



memorandum

Date: August 13, 2025

To: Aaron Stanford (City of Powell)

cc: Sean Gillilan (OHM), Tony Slanec (OHM) Sophia Lorenz (Pizzuti), Jim Russell (Pizzuti)

From: Jonathan Grimm (OHM)

Re: Powell Village Green Park Project – Phase 1 – *Existing Conditions Traffic Analysis*

The objective of this study is to provide analysis of background traffic growth along the Powell Rd (SR 750) and Liberty Rd corridors located in the heart of downtown Powell, OH. This study investigates the notable congestion experienced throughout the project area that will be factored into the future redevelopment of Village Green Park for both the 2030 Opening Year (OY) and 2050 Design Year (DY). In addition, this study includes analysis of the CSX railroad crossing and its impact to the flow of vehicular traffic.

The detailed study area includes twelve (12) of the major intersections located in and adjacent to the heart of Powell, OH (shown in **Figure 1** below). The CSX railroad crossing will focus on the track that bisects Powell Rd just west of Depot St. The limits of the study area along Powell Rd (SR 750) include the intersections of Sawmill Pkwy and Bartholomew Blvd to the west and east, respectively. The limits of the study along Liberty Rd include the intersections of Seldom Seen Rd and Murphy Pkwy to the north and south, respectively.

To perform this study, traffic information was collected via turning movement counts at each of the study intersections in accordance with the dates highlighted in the approved *Traffic Study Memorandum of Understanding* located in **Appendix A**. The collected counts were analyzed and used to establish the AM and PM Peak hour volumes throughout the project area. Once determined, background growth rates obtained by the Mid-Ohio Regional Planning Commission (MORPC) were applied to the existing counts to establish the 2030 OY and 2050 DY volumes in accordance with the Ohio Department of Transportation's (ODOT) standards of practice.

The raw traffic counts, growth rate correspondence, and OY/DY adjusted traffic volumes can be found in **Appendix A**.

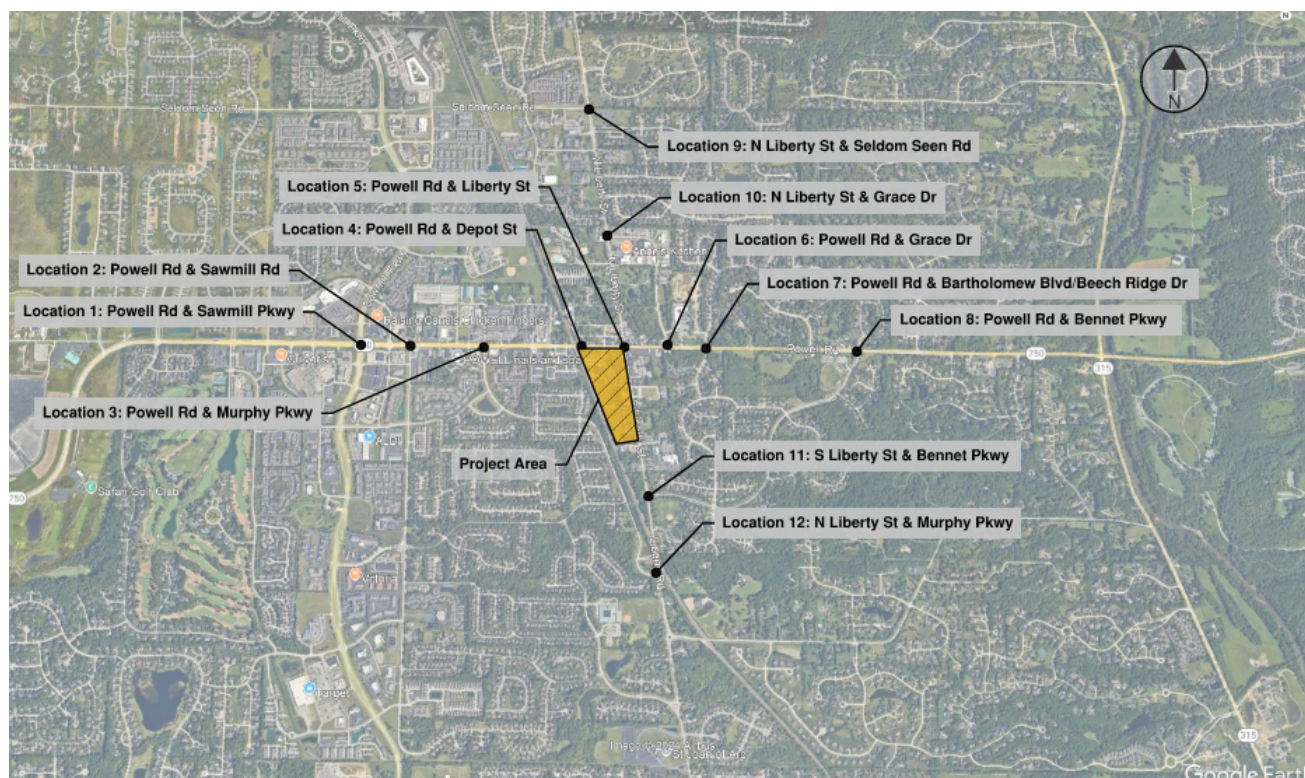


Figure 1: Study Area Map

The study intersections were analyzed according to the methodologies published in the Highway Capacity Manual, 7th edition. For this project, Synchro Version 12 software was used to conduct the analysis for traditional intersections. Software printouts for the evaluations of intersections have been included in **Appendix B**. These software packages compute delay values based on factors such as number and type of lanes, intersection controls such as STOP signs or traffic signals, traffic volumes, pedestrian volumes, geometric characteristics, signal timing characteristics, roadway grade, speed limit, etc. This analysis determines the average delay experienced by vehicles. This value is an average across the entire peak hour. Vehicles arriving during the busiest portion of the peak hour or arriving in a clustered group instead of in a random pattern could experience longer delays. On the other hand, vehicles arriving during a lighter portion of the peak hour could experience a shorter delay. The average delay is used to determine the corresponding level of service (LOS) values for each intersection movement, as well as the intersection in its entirety.

LOS is expressed as a letter grade, in a range from 'A' through 'F'. In this context, 'A' represents the best conditions, with very little or no average delay to vehicles. LOS 'F' is the worst of conditions, equated with very large average delays and few gaps of acceptable length. The following tables identify level of service criteria for signalized and unsignalized intersections.



Table 1: Level of Service Criteria For Signalized Intersections

Level of Service	Average Delay/Vehicle (seconds)	Description
A	Less than or equal to 10	Most vehicles do not stop at all. Most arrive during the green phase. Little or no delay.
B	> 10 to 20	More vehicles stop than for LOS A. Still good progression through lights. Short traffic delays.
C	> 20 to 35	Significant numbers of vehicles stop, although many pass through without stopping.
D	> 35 to 55	Many vehicles stop. Individual signal cycle failures are noticeable. Progression is intermittent.
E	> 55 to 80	Considered to be the limit of acceptable delay. Individual cycle failures are frequent and progression is poor.
F	> 80	Extreme and unacceptable traffic delays.

SOURCE: Transportation Research Board, Highway Capacity Manual 7th Edition.

Table 2: Level of Service Criteria for Unsignalized Intersections

Level of Service	Average Delay/Vehicle (seconds)	Description
A	Less than or equal to 10	Little or no delay, very low main street traffic
B	> 10 to 15	Short traffic delays, many acceptable gaps
C	> 15 to 25	Average Traffic delays, frequent gaps still occur
D	> 25 to 35	Longer traffic delays, limited number of acceptable gaps
E	> 35 to 50	Very long traffic delays, very small number of acceptable gaps
F	> 50	Extreme traffic delays, virtually no acceptable gaps

SOURCE: Transportation Research Board, Highway Capacity Manual 7th Edition.

An intersection LOS 'D' is considered by many traffic safety professionals to be the minimum acceptable condition in an urban/suburban area. For rural areas, most highway agencies consider LOS 'C' the minimum. Given the location of the study intersections, on the edge of an urbanized area, LOS 'D' was utilized as the study goal.

The operational analysis focuses on the AM and PM peak commuter periods for the 2030 OY and the 2050 DY. The signalized and unsignalized intersections were evaluated under the existing conditions during both peak periods. Please note that existing traffic signal timings were not available at the time of this study. The signal cycle splits were optimized using Synchro, and actual results may be different than indicated as part of this analysis. **Tables 3 and 4** show the intersection LOS and corresponding delays during the AM and PM Peak Hour for 2030 OY and 2050 DY, respectively.



Table 3: 2030 OY AM/PM Peak Delay and Level of Service – Existing Configuration

Intersection	Approach/ Movement	2030							
		AM Peak				PM Peak			
		LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
Powell Rd & Sawmill Pkwy	EB	C	31.7	D	35.3	D	51.8	E	62.9
	WB	C	31.8			F	81.7		
	NB	C	32.3			E	79.7		
	SB	D	40.1			D	39.8		
Powell Rd & Sawmill Rd	EB	A	0.3	B	18.4	A	0.4	F	70.9
	WB	A	2.2			A	2.0		
	NB	F	136.1			F	785.9		
	SB	D	29.3			F	194.7		
Powell Rd & Murphy Pkwy	EB	B	15.6	B	14.8	C	24.7	C	23.3
	WB	B	13.4			C	20.2		
	NB	B	14.7			C	26.9		
	SB	C	21.0			C	26.0		
Powell Rd & Depot St	EB	A	0.0	A	0.4	A	0.0	A	1.0
	WB	A	0.0			A	0.0		
	NB	B	14.7			D	27.1		
	SB	B	12.2			B	14.6		
Powell Rd & Liberty St	EB	B	19.4	C	20.4	D	35.3	C	33.0
	WB	B	18.6			C	32.5		
	NB	B	19.7			D	36.4		
	SB	C	24.1			C	26.0		
Powell Rd & Grace Dr	EB	A	9.2	B	19.6	A	8.3	C	21.6
	WB	C	21.9			C	26.0		
	SB	C	34.7			D	44.0		
	EB	A	0.2			A	0.5		
Powell Rd & Bartholomew Blvd	WB	A	0.0	A	2.5	A	0.1	A	3.0
	NB	D	29.3			F	51.7		
	SB	D	27.1			E	42.4		
	EB	B	10.6			B	10.4		
Powell Rd & Bennett Pkwy	WB	A	9.0	A	9.3	B	14.1	B	12.2
	NB	A	2.7			A	9.9		
	SB	B	14.4			A	7.0		
	EB	B	14.0			C	22.0		
N Liberty St & Seldom Seen Rd	NB	A	6.6	C	21.3	B	19.8	D	44.9
	SB	D	37.5			F	94.7		
	EB	B	19.3			B	17.6		
N Liberty St & Grace Dr	WB	B	11.6	B	11.3	B	11.3	B	18.3
	NB	B	19.3			C	29.3		
	SB	A	7.3			B	11.7		
	WB	D	25.5			F	64.6		
Liberty Rd & Bennett Pkwy	NB	A	0	A	4.4	A	0.0	A	6.7
	SB	A	0.5			A	1.0		
	EB	C	18.8			E	35.0		
Liberty Rd & Murphy Pkwy	NB	A	2.2	A	3.7	A	2.3	A	5.6
	SB	A	0.0			A	0.0		
	EB	C	18.8			A	0.0		



Table 4: 2050 DY AM/PM Peak Delay and Level of Service – Existing Configuration

Intersection	Approach/ Movement	2050							
		AM Peak				PM Peak			
		LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
Powell Rd & Sawmill Pkwy	EB	C	34.8	D	47.2	E	68.5	E	79.1
	WB	D	38.1			F	84.5		
	NB	C	34.8			F	114.7		
	SB	E	64.9			D	44.8		
Powell Rd & Sawmill Rd	EB	A	0.3	F	80.0	A	0.4	F	413.2
	WB	A	2.5			A	2.6		
	NB	F	710.6			F	4331.4		
	SB	F	64.4			F	4339.4		
Powell Rd & Murphy Pkwy	EB	C	20.7	B	18.3	C	25.5	C	26.1
	WB	B	14.3			C	20.1		
	NB	C	21.3			D	51.0		
	SB	C	25.5			C	31.1		
Powell Rd & Depot St	EB	A	0.0	A	0.3	A	0.0	A	1.1
	WB	A	0.0			A	0.0		
	NB	C	18.8			E	49.3		
	SB	B	13.9			C	18.0		
Powell Rd & Liberty St	EB	C	34.5	C	32.6	F	94.7	E	75.7
	WB	C	29.0			E	60.9		
	NB	C	26.9			F	99.1		
	SB	D	38.4			D	36.5		
Powell Rd & Grace Dr	EB	A	8.8	C	23.1	A	8.4	C	24.4
	WB	C	27.5			C	30.1		
	SB	D	43.3			E	55.2		
Powell Rd & Bartholomew Blvd	EB	A	0.2	A	3.2	A	0.5	A	4.9
	WB	A	0.0			A	0.1		
	NB	E	45.8			F	109.0		
	SB	E	42.2			F	84.8		
Powell Rd & Bennett Pkwy	EB	B	11.3	A	9.9	B	10.2	B	13.3
	WB	A	9.3			B	15.7		
	NB	A	3.5			B	12.7		
	SB	B	18.0			A	9.6		
N Liberty St & Seldom Seen Rd	EB	B	17.6	F	90.8	C	26.4	F	146.1
	NB	A	9.3			F	98.4		
	SB	F	188.1			F	276.1		
N Liberty St & Grace Dr	EB	B	20.0	C	21.8	B	17.6	E	76.6
	WB	B	12.1			B	12.3		
	NB	D	39.4			F	125.4		
	SB	B	15.7			D	54.5		
Liberty Rd & Bennett Pkwy	WB	F	90.0	B	10.8	F	563.9	E	39.4
	NB	A	0.0			A	0.0		
	SB	A	0.5			A	1.2		
Liberty Rd & Murphy Pkwy	EB	F	50.3	A	6.4	F	302.3	D	27.5
	NB	A	2.7			A	3.2		
	SB	A	0.0			A	0.0		

As can be seen by the LOS results above, particularly during the DY PM Peak, 50% of the project area intersections are outside the target LOS. This suggests that the roadway and associated intersections may not be designed with enough excess capacity to handle even the background growth of the roadway network.



The existing CSX rail grade crossing at Powell Rd (SR 750) just west of Depot St has a significant impact on congestion in the study area. This crossing was analyzed using Synchro 12 modeling to gauge the LOS, delay, and queues generated along Powell Rd due to a single train incident. There is conflicting information related to the number of trains per day using the Powell Rd (SR 750) crossing. Per the Ohio Rail Development Commission (ORDC) GIS Map, this crossing experiences 21-30 trains per day. Per the Ohio Railroad Information System (ORIS), the total number of trains utilizing the active crossing (US DOT 228650P) during the day/night/switching is 2, 3, and 4 respectively. In addition, the website indicates there is an inactive crossing (US DOT 481480P) with a total of 12-day and 15-night trains. For the purposes of this analysis, train speeds through this crossing are assumed to be 25 MPH.

It was assumed that one train crosses Powell Rd (SR 750) during each of the peak hours during the OY and DY to provide analysis for the “worst case scenario”. The length of train is assumed to be 7,200 ft, which is based on a combination of average train lengths found during research and engineering judgement. This suggests that it takes approximately 200 seconds (3.3 minutes) for a train to clear the gates at this crossing. Please note that due to the cycle length limitations of Synchro 12, the average delay and 95th percentile queue values had to be doubled to account for the peak hour results.

