	-	0	-2	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	3	1	0	981	955	0
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	1936	955	955	0	-	0
Stage 1	955	-	-	-	-	-
Stage 2	981	-	-	-	-	-
Critical Hdwy	5.45	5.75	4.15	-	-	-
Critical Hdwy Stg 1	4.45	-	-	-	-	-
Critical Hdwy Stg 2	4.45	-	-	-	-	-
Follow-up Hdwy	3.545	3.345	2.245	-	-	-
Pot Cap-1 Maneuver	121	353	708	-	-	-
Stage 1	481	-	-	-	-	-
Stage 2	471	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	121	353	708	-	-	-
Mov Cap-2 Maneuver	121	-	-	-	-	-
Stage 1	481	-	-	-	-	-
Stage 2	471	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	30.4	0		0		
HCM LOS	D					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	708	-	121	353	-	-
HCM Lane V/C Ratio	-	-	0.026	0.003	-	-
HCM Control Delay (s)	0	-	35.5	15.2	-	-
HCM Lane LOS	A	-	E	C	-	-
HCM 95th %tile Q(veh)	0	-	0.1	0	-	-

2019 Build Traffic Volumes
1: U.S. Route 9W & Purdy Avenue

Peak AM Hour
8/30/2017



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	4	10	4	759	677	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	12	12	12	12	12
Grade (%)	-6%			0%	0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.901				0.999	
Flt Protected	0.987					
Satd. Flow (prot)	1547	0	0	1810	1808	0
Flt Permitted	0.987					
Satd. Flow (perm)	1547	0	0	1810	1808	0
Link Speed (mph)	30			40	30	
Link Distance (ft)	1246			469	274	
Travel Time (s)	28.3			8.0	6.2	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	4	11	4	843	752	3
Shared Lane Traffic (%)						
Lane Group Flow (vph)	15	0	0	847	755	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	10			11	11	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.05	0.96	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other
Control Type: Unsignalized

2019 Build Traffic Volumes
1: U.S. Route 9W & Purdy Avenue

Peak AM Hour
8/30/2017

Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	4	10	4	759	677	3
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, %	-6	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	4	11	4	843	752	3
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	1606	754	756	0	-	0
Stage 1	754	-	-	-	-	-
Stage 2	852	-	-	-	-	-
Critical Hdwy	5.25	5.65	4.15	-	-	-
Critical Hdwy Stg 1	4.25	-	-	-	-	-
Critical Hdwy Stg 2	4.25	-	-	-	-	-
Follow-up Hdwy	3.545	3.345	2.245	-	-	-
Pot Cap-1 Maneuver	194	458	841	-	-	-
Stage 1	591	-	-	-	-	-
Stage 2	549	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	192	458	841	-	-	-
Mov Cap-2 Maneuver	192	-	-	-	-	-
Stage 1	591	-	-	-	-	-
Stage 2	544	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	16.5	0		0		
HCM LOS	C					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	841	-	328	-	-	
HCM Lane V/C Ratio	0.005	-	0.047	-	-	
HCM Control Delay (s)	9.3	0	16.5	-	-	
HCM Lane LOS	A	A	C	-	-	
HCM 95th %tile Q(veh)	0	-	0.1	-	-	

2019 Build Traffic Volumes
2: U.S. Route 9W & Site Access/Young Avenue

Peak AM Hour
8/30/2017

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	55	3	40	101	2	42	26	666	154	95	578	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	11	11	12	12	12	11	11	12
Grade (%)		0%			0%			3%			1%	
Storage Length (ft)	125		0	80		0	100		0	125		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		0.860			0.856			0.972			0.997	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1719	1556	0	1719	1497	0	1693	1732	0	1653	1735	0
Flt Permitted	0.725			0.726			0.351			0.129		
Satd. Flow (perm)	1312	1556	0	1314	1497	0	626	1732	0	225	1735	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		44			47			16			2	
Link Speed (mph)		30			30			40			30	
Link Distance (ft)		264			629			278			469	
Travel Time (s)		6.0			14.3			4.7			10.7	
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 (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	61	3	44	112	2	47	29	740	171	106	642	14
Shared Lane Traffic (%)												
Lane Group Flow (vph)	61	47	0	112	49	0	29	911	0	106	656	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	1.00	1.00	1.00	1.00	1.04	1.04	1.02	1.02	1.02	1.05	1.05	1.01
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2		2	2		2	2		2	2	
Detector Template												
Leading Detector (ft)	83	83		83	83		83	83		83	83	
Trailing Detector (ft)	-5	-5		-5	-5		-5	-5		-5	-5	
Detector 1 Position(ft)	-5	-5		-5	-5		-5	-5		-5	-5	
Detector 1 Size(ft)	40	40		40	40		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	
Detector 2 Position(ft)	43	43		43	43		43	43		43	43	
Detector 2 Size(ft)	40	40		40	40		40	40		40	40	
Detector 2 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	

2019 Build Traffic Volumes
2: U.S. Route 9W & Site Access/Young Avenue

Peak AM Hour
8/30/2017

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		8			4		5	2		1	6	
Permitted Phases	8			4			2			6		
Detector Phase	8	8		4	4		5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		4.0	10.0		3.0	10.0	
Minimum Split (s)	11.0	11.0		11.0	11.0		10.0	16.0		9.0	26.0	
Total Split (s)	30.0	30.0		30.0	30.0		15.0	45.0		15.0	45.0	
Total Split (%)	33.3%	33.3%		33.3%	33.3%		16.7%	50.0%		16.7%	50.0%	
Maximum Green (s)	25.0	25.0		25.0	25.0		9.0	39.0		9.0	39.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0		6.0	6.0		6.0	6.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	None	None		None	None		None	Min		None	Min	
Walk Time (s)				7.0	7.0							7.0
Flash Dont Walk (s)				13.0	13.0							13.0
Pedestrian Calls (#/hr)				0	0							0
v/c Ratio	0.32	0.18		0.58	0.19		0.06	0.85		0.37	0.54	
Control Delay	32.6	11.5		41.6	11.2		4.9	27.2		8.1	12.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	32.6	11.5		41.6	11.2		4.9	27.2		8.1	12.0	
Queue Length 50th (ft)	25	1		48	1		3	362		12	115	
Queue Length 95th (ft)	60	28		100	28		12	#755		34	378	
Internal Link Dist (ft)		184			549			198			389	
Turn Bay Length (ft)	125			80			100			125		
Base Capacity (vph)	460	574		460	555		568	1075		342	1206	
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	0.13	0.08		0.24	0.09		0.05	0.85		0.31	0.54	

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 72

Natural Cycle: 65

Control Type: Actuated-Uncoordinated

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

Queue shown is maximum after two cycles.

Splits and Phases: 2: U.S. Route 9W & Site Access/Young Avenue



2019 Build Traffic Volumes
2: U.S. Route 9W & Site Access/Young Avenue

Peak AM Hour
8/30/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	55	3	40	101	2	42	26	666	154	95	578	13
Number	3	8	18	7	4	14	5	2	12	1	6	16
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	1810	1810	1900	1810	1810	1900	1782	1782	1872	1800	1800	1890
Adj Flow Rate, veh/h	61	3	44	112	2	47	29	740	171	106	642	14
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	1	1	0
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
Percent Heavy Veh, %	5	5	5	5	5	5	5	5	5	5	5	5
Cap, veh/h	264	15	216	266	9	221	395	775	179	221	1014	22
Arrive On Green	0.15	0.15	0.15	0.15	0.15	0.15	0.02	0.55	0.55	0.05	0.58	0.58
Sat Flow, veh/h	1312	99	1454	1314	63	1484	1698	1401	324	1715	1755	38
Grp Volume(v), veh/h	61	0	47	112	0	49	29	0	911	106	0	656
Grp Sat Flow(s),veh/h/ln	1312	0	1553	1314	0	1548	1698	0	1725	1715	0	1794
Q Serve(g_s), s	2.9	0.0	1.8	5.6	0.0	1.9	0.5	0.0	34.1	1.8	0.0	16.6
Cycle Q Clear(g_c), s	4.8	0.0	1.8	7.4	0.0	1.9	0.5	0.0	34.1	1.8	0.0	16.6
Prop In Lane	1.00		0.94	1.00		0.96	1.00		0.19	1.00		0.02
Lane Grp Cap(c), veh/h	264	0	231	266	0	230	395	0	954	221	0	1036
V/C Ratio(X)	0.23	0.00	0.20	0.42	0.00	0.21	0.07	0.00	0.96	0.48	0.00	0.63
Avail Cap(c_a), veh/h	550	0	569	552	0	567	577	0	986	363	0	1036
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	27.7	0.0	25.5	28.7	0.0	25.5	7.9	0.0	14.5	15.7	0.0	9.6
Incr Delay (d2), s/veh	0.2	0.0	0.2	0.4	0.0	0.2	0.0	0.0	18.2	0.6	0.0	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	0.0	0.8	2.1	0.0	0.8	0.2	0.0	20.8	1.1	0.0	8.3
LnGrp Delay(d),s/veh	27.8	0.0	25.7	29.1	0.0	25.7	7.9	0.0	32.6	16.3	0.0	10.6
LnGrp LOS	C		C	C		C	A		C	B		B
Approach Vol, veh/h		108			161			940			762	
Approach Delay, s/veh		26.9			28.1			31.9			11.4	
Approach LOS		C			C			C			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.4	43.7		15.1	7.7	45.4		15.1				
Change Period (Y+Rc), s	6.0	6.0		5.0	6.0	6.0		5.0				
Max Green Setting (Gmax), s	9.0	39.0		25.0	9.0	39.0		25.0				
Max Q Clear Time (g_c+I1), s	3.8	36.1		9.4	2.5	18.6		6.8				
Green Ext Time (p_c), s	0.1	1.6		0.8	0.0	6.6		0.9				
Intersection Summary												
HCM 2010 Ctrl Delay			23.4									
HCM 2010 LOS			C									

Two Way Analysis cannot be performed on Signalized Intersection.

