MEMORANDUM

To:	Project File		
From:	Alexander Cowan		
Date:	August 9, 2024	Project No.:	47-0426.00
Re:	Mandel Group Delafield Street Apartments Traffic Impact Analysis Study – Addendum #1		

Introduction

The City of Waukesha requested a traffic impact analysis (TIA) study be conducted for the proposed Mandel Group development located along the west side of Delafield Street, just north of Madison Street, in the City of Waukesha, WI. The TIA, dated May 31, 2024, considered three site access alternatives. Following coordination with the City of Waukesha, a fourth site access alternative has been considered, identified in this document as Site Plan D. Site Plan D would include three access points: one full access to the north building and surface parking lots located on Delafield Street, a second located on Delafield Street that would serve as an exit-only driveway from the underground parking of the south building, and a third full access along Madison Street serving the underground parking for the south building.

The purpose of this addendum is to summarize the anticipated traffic volume distribution and operational impact of the proposed development on study intersections under the Site Plan D alternative.

Proposed Site Plan

Three driveways will be provided at the site under Site Plan D as shown in **Exhibit 2-3**. The first will be a full access driveway along Delafield Street ("North Driveway"), serving as ingress and egress for both the surface parking lot and the underground parking lot for the north building. The driveway is anticipated to be located approximately 250 feet south of the Delafield Street intersection with Buena Vista Avenue, or approximately 425 feet north of the Delafield Street, Madison Street, and North Street intersection.

The second driveway would be provided along Delafield Street, located approximately 520 feet south of the Delafield Street intersection with Buena Vista, or approximately 165 feet north of the Delafield Street, Madison Street, and North Street intersection. The second driveway would serve the underground parking for residents within the south apartment building and would allow exit-only access. Exiting vehicles would be allowed to make a left or right turn onto Delafield Street.

The third driveway would be located on Madison Street, approximately 120 feet northwest of the Madison Street intersection with Delafield Street and North Street. The third driveway would provide full access to underground parking for residents within the south apartment building.

Trip Distribution

The trip distribution used to assign new development trips to the study area was estimated based on existing traffic patterns. The expected access restrictions, as well as the distribution of available parking, were also taken into consideration when developing the trip distribution. The distribution is consistent with the anticipated distribution described in the TIA for the other site access alternatives. The expected trip distribution for the development trips for Site Plan D are shown in **Exhibit 4-2D.**

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Trip Assignment

The new trips expected to be generated by the proposed site are summarized in the TIA. New development trips were assigned to the study area roadway networks based on the trip distributions previously identified for Site Plan D. The new development trips are assigned to the roadway network in **Exhibit 4-3D**.

Build Traffic

The 2025 base year build volumes, as shown in **Exhibit 4-4D**, are the summation of the 2025 base year background volumes in **Exhibit 3-1** of the TIA report and the trip assignment volumes in **Exhibit 4-3D**. These volumes represent the total traffic within the study area after the proposed development is fully open under Site Plan D.

The 2035 horizon year build volumes, as shown in **Exhibit 4-5D**, are the summation of the 2035 horizon year background volumes in **Exhibit 4-1** of the TIA report and the trip assignment volumes in **Exhibit 4-3D**. These volumes represent the total traffic within the study area 10 years after the proposed development is fully open under Site Plan D.

Capacity/Level of Service Analysis

2025 Base Year Build – Site Plan D: Three Driveway Scenario

The 2025 base year build Site Plan D scenario, weekday AM and PM peak hour traffic operations at the study intersections are summarized in **Table 16**. The highway capacity manual analysis summary sheets are included in Attachment B. This scenario requires the analysis of three driveways along with the existing study intersections. As shown in the table, all peak hour traffic movements at the study intersections under the existing geometry and signal timing parameters are expected to continue to operate at a LOS 'D' or better, or the same as observed under the 2025 base year background volumes when the LOS was worse than LOS 'D', with the exception of the shared westbound through/right-turn lane and the shared south westbound left-turn/through/right-turn at the intersection of Delafield Street, Madison Street, and North Street. Both of these movements are expected to worsen from LOS 'D' to LOS 'E', during the PM peak hour.

Maximum 95th percentile queues at the intersection of Delafield Street, Summit Avenue, and Spring Street, and the intersection of Delafield Street and Buena Vista Avenue are expected to fit within the available storage area.

Several movements at the Delafield Street, Madison Street, and North Street intersection are expected to experience periods where the 95th percentile traffic volume flows are expected to exceed the capacity, in which case the 95th percentile queues may be longer than what is calculated. These movements, and the calculated 95th percentile queues are as follows:

- AM Peak
  - EBL: 150-foot queue
  - Shared WBT/WBR: 450-foot queue
  - Shared SBT/SBR: 175-foot queue
  - Shared SWBL/SWBT/SWBR: 125-foot queue
- PM Peak
  - EBL: 175-foot queue
  - Shared WBT/WBR: 625-foot queue
  - Shared SWBL/SWBT/SWBR: 200-foot queue

Table 16: 2025 Base Year Build Peak Hour Traffic Operations – Site Plan D: Three Driveway Scenario

Mandel TIA - 2025 Base Year Build - Three Driveway Scenario - Site Plan D																			
Intersection	Peak Hour	Traffic Control	MOE	Movement															OVERALL
				EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	SWBL	SWBT	SWBR	
Summit Ave. & Spring St. & Delafield St.	AM Peak	Signal	LOS	B	B		B	B	B	B			B	A		-	-	-	B
			Delay (sec)	13.6	11.9		13.2	11.9	10.5	16.1			10.3	7.6		-	-	-	11.8
			Queue (ft)	25'	125'		25'	125'	50'	50'			50'	25'		-	-	-	--
	PM Peak	Signal	LOS	B	B		B	B	B	B			B	A		-	-	-	B
			Delay (sec)	14.8	13.4		15.4	12.9	11.3	16.2			10.1	7.5		-	-	-	12.4
			Queue (ft)	25'	150'		25'	125'	50'	50'			50'	50'		-	-	-	--
				Movement															OVERALL
				EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	SWBL	SWBT	SWBR	
Buena Vista Ave. & Delafield St.	AM Peak	Minor Stop	LOS	-	-	-	C	-	B	-	A	A	A		-	-	-	-	A
			Delay (sec)	-	-	-	15.9	-	10.2	-	0.0	0.0	8.2		-	-	-	-	2.8
			Queue (ft)	-	-	-	25'	-	25'	-	0'	0'	25'		-	-	-	-	--
	PM Peak	Minor Stop	LOS	-	-	-	C	-	B	-	A	A	A		-	-	-	-	A
			Delay (sec)	-	-	-	18.8	-	10.9	-	0.0	0.0	8.2		-	-	-	-	2.8
			Queue (ft)	-	-	-	25'	-	25'	-	0'	0'	25'		-	-	-	-	--
				Movement															OVERALL
				EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	SWBL	SWBT	SWBR	
North St. & Madison St. & Delafield St.	AM Peak	Signal	LOS	E	B		B	D		C	C	C	C	D		D			D
			Delay (sec)	65.5	10.8		10.5	45.6		30.6	32.2	24.4	32.2	43.3		37.0			40.8
			Queue (ft)	*150'	50'		25'	*450'		25'	100'	125'	75'	*175'		*125			--
	PM Peak	Signal	LOS	E	B		B	E		D	D	C	D	D		E			D
			Delay (sec)	66.8	11.2		11.0	56.1		36.6	41.2	29.5	37.7	45.1		60.3			50.3
			Queue (ft)	*175'	25'		25'	*625'		25'	150'	175'	50'	150'		*200'			--
				Movement															OVERALL
				EBL	-	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	SWBL	SWBT	SWBR	
North Drwy. & Delafield St.	AM Peak	Minor Stop	LOS	B			-	-	-	A	A	-	-	A		-	-	-	A
			Delay (sec)	11.4			-	-	-	7.8	0.0	-	-	0.0		-	-	-	0.9
			Queue (ft)	25'			-	-	-	25'	0'	-	-	0'		-	-	-	--
	PM Peak	Minor Stop	LOS	B			-	-	-	A	A	-	-	A		-	-	-	A
			Delay (sec)	12.9			-	-	-	8.1	0.0	-	-	0.0		-	-	-	0.9
			Queue (ft)	25'			-	-	-	25'	0'	-	-	0'		-	-	-	--
				Movement															OVERALL
				EBL	-	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	SWBL	SWBT	SWBR	
South Drwy. & Delafield St.	AM Peak	Minor Stop	LOS	B			-	-	-	-	A	-	-	A	-	-	-	-	A
			Delay (sec)	11.0			-	-	-	-	0.0	-	-	0.0	-	-	-	-	0.2
			Queue (ft)	25'			-	-	-	-	0'	-	-	0'	-	-	-	-	--
	PM Peak	Minor Stop	LOS	B			-	-	-	-	A	-	-	A	-	-	-	-	A
			Delay (sec)	12.3			-	-	-	-	0.0	-	-	0.0	-	-	-	-	0.2
			Queue (ft)	25'			-	-	-	-	0'	-	-	0'	-	-	-	-	--
				Movement															OVERALL
				EBL	EBT	EBR	WBL	--	WBR	NBL	NBT	NBR	SBL	SBT	SBR	SWBL	SWBT	SWBR	
Madison St. Drwy. & Madison St.	AM Peak	Minor Stop	LOS	-	-	-	B			-	A		A		-	-	-	-	A
			Delay (sec)	-	-	-	10.8			-	0.0		0.0		-	-	-	-	0.2
			Queue (ft)	-	-	-	25'			-	0'		0'		-	-	-	-	--
	PM Peak	Minor Stop	LOS	-	-	-	B			-	A		A		-	-	-	-	A
			Delay (sec)	-	-	-	11.5			-	0.0		7.8		-	-	-	-	0.2
			Queue (ft)	-	-	-	25'			-	0'		25'		-	-	-	-	--

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

The remaining 95th percentile queues at the intersection of Delafield Street, Madison Street, and North Street are expected to fit with the available storage area. Based on the maximum expected 95th percentile queue of 200 feet for the south-westbound approach at the intersection of Delafield Street, Madison Street, and North Street, the reduction in the existing storage length for this movement to accommodate the north proposed development driveway is not expected to lead to significant reductions in operational performance along Delafield Street.

Improving the additional LOS ‘E’ movements at the intersection of Delafield Street, Madison Street, and North Street would require an adjustment in signal timings. The northbound/southbound approaches of Madison Street are the only approaches operating with all movements at LOS ‘D’ or better. If two seconds of green time is taken from the northbound/southbound Madison Street approaches and given as one

second to the westbound North Street through phase and one second to the south westbound Delafield Street approach, all movements are expected to operate at a similar LOS as the background condition in 2025 during the PM peak hour, as shown in **Table 17**.

Table 17: 2025 Base Year Build Peak Hour Traffic Operations – Site Plan D: Three Driveway Scenario - Improved

				Movement														OVERALL
				EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	SWBL	SWBT	SWBR	
North St. & Madison St. & Delafield St.	PM Peak	Signal	LOS	E	B		B	D		D	D	C	D	D		D			D
			Delay (sec)	75.2	11.0		10.9	51.8		37.5	44.1	29.7	38.7	50.9		52.8			49.1
			Queue (ft)	*175'	25'		25'	*600'		25'	*150'	175'	50'	*175'		*200'			--

2035 Horizon Year Build – Site Plan D: Three Driveway Scenario

The 2035 horizon year build Site Plan D scenario, weekday AM and PM peak hour traffic operations at the study intersections are summarized in **Table 18**. As shown in the table, all peak hour traffic movements at the study intersections under the existing geometry and signal timing parameters are expected to continue to operate at LOS 'D' or better, or the same as expected under the 2035 horizon year background volumes when the LOS was worse than LOS 'D', with the exception of the overall LOS at the intersection of Delafield Street, Madison Street, and North Street. The overall LOS is expected to worsen from LOS 'D' to LOS 'E', during the PM peak hour.

Signal timing adjustments were evaluated during the weekday PM peak hour, but they did not result in reducing the overall LOS 'E' to LOS 'D'. Geometric changes are expected to be necessary to address the overall LOS 'E', but the feasibility to accommodate such improvements is limited.

Maximum 95th percentile queues at the intersection of Delafield Street, Summit Avenue, and Spring Street, and the intersection of Delafield Street and Buena Vista Avenue are expected to fit within the available storage area.

Several movements at the Delafield Street, Madison Street, and North Street intersection are expected to experience periods where the 95th percentile traffic volume flows exceed the capacity, in which case the 95th percentile queues may be longer than what is calculated. These movements, and the calculated 95th percentile queues are as follows:

- AM Peak
  - EBL: 150-foot queue
  - Shared WBT/WBR: 500-foot queue
  - Shared SBT/SBR: 175-foot queue
  - Shared SWBL/SWBT/SWBR: 125-foot queue
- PM Peak
  - EBL: 200-foot queue
  - Shared WBT/WBR: 675-foot queue
  - Shared SWBL/SWBT/SWBR: 225-foot queue

The remaining 95th percentile queues at the intersection of Delafield Street, Madison Street, and North Street are expected to fit within the available storage area. Based on the maximum expected 95th percentile queue of 225 feet for the south-westbound left-turn movement at the intersection of Delafield Street, Madison Street, and North Street, the reduction in the existing storage length for this movement to accommodate the north proposed development driveway is not expected to lead to significant reductions in operational performance along Delafield Street.

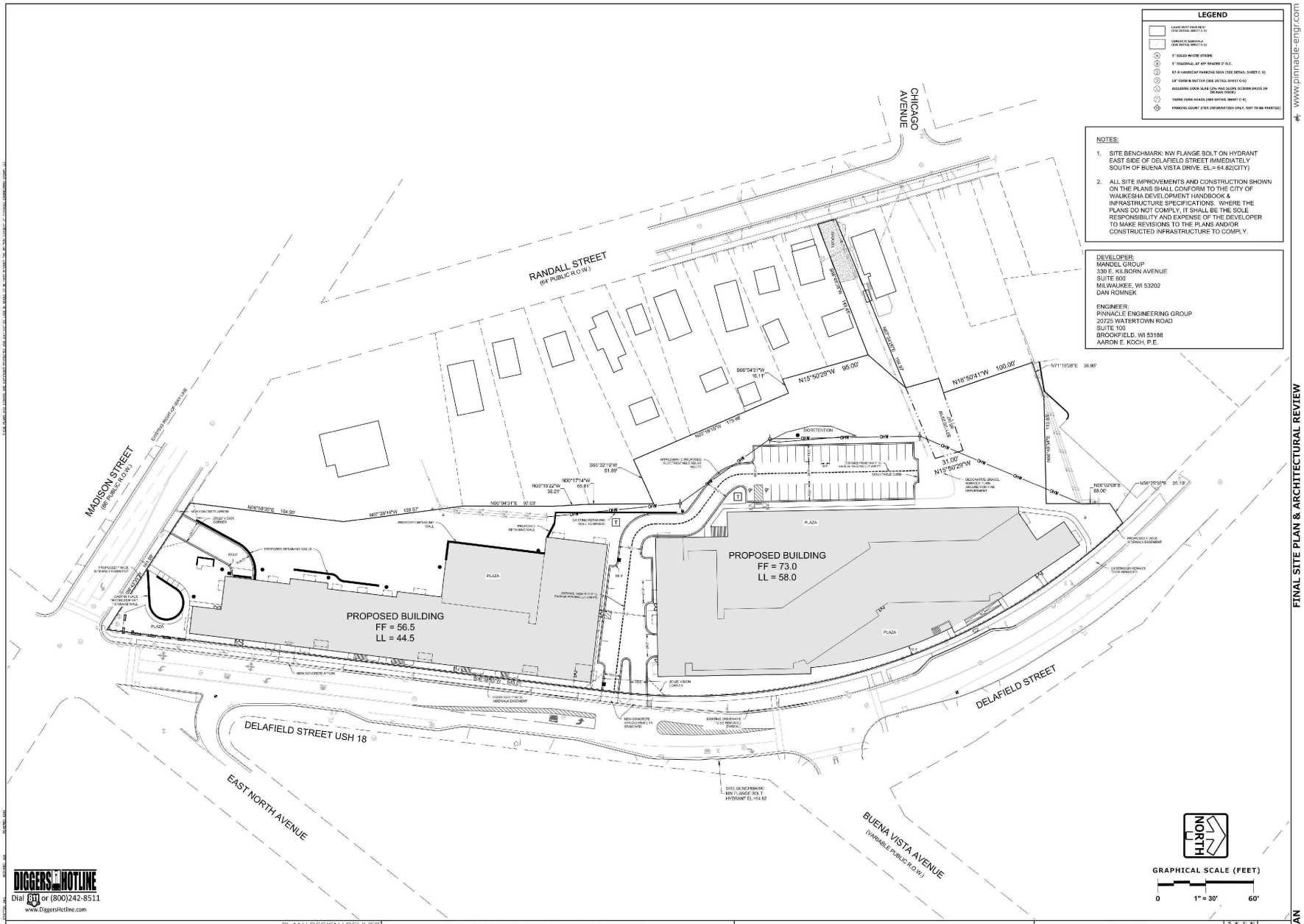
Table 18: 2035 Horizon Year Build Peak Hour Traffic Operations – Three Driveway Scenario