Tables 5 and 6 show the LOS, corresponding delays, and the 95th percentile queues along Powell Rd (SR 750) at the railroad crossing during the AM and PM peak hours for 2030 OY and 2050 DY, respectively.

Table 5: 2030 OY AM/PM Peak Delay, LOS, 95% Queues at Railroad Crossing – Existing Configuration

Intersection	2030						
	Approach/ Movement	AM Peak			PM Peak		
		95th% Queue	LOS	Delay	95th% Queue	LOS	Delay
Powell Rd & CSX Tracks	EB	1080'	C	23.2	1472'	C	27.4
	WB	1140'	D	35.8	1500'	D	41.0

Table 6: 2050 DY AM/PM Peak Delay, LOS, 95% Queues at Railroad Crossing – Existing Configuration

Intersection	2050						
	Approach/ Movement	AM Peak			PM Peak		
		95th% Queue	LOS	Delay	95th% Queue	LOS	Delay
Powell Rd & CSX Tracks	EB	1538'	C	28.2	2208'	D	35.6
	WB	1614'	D	42.0	2586'	D	51.4

As can be seen from the analysis, the 95th percentile queues due to train events extend well beyond adjacent signalized intersections along Powell Rd (SR 750) for both the 2030 OY and 2050 DY.



NEXT STEPS

Phase 2 will take the *Existing Conditions Traffic Analysis* and expand it to a comprehensive traffic study. This study builds off the existing conditions analysis completed as part of Phase 1 with the ultimate goal being to identify the traffic related impacts associated with the Village Green development.

Estimates for the number of trips generated by the Village Green development will be calculated using information from the 11th Edition of the Institute of Transportation Engineers (ITE) Trip Generation Manual. These trips will be distributed throughout the project corridor using distribution methods consistent with existing traffic patterns in conjunction with engineering judgement based on anticipated origin and destinations of the users. This process will be completed in collaboration with all key stakeholders and include preliminary warrant and capacity related calculations to establish potential impacts prior to selecting a preferred alternative for the final build condition of the Village Green development.

Phase 2 will also include consideration for potential congestion mitigation efforts associated with modal splits (vehicular trips to public transit/pedestrians/bicyclists) as well as alternative routing. The Synchro models will be updated to reflect the preferred alternative build conditions including all trip adjustments and improvements to traffic control and roadway geometry identified as part of the traffic study. This will allow us to provide a comparison between the 'No-Build' and 'Build' conditions for both the 2030 OY and 2050 DY.



APPENDIX A: Traffic Data



Traffic Count Data

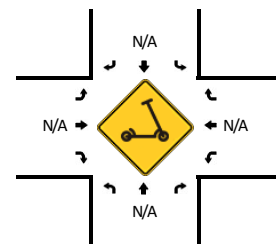
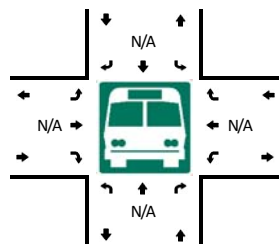
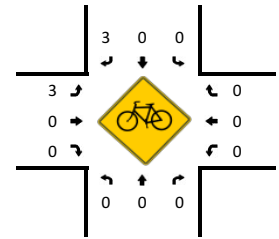
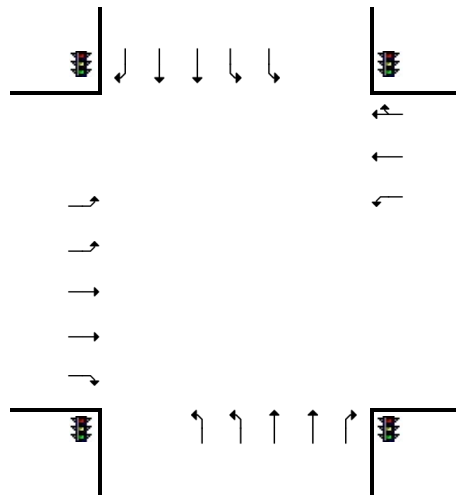
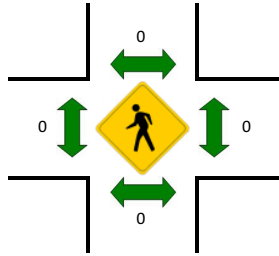
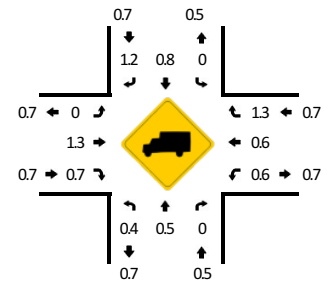
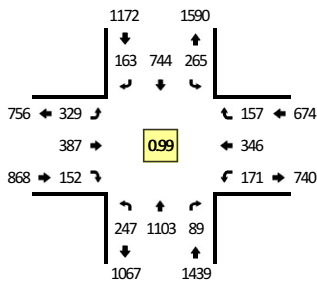
LOCATION: Sawmill Pkwy -- Powell Rd

CITY/STATE: Powell, OH

QC JOB #: 16915301

DATE: Tue, May 6 2025

Peak-Hour: 4:45 PM -- 5:45 PM
Peak 15-Min: 4:45 PM -- 5:00 PM



15-Min Count Period Beginning At	Sawmill Pkwy (Northbound)				Sawmill Pkwy (Southbound)				Powell Rd (Eastbound)				Powell Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:00 AM	3	33	1	1	9	78	7	0	6	5	19	0	7	13	4	0	186	
6:15 AM	14	57	6	0	6	107	12	0	2	14	13	0	4	14	9	0	258	
6:30 AM	10	69	11	0	14	128	15	0	7	19	9	0	5	14	11	0	312	
6:45 AM	23	117	10	0	6	158	18	0	27	29	19	0	13	28	13	0	461	1217
7:00 AM	23	113	12	0	16	206	25	0	38	33	27	0	12	22	21	0	548	1579
7:15 AM	18	88	15	0	45	214	29	0	28	54	22	0	9	33	17	0	572	1893
7:30 AM	22	134	12	0	28	221	33	0	37	55	25	0	17	41	10	0	635	2216
7:45 AM	19	156	18	0	44	238	47	0	45	68	24	0	15	60	22	0	756	2511
8:00 AM	39	137	23	0	37	203	48	0	28	63	43	0	28	42	17	0	708	2671
8:15 AM	39	121	25	0	61	241	41	0	38	77	39	0	28	62	21	0	793	2892
8:30 AM	53	154	19	0	46	195	43	0	46	62	32	0	26	43	33	0	752	3009
8:45 AM	28	125	16	0	51	204	51	0	33	64	25	0	22	61	15	0	695	2948
9:00 AM	41	120	23	0	53	183	38	0	48	73	37	0	22	57	26	0	721	2961
9:15 AM	30	95	18	0	42	192	31	0	40	73	40	0	26	67	16	0	670	2838
9:30 AM	35	98	15	0	32	179	23	0	33	69	34	0	22	47	24	0	611	2697
9:45 AM	47	115	20	0	43	168	22	0	36	74	32	0	35	54	13	0	659	2661
10:00 AM	43	97	24	0	37	137	21	0	39	54	34	0	29	54	15	0	584	2524
10:15 AM	44	117	18	0	42	153	21	0	34	58	35	0	23	49	13	0	607	2461
10:30 AM	43	126	18	0	46	136	21	0	34	57	37	0	34	64	30	0	646	2496
10:45 AM	43	111	26	0	44	151	26	0	45	74	33	0	38	56	27	0	674	2511
11:00 AM	35	113	21	0	35	148	24	0	36	68	35	0	35	66	22	0	638	2565
11:15 AM	65	119	21	0	44	160	28	0	51	78	49	0	38	68	19	0	740	2698
11:30 AM	57	116	22	0	37	163	28	0	69	77	46	0	43	75	21	0	754	2806
11:45 AM	47	132	27	0	45	164	38	0	60	70	59	0	34	64	22	0	762	2894
12:00 PM	52	129	23	0	35	158	44	0	67	65	39	0	50	79	26	0	767	3023
12:15 PM	38	126	27	0	52	167	36	0	54	81	37	0	46	82	20	0	766	3049
12:30 PM	59	163	32	0	37	146	35	0	78	77	47	0	47	74	28	0	823	3118
12:45 PM	45	135	16	0	50	138	33	0	61	74	58	0	43	66	13	0	732	3088
1:00 PM	57	143	24	0	53	142	31	0	55	85	50	0	49	69	27	0	785	3106
1:15 PM	55	126	26	1	36	134	32	0	47	61	66	0	38	79	26	0	727	3067
1:30 PM	53	136	22	0	37	120	27	0	59	59	50	0	35	71	18	0	687	2931
1:45 PM	50	144	32	0	48	143	26	0	60	57	32	0	52	70	19	0	733	2932
2:00 PM	26	146	23	0	47	133	26	0	45	68	38	0	53	60	22	0	687	2834
2:15 PM	44	155	25	0	45	144	25	0	40	68	36	0	39	62	21	0	704	2811
2:30 PM	54	161	23	0	36	101	33	0	49	57	32	0	45	60	34	0	685	2809
2:45 PM	42	151	22	0	71	198	49	0	55	59	41	0	36	59	21	0	804	2880
3:00 PM	44	154	33	0	41	175	35	0	69	69	62	0	43	69	32	0	826	3019
3:15 PM	43	198	21	0	37	155	30	0	52	58	43	0	37	66	26	0	766	3081

15-Min Count Period Beginning At	Sawmill Pkwy (Northbound)				Sawmill Pkwy (Southbound)				Powell Rd (Eastbound)				Powell Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:30 PM	63	191	24	0	63	175	35	0	77	77	54	0	50	77	40	0	926	3322
3:45 PM	52	184	19	0	62	180	35	0	58	88	30	0	42	67	31	0	848	3366
4:00 PM	50	228	19	0	51	189	33	0	69	94	39	0	43	75	48	0	938	3478
4:15 PM	48	238	17	0	70	191	44	0	65	69	49	0	39	82	33	0	945	3657
4:30 PM	62	262	11	0	45	172	45	0	71	88	41	0	44	94	35	0	970	3701
4:45 PM	72	274	18	0	86	205	42	0	73	84	45	0	34	84	35	0	1052	3905
5:00 PM	50	277	23	0	45	189	27	0	85	104	45	0	55	97	40	0	1037	4004
5:15 PM	68	292	22	0	58	183	52	1	89	102	30	0	36	72	38	0	1043	4102
5:30 PM	57	260	26	0	75	167	42	0	82	97	32	0	46	93	44	0	1021	4153
5:45 PM	63	261	20	0	67	217	29	0	96	78	45	0	38	76	29	0	1019	4120
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	288	1096	72	0	344	820	168	0	292	336	180	0	136	336	140	0	4208	
Heavy Trucks	0	12	0		0	12	0		0	4	0		4	0	4		36	
Buses																		
Pedestrians		0				0				0				0			0	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Scooters																		
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SOURCE: Quality Counts, LLC (<http://www.qualitycounts.net>) 1-877-580-2212

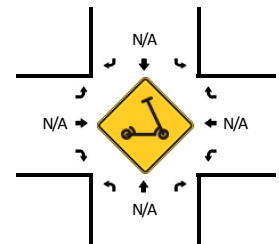
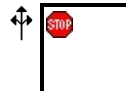
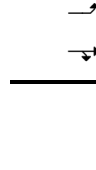
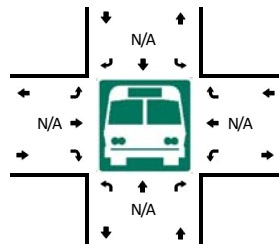
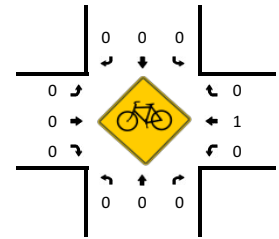
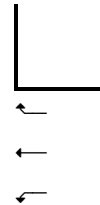
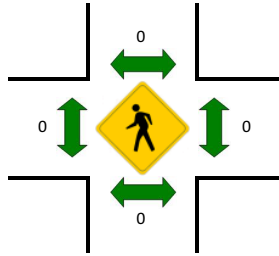
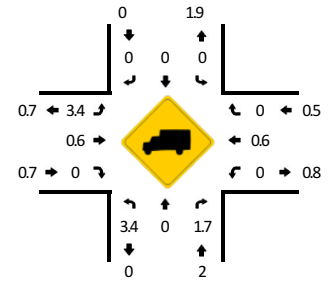
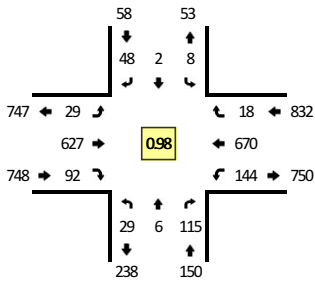
LOCATION: Sawmill Rd -- Powell Rd

CITY/STATE: Powell, OH

QC JOB #: 16915302

DATE: Tue, May 6 2025

Peak-Hour: 4:45 PM -- 5:45 PM
Peak 15-Min: 4:45 PM -- 5:00 PM



15-Min Count Period Beginning At	Sawmill Rd (Northbound)				Sawmill Rd (Southbound)				Powell Rd (Eastbound)				Powell Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:00 AM	5	0	7	0	0	0	1	0	0	15	2	0	8	17	0	0	55	
6:15 AM	5	1	8	0	0	2	1	0	4	21	0	0	7	26	4	0	79	
6:30 AM	5	0	9	0	1	0	2	0	1	38	3	0	9	28	1	0	97	
6:45 AM	10	1	9	0	0	0	0	0	3	39	3	0	14	53	1	0	133	364
7:00 AM	14	1	20	0	0	1	3	0	1	51	4	0	17	58	2	0	172	481
7:15 AM	9	0	24	0	3	1	3	0	0	96	10	0	8	45	2	0	201	603
7:30 AM	13	0	16	0	0	0	1	0	0	83	11	0	22	70	3	0	219	725
7:45 AM	18	0	21	0	0	0	3	0	4	106	8	0	31	93	4	0	288	880
8:00 AM	8	1	24	0	0	3	2	0	2	107	8	0	27	84	1	0	267	975
8:15 AM	5	0	28	0	1	2	0	0	3	126	30	0	36	104	1	0	336	1110
8:30 AM	19	0	19	0	0	0	1	0	1	101	18	0	30	104	1	0	294	1185
8:45 AM	17	0	32	0	1	0	1	0	5	98	23	0	27	87	2	0	293	1190
9:00 AM	9	2	32	0	1	2	8	0	7	119	17	0	24	106	3	0	330	1253
9:15 AM	6	2	23	0	1	2	2	0	13	108	9	0	25	102	1	0	294	1211
9:30 AM	4	4	34	0	0	1	3	0	7	96	8	0	26	97	4	0	284	1201
9:45 AM	9	1	32	0	0	0	3	0	7	115	12	0	30	92	6	0	307	1215
10:00 AM	13	0	22	0	2	1	7	0	6	95	14	0	13	84	7	0	264	1149
10:15 AM	6	1	24	0	0	1	5	0	8	85	10	0	27	79	3	0	249	1104
10:30 AM	8	3	20	0	1	0	7	0	5	118	14	0	32	127	6	0	341	1161
10:45 AM	6	0	14	0	3	1	3	0	5	112	21	0	35	106	1	0	307	1161
11:00 AM	7	1	19	0	6	1	16	0	4	108	7	0	25	114	3	0	311	1208
11:15 AM	6	1	35	0	2	0	13	0	2	122	14	0	21	116	5	0	337	1296
11:30 AM	6	0	31	0	1	2	6	0	6	131	11	0	27	124	4	0	349	1304
11:45 AM	6	0	23	0	2	1	4	0	2	113	16	0	35	125	0	0	327	1324
12:00 PM	6	0	23	0	0	3	4	0	4	110	13	0	38	148	7	0	356	1369
12:15 PM	9	0	38	0	2	1	11	0	4	133	12	0	21	139	1	0	371	1403
12:30 PM	6	0	40	0	0	2	8	0	6	122	13	0	36	134	0	0	367	1421
12:45 PM	8	0	24	0	3	1	5	0	9	131	9	0	32	111	2	0	335	1429
1:00 PM	9	0	28	0	3	0	6	0	7	135	23	0	28	138	7	0	384	1457
1:15 PM	11	0	27	0	0	1	7	0	3	107	17	0	24	124	4	0	325	1411
1:30 PM	6	0	25	0	0	0	5	0	2	102	14	0	21	111	4	0	290	1334
1:45 PM	6	0	27	0	1	2	3	0	2	113	16	0	31	134	2	0	337	1336
2:00 PM	8	0	23	0	4	3	11	0	9	112	14	0	23	110	1	0	318	1270
2:15 PM	5	2	33	0	4	1	6	0	4	114	23	0	23	124	1	0	340	1285
2:30 PM	10	0	26	0	0	0	3	0	7	101	6	0	29	126	4	0	312	1307
2:45 PM	5	1	30	0	2	0	8	0	5	121	25	0	34	101	2	0	334	1304
3:00 PM	4	2	26	0	0	1	9	0	5	114	13	0	31	142	1	0	348	1334
3:15 PM	7	2	27	0	1	2	3	0	4	92	20	0	30	117	5	0	310	1304