2019 Build Traffic Volumes
3: U.S. Route 9W & Birdsall Avenue

Peak AM Hour
8/30/2017



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	23	19	37	802	650	76
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	-5%			0%	-2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.939				0.986	
Flt Protected	0.973			0.998		
Satd. Flow (prot)	1695	0	0	1806	1802	0
Flt Permitted	0.973			0.998		
Satd. Flow (perm)	1695	0	0	1806	1802	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	621			334	419	
Travel Time (s)	14.1			7.6	9.5	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	27	22	44	944	765	89
Shared Lane Traffic (%)						
Lane Group Flow (vph)	49	0	0	988	854	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
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	0.97	0.97	1.00	1.00	0.99	0.99
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

2019 Build Traffic Volumes
3: U.S. Route 9W & Birdsall Avenue

Peak AM Hour
8/30/2017

Intersection						
Int Delay, s/veh	1.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	23	19	37	802	650	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, %	-5	-	-	0	-2	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	27	22	44	944	765	89
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	1840	809	854	0	-	0
Stage 1	809	-	-	-	-	-
Stage 2	1031	-	-	-	-	-
Critical Hdwy	5.45	5.75	4.15	-	-	-
Critical Hdwy Stg 1	4.45	-	-	-	-	-
Critical Hdwy Stg 2	4.45	-	-	-	-	-
Follow-up Hdwy	3.545	3.345	2.245	-	-	-
Pot Cap-1 Maneuver	136	421	773	-	-	-
Stage 1	542	-	-	-	-	-
Stage 2	452	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	120	421	773	-	-	-
Mov Cap-2 Maneuver	120	-	-	-	-	-
Stage 1	542	-	-	-	-	-
Stage 2	398	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	33	0.4		0		
HCM LOS	D					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	773	-	177	-	-	
HCM Lane V/C Ratio	0.056	-	0.279	-	-	
HCM Control Delay (s)	9.9	0	33	-	-	
HCM Lane LOS	A	A	D	-	-	
HCM 95th %tile Q(veh)	0.2	-	1.1	-	-	

2019 Build Traffic Volumes
4: U.S. Route 9W & Dock Road

Peak AM Hour
8/30/2017

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	1	2	837	5	6	663
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	14	12	12	12
Grade (%)	4%		-2%			-4%
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.910		0.999			
Flt Protected	0.984					
Satd. Flow (prot)	1588	0	1948	0	0	1846
Flt Permitted	0.984					
Satd. Flow (perm)	1588	0	1948	0	0	1846
Link Speed (mph)	30		30			30
Link Distance (ft)	543		398			334
Travel Time (s)	12.3		9.0			7.6
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	1	2	881	5	6	698
Shared Lane Traffic (%)						
Lane Group Flow (vph)	3	0	886	0	0	704
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	1.03	1.03	0.91	0.99	0.97	0.97
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

2019 Build Traffic Volumes
4: U.S. Route 9W & Dock Road

Peak AM Hour
8/30/2017

Intersection						
Int Delay, s/veh	0.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	1	2	837	5	6	663
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, %	4	-	-2	-	-	-4
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	1	2	881	5	6	698
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	1595	884	0	0	886	0
Stage 1	884	-	-	-	-	-
Stage 2	711	-	-	-	-	-
Critical Hdwy	7.25	6.65	-	-	4.15	-
Critical Hdwy Stg 1	6.25	-	-	-	-	-
Critical Hdwy Stg 2	6.25	-	-	-	-	-
Follow-up Hdwy	3.545	3.345	-	-	2.245	-
Pot Cap-1 Maneuver	81	308	-	-	752	-
Stage 1	328	-	-	-	-	-
Stage 2	411	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	80	308	-	-	752	-
Mov Cap-2 Maneuver	80	-	-	-	-	-
Stage 1	328	-	-	-	-	-
Stage 2	406	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	28.2	0		0.1		
HCM LOS	D					
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT	
Capacity (veh/h)	-	-	158	752	-	
HCM Lane V/C Ratio	-	-	0.02	0.008	-	
HCM Control Delay (s)	-	-	28.2	9.8	0	
HCM Lane LOS	-	-	D	A	A	
HCM 95th %tile Q(veh)	-	-	0.1	0	-	

2019 Build Traffic Volumes
5: U.S. Route 9W & Western Avenue

Peak AM Hour
8/30/2017

						
Lane Group	NBL	NBT	SBT	SBR	SEL	SER
Lane Configurations						
Volume (vph)	66	838	494	170	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	12	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.965			
Flt Protected		0.996				
Satd. Flow (prot)	0	1862	1746	0	1810	0
Flt Permitted		0.996				
Satd. Flow (perm)	0	1862	1746	0	1810	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		356	398		297	
Travel Time (s)		8.1	9.0		6.8	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	69	882	520	179	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	951	699	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	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	1.00	0.96	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

2019 Build Traffic Volumes
5: U.S. Route 9W & Western Avenue

Peak AM Hour
8/30/2017

Intersection						
Int Delay, s/veh	0.4					
Movement	NBL	NBT	SBT	SBR	SEL	SER
Vol, veh/h	66	838	494	170	0	0
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	95	95	95	95	95	95
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	69	882	520	179	0	0
Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	699	0	-	0	1630	609
Stage 1	-	-	-	-	609	-
Stage 2	-	-	-	-	1021	-
Critical Hdwy	4.15	-	-	-	6.45	6.25
Critical Hdwy Stg 1	-	-	-	-	5.45	-
Critical Hdwy Stg 2	-	-	-	-	5.45	-
Follow-up Hdwy	2.245	-	-	-	3.545	3.345
Pot Cap-1 Maneuver	884	-	-	-	110	490
Stage 1	-	-	-	-	537	-
Stage 2	-	-	-	-	343	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	884	-	-	-	93	490
Mov Cap-2 Maneuver	-	-	-	-	93	-
Stage 1	-	-	-	-	537	-
Stage 2	-	-	-	-	291	-
Approach	NB		SB		SE	
HCM Control Delay, s	0.7		0		0	
HCM LOS					A	
Minor Lane/Major Mvmt	NBL	NBT	SELn1	SBT	SBR	
Capacity (veh/h)	884	-	-	-	-	
HCM Lane V/C Ratio	0.079	-	-	-	-	
HCM Control Delay (s)	9.4	0	0	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0.3	-	-	-	-	

2019 Build Traffic Volumes
6: U.S. Route 9W & King Street

Peak AM Hour
8/30/2017

						
Lane Group	NBL	NBT	SBT	SBR	SEL	SER
Lane Configurations						
Volume (vph)	0	763	494	0	145	108
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	10	10
Storage Length (ft)	0			0	0	50
Storage Lanes	0			0	1	1
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	0	1870	1810	0	1604	1436
Flt Permitted					0.950	
Satd. Flow (perm)	0	1870	1810	0	1604	1436
Link Speed (mph)		30	30		30	
Link Distance (ft)		755	356		216	
Travel Time (s)		17.2	8.1		4.9	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	0	803	520	0	153	114
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	803	520	0	153	114
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	1.00	0.96	1.00	1.00	1.09	1.09
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

2019 Build Traffic Volumes
6: U.S. Route 9W & King Street

Peak AM Hour
8/30/2017

Intersection						
Int Delay, s/veh	10.4					
Movement	NBL	NBT	SBT	SBR	SEL	SER
Vol, veh/h	0	763	494	0	145	108
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	50
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	0	803	520	0	153	114
Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	520	0	-	0	1323	520
Stage 1	-	-	-	-	520	-
Stage 2	-	-	-	-	803	-
Critical Hdwy	4.15	-	-	-	6.45	6.25
Critical Hdwy Stg 1	-	-	-	-	5.45	-
Critical Hdwy Stg 2	-	-	-	-	5.45	-
Follow-up Hdwy	2.245	-	-	-	3.545	3.345
Pot Cap-1 Maneuver	1031	-	-	-	170	550
Stage 1	-	-	-	-	591	-
Stage 2	-	-	-	-	436	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1031	-	-	-	170	550
Mov Cap-2 Maneuver	-	-	-	-	170	-
Stage 1	-	-	-	-	591	-
Stage 2	-	-	-	-	436	-
Approach	NB		SB		SE	
HCM Control Delay, s	0		0		62.1	
HCM LOS					F	
Minor Lane/Major Mvmt	NBL	NBT	SELn1	SELn2	SBT	SBR
Capacity (veh/h)	1031	-	170	550	-	-
HCM Lane V/C Ratio	-	-	0.898	0.207	-	-
HCM Control Delay (s)	0	-	98.5	13.2	-	-
HCM Lane LOS	A	-	F	B	-	-
HCM 95th %tile Q(veh)	0	-	6.6	0.8	-	-

2019 Build Traffic Volumes
7: U.S. Route 9W & Middle School Exit Driveway

Peak AM Hour
8/30/2017



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	20	7	0	825	719	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	-5%			0%	-2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.850					
Flt Protected	0.950					
Satd. Flow (prot)	1762	1577	0	1810	1828	0
Flt Permitted	0.950					
Satd. Flow (perm)	1762	1577	0	1810	1828	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	522			419	278	
Travel Time (s)	11.9			9.5	6.3	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	21	7	0	868	757	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	21	7	0	868	757	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	0.97	0.97	1.00	1.00	0.99	0.99
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

2019 Build Traffic Volumes
7: U.S. Route 9W & Middle School Exit Driveway

Peak AM Hour
8/30/2017

Intersection						
Int Delay, s/veh	0.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	20	7	0	825	719	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-5	-	-	0	-2	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	21	7	0	868	757	0
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	1625	757	757	0	-	0
Stage 1	757	-	-	-	-	-
Stage 2	868	-	-	-	-	-
Critical Hdwy	5.45	5.75	4.15	-	-	-
Critical Hdwy Stg 1	4.45	-	-	-	-	-
Critical Hdwy Stg 2	4.45	-	-	-	-	-
Follow-up Hdwy	3.545	3.345	2.245	-	-	-
Pot Cap-1 Maneuver	174	447	841	-	-	-
Stage 1	565	-	-	-	-	-
Stage 2	517	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	174	447	841	-	-	-
Mov Cap-2 Maneuver	174	-	-	-	-	-
Stage 1	565	-	-	-	-	-
Stage 2	517	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	24.5	0		0		
HCM LOS	C					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	841	-	174	447	-	-
HCM Lane V/C Ratio	-	-	0.121	0.016	-	-
HCM Control Delay (s)	0	-	28.5	13.2	-	-
HCM Lane LOS	A	-	D	B	-	-
HCM 95th %tile Q(veh)	0	-	0.4	0.1	-	-