Mandel TIA - 2035 Horizon Year Build - Three Driveway Scenario - Site Plan D																		
Intersection	Peak Hour	Traffic Control	MOE	Movement														OVERALL
				EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	SWBL	SWBT	SWBR	
Summit Ave. & Spring St. & Delafield St.	AM Peak	Signal	LOS	B	B		B	B	B	B			B	A		-	-	-	B
			Delay (sec)	13.9	12.1		13.5	12.2	10.6	16.2			10.3	7.6		-	-	-	12.0
			Queue (ft)	25'	125'		25'	125'	50'	50'			50'	25'		-	-	-	--
	PM Peak	Signal	LOS	B	B		B	B	B	B			B	A		-	-	-	B
			Delay (sec)	15.2	13.7		15.9	13.2	11.3	16.2			10.1	7.5		-	-	-	12.6
			Queue (ft)	25'	150'		25'	150'	50'	50'			75'	50'		-	-	-	--
				Movement															OVERALL
				EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	SWBL	SWBT	SWBR	
Buena Vista Ave. & Delafield St.	AM Peak	Minor Stop	LOS	-	-	-	C	-	B	-	A	A	A		-	-	-	-	A
			Delay (sec)	-	-	-	16.5	-	10.3	-	0.0	0.0	8.3		-	-	-	-	2.9
			Queue (ft)	-	-	-	25'	-	25'	-	0'	0'	25'		-	-	-	-	--
	PM Peak	Minor Stop	LOS	-	-	-	C	-	B	-	A	A	A		-	-	-	-	A
			Delay (sec)	-	-	-	20.4	-	11.1	-	0.0	0.0	8.3		-	-	-	-	3.0
			Queue (ft)	-	-	-	25'	-	25'	-	0'	0'	25'		-	-	-	-	--
				Movement															OVERALL
				EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	SWBL	SWBT	SWBR	
North St. & Madison St. & Delafield St.	AM Peak	Signal	LOS	D	B		B	E		C	C	C	C	D		D			D
			Delay (sec)	47.8	10.8		10.5	67.4		30.6	32.4	24.5	32.2	46.9		38.1			47.8
			Queue (ft)	*150'	50'		25'	*500'		25'	100'	125'	75'	*175'		*125			--
	PM Peak	Signal	LOS	E	B		B	E		D	D	C	D	D		E			E
			Delay (sec)	71.5	11.4		11.2	71.8		36.5	41.8	29.3	37.6	46.1		65.3			57.2
			Queue (ft)	*200'	25'		25'	*675'		25'	150'	175'	50'	150'		*225'			--
				Movement															OVERALL
				EBL	-	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	SWBL	SWBT	SWBR	
North Drwy. & Delafield St.	AM Peak	Minor Stop	LOS	B			-	-	-	A	A	-	-	A		-	-	-	A
			Delay (sec)	11.6			-	-	-	7.8	0.0	-	-	0.0		-	-	-	1.2
			Queue (ft)	25'			-	-	-	25'	0'	-	-	0'		-	-	-	--
	PM Peak	Minor Stop	LOS	B			-	-	-	A	A	-	-	A		-	-	-	A
			Delay (sec)	13.3			-	-	-	8.2	0.0	-	-	0.0		-	-	-	0.8
			Queue (ft)	25'			-	-	-	25'	0'	-	-	0'		-	-	-	--
				Movement															OVERALL
				EBL	-	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	SWBL	SWBT	SWBR	
South Drwy. & Delafield St.	AM Peak	Minor Stop	LOS	B			-	-	-	-	A	-	-	A	-	-	-	-	A
			Delay (sec)	11.2			-	-	-	-	0.0	-	-	0.0	-	-	-	-	0.2
			Queue (ft)	25'			-	-	-	-	0'	-	-	0'	-	-	-	-	--
	PM Peak	Minor Stop	LOS	B			-	-	-	-	A	-	-	A	-	-	-	-	A
			Delay (sec)	12.6			-	-	-	-	0.0	-	-	0.0	-	-	-	-	0.2
			Queue (ft)	25'			-	-	-	-	0'	-	-	0'	-	-	-	-	--
				Movement															OVERALL
				EBL	EBT	EBR	WBL	--	WBR	NBL	NBT	NBR	SBL	SBT	SBR	SWBL	SWBT	SWBR	
Madison St. Drwy. & Madison St.	AM Peak	Minor Stop	LOS	-	-	-	B			-	A		A		-	-	-	-	A
			Delay (sec)	-	-	-	11.0			-	0.0		0.0		-	-	-	-	0.2
			Queue (ft)	-	-	-	25'			-	0'		0'		-	-	-	-	--
	PM Peak	Minor Stop	LOS	-	-	-	B			-	A		A		-	-	-	-	A
			Delay (sec)	-	-	-	11.6			-	0.0		7.8		-	-	-	-	0.2
			Queue (ft)	-	-	-	25'			-	0'		25'		-	-	-	-	--

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

Conclusion

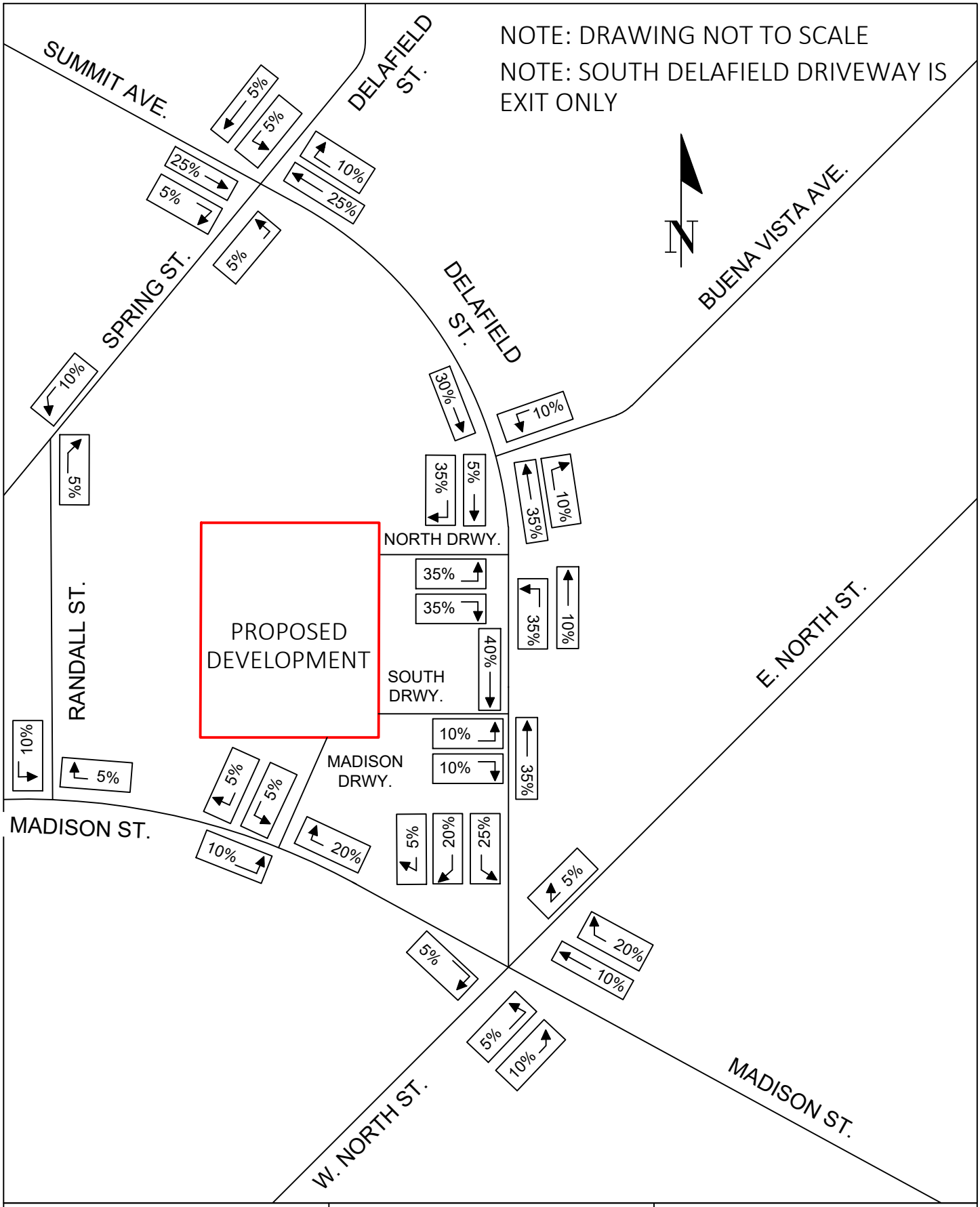
Under the Site Plan D scenario, all study intersections are expected to operate at a similar LOS as the previously reported alternatives. Site Plan D presents a reasonable variation on the Site Plan C alternative with three development access points. It locates a full-access driveway for the south building on Madison Street where entering left turns can occur in a more desirable location as opposed to Delafield Street. With adequate signing, the exit-only condition for the south driveway on Delafield Street should deter the potential for Delafield Street traffic to attempt a left-turn into the south parking structure, as opposed to Site Plans B and C. Site Plan D should reduce indirect routing along Randall Street as compared to Site Plans B and C. The conclusions and recommendations as described in the original TIA remain the same after the evaluation of Site Plan D, with the addition of the comparative conclusions described above.



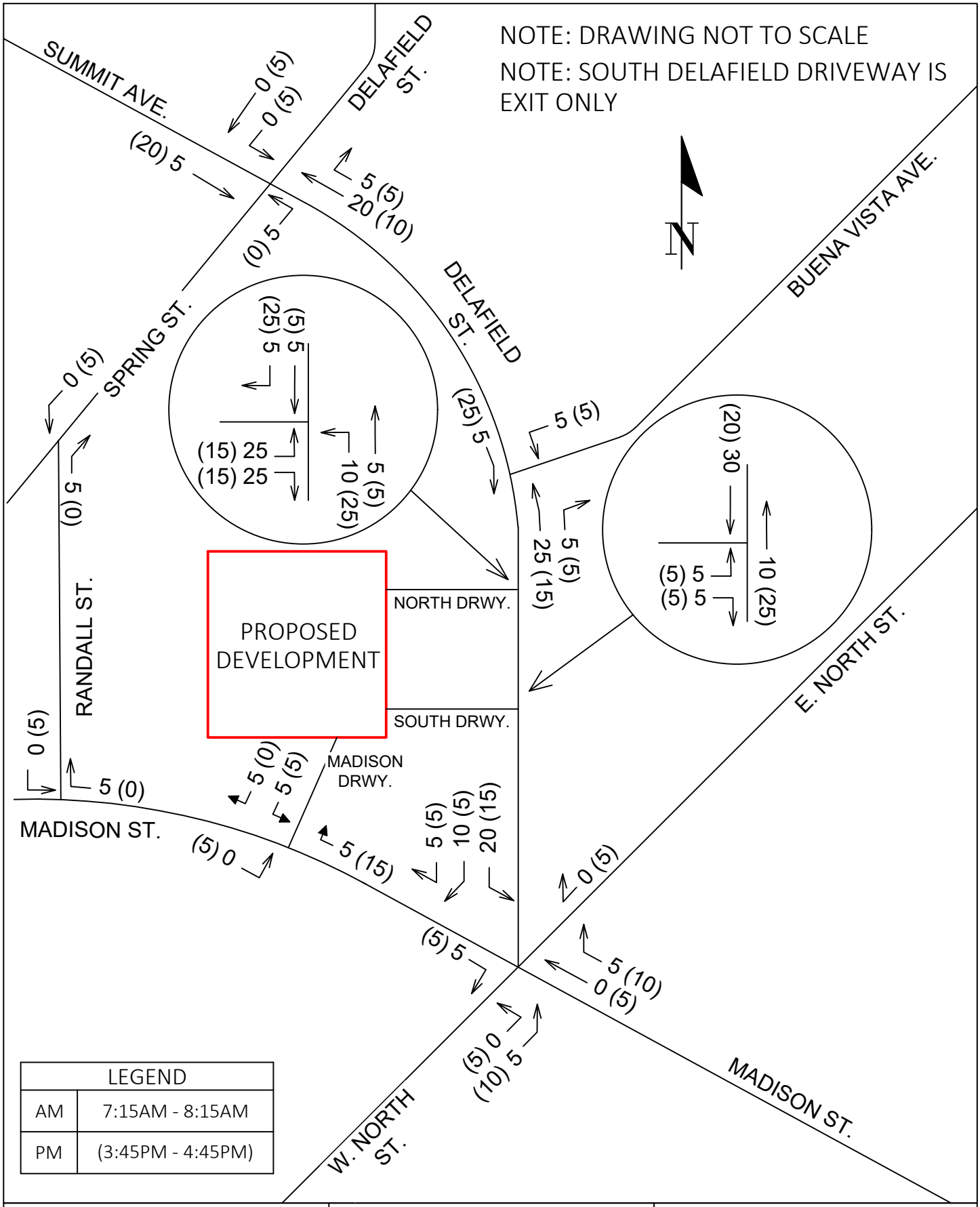
AYRES

MANDEL GROUP
TRAFFIC IMPACT ANALYSIS
WAUKESHA, WISCONSIN

EXHIBIT 2-3:
SITE PLAN D



AYRES	MANDEL GROUP TRAFFIC IMPACT ANALYSIS WAUKESHA, WISCONSIN	EXHIBIT 4-2D: TRIP DISTRIBUTION - SITE PLAN D



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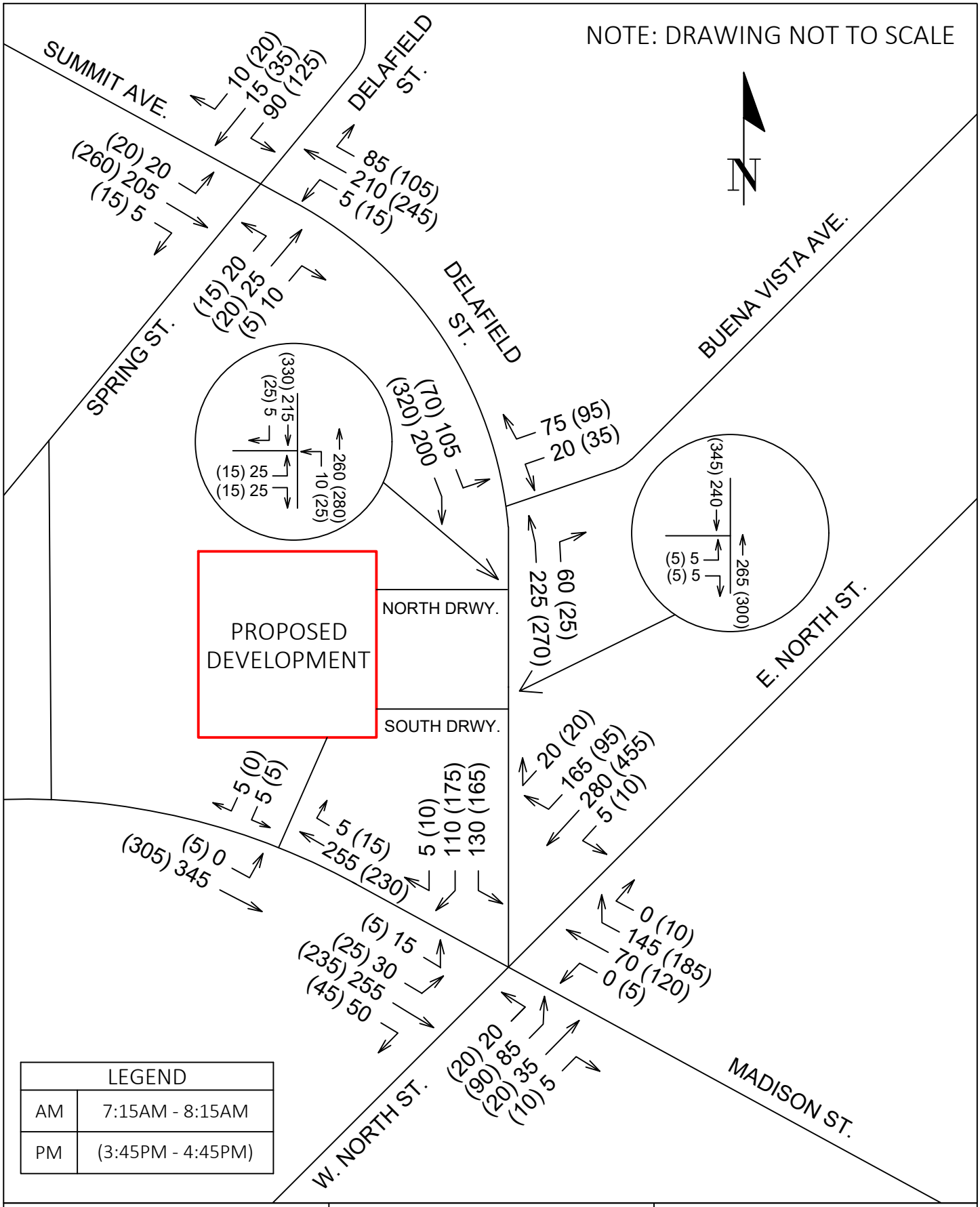
MANDEL GROUP
TRAFFIC IMPACT ANALYSIS
WAUKESHA, WISCONSIN

EXHIBIT 4-3D:
NEW DEVELOPMENT TRIPS -
SITE PLAN D



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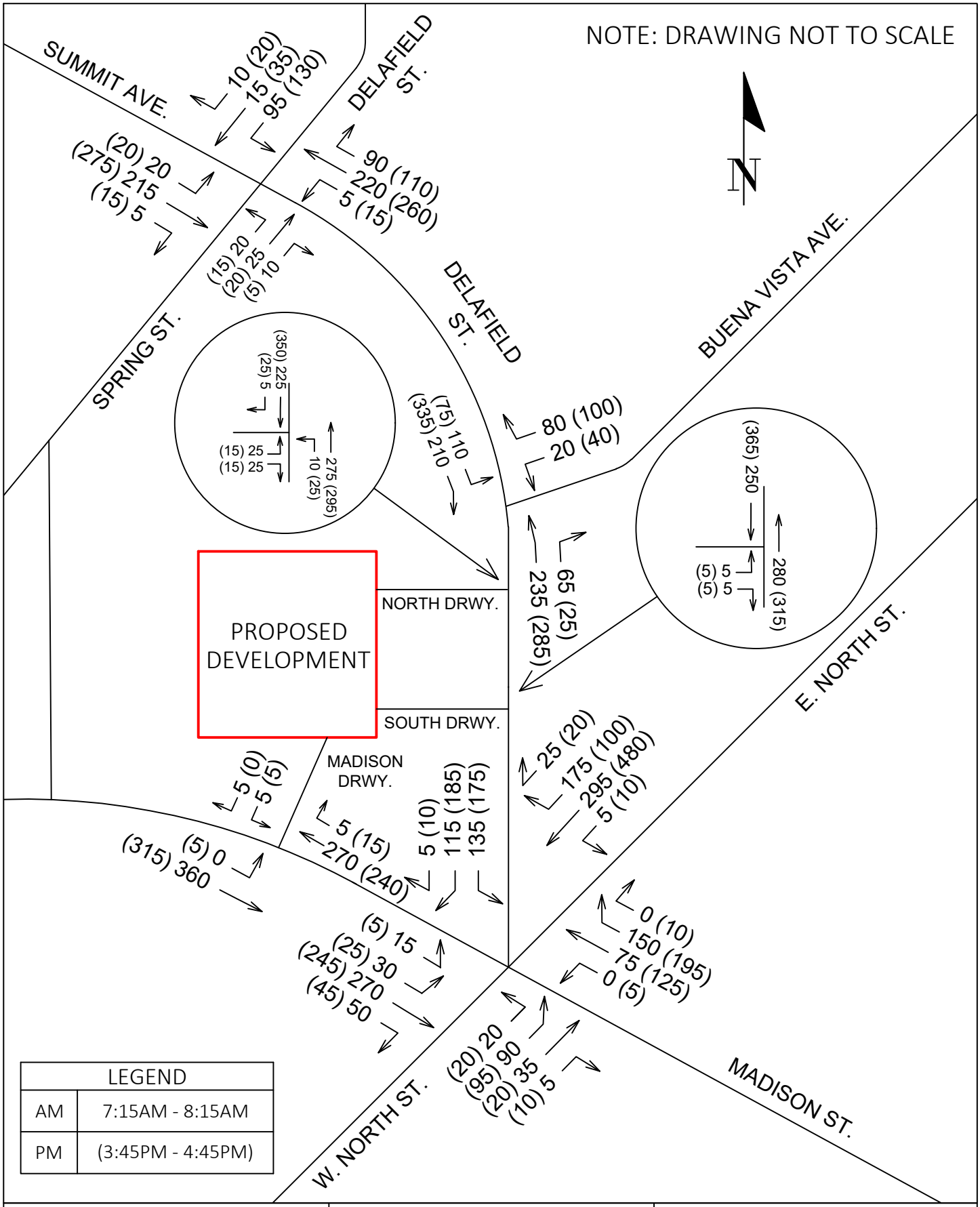
MANDEL GROUP
TRAFFIC IMPACT ANALYSIS
WAUKESHA, WISCONSIN

EXHIBIT 4-4D:
2025 BASE YEAR TOTAL
SITE PLAN D



LEGEND	
AM	7:15AM - 8:15AM
PM	(3:45PM - 4:45PM)

AYRES

MANDEL GROUP
TRAFFIC IMPACT ANALYSIS
WAUKESHA, WISCONSIN

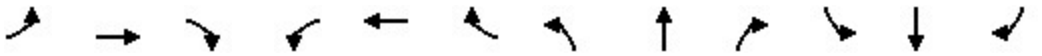
EXHIBIT 4-5D:
2035 HORIZON YEAR TOTAL
SITE PLAN D