15-Min Count Period Beginning At	Sawmill Rd (Northbound)				Sawmill Rd (Southbound)				Powell Rd (Eastbound)				Powell Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:30 PM	14	0	23	0	1	1	5	0	7	137	18	0	21	156	2	0	385	1377
3:45 PM	7	2	29	0	0	0	2	0	12	141	18	0	21	136	6	0	374	1417
4:00 PM	9	1	31	0	2	2	13	0	9	119	21	0	35	152	2	0	396	1465
4:15 PM	4	0	38	0	1	1	1	0	8	132	21	0	31	186	3	0	426	1581
4:30 PM	8	1	33	0	2	3	7	0	1	101	20	0	33	148	5	0	362	1558
4:45 PM	7	3	35	0	1	0	8	0	11	152	23	0	42	170	5	0	457	1641
5:00 PM	8	1	29	0	4	1	16	0	3	155	17	0	41	174	3	0	452	1697
5:15 PM	1	2	27	0	0	0	11	0	8	166	22	0	31	171	8	0	447	1718
5:30 PM	13	0	24	0	3	1	13	0	7	154	30	0	30	155	2	0	432	1788
5:45 PM	7	0	22	0	0	2	9	0	12	132	20	0	38	163	5	0	410	1741
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	28	12	140	0	4	0	32	0	44	608	92	0	168	680	20	0	1828	
Heavy Trucks	4	0	8		0	0	0		0	4	0		0	4	0		20	
Buses																		
Pedestrians		0				0				0				0			0	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Scooters																		

Comments:

Report generated on 5/21/2025 12:48 PM

SOURCE: Quality Counts, LLC (<http://www.qualitycounts.net>) 1-877-580-2212

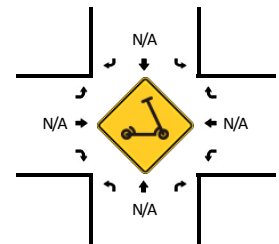
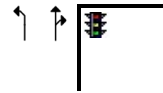
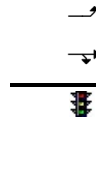
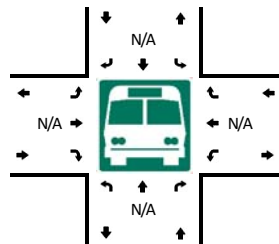
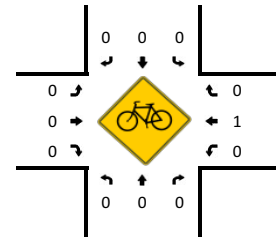
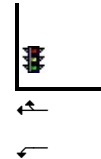
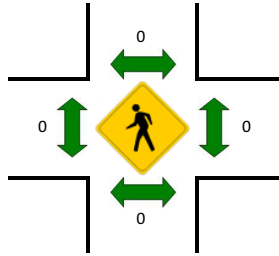
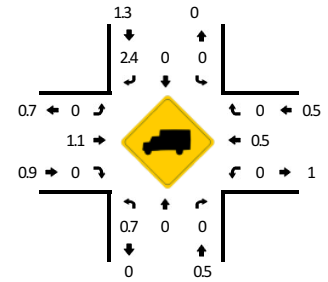
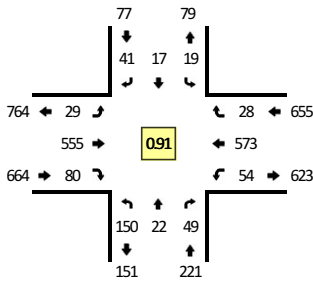
LOCATION: Murphy Pkwy -- Powell Rd

CITY/STATE: Powell, OH

QC JOB #: 16915303

DATE: Tue, May 6 2025

Peak-Hour: 4:45 PM -- 5:45 PM
Peak 15-Min: 5:00 PM -- 5:15 PM



15-Min Count Period Beginning At	Murphy Pkwy (Northbound)				Murphy Pkwy (Southbound)				Powell Rd (Eastbound)				Powell Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:00 AM	2	0	0	0	0	0	0	0	1	16	1	0	0	21	3	0	44	
6:15 AM	3	0	2	0	0	0	0	0	1	25	0	0	0	29	2	0	62	
6:30 AM	8	2	1	0	0	0	0	0	2	33	1	0	0	31	0	0	78	
6:45 AM	18	2	5	0	2	1	1	0	2	48	2	0	4	56	5	0	146	330
7:00 AM	21	1	9	0	3	3	3	0	6	49	4	0	3	52	0	0	154	440
7:15 AM	8	1	9	0	5	0	1	0	6	91	11	0	2	54	2	0	190	568
7:30 AM	13	1	19	0	2	0	3	0	4	76	12	0	8	75	1	0	214	704
7:45 AM	33	1	12	0	0	0	1	0	10	87	7	0	7	92	3	0	253	811
8:00 AM	17	4	5	0	1	5	8	0	13	93	12	0	8	90	0	0	256	913
8:15 AM	15	5	13	0	3	7	7	0	12	107	21	0	8	119	1	0	318	1041
8:30 AM	22	1	9	0	0	4	7	0	7	101	19	0	2	101	2	0	275	1102
8:45 AM	26	1	16	0	1	0	1	0	3	108	11	0	7	92	1	0	267	1116
9:00 AM	19	1	13	0	1	1	4	0	7	109	20	0	5	102	4	0	286	1146
9:15 AM	16	0	7	0	1	2	0	0	7	94	19	0	7	109	1	0	263	1091
9:30 AM	18	2	12	0	3	2	3	0	9	131	9	0	7	104	5	0	305	1121
9:45 AM	6	1	11	0	0	0	3	0	8	121	10	0	5	121	1	0	287	1141
10:00 AM	11	1	8	0	0	1	3	0	4	105	3	0	6	82	2	0	226	1081
10:15 AM	14	3	6	0	2	0	2	0	3	100	8	0	5	102	4	0	249	1067
10:30 AM	26	1	6	0	0	0	4	0	7	114	6	0	5	116	4	0	289	1051
10:45 AM	17	3	9	0	2	0	6	0	3	111	13	0	7	118	2	0	291	1055
11:00 AM	12	0	8	0	2	2	9	0	6	112	10	0	7	108	2	0	278	1107
11:15 AM	19	1	8	0	1	3	3	0	7	132	17	0	4	115	4	0	314	1172
11:30 AM	9	0	8	0	2	2	7	0	5	130	14	0	12	126	1	0	316	1199
11:45 AM	21	2	14	0	3	0	5	0	7	120	11	0	8	127	2	0	320	1228
12:00 PM	25	1	12	0	4	1	2	0	5	106	13	1	7	148	1	0	326	1276
12:15 PM	17	3	11	0	1	1	4	0	6	142	13	0	10	151	1	0	360	1322
12:30 PM	21	2	10	0	5	3	3	0	9	159	21	1	5	150	5	0	394	1400
12:45 PM	14	0	9	0	0	1	1	0	9	115	13	0	10	127	4	0	303	1383
1:00 PM	17	3	7	0	4	0	8	0	5	144	18	0	6	134	1	0	347	1404
1:15 PM	11	1	9	0	3	1	5	0	4	101	17	0	8	140	0	0	300	1344
1:30 PM	12	1	7	0	7	2	5	0	10	111	11	0	9	109	3	0	287	1237
1:45 PM	14	6	8	0	3	3	6	0	11	113	22	0	3	139	0	0	328	1262
2:00 PM	22	0	6	0	0	0	6	0	4	121	17	0	8	107	2	0	293	1208
2:15 PM	21	2	7	0	3	1	6	0	9	120	21	0	5	120	3	0	318	1226
2:30 PM	19	4	5	0	1	2	5	0	5	104	13	0	8	130	2	0	298	1237
2:45 PM	21	6	11	0	4	4	9	0	12	119	25	0	3	103	4	0	321	1230
3:00 PM	17	7	9	0	9	4	20	0	15	106	9	0	6	132	4	0	338	1275
3:15 PM	28	3	14	0	2	0	12	0	6	98	21	0	16	108	0	0	308	1265

15-Min Count Period Beginning At	Murphy Pkwy (Northbound)				Murphy Pkwy (Southbound)				Powell Rd (Eastbound)				Powell Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:30 PM	29	2	9	0	4	1	7	0	9	120	24	0	12	147	1	0	365	1332
3:45 PM	32	3	13	0	4	5	8	0	11	139	19	0	11	116	1	0	362	1373
4:00 PM	32	5	11	0	3	3	17	0	4	123	16	0	9	150	1	0	374	1409
4:15 PM	54	3	12	0	3	1	8	0	11	123	16	0	12	142	2	0	387	1488
4:30 PM	31	2	10	0	3	2	8	0	9	113	23	0	12	148	2	0	363	1486
4:45 PM	38	4	12	0	5	2	10	0	14	125	21	0	15	140	8	0	394	1518
5:00 PM	36	7	14	0	5	11	15	0	7	162	17	0	10	152	6	0	442	1586
5:15 PM	46	7	13	0	6	2	8	0	4	118	21	0	13	135	10	0	383	1582
5:30 PM	30	4	10	0	3	2	8	0	4	150	21	0	16	146	4	0	398	1617
5:45 PM	43	13	3	0	4	4	7	0	3	113	25	0	10	148	5	0	378	1601
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	144	28	56	0	20	44	60	0	28	648	68	0	40	608	24	0	1768	
Heavy Trucks	0	0	0		0	0	0		0	4	0		0	0	0		4	
Buses																		
Pedestrians		0				0				0				0			0	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Scooters																		
<i>Comments:</i>																		

Report generated on 5/21/2025 12:48 PM

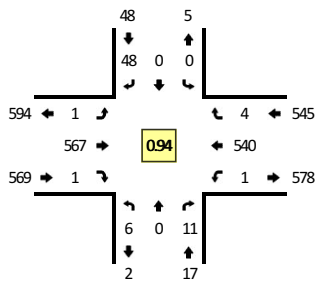
SOURCE: Quality Counts, LLC (<http://www.qualitycounts.net>) 1-877-580-2212

LOCATION: Depot St -- Powell Rd

CITY/STATE: Powell, OH

QC JOB #: 16915304

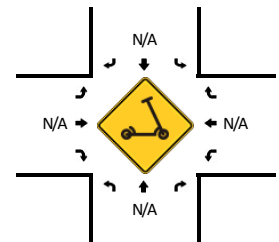
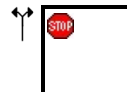
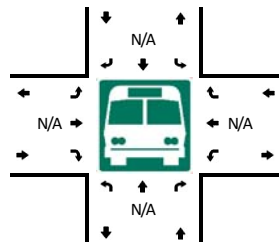
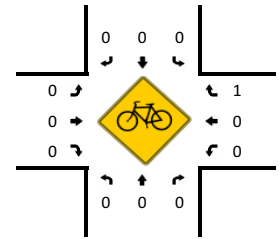
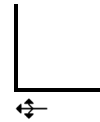
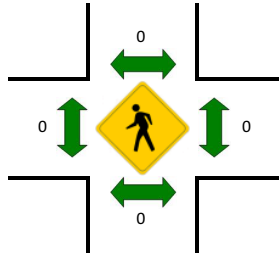
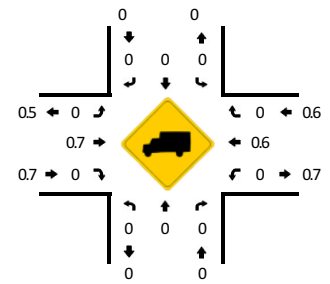
DATE: Tue, May 6 2025



Peak-Hour: 5:00 PM -- 6:00 PM
Peak 15-Min: 5:00 PM -- 5:15 PM



TRUE DATA TO IMPROVE MOBILITY



15-Min Count Period Beginning At	Depot St (Northbound)				Depot St (Southbound)				Powell Rd (Eastbound)				Powell Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:00 AM	0	0	1	0	0	1	1	0	0	17	2	0	1	23	2	0	48	291 361 462 570 658 743 825 847 876 907 879 909 926 897 904 912 900 926 956 995 1024 1076 1122 1135 1120 1109 1090 1032 1033 1019 996 1000 986 998 984
6:15 AM	0	0	0	0	0	0	1	0	0	27	1	0	0	27	0	0	56	
6:30 AM	0	0	1	0	0	0	2	0	0	35	0	0	0	36	0	0	74	
6:45 AM	0	0	0	0	0	0	3	0	0	50	1	0	0	59	0	0	113	
7:00 AM	1	0	0	0	0	0	1	0	0	64	0	0	0	52	0	0	118	
7:15 AM	1	0	1	0	0	0	6	0	0	98	0	0	0	50	1	0	157	
7:30 AM	0	0	1	0	0	0	3	0	0	102	0	0	1	74	1	0	182	
7:45 AM	0	0	0	0	0	0	7	0	0	87	4	0	1	102	0	0	201	
8:00 AM	0	0	0	0	0	1	11	0	0	102	3	0	0	82	4	0	203	
8:15 AM	0	0	1	0	0	0	10	0	0	108	2	0	0	118	0	0	239	
8:30 AM	0	0	0	0	0	0	6	0	0	100	1	0	0	95	2	0	204	
8:45 AM	1	0	2	0	0	0	3	0	0	115	1	0	0	107	1	0	230	
9:00 AM	0	0	1	0	0	0	4	0	0	108	3	0	1	114	3	0	234	
9:15 AM	0	0	1	0	0	0	6	0	0	86	0	0	0	118	0	0	211	
9:30 AM	0	0	2	0	0	0	5	0	0	122	1	0	0	103	1	0	234	
9:45 AM	0	0	0	0	0	0	9	0	0	109	2	0	1	126	0	0	247	
10:00 AM	0	0	1	0	0	0	3	0	0	111	0	0	2	87	1	0	205	
10:15 AM	0	0	3	0	0	0	13	0	0	99	0	0	0	102	1	0	218	
10:30 AM	1	0	4	0	0	0	11	0	0	116	1	0	1	106	2	0	242	
10:45 AM	0	0	1	0	0	0	5	0	0	106	2	0	0	121	0	0	235	
11:00 AM	0	0	0	0	0	0	8	0	0	116	0	0	0	106	1	0	231	
11:15 AM	1	0	0	0	0	0	4	0	0	124	0	0	0	119	0	0	248	
11:30 AM	2	0	1	0	0	0	6	0	0	143	4	0	0	124	1	0	281	
11:45 AM	1	0	4	0	0	0	6	0	0	123	0	0	2	128	0	0	264	
12:00 PM	3	0	4	0	0	0	5	0	0	122	1	0	0	145	3	0	283	
12:15 PM	1	0	1	0	0	0	8	0	0	143	3	0	0	138	0	0	294	
12:30 PM	0	0	0	0	0	0	8	0	0	143	3	0	2	136	2	0	294	
12:45 PM	1	0	2	0	0	0	12	0	0	119	2	0	1	112	0	0	249	
1:00 PM	2	0	1	0	0	0	8	0	0	149	1	0	1	110	0	0	272	
1:15 PM	2	0	2	0	0	0	13	0	0	118	0	0	1	139	0	0	275	
1:30 PM	0	0	0	0	0	0	5	0	0	114	3	0	1	112	1	0	236	
1:45 PM	0	0	1	0	0	0	8	0	0	116	2	0	0	121	2	0	250	
2:00 PM	0	0	1	0	0	0	8	0	0	132	0	0	0	117	0	0	258	
2:15 PM	0	0	0	0	0	0	8	0	0	122	0	0	1	117	4	0	252	
2:30 PM	3	0	3	0	0	0	6	0	0	113	1	0	0	114	0	0	240	
2:45 PM	0	0	1	0	0	0	5	0	0	123	1	0	0	102	4	0	236	
3:00 PM	1	0	2	0	0	0	6	0	0	130	0	0	0	130	1	0	270	
3:15 PM	1	0	2	0	0	0	7	0	0	108	1	0	1	117	1	0	238	