2019 Build Traffic Volumes
1: U.S. Route 9W & Purdy Avenue

Peak PM Hour
8/30/2017



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	2	8	12	893	877	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	12	12	12	12	12
Grade (%)	-6%			0%	0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.890				0.999	
Flt Protected	0.991			0.999		
Satd. Flow (prot)	1534	0	0	1808	1808	0
Flt Permitted	0.991			0.999		
Satd. Flow (perm)	1534	0	0	1808	1808	0
Link Speed (mph)	30			40	30	
Link Distance (ft)	1246			469	274	
Travel Time (s)	28.3			8.0	6.2	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	2	9	13	992	974	7
Shared Lane Traffic (%)						
Lane Group Flow (vph)	11	0	0	1005	981	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	10			11	11	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.05	0.96	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other
Control Type: Unsignalized

2019 Build Traffic Volumes
1: U.S. Route 9W & Purdy Avenue

Peak PM Hour
8/30/2017

Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	2	8	12	893	877	6
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, %	-6	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	2	9	13	992	974	7
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	1997	978	981	0	-	0
Stage 1	978	-	-	-	-	-
Stage 2	1019	-	-	-	-	-
Critical Hdwy	5.25	5.65	4.15	-	-	-
Critical Hdwy Stg 1	4.25	-	-	-	-	-
Critical Hdwy Stg 2	4.25	-	-	-	-	-
Follow-up Hdwy	3.545	3.345	2.245	-	-	-
Pot Cap-1 Maneuver	126	353	692	-	-	-
Stage 1	499	-	-	-	-	-
Stage 2	483	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	121	353	692	-	-	-
Mov Cap-2 Maneuver	121	-	-	-	-	-
Stage 1	499	-	-	-	-	-
Stage 2	463	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	19.8	0.1		0		
HCM LOS	C					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	692	-	255	-	-	
HCM Lane V/C Ratio	0.019	-	0.044	-	-	
HCM Control Delay (s)	10.3	0	19.8	-	-	
HCM Lane LOS	B	A	C	-	-	
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-	

2019 Build Traffic Volumes
2: U.S. Route 9W & Site Access/Young Avenue

Peak PM Hour

8/30/2017

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	46	5	58	10	6	11	80	848	6	5	839	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	11	11	12	12	12	11	11	12
Grade (%)		0%			0%			3%			1%	
Storage Length (ft)	125		0	80		0	100		0	125		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		0.861			0.900			0.999			0.993	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1752	1588	0	1752	1605	0	1726	1815	0	1686	1762	0
Flt Permitted	0.746			0.714			0.168			0.254		
Satd. Flow (perm)	1376	1588	0	1317	1605	0	305	1815	0	451	1762	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		61			12						3	
Link Speed (mph)		30			30			40			30	
Link Distance (ft)		303			629			278			469	
Travel Time (s)		6.9			14.3			4.7			10.7	
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 (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Adj. Flow (vph)	48	5	61	11	6	12	84	893	6	5	883	43
Shared Lane Traffic (%)												
Lane Group Flow (vph)	48	66	0	11	18	0	84	899	0	5	926	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	1.00	1.00	1.00	1.00	1.04	1.04	1.02	1.02	1.02	1.05	1.05	1.01
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2		2	2		2	2		2	2	
Detector Template												
Leading Detector (ft)	83	83		83	83		83	83		83	83	
Trailing Detector (ft)	-5	-5		-5	-5		-5	-5		-5	-5	
Detector 1 Position(ft)	-5	-5		-5	-5		-5	-5		-5	-5	
Detector 1 Size(ft)	40	40		40	40		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	
Detector 2 Position(ft)	43	43		43	43		43	43		43	43	
Detector 2 Size(ft)	40	40		40	40		40	40		40	40	
Detector 2 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	

2019 Build Traffic Volumes
2: U.S. Route 9W & Site Access/Young Avenue

Peak PM Hour
8/30/2017

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		8			4		5	2		1	6	
Permitted Phases	8			4			2			6		
Detector Phase	8	8		4	4		5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		4.0	10.0		3.0	10.0	
Minimum Split (s)	10.0	10.0		10.0	10.0		10.0	16.0		9.0	26.0	
Total Split (s)	30.0	30.0		30.0	30.0		15.0	70.0		15.0	70.0	
Total Split (%)	26.1%	26.1%		26.1%	26.1%		13.0%	60.9%		13.0%	60.9%	
Maximum Green (s)	25.0	25.0		25.0	25.0		9.0	64.0		9.0	64.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0		6.0	6.0		6.0	6.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	None	None		None	None		None	Min		None	Min	
Walk Time (s)				7.0	7.0							7.0
Flash Dont Walk (s)				13.0	13.0							13.0
Pedestrian Calls (#/hr)				0	0							0
v/c Ratio	0.34	0.30		0.08	0.10		0.22	0.62		0.01	0.75	
Control Delay	46.3	16.5		40.6	26.2		3.9	8.4		2.8	17.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	46.3	16.5		40.6	26.2		3.9	8.4		2.8	17.6	
Queue Length 50th (ft)	25	3		6	3		8	159		1	361	
Queue Length 95th (ft)	65	42		24	25		20	504		3	618	
Internal Link Dist (ft)		223			549			198			389	
Turn Bay Length (ft)	125			80			100			125		
Base Capacity (vph)	483	597		462	571		420	1492		493	1383	
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	0.10	0.11		0.02	0.03		0.20	0.60		0.01	0.67	

Intersection Summary

Area Type: Other

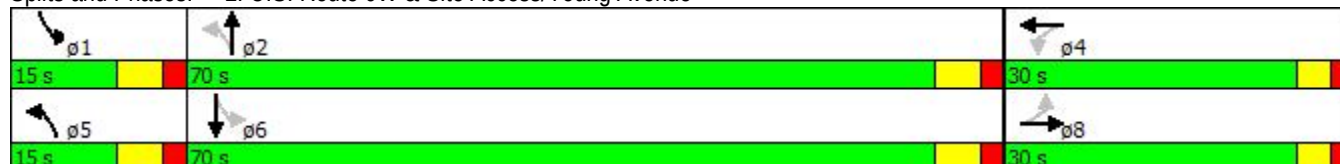
Cycle Length: 115

Actuated Cycle Length: 79.2

Natural Cycle: 60

Control Type: Actuated-Uncoordinated

Splits and Phases: 2: U.S. Route 9W & Site Access/Young Avenue



2019 Build Traffic Volumes
2: U.S. Route 9W & Site Access/Young Avenue

Peak PM Hour
8/30/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	46	5	58	10	6	11	80	848	6	5	839	41
Number	3	8	18	7	4	14	5	2	12	1	6	16
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	1845	1845	1900	1845	1845	1900	1817	1817	1872	1835	1835	1890
Adj Flow Rate, veh/h	48	5	61	11	6	12	84	893	6	5	883	43
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	1	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, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	210	10	116	166	44	87	310	1165	8	303	1044	51
Arrive On Green	0.08	0.08	0.08	0.08	0.08	0.08	0.05	0.65	0.65	0.00	0.60	0.60
Sat Flow, veh/h	1376	120	1466	1317	550	1100	1730	1803	12	1748	1736	85
Grp Volume(v), veh/h	48	0	66	11	0	18	84	0	899	5	0	926
Grp Sat Flow(s),veh/h/ln	1376	0	1586	1317	0	1650	1730	0	1815	1748	0	1821
Q Serve(g_s), s	2.1	0.0	2.5	0.5	0.0	0.6	1.1	0.0	21.8	0.1	0.0	25.9
Cycle Q Clear(g_c), s	2.8	0.0	2.5	3.0	0.0	0.6	1.1	0.0	21.8	0.1	0.0	25.9
Prop In Lane	1.00		0.92	1.00		0.67	1.00		0.01	1.00		0.05
Lane Grp Cap(c), veh/h	210	0	126	166	0	131	310	0	1173	303	0	1095
V/C Ratio(X)	0.23	0.00	0.53	0.07	0.00	0.14	0.27	0.00	0.77	0.02	0.00	0.85
Avail Cap(c_a), veh/h	648	0	631	586	0	657	473	0	1849	547	0	1855
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	28.2	0.0	27.8	29.2	0.0	26.9	10.3	0.0	7.8	7.8	0.0	10.2
Incr Delay (d2), s/veh	0.2	0.0	1.3	0.1	0.0	0.2	0.2	0.0	0.4	0.0	0.0	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	1.1	0.2	0.0	0.3	0.7	0.0	10.9	0.0	0.0	13.1
LnGrp Delay(d),s/veh	28.4	0.0	29.1	29.3	0.0	27.1	10.5	0.0	8.2	7.8	0.0	10.9
LnGrp LOS	C		C	C		C	B		A	A		B
Approach Vol, veh/h		114			29			983			931	
Approach Delay, s/veh		28.8			27.9			8.4			10.9	
Approach LOS		C			C			A			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.3	46.6		10.0	9.1	43.8		10.0				
Change Period (Y+Rc), s	6.0	6.0		5.0	6.0	6.0		5.0				
Max Green Setting (Gmax), s	9.0	64.0		25.0	9.0	64.0		25.0				
Max Q Clear Time (g_c+I1), s	2.1	23.8		5.0	3.1	27.9		4.8				
Green Ext Time (p_c), s	0.0	10.0		0.4	0.1	9.8		0.4				
Intersection Summary												
HCM 2010 Ctrl Delay	10.9											
HCM 2010 LOS	B											

Two Way Analysis cannot be performed on Signalized Intersection.