Attachment B)

Highway Capacity Manual Analysis Outputs

2025 AM – Base Year Build:

Site Plan D Scenario

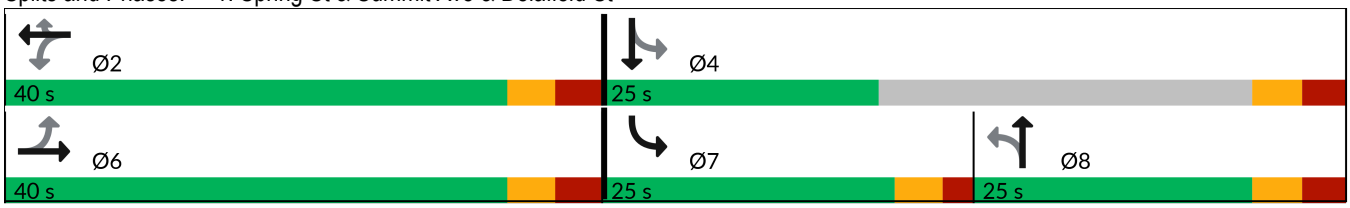


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	205	5	5	210	85	20	25	10	90	15	10
Future Volume (vph)	20	205	5	5	210	85	20	25	10	90	15	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	125		0	75		100	0		0	0		0
Storage Lanes	1		0	1		1	0		0	1		0
Taper Length (ft)	75			75			25			25		
Right Turn on Red			No			No			No			No
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		424			323			219			200	
Travel Time (s)		9.6			7.3			5.0			4.5	
Confl. Peds. (#/hr)			1	1			1					1
Confl. Bikes (#/hr)												
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	62%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	5%	5%	5%	2%	2%	2%	8%	8%	8%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	23	239	0	6	239	60	0	62	0	102	28	0
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		pm+pt	NA	
Protected Phases		6			2			8		7	4	
Permitted Phases	6			2		2	8			4		
Detector Phase	6	6		2	2	2	8	8		7	4	
Switch Phase												
Minimum Initial (s)	12.0	12.0		12.0	12.0	12.0	8.0	8.0		8.0	8.0	
Minimum Split (s)	18.3	18.3		18.3	18.3	18.3	14.3	14.3		13.3	14.3	
Total Split (s)	40.0	40.0		40.0	40.0	40.0	25.0	25.0		25.0	25.0	
Total Split (%)	44.4%	44.4%		44.4%	44.4%	44.4%	27.8%	27.8%		27.8%	27.8%	
Maximum Green (s)	33.7	33.7		33.7	33.7	33.7	18.7	18.7		19.7	18.7	
Yellow Time (s)	3.3	3.3		3.3	3.3	3.3	3.3	3.3		3.3	3.3	
All-Red Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		2.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0		0.0	0.0	
Total Lost Time (s)	6.3	6.3		6.3	6.3	6.3		6.3		5.3	6.3	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Vehicle Extension (s)	2.5	2.5		2.5	2.5	2.5	1.5	1.5		1.5	1.5	
Minimum Gap (s)	1.5	1.5		1.5	1.5	1.5	1.5	1.5		1.5	1.5	
Time Before Reduce (s)	19.0	19.0		19.0	19.0	19.0	25.0	25.0		25.0	25.0	
Time To Reduce (s)	11.0	11.0		11.0	11.0	11.0	0.0	0.0		0.0	0.0	
Recall Mode	Min	Min		Min	Min	Min	None	None		None	None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	0.04	0.28		0.01	0.29	0.08		0.20		0.18	0.04	
Control Delay (s/veh)	13.4	14.2		13.0	14.4	13.2		19.0		8.3	7.4	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0		0.0	0.0	
Total Delay (s/veh)	13.4	14.2		13.0	14.4	13.2		19.0		8.3	7.4	
Queue Length 50th (ft)	5	53		1	53	12		14		13	4	
Queue Length 95th (ft)	18	105		7	106	34		42		34	14	
Internal Link Dist (ft)		344			243			139			120	
Turn Bay Length (ft)	125			75		100						
Base Capacity (vph)	919	1500		892	1464	1244		708		835	1567	
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	0.03	0.16		0.01	0.16	0.05		0.09		0.12	0.02	

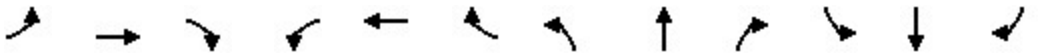
Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 42.5	
Natural Cycle: 50	
Control Type: Actuated-Uncoordinated	

Splits and Phases: 1: Spring St & Summit Ave & Delafield St



HCM 7th Signalized Intersection Summary
1: Spring St & Summit Ave & Delafield St

08/07/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	205	5	5	210	85	20	25	10	90	15	10
Future Volume (veh/h)	20	205	5	5	210	85	20	25	10	90	15	10
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1826	1826	1826	1870	1870	1870	1781	1781	1781
Adj Flow Rate, veh/h	23	233	6	6	239	60	23	28	11	102	17	11
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	5	5	5	2	2	2	8	8	8
Cap, veh/h	384	539	14	393	542	458	174	120	37	666	396	256
Arrive On Green	0.30	0.30	0.30	0.30	0.30	0.30	0.13	0.13	0.13	0.13	0.39	0.39
Sat Flow, veh/h	1079	1815	47	1113	1826	1545	417	954	296	1697	1010	653
Grp Volume(v), veh/h	23	0	239	6	239	60	62	0	0	102	0	28
Grp Sat Flow(s),veh/h/ln	1079	0	1862	1113	1826	1545	1667	0	0	1697	0	1663
Q Serve(g_s), s	0.7	0.0	4.2	0.2	4.3	1.1	0.0	0.0	0.0	1.8	0.0	0.4
Cycle Q Clear(g_c), s	5.0	0.0	4.2	4.4	4.3	1.1	1.3	0.0	0.0	1.8	0.0	0.4
Prop In Lane	1.00		0.03	1.00		1.00	0.37		0.18	1.00		0.39
Lane Grp Cap(c), veh/h	384	0	552	393	542	458	332	0	0	666	0	651
V/C Ratio(X)	0.06	0.00	0.43	0.02	0.44	0.13	0.19	0.00	0.00	0.15	0.00	0.04
Avail Cap(c_a), veh/h	963	0	1551	990	1521	1287	872	0	0	1264	0	769
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	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	13.5	0.0	11.5	13.2	11.5	10.4	16.0	0.0	0.0	10.2	0.0	7.6
Incr Delay (d2), s/veh	0.0	0.0	0.4	0.0	0.4	0.1	0.1	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	1.4	0.0	1.4	0.3	0.5	0.0	0.0	0.5	0.0	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	13.6	0.0	11.9	13.2	11.9	10.5	16.1	0.0	0.0	10.3	0.0	7.6
LnGrp LOS	B		B	B	B	B	B			B		A
Approach Vol, veh/h		262			305			62			130	
Approach Delay, s/veh		12.0			11.7			16.1			9.7	
Approach LOS		B			B			B			A	

Timer - Assigned Phs		2		4		6	7	8				
Phs Duration (G+Y+Rc), s		18.3		22.1		18.3	10.8	11.4				
Change Period (Y+Rc), s		6.3		6.3		6.3	5.3	6.3				
Max Green Setting (Gmax), s		33.7		18.7		33.7	19.7	18.7				
Max Q Clear Time (g_c+I1), s		6.4		2.4		7.0	3.8	3.3				
Green Ext Time (p_c), s		1.3		0.0		1.2	0.1	0.1				

Intersection Summary	
HCM 7th Control Delay, s/veh	11.8
HCM 7th LOS	B

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	20	75	225	60	105	200
Future Volume (vph)	20	75	225	60	105	200
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	50	0		115	0	
Storage Lanes	1	1		1	0	
Taper Length (ft)	100				25	
Link Speed (mph)	30		30			30
Link Distance (ft)	455		196			403
Travel Time (s)	7.0		4.6			5.1
Confl. Peds. (#/hr)		1		1	1	
Confl. Bikes (#/hr)						
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	4%	4%	3%	3%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	22	84	253	67	0	343
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	2.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	20	75	225	60	105	200
Future Vol, veh/h	20	75	225	60	105	200
Conflicting Peds, #/hr	0	1	0	1	1	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	50	0	-	115	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	2	2	4	4	3	3
Mvmt Flow	22	84	253	67	118	225

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	714	255	0	0	321	0
Stage 1	254	-	-	-	-	-
Stage 2	461	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.13	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.227	-
Pot Cap-1 Maneuver	398	784	-	-	1233	-
Stage 1	788	-	-	-	-	-
Stage 2	635	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	354	782	-	-	1232	-
Mov Cap-2 Maneuver	354	-	-	-	-	-
Stage 1	788	-	-	-	-	-
Stage 2	566	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	11.36	0	2.83
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	354	782	620	-
HCM Lane V/C Ratio	-	-	0.064	0.108	0.096	-
HCM Control Delay (s/veh)	-	-	15.9	10.2	8.2	0
HCM Lane LOS	-	-	C	B	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0.4	0.3	-

Lane Group	EBL2	EBL	EBT	EBR	WBL	WBT	WBR	WBR2	NBL	NBT	NBR	SBL2
Lane Configurations												
Traffic Volume (vph)	20	85	35	5	5	280	165	20	1	70	145	15
Future Volume (vph)	20	85	35	5	5	280	165	20	1	70	145	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)			0%			0%				0%		
Storage Length (ft)		125		0	150		50		50		0	
Storage Lanes		1		0	1		0		1		1	
Taper Length (ft)		100			125				75			
Right Turn on Red				No				No				
Link Speed (mph)			30			30				30		
Link Distance (ft)			435			580				357		
Travel Time (s)			9.9			13.2				8.1		
Confl. Peds. (#/hr)	1			3	3		1		1			
Confl. Bikes (#/hr)												
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	3%	3%	3%	3%	4%	4%	4%	4%	4%	4%	4%	4%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)			0%			0%				0%		
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	115	43	0	5	511	0	0	1	77	159	0
Turn Type	Prot	Prot	NA		D.Pm	NA			D.Pm	NA	custom	D.Pm
Protected Phases	1	1	6			2				8	10	
Permitted Phases					6				4		4	8
Detector Phase	1	1	6		6	2			4	8	10	8
Switch Phase												
Minimum Initial (s)	6.0	6.0	12.0		12.0	12.0			10.0	10.0	10.0	10.0
Minimum Split (s)	14.0	14.0	19.0		19.0	19.0			17.0	17.0	17.0	17.0
Total Split (s)	14.0	14.0	46.0		46.0	32.0			17.0	17.0	17.0	17.0
Total Split (%)	17.5%	17.5%	57.5%		57.5%	40.0%			21.3%	21.3%	21.3%	21.3%
Maximum Green (s)	8.0	8.0	39.0		39.0	25.0			10.0	10.0	10.0	10.0
Yellow Time (s)	4.0	4.0	4.0		4.0	4.0			4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	3.0		3.0	3.0			3.0	3.0	3.0	3.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0			0.0	0.0	0.0	
Total Lost Time (s)		6.0	7.0		7.0	7.0			7.0	7.0	7.0	
Lead/Lag	Lag	Lag				Lead						
Lead-Lag Optimize?	Yes	Yes				Yes						
Vehicle Extension (s)	1.5	1.5	4.9		4.9	4.9			1.5	1.5	1.5	1.5
Minimum Gap (s)	1.5	1.5	3.9		3.9	3.9			1.5	1.5	1.5	1.5
Time Before Reduce (s)	15.0	15.0	19.0		19.0	19.0			30.0	30.0	25.0	30.0
Time To Reduce (s)	0.0	0.0	11.0		11.0	11.0			0.0	0.0	0.0	0.0
Recall Mode	None	None	C-Min		C-Min	C-Min			None	None	None	None
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio		0.69	0.04		0.00	0.86			0.00	0.33	0.30	
Control Delay (s/veh)		58.1	11.0		10.6	43.5			31.0	36.5	21.5	

Lane Group	SBL	SBT	SBR	SWL	SWR	SWR2
Lane Configurations						
Traffic Volume (vph)	30	255	50	130	110	5
Future Volume (vph)	30	255	50	130	110	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%		0%		
Storage Length (ft)	75		0	300	0	
Storage Lanes	1		0	1	0	
Taper Length (ft)	75			50		
Right Turn on Red			No			No
Link Speed (mph)		30		30		
Link Distance (ft)		184		322		
Travel Time (s)		4.2		7.3		
Confl. Peds. (#/hr)			1			
Confl. Bikes (#/hr)						
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	4%	4%	4%	5%	5%	5%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%		0%		
Shared Lane Traffic (%)						
Lane Group Flow (vph)	49	335	0	269	0	0
Turn Type	D.Pm	NA		Prot		
Protected Phases		4		9		
Permitted Phases	8					
Detector Phase	8	4		9		
Switch Phase						
Minimum Initial (s)	10.0	10.0		10.0		
Minimum Split (s)	17.0	17.0		17.0		
Total Split (s)	17.0	17.0		17.0		
Total Split (%)	21.3%	21.3%		21.3%		
Maximum Green (s)	10.0	10.0		10.0		
Yellow Time (s)	4.0	4.0		4.0		
All-Red Time (s)	3.0	3.0		3.0		
Lost Time Adjust (s)	0.0	0.0		0.0		
Total Lost Time (s)	7.0	7.0		7.0		
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	1.5	1.5		1.5		
Minimum Gap (s)	1.5	1.5		1.5		
Time Before Reduce (s)	30.0	30.0		25.0		
Time To Reduce (s)	0.0	0.0		0.0		
Recall Mode	None	None		None		
Walk Time (s)						
Flash Dont Walk (s)						
Pedestrian Calls (#/hr)						
v/c Ratio	0.30	0.79		0.67		
Control Delay (s/veh)	37.3	49.3		43.0		

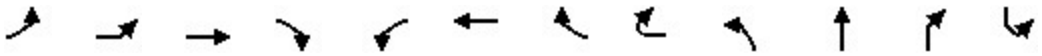
Lane Group	EBL2	EBL	EBT	EBR	WBL	WBT	WBR	WBR2	NBL	NBT	NBR	SBL2
Queue Delay		0.0	0.0		0.0	0.0			0.0	0.0	0.0	
Total Delay (s/veh)		58.1	11.0		10.6	43.5			31.0	36.5	21.5	
Queue Length 50th (ft)		56	11		1	249			0	36	58	
Queue Length 95th (ft)		#129	27		7	#441			5	76	106	
Internal Link Dist (ft)			355			500				277		
Turn Bay Length (ft)		125			150				50			
Base Capacity (vph)		175	882		648	592			118	229	525	
Starvation Cap Reductn		0	0		0	0			0	0	0	
Spillback Cap Reductn		0	0		0	0			0	0	0	
Storage Cap Reductn		0	0		0	0			0	0	0	
Reduced v/c Ratio		0.66	0.05		0.01	0.86			0.01	0.34	0.30	

Intersection Summary	
Area Type:	Other
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 75 (94%), Referenced to phase 2:WBT and 6:EBWB, Start of Green	
Natural Cycle: 80	
Control Type: Actuated-Coordinated	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 3: Madison St & W. North St/E. North St & Delafield St

Lane Group	SBL	SBT	SBR	SWL	SWR	SWR2
Queue Delay	0.0	0.0		0.0		
Total Delay (s/veh)	37.3	49.3		43.0		
Queue Length 50th (ft)	23	86		67		
Queue Length 95th (ft)	55	#151		#108		
Internal Link Dist (ft)		104		242		
Turn Bay Length (ft)	75			300		
Base Capacity (vph)	162	423		397		
Starvation Cap Reductn	0	0		0		
Spillback Cap Reductn	0	0		0		
Storage Cap Reductn	0	0		0		
Reduced v/c Ratio	0.30	0.79		0.68		

Intersection Summary



Movement	EBL2	EBL	EBT	EBR	WBL	WBT	WBR	WBR2	NBL	NBT	NBR	SBL2
Lane Configurations												
Traffic Volume (vph)	20	85	35	5	5	280	165	20	1	70	145	15
Future Volume (vph)	20	85	35	5	5	280	165	20	1	70	145	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	7.0		7.0	7.0			7.0	7.0	7.0	
Lane Util. Factor		1.00	1.00		1.00	1.00			1.00	1.00	1.00	
Frpb, ped/bikes		1.00	0.99		1.00	0.99			1.00	1.00	1.00	
Flpb, ped/bikes		1.00	1.00		0.99	1.00			0.99	1.00	1.00	
Frt		1.00	0.98		1.00	0.94			1.00	1.00	0.85	
Flt Protected		0.95	1.00		0.95	1.00			0.95	1.00	1.00	
Satd. Flow (prot)		1752	1810		1733	1703			1731	1827	1553	
Flt Permitted		0.95	1.00		0.72	1.00			0.51	1.00	1.00	
Satd. Flow (perm)		1752	1810		1330	1703			942	1827	1553	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	22	93	38	5	5	308	181	22	1	77	159	16
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	115	43	0	5	511	0	0	1	77	159	0
Confl. Peds. (#/hr)	1			3	3		1		1			
Heavy Vehicles (%)	3%	3%	3%	3%	4%	4%	4%	4%	4%	4%	4%	4%
Turn Type	Prot	Prot	NA		D.Pm	NA			D.Pm	NA	custom	D.Pm
Protected Phases	1	1	6			2				8	10	
Permitted Phases					6				4		4	8
Actuated Green, G (s)		6.4	39.0		39.0	26.6			10.0	10.0	20.0	
Effective Green, g (s)		6.4	39.0		39.0	26.6			10.0	10.0	20.0	
Actuated g/C Ratio		0.08	0.49		0.49	0.33			0.13	0.13	0.25	
Clearance Time (s)		6.0	7.0		7.0	7.0			7.0	7.0	7.0	
Vehicle Extension (s)		1.5	4.9		4.9	4.9			1.5	1.5	1.5	
Lane Grp Cap (vph)		140	882		648	566			117	228	524	
v/s Ratio Prot		c0.07	0.02			c0.30				0.04	0.04	
v/s Ratio Perm					0.00				0.00		0.06	
v/c Ratio		0.82	0.04		0.00	0.90			0.00	0.33	0.30	
Uniform Delay, d1		36.2	10.7		10.5	25.4			30.6	31.9	24.3	
Progression Factor		1.00	1.00		1.00	1.00			1.00	1.00	1.00	
Incremental Delay, d2		29.2	0.1		0.0	20.2			0.0	0.3	0.1	
Delay (s)		65.5	10.8		10.5	45.6			30.6	32.2	24.4	
Level of Service		E	B		B	D			C	C	C	
Approach Delay (s/veh)			50.6			45.3				27.0		
Approach LOS			D			D				C		