15-Min Count Period Beginning At	Depot St (Northbound)				Depot St (Southbound)				Powell Rd (Eastbound)				Powell Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:30 PM	0	0	1	0	0	0	8	0	0	130	1	0	0	140	0	0	280	1024
3:45 PM	0	0	0	0	0	0	8	0	0	126	0	0	1	116	1	0	252	1040
4:00 PM	4	0	1	0	0	0	15	0	1	152	0	0	0	116	2	0	291	1061
4:15 PM	2	0	6	0	0	0	7	0	0	122	0	0	0	149	0	0	286	1109
4:30 PM	2	0	0	0	0	0	9	0	1	125	2	0	0	137	0	0	276	1105
4:45 PM	1	0	0	0	0	0	11	0	0	117	1	0	0	143	0	0	273	1126
5:00 PM	4	0	4	0	0	0	13	0	0	153	0	0	0	138	2	0	314	1149
5:15 PM	1	0	3	0	0	0	12	0	0	130	0	0	0	140	0	0	286	1149
5:30 PM	1	0	3	0	0	0	13	0	0	143	1	0	0	130	0	0	291	1164
5:45 PM	0	0	1	0	0	0	10	0	1	141	0	0	1	132	2	0	288	1179
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	16	0	16	0	0	0	52	0	0	612	0	0	0	552	8	0	1256	
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	0	0		0	
Buses																		
Pedestrians		0				0				0				0			0	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Scooters																		
<i>Comments:</i>																		

Report generated on 5/21/2025 12:48 PM

SOURCE: Quality Counts, LLC (<http://www.qualitycounts.net>) 1-877-580-2212

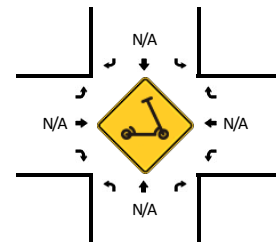
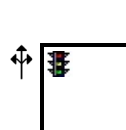
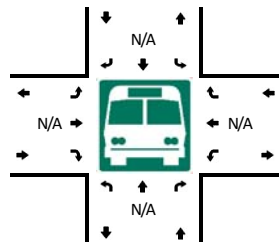
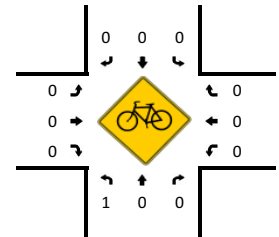
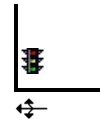
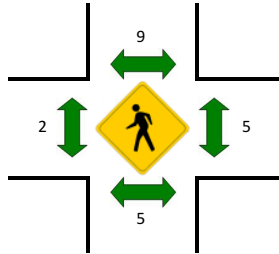
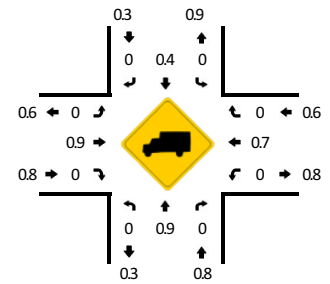
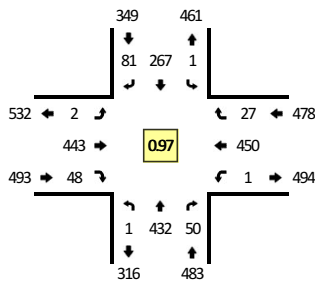
LOCATION: Liberty St -- Powell Rd

CITY/STATE: Powell, OH

QC JOB #: 16915305

DATE: Tue, May 6 2025

Peak-Hour: 4:45 PM -- 5:45 PM
Peak 15-Min: 5:00 PM -- 5:15 PM



15-Min Count Period Beginning At	Liberty St (Northbound)				Liberty St (Southbound)				Powell Rd (Eastbound)				Powell Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:00 AM	0	4	0	0	4	4	2	0	0	15	0	0	0	24	0	0	53	
6:15 AM	1	7	2	0	0	6	4	0	0	22	2	0	1	23	1	0	69	
6:30 AM	2	16	3	0	1	13	2	0	2	33	2	0	1	28	1	0	104	
6:45 AM	0	41	3	0	1	14	7	0	0	43	3	0	1	49	1	0	163	389
7:00 AM	1	44	4	0	0	30	5	0	0	51	1	0	0	38	3	0	177	513
7:15 AM	0	43	2	0	0	65	9	0	0	88	2	0	0	45	8	0	262	706
7:30 AM	0	68	6	0	1	77	10	0	1	76	3	0	0	61	7	0	310	912
7:45 AM	0	68	8	0	0	102	9	0	0	74	11	0	0	92	10	0	374	1123
8:00 AM	0	50	5	0	0	82	8	0	0	89	9	0	0	71	9	0	323	1269
8:15 AM	0	54	9	0	0	78	23	0	1	74	17	0	0	87	2	0	345	1352
8:30 AM	0	46	6	0	0	68	14	0	1	85	12	0	0	79	11	0	322	1364
8:45 AM	0	58	7	0	0	59	8	0	0	91	12	0	0	90	9	0	334	1324
9:00 AM	0	59	13	0	0	60	17	0	0	84	10	0	0	92	8	0	343	1344
9:15 AM	0	31	8	0	0	39	20	0	0	71	13	0	0	83	9	0	274	1273
9:30 AM	0	48	11	0	0	38	18	0	0	90	13	0	0	81	5	0	304	1255
9:45 AM	0	50	6	0	0	47	21	0	0	92	13	0	0	99	4	0	332	1253
10:00 AM	0	51	9	0	0	41	15	0	0	82	15	0	0	71	6	0	290	1200
10:15 AM	1	35	3	0	0	40	23	0	0	87	15	0	0	87	11	0	302	1228
10:30 AM	0	27	4	0	3	32	12	0	0	101	15	0	1	90	4	0	289	1213
10:45 AM	0	37	6	0	0	42	26	0	0	81	11	0	1	93	4	0	301	1182
11:00 AM	0	46	12	0	0	36	21	0	1	102	11	0	0	84	12	0	325	1217
11:15 AM	0	47	8	0	0	37	23	0	0	100	12	0	2	88	8	0	325	1240
11:30 AM	0	42	13	0	1	52	24	0	1	109	13	0	1	97	9	0	362	1313
11:45 AM	0	41	8	0	2	40	21	0	0	106	14	0	1	110	9	0	352	1364
12:00 PM	1	36	7	0	1	41	24	0	1	105	14	0	1	122	12	0	365	1404
12:15 PM	0	52	16	0	1	39	27	0	0	123	16	0	0	110	10	0	394	1473
12:30 PM	0	41	14	0	0	41	17	0	0	102	21	0	0	120	10	0	366	1477
12:45 PM	1	40	14	0	0	55	18	0	1	110	13	0	0	93	9	0	354	1479
1:00 PM	0	42	14	0	1	62	22	0	0	127	12	0	0	89	14	0	383	1497
1:15 PM	1	41	10	0	1	34	26	0	0	100	16	0	0	108	8	0	345	1448
1:30 PM	0	44	5	0	0	36	19	0	0	82	21	0	0	88	13	0	308	1390
1:45 PM	1	50	11	0	0	35	18	0	0	95	15	0	0	101	12	0	338	1374
2:00 PM	2	52	10	0	1	41	18	0	0	114	8	0	0	89	4	0	339	1330
2:15 PM	1	48	8	0	1	35	18	0	0	114	16	0	0	96	12	0	349	1334
2:30 PM	0	51	13	0	1	51	17	0	0	91	11	0	0	95	12	0	342	1368
2:45 PM	1	49	11	0	0	58	15	0	0	105	10	0	1	92	9	0	351	1381
3:00 PM	0	60	21	0	2	55	19	0	0	111	14	0	0	103	5	0	390	1432
3:15 PM	0	67	9	0	1	44	24	0	0	81	13	0	0	99	7	0	345	1428

15-Min Count Period Beginning At	Liberty St (Northbound)				Liberty St (Southbound)				Powell Rd (Eastbound)				Powell Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:30 PM	0	76	15	2	0	47	20	0	0	115	9	0	0	114	7	0	405	1491
3:45 PM	1	89	20	0	0	53	18	0	2	108	12	0	0	95	8	0	406	1546
4:00 PM	0	100	10	0	0	79	25	0	0	124	20	0	0	90	8	0	456	1612
4:15 PM	1	106	10	0	0	52	18	0	0	111	12	0	0	130	4	0	444	1711
4:30 PM	0	99	13	0	0	78	22	0	0	100	18	0	0	104	8	0	442	1748
4:45 PM	0	101	12	0	1	69	18	0	0	97	9	0	0	123	8	0	438	1780
5:00 PM	1	112	19	0	0	65	20	0	1	117	13	0	0	109	6	0	463	1787
5:15 PM	0	102	9	0	0	68	21	0	1	114	11	0	1	115	5	0	447	1790
5:30 PM	0	117	10	0	0	65	22	0	0	115	15	0	0	103	8	0	455	1803
5:45 PM	1	89	13	0	0	42	23	0	1	127	12	0	0	106	3	0	417	1782
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	4	448	76	0	0	260	80	0	4	468	52	0	0	436	24	0	1852	
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	0	0		0	
Buses																		
Pedestrians		0				16				0				0			16	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Scooters																		
<i>Comments:</i>																		

Report generated on 5/21/2025 12:48 PM

SOURCE: Quality Counts, LLC (<http://www.qualitycounts.net>) 1-877-580-2212

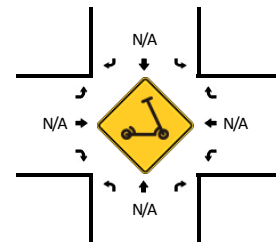
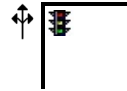
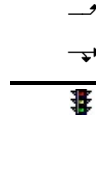
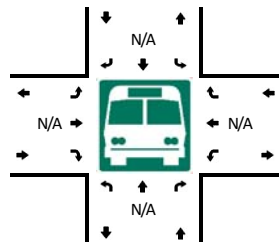
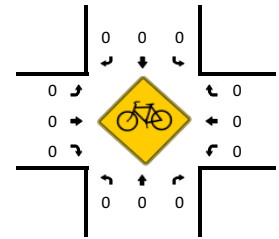
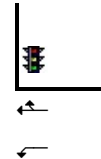
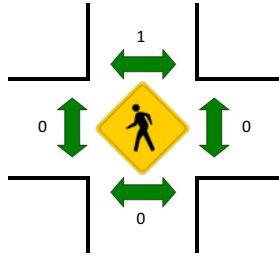
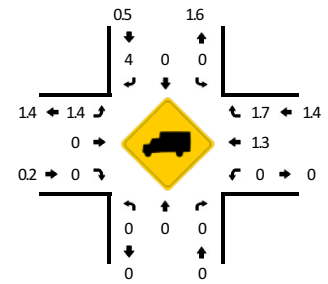
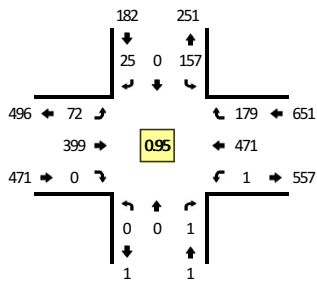
LOCATION: Grace Dr -- Powell Rd