2019 Build Traffic Volumes
3: U.S. Route 9W & Birdsall Avenue

Peak PM Hour
8/30/2017



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	16	11	14	916	882	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	-5%			0%	-2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.944				0.996	
Flt Protected	0.972			0.999		
Satd. Flow (prot)	1702	0	0	1808	1820	0
Flt Permitted	0.972			0.999		
Satd. Flow (perm)	1702	0	0	1808	1820	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	621			334	419	
Travel Time (s)	14.1			7.6	9.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	17	12	15	964	928	27
Shared Lane Traffic (%)						
Lane Group Flow (vph)	29	0	0	979	955	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
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	0.97	0.97	1.00	1.00	0.99	0.99
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

2019 Build Traffic Volumes
3: U.S. Route 9W & Birdsall Avenue

Peak PM Hour
8/30/2017

Intersection						
Int Delay, s/veh	0.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	16	11	14	916	882	26
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, %	-5	-	-	0	-2	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	17	12	15	964	928	27
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	1936	942	956	0	-	0
Stage 1	942	-	-	-	-	-
Stage 2	994	-	-	-	-	-
Critical Hdwy	5.45	5.75	4.15	-	-	-
Critical Hdwy Stg 1	4.45	-	-	-	-	-
Critical Hdwy Stg 2	4.45	-	-	-	-	-
Follow-up Hdwy	3.545	3.345	2.245	-	-	-
Pot Cap-1 Maneuver	121	359	707	-	-	-
Stage 1	486	-	-	-	-	-
Stage 2	466	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	115	359	707	-	-	-
Mov Cap-2 Maneuver	115	-	-	-	-	-
Stage 1	486	-	-	-	-	-
Stage 2	445	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	32.5	0.2		0		
HCM LOS	D					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	707	-	159	-	-	
HCM Lane V/C Ratio	0.021	-	0.179	-	-	
HCM Control Delay (s)	10.2	0	32.5	-	-	
HCM Lane LOS	B	A	D	-	-	
HCM 95th %tile Q(veh)	0.1	-	0.6	-	-	

2019 Build Traffic Volumes
4: U.S. Route 9W & Dock Road

Peak PM Hour
8/30/2017

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	5	11	919	6	1	892
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	14	12	12	12
Grade (%)	4%		-2%			-4%
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.905		0.999			
Flt Protected	0.986					
Satd. Flow (prot)	1582	0	1948	0	0	1846
Flt Permitted	0.986					
Satd. Flow (perm)	1582	0	1948	0	0	1846
Link Speed (mph)	30		30			30
Link Distance (ft)	543		398			334
Travel Time (s)	12.3		9.0			7.6
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	5	12	967	6	1	939
Shared Lane Traffic (%)						
Lane Group Flow (vph)	17	0	973	0	0	940
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	1.03	1.03	0.91	0.99	0.97	0.97
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

2019 Build Traffic Volumes
4: U.S. Route 9W & Dock Road

Peak PM Hour
8/30/2017

Intersection						
Int Delay, s/veh	0.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	5	11	919	6	1	892
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, %	4	-	-2	-	-	-4
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	5	12	967	6	1	939
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	1912	971	0	0	974	0
Stage 1	971	-	-	-	-	-
Stage 2	941	-	-	-	-	-
Critical Hdwy	7.25	6.65	-	-	4.15	-
Critical Hdwy Stg 1	6.25	-	-	-	-	-
Critical Hdwy Stg 2	6.25	-	-	-	-	-
Follow-up Hdwy	3.545	3.345	-	-	2.245	-
Pot Cap-1 Maneuver	48	272	-	-	696	-
Stage 1	292	-	-	-	-	-
Stage 2	304	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	48	272	-	-	696	-
Mov Cap-2 Maneuver	48	-	-	-	-	-
Stage 1	292	-	-	-	-	-
Stage 2	303	-	-	-	-	-
Approach	WB		NB		SB	
HCM Control Delay, s	43.1		0		0	
HCM LOS	E					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	- 111	696	-		
HCM Lane V/C Ratio	-	- 0.152	0.002	-		
HCM Control Delay (s)	-	- 43.1	10.2	0		
HCM Lane LOS	-	- E	B	A		
HCM 95th %tile Q(veh)	-	- 0.5	0	-		

2019 Build Traffic Volumes
5: U.S. Route 9W & Western Avenue

Peak PM Hour
8/30/2017

						
Lane Group	NBL	NBT	SBT	SBR	SEL	SER
Lane Configurations						
Volume (vph)	110	916	704	193	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	12	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.971			
Flt Protected		0.995				
Satd. Flow (prot)	0	1860	1757	0	1810	0
Flt Permitted		0.995				
Satd. Flow (perm)	0	1860	1757	0	1810	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		356	398		297	
Travel Time (s)		8.1	9.0		6.8	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	116	964	741	203	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1080	944	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	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	1.00	0.96	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

2019 Build Traffic Volumes
5: U.S. Route 9W & Western Avenue

Peak PM Hour
8/30/2017

Intersection						
Int Delay, s/veh	0.6					
Movement	NBL	NBT	SBT	SBR	SEL	SER
Vol, veh/h	110	916	704	193	0	0
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	95	95	95	95	95	95
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	116	964	741	203	0	0
Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	944	0	-	0	2039	843
Stage 1	-	-	-	-	843	-
Stage 2	-	-	-	-	1196	-
Critical Hdwy	4.15	-	-	-	6.45	6.25
Critical Hdwy Stg 1	-	-	-	-	5.45	-
Critical Hdwy Stg 2	-	-	-	-	5.45	-
Follow-up Hdwy	2.245	-	-	-	3.545	3.345
Pot Cap-1 Maneuver	715	-	-	-	61	359
Stage 1	-	-	-	-	417	-
Stage 2	-	-	-	-	283	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	715	-	-	-	40	359
Mov Cap-2 Maneuver	-	-	-	-	40	-
Stage 1	-	-	-	-	417	-
Stage 2	-	-	-	-	184	-
Approach	NB		SB		SE	
HCM Control Delay, s	1.2		0		0	
HCM LOS					A	
Minor Lane/Major Mvmt	NBL	NBT	SELn1	SBT	SBR	
Capacity (veh/h)	715	-	-	-	-	
HCM Lane V/C Ratio	0.162	-	-	-	-	
HCM Control Delay (s)	11	0	0	-	-	
HCM Lane LOS	B	A	A	-	-	
HCM 95th %tile Q(veh)	0.6	-	-	-	-	

2019 Build Traffic Volumes
6: U.S. Route 9W & King Street

Peak PM Hour
8/30/2017

						
Lane Group	NBL	NBT	SBT	SBR	SEL	SER
Lane Configurations						
Volume (vph)	0	917	704	0	119	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	10	10
Storage Length (ft)	0			0	0	50
Storage Lanes	0			0	1	1
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	0	1870	1810	0	1604	1436
Flt Permitted					0.950	
Satd. Flow (perm)	0	1870	1810	0	1604	1436
Link Speed (mph)		30	30		30	
Link Distance (ft)		755	356		216	
Travel Time (s)		17.2	8.1		4.9	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	0	965	741	0	125	95
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	965	741	0	125	95
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	1.00	0.96	1.00	1.00	1.09	1.09
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

2019 Build Traffic Volumes
6: U.S. Route 9W & King Street

Peak PM Hour
8/30/2017

Intersection						
Int Delay, s/veh	17.5					
Movement	NBL	NBT	SBT	SBR	SEL	SER
Vol, veh/h	0	917	704	0	119	90
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	50
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	0	965	741	0	125	95
Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	741	0	-	0	1706	741
Stage 1	-	-	-	-	741	-
Stage 2	-	-	-	-	965	-
Critical Hdwy	4.15	-	-	-	6.45	6.25
Critical Hdwy Stg 1	-	-	-	-	5.45	-
Critical Hdwy Stg 2	-	-	-	-	5.45	-
Follow-up Hdwy	2.245	-	-	-	3.545	3.345
Pot Cap-1 Maneuver	852	-	-	-	~ 99	411
Stage 1	-	-	-	-	466	-
Stage 2	-	-	-	-	365	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	852	-	-	-	~ 99	411
Mov Cap-2 Maneuver	-	-	-	-	~ 99	-
Stage 1	-	-	-	-	466	-
Stage 2	-	-	-	-	365	-
Approach	NB		SB		SE	
HCM Control Delay, s	0		0		153.3	
HCM LOS	F					
Minor Lane/Major Mvmt	NBL	NBT	SELn1	SELn2	SBT	SBR
Capacity (veh/h)	852	-	99	411	-	-
HCM Lane V/C Ratio	-	-	1.265	0.231	-	-
HCM Control Delay (s)	0	-	256.8	16.4	-	-
HCM Lane LOS	A	-	F	C	-	-
HCM 95th %tile Q(veh)	0	-	8.7	0.9	-	-
Notes						
~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon						

2019 Build Traffic Volumes
7: U.S. Route 9W & Middle School Exit Driveway

Peak PM Hour
8/30/2017



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	3	1	0	932	907	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	-5%			0%	-2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.850					
Flt Protected	0.950					
Satd. Flow (prot)	1762	1577	0	1810	1828	0
Flt Permitted	0.950					
Satd. Flow (perm)	1762	1577	0	1810	1828	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	522			419	278	
Travel Time (s)	11.9			9.5	6.3	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	3	1	0	981	955	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	3	1	0	981	955	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	0.97	0.97	1.00	1.00	0.99	0.99
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

2019 Build Traffic Volumes
7: U.S. Route 9W & Middle School Exit Driveway

Peak PM Hour
8/30/2017

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	3	1	0	932	907	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-5	-	-	0	-2	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	3	1	0	981	955	0
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	1936	955	955	0	-	0
Stage 1	955	-	-	-	-	-
Stage 2	981	-	-	-	-	-
Critical Hdwy	5.45	5.75	4.15	-	-	-
Critical Hdwy Stg 1	4.45	-	-	-	-	-
Critical Hdwy Stg 2	4.45	-	-	-	-	-
Follow-up Hdwy	3.545	3.345	2.245	-	-	-
Pot Cap-1 Maneuver	121	353	708	-	-	-
Stage 1	481	-	-	-	-	-
Stage 2	471	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	121	353	708	-	-	-
Mov Cap-2 Maneuver	121	-	-	-	-	-
Stage 1	481	-	-	-	-	-
Stage 2	471	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	30.4	0		0		
HCM LOS	D					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	708	-	121	353	-	-
HCM Lane V/C Ratio	-	-	0.026	0.003	-	-
HCM Control Delay (s)	0	-	35.5	15.2	-	-
HCM Lane LOS	A	-	E	C	-	-
HCM 95th %tile Q(veh)	0	-	0.1	0	-	-