Intersection Summary			
HCM 2000 Control Delay (s/veh)	40.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	27.0
Intersection Capacity Utilization	71.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBL	SBT	SBR	SWL	SWR	SWR2
Lane Configurations						
Traffic Volume (vph)	30	255	50	130	110	5
Future Volume (vph)	30	255	50	130	110	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0		7.0		
Lane Util. Factor	1.00	0.95		0.97		
Frpb, ped/bikes	1.00	0.99		1.00		
Flpb, ped/bikes	1.00	1.00		1.00		
Frt	1.00	0.97		0.92		
Flt Protected	0.95	1.00		0.97		
Satd. Flow (prot)	1736	3372		3179		
Flt Permitted	0.70	1.00		0.97		
Satd. Flow (perm)	1291	3372		3179		
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	33	280	55	143	121	5
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	49	335	0	269	0	0
Confl. Peds. (#/hr)			1			
Heavy Vehicles (%)	4%	4%	4%	5%	5%	5%
Turn Type	D.Pm	NA		Prot		
Protected Phases		4		9		
Permitted Phases	8					
Actuated Green, G (s)	10.0	10.0		10.0		
Effective Green, g (s)	10.0	10.0		10.0		
Actuated g/C Ratio	0.13	0.13		0.13		
Clearance Time (s)	7.0	7.0		7.0		
Vehicle Extension (s)	1.5	1.5		1.5		
Lane Grp Cap (vph)	161	421		397		
v/s Ratio Prot		c0.10		c0.08		
v/s Ratio Perm	0.04					
v/c Ratio	0.30	0.79		0.67		
Uniform Delay, d1	31.8	34.0		33.4		
Progression Factor	1.00	1.00		1.00		
Incremental Delay, d2	0.3	9.3		3.5		
Delay (s)	32.2	43.3		37.0		
Level of Service	C	D		D		
Approach Delay (s/veh)		41.9		37.0		
Approach LOS		D		D		

Intersection Summary

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	25	25	10	260	215	5
Future Volume (vph)	25	25	10	260	215	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)	0	0	50			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		50			
Link Speed (mph)	25			30	30	
Link Distance (ft)	210			211	113	
Travel Time (s)	5.7			7.5	7.2	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	4%	4%	3%	3%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	54	0	11	283	239	0
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	25	25	10	260	215	5
Future Vol, veh/h	25	25	10	260	215	5
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	-	50	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	4	4	3	3
Mvmt Flow	27	27	11	283	234	5

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	541	236	239	0	-	0
Stage 1	236	-	-	-	-	-
Stage 2	304	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.14	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.236	-	-	-
Pot Cap-1 Maneuver	502	803	1316	-	-	-
Stage 1	803	-	-	-	-	-
Stage 2	748	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	498	803	1316	-	-	-
Mov Cap-2 Maneuver	498	-	-	-	-	-
Stage 1	796	-	-	-	-	-
Stage 2	748	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	11.42	0.29	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1316	-	615	-	-
HCM Lane V/C Ratio	0.008	-	0.088	-	-
HCM Control Delay (s/veh)	7.8	-	11.4	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0.3	-	-

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	5	5	0	265	240	0
Future Volume (vph)	5	5	0	265	240	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)	0	0	0			0
Storage Lanes	1	0	0			0
Taper Length (ft)	25		25			
Link Speed (mph)	25			30	30	
Link Distance (ft)	184			322	211	
Travel Time (s)	3.3			7.5	4.6	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	4%	4%	3%	3%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	10	0	0	288	261	0
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	5	0	265	240	0
Future Vol, veh/h	5	5	0	265	240	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	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	4	4	3	3
Mvmt Flow	5	5	0	288	261	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	549	261	-	0	-	0
Stage 1	261	-	-	-	-	-
Stage 2	288	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	-	-
Pot Cap-1 Maneuver	497	778	0	-	-	0
Stage 1	783	-	0	-	-	0
Stage 2	761	-	0	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	497	778	-	-	-	-
Mov Cap-2 Maneuver	497	-	-	-	-	-
Stage 1	783	-	-	-	-	-
Stage 2	761	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	11.05	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT
Capacity (veh/h)	-	606	-
HCM Lane V/C Ratio	-	0.018	-
HCM Control Delay (s/veh)	-	11	-
HCM Lane LOS	-	B	-
HCM 95th %tile Q(veh)	-	0.1	-

Lane Group	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	0	345	255	5	5	5
Future Volume (vph)	0	345	255	5	5	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%	0%		0%	
Storage Length (ft)	0			0	0	0
Storage Lanes	0			0	0	1
Taper Length (ft)	25				25	
Link Speed (mph)		30	30		30	
Link Distance (ft)		308	184		133	
Travel Time (s)		7.0	4.2		3.0	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	4%	4%	4%	4%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	375	282	0	10	0
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0.2

Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Traffic Vol, veh/h	0	345	255	5	5	5
Future Vol, veh/h	0	345	255	5	5	5
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	92	92	92	92	92	92
Heavy Vehicles, %	4	4	4	4	2	2
Mvmt Flow	0	375	277	5	5	5

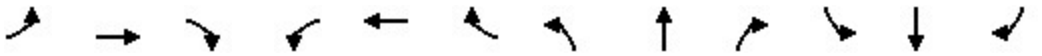
Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	283	0	-	0	467	280
Stage 1	-	-	-	-	280	-
Stage 2	-	-	-	-	188	-
Critical Hdwy	4.16	-	-	-	6.63	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.83	-
Follow-up Hdwy	2.238	-	-	-	3.519	3.319
Pot Cap-1 Maneuver	1265	-	-	-	539	758
Stage 1	-	-	-	-	767	-
Stage 2	-	-	-	-	826	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1265	-	-	-	539	758
Mov Cap-2 Maneuver	-	-	-	-	539	-
Stage 1	-	-	-	-	767	-
Stage 2	-	-	-	-	826	-

Approach	SE	NW	SW
HCM Control Delay, s/v	0	0	10.81
HCM LOS			B

Minor Lane/Major Mvmt	NWT	NWR	SEL	SET	SWLn1
Capacity (veh/h)	-	-	1265	-	630
HCM Lane V/C Ratio	-	-	-	-	0.017
HCM Control Delay (s/veh)	-	-	0	-	10.8
HCM Lane LOS	-	-	A	-	B
HCM 95th %tile Q(veh)	-	-	0	-	0.1

2025 PM – Base Year Build:

Site Plan D Scenario

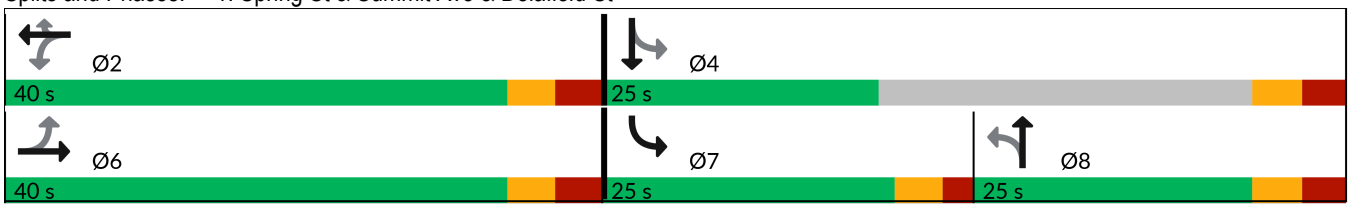


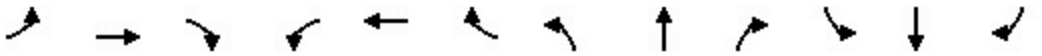
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	260	15	15	245	105	15	20	5	125	35	20
Future Volume (vph)	20	260	15	15	245	105	15	20	5	125	35	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	125		0	75		100	0		0	0		0
Storage Lanes	1		0	1		1	0		0	1		0
Taper Length (ft)	75			75			25			25		
Right Turn on Red			No			No			No			No
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		424			323			219			200	
Travel Time (s)		9.6			7.3			5.0			4.5	
Confl. Peds. (#/hr)	1					1	1		1	1		1
Confl. Bikes (#/hr)												1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	62%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	3%	3%	3%	2%	2%	2%	5%	5%	5%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	22	299	0	16	266	71	0	43	0	136	60	0
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		pm+pt	NA	
Protected Phases		6			2			8		7	4	
Permitted Phases	6			2		2	8			4		
Detector Phase	6	6		2	2	2	8	8		7	4	
Switch Phase												
Minimum Initial (s)	12.0	12.0		12.0	12.0	12.0	8.0	8.0		8.0	8.0	
Minimum Split (s)	18.3	18.3		18.3	18.3	18.3	14.3	14.3		13.3	14.3	
Total Split (s)	40.0	40.0		40.0	40.0	40.0	25.0	25.0		25.0	25.0	
Total Split (%)	44.4%	44.4%		44.4%	44.4%	44.4%	27.8%	27.8%		27.8%	27.8%	
Maximum Green (s)	33.7	33.7		33.7	33.7	33.7	18.7	18.7		19.7	18.7	
Yellow Time (s)	3.3	3.3		3.3	3.3	3.3	3.3	3.3		3.3	3.3	
All-Red Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		2.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0		0.0	0.0	
Total Lost Time (s)	6.3	6.3		6.3	6.3	6.3		6.3		5.3	6.3	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Vehicle Extension (s)	2.5	2.5		2.5	2.5	2.5	1.5	1.5		1.5	1.5	
Minimum Gap (s)	1.5	1.5		1.5	1.5	1.5	1.5	1.5		1.5	1.5	
Time Before Reduce (s)	19.0	19.0		19.0	19.0	19.0	25.0	25.0		25.0	25.0	
Time To Reduce (s)	11.0	11.0		11.0	11.0	11.0	0.0	0.0		0.0	0.0	
Recall Mode	Min	Min		Min	Min	Min	None	None		None	None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	0.04	0.35		0.03	0.30	0.09		0.11		0.25	0.10	
Control Delay (s/veh)	12.5	13.5		12.4	13.1	12.2		18.0		9.6	8.9	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0		0.0	0.0	
Total Delay (s/veh)	12.5	13.5		12.4	13.1	12.2		18.0		9.6	8.9	
Queue Length 50th (ft)	2	36		2	32	8		6		18	8	
Queue Length 95th (ft)	18	141		15	124	41		36		49	27	
Internal Link Dist (ft)		344			243			139			120	
Turn Bay Length (ft)	125			75		100						
Base Capacity (vph)	947	1579		929	1608	1338		864		949	1643	
Starvation Cap Reductn	0	0		0	0	0		0		0	0	
Spillback Cap Reductn	0	0		0	0	0		0		0	0	
Storage Cap Reductn	0	0		0	0	0		0		0	0	
Reduced v/c Ratio	0.02	0.19		0.02	0.17	0.05		0.05		0.14	0.04	

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 40.3	
Natural Cycle: 50	
Control Type: Actuated-Uncoordinated	

Splits and Phases: 1: Spring St & Summit Ave & Delafield St





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	260	15	15	245	105	15	20	5	125	35	20
Future Volume (veh/h)	20	260	15	15	245	105	15	20	5	125	35	20
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1870	1870	1870	1826	1826	1826	1870	1870	1870
Adj Flow Rate, veh/h	22	283	16	16	266	71	16	22	5	136	38	22
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	2	2	2	5	5	5	2	2	2
Cap, veh/h	346	499	28	332	536	454	166	147	26	720	454	263
Arrive On Green	0.29	0.29	0.29	0.29	0.29	0.29	0.13	0.13	0.13	0.15	0.41	0.41
Sat Flow, veh/h	1034	1739	98	1079	1870	1582	358	1099	192	1781	1101	637
Grp Volume(v), veh/h	22	0	299	16	266	71	43	0	0	136	0	60
Grp Sat Flow(s),veh/h/ln	1034	0	1838	1079	1870	1582	1648	0	0	1781	0	1739
Q Serve(g_s), s	0.8	0.0	5.8	0.5	4.9	1.4	0.0	0.0	0.0	2.3	0.0	0.9
Cycle Q Clear(g_c), s	5.7	0.0	5.8	6.3	4.9	1.4	0.9	0.0	0.0	2.3	0.0	0.9
Prop In Lane	1.00		0.05	1.00		1.00	0.37		0.12	1.00		0.37
Lane Grp Cap(c), veh/h	346	0	527	332	536	454	338	0	0	720	0	716
V/C Ratio(X)	0.06	0.00	0.57	0.05	0.50	0.16	0.13	0.00	0.00	0.19	0.00	0.08
Avail Cap(c_a), veh/h	883	0	1480	892	1507	1275	828	0	0	1289	0	777
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	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	14.8	0.0	12.7	15.4	12.4	11.1	16.1	0.0	0.0	10.1	0.0	7.5
Incr Delay (d2), s/veh	0.1	0.0	0.7	0.0	0.5	0.1	0.1	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	2.0	0.1	1.8	0.4	0.3	0.0	0.0	0.7	0.0	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	14.8	0.0	13.4	15.4	12.9	11.3	16.2	0.0	0.0	10.1	0.0	7.5
LnGrp LOS	B		B	B	B	B	B			B		A
Approach Vol, veh/h		321			353			43			196	
Approach Delay, s/veh		13.5			12.7			16.2			9.3	
Approach LOS		B			B			B			A	

Timer - Assigned Phs		2		4		6	7	8				
Phs Duration (G+Y+Rc), s		18.3		23.5		18.3	11.7	11.9				
Change Period (Y+Rc), s		6.3		6.3		6.3	5.3	6.3				
Max Green Setting (Gmax), s		33.7		18.7		33.7	19.7	18.7				
Max Q Clear Time (g_c+I1), s		8.3		2.9		7.8	4.3	2.9				
Green Ext Time (p_c), s		1.5		0.1		1.6	0.1	0.1				

Intersection Summary												
HCM 7th Control Delay, s/veh			12.4									
HCM 7th LOS			B									

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	35	95	270	25	70	320
Future Volume (vph)	35	95	270	25	70	320
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	50	0		115	0	
Storage Lanes	1	1		1	0	
Taper Length (ft)	100				25	
Link Speed (mph)	30		30			30
Link Distance (ft)	452		196			403
Travel Time (s)	7.0		4.6			5.1
Confl. Peds. (#/hr)				2	2	
Confl. Bikes (#/hr)						
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	41	110	314	29	0	453
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

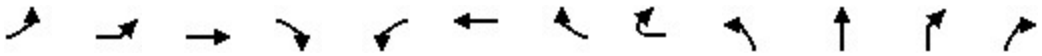
Intersection	
Int Delay, s/veh	2.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	35	95	270	25	70	320
Future Vol, veh/h	35	95	270	25	70	320
Conflicting Peds, #/hr	0	0	0	2	2	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	50	0	-	115	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	41	110	314	29	81	372

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	851	316	0	0	345	0
Stage 1	316	-	-	-	-	-
Stage 2	535	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	330	725	-	-	1214	-
Stage 1	739	-	-	-	-	-
Stage 2	587	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	302	723	-	-	1212	-
Mov Cap-2 Maneuver	302	-	-	-	-	-
Stage 1	738	-	-	-	-	-
Stage 2	538	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	13	0	1.47
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	302	723	323	-
HCM Lane V/C Ratio	-	-	0.135	0.153	0.067	-
HCM Control Delay (s/veh)	-	-	18.8	10.9	8.2	0
HCM Lane LOS	-	-	C	B	A	A
HCM 95th %tile Q(veh)	-	-	0.5	0.5	0.2	-



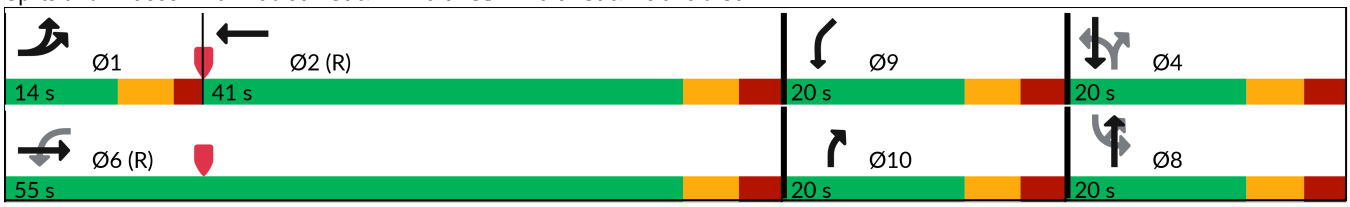
Lane Group	EBL2	EBL	EBT	EBR	WBL	WBT	WBR	WBR2	NBL	NBT	NBR	NBR2
Lane Configurations												
Traffic Volume (vph)	20	90	20	10	10	455	95	20	5	120	185	10
Future Volume (vph)	20	90	20	10	10	455	95	20	5	120	185	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)			0%			0%				0%		
Storage Length (ft)		125		0	150		50		50		0	
Storage Lanes		1		0	1		0		1		1	
Taper Length (ft)		100			125				75			
Right Turn on Red				No				No				No
Link Speed (mph)			30			30				30		
Link Distance (ft)			435			580				357		
Travel Time (s)			9.9			13.2				8.1		
Confl. Peds. (#/hr)	4	8		14	14		4		14		8	9
Confl. Bikes (#/hr)							1				1	1
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	3%	3%	3%	3%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)			0%			0%				0%		
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	122	33	0	11	634	0	0	6	133	217	0
Turn Type	Prot	Prot	NA		D.Pm	NA			D.Pm	NA	custom	
Protected Phases	1	1	6			2				8	10	
Permitted Phases					6				4		4	
Detector Phase	1	1	6		6	2			4	8	10	
Switch Phase												
Minimum Initial (s)	6.0	6.0	12.0		12.0	12.0			10.0	10.0	10.0	
Minimum Split (s)	14.0	14.0	19.0		19.0	19.0			17.0	17.0	17.0	
Total Split (s)	14.0	14.0	55.0		55.0	41.0			20.0	20.0	20.0	
Total Split (%)	14.7%	14.7%	57.9%		57.9%	43.2%			21.1%	21.1%	21.1%	
Maximum Green (s)	8.0	8.0	48.0		48.0	34.0			13.0	13.0	13.0	
Yellow Time (s)	4.0	4.0	4.0		4.0	4.0			4.0	4.0	4.0	
All-Red Time (s)	2.0	2.0	3.0		3.0	3.0			3.0	3.0	3.0	
Lost Time Adjust (s)		0.0	0.0		0.0	0.0			0.0	0.0	0.0	
Total Lost Time (s)		6.0	7.0		7.0	7.0			7.0	7.0	7.0	
Lead/Lag	Lead	Lead				Lag						
Lead-Lag Optimize?	Yes	Yes				Yes						
Vehicle Extension (s)	1.5	1.5	4.9		4.9	4.9			1.5	1.5	1.5	
Minimum Gap (s)	1.5	1.5	3.9		3.9	3.9			1.5	1.5	1.5	
Time Before Reduce (s)	15.0	15.0	19.0		19.0	19.0			30.0	30.0	25.0	
Time To Reduce (s)	0.0	0.0	11.0		11.0	11.0			0.0	0.0	0.0	
Recall Mode	None	None	C-Min		C-Min	C-Min			None	None	None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio		0.79	0.03		0.01	0.96			0.05	0.57	0.54	
Control Delay (s/veh)		78.1	11.9		11.9	58.5			37.2	49.1	30.5	

Lane Group	SBL2	SBL	SBT	SBR	SWL	SWR	SWR2
Lane Configurations							
Traffic Volume (vph)	5	25	235	45	165	175	10
Future Volume (vph)	5	25	235	45	165	175	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12
Grade (%)			0%		0%		
Storage Length (ft)		75		0	300	0	
Storage Lanes		1		0	1	0	
Taper Length (ft)		75			50		
Right Turn on Red				No			No
Link Speed (mph)			30		30		
Link Distance (ft)			182		331		
Travel Time (s)			4.1		7.5		
Confl. Peds. (#/hr)	8	9		14			
Confl. Bikes (#/hr)				1			
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0
Parking (#/hr)							
Mid-Block Traffic (%)			0%		0%		
Shared Lane Traffic (%)							
Lane Group Flow (vph)	0	34	311	0	388	0	0
Turn Type	D.Pm	D.Pm	NA		Prot		
Protected Phases			4		9		
Permitted Phases	8	8					
Detector Phase	8	8	4		9		
Switch Phase							
Minimum Initial (s)	10.0	10.0	10.0		10.0		
Minimum Split (s)	17.0	17.0	17.0		17.0		
Total Split (s)	20.0	20.0	20.0		20.0		
Total Split (%)	21.1%	21.1%	21.1%		21.1%		
Maximum Green (s)	13.0	13.0	13.0		13.0		
Yellow Time (s)	4.0	4.0	4.0		4.0		
All-Red Time (s)	3.0	3.0	3.0		3.0		
Lost Time Adjust (s)		0.0	0.0		0.0		
Total Lost Time (s)		7.0	7.0		7.0		
Lead/Lag							
Lead-Lag Optimize?							
Vehicle Extension (s)	1.5	1.5	1.5		1.5		
Minimum Gap (s)	1.5	1.5	1.5		1.5		
Time Before Reduce (s)	30.0	30.0	30.0		25.0		
Time To Reduce (s)	0.0	0.0	0.0		0.0		
Recall Mode	None	None	None		None		
Walk Time (s)							
Flash Dont Walk (s)							
Pedestrian Calls (#/hr)							
v/c Ratio		0.22	0.72		0.95dr		
Control Delay (s/veh)		41.0	50.5		64.1		

Lane Group	EBL2	EBL	EBT	EBR	WBL	WBT	WBR	WBR2	NBL	NBT	NBR	NBR2
Queue Delay		0.0	0.0		0.0	0.0			0.0	0.0	0.0	
Total Delay (s/veh)		78.1	11.9		11.9	58.5			37.2	49.1	30.5	
Queue Length 50th (ft)		73	10		3	376			3	76	99	
Queue Length 95th (ft)		#173	24		12	#609			15	135	162	
Internal Link Dist (ft)			355			500				277		
Turn Bay Length (ft)		125			150				50			
Base Capacity (vph)		157	913		700	658			123	254	403	
Starvation Cap Reductn		0	0		0	0			0	0	0	
Spillback Cap Reductn		0	0		0	0			0	0	0	
Storage Cap Reductn		0	0		0	0			0	0	0	
Reduced v/c Ratio		0.78	0.04		0.02	0.96			0.05	0.52	0.54	

Intersection Summary	
Area Type:	Other
Cycle Length: 95	
Actuated Cycle Length: 95	
Offset: 76 (80%), Referenced to phase 2:WBT and 6:EBWB, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	
dr Defacto Right Lane. Recode with 1 though lane as a right lane.	