CITY/STATE: Powell, OH

QC JOB #: 16915306

DATE: Tue, May 6 2025

Peak-Hour: 4:15 PM -- 5:15 PM
Peak 15-Min: 5:00 PM -- 5:15 PM



15-Min Count Period Beginning At	Grace Dr (Northbound)				Grace Dr (Southbound)				Powell Rd (Eastbound)				Powell Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:00 AM	0	0	0	0	13	0	0	0	1	19	0	0	0	24	9	0	66	
6:15 AM	0	0	0	0	15	0	0	0	2	22	0	0	0	25	4	0	68	
6:30 AM	0	0	0	0	38	0	0	0	0	32	0	0	0	31	9	0	110	
6:45 AM	0	0	0	0	32	0	2	0	3	46	0	0	0	47	17	0	147	391
7:00 AM	0	0	0	0	46	0	1	0	2	52	0	0	0	43	25	0	169	494
7:15 AM	0	0	0	0	52	0	2	0	5	81	0	0	0	49	39	0	228	654
7:30 AM	0	0	0	0	48	0	2	0	4	78	0	0	0	71	38	0	241	785
7:45 AM	0	0	0	0	39	0	4	0	7	79	0	0	0	92	67	0	288	926
8:00 AM	0	0	0	0	39	0	3	0	11	80	0	0	0	76	35	0	244	1001
8:15 AM	0	0	0	0	33	0	2	0	8	74	0	0	0	88	33	0	238	1011
8:30 AM	0	0	0	0	41	0	8	0	12	80	0	0	0	85	36	0	262	1032
8:45 AM	0	0	0	0	43	0	3	0	5	91	0	0	0	92	39	0	273	1017
9:00 AM	0	0	0	0	51	0	6	0	19	78	0	0	0	97	33	0	284	1057
9:15 AM	0	0	0	0	46	0	7	0	11	70	0	0	0	81	30	0	245	1064
9:30 AM	0	0	0	0	25	0	5	0	14	81	0	0	0	84	31	0	240	1042
9:45 AM	0	0	0	0	34	0	12	0	14	84	0	0	0	94	27	0	265	1034
10:00 AM	0	0	0	0	37	0	5	0	13	78	0	0	0	86	23	0	242	992
10:15 AM	0	0	0	0	42	0	10	0	13	67	0	0	0	79	26	0	237	984
10:30 AM	1	0	0	0	25	0	8	0	8	96	1	0	0	81	27	0	247	991
10:45 AM	0	0	0	0	40	0	12	0	12	69	0	0	0	95	29	0	257	983
11:00 AM	0	0	0	0	40	0	13	0	18	97	0	0	0	83	19	0	270	1011
11:15 AM	0	0	0	0	29	0	10	0	13	90	0	0	0	92	28	0	262	1036
11:30 AM	0	0	0	0	21	0	7	0	8	107	0	0	0	103	31	0	277	1066
11:45 AM	0	0	0	0	19	0	7	0	17	94	0	0	0	120	37	0	294	1103
12:00 PM	0	0	0	0	36	0	10	0	10	101	0	0	0	114	19	0	290	1123
12:15 PM	0	0	0	0	36	0	18	0	25	111	0	0	0	110	25	0	325	1186
12:30 PM	0	0	0	0	30	0	13	0	22	99	0	0	0	116	33	0	313	1222
12:45 PM	0	0	0	0	23	0	12	0	17	106	0	1	0	90	32	0	281	1209
1:00 PM	0	0	0	0	32	0	6	0	12	127	0	0	0	87	31	0	295	1214
1:15 PM	0	0	1	0	25	0	10	0	18	97	0	0	1	98	40	0	290	1179
1:30 PM	0	0	0	0	31	0	7	0	13	73	0	0	0	84	26	0	234	1100
1:45 PM	0	0	0	0	32	0	6	0	15	95	0	0	0	103	32	0	283	1102
2:00 PM	0	0	0	0	21	0	11	0	19	108	0	0	0	89	31	0	279	1086
2:15 PM	0	0	0	0	32	0	14	0	21	99	0	0	0	90	36	0	292	1088
2:30 PM	0	0	1	0	35	0	11	0	10	91	1	0	0	88	29	0	266	1120
2:45 PM	0	0	0	0	41	0	8	0	12	98	0	0	0	93	48	0	300	1137
3:00 PM	0	0	0	0	27	0	10	0	17	128	0	0	0	96	46	0	324	1182
3:15 PM	0	0	0	0	44	0	10	0	13	79	0	0	0	97	34	0	277	1167

15-Min Count Period Beginning At	Grace Dr (Northbound)				Grace Dr (Southbound)				Powell Rd (Eastbound)				Powell Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:30 PM	0	0	0	0	35	0	7	0	12	114	0	0	0	115	35	0	318	1219
3:45 PM	0	0	0	0	33	0	13	0	22	103	0	0	0	86	32	0	289	1208
4:00 PM	0	0	0	0	34	0	11	0	23	114	0	0	0	95	38	0	315	1199
4:15 PM	0	0	0	0	50	0	7	0	18	96	0	0	0	128	43	0	342	1264
4:30 PM	0	0	0	0	30	0	6	0	19	95	0	0	0	99	43	0	292	1238
4:45 PM	0	0	1	0	43	0	7	0	17	87	0	0	1	128	43	0	327	1276
5:00 PM	0	0	0	0	34	0	5	0	18	121	0	0	0	116	50	0	344	1305
5:15 PM	0	0	0	0	31	0	9	0	9	98	0	0	0	101	46	0	294	1257
5:30 PM	0	0	0	0	32	0	4	0	11	114	0	0	0	114	36	0	311	1276
5:45 PM	0	0	0	0	41	0	4	0	21	118	1	0	0	99	41	0	325	1274
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	0	0	0	136	0	20	0	72	484	0	0	0	464	200	0	1376	
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	0	0		0	
Buses																		
Pedestrians		0				0				0				0			0	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Scooters																		

Comments:

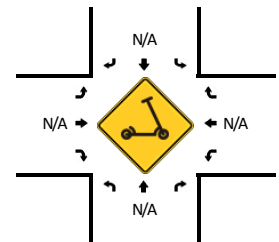
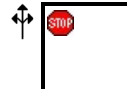
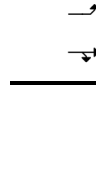
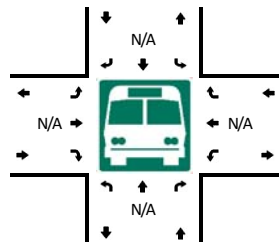
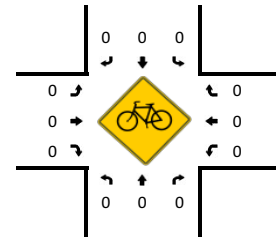
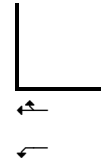
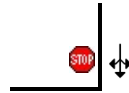
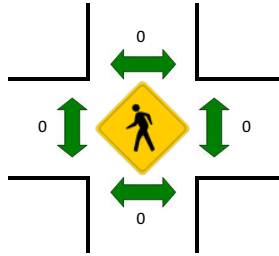
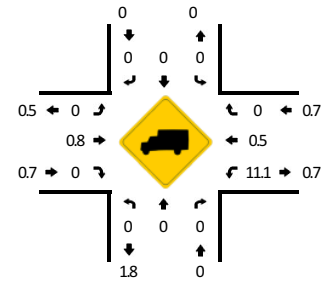
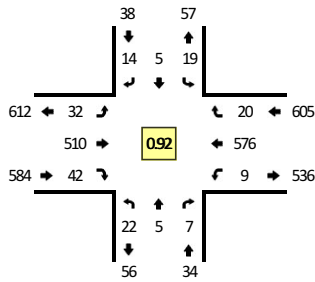
Report generated on 5/21/2025 12:48 PM

SOURCE: Quality Counts, LLC (<http://www.qualitycounts.net>) 1-877-580-2212

LOCATION: Bartholomew Blvd/Beech Ridge Dr -- Powell Rd
CITY/STATE: Powell, OH

QC JOB #: 16915307
DATE: Tue, May 6 2025

Peak-Hour: 5:00 PM -- 6:00 PM
 Peak 15-Min: 5:00 PM -- 5:15 PM



15-Min Count Period Beginning At	Bartholomew Blvd/Beech Ridge Dr (Northbound)				Bartholomew Blvd/Beech Ridge Dr (Southbound)				Powell Rd (Eastbound)				Powell Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:00 AM	2	0	0	0	3	0	3	0	1	31	0	0	0	32	0	0	72	
6:15 AM	0	0	0	0	4	0	2	0	0	36	1	0	0	27	1	0	71	
6:30 AM	2	0	2	0	5	0	3	0	2	68	0	0	1	44	0	0	127	
6:45 AM	6	0	2	0	4	0	1	0	1	80	1	0	0	57	2	0	154	424
7:00 AM	9	0	3	0	7	0	4	0	3	96	4	0	0	53	1	0	180	532
7:15 AM	9	0	3	0	7	0	7	0	3	135	3	0	0	70	1	0	238	699
7:30 AM	8	0	3	0	13	2	4	0	0	123	3	0	2	103	3	0	264	836
7:45 AM	13	3	3	0	6	1	3	0	3	110	1	0	1	145	2	0	291	973
8:00 AM	6	1	2	0	5	3	5	0	8	105	3	0	1	105	0	0	244	1037
8:15 AM	5	0	2	0	9	2	7	0	3	105	1	0	0	109	1	0	244	1043
8:30 AM	6	1	2	0	8	3	10	0	4	112	6	0	0	107	3	0	262	1041
8:45 AM	7	1	6	0	5	1	2	0	3	124	4	0	1	121	2	0	277	1027
9:00 AM	3	1	2	0	2	1	6	0	3	120	5	0	0	123	5	0	271	1054
9:15 AM	6	0	1	0	3	1	3	0	1	113	4	0	1	100	3	0	236	1046
9:30 AM	3	1	1	0	5	1	7	0	5	94	3	0	0	106	1	0	227	1011
9:45 AM	3	0	1	0	5	1	4	0	5	115	0	0	1	119	0	0	254	988
10:00 AM	4	1	0	0	3	2	3	0	3	111	2	0	0	96	3	0	228	945
10:15 AM	2	0	1	0	0	0	6	0	3	97	7	0	1	99	5	0	221	930
10:30 AM	3	0	2	0	6	1	4	0	4	111	4	0	0	99	6	0	240	943
10:45 AM	5	0	2	0	4	0	9	0	3	99	0	0	0	114	3	0	239	928
11:00 AM	4	1	0	0	3	0	3	0	11	123	5	0	1	91	3	0	245	945
11:15 AM	2	1	0	0	5	0	3	0	3	120	4	0	0	129	2	0	269	993
11:30 AM	5	0	4	0	4	1	6	0	4	118	4	0	2	121	2	0	271	1024
11:45 AM	4	0	1	0	3	0	6	0	12	89	10	0	0	142	0	0	267	1052
12:00 PM	1	0	4	0	1	0	7	0	5	129	3	0	1	123	0	0	274	1081
12:15 PM	5	0	6	0	3	0	7	0	7	137	3	0	3	123	2	0	296	1108
12:30 PM	5	2	1	0	0	1	5	0	6	112	5	0	0	134	5	0	276	1113
12:45 PM	3	0	2	0	3	0	5	0	8	115	7	0	1	113	4	0	261	1107
1:00 PM	1	0	1	0	4	1	4	0	8	140	4	0	2	115	5	0	285	1118
1:15 PM	4	0	0	0	3	1	3	0	3	120	4	0	1	134	1	0	274	1096
1:30 PM	1	0	1	0	2	0	3	0	2	94	6	0	3	107	3	0	222	1042
1:45 PM	1	0	0	0	5	0	5	0	7	116	4	0	0	134	3	0	275	1056
2:00 PM	5	0	0	0	1	0	0	0	4	122	4	0	1	114	2	0	253	1024
2:15 PM	0	0	1	0	2	0	2	0	6	116	6	0	1	125	3	0	262	1012
2:30 PM	3	0	0	0	2	0	3	0	2	121	4	0	2	109	6	0	252	1042
2:45 PM	4	0	1	0	3	0	5	0	7	118	13	0	2	132	5	0	290	1057
3:00 PM	2	0	1	0	1	0	5	0	5	138	9	0	1	135	4	0	301	1105

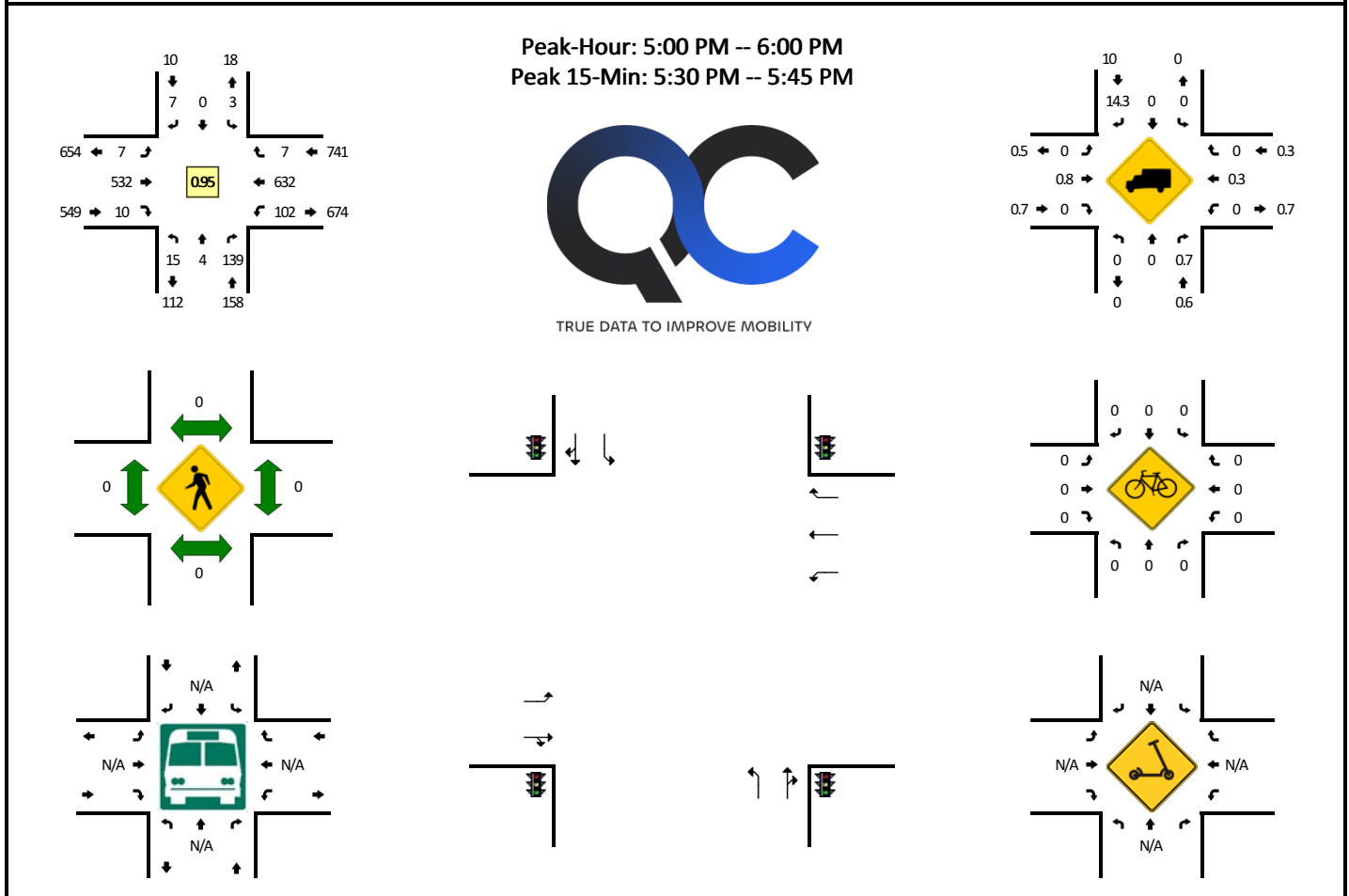
15-Min Count Period Beginning At	Bartholomew Blvd/Beech Ridge Dr (Northbound)				Bartholomew Blvd/Beech Ridge Dr (Southbound)				Powell Rd (Eastbound)				Powell Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:15 PM	4	0	0	0	2	1	1	0	6	108	9	0	1	126	3	0	261	1104
3:30 PM	2	0	3	0	1	1	1	0	10	131	9	0	2	146	3	0	309	1161
3:45 PM	3	1	0	0	3	1	3	0	4	114	8	0	0	113	2	0	252	1123
4:00 PM	6	0	3	0	3	1	10	0	8	131	9	0	3	116	2	0	292	1114
4:15 PM	10	1	2	0	3	0	5	0	5	133	3	0	0	163	3	0	328	1181
4:30 PM	6	2	0	0	1	1	4	0	6	112	8	0	1	121	7	0	269	1141
4:45 PM	6	0	2	0	8	0	7	0	4	106	12	0	1	154	2	0	302	1191
5:00 PM	4	0	1	0	4	1	3	0	9	138	13	0	1	165	2	0	341	1240
5:15 PM	5	1	3	0	4	1	4	0	6	110	7	0	4	136	4	0	285	1197
5:30 PM	8	3	1	0	6	1	3	0	8	132	8	0	2	137	6	0	315	1243
5:45 PM	5	1	2	0	5	2	4	0	9	130	14	0	2	138	8	0	320	1261
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	16	0	4	0	16	4	12	0	36	552	52	0	4	660	8	0	1364	
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	0	0		0	
Buses																		
Pedestrians		0				0				0				0			0	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Scooters																		
<i>Comments:</i>																		