2019 Build Traffic Volumes W/Imp
1: U.S. Route 9W & Purdy Avenue

Peak AM Hour
8/30/2017



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	4	10	4	777	680	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	12	12	12	12	12
Grade (%)	-6%			0%	0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.901				0.999	
Flt Protected	0.987					
Satd. Flow (prot)	1547	0	0	1810	1808	0
Flt Permitted	0.987					
Satd. Flow (perm)	1547	0	0	1810	1808	0
Link Speed (mph)	30			40	30	
Link Distance (ft)	1246			469	274	
Travel Time (s)	28.3			8.0	6.2	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	4	11	4	863	756	3
Shared Lane Traffic (%)						
Lane Group Flow (vph)	15	0	0	867	759	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	10			11	11	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.05	0.96	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other
Control Type: Unsignalized

2019 Build Traffic Volumes W/Imp
1: U.S. Route 9W & Purdy Avenue

Peak AM Hour
8/30/2017

Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	4	10	4	777	680	3
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, %	-6	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	4	11	4	863	756	3
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	1629	757	759	0	-	0
Stage 1	757	-	-	-	-	-
Stage 2	872	-	-	-	-	-
Critical Hdwy	5.25	5.65	4.15	-	-	-
Critical Hdwy Stg 1	4.25	-	-	-	-	-
Critical Hdwy Stg 2	4.25	-	-	-	-	-
Follow-up Hdwy	3.545	3.345	2.245	-	-	-
Pot Cap-1 Maneuver	190	457	839	-	-	-
Stage 1	589	-	-	-	-	-
Stage 2	541	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	188	457	839	-	-	-
Mov Cap-2 Maneuver	188	-	-	-	-	-
Stage 1	589	-	-	-	-	-
Stage 2	536	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	16.7	0		0		
HCM LOS	C					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	839	-	324	-	-	
HCM Lane V/C Ratio	0.005	-	0.048	-	-	
HCM Control Delay (s)	9.3	0	16.7	-	-	
HCM Lane LOS	A	A	C	-	-	
HCM 95th %tile Q(veh)	0	-	0.2	-	-	

2019 Build Traffic Volumes W/Imp
2: U.S. Route 9W & Site Access/Young Avenue

Peak AM Hour
8/30/2017

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	55	3	40	101	2	42	26	666	154	95	578	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	11	11	12	12	12	11	11	12
Grade (%)		0%			0%			3%			1%	
Storage Length (ft)	125		0	80		0	100		0	125		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		0.860			0.856			0.972			0.997	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1719	1556	0	1719	1497	0	1693	1732	0	1653	1735	0
Flt Permitted	0.950			0.950			0.288			0.072		
Satd. Flow (perm)	1719	1556	0	1719	1497	0	513	1732	0	125	1735	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		44			47			12			1	
Link Speed (mph)		30			30			40			30	
Link Distance (ft)		264			629			278			469	
Travel Time (s)		6.0			14.3			4.7			10.7	
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 (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	61	3	44	112	2	47	29	740	171	106	642	14
Shared Lane Traffic (%)												
Lane Group Flow (vph)	61	47	0	112	49	0	29	911	0	106	656	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	1.00	1.00	1.00	1.00	1.04	1.04	1.02	1.02	1.02	1.05	1.05	1.01
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2		2	2		2	2		2	2	
Detector Template												
Leading Detector (ft)	83	83		83	83		83	83		83	83	
Trailing Detector (ft)	-5	-5		-5	-5		-5	-5		-5	-5	
Detector 1 Position(ft)	-5	-5		-5	-5		-5	-5		-5	-5	
Detector 1 Size(ft)	40	40		40	40		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	
Detector 2 Position(ft)	43	43		43	43		43	43		43	43	
Detector 2 Size(ft)	40	40		40	40		40	40		40	40	
Detector 2 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	Split	NA		Split	NA		pm+pt	NA		pm+pt	NA	

2019 Build Traffic Volumes W/Imp
2: U.S. Route 9W & Site Access/Young Avenue

Peak AM Hour
8/30/2017

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases	8	8		4	4		5	2		1	6	
Permitted Phases							2			6		
Detector Phase	8	8		4	4		5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		3.0	10.0		3.0	10.0	
Minimum Split (s)	11.0	11.0		11.0	11.0		9.0	26.0		9.0	26.0	
Total Split (s)	25.0	25.0		25.0	25.0		15.0	55.0		15.0	55.0	
Total Split (%)	20.8%	20.8%		20.8%	20.8%		12.5%	45.8%		12.5%	45.8%	
Maximum Green (s)	20.0	20.0		20.0	20.0		9.0	49.0		9.0	49.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0		6.0	6.0		6.0	6.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	2.0	2.0		3.0	3.0		3.0	2.0		2.0	2.0	
Recall Mode	None	None		None	None		None	Max		None	Max	
Walk Time (s)				7.0	7.0						7.0	
Flash Dont Walk (s)				13.0	13.0						13.0	
Pedestrian Calls (#/hr)				0	0						0	
v/c Ratio	0.43	0.28		0.54	0.22		0.08	1.01		0.56	0.65	
Control Delay	53.6	19.0		51.0	15.2		8.9	60.2		27.1	22.1	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	53.6	19.0		51.0	15.2		8.9	60.2		27.1	22.1	
Queue Length 50th (ft)	37	2		67	1		6	~616		23	307	
Queue Length 95th (ft)	83	37		128	35		20	#999		85	#549	
Internal Link Dist (ft)		184			549			198			389	
Turn Bay Length (ft)	125			80			100			125		
Base Capacity (vph)	361	361		361	352		424	898		223	1002	
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	0.17	0.13		0.31	0.14		0.07	1.01		0.48	0.65	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 96.3

Natural Cycle: 90

Control Type: Semi Act-Uncoord

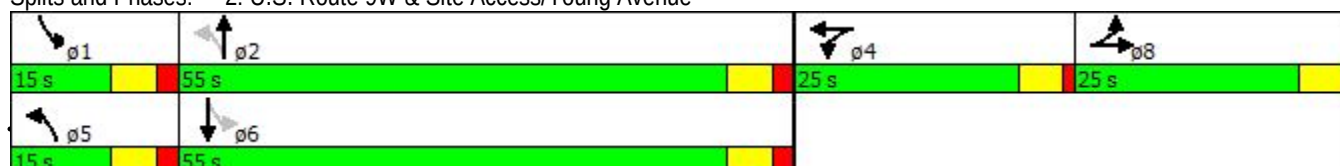
~ Volume exceeds capacity, queue is theoretically infinite.

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: 2: U.S. Route 9W & Site Access/Young Avenue



Job# 12100049A - R.H.

Page 4

2019 Build Traffic Volumes W/Imp
2: U.S. Route 9W & Site Access/Young Avenue

Peak AM Hour
8/30/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	55	3	40	101	2	42	26	666	154	95	578	13
Number	3	8	18	7	4	14	5	2	12	1	6	16
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	1810	1810	1900	1810	1810	1900	1782	1782	1872	1800	1800	1890
Adj Flow Rate, veh/h	61	3	44	112	2	47	29	740	171	106	642	14
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	1	1	0
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
Percent Heavy Veh, %	5	5	5	5	5	5	5	5	5	5	5	5
Cap, veh/h	96	6	81	156	6	134	369	781	180	198	1029	22
Arrive On Green	0.06	0.06	0.06	0.09	0.09	0.09	0.02	0.56	0.56	0.05	0.59	0.59
Sat Flow, veh/h	1723	99	1454	1723	63	1484	1698	1401	324	1715	1755	38
Grp Volume(v), veh/h	61	0	47	112	0	49	29	0	911	106	0	656
Grp Sat Flow(s),veh/h/ln	1723	0	1553	1723	0	1548	1698	0	1725	1715	0	1794
Q Serve(g_s), s	3.0	0.0	2.6	5.6	0.0	2.6	0.7	0.0	43.6	2.3	0.0	21.0
Cycle Q Clear(g_c), s	3.0	0.0	2.6	5.6	0.0	2.6	0.7	0.0	43.6	2.3	0.0	21.0
Prop In Lane	1.00		0.94	1.00		0.96	1.00		0.19	1.00		0.02
Lane Grp Cap(c), veh/h	96	0	87	156	0	140	369	0	961	198	0	1051
V/C Ratio(X)	0.63	0.00	0.54	0.72	0.00	0.35	0.08	0.00	0.95	0.54	0.00	0.62
Avail Cap(c_a), veh/h	392	0	353	392	0	352	513	0	961	294	0	1051
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	40.6	0.0	40.4	38.9	0.0	37.6	10.1	0.0	18.3	20.1	0.0	11.9
Incr Delay (d2), s/veh	2.6	0.0	2.0	6.0	0.0	1.5	0.1	0.0	18.8	0.8	0.0	2.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	0.0	1.2	2.9	0.0	1.2	0.3	0.0	25.5	1.5	0.0	11.0
LnGrp Delay(d),s/veh	43.2	0.0	42.4	44.9	0.0	39.0	10.2	0.0	37.1	20.9	0.0	14.7
LnGrp LOS	D		D	D		D	B		D	C		B
Approach Vol, veh/h		108			161			940			762	
Approach Delay, s/veh		42.8			43.1			36.3			15.5	
Approach LOS		D			D			D			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.1	55.0		13.0	7.5	57.5		9.9				
Change Period (Y+Rc), s	6.0	6.0		5.0	6.0	6.0		5.0				
Max Green Setting (Gmax), s	9.0	49.0		20.0	9.0	49.0		20.0				
Max Q Clear Time (g_c+I1), s	4.3	45.6		7.6	2.7	23.0		5.0				
Green Ext Time (p_c), s	0.1	2.1		0.6	0.0	7.1		0.2				
Intersection Summary												
HCM 2010 Ctrl Delay			29.2									
HCM 2010 LOS			C									

Two Way Analysis cannot be performed on Signalized Intersection.