Splits and Phases: 3: Madison St & W. North St/E. North St & Delafield St



Lane Group	SBL2	SBL	SBT	SBR	SWL	SWR	SWR2
Queue Delay		0.0	0.0		0.0		
Total Delay (s/veh)		41.0	50.5		64.1		
Queue Length 50th (ft)		19	95		120		
Queue Length 95th (ft)		48	140		#198		
Internal Link Dist (ft)			102		251		
Turn Bay Length (ft)		75			300		
Base Capacity (vph)		162	467		445		
Starvation Cap Reductn		0	0		0		
Spillback Cap Reductn		0	0		0		
Storage Cap Reductn		0	0		0		
Reduced v/c Ratio		0.21	0.67		0.87		

Intersection Summary

Movement	EBL2	EBL	EBT	EBR	WBL	WBT	WBR	WBR2	NBL	NBT	NBR	NBR2
Lane Configurations												
Traffic Volume (vph)	20	90	20	10	10	455	95	20	5	120	185	10
Future Volume (vph)	20	90	20	10	10	455	95	20	5	120	185	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	7.0		7.0	7.0			7.0	7.0	7.0	
Lane Util. Factor		1.00	1.00		1.00	1.00			1.00	1.00	1.00	
Frpb, ped/bikes		1.00	0.99		1.00	0.99			1.00	1.00	0.97	
Flpb, ped/bikes		1.00	1.00		0.99	1.00			0.96	1.00	1.00	
Frt		1.00	0.95		1.00	0.96			1.00	1.00	0.85	
Flt Protected		0.95	1.00		0.95	1.00			0.95	1.00	1.00	
Satd. Flow (prot)		1770	1758		1739	1779			1709	1863	1541	
Flt Permitted		0.95	1.00		0.73	1.00			0.50	1.00	1.00	
Satd. Flow (perm)		1770	1758		1347	1779			901	1863	1541	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	22	100	22	11	11	506	106	22	6	133	206	11
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	122	33	0	11	634	0	0	6	133	217	0
Confl. Peds. (#/hr)	4	8		14	14		4		14		8	9
Confl. Bikes (#/hr)							1				1	1
Heavy Vehicles (%)	2%	2%	2%	2%	3%	3%	3%	3%	2%	2%	2%	2%
Turn Type	Prot	Prot	NA		D.Pm	NA			D.Pm	NA	custom	
Protected Phases	1	1	6			2				8	10	
Permitted Phases					6				4		4	
Actuated Green, G (s)		8.2	49.4		49.4	35.2			11.9	11.9	24.6	
Effective Green, g (s)		8.2	49.4		49.4	35.2			11.9	11.9	24.6	
Actuated g/C Ratio		0.09	0.52		0.52	0.37			0.13	0.13	0.26	
Clearance Time (s)		6.0	7.0		7.0	7.0			7.0	7.0	7.0	
Vehicle Extension (s)		1.5	4.9		4.9	4.9			1.5	1.5	1.5	
Lane Grp Cap (vph)		152	914		700	659			112	233	512	
v/s Ratio Prot		c0.07	0.02			c0.36				0.07	0.06	
v/s Ratio Perm					0.01				0.01		0.08	
v/c Ratio		0.80	0.03		0.01	0.96			0.05	0.57	0.42	
Uniform Delay, d1		42.6	11.1		11.0	29.2			36.5	39.1	29.3	
Progression Factor		1.00	1.00		1.00	1.00			1.00	1.00	1.00	
Incremental Delay, d2		24.2	0.0		0.0	26.8			0.0	2.0	0.2	
Delay (s)		66.8	11.2		11.0	56.1			36.6	41.2	29.5	
Level of Service		E	B		B	E			D	D	C	
Approach Delay (s/veh)			54.9			55.3				34.0		
Approach LOS			D			E				C		

Intersection Summary			
HCM 2000 Control Delay (s/veh)	50.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	95.0	Sum of lost time (s)	27.0
Intersection Capacity Utilization	80.9%	ICU Level of Service	D
Analysis Period (min)	15		

dr Defacto Right Lane. Recode with 1 though lane as a right lane.
c Critical Lane Group

Movement	SBL2	SBL	SBT	SBR	SWL	SWR	SWR2
Lane Configurations							
Traffic Volume (vph)	5	25	235	45	165	175	10
Future Volume (vph)	5	25	235	45	165	175	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.0	7.0		7.0		
Lane Util. Factor		1.00	0.95		0.97		
Frpb, ped/bikes		1.00	0.98		1.00		
Flpb, ped/bikes		0.94	1.00		1.00		
Frt		1.00	0.97		0.92		
Flt Protected		0.95	1.00		0.97		
Satd. Flow (prot)		1670	3411		3251		
Flt Permitted		0.67	1.00		0.97		
Satd. Flow (perm)		1181	3411		3251		
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	6	28	261	50	183	194	11
RTOR Reduction (vph)	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	34	311	0	388	0	0
Confl. Peds. (#/hr)	8	9		14			
Confl. Bikes (#/hr)				1			
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%
Turn Type	D.Pm	D.Pm	NA		Prot		
Protected Phases			4		9		
Permitted Phases	8	8					
Actuated Green, G (s)		11.9	11.9		12.7		
Effective Green, g (s)		11.9	11.9		12.7		
Actuated g/C Ratio		0.13	0.13		0.13		
Clearance Time (s)		7.0	7.0		7.0		
Vehicle Extension (s)		1.5	1.5		1.5		
Lane Grp Cap (vph)		147	427		434		
v/s Ratio Prot			c0.09		c0.12		
v/s Ratio Perm		0.03					
v/c Ratio		0.23	0.72		0.95dr		
Uniform Delay, d1		37.4	39.9		40.4		
Progression Factor		1.00	1.00		1.00		
Incremental Delay, d2		0.2	5.2		19.8		
Delay (s)		37.7	45.1		60.3		
Level of Service		D	D		E		
Approach Delay (s/veh)			44.4		60.3		
Approach LOS			D		E		

Intersection Summary

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	15	15	25	280	330	25
Future Volume (vph)	15	15	25	280	330	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)	0	0	50			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		50			
Link Speed (mph)	25			30	30	
Link Distance (ft)	181			201	114	
Travel Time (s)	5.1			7.5	7.2	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	32	0	27	304	386	0
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	15	15	25	280	330	25
Future Vol, veh/h	15	15	25	280	330	25
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	-	50	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	16	16	27	304	359	27

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	731	372	386	0	-	0
Stage 1	372	-	-	-	-	-
Stage 2	359	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	389	674	1173	-	-	-
Stage 1	697	-	-	-	-	-
Stage 2	707	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	380	674	1173	-	-	-
Mov Cap-2 Maneuver	380	-	-	-	-	-
Stage 1	681	-	-	-	-	-
Stage 2	707	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	12.94	0.67	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1173	-	486	-	-
HCM Lane V/C Ratio	0.023	-	0.067	-	-
HCM Control Delay (s/veh)	8.1	-	12.9	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.2	-	-

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	5	5	0	300	345	0
Future Volume (vph)	5	5	0	300	345	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)	0	0	0			0
Storage Lanes	0	1	0			0
Taper Length (ft)	25		25			
Link Speed (mph)	25			30	30	
Link Distance (ft)	178			331	201	
Travel Time (s)	4.1			7.5	4.6	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	10	0	0	326	375	0
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	5	0	300	345	0
Future Vol, veh/h	5	5	0	300	345	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	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	5	0	326	375	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	701	375	-	0	-	0
Stage 1	375	-	-	-	-	-
Stage 2	326	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	-	-
Pot Cap-1 Maneuver	405	671	0	-	-	0
Stage 1	695	-	0	-	-	0
Stage 2	731	-	0	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	405	671	-	-	-	-
Mov Cap-2 Maneuver	405	-	-	-	-	-
Stage 1	695	-	-	-	-	-
Stage 2	731	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	12.28	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT
Capacity (veh/h)	-	505	-
HCM Lane V/C Ratio	-	0.022	-
HCM Control Delay (s/veh)	-	12.3	-
HCM Lane LOS	-	B	-
HCM 95th %tile Q(veh)	-	0.1	-

Lane Group	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	5	305	230	15	5	0
Future Volume (vph)	5	305	230	15	5	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%	0%		0%	
Storage Length (ft)	0			0	0	0
Storage Lanes	0			0	0	1
Taper Length (ft)	25				25	
Link Speed (mph)		30	30		30	
Link Distance (ft)		297	182		156	
Travel Time (s)		6.8	4.1		3.5	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	337	266	0	5	0
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

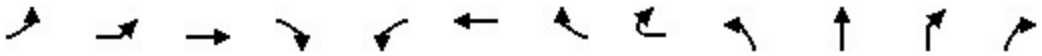
Intersection	
Int Delay, s/veh	0.2

Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Traffic Vol, veh/h	5	305	230	15	5	0
Future Vol, veh/h	5	305	230	15	5	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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	332	250	16	5	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	266	0	-	0	435	258
Stage 1	-	-	-	-	258	-
Stage 2	-	-	-	-	177	-
Critical Hdwy	4.13	-	-	-	6.63	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.83	-
Follow-up Hdwy	2.219	-	-	-	3.519	3.319
Pot Cap-1 Maneuver	1296	-	-	-	564	780
Stage 1	-	-	-	-	784	-
Stage 2	-	-	-	-	837	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1296	-	-	-	561	780
Mov Cap-2 Maneuver	-	-	-	-	561	-
Stage 1	-	-	-	-	781	-
Stage 2	-	-	-	-	837	-

Approach	SE	NW	SW
HCM Control Delay, s/v	0.16	0	11.48
HCM LOS			B

Minor Lane/Major Mvmt	NWT	NWR	SEL	SET	SWLn1
Capacity (veh/h)	-	-	58	-	561
HCM Lane V/C Ratio	-	-	0.004	-	0.01
HCM Control Delay (s/veh)	-	-	7.8	0	11.5
HCM Lane LOS	-	-	A	A	B
HCM 95th %tile Q(veh)	-	-	0	-	0



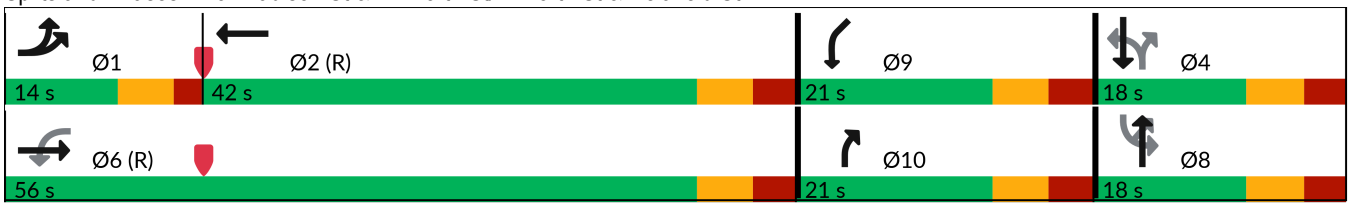
Lane Group	EBL2	EBL	EBT	EBR	WBL	WBT	WBR	WBR2	NBL	NBT	NBR	NBR2
Lane Configurations												
Traffic Volume (vph)	20	90	20	10	10	455	95	20	5	120	185	10
Future Volume (vph)	20	90	20	10	10	455	95	20	5	120	185	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)			0%			0%				0%		
Storage Length (ft)		125		0	150		50		50		0	
Storage Lanes		1		0	1		0		1		1	
Taper Length (ft)		100			125				75			
Right Turn on Red				No				No				No
Link Speed (mph)			30			30				30		
Link Distance (ft)			435			580				357		
Travel Time (s)			9.9			13.2				8.1		
Confl. Peds. (#/hr)	4	8		14	14		4		14		8	9
Confl. Bikes (#/hr)							1				1	1
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	3%	3%	3%	3%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)			0%			0%				0%		
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	122	33	0	11	634	0	0	6	133	217	0
Turn Type	Prot	Prot	NA		D.Pm	NA			D.Pm	NA	custom	
Protected Phases	1	1	6			2				8	10	
Permitted Phases					6				4		4	
Detector Phase	1	1	6		6	2			4	8	10	
Switch Phase												
Minimum Initial (s)	6.0	6.0	12.0		12.0	12.0			10.0	10.0	10.0	
Minimum Split (s)	14.0	14.0	19.0		19.0	19.0			17.0	17.0	17.0	
Total Split (s)	14.0	14.0	56.0		56.0	42.0			18.0	18.0	21.0	
Total Split (%)	14.7%	14.7%	58.9%		58.9%	44.2%			18.9%	18.9%	22.1%	
Maximum Green (s)	8.0	8.0	49.0		49.0	35.0			11.0	11.0	14.0	
Yellow Time (s)	4.0	4.0	4.0		4.0	4.0			4.0	4.0	4.0	
All-Red Time (s)	2.0	2.0	3.0		3.0	3.0			3.0	3.0	3.0	
Lost Time Adjust (s)		0.0	0.0		0.0	0.0			0.0	0.0	0.0	
Total Lost Time (s)		6.0	7.0		7.0	7.0			7.0	7.0	7.0	
Lead/Lag	Lead	Lead				Lag						
Lead-Lag Optimize?	Yes	Yes				Yes						
Vehicle Extension (s)	1.5	1.5	4.9		4.9	4.9			1.5	1.5	1.5	
Minimum Gap (s)	1.5	1.5	3.9		3.9	3.9			1.5	1.5	1.5	
Time Before Reduce (s)	15.0	15.0	19.0		19.0	19.0			30.0	30.0	25.0	
Time To Reduce (s)	0.0	0.0	11.0		11.0	11.0			0.0	0.0	0.0	
Recall Mode	None	None	C-Min		C-Min	C-Min			None	None	None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio		0.84	0.03		0.01	0.94			0.06	0.62	0.55	
Control Delay (s/veh)		86.2	11.5		11.4	53.4			39.0	54.0	31.1	

Lane Group	SBL2	SBL	SBT	SBR	SWL	SWR	SWR2
Lane Configurations							
Traffic Volume (vph)	5	25	235	45	165	175	10
Future Volume (vph)	5	25	235	45	165	175	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12
Grade (%)			0%		0%		
Storage Length (ft)		75		0	300	0	
Storage Lanes		1		0	1	0	
Taper Length (ft)		75			50		
Right Turn on Red				No			No
Link Speed (mph)			30		30		
Link Distance (ft)			192		331		
Travel Time (s)			4.4		7.5		
Confl. Peds. (#/hr)	8	9		14			
Confl. Bikes (#/hr)				1			
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0
Parking (#/hr)							
Mid-Block Traffic (%)			0%		0%		
Shared Lane Traffic (%)							
Lane Group Flow (vph)	0	34	311	0	388	0	0
Turn Type	D.Pm	D.Pm	NA		Prot		
Protected Phases			4		9		
Permitted Phases	8	8					
Detector Phase	8	8	4		9		
Switch Phase							
Minimum Initial (s)	10.0	10.0	10.0		10.0		
Minimum Split (s)	17.0	17.0	17.0		17.0		
Total Split (s)	18.0	18.0	18.0		21.0		
Total Split (%)	18.9%	18.9%	18.9%		22.1%		
Maximum Green (s)	11.0	11.0	11.0		14.0		
Yellow Time (s)	4.0	4.0	4.0		4.0		
All-Red Time (s)	3.0	3.0	3.0		3.0		
Lost Time Adjust (s)		0.0	0.0		0.0		
Total Lost Time (s)		7.0	7.0		7.0		
Lead/Lag							
Lead-Lag Optimize?							
Vehicle Extension (s)	1.5	1.5	1.5		1.5		
Minimum Gap (s)	1.5	1.5	1.5		1.5		
Time Before Reduce (s)	30.0	30.0	30.0		25.0		
Time To Reduce (s)	0.0	0.0	0.0		0.0		
Recall Mode	None	None	None		None		
Walk Time (s)							
Flash Dont Walk (s)							
Pedestrian Calls (#/hr)							
v/c Ratio		0.25	0.79		0.91dr		
Control Delay (s/veh)		43.5	57.4		58.0		

Lane Group	EBL2	EBL	EBT	EBR	WBL	WBT	WBR	WBR2	NBL	NBT	NBR	NBR2
Queue Delay		0.0	0.0		0.0	0.0			0.0	0.0	0.0	
Total Delay (s/veh)		86.2	11.5		11.4	53.4			39.0	54.0	31.1	
Queue Length 50th (ft)		74	9		3	369			3	78	100	
Queue Length 95th (ft)		#173	24		12	#597			16	#148	165	
Internal Link Dist (ft)			355			500				277		
Turn Bay Length (ft)		125			150				50			
Base Capacity (vph)		149	920		705	673			102	216	404	
Starvation Cap Reductn		0	0		0	0			0	0	0	
Spillback Cap Reductn		0	0		0	0			0	0	0	
Storage Cap Reductn		0	0		0	0			0	0	0	
Reduced v/c Ratio		0.82	0.04		0.02	0.94			0.06	0.62	0.54	

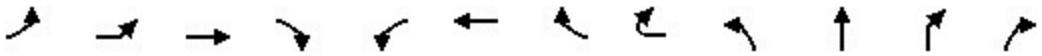
Intersection Summary	
Area Type:	Other
Cycle Length: 95	
Actuated Cycle Length: 95	
Offset: 76 (80%), Referenced to phase 2:WBT and 6:EBWB, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	
dr Defacto Right Lane. Recode with 1 though lane as a right lane.	