Report generated on 5/21/2025 12:48 PM

SOURCE: Quality Counts, LLC (<http://www.qualitycounts.net>) 1-877-580-2212

LOCATION: Bennett Pkwy/Cressingham Ln -- Powell Rd
CITY/STATE: Powell, OH

QC JOB #: 16915308
DATE: Tue, May 6 2025



15-Min Count Period Beginning At	Bennett Pkwy/Cressingham Ln (Northbound)				Bennett Pkwy/Cressingham Ln (Southbound)				Powell Rd (Eastbound)				Powell Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:00 AM	2	0	12	0	2	0	1	0	0	35	1	0	1	26	0	0	80	
6:15 AM	2	0	7	0	2	1	1	0	1	46	0	0	2	28	1	0	91	
6:30 AM	2	0	19	0	1	1	0	0	0	75	2	0	2	41	0	0	143	
6:45 AM	2	0	14	0	2	0	1	0	0	102	1	0	0	58	0	0	180	494
7:00 AM	2	0	29	0	1	0	0	0	0	119	1	0	8	53	0	0	213	627
7:15 AM	0	0	26	0	3	0	0	0	0	157	1	0	7	66	2	0	262	798
7:30 AM	2	1	35	0	2	1	6	0	2	168	4	0	15	107	1	0	344	999
7:45 AM	5	1	37	0	1	1	3	0	0	128	4	0	20	145	1	0	346	1165
8:00 AM	3	0	38	0	1	0	0	0	0	126	4	0	9	102	2	0	285	1237
8:15 AM	4	0	19	0	2	0	1	0	1	123	1	0	24	107	2	0	284	1259
8:30 AM	6	0	24	0	0	1	2	0	1	131	1	0	13	109	1	0	289	1204
8:45 AM	2	0	27	0	2	0	2	0	0	158	3	0	15	123	0	0	332	1190
9:00 AM	1	0	29	0	1	0	0	0	0	135	0	0	17	128	1	0	312	1217
9:15 AM	3	0	12	0	0	1	1	0	0	120	2	0	17	99	4	1	260	1193
9:30 AM	0	0	15	0	1	2	2	0	2	100	1	0	11	111	1	0	246	1150
9:45 AM	2	0	11	0	1	0	6	0	0	126	3	0	11	109	3	0	272	1090
10:00 AM	0	0	11	0	0	0	0	0	0	121	0	0	7	102	1	0	242	1020
10:15 AM	4	0	18	0	2	0	1	0	2	96	3	0	16	97	0	0	239	999
10:30 AM	1	0	15	0	2	0	1	0	0	123	5	0	6	114	0	0	267	1020
10:45 AM	2	0	17	0	2	0	0	0	3	105	1	0	7	119	2	0	258	1006
11:00 AM	8	1	12	0	1	0	1	0	0	124	2	0	11	102	1	0	263	1027
11:15 AM	0	0	23	0	1	1	0	0	1	129	3	0	15	132	2	0	307	1095
11:30 AM	3	0	13	0	0	0	2	0	1	129	1	0	16	124	1	0	290	1118
11:45 AM	2	0	11	0	2	0	0	0	0	106	5	0	17	143	2	0	288	1148
12:00 PM	0	0	16	0	0	0	1	0	1	132	0	0	13	123	3	0	289	1174
12:15 PM	3	1	10	0	2	0	2	0	0	147	3	0	11	139	0	0	318	1185
12:30 PM	2	0	21	0	1	0	4	0	0	121	2	0	10	132	1	0	294	1189
12:45 PM	1	2	15	0	2	0	0	0	2	119	0	0	17	120	1	0	279	1180
1:00 PM	3	0	20	0	2	0	0	0	2	141	0	0	17	136	3	0	324	1215
1:15 PM	3	0	12	0	2	0	1	0	2	129	3	0	16	123	0	0	291	1188
1:30 PM	2	0	9	0	1	1	1	0	0	98	3	0	21	127	2	0	265	1159
1:45 PM	0	0	16	0	1	0	1	0	1	124	1	0	11	136	1	0	292	1172
2:00 PM	4	0	17	0	2	0	1	0	1	122	4	0	11	117	0	0	279	1127
2:15 PM	2	0	16	0	1	0	1	0	0	132	1	0	18	126	3	0	300	1136
2:30 PM	2	0	23	0	2	1	1	0	0	128	1	0	9	126	1	0	294	1165
2:45 PM	4	0	11	0	1	0	1	0	1	118	5	0	17	139	3	0	300	1173
3:00 PM	6	1	18	0	0	0	2	0	0	140	3	0	17	148	4	0	339	1233
3:15 PM	5	2	13	0	2	0	2	0	1	117	3	0	14	143	2	0	304	1237

15-Min Count Period Beginning At	Bennett Pkwy/Cressingham Ln (Northbound)				Bennett Pkwy/Cressingham Ln (Southbound)				Powell Rd (Eastbound)				Powell Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:30 PM	4	1	22	0	2	1	3	0	1	136	5	0	14	133	0	0	322	1265
3:45 PM	2	0	26	0	2	0	3	0	2	121	3	0	15	129	0	0	303	1268
4:00 PM	3	0	36	0	1	1	0	0	3	138	1	0	20	134	2	0	339	1268
4:15 PM	8	0	37	0	1	0	1	0	0	137	2	1	14	154	0	0	355	1319
4:30 PM	4	2	22	0	1	0	1	0	2	115	2	0	25	139	1	0	314	1311
4:45 PM	5	1	36	0	1	0	1	0	0	114	4	0	22	166	4	0	354	1362
5:00 PM	6	1	28	0	2	0	2	0	3	135	4	0	18	165	2	0	366	1389
5:15 PM	3	0	30	0	0	0	2	0	1	121	3	0	24	152	2	0	338	1372
5:30 PM	4	2	50	0	1	0	2	0	1	140	0	0	30	152	1	0	383	1441
5:45 PM	2	1	31	0	0	0	1	0	2	136	3	0	30	163	2	0	371	1458
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	16	8	200	0	4	0	8	0	4	560	0	0	120	608	4	0	1532	
Heavy Trucks	0	0	4		0	0	0		0	4	0		0	0	0		8	
Buses																		
Pedestrians		0				0				0				0			0	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Scooters																		
<i>Comments:</i>																		

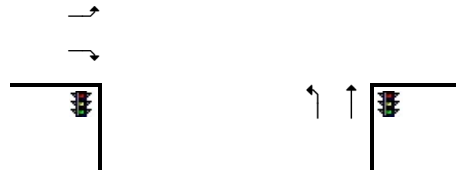
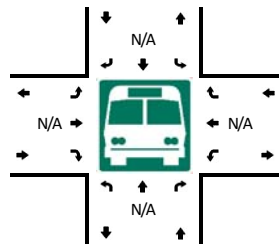
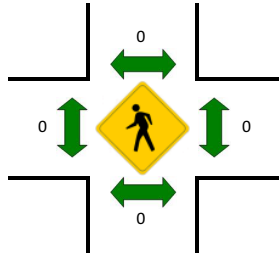
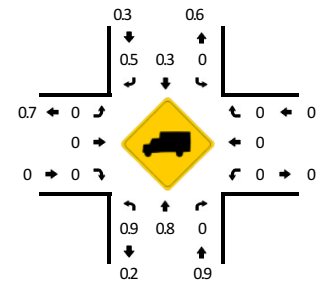
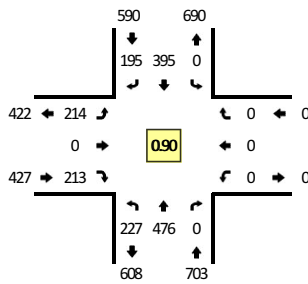
Report generated on 5/21/2025 12:48 PM

SOURCE: Quality Counts, LLC (<http://www.qualitycounts.net>) 1-877-580-2212

LOCATION: N Liberty St -- Seldom Seen Rd
CITY/STATE: Powell, OH

QC JOB #: 16915309
DATE: Tue, May 6 2025

Peak-Hour: 4:30 PM -- 5:30 PM
Peak 15-Min: 5:15 PM -- 5:30 PM



15-Min Count Period Beginning At	N Liberty St (Northbound)				N Liberty St (Southbound)				Seldom Seen Rd (Eastbound)				Seldom Seen Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:00 AM	3	14	0	0	0	19	3	0	1	0	9	0	0	0	0	0	49	
6:15 AM	5	8	0	0	0	30	3	0	3	0	13	0	0	0	0	0	62	
6:30 AM	5	25	0	0	0	30	11	0	14	0	20	0	0	0	0	0	105	
6:45 AM	18	80	0	0	0	59	12	0	17	0	16	0	0	0	0	0	202	418
7:00 AM	15	68	0	0	0	64	19	0	9	0	32	0	0	0	0	0	207	576
7:15 AM	24	76	0	0	0	117	19	0	27	0	47	0	0	0	0	0	310	824
7:30 AM	36	95	0	0	0	104	24	0	43	0	48	0	0	0	0	0	350	1069
7:45 AM	36	132	0	0	0	132	53	0	63	0	31	0	0	0	0	0	447	1314
8:00 AM	37	49	0	0	0	109	51	0	23	0	44	0	0	0	0	0	313	1420
8:15 AM	27	56	0	0	0	96	23	0	24	0	37	0	0	0	0	0	263	1373
8:30 AM	28	77	0	0	0	94	29	0	22	0	53	0	0	0	0	0	303	1326
8:45 AM	34	92	0	0	0	98	26	0	23	0	45	0	0	0	0	0	318	1197
9:00 AM	28	87	0	0	0	101	43	0	35	0	49	0	0	0	0	0	343	1227
9:15 AM	30	41	0	0	0	54	35	0	26	0	35	0	0	0	0	0	221	1185
9:30 AM	22	62	0	0	0	68	19	0	24	0	31	0	0	0	0	0	226	1108
9:45 AM	23	51	0	0	0	60	17	0	30	0	30	0	0	0	0	0	211	1001
10:00 AM	25	58	0	0	0	64	29	0	25	0	25	0	0	0	0	0	226	884
10:15 AM	23	59	0	0	0	75	21	0	34	0	28	0	0	0	0	0	240	903
10:30 AM	30	34	0	0	0	55	20	0	24	0	26	0	0	0	0	0	189	866
10:45 AM	21	52	0	0	0	67	26	0	18	0	37	0	0	0	0	0	221	876
11:00 AM	16	53	0	0	0	61	30	0	29	0	30	0	0	0	0	0	219	869
11:15 AM	26	48	0	0	0	50	33	0	22	0	25	0	0	0	0	0	204	833
11:30 AM	28	65	0	0	0	61	27	0	31	0	20	0	0	0	0	0	232	876
11:45 AM	38	43	0	0	0	59	30	0	23	0	31	0	0	0	0	0	224	879
12:00 PM	29	45	0	0	0	65	28	0	24	0	37	0	0	0	0	0	228	888
12:15 PM	27	50	0	0	0	77	23	0	31	0	29	0	0	0	0	0	237	921
12:30 PM	36	65	0	0	0	61	20	0	33	0	34	0	0	0	0	0	249	938
12:45 PM	24	48	0	0	0	71	22	0	23	0	26	0	0	0	0	0	214	928
1:00 PM	20	61	0	0	0	67	26	0	27	0	36	0	0	0	0	0	237	937
1:15 PM	34	40	0	0	0	62	22	0	25	0	35	0	0	0	0	0	218	918
1:30 PM	24	56	0	0	0	45	18	0	21	0	22	0	0	0	0	0	186	855
1:45 PM	32	57	0	0	0	54	27	0	31	0	28	0	0	0	0	0	229	870
2:00 PM	25	54	0	0	0	56	21	0	29	0	39	0	0	0	0	0	224	857
2:15 PM	39	62	0	0	0	61	19	0	28	0	30	0	0	0	0	0	239	878
2:30 PM	33	70	0	0	0	57	28	0	21	0	41	0	0	0	0	0	250	942
2:45 PM	34	62	0	0	0	100	29	0	25	0	31	0	0	0	0	0	281	994
3:00 PM	34	89	0	0	0	69	31	0	45	0	31	0	0	0	0	0	299	1069
3:15 PM	41	64	0	0	0	111	44	0	21	0	27	0	0	0	0	0	308	1138

15-Min Count Period Beginning At	N Liberty St (Northbound)				N Liberty St (Southbound)				Seldom Seen Rd (Eastbound)				Seldom Seen Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:30 PM	38	109	0	0	0	66	31	0	38	0	36	0	0	0	0	0	318	1206
3:45 PM	43	101	0	0	0	103	25	0	51	0	39	0	0	0	0	0	362	1287
4:00 PM	54	104	0	0	0	104	40	0	57	0	27	0	0	0	0	0	386	1374
4:15 PM	40	125	0	0	0	106	40	0	54	0	53	0	0	0	0	0	418	1484
4:30 PM	53	119	0	0	0	103	53	0	46	0	44	0	0	0	0	0	418	1584
4:45 PM	49	120	0	0	0	92	39	0	47	0	51	0	0	0	0	0	398	1620
5:00 PM	67	116	0	0	0	100	45	0	50	0	47	0	0	0	0	0	425	1659
5:15 PM	58	121	0	0	0	100	58	0	71	0	71	0	0	0	0	0	479	1720
5:30 PM	62	117	0	0	0	72	44	0	74	0	42	0	0	0	0	0	411	1713
5:45 PM	43	119	0	0	0	84	28	0	69	0	50	0	0	0	0	0	393	1708
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	232	484	0	0	0	400	232	0	284	0	284	0	0	0	0	0	1916	
Heavy Trucks	0	4	0		0	4	0		0	0	0		0	0	0		8	
Buses																		
Pedestrians		0				0				0				0			0	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Scooters																		

Comments:

Report generated on 5/21/2025 12:48 PM

SOURCE: Quality Counts, LLC (<http://www.qualitycounts.net>) 1-877-580-2212

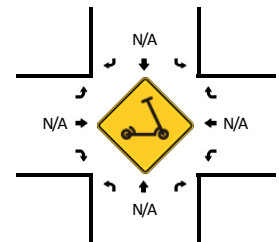
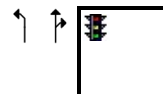
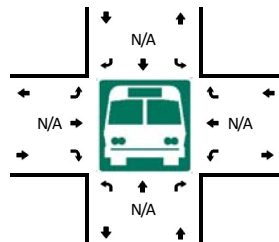
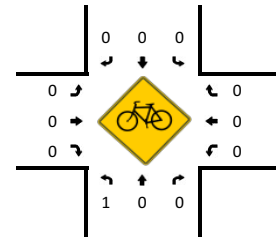
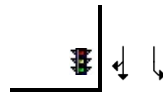
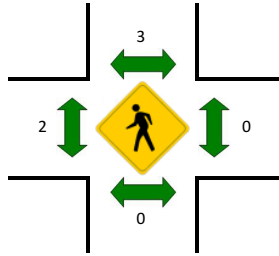
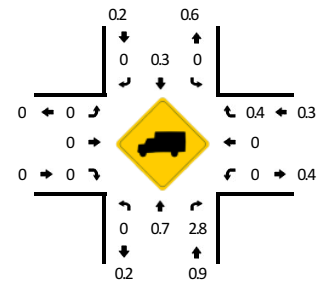
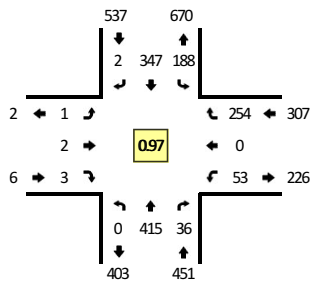
LOCATION: N Liberty St -- Grace Dr