2019 Build Traffic Volumes W/Imp
3: U.S. Route 9W & Birdsall Avenue

Peak AM Hour

8/30/2017



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	23	19	39	822	654	76
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	-5%			0%	-2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.939				0.986	
Flt Protected	0.973			0.998		
Satd. Flow (prot)	1695	0	0	1806	1802	0
Flt Permitted	0.973			0.998		
Satd. Flow (perm)	1695	0	0	1806	1802	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	621			334	419	
Travel Time (s)	14.1			7.6	9.5	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	27	22	46	967	769	89
Shared Lane Traffic (%)						
Lane Group Flow (vph)	49	0	0	1013	858	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
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	0.97	0.97	1.00	1.00	0.99	0.99
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection						
Int Delay, s/veh	1.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	23	19	39	822	654	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, %	-5	-	-	0	-2	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	27	22	46	967	769	89
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	1873	814	859	0	-	0
Stage 1	814	-	-	-	-	-
Stage 2	1059	-	-	-	-	-
Critical Hdwy	5.45	5.75	4.15	-	-	-
Critical Hdwy Stg 1	4.45	-	-	-	-	-
Critical Hdwy Stg 2	4.45	-	-	-	-	-
Follow-up Hdwy	3.545	3.345	2.245	-	-	-
Pot Cap-1 Maneuver	131	418	769	-	-	-
Stage 1	540	-	-	-	-	-
Stage 2	442	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	114	418	769	-	-	-
Mov Cap-2 Maneuver	114	-	-	-	-	-
Stage 1	540	-	-	-	-	-
Stage 2	385	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	34.6	0.5		0		
HCM LOS	D					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	769	-	170	-	-	
HCM Lane V/C Ratio	0.06	-	0.291	-	-	
HCM Control Delay (s)	10	0	34.6	-	-	
HCM Lane LOS	A	A	D	-	-	
HCM 95th %tile Q(veh)	0.2	-	1.1	-	-	

2019 Build Traffic Volumes W/Imp
4: U.S. Route 9W & Dock Road

Peak AM Hour
8/30/2017

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	1	2	837	5	6	663
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	14	12	12	12
Grade (%)	4%		-2%			-4%
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.910		0.999			
Flt Protected	0.984					
Satd. Flow (prot)	1588	0	1948	0	0	1846
Flt Permitted	0.984					
Satd. Flow (perm)	1588	0	1948	0	0	1846
Link Speed (mph)	30		30			30
Link Distance (ft)	543		398			334
Travel Time (s)	12.3		9.0			7.6
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	1	2	881	5	6	698
Shared Lane Traffic (%)						
Lane Group Flow (vph)	3	0	886	0	0	704
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	1.03	1.03	0.91	0.99	0.97	0.97
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

2019 Build Traffic Volumes W/Imp
4: U.S. Route 9W & Dock Road

Peak AM Hour
8/30/2017

Intersection						
Int Delay, s/veh	0.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	1	2	837	5	6	663
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, %	4	-	-2	-	-	-4
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	1	2	881	5	6	698
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	1595	884	0	0	886	0
Stage 1	884	-	-	-	-	-
Stage 2	711	-	-	-	-	-
Critical Hdwy	7.25	6.65	-	-	4.15	-
Critical Hdwy Stg 1	6.25	-	-	-	-	-
Critical Hdwy Stg 2	6.25	-	-	-	-	-
Follow-up Hdwy	3.545	3.345	-	-	2.245	-
Pot Cap-1 Maneuver	81	308	-	-	752	-
Stage 1	328	-	-	-	-	-
Stage 2	411	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	80	308	-	-	752	-
Mov Cap-2 Maneuver	80	-	-	-	-	-
Stage 1	328	-	-	-	-	-
Stage 2	406	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	28.2	0		0.1		
HCM LOS	D					
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT	
Capacity (veh/h)	-	-	158	752	-	
HCM Lane V/C Ratio	-	-	0.02	0.008	-	
HCM Control Delay (s)	-	-	28.2	9.8	0	
HCM Lane LOS	-	-	D	A	A	
HCM 95th %tile Q(veh)	-	-	0.1	0	-	

2019 Build Traffic Volumes W/Imp
5: U.S. Route 9W & Western Avenue

Peak AM Hour
8/30/2017

						
Lane Group	NBL	NBT	SBT	SBR	SEL	SER
Lane Configurations						
Volume (vph)	66	848	516	181	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	12	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.965			
Flt Protected		0.996				
Satd. Flow (prot)	0	1862	1746	0	1810	0
Flt Permitted		0.996				
Satd. Flow (perm)	0	1862	1746	0	1810	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		356	398		297	
Travel Time (s)		8.1	9.0		6.8	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	69	893	543	191	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	962	734	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	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	1.00	0.96	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

2019 Build Traffic Volumes W/Imp
5: U.S. Route 9W & Western Avenue

Peak AM Hour
8/30/2017

Intersection						
Int Delay, s/veh	0.4					
Movement	NBL	NBT	SBT	SBR	SEL	SER
Vol, veh/h	66	848	516	181	0	0
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	95	95	95	95	95	95
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	69	893	543	191	0	0
Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	734	0	-	0	1670	638
Stage 1	-	-	-	-	638	-
Stage 2	-	-	-	-	1032	-
Critical Hdwy	4.15	-	-	-	6.45	6.25
Critical Hdwy Stg 1	-	-	-	-	5.45	-
Critical Hdwy Stg 2	-	-	-	-	5.45	-
Follow-up Hdwy	2.245	-	-	-	3.545	3.345
Pot Cap-1 Maneuver	857	-	-	-	104	471
Stage 1	-	-	-	-	521	-
Stage 2	-	-	-	-	339	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	857	-	-	-	87	471
Mov Cap-2 Maneuver	-	-	-	-	87	-
Stage 1	-	-	-	-	521	-
Stage 2	-	-	-	-	285	-
Approach	NB		SB		SE	
HCM Control Delay, s	0.7		0		0	
HCM LOS					A	
Minor Lane/Major Mvmt	NBL	NBT	SELn1	SBT	SBR	
Capacity (veh/h)	857	-	-	-	-	
HCM Lane V/C Ratio	0.081	-	-	-	-	
HCM Control Delay (s)	9.6	0	0	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0.3	-	-	-	-	

2019 Build Traffic Volumes W/Imp
6: U.S. Route 9W & King Street

Peak AM Hour
8/30/2017

						
Lane Group	NBL	NBT	SBT	SBR	SEL	SER
Lane Configurations						
Volume (vph)	0	765	516	0	149	108
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	10	10
Storage Length (ft)	0			0	0	50
Storage Lanes	0			0	1	1
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	0	1870	1810	0	1604	1436
Flt Permitted					0.950	
Satd. Flow (perm)	0	1870	1810	0	1604	1436
Link Speed (mph)		30	30		30	
Link Distance (ft)		755	356		216	
Travel Time (s)		17.2	8.1		4.9	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	0	805	543	0	157	114
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	805	543	0	157	114
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	1.00	0.96	1.00	1.00	1.09	1.09
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

Intersection						
Int Delay, s/veh	12.1					
Movement	NBL	NBT	SBT	SBR	SEL	SER
Vol, veh/h	0	765	516	0	149	108
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	50
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	0	805	543	0	157	114
Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	543	0	-	0	1348	543
Stage 1	-	-	-	-	543	-
Stage 2	-	-	-	-	805	-
Critical Hdwy	4.15	-	-	-	6.45	6.25
Critical Hdwy Stg 1	-	-	-	-	5.45	-
Critical Hdwy Stg 2	-	-	-	-	5.45	-
Follow-up Hdwy	2.245	-	-	-	3.545	3.345
Pot Cap-1 Maneuver	1011	-	-	-	164	534
Stage 1	-	-	-	-	576	-
Stage 2	-	-	-	-	435	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1011	-	-	-	164	534
Mov Cap-2 Maneuver	-	-	-	-	164	-
Stage 1	-	-	-	-	576	-
Stage 2	-	-	-	-	435	-
Approach	NB		SB		SE	
HCM Control Delay, s	0		0		72.3	
HCM LOS					F	
Minor Lane/Major Mvmt	NBL	NBT	SELn1	SELn2	SBT	SBR
Capacity (veh/h)	1011	-	164	534	-	-
HCM Lane V/C Ratio	-	-	0.956	0.213	-	-
HCM Control Delay (s)	0	-	114.8	13.6	-	-
HCM Lane LOS	A	-	F	B	-	-
HCM 95th %tile Q(veh)	0	-	7.2	0.8	-	-

2019 Build Traffic Volumes W/Imp
7: U.S. Route 9W & Middle School Exit Driveway

Peak AM Hour

8/30/2017



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	20	7	0	845	723	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	-5%			0%	-2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.850					
Flt Protected	0.950					
Satd. Flow (prot)	1762	1577	0	1810	1828	0
Flt Permitted	0.950					
Satd. Flow (perm)	1762	1577	0	1810	1828	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	522			419	278	
Travel Time (s)	11.9			9.5	6.3	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	21	7	0	889	761	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	21	7	0	889	761	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	0.97	0.97	1.00	1.00	0.99	0.99
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