Splits and Phases: 3: Madison St & W. North St/E. North St & Delafield St



Lane Group	SBL2	SBL	SBT	SBR	SWL	SWR	SWR2
Queue Delay		0.0	0.0		0.0		
Total Delay (s/veh)		43.5	57.4		58.0		
Queue Length 50th (ft)		19	97		118		
Queue Length 95th (ft)		49	#162		#188		
Internal Link Dist (ft)			112		251		
Turn Bay Length (ft)		75			300		
Base Capacity (vph)		137	396		479		
Starvation Cap Reductn		0	0		0		
Spillback Cap Reductn		0	0		0		
Storage Cap Reductn		0	0		0		
Reduced v/c Ratio		0.25	0.79		0.81		

Intersection Summary



Movement	EBL2	EBL	EBT	EBR	WBL	WBT	WBR	WBR2	NBL	NBT	NBR	NBR2
Lane Configurations												
Traffic Volume (vph)	20	90	20	10	10	455	95	20	5	120	185	10
Future Volume (vph)	20	90	20	10	10	455	95	20	5	120	185	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	7.0		7.0	7.0			7.0	7.0	7.0	
Lane Util. Factor		1.00	1.00		1.00	1.00			1.00	1.00	1.00	
Frpb, ped/bikes		1.00	0.99		1.00	0.99			1.00	1.00	0.97	
Flpb, ped/bikes		1.00	1.00		0.99	1.00			0.96	1.00	1.00	
Frt		1.00	0.95		1.00	0.96			1.00	1.00	0.85	
Flt Protected		0.95	1.00		0.95	1.00			0.95	1.00	1.00	
Satd. Flow (prot)		1770	1758		1739	1779			1704	1863	1544	
Flt Permitted		0.95	1.00		0.73	1.00			0.48	1.00	1.00	
Satd. Flow (perm)		1770	1758		1347	1779			879	1863	1544	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	22	100	22	11	11	506	106	22	6	133	206	11
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	122	33	0	11	634	0	0	6	133	217	0
Confl. Peds. (#/hr)	4	8		14	14		4		14		8	9
Confl. Bikes (#/hr)							1				1	1
Heavy Vehicles (%)	2%	2%	2%	2%	3%	3%	3%	3%	2%	2%	2%	2%
Turn Type	Prot	Prot	NA		D.Pm	NA			D.Pm	NA	custom	
Protected Phases	1	1	6			2				8	10	
Permitted Phases					6				4		4	
Actuated Green, G (s)		7.8	49.7		49.7	35.9			10.9	10.9	24.3	
Effective Green, g (s)		7.8	49.7		49.7	35.9			10.9	10.9	24.3	
Actuated g/C Ratio		0.08	0.52		0.52	0.38			0.11	0.11	0.26	
Clearance Time (s)		6.0	7.0		7.0	7.0			7.0	7.0	7.0	
Vehicle Extension (s)		1.5	4.9		4.9	4.9			1.5	1.5	1.5	
Lane Grp Cap (vph)		145	919		704	672			100	213	508	
v/s Ratio Prot		c0.07	0.02			c0.36				0.07	0.06	
v/s Ratio Perm					0.01				0.01		0.08	
v/c Ratio		0.84	0.03		0.01	0.94			0.06	0.62	0.42	
Uniform Delay, d1		42.9	11.0		10.8	28.5			37.4	40.0	29.5	
Progression Factor		1.00	1.00		1.00	1.00			1.00	1.00	1.00	
Incremental Delay, d2		32.2	0.0		0.0	23.3			0.0	4.0	0.2	
Delay (s)		75.2	11.0		10.9	51.8			37.5	44.1	29.7	
Level of Service		E	B		B	D			D	D	C	
Approach Delay (s/veh)			61.6			51.1				35.2		
Approach LOS			E			D				D		

Intersection Summary			
HCM 2000 Control Delay (s/veh)	49.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	95.0	Sum of lost time (s)	27.0
Intersection Capacity Utilization	80.9%	ICU Level of Service	D
Analysis Period (min)	15		

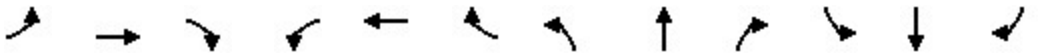
dr Defacto Right Lane. Recode with 1 though lane as a right lane.
c Critical Lane Group

Movement	SBL2	SBL	SBT	SBR	SWL	SWR	SWR2
Lane Configurations							
Traffic Volume (vph)	5	25	235	45	165	175	10
Future Volume (vph)	5	25	235	45	165	175	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.0	7.0		7.0		
Lane Util. Factor		1.00	0.95		0.97		
Frpb, ped/bikes		1.00	0.98		1.00		
Flpb, ped/bikes		0.93	1.00		1.00		
Frt		1.00	0.97		0.92		
Flt Protected		0.95	1.00		0.97		
Satd. Flow (prot)		1661	3408		3251		
Flt Permitted		0.67	1.00		0.97		
Satd. Flow (perm)		1175	3408		3251		
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	6	28	261	50	183	194	11
RTOR Reduction (vph)	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	34	311	0	388	0	0
Confl. Peds. (#/hr)	8	9		14			
Confl. Bikes (#/hr)				1			
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%
Turn Type	D.Pm	D.Pm	NA		Prot		
Protected Phases			4		9		
Permitted Phases	8	8					
Actuated Green, G (s)		10.9	10.9		13.4		
Effective Green, g (s)		10.9	10.9		13.4		
Actuated g/C Ratio		0.11	0.11		0.14		
Clearance Time (s)		7.0	7.0		7.0		
Vehicle Extension (s)		1.5	1.5		1.5		
Lane Grp Cap (vph)		134	391		458		
v/s Ratio Prot			c0.09		c0.12		
v/s Ratio Perm		0.03					
v/c Ratio		0.25	0.79		0.91dr		
Uniform Delay, d1		38.3	40.9		39.8		
Progression Factor		1.00	1.00		1.00		
Incremental Delay, d2		0.3	10.0		13.0		
Delay (s)		38.7	50.9		52.8		
Level of Service		D	D		D		
Approach Delay (s/veh)			49.7		52.8		
Approach LOS			D		D		

Intersection Summary

2035 AM – Horizon Year Build:

Site Plan D Scenario

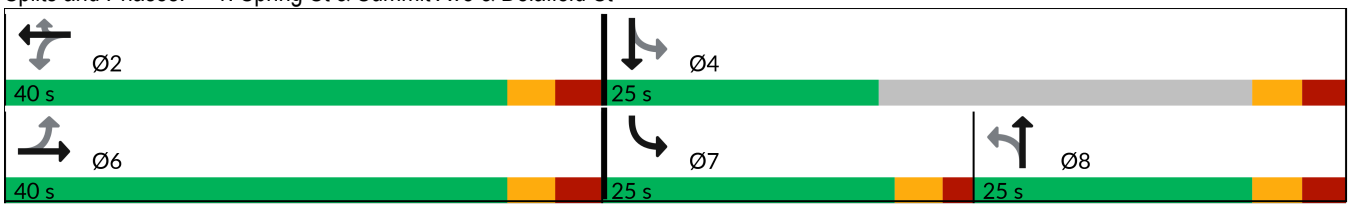


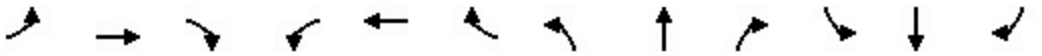
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	215	5	5	220	90	20	25	10	95	15	10
Future Volume (vph)	20	215	5	5	220	90	20	25	10	95	15	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	125		0	75		100	0		0	0		0
Storage Lanes	1		0	1		1	0		0	1		0
Taper Length (ft)	75			75			25			25		
Right Turn on Red			No			No			No			No
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		424			323			219			200	
Travel Time (s)		9.6			7.3			5.0			4.5	
Confl. Peds. (#/hr)			1	1			1					1
Confl. Bikes (#/hr)												
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	62%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	5%	5%	5%	2%	2%	2%	8%	8%	8%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	23	250	0	6	250	63	0	62	0	108	28	0
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		pm+pt	NA	
Protected Phases		6			2			8		7	4	
Permitted Phases	6			2		2	8			4		
Detector Phase	6	6		2	2	2	8	8		7	4	
Switch Phase												
Minimum Initial (s)	12.0	12.0		12.0	12.0	12.0	8.0	8.0		8.0	8.0	
Minimum Split (s)	18.3	18.3		18.3	18.3	18.3	14.3	14.3		13.3	14.3	
Total Split (s)	40.0	40.0		40.0	40.0	40.0	25.0	25.0		25.0	25.0	
Total Split (%)	44.4%	44.4%		44.4%	44.4%	44.4%	27.8%	27.8%		27.8%	27.8%	
Maximum Green (s)	33.7	33.7		33.7	33.7	33.7	18.7	18.7		19.7	18.7	
Yellow Time (s)	3.3	3.3		3.3	3.3	3.3	3.3	3.3		3.3	3.3	
All-Red Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		2.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0		0.0	0.0	
Total Lost Time (s)	6.3	6.3		6.3	6.3	6.3		6.3		5.3	6.3	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Vehicle Extension (s)	2.5	2.5		2.5	2.5	2.5	1.5	1.5		1.5	1.5	
Minimum Gap (s)	1.5	1.5		1.5	1.5	1.5	1.5	1.5		1.5	1.5	
Time Before Reduce (s)	19.0	19.0		19.0	19.0	19.0	25.0	25.0		25.0	25.0	
Time To Reduce (s)	11.0	11.0		11.0	11.0	11.0	0.0	0.0		0.0	0.0	
Recall Mode	Min	Min		Min	Min	Min	None	None		None	None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	0.04	0.29		0.01	0.30	0.09		0.20		0.20	0.04	
Control Delay (s/veh)	13.4	14.3		12.8	14.4	13.2		19.5		8.6	7.7	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0		0.0	0.0	
Total Delay (s/veh)	13.4	14.3		12.8	14.4	13.2		19.5		8.6	7.7	
Queue Length 50th (ft)	5	56		1	56	13		14		14	4	
Queue Length 95th (ft)	18	111		7	112	35		44		38	15	
Internal Link Dist (ft)		344			243			139			120	
Turn Bay Length (ft)	125			75		100						
Base Capacity (vph)	907	1496		881	1460	1241		706		836	1551	
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	0.03	0.17		0.01	0.17	0.05		0.09		0.13	0.02	

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 42.9	
Natural Cycle: 50	
Control Type: Actuated-Uncoordinated	

Splits and Phases: 1: Spring St & Summit Ave & Delafield St





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	215	5	5	220	90	20	25	10	95	15	10
Future Volume (veh/h)	20	215	5	5	220	90	20	25	10	95	15	10
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1826	1826	1826	1870	1870	1870	1781	1781	1781
Adj Flow Rate, veh/h	23	244	6	6	250	63	23	28	11	108	17	11
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	5	5	5	2	2	2	8	8	8
Cap, veh/h	373	537	13	382	539	456	174	120	37	671	398	258
Arrive On Green	0.30	0.30	0.30	0.30	0.30	0.30	0.13	0.13	0.13	0.14	0.39	0.39
Sat Flow, veh/h	1066	1818	45	1102	1826	1545	417	954	296	1697	1010	653
Grp Volume(v), veh/h	23	0	250	6	250	63	62	0	0	108	0	28
Grp Sat Flow(s),veh/h/ln	1066	0	1862	1102	1826	1545	1667	0	0	1697	0	1663
Q Serve(g_s), s	0.7	0.0	4.4	0.2	4.5	1.2	0.0	0.0	0.0	1.9	0.0	0.4
Cycle Q Clear(g_c), s	5.3	0.0	4.4	4.6	4.5	1.2	1.3	0.0	0.0	1.9	0.0	0.4
Prop In Lane	1.00		0.02	1.00		1.00	0.37		0.18	1.00		0.39
Lane Grp Cap(c), veh/h	373	0	550	382	539	456	331	0	0	671	0	656
V/C Ratio(X)	0.06	0.00	0.45	0.02	0.46	0.14	0.19	0.00	0.00	0.16	0.00	0.04
Avail Cap(c_a), veh/h	942	0	1544	970	1514	1281	868	0	0	1258	0	765
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	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	13.8	0.0	11.7	13.5	11.7	10.5	16.1	0.0	0.0	10.2	0.0	7.6
Incr Delay (d2), s/veh	0.1	0.0	0.4	0.0	0.5	0.1	0.1	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	1.5	0.0	1.5	0.3	0.5	0.0	0.0	0.6	0.0	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	13.9	0.0	12.1	13.5	12.2	10.6	16.2	0.0	0.0	10.3	0.0	7.6
LnGrp LOS	B		B	B	B	B	B			B		A
Approach Vol, veh/h		273			319			62			136	
Approach Delay, s/veh		12.2			11.9			16.2			9.7	
Approach LOS		B			B			B			A	

Timer - Assigned Phs	2	4	6	7	8
Phs Duration (G+Y+Rc), s	18.3	22.3	18.3	10.9	11.4
Change Period (Y+Rc), s	6.3	6.3	6.3	5.3	6.3
Max Green Setting (Gmax), s	33.7	18.7	33.7	19.7	18.7
Max Q Clear Time (g_c+I1), s	6.6	2.4	7.3	3.9	3.3
Green Ext Time (p_c), s	1.4	0.0	1.3	0.1	0.1

Intersection Summary	
HCM 7th Control Delay, s/veh	12.0
HCM 7th LOS	B

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	20	80	235	65	110	210
Future Volume (vph)	20	80	235	65	110	210
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	50	0		115	0	
Storage Lanes	1	1		1	0	
Taper Length (ft)	100				25	
Link Speed (mph)	30		30			30
Link Distance (ft)	452		196			403
Travel Time (s)	7.0		4.6			5.1
Confl. Peds. (#/hr)		1		1	1	
Confl. Bikes (#/hr)						
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	4%	4%	3%	3%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	22	90	264	73	0	360
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	2.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	20	80	235	65	110	210
Future Vol, veh/h	20	80	235	65	110	210
Conflicting Peds, #/hr	0	1	0	1	1	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	50	0	-	115	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	2	2	4	4	3	3
Mvmt Flow	22	90	264	73	124	236

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	748	266	0	0	338	0
Stage 1	265	-	-	-	-	-
Stage 2	483	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.13	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.227	-
Pot Cap-1 Maneuver	380	773	-	-	1216	-
Stage 1	779	-	-	-	-	-
Stage 2	620	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	335	771	-	-	1214	-
Mov Cap-2 Maneuver	335	-	-	-	-	-
Stage 1	779	-	-	-	-	-
Stage 2	548	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	11.53	0	2.85
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	335	771	619	-
HCM Lane V/C Ratio	-	-	0.067	0.117	0.102	-
HCM Control Delay (s/veh)	-	-	16.5	10.3	8.3	0
HCM Lane LOS	-	-	C	B	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0.4	0.3	-

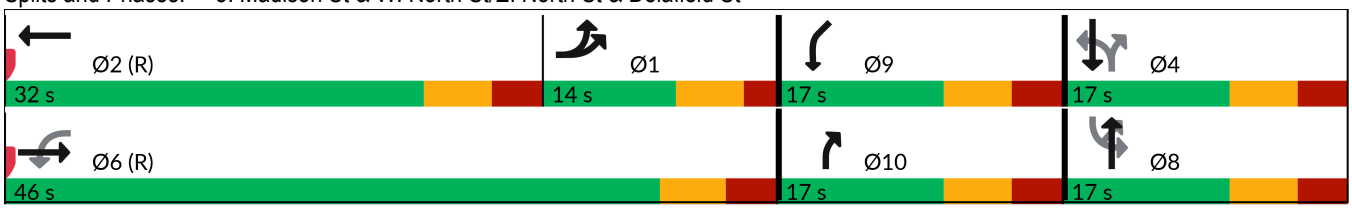
Lane Group	EBL2	EBL	EBT	EBR	WBL	WBT	WBR	WBR2	NBL	NBT	NBR	SBL2
Lane Configurations												
Traffic Volume (vph)	20	90	35	5	5	295	175	25	1	75	150	15
Future Volume (vph)	20	90	35	5	5	295	175	25	1	75	150	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)			0%			0%				0%		
Storage Length (ft)		125		0	150		50		50		0	
Storage Lanes		1		0	1		0		1		1	
Taper Length (ft)		100			125				75			
Right Turn on Red				No				No				
Link Speed (mph)			30			30				30		
Link Distance (ft)			435			580				357		
Travel Time (s)			9.9			13.2				8.1		
Confl. Peds. (#/hr)	1			3	3		1		1			
Confl. Bikes (#/hr)												
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	3%	3%	3%	3%	4%	4%	4%	4%	4%	4%	4%	4%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)			0%			0%				0%		
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	121	43	0	5	543	0	0	1	82	165	0
Turn Type	Prot	Prot	NA		D.Pm	NA			D.Pm	NA	custom	D.Pm
Protected Phases	1	1	6			2				8	10	
Permitted Phases					6				4		4	8
Detector Phase	1	1	6		6	2			4	8	10	8
Switch Phase												
Minimum Initial (s)	6.0	6.0	12.0		12.0	12.0			10.0	10.0	10.0	10.0
Minimum Split (s)	14.0	14.0	19.0		19.0	19.0			17.0	17.0	17.0	17.0
Total Split (s)	14.0	14.0	46.0		46.0	32.0			17.0	17.0	17.0	17.0
Total Split (%)	17.5%	17.5%	57.5%		57.5%	40.0%			21.3%	21.3%	21.3%	21.3%
Maximum Green (s)	8.0	8.0	39.0		39.0	25.0			10.0	10.0	10.0	10.0
Yellow Time (s)	4.0	4.0	4.0		4.0	4.0			4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	3.0		3.0	3.0			3.0	3.0	3.0	3.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0			0.0	0.0	0.0	
Total Lost Time (s)		6.0	7.0		7.0	7.0			7.0	7.0	7.0	
Lead/Lag	Lag	Lag				Lead						
Lead-Lag Optimize?	Yes	Yes				Yes						
Vehicle Extension (s)	1.5	1.5	4.9		4.9	4.9			1.5	1.5	1.5	1.5
Minimum Gap (s)	1.5	1.5	3.9		3.9	3.9			1.5	1.5	1.5	1.5
Time Before Reduce (s)	15.0	15.0	19.0		19.0	19.0			30.0	30.0	25.0	30.0
Time To Reduce (s)	0.0	0.0	11.0		11.0	11.0			0.0	0.0	0.0	0.0
Recall Mode	None	None	C-Min		C-Min	C-Min			None	None	None	None
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio		0.72	0.04		0.00	1.00			0.00	0.35	0.31	
Control Delay (s/veh)		61.1	11.0		10.6	70.4			31.0	37.0	21.7	