CITY/STATE: Powell, OH

QC JOB #: 16915310

DATE: Tue, May 6 2025

Peak-Hour: 4:30 PM -- 5:30 PM
Peak 15-Min: 4:30 PM -- 4:45 PM



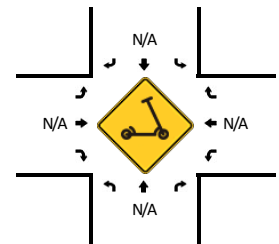
15-Min Count Period Beginning At	N Liberty St (Northbound)				N Liberty St (Southbound)				Grace Dr (Eastbound)				Grace Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:00 AM	0	5	0	0	13	11	0	0	0	0	0	0	0	0	9	0	38	
6:15 AM	0	8	1	0	24	15	0	0	0	0	0	0	0	0	1	0	49	
6:30 AM	0	20	0	0	36	19	0	0	0	0	0	0	1	0	8	0	84	
6:45 AM	0	38	2	0	37	34	0	0	0	0	0	0	1	0	13	0	125	296
7:00 AM	0	43	6	0	52	39	0	0	0	0	0	0	1	0	25	0	166	424
7:15 AM	0	60	4	0	65	87	0	0	0	0	0	0	4	0	28	0	248	623
7:30 AM	0	73	9	0	62	97	0	0	0	0	0	0	8	0	44	0	293	832
7:45 AM	0	83	7	0	45	109	0	0	0	0	0	0	12	0	66	0	322	1029
8:00 AM	0	55	5	0	55	90	0	0	0	0	0	0	10	1	24	0	240	1103
8:15 AM	0	51	8	0	43	95	0	0	0	0	0	0	11	1	33	0	242	1097
8:30 AM	2	51	2	0	56	81	2	0	0	0	0	0	9	1	44	0	248	1052
8:45 AM	0	64	6	0	61	77	3	0	0	1	1	0	8	2	36	0	259	989
9:00 AM	0	64	10	0	53	72	1	0	1	0	0	0	9	2	44	0	256	1005
9:15 AM	0	35	5	0	35	56	0	0	0	1	0	0	13	0	31	0	176	939
9:30 AM	0	43	6	0	38	50	2	0	0	1	0	0	8	0	36	0	184	875
9:45 AM	3	44	4	0	42	53	0	0	0	0	0	0	16	0	38	0	200	816
10:00 AM	0	47	7	0	42	54	1	0	0	0	0	0	10	2	32	0	195	755
10:15 AM	0	41	10	0	46	62	0	0	0	1	0	0	11	0	35	0	206	785
10:30 AM	0	30	2	0	31	47	0	0	0	0	0	0	6	0	35	0	151	752
10:45 AM	0	34	7	0	44	57	0	0	1	0	0	0	11	0	28	0	182	734
11:00 AM	0	33	7	0	43	45	1	0	0	0	0	0	10	0	31	0	170	709
11:15 AM	0	36	5	0	30	49	0	0	0	0	0	0	13	0	29	0	162	665
11:30 AM	1	52	15	0	21	69	1	0	2	1	0	0	12	0	40	0	214	728
11:45 AM	0	37	4	0	31	57	0	0	1	0	2	0	12	1	35	0	180	726
12:00 PM	0	46	10	0	43	61	0	0	0	1	0	0	10	1	29	0	201	757
12:15 PM	0	41	7	0	51	42	0	0	1	0	2	0	15	0	33	0	192	787
12:30 PM	0	51	6	0	35	48	2	0	0	0	0	0	13	0	53	0	208	781
12:45 PM	1	39	8	0	34	65	0	0	0	0	1	0	16	3	38	0	205	806
1:00 PM	0	49	5	0	28	68	1	0	0	0	0	0	11	0	32	0	194	799
1:15 PM	0	33	8	0	33	47	0	0	1	0	0	0	11	0	46	0	179	786
1:30 PM	0	40	5	0	31	45	1	0	0	1	0	0	8	1	34	0	166	744
1:45 PM	0	44	11	0	31	37	0	0	0	0	1	0	12	0	39	0	175	714
2:00 PM	0	45	3	0	38	56	0	0	0	0	1	0	10	1	44	0	198	718
2:15 PM	0	67	4	0	37	50	2	0	0	0	1	0	7	0	43	0	211	750
2:30 PM	0	57	4	0	41	64	0	0	0	0	1	0	9	0	34	0	210	794
2:45 PM	0	48	4	0	49	70	0	0	2	0	0	0	9	0	48	0	230	849
3:00 PM	0	64	10	0	34	56	2	0	1	0	1	0	14	0	44	0	226	877
3:15 PM	0	66	12	0	50	74	2	0	1	0	0	0	11	0	50	0	266	932

15-Min Count Period Beginning At	N Liberty St (Northbound)				N Liberty St (Southbound)				Grace Dr (Eastbound)				Grace Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:30 PM	0	75	6	0	47	48	0	0	0	1	0	0	9	0	51	0	237	959
3:45 PM	0	89	4	0	49	69	1	0	1	1	0	0	10	0	50	0	274	1003
4:00 PM	0	87	7	0	51	89	1	0	0	0	0	0	13	0	61	0	309	1086
4:15 PM	0	112	13	0	57	76	0	0	1	1	0	0	14	0	58	0	332	1152
4:30 PM	0	98	9	0	51	90	1	0	0	0	0	0	20	0	66	0	335	1250
4:45 PM	0	92	13	0	49	81	0	0	0	1	1	0	12	0	67	0	316	1292
5:00 PM	0	102	7	0	49	75	1	0	1	1	2	0	12	0	66	0	316	1299
5:15 PM	0	123	7	0	39	101	0	0	0	0	0	0	9	0	55	0	334	1301
5:30 PM	0	111	11	0	47	66	1	0	2	0	1	0	18	0	50	0	307	1273
5:45 PM	0	107	9	0	60	63	1	0	1	1	0	0	21	1	61	0	325	1282
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	392	36	0	204	360	4	0	0	0	0	0	80	0	264	0	1340	
Heavy Trucks	0	4	0		0	0	0		0	0	0		0	0	4		8	
Buses																		
Pedestrians		0				0				0				0			0	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Scooters																		
<i>Comments:</i>																		

Report generated on 5/21/2025 12:48 PM

SOURCE: Quality Counts, LLC (<http://www.qualitycounts.net>) 1-877-580-2212

DATE: Tue, May 6 2025



15-Min Count Period Beginning At	Liberty Rd (Northbound)				Liberty Rd (Southbound)				Bennett Pkwy (Eastbound)				Bennett Pkwy (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:30 PM	0	91	27	0	6	49	0	0	0	0	0	0	22	0	10	0	205	725
3:45 PM	0	120	47	0	3	69	0	0	0	0	0	0	18	0	3	0	260	816
4:00 PM	0	117	49	0	8	85	0	0	0	0	0	0	25	0	8	0	292	932
4:15 PM	0	122	34	0	4	78	0	0	0	0	0	0	18	0	6	0	262	1019
4:30 PM	0	98	43	0	9	87	0	0	0	0	0	0	20	0	6	0	263	1077
4:45 PM	0	110	42	0	13	78	0	0	0	0	0	0	24	0	7	0	274	1091
5:00 PM	0	144	29	0	4	90	0	0	0	0	0	0	19	0	7	0	293	1092
5:15 PM	0	108	49	0	7	77	0	0	0	0	0	0	24	0	8	0	273	1103
5:30 PM	0	114	64	0	9	73	0	0	0	0	0	0	28	0	7	0	295	1135
5:45 PM	0	105	44	0	8	50	0	0	0	0	0	0	34	0	7	0	248	1109
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	456	256	0	36	292	0	0	0	0	0	0	112	0	28	0	1180	
Heavy Trucks	0	0	4		0	0	0		0	0	0		0	0	0		4	
Buses																		
Pedestrians		0				0				0				0			0	
Bicycles	0	0	0		0	4	0		0	0	0		0	0	0		4	
Scooters																		

Comments:

Report generated on 5/21/2025 12:48 PM

SOURCE: Quality Counts, LLC (<http://www.qualitycounts.net>) 1-877-580-2212

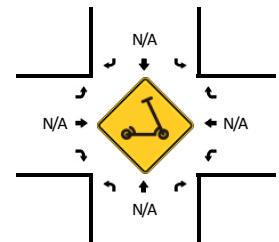
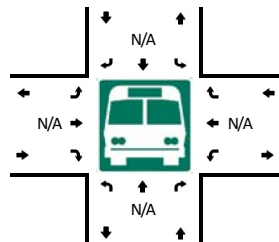
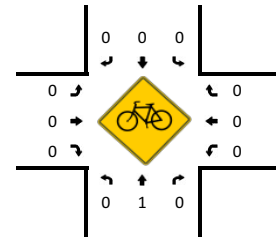
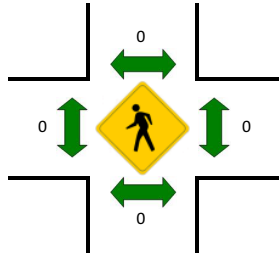
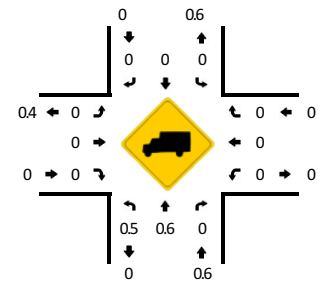
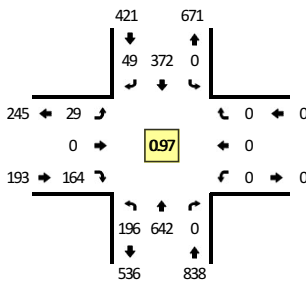
LOCATION: Liberty Rd -- Murphy Pkwy

CITY/STATE: Powell, OH

QC JOB #: 16915312

DATE: Tue, May 6 2025

Peak-Hour: 4:45 PM -- 5:45 PM
Peak 15-Min: 5:30 PM -- 5:45 PM



15-Min Count Period Beginning At	Liberty Rd (Northbound)				Liberty Rd (Southbound)				Murphy Pkwy (Eastbound)				Murphy Pkwy (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:00 AM	2	7	0	0	0	7	0	0	1	0	7	0	0	0	0	0	24	
6:15 AM	5	19	0	0	0	16	0	0	0	0	4	0	0	0	0	0	44	
6:30 AM	14	43	0	0	0	21	3	0	6	0	8	0	0	0	0	0	95	
6:45 AM	18	56	0	0	0	26	2	0	6	0	5	0	0	0	0	0	113	276
7:00 AM	18	65	0	0	0	35	4	0	9	0	20	0	0	0	0	0	151	403
7:15 AM	13	73	0	0	0	78	2	0	6	0	25	0	0	0	0	0	197	556
7:30 AM	26	100	0	0	0	93	6	0	10	0	29	0	0	0	0	0	264	725
7:45 AM	36	78	0	0	0	130	10	0	10	0	32	0	0	0	0	0	296	908
8:00 AM	32	82	0	0	0	100	8	0	6	0	28	0	0	0	0	0	256	1013
8:15 AM	18	76	0	0	0	127	6	0	6	0	46	0	0	0	0	0	279	1095
8:30 AM	31	69	0	0	0	92	7	0	10	0	48	0	0	0	0	0	257	1088
8:45 AM	27	90	0	0	0	94	7	0	11	0	20	0	0	0	0	0	249	1041
9:00 AM	31	99	0	0	0	79	14	0	7	0	16	0	0	0	0	0	246	1031
9:15 AM	28	46	0	0	0	61	8	0	5	0	20	0	0	0	0	0	168	920
9:30 AM	32	63	0	0	0	44	8	0	7	0	17	0	0	0	0	0	171	834
9:45 AM	19	64	0	0	0	62	8	0	10	0	10	0	0	0	0	0	173	758
10:00 AM	16	62	0	0	0	56	10	0	5	0	20	0	0	0	0	0	169	681
10:15 AM	20	50	0	0	0	54	10	0	4	0	8	0	0	0	0	0	146	659
10:30 AM	15	37	0	0	0	44	6	0	7	0	14	0	0	0	0	0	123	611
10:45 AM	19	43	0	0	0	45	5	0	9	0	14	0	0	0	0	0	135	573
11:00 AM	18	65	0	0	0	53	8	0	4	0	21	0	0	0	0	0	169	573
11:15 AM	24	71	0	0	0	52	7	0	10	0	14	0	0	0	0	0	178	605
11:30 AM	14	53	0	0	0	74	7	0	11	0	24	0	0	0	0	0	183	665
11:45 AM	18	57	0	0	0	44	12	0	4	0	26	0	0	0	0	0	161	691
12:00 PM	24	60	0	0	0	57	7	0	6	0	30	0	0	0	0	0	184	706
12:15 PM	26	67	0	0	0	42	15	0	10	0	29	0	0	0	0	0	189	717
12:30 PM	17	55	0	0	0	56	13	0	6	0	21	0	0	0	0	0	168	702
12:45 PM	21	56	0	0	0	57	11	0	12	0	20	0	0	0	0	0	177	718
1:00 PM	22	55	0	0	0	72	11	0	7	0	23	0	0	0	0	0	190	724
1:15 PM	18	56	0	0	0	56	6	0	2	0	20	0	0	0	0	0	158	693
1:30 PM	16	60	0	0	0	60	9	0	5	0	26	0	0	0	0	0	176	701
1:45 PM	13	61	0	0	0	55	8	0	7	0	24	0	0	0	0	0	168	692
2:00 PM	30	57	0	0	0	45	10	0	6	0	18	0	0	0	0	0	166	668
2:15 PM	20	64	0	0	0	58	12	0	7	0	22	0	0	0	0	0	183	693
2:30 PM	29	88	0	0	0	65	7	0	8	0	16	0	0	0	0	0	213	730
2:45 PM	28	67	0	0	0	73	10	0	5	0	34	0	0	0	0	0	217	779
3:00 PM	26	81	0	0	0	67	10	0	8	0	19	0	0	0	0	0	211	824
3:15 PM	40	76	0	0	0	58	20	0	7	0	21	0	0	0	0	0	222	863

15-Min Count Period Beginning At	Liberty Rd (Northbound)				Liberty Rd (Southbound)				Murphy Pkwy (Eastbound)				Murphy Pkwy (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:30 PM	40	113	0	0	0	67	11	0	12	0	43	0	0	0	0	0	286	936
3:45 PM	38	162	0	0	0	71	13	0	8	0	28	0	0	0	0	0	320	1039
4:00 PM	48	156	0	0	0	101	18	0	7	0	32	0	0	0	0	0	362	1190
4:15 PM	55	155	0	0	0	77	14	0	6	0	29	0	0	0	0	0	336	1304
4:30 PM	40	128	0	0	0	102	15	0	10	0	32	0	0	0	0	0	327	1345
4:45 PM	52	154	0	0	0	93	11	0	5	0	32	0	0	0	0	0	347	1372
5:00 PM	32	164	0	0	0	94	13	0	8	0	49	0	0	0	0	0	360	1370
5:15 PM	58	156	0	0	0	90	11	0	11	0	44	0	0	0	0	0	370	1404
5:30 PM	54	168	0	0	0	95	14	0	5	0	39	0	0	0	0	0	375	1452
5:45 PM	67	140	0	0	0	70	14	0	10	0	32	0	0	0	0	0	333	1438
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	216	672	0	0	0	380	56	0	20	0	156	0	0	0	0	0	1500	
Heavy Trucks	0	4	0		0	0	0		0	0	0		0	0	0		4	
Buses																		
Pedestrians		0				0				0				0			0	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Scooters																		

Comments:

Report generated on 5/21/2025 12:48 PM

SOURCE: Quality Counts, LLC (<http://www.qualitycounts.net>) 1-877-580-2212



MORPC Growth Rates


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Jon,

We have completed processing growth rates for your traffic study area.