2019 Build Traffic Volumes W/Imp
7: U.S. Route 9W & Middle School Exit Driveway

Peak AM Hour
8/30/2017

Intersection						
Int Delay, s/veh	0.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	20	7	0	845	723	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-5	-	-	0	-2	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	21	7	0	889	761	0
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	1650	761	761	0	-	0
Stage 1	761	-	-	-	-	-
Stage 2	889	-	-	-	-	-
Critical Hdwy	5.45	5.75	4.15	-	-	-
Critical Hdwy Stg 1	4.45	-	-	-	-	-
Critical Hdwy Stg 2	4.45	-	-	-	-	-
Follow-up Hdwy	3.545	3.345	2.245	-	-	-
Pot Cap-1 Maneuver	169	445	838	-	-	-
Stage 1	563	-	-	-	-	-
Stage 2	508	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	169	445	838	-	-	-
Mov Cap-2 Maneuver	169	-	-	-	-	-
Stage 1	563	-	-	-	-	-
Stage 2	508	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	25.1	0		0		
HCM LOS	D					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	838	-	169	445	-	-
HCM Lane V/C Ratio	-	-	0.125	0.017	-	-
HCM Control Delay (s)	0	-	29.3	13.2	-	-
HCM Lane LOS	A	-	D	B	-	-
HCM 95th %tile Q(veh)	0	-	0.4	0.1	-	-

2019 Build Traffic Volumes W/Imp
1: U.S. Route 9W & Purdy Avenue

Peak PM Hour
8/30/2017



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	2	8	12	893	877	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	12	12	12	12	12
Grade (%)	-6%			0%	0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.890				0.999	
Flt Protected	0.991			0.999		
Satd. Flow (prot)	1534	0	0	1808	1808	0
Flt Permitted	0.991			0.999		
Satd. Flow (perm)	1534	0	0	1808	1808	0
Link Speed (mph)	30			40	30	
Link Distance (ft)	1246			469	274	
Travel Time (s)	28.3			8.0	6.2	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	2	9	13	992	974	7
Shared Lane Traffic (%)						
Lane Group Flow (vph)	11	0	0	1005	981	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	10			11	11	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.05	0.96	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other
Control Type: Unsignalized

2019 Build Traffic Volumes W/Imp
1: U.S. Route 9W & Purdy Avenue

Peak PM Hour
8/30/2017

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	2	8	12	893	877	6
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, %	-6	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	2	9	13	992	974	7

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1997	978	981	0	-	0
Stage 1	978	-	-	-	-	-
Stage 2	1019	-	-	-	-	-
Critical Hdwy	5.25	5.65	4.15	-	-	-
Critical Hdwy Stg 1	4.25	-	-	-	-	-
Critical Hdwy Stg 2	4.25	-	-	-	-	-
Follow-up Hdwy	3.545	3.345	2.245	-	-	-
Pot Cap-1 Maneuver	126	353	692	-	-	-
Stage 1	499	-	-	-	-	-
Stage 2	483	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	121	353	692	-	-	-
Mov Cap-2 Maneuver	121	-	-	-	-	-
Stage 1	499	-	-	-	-	-
Stage 2	463	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	19.8	0.1	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	692	-	255	-	-
HCM Lane V/C Ratio	0.019	-	0.044	-	-
HCM Control Delay (s)	10.3	0	19.8	-	-
HCM Lane LOS	B	A	C	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-

2019 Build Traffic Volumes W/Imp
2: U.S. Route 9W & Site Access/Young Avenue

Peak PM Hour
8/30/2017

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	46	5	58	10	6	11	80	848	6	5	839	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	11	11	12	12	12	11	11	12
Grade (%)		0%			0%			3%			1%	
Storage Length (ft)	125		0	80		0	100		0	125		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		0.861			0.900			0.999			0.993	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1752	1588	0	1752	1605	0	1726	1815	0	1686	1762	0
Flt Permitted	0.950			0.950			0.121			0.209		
Satd. Flow (perm)	1752	1588	0	1752	1605	0	220	1815	0	371	1762	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		61			12						2	
Link Speed (mph)		30			30			40			30	
Link Distance (ft)		303			629			278			469	
Travel Time (s)		6.9			14.3			4.7			10.7	
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 (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Adj. Flow (vph)	48	5	61	11	6	12	84	893	6	5	883	43
Shared Lane Traffic (%)												
Lane Group Flow (vph)	48	66	0	11	18	0	84	899	0	5	926	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	1.00	1.00	1.00	1.00	1.04	1.04	1.02	1.02	1.02	1.05	1.05	1.01
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2		2	2		2	2		2	2	
Detector Template												
Leading Detector (ft)	83	83		83	83		83	83		83	83	
Trailing Detector (ft)	-5	-5		-5	-5		-5	-5		-5	-5	
Detector 1 Position(ft)	-5	-5		-5	-5		-5	-5		-5	-5	
Detector 1 Size(ft)	40	40		40	40		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	
Detector 2 Position(ft)	43	43		43	43		43	43		43	43	
Detector 2 Size(ft)	40	40		40	40		40	40		40	40	
Detector 2 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	Split	NA		Split	NA		pm+pt	NA		pm+pt	NA	

2019 Build Traffic Volumes W/Imp
2: U.S. Route 9W & Site Access/Young Avenue

Peak PM Hour
8/30/2017

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases	8	8		4	4		5	2		1	6	
Permitted Phases							2			6		
Detector Phase	8	8		4	4		5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		3.0	10.0		3.0	10.0	
Minimum Split (s)	11.0	11.0		11.0	11.0		9.0	26.0		9.0	26.0	
Total Split (s)	25.0	25.0		25.0	25.0		15.0	55.0		15.0	55.0	
Total Split (%)	20.8%	20.8%		20.8%	20.8%		12.5%	45.8%		12.5%	45.8%	
Maximum Green (s)	20.0	20.0		20.0	20.0		9.0	49.0		9.0	49.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0		6.0	6.0		6.0	6.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	2.0	2.0		3.0	3.0		3.0	2.0		2.0	2.0	
Recall Mode	None	None		None	None		None	Max		None	Max	
Walk Time (s)				7.0	7.0						7.0	
Flash Dont Walk (s)				13.0	13.0						13.0	
Pedestrian Calls (#/hr)				0	0						0	
v/c Ratio	0.34	0.36		0.09	0.14		0.29	0.67		0.02	0.83	
Control Delay	46.8	18.4		42.9	28.4		7.7	14.5		6.0	27.4	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	46.8	18.4		42.9	28.4		7.7	14.5		6.0	27.4	
Queue Length 50th (ft)	27	3		6	3		14	286		1	499	
Queue Length 95th (ft)	63	42		24	25		33	#761		5	#868	
Internal Link Dist (ft)		223			549			198			389	
Turn Bay Length (ft)	125			80			100			125		
Base Capacity (vph)	411	419		411	386		321	1338		398	1121	
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	0.12	0.16		0.03	0.05		0.26	0.67		0.01	0.83	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 86.5

Natural Cycle: 90

Control Type: Semi Act-Uncoord

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

Queue shown is maximum after two cycles.

Splits and Phases: 2: U.S. Route 9W & Site Access/Young Avenue

15 s	55 s	25 s	25 s
15 s	55 s		

2019 Build Traffic Volumes W/Imp
2: U.S. Route 9W & Site Access/Young Avenue

Peak PM Hour
8/30/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	46	5	58	10	6	11	80	848	6	5	839	41
Number	3	8	18	7	4	14	5	2	12	1	6	16
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	1845	1845	1900	1845	1845	1900	1817	1817	1872	1835	1835	1890
Adj Flow Rate, veh/h	48	5	61	11	6	12	84	893	6	5	883	43
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	1	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, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	111	8	93	52	16	32	263	1143	8	262	1042	51
Arrive On Green	0.06	0.06	0.06	0.03	0.03	0.03	0.04	0.63	0.63	0.00	0.60	0.60
Sat Flow, veh/h	1757	120	1466	1757	550	1100	1730	1803	12	1748	1736	85
Grp Volume(v), veh/h	48	0	66	11	0	18	84	0	899	5	0	926
Grp Sat Flow(s),veh/h/ln	1757	0	1586	1757	0	1650	1730	0	1815	1748	0	1821
Q Serve(g_s), s	2.1	0.0	3.3	0.5	0.0	0.9	1.5	0.0	29.3	0.1	0.0	33.8
Cycle Q Clear(g_c), s	2.1	0.0	3.3	0.5	0.0	0.9	1.5	0.0	29.3	0.1	0.0	33.8
Prop In Lane	1.00		0.92	1.00		0.67	1.00		0.01	1.00		0.05
Lane Grp Cap(c), veh/h	111	0	100	52	0	49	263	0	1150	262	0	1093
V/C Ratio(X)	0.43	0.00	0.66	0.21	0.00	0.37	0.32	0.00	0.78	0.02	0.00	0.85
Avail Cap(c_a), veh/h	430	0	388	430	0	404	388	0	1150	448	0	1093
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	36.8	0.0	37.4	38.7	0.0	38.9	13.8	0.0	10.8	10.8	0.0	13.3
Incr Delay (d2), s/veh	1.0	0.0	2.7	2.0	0.0	4.6	0.7	0.0	5.3	0.0	0.0	8.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	0.0	1.5	0.3	0.0	0.5	1.0	0.0	16.2	0.0	0.0	19.2
LnGrp Delay(d),s/veh	37.8	0.0	40.1	40.7	0.0	43.5	14.5	0.0	16.2	10.8	0.0	21.5
LnGrp LOS	D		D	D		D	B		B	B		C
Approach Vol, veh/h		114			29			983			931	
Approach Delay, s/veh		39.1			42.4			16.0			21.4	
Approach LOS		D			D			B			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.3	57.8		7.4	9.1	55.0		10.2				
Change Period (Y+Rc), s	6.0	6.0		5.0	6.0	6.0		5.0				
Max Green Setting (Gmax), s	9.0	49.0		20.0	9.0	49.0		20.0				
Max Q Clear Time (g_c+I1), s	2.1	31.3		2.9	3.5	35.8		5.3				
Green Ext Time (p_c), s	0.0	7.8		0.1	0.1	6.7		0.3				
Intersection Summary												
HCM 2010 Ctrl Delay			20.1									
HCM 2010 LOS			C									

Two Way Analysis cannot be performed on Signalized Intersection.