Lane Group	SBL	SBT	SBR	SWL	SWR	SWR2
Lane Configurations						
Traffic Volume (vph)	30	270	50	135	115	5
Future Volume (vph)	30	270	50	135	115	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%		0%		
Storage Length (ft)	75		0	300	0	
Storage Lanes	1		0	1	0	
Taper Length (ft)	75			50		
Right Turn on Red			No			No
Link Speed (mph)		30		30		
Link Distance (ft)		192		332		
Travel Time (s)		4.4		7.5		
Confl. Peds. (#/hr)			1			
Confl. Bikes (#/hr)						
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	4%	4%	4%	5%	5%	5%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%		0%		
Shared Lane Traffic (%)						
Lane Group Flow (vph)	49	352	0	279	0	0
Turn Type	D.Pm	NA		Prot		
Protected Phases		4		9		
Permitted Phases	8					
Detector Phase	8	4		9		
Switch Phase						
Minimum Initial (s)	10.0	10.0		10.0		
Minimum Split (s)	17.0	17.0		17.0		
Total Split (s)	17.0	17.0		17.0		
Total Split (%)	21.3%	21.3%		21.3%		
Maximum Green (s)	10.0	10.0		10.0		
Yellow Time (s)	4.0	4.0		4.0		
All-Red Time (s)	3.0	3.0		3.0		
Lost Time Adjust (s)	0.0	0.0		0.0		
Total Lost Time (s)	7.0	7.0		7.0		
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	1.5	1.5		1.5		
Minimum Gap (s)	1.5	1.5		1.5		
Time Before Reduce (s)	30.0	30.0		25.0		
Time To Reduce (s)	0.0	0.0		0.0		
Recall Mode	None	None		None		
Walk Time (s)						
Flash Dont Walk (s)						
Pedestrian Calls (#/hr)						
v/c Ratio	0.30	0.83		0.70		
Control Delay (s/veh)	37.5	52.9		44.3		

Lane Group	EBL2	EBL	EBT	EBR	WBL	WBT	WBR	WBR2	NBL	NBT	NBR	SBL2
Queue Delay		0.0	0.0		0.0	0.0			0.0	0.0	0.0	
Total Delay (s/veh)		61.1	11.0		10.6	70.4			31.0	37.0	21.7	
Queue Length 50th (ft)		60	11		1	~280			0	38	60	
Queue Length 95th (ft)		#138	27		7	#480			5	80	110	
Internal Link Dist (ft)			355			500				277		
Turn Bay Length (ft)		125			150				50			
Base Capacity (vph)		175	882		648	540			110	228	524	
Starvation Cap Reductn		0	0		0	0			0	0	0	
Spillback Cap Reductn		0	0		0	0			0	0	0	
Storage Cap Reductn		0	0		0	0			0	0	0	
Reduced v/c Ratio		0.69	0.05		0.01	1.01			0.01	0.36	0.31	

Intersection Summary	
Area Type:	Other
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 75 (94%), Referenced to phase 2:WBT and 6:EBWB, Start of Green	
Natural Cycle: 80	
Control Type: Actuated-Coordinated	
~ 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: 3: Madison St & W. North St/E. North St & Delafield St



Lane Group	SBL	SBT	SBR	SWL	SWR	SWR2
Queue Delay	0.0	0.0		0.0		
Total Delay (s/veh)	37.5	52.9		44.3		
Queue Length 50th (ft)	23	92		70		
Queue Length 95th (ft)	55	#162		#119		
Internal Link Dist (ft)		112		252		
Turn Bay Length (ft)	75			300		
Base Capacity (vph)	160	422		397		
Starvation Cap Reductn	0	0		0		
Spillback Cap Reductn	0	0		0		
Storage Cap Reductn	0	0		0		
Reduced v/c Ratio	0.31	0.83		0.70		

Intersection Summary

Movement	EBL2	EBL	EBT	EBR	WBL	WBT	WBR	WBR2	NBL	NBT	NBR	SBL2
Lane Configurations												
Traffic Volume (vph)	20	90	35	5	5	295	175	25	1	75	150	15
Future Volume (vph)	20	90	35	5	5	295	175	25	1	75	150	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	7.0		7.0	7.0			7.0	7.0	7.0	
Lane Util. Factor		1.00	1.00		1.00	1.00			1.00	1.00	1.00	
Frpb, ped/bikes		1.00	0.99		1.00	0.99			1.00	1.00	1.00	
Flpb, ped/bikes		1.00	1.00		0.99	1.00			0.99	1.00	1.00	
Frt		1.00	0.98		1.00	0.93			1.00	1.00	0.85	
Flt Protected		0.95	1.00		0.95	1.00			0.95	1.00	1.00	
Satd. Flow (prot)		1752	1810		1733	1701			1732	1827	1553	
Flt Permitted		0.95	1.00		0.72	1.00			0.48	1.00	1.00	
Satd. Flow (perm)		1752	1810		1330	1701			884	1827	1553	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	22	99	38	5	5	324	192	27	1	82	165	16
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	121	43	0	5	543	0	0	1	82	165	0
Confl. Peds. (#/hr)	1			3	3		1		1			
Heavy Vehicles (%)	3%	3%	3%	3%	4%	4%	4%	4%	4%	4%	4%	4%
Turn Type	Prot	Prot	NA		D.Pm	NA			D.Pm	NA	custom	D.Pm
Protected Phases	1	1	6			2				8	10	
Permitted Phases					6				4		4	8
Actuated Green, G (s)		7.6	39.0		39.0	25.4			10.0	10.0	20.0	
Effective Green, g (s)		7.6	39.0		39.0	25.4			10.0	10.0	20.0	
Actuated g/C Ratio		0.10	0.49		0.49	0.32			0.13	0.13	0.25	
Clearance Time (s)		6.0	7.0		7.0	7.0			7.0	7.0	7.0	
Vehicle Extension (s)		1.5	4.9		4.9	4.9			1.5	1.5	1.5	
Lane Grp Cap (vph)		166	882		648	540			110	228	524	
v/s Ratio Prot		c0.07	0.02			c0.32				0.04	0.04	
v/s Ratio Perm					0.00				0.00		0.07	
v/c Ratio		0.72	0.04		0.00	1.00			0.00	0.35	0.31	
Uniform Delay, d1		35.1	10.7		10.5	27.3			30.6	32.0	24.4	
Progression Factor		1.00	1.00		1.00	1.00			1.00	1.00	1.00	
Incremental Delay, d2		12.6	0.1		0.0	40.1			0.0	0.3	0.1	
Delay (s)		47.8	10.8		10.5	67.4			30.6	32.4	24.5	
Level of Service		D	B		B	E			C	C	C	
Approach Delay (s/veh)			38.1			66.8				27.1		
Approach LOS			D			E				C		

Intersection Summary			
HCM 2000 Control Delay (s/veh)	47.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	27.0
Intersection Capacity Utilization	74.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBL	SBT	SBR	SWL	SWR	SWR2
Lane Configurations						
Traffic Volume (vph)	30	270	50	135	115	5
Future Volume (vph)	30	270	50	135	115	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0		7.0		
Lane Util. Factor	1.00	0.95		0.97		
Frpb, ped/bikes	1.00	0.99		1.00		
Flpb, ped/bikes	1.00	1.00		1.00		
Frt	1.00	0.97		0.92		
Flt Protected	0.95	1.00		0.97		
Satd. Flow (prot)	1736	3377		3179		
Flt Permitted	0.70	1.00		0.97		
Satd. Flow (perm)	1286	3377		3179		
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	33	297	55	148	126	5
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	49	352	0	279	0	0
Confl. Peds. (#/hr)			1			
Heavy Vehicles (%)	4%	4%	4%	5%	5%	5%
Turn Type	D.Pm	NA		Prot		
Protected Phases		4		9		
Permitted Phases	8					
Actuated Green, G (s)	10.0	10.0		10.0		
Effective Green, g (s)	10.0	10.0		10.0		
Actuated g/C Ratio	0.13	0.13		0.13		
Clearance Time (s)	7.0	7.0		7.0		
Vehicle Extension (s)	1.5	1.5		1.5		
Lane Grp Cap (vph)	160	422		397		
v/s Ratio Prot		c0.10		c0.09		
v/s Ratio Perm	0.04					
v/c Ratio	0.30	0.83		0.70		
Uniform Delay, d1	31.8	34.1		33.5		
Progression Factor	1.00	1.00		1.00		
Incremental Delay, d2	0.3	12.7		4.5		
Delay (s)	32.2	46.9		38.1		
Level of Service	C	D		D		
Approach Delay (s/veh)		45.1		38.1		
Approach LOS		D		D		

Intersection Summary

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	25	25	10	275	225	5
Future Volume (vph)	25	25	10	275	225	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)	0	0	50			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		50			
Link Speed (mph)	25			30	30	
Link Distance (ft)	197			204	109	
Travel Time (s)	5.2			7.7	7.0	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	4%	4%	3%	3%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	54	0	11	299	250	0
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	25	25	10	275	225	5
Future Vol, veh/h	25	25	10	275	225	5
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	-	50	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	4	4	3	3
Mvmt Flow	27	27	11	299	245	5

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	568	247	250	0	-	0
Stage 1	247	-	-	-	-	-
Stage 2	321	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.14	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.236	-	-	-
Pot Cap-1 Maneuver	484	791	1304	-	-	-
Stage 1	794	-	-	-	-	-
Stage 2	736	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	480	791	1304	-	-	-
Mov Cap-2 Maneuver	480	-	-	-	-	-
Stage 1	787	-	-	-	-	-
Stage 2	736	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	11.62	0.27	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1304	-	598	-	-
HCM Lane V/C Ratio	0.008	-	0.091	-	-
HCM Control Delay (s/veh)	7.8	-	11.6	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0.3	-	-

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	5	5	0	280	250	0
Future Volume (vph)	5	5	0	280	250	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)	0	0	0			0
Storage Lanes	0	1	0			0
Taper Length (ft)	25		25			
Link Speed (mph)	25			30	30	
Link Distance (ft)	184			332	204	
Travel Time (s)	4.1			7.5	4.6	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	4%	4%	3%	3%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	10	0	0	304	272	0
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	5	0	280	250	0
Future Vol, veh/h	5	5	0	280	250	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	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	4	4	3	3
Mvmt Flow	5	5	0	304	272	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	576	272	-	0	-	0
Stage 1	272	-	-	-	-	-
Stage 2	304	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	-	-
Pot Cap-1 Maneuver	479	767	0	-	-	0
Stage 1	774	-	0	-	-	0
Stage 2	748	-	0	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	479	767	-	-	-	-
Mov Cap-2 Maneuver	479	-	-	-	-	-
Stage 1	774	-	-	-	-	-
Stage 2	748	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	11.22	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT
Capacity (veh/h)	-	590	-
HCM Lane V/C Ratio	-	0.018	-
HCM Control Delay (s/veh)	-	11.2	-
HCM Lane LOS	-	B	-
HCM 95th %tile Q(veh)	-	0.1	-

Lane Group	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	0	360	270	5	5	5
Future Volume (vph)	0	360	270	5	5	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%	0%		0%	
Storage Length (ft)	0			0	0	0
Storage Lanes	0			0	0	1
Taper Length (ft)	25				25	
Link Speed (mph)		30	30		30	
Link Distance (ft)		299	192		135	
Travel Time (s)		6.8	4.4		3.1	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	4%	4%	4%	4%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	391	298	0	10	0
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0.2

Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Traffic Vol, veh/h	0	360	270	5	5	5
Future Vol, veh/h	0	360	270	5	5	5
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	92	92	92	92	92	92
Heavy Vehicles, %	4	4	4	4	2	2
Mvmt Flow	0	391	293	5	5	5

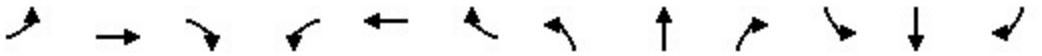
Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	299	0	-	0	492	296
Stage 1	-	-	-	-	296	-
Stage 2	-	-	-	-	196	-
Critical Hdwy	4.16	-	-	-	6.63	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.83	-
Follow-up Hdwy	2.238	-	-	-	3.519	3.319
Pot Cap-1 Maneuver	1248	-	-	-	521	742
Stage 1	-	-	-	-	754	-
Stage 2	-	-	-	-	819	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1248	-	-	-	521	742
Mov Cap-2 Maneuver	-	-	-	-	521	-
Stage 1	-	-	-	-	754	-
Stage 2	-	-	-	-	819	-

Approach	SE	NW	SW
HCM Control Delay, s/v	0	0	10.99
HCM LOS			B

Minor Lane/Major Mvmt	NWT	NWR	SEL	SET	SWLn1
Capacity (veh/h)	-	-	1248	-	612
HCM Lane V/C Ratio	-	-	-	-	0.018
HCM Control Delay (s/veh)	-	-	0	-	11
HCM Lane LOS	-	-	A	-	B
HCM 95th %tile Q(veh)	-	-	0	-	0.1

2035 PM – Horizon Year Build:

Site Plan D Scenario

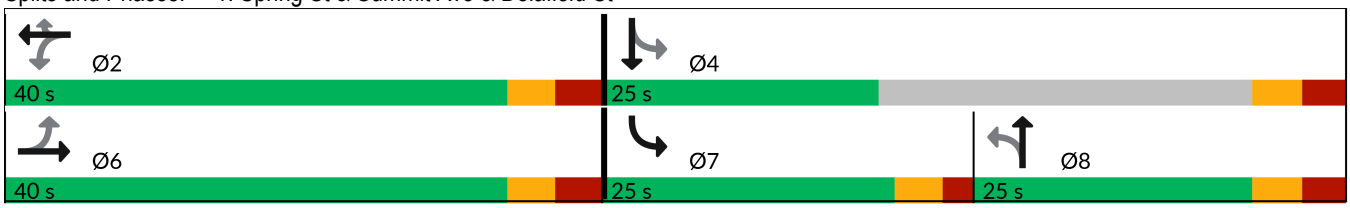


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	275	15	15	260	110	15	20	5	130	35	20
Future Volume (vph)	20	275	15	15	260	110	15	20	5	130	35	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	125		0	75		100	0		0	0		0
Storage Lanes	1		0	1		1	0		0	1		0
Taper Length (ft)	75			75			25			25		
Right Turn on Red			No			No			No			No
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		424			323			219			200	
Travel Time (s)		9.6			7.3			5.0			4.5	
Confl. Peds. (#/hr)	1					1	1		1	1		1
Confl. Bikes (#/hr)												1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	62%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	3%	3%	3%	2%	2%	2%	5%	5%	5%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	22	315	0	16	283	74	0	43	0	141	60	0
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		pm+pt	NA	
Protected Phases		6			2			8		7	4	
Permitted Phases	6			2		2	8			4		
Detector Phase	6	6		2	2	2	8	8		7	4	
Switch Phase												
Minimum Initial (s)	12.0	12.0		12.0	12.0	12.0	8.0	8.0		8.0	8.0	
Minimum Split (s)	18.3	18.3		18.3	18.3	18.3	14.3	14.3		13.3	14.3	
Total Split (s)	40.0	40.0		40.0	40.0	40.0	25.0	25.0		25.0	25.0	
Total Split (%)	44.4%	44.4%		44.4%	44.4%	44.4%	27.8%	27.8%		27.8%	27.8%	
Maximum Green (s)	33.7	33.7		33.7	33.7	33.7	18.7	18.7		19.7	18.7	
Yellow Time (s)	3.3	3.3		3.3	3.3	3.3	3.3	3.3		3.3	3.3	
All-Red Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		2.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0		0.0	0.0	
Total Lost Time (s)	6.3	6.3		6.3	6.3	6.3		6.3		5.3	6.3	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Vehicle Extension (s)	2.5	2.5		2.5	2.5	2.5	1.5	1.5		1.5	1.5	
Minimum Gap (s)	1.5	1.5		1.5	1.5	1.5	1.5	1.5		1.5	1.5	
Time Before Reduce (s)	19.0	19.0		19.0	19.0	19.0	25.0	25.0		25.0	25.0	
Time To Reduce (s)	11.0	11.0		11.0	11.0	11.0	0.0	0.0		0.0	0.0	
Recall Mode	Min	Min		Min	Min	Min	None	None		None	None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	0.04	0.36		0.03	0.32	0.10		0.11		0.26	0.10	
Control Delay (s/veh)	12.3	13.5		12.2	13.0	12.0		18.7		10.1	9.4	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0		0.0	0.0	
Total Delay (s/veh)	12.3	13.5		12.2	13.0	12.0		18.7		10.1	9.4	
Queue Length 50th (ft)	2	39		2	34	8		6		19	8	
Queue Length 95th (ft)	18	149		14	133	42		37		54	28	
Internal Link Dist (ft)		344			243			139			120	
Turn Bay Length (ft)	125			75		100						
Base Capacity (vph)	924	1566		907	1594	1326		855		940	1627	
Starvation Cap Reductn	0	0		0	0	0		0		0	0	
Spillback Cap Reductn	0	0		0	0	0		0		0	0	
Storage Cap Reductn	0	0		0	0	0		0		0	0	
Reduced v/c Ratio	0.02	0.20		0.02	0.18	0.06		0.05		0.15	0.04	

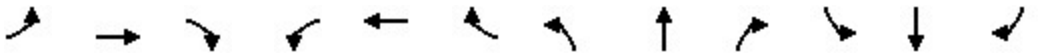
Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 41	
Natural Cycle: 50	
Control Type: Actuated-Uncoordinated	

Splits and Phases: 1: Spring St & Summit Ave & Delafield St



HCM 7th Signalized Intersection Summary
1: Spring St & Summit Ave & Delafield St

08/08/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	275	15	15	260	110	15	20	5	130	35	20
Future Volume (veh/h)	20	275	15	15	260	110	15	20	5	130	35	20
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1870	1870	1870	1826	1826	1826	1870	1870	1870
Adj Flow Rate, veh/h	22	299	16	16	283	74	16	22	5	141	38	22
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	2	2	2	5	5	5	2	2	2
Cap, veh/h	333	499	27	319	535	453	165	146	26	723	455	264
Arrive On Green	0.29	0.29	0.29	0.29	0.29	0.29	0.13	0.13	0.13	0.15	0.41	0.41
Sat Flow, veh/h	1015	1745	93	1064	1870	1582	358	1099	192	1781	1101	637
Grp Volume(v), veh/h	22	0	315	16	283	74	43	0	0	141	0	60
Grp Sat Flow(s),veh/h/ln	1015	0	1839	1064	1870	1582	1648	0	0	1781	0	1739
Q Serve(g_s), s	0.8	0.0	6.2	0.6	5.3	1.5	0.0	0.0	0.0	2.4	0.0	0.9
Cycle Q Clear(g_c), s	6.1	0.0	6.2	6.7	5.3	1.5	0.9	0.0	0.0	2.4	0.0	0.9
Prop In Lane	1.00		0.05	1.00		1.00	0.37		0.12	1.00		0.37
Lane Grp Cap(c), veh/h	333	0	526	319	535	453	337	0	0	723	0	719
V/C Ratio(X)	0.07	0.00	0.60	0.05	0.53	0.16	0.13	0.00	0.00	0.20	0.00	0.08
Avail Cap(c_a), veh/h	858	0	1477	869	1503	1271	826	0	0	1286	0	775
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	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	15.2	0.0	12.9	15.8	12.6	11.2	16.1	0.0	0.0	10.1	0.0	7.5
Incr Delay (d2), s/veh	0.1	0.0	0.8	0.0	0.6	0.1	0.1	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	2.2	0.1	1.9	0.4	0.3	0.0	0.0	0.7	0.0	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	15.2	0.0	13.7	15.9	13.2	11.3	16.2	0.0	0.0	10.1	0.0	7.5
LnGrp LOS	B		B	B	B	B	B			B		A
Approach Vol, veh/h		337			373			43			201	
Approach Delay, s/veh		13.8			12.9			16.2			9.3	
Approach LOS		B			B			B			A	