2019 Build Traffic Volumes W/Imp
3: U.S. Route 9W & Birdsall Avenue

Peak PM Hour
8/30/2017



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	16	11	14	916	882	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	-5%			0%	-2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.944				0.996	
Flt Protected	0.972			0.999		
Satd. Flow (prot)	1702	0	0	1808	1820	0
Flt Permitted	0.972			0.999		
Satd. Flow (perm)	1702	0	0	1808	1820	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	621			334	419	
Travel Time (s)	14.1			7.6	9.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	17	12	15	964	928	27
Shared Lane Traffic (%)						
Lane Group Flow (vph)	29	0	0	979	955	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
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	0.97	0.97	1.00	1.00	0.99	0.99
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	16	11	14	916	882	26
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, %	-5	-	-	0	-2	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	17	12	15	964	928	27

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1936	942	956	0	-	0
Stage 1	942	-	-	-	-	-
Stage 2	994	-	-	-	-	-
Critical Hdwy	5.45	5.75	4.15	-	-	-
Critical Hdwy Stg 1	4.45	-	-	-	-	-
Critical Hdwy Stg 2	4.45	-	-	-	-	-
Follow-up Hdwy	3.545	3.345	2.245	-	-	-
Pot Cap-1 Maneuver	121	359	707	-	-	-
Stage 1	486	-	-	-	-	-
Stage 2	466	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	115	359	707	-	-	-
Mov Cap-2 Maneuver	115	-	-	-	-	-
Stage 1	486	-	-	-	-	-
Stage 2	445	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	32.5	0.2	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	707	-	159	-	-
HCM Lane V/C Ratio	0.021	-	0.179	-	-
HCM Control Delay (s)	10.2	0	32.5	-	-
HCM Lane LOS	B	A	D	-	-
HCM 95th %tile Q(veh)	0.1	-	0.6	-	-

2019 Build Traffic Volumes W/Imp
4: U.S. Route 9W & Dock Road

Peak PM Hour
8/30/2017

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	5	11	919	6	1	892
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	14	12	12	12
Grade (%)	4%		-2%			-4%
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.905		0.999			
Flt Protected	0.986					
Satd. Flow (prot)	1582	0	1948	0	0	1846
Flt Permitted	0.986					
Satd. Flow (perm)	1582	0	1948	0	0	1846
Link Speed (mph)	30		30			30
Link Distance (ft)	543		398			334
Travel Time (s)	12.3		9.0			7.6
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	5	12	967	6	1	939
Shared Lane Traffic (%)						
Lane Group Flow (vph)	17	0	973	0	0	940
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	1.03	1.03	0.91	0.99	0.97	0.97
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

2019 Build Traffic Volumes W/Imp
4: U.S. Route 9W & Dock Road

Peak PM Hour
8/30/2017

Intersection						
Int Delay, s/veh	0.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	5	11	919	6	1	892
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, %	4	-	-2	-	-	-4
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	5	12	967	6	1	939
Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1912	971	0	0	974	0
Stage 1	971	-	-	-	-	-
Stage 2	941	-	-	-	-	-
Critical Hdwy	7.25	6.65	-	-	4.15	-
Critical Hdwy Stg 1	6.25	-	-	-	-	-
Critical Hdwy Stg 2	6.25	-	-	-	-	-
Follow-up Hdwy	3.545	3.345	-	-	2.245	-
Pot Cap-1 Maneuver	48	272	-	-	696	-
Stage 1	292	-	-	-	-	-
Stage 2	304	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	48	272	-	-	696	-
Mov Cap-2 Maneuver	48	-	-	-	-	-
Stage 1	292	-	-	-	-	-
Stage 2	303	-	-	-	-	-
Approach	WB		NB		SB	
HCM Control Delay, s	43.1		0		0	
HCM LOS	E					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	- 111	696	-		
HCM Lane V/C Ratio	-	- 0.152	0.002	-		
HCM Control Delay (s)	-	- 43.1	10.2	0		
HCM Lane LOS	-	- E	B	A		
HCM 95th %tile Q(veh)	-	- 0.5	0	-		

2019 Build Traffic Volumes W/Imp
5: U.S. Route 9W & Western Avenue

Peak PM Hour
8/30/2017

						
Lane Group	NBL	NBT	SBT	SBR	SEL	SER
Lane Configurations						
Volume (vph)	110	916	704	193	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	12	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.971			
Flt Protected		0.995				
Satd. Flow (prot)	0	1860	1757	0	1810	0
Flt Permitted		0.995				
Satd. Flow (perm)	0	1860	1757	0	1810	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		356	398		297	
Travel Time (s)		8.1	9.0		6.8	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	116	964	741	203	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1080	944	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	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	1.00	0.96	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

2019 Build Traffic Volumes W/Imp
5: U.S. Route 9W & Western Avenue

Peak PM Hour
8/30/2017

Intersection						
Int Delay, s/veh	0.6					
Movement	NBL	NBT	SBT	SBR	SEL	SER
Vol, veh/h	110	916	704	193	0	0
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	95	95	95	95	95	95
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	116	964	741	203	0	0
Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	944	0	-	0	2039	843
Stage 1	-	-	-	-	843	-
Stage 2	-	-	-	-	1196	-
Critical Hdwy	4.15	-	-	-	6.45	6.25
Critical Hdwy Stg 1	-	-	-	-	5.45	-
Critical Hdwy Stg 2	-	-	-	-	5.45	-
Follow-up Hdwy	2.245	-	-	-	3.545	3.345
Pot Cap-1 Maneuver	715	-	-	-	61	359
Stage 1	-	-	-	-	417	-
Stage 2	-	-	-	-	283	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	715	-	-	-	40	359
Mov Cap-2 Maneuver	-	-	-	-	40	-
Stage 1	-	-	-	-	417	-
Stage 2	-	-	-	-	184	-
Approach	NB		SB		SE	
HCM Control Delay, s	1.2		0		0	
HCM LOS					A	
Minor Lane/Major Mvmt	NBL	NBT	SELn1	SBT	SBR	
Capacity (veh/h)	715	-	-	-	-	
HCM Lane V/C Ratio	0.162	-	-	-	-	
HCM Control Delay (s)	11	0	0	-	-	
HCM Lane LOS	B	A	A	-	-	
HCM 95th %tile Q(veh)	0.6	-	-	-	-	

2019 Build Traffic Volumes W/Imp
6: U.S. Route 9W & King Street

Peak PM Hour
8/30/2017

						
Lane Group	NBL	NBT	SBT	SBR	SEL	SER
Lane Configurations						
Volume (vph)	0	917	704	0	119	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	10	10
Storage Length (ft)	0			0	0	50
Storage Lanes	0			0	1	1
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	0	1870	1810	0	1604	1436
Flt Permitted					0.950	
Satd. Flow (perm)	0	1870	1810	0	1604	1436
Link Speed (mph)		30	30		30	
Link Distance (ft)		755	356		216	
Travel Time (s)		17.2	8.1		4.9	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	0	965	741	0	125	95
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	965	741	0	125	95
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	1.00	0.96	1.00	1.00	1.09	1.09
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

Intersection	
Int Delay, s/veh	17.5

Movement	NBL	NBT	SBT	SBR	SEL	SER
Vol, veh/h	0	917	704	0	119	90
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	50
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	0	965	741	0	125	95

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	741	0	1706
Stage 1	-	-	741
Stage 2	-	-	965
Critical Hdwy	4.15	-	6.45
Critical Hdwy Stg 1	-	-	5.45
Critical Hdwy Stg 2	-	-	5.45
Follow-up Hdwy	2.245	-	3.545
Pot Cap-1 Maneuver	852	-	~ 99
Stage 1	-	-	466
Stage 2	-	-	365
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	852	-	~ 99
Mov Cap-2 Maneuver	-	-	~ 99
Stage 1	-	-	466
Stage 2	-	-	365

Approach	NB	SB	SE
HCM Control Delay, s	0	0	153.3
HCM LOS			F

Minor Lane/Major Mvmt	NBL	NBT	SELn1	SELn2	SBT	SBR
Capacity (veh/h)	852	-	99	411	-	-
HCM Lane V/C Ratio	-	-	1.265	0.231	-	-
HCM Control Delay (s)	0	-	256.8	16.4	-	-
HCM Lane LOS	A	-	F	C	-	-
HCM 95th %tile Q(veh)	0	-	8.7	0.9	-	-

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

2019 Build Traffic Volumes W/Imp
7: U.S. Route 9W & Middle School Exit Driveway

Peak PM Hour
8/30/2017



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	3	1	0	932	907	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	-5%			0%	-2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.850					
Flt Protected	0.950					
Satd. Flow (prot)	1762	1577	0	1810	1828	0
Flt Permitted	0.950					
Satd. Flow (perm)	1762	1577	0	1810	1828	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	522			419	278	
Travel Time (s)	11.9			9.5	6.3	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	3	1	0	981	955	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	3	1	0	981	955	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	0.97	0.97	1.00	1.00	0.99	0.99
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

2019 Build Traffic Volumes W/Imp
7: U.S. Route 9W & Middle School Exit Driveway

Peak PM Hour
8/30/2017

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	3	1	0	932	907	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-5	-	-	0	-2	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	3	1	0	981	955	0
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	1936	955	955	0	-	0
Stage 1	955	-	-	-	-	-
Stage 2	981	-	-	-	-	-
Critical Hdwy	5.45	5.75	4.15	-	-	-
Critical Hdwy Stg 1	4.45	-	-	-	-	-
Critical Hdwy Stg 2	4.45	-	-	-	-	-
Follow-up Hdwy	3.545	3.345	2.245	-	-	-
Pot Cap-1 Maneuver	121	353	708	-	-	-
Stage 1	481	-	-	-	-	-
Stage 2	471	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	121	353	708	-	-	-
Mov Cap-2 Maneuver	121	-	-	-	-	-
Stage 1	481	-	-	-	-	-
Stage 2	471	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	30.4	0		0		
HCM LOS	D					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	708	-	121	353	-	-
HCM Lane V/C Ratio	-	-	0.026	0.003	-	-
HCM Control Delay (s)	0	-	35.5	15.2	-	-
HCM Lane LOS	A	-	E	C	-	-
HCM 95th %tile Q(veh)	0	-	0.1	0	-	-