Timer - Assigned Phs		2		4		6	7	8				
Phs Duration (G+Y+Rc), s		18.3		23.6		18.3	11.8	11.9				
Change Period (Y+Rc), s		6.3		6.3		6.3	5.3	6.3				
Max Green Setting (Gmax), s		33.7		18.7		33.7	19.7	18.7				
Max Q Clear Time (g_c+I1), s		8.7		2.9		8.2	4.4	2.9				
Green Ext Time (p_c), s		1.6		0.1		1.6	0.1	0.1				

Intersection Summary		
HCM 7th Control Delay, s/veh	12.6	
HCM 7th LOS	B	

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	40	100	285	25	75	335
Future Volume (vph)	40	100	285	25	75	335
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	50	0		115	0	
Storage Lanes	1	1		1	0	
Taper Length (ft)	100				25	
Link Speed (mph)	30		30			30
Link Distance (ft)	452		196			403
Travel Time (s)	7.0		4.6			5.1
Confl. Peds. (#/hr)				2	2	
Confl. Bikes (#/hr)						
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	47	116	331	29	0	477
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

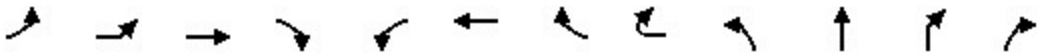
Intersection	
Int Delay, s/veh	3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	40	100	285	25	75	335
Future Vol, veh/h	40	100	285	25	75	335
Conflicting Peds, #/hr	0	0	0	2	2	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	50	0	-	115	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	47	116	331	29	87	390

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	897	333	0	0	362	0
Stage 1	333	-	-	-	-	-
Stage 2	564	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	310	708	-	-	1196	-
Stage 1	726	-	-	-	-	-
Stage 2	569	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	281	707	-	-	1194	-
Mov Cap-2 Maneuver	281	-	-	-	-	-
Stage 1	724	-	-	-	-	-
Stage 2	516	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	13.74	0	1.51
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	281	707	329	-
HCM Lane V/C Ratio	-	-	0.166	0.164	0.073	-
HCM Control Delay (s/veh)	-	-	20.4	11.1	8.3	0
HCM Lane LOS	-	-	C	B	A	A
HCM 95th %tile Q(veh)	-	-	0.6	0.6	0.2	-



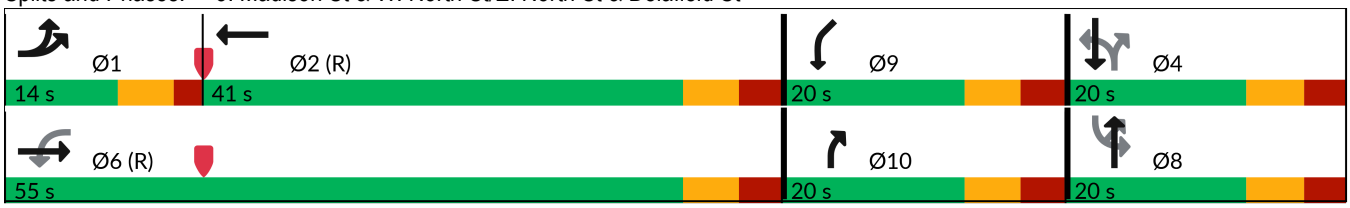
Lane Group	EBL2	EBL	EBT	EBR	WBL	WBT	WBR	WBR2	NBL	NBT	NBR	NBR2
Lane Configurations												
Traffic Volume (vph)	20	95	20	10	10	480	100	20	5	125	195	10
Future Volume (vph)	20	95	20	10	10	480	100	20	5	125	195	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)			0%			0%				0%		
Storage Length (ft)		125		0	150		50		50		0	
Storage Lanes		1		0	1		0		1		1	
Taper Length (ft)		100			125				75			
Right Turn on Red				No				No				No
Link Speed (mph)			30			30				30		
Link Distance (ft)			435			580				357		
Travel Time (s)			9.9			13.2				8.1		
Confl. Peds. (#/hr)	4	8		14	14		4		14		8	9
Confl. Bikes (#/hr)							1				1	1
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	3%	3%	3%	3%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)			0%			0%				0%		
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	128	33	0	11	666	0	0	6	139	228	0
Turn Type	Prot	Prot	NA		D.Pm	NA			D.Pm	NA	custom	
Protected Phases	1	1	6			2				8	10	
Permitted Phases					6				4		4	
Detector Phase	1	1	6		6	2			4	8	10	
Switch Phase												
Minimum Initial (s)	6.0	6.0	12.0		12.0	12.0			10.0	10.0	10.0	
Minimum Split (s)	14.0	14.0	19.0		19.0	19.0			17.0	17.0	17.0	
Total Split (s)	14.0	14.0	55.0		55.0	41.0			20.0	20.0	20.0	
Total Split (%)	14.7%	14.7%	57.9%		57.9%	43.2%			21.1%	21.1%	21.1%	
Maximum Green (s)	8.0	8.0	48.0		48.0	34.0			13.0	13.0	13.0	
Yellow Time (s)	4.0	4.0	4.0		4.0	4.0			4.0	4.0	4.0	
All-Red Time (s)	2.0	2.0	3.0		3.0	3.0			3.0	3.0	3.0	
Lost Time Adjust (s)		0.0	0.0		0.0	0.0			0.0	0.0	0.0	
Total Lost Time (s)		6.0	7.0		7.0	7.0			7.0	7.0	7.0	
Lead/Lag	Lead	Lead				Lag						
Lead-Lag Optimize?	Yes	Yes				Yes						
Vehicle Extension (s)	1.5	1.5	4.9		4.9	4.9			1.5	1.5	1.5	
Minimum Gap (s)	1.5	1.5	3.9		3.9	3.9			1.5	1.5	1.5	
Time Before Reduce (s)	15.0	15.0	19.0		19.0	19.0			30.0	30.0	25.0	
Time To Reduce (s)	0.0	0.0	11.0		11.0	11.0			0.0	0.0	0.0	
Recall Mode	None	None	C-Min		C-Min	C-Min			None	None	None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio		0.82	0.03		0.01	1.02			0.05	0.59	0.56	
Control Delay (s/veh)		82.1	12.0		11.9	73.8			37.2	49.9	31.0	

Lane Group	SBL2	SBL	SBT	SBR	SWL	SWR	SWR2
Lane Configurations							
Traffic Volume (vph)	5	25	245	45	175	185	10
Future Volume (vph)	5	25	245	45	175	185	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12
Grade (%)			0%		0%		
Storage Length (ft)		75		0	300	0	
Storage Lanes		1		0	1	0	
Taper Length (ft)		75			50		
Right Turn on Red				No			No
Link Speed (mph)			30		30		
Link Distance (ft)			192		329		
Travel Time (s)			4.4		7.5		
Confl. Peds. (#/hr)	8	9		14			
Confl. Bikes (#/hr)				1			
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0
Parking (#/hr)							
Mid-Block Traffic (%)			0%		0%		
Shared Lane Traffic (%)							
Lane Group Flow (vph)	0	34	322	0	411	0	0
Turn Type	D.Pm	D.Pm	NA		Prot		
Protected Phases			4		9		
Permitted Phases	8	8					
Detector Phase	8	8	4		9		
Switch Phase							
Minimum Initial (s)	10.0	10.0	10.0		10.0		
Minimum Split (s)	17.0	17.0	17.0		17.0		
Total Split (s)	20.0	20.0	20.0		20.0		
Total Split (%)	21.1%	21.1%	21.1%		21.1%		
Maximum Green (s)	13.0	13.0	13.0		13.0		
Yellow Time (s)	4.0	4.0	4.0		4.0		
All-Red Time (s)	3.0	3.0	3.0		3.0		
Lost Time Adjust (s)		0.0	0.0		0.0		
Total Lost Time (s)		7.0	7.0		7.0		
Lead/Lag							
Lead-Lag Optimize?							
Vehicle Extension (s)	1.5	1.5	1.5		1.5		
Minimum Gap (s)	1.5	1.5	1.5		1.5		
Time Before Reduce (s)	30.0	30.0	30.0		25.0		
Time To Reduce (s)	0.0	0.0	0.0		0.0		
Recall Mode	None	None	None		None		
Walk Time (s)							
Flash Dont Walk (s)							
Pedestrian Calls (#/hr)							
v/c Ratio		0.22	0.74		0.99dr		
Control Delay (s/veh)		40.9	51.2		69.0		

Lane Group	EBL2	EBL	EBT	EBR	WBL	WBT	WBR	WBR2	NBL	NBT	NBR	NBR2
Queue Delay		0.0	0.0		0.0	0.0			0.0	0.0	0.0	
Total Delay (s/veh)		82.1	12.0		11.9	73.8			37.2	49.9	31.0	
Queue Length 50th (ft)		77	10		3	~439			3	80	104	
Queue Length 95th (ft)		#183	24		12	#652			15	140	170	
Internal Link Dist (ft)			355			500				277		
Turn Bay Length (ft)		125			150				50			
Base Capacity (vph)		156	906		694	649			118	254	405	
Starvation Cap Reductn		0	0		0	0			0	0	0	
Spillback Cap Reductn		0	0		0	0			0	0	0	
Storage Cap Reductn		0	0		0	0			0	0	0	
Reduced v/c Ratio		0.82	0.04		0.02	1.03			0.05	0.55	0.56	

Intersection Summary	
Area Type:	Other
Cycle Length: 95	
Actuated Cycle Length: 95	
Offset: 76 (80%), Referenced to phase 2:WBT and 6:EBWB, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
~ 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.	
dr Defacto Right Lane. Recode with 1 though lane as a right lane.	

Splits and Phases: 3: Madison St & W. North St/E. North St & Delafield St



Lane Group	SBL2	SBL	SBT	SBR	SWL	SWR	SWR2
Queue Delay		0.0	0.0		0.0		
Total Delay (s/veh)		40.9	51.2		69.0		
Queue Length 50th (ft)		19	98		127		
Queue Length 95th (ft)		48	145		#215		
Internal Link Dist (ft)			112		249		
Turn Bay Length (ft)		75			300		
Base Capacity (vph)		161	467		445		
Starvation Cap Reductn		0	0		0		
Spillback Cap Reductn		0	0		0		
Storage Cap Reductn		0	0		0		
Reduced v/c Ratio		0.21	0.69		0.92		

Intersection Summary

Movement	EBL2	EBL	EBT	EBR	WBL	WBT	WBR	WBR2	NBL	NBT	NBR	NBR2
Lane Configurations												
Traffic Volume (vph)	20	95	20	10	10	480	100	20	5	125	195	10
Future Volume (vph)	20	95	20	10	10	480	100	20	5	125	195	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	7.0		7.0	7.0			7.0	7.0	7.0	
Lane Util. Factor		1.00	1.00		1.00	1.00			1.00	1.00	1.00	
Frpb, ped/bikes		1.00	0.99		1.00	0.99			1.00	1.00	0.97	
Flpb, ped/bikes		1.00	1.00		0.99	1.00			0.96	1.00	1.00	
Frt		1.00	0.95		1.00	0.97			1.00	1.00	0.85	
Flt Protected		0.95	1.00		0.95	1.00			0.95	1.00	1.00	
Satd. Flow (prot)		1770	1758		1739	1780			1711	1863	1542	
Flt Permitted		0.95	1.00		0.73	1.00			0.48	1.00	1.00	
Satd. Flow (perm)		1770	1758		1346	1780			867	1863	1542	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	22	106	22	11	11	533	111	22	6	139	217	11
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	128	33	0	11	666	0	0	6	139	228	0
Confl. Peds. (#/hr)	4	8		14	14		4		14		8	9
Confl. Bikes (#/hr)							1				1	1
Heavy Vehicles (%)	2%	2%	2%	2%	3%	3%	3%	3%	2%	2%	2%	2%
Turn Type	Prot	Prot	NA		D.Pm	NA			D.Pm	NA	custom	
Protected Phases	1	1	6			2				8	10	
Permitted Phases					6				4		4	
Actuated Green, G (s)		8.3	49.0		49.0	34.7			12.0	12.0	25.0	
Effective Green, g (s)		8.3	49.0		49.0	34.7			12.0	12.0	25.0	
Actuated g/C Ratio		0.09	0.52		0.52	0.37			0.13	0.13	0.26	
Clearance Time (s)		6.0	7.0		7.0	7.0			7.0	7.0	7.0	
Vehicle Extension (s)		1.5	4.9		4.9	4.9			1.5	1.5	1.5	
Lane Grp Cap (vph)		154	906		694	650			109	235	519	
v/s Ratio Prot		c0.07	0.02			c0.37				0.07	0.06	
v/s Ratio Perm					0.01				0.01		0.09	
v/c Ratio		0.83	0.03		0.01	1.02			0.05	0.59	0.43	
Uniform Delay, d1		42.6	11.3		11.2	30.1			36.5	39.1	29.1	
Progression Factor		1.00	1.00		1.00	1.00			1.00	1.00	1.00	
Incremental Delay, d2		28.9	0.0		0.0	41.6			0.0	2.6	0.2	
Delay (s)		71.5	11.4		11.2	71.8			36.5	41.8	29.3	
Level of Service		E	B		B	E			D	D	C	
Approach Delay (s/veh)			59.2			70.8				34.1		
Approach LOS			E			E				C		

Intersection Summary			
HCM 2000 Control Delay (s/veh)	57.2	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	95.0	Sum of lost time (s)	27.0
Intersection Capacity Utilization	95.3%	ICU Level of Service	F
Analysis Period (min)	15		

dr Defacto Right Lane. Recode with 1 though lane as a right lane.
c Critical Lane Group

Movement	SBL2	SBL	SBT	SBR	SWL	SWR	SWR2
Lane Configurations							
Traffic Volume (vph)	5	25	245	45	175	185	10
Future Volume (vph)	5	25	245	45	175	185	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.0	7.0		7.0		
Lane Util. Factor		1.00	0.95		0.97		
Frpb, ped/bikes		1.00	0.98		1.00		
Flpb, ped/bikes		0.94	1.00		1.00		
Frt		1.00	0.97		0.92		
Flt Protected		0.95	1.00		0.97		
Satd. Flow (prot)		1671	3415		3251		
Flt Permitted		0.66	1.00		0.97		
Satd. Flow (perm)		1176	3415		3251		
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	6	28	272	50	194	206	11
RTOR Reduction (vph)	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	34	322	0	411	0	0
Confl. Peds. (#/hr)	8	9		14			
Confl. Bikes (#/hr)				1			
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%
Turn Type	D.Pm	D.Pm	NA		Prot		
Protected Phases			4		9		
Permitted Phases	8	8					
Actuated Green, G (s)		12.0	12.0		13.0		
Effective Green, g (s)		12.0	12.0		13.0		
Actuated g/C Ratio		0.13	0.13		0.14		
Clearance Time (s)		7.0	7.0		7.0		
Vehicle Extension (s)		1.5	1.5		1.5		
Lane Grp Cap (vph)		148	431		444		
v/s Ratio Prot			c0.09		c0.13		
v/s Ratio Perm		0.03					
v/c Ratio		0.22	0.74		0.99dr		
Uniform Delay, d1		37.3	40.0		40.5		
Progression Factor		1.00	1.00		1.00		
Incremental Delay, d2		0.2	6.0		24.8		
Delay (s)		37.6	46.1		65.3		
Level of Service		D	D		E		
Approach Delay (s/veh)			45.3		65.3		
Approach LOS			D		E		

Intersection Summary

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	15	15	25	295	350	25
Future Volume (vph)	15	15	25	295	350	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)	0	0	50			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		50			
Link Speed (mph)	25			30	30	
Link Distance (ft)	193			206	111	
Travel Time (s)	4.4			7.5	7.2	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	32	0	27	321	407	0
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	15	15	25	295	350	25
Future Vol, veh/h	15	15	25	295	350	25
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	-	50	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	16	16	27	321	380	27

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	769	394	408	0	-	0
Stage 1	394	-	-	-	-	-
Stage 2	375	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	369	655	1151	-	-	-
Stage 1	681	-	-	-	-	-
Stage 2	695	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	361	655	1151	-	-	-
Mov Cap-2 Maneuver	361	-	-	-	-	-
Stage 1	665	-	-	-	-	-
Stage 2	695	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	13.32	0.64	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1151	-	465	-	-
HCM Lane V/C Ratio	0.024	-	0.07	-	-
HCM Control Delay (s/veh)	8.2	-	13.3	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.2	-	-

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	5	5	0	315	365	0
Future Volume (vph)	5	5	0	315	365	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)	0	0	0			0
Storage Lanes	0	1	0			0
Taper Length (ft)	25		25			
Link Speed (mph)	25			30	30	
Link Distance (ft)	189			329	206	
Travel Time (s)	4.3			7.5	4.6	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	10	0	0	342	397	0
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	5	0	315	365	0
Future Vol, veh/h	5	5	0	315	365	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	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	5	0	342	397	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	739	397	-	0	-	0
Stage 1	397	-	-	-	-	-
Stage 2	342	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	-	-
Pot Cap-1 Maneuver	385	653	0	-	-	0
Stage 1	679	-	0	-	-	0
Stage 2	719	-	0	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	385	653	-	-	-	-
Mov Cap-2 Maneuver	385	-	-	-	-	-
Stage 1	679	-	-	-	-	-
Stage 2	719	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	12.61	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT
Capacity (veh/h)	-	484	-
HCM Lane V/C Ratio	-	0.022	-
HCM Control Delay (s/veh)	-	12.6	-
HCM Lane LOS	-	B	-
HCM 95th %tile Q(veh)	-	0.1	-

Lane Group	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	5	315	240	15	5	0
Future Volume (vph)	5	315	240	15	5	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%	0%		0%	
Storage Length (ft)	0			0	0	0
Storage Lanes	0			0	0	1
Taper Length (ft)	25				25	
Link Speed (mph)		30	30		30	
Link Distance (ft)		299	192		141	
Travel Time (s)		6.8	4.4		3.2	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	347	277	0	5	0
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0.2

Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Traffic Vol, veh/h	5	315	240	15	5	0
Future Vol, veh/h	5	315	240	15	5	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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	342	261	16	5	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	277	0	-	0	451	269
Stage 1	-	-	-	-	269	-
Stage 2	-	-	-	-	182	-
Critical Hdwy	4.13	-	-	-	6.63	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.83	-
Follow-up Hdwy	2.219	-	-	-	3.519	3.319
Pot Cap-1 Maneuver	1284	-	-	-	551	769
Stage 1	-	-	-	-	775	-
Stage 2	-	-	-	-	832	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	1284	-	-	-	549	769
Mov Cap-2 Maneuver	-	-	-	-	549	-
Stage 1	-	-	-	-	772	-
Stage 2	-	-	-	-	832	-

Approach	SE	NW	SW
HCM Control Delay, s/v	0.16	0	11.63
HCM LOS			B

Minor Lane/Major Mvmt	NWT	NWR	SEL	SET	SWLn1
Capacity (veh/h)	-	-	56	-	549
HCM Lane V/C Ratio	-	-	0.004	-	0.01
HCM Control Delay (s/veh)	-	-	7.8	0	11.6
HCM Lane LOS	-	-	A	A	B
HCM 95th %tile Q(veh)	-	-	0	-	0