Please use linear annual growth rates as summarized below.

Location	Linear Annual Growth Rate
Powell Rd e/o Liberty St	1.00%
Liberty St n/o Powell Rd	2.40%
Powell Rd w/o Liberty St	1.40%
Liberty St s/o Powell Rd	2.40%

Note: The above rate was derived based on planning level analysis by using MORPC's regional travel demand model.

If you have any questions, please let me know.

Thanks,

HWASHIK JANG

Senior Planner | **Mid-Ohio Regional Planning Commission**

T: 614.233.4145 | hjang@morpc.org

111 Liberty Street, Suite 100 | Columbus, OH 43215



MID-OHIO REGIONAL
MORPC
PLANNING COMMISSION

From: Jon Grimm <Jon.Grimm@ohm-advisors.com>

Sent: Wednesday, May 28, 2025 9:54 AM

To: Hwashik Jang <hjang@morpc.org>

Subject: RE: MORPC Traffic Growth Rates Data Requirement & Request

Caution: This email originated from outside the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe. When in doubt, contact the IT team

Good morning Hwashik, hopefully you're doing well! In reference to the discussion below, please see attached for the additional traffic count on the north leg of Liberty St. For additional reference, including the station (location)



Approved Traffic MOU

Date of Meeting

10/18/24



TRAFFIC STUDY MEMORANDUM OF UNDERSTANDING

PROJECT DESCRIPTION

Brief description of the project including build alternatives, boundaries, anticipated developments, etc.

This project includes analysis of traffic impacts associated with the redevelopment of the *Village Green Park* area located in the heart of downtown Powell, OH into a mixed-use development. In addition, this study will include an investigation into the notable congestion experienced throughout along the Powell Rd (SR 750) corridor. This study will include a significant component identifying alternate routes to help mitigate congestion and make the downtown area more walkable/bikeable.

STUDY AREA AND PROJECT ALTERNATIVES

Include a brief description of the study area below including intersections to be counted, study requirements, etc.

The study area will include eight (8) of the major intersections located in and adjacent to the heart of Powell, OH. These will be focused along the two (2) primary roads through the City: Powell Rd (SR 750) and Liberty St. The borders of this study will include the intersections of Powell Rd at Sawmill Pkwy and Bartholomew Blvd to the west and east respectively and Liberty St at Seldom Seen Rd and Murphy Pkwy to the north and south respectively.

INTERSECTIONS TO BE STUDIED

☐ Attachment included for
8 intersections or more

New Count

Existing Count
Date Duration Source

1. See Attached	☐			
2.	☐			
3.	☐			
4.	☐			
5.	☐			
6.	☐			
7.	☐			

OHM Advisors*

580 NORTH FOURTH STREET, SUITE 610
COLUMBUS, OHIO 43215

T 614.418.0600
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ANALYSIS SCENARIOS

Include list of what study periods will be required.

Opening Year No-Build (2030), Opening Year Build (2030), Design Year No-Build (2050), Design Year Build (2050)
AM & PM Peak Hours Only

DATA SOURCES/COLLECTION

Include list of traffic count details, growth rate calculations, trip generation, PHF, etc.

- 12-HR (6AM - 6PM) Turning Movement Traffic Counts to be conducted at all project area intersections.
 - Traffic counts to be conducted in March/April of 2025 to capture full buildout of Depot St once housing development and connection are completed.
 - Traffic counts are anticipated to be collected on Tue-Thu only.
- Background Growth Rates to be determined through coordination with ODOT
- Trip Generation Rates will utilize the most current ITE Trip Generation Handbook (including applicable pass-by and internal capture)
- Existing directional distributions along Powell Rd & Liberty St will be utilized for all new development traffic.
- PHF for the existing intersections will be calculated from the traffic counts and be utilized throughout the analysis

KEY ANALYSIS ITEMS

- ☐ Interim review of traffic forecast volumes (*ONLY for large scale studies or when alternative volume calculation methods used*)
- ☐ Capacity analysis at study intersections in the peak hour(s)
- ☐ Roundabout feasibility and analysis:
- ☐ Signal warrants at unsignalized intersections:
- ☐ Left/Right turn lane warrants at intersections
- ☐ Turn lane sizing
- ☐ Horizontal sight distance study at site access points
- ☐ Vertical sight distance study at site access points
- ☐ Queuing analysis at signalized intersections

Other:

Capacity analysis will utilize Synchro/SimTraffic Version 12

ADDITIONAL COMMENTS/INFORMATION

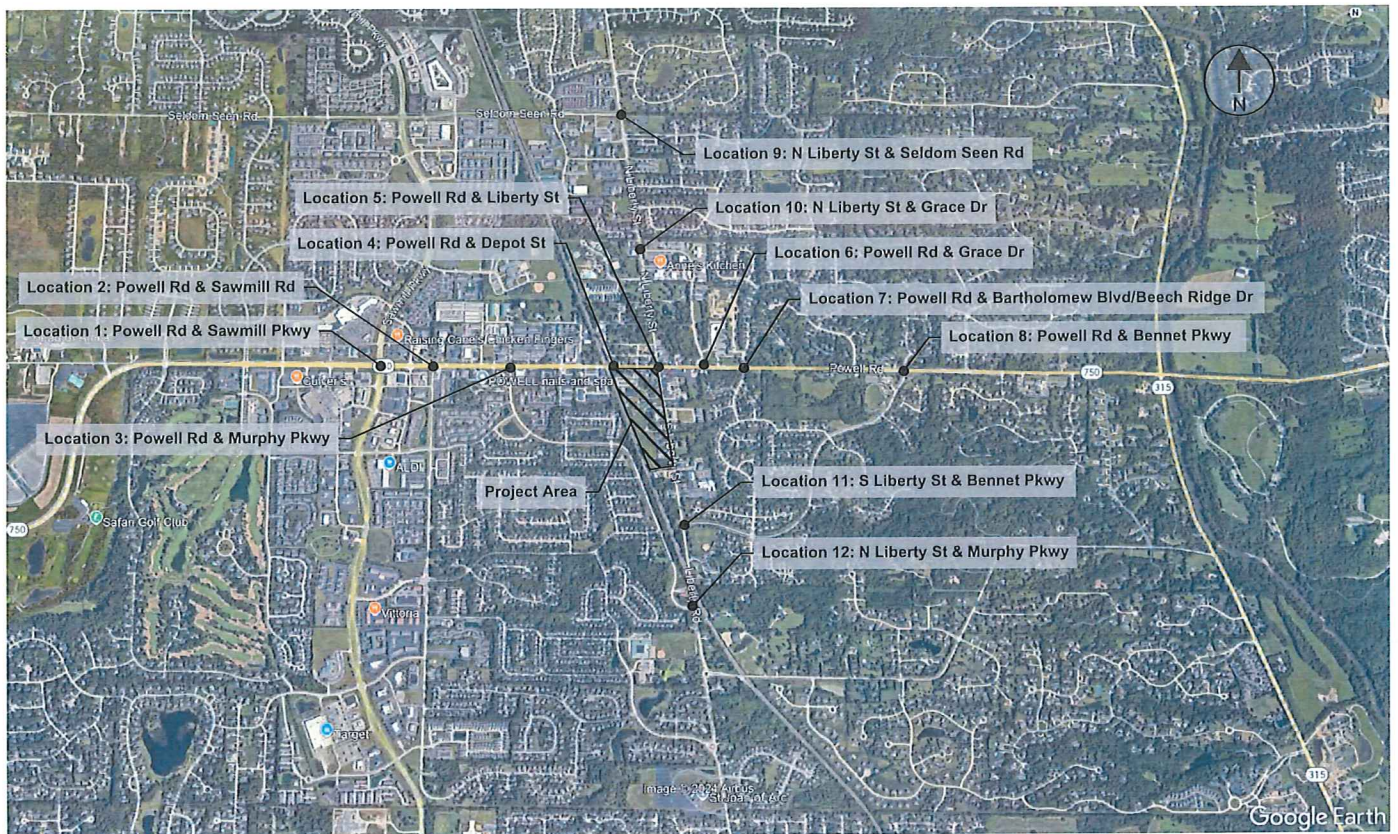
- There is an ongoing project to interconnect all existing signals throughout the City. This is not anticipated to have a significant impact to the traffic volume counts.
- See attached meeting minutes for additional information.

APPROVED BY:



DATE:

12-9-24





Meeting Minutes

Subject:	Powell Village Green – Traffic Discussion
Date:	October 18, 2024
Location:	MS Teams (Virtual)
Objective:	Establish Traffic Parameters Aaron Stanford, Grant Crawford, Logan Stang (Powell) – Sophia Lanza, Ashley Senn (Pizzuti) –
Attendees:	Sean Gillilan, Jon Grimm (OHM)

Discussion:

- Question posed to group regarding the anticipated level of impacts associated with interconnecting signals throughout the city to the Centrac Traffic Management System.
 - Jon Grimm and Grant Crawford both agree that the implementation wouldn't have a significant impact on the vehicular volumes.
- Question posed about specific instances of when to target/avoid data collection. This was a group effort to establish an agreed upon list.
 - School needs to be in session
 - Avoid the Columbus Zoo Wildlights as this would skew traffic volumes significantly
 - The holiday season in general would likely skew data due to the close proximity to Polaris
 - Avoid Powel Festival as well as the 4th of July
- Discussed conducting 8 or 12 hour turning movement counts at identified locations on the map shared with the City.
 - The Powell Rd & Bartholomew Blvd/Beech Ridge Dr and Powell Rd & Depot St intersections should also be counted.
- Discussion of the design year horizon resulted in an agreed upon 20 years.
- Discussed that the ITE Trip Generation manual would be utilized to establish new trips associated with any developments. Regarding trip distributions, it was decided that existing directional distributions along the roadway networks would be used. Engineering judgement will apply should the final design designations justify it.
- The City will be able to provide existing signal timings for use as part of the capacity analysis.
- OHM discussed using a sub-contractor to conduct the traffic counts. These would likely be done via video.
 - City requested that they be notified as soon as possible once dates are determined to help with public involvement and to ensure no issues with any other projects.
- Only one known development was discussed which is adjacent to Nocterra located off Depot St north of Powell Rd. This development will consist of 19 single-family units but most importantly Depot St will be connected providing these residents in addition to the existing neighborhood north of there direct access to Powell Rd, which will have an impact on the existing traffic patterns.



Design Hour Traffic Volumes

Design Hour Volumes

Intersection	Count Date	Roadway Classification	Approach/Ramp/ Direction	AM Peak Hour Counted Volume (vph)	AM Trucks	AM %	PM Peak Hour Counted Volume (vph)	PM Trucks	PM %	DHV Factor	Growth Rate (%/yr)	2030 AM Peak Opening Year Design Hour Volume (vph)	2030 PM Peak Opening Year Design Hour Volume (vph)	2050 AM Peak Design Year Design Hour Volume (vph)	2050 PM Peak Design Year Design Hour Volume (vph)
Powell Rd & Sawmill Pkwy	Tuesday, May 6, 2025	U03	NBLT	161	7	7%	247	1	0%	1.10	0.3%	180	276	191	292
			NBTH	520	41		1,103	6		1.10	0.3%	581	1,231	615	1305
			NBRT	83	3		89	0		1.10	0.3%	93	99	98	105
			SBLT	211	7	3%	264	0	1%	1.10	0.7%	240	301	274	343
			SBTH	823	22		744	6		1.10	0.7%	937	847	1068	966
			SBRT	173	5		163	2		1.10	0.7%	197	186	225	212
			EBLT	165	8	3%	329	0	1%	1.10	1.4%	194	387	249	496
			EBTH	276	9		387	5		1.10	1.4%	325	455	416	583
			EBRT	133	3		152	1		1.10	1.4%	157	179	200	229
			WBLT	98	3	5%	171	1	1%	1.10	1.4%	115	201	148	258
			WBTH	223	12		346	2		1.10	1.4%	262	407	336	521
			WBRT	95	6		157	2		1.10	1.4%	112	185	143	237
Powell Rd & Sawmill Rd	Tuesday, May 6, 2025	U03	EBLT	16	0	3%	29	1	1%	1.10	1.4%	19	34	24	44
			EBTH	444	16		627	4		1.10	1.4%	523	738	669	945
			EBRT	88	3		92	0		1.10	1.4%	104	108	133	139
			WBLT	117	4	4%	144	0	0%	1.10	1.4%	138	169	176	217
			WBTH	401	19		670	4		1.10	1.4%	472	789	604	1009
			WBRT	7	0		18	0		1.10	1.4%	8	21	11	27
		U05	NBLT	50	1	2%	29	1	2%	1.10	0.5%	56	33	62	36
			NBTH	2	0		6	0		1.10	0.5%	2	7	2	7
		U07*	NBRT	111	2		115	2		1.10	0.5%	125	130	138	143
			SBLT	3	0	0%	8	0	0%	1.10	0.0%	3	9	3	9
			SBTH	4	0		2	0		1.10	0.0%	4	2	4	2
			SBRT	10	0		48	0		1.10	0.0%	11	53	11	53
Powell Rd & Murphy Pkwy	Tuesday, May 6, 2025	U03	EBLT	29	0	3%	29	0	1%	1.10	1.4%	34	34	44	44
			EBTH	425	14		555	6		1.10	1.4%	500	653	640	836
			EBRT	71	2		80	0		1.10	1.4%	84	94	107	121
			WBLT	22	2	5%	54	0	0%	1.10	1.4%	26	64	33	81
			WBTH	414	17		573	3		1.10	1.4%	487	674	624	863
		U07*	WBRT	8	1	4%	28	0	0%	1.10	1.4%	9	33	12	42
			NBLT	82	4		150	1		1.10	0.0%	90	165	90	165
			NBTH	8	0		22	0		1.10	0.0%	9	24	9	24
			NBRT	51	2	6%	49	0	1%	1.10	0.0%	56	54	56	54
			SBLT	5	1		19	0		1.10	0.0%	6	21	6	21
			SBTH	12	1		17	0		1.10	0.0%	13	19	13	19
			SBRT	19	0		41	1		1.10	0.0%	21	45	21	45
Powell Rd & Depot St	Tuesday, May 6, 2025	U03	EBLT	0	0	4%	0	0	1%	1.10	1.4%	0	0	0	0
			EBTH	431	16		543	4		1.10	1.4%	507	639	649	818
			EBRT	7	0		2	0		1.10	1.4%	8	2	11	3
			WBLT	1	1	4%	0	0	1%	1.10	1.4%	1	0	2	0
			WBTH	434	17		551	3		1.10	1.4%	511	649	654	830
		U07*	WBRT	6	0		2	0		1.10	1.4%	7	2	9	3
			NBLT	1	0	0%	7	0	0%	1.10	0.0%	1	8	1	8
			NBTH	0	0		0	0		1.10	0.0%	0	0	0	0
			NBRT	4	0		10	0		1.10	0.0%	4	11	4	11
			SBLT	0	0	0%	0	0	0%	1.10	0.0%	0	0	0	0
			SBTH	0	0		0	0		1.10	0.0%	0	0	0	0
			SBRT	23	0		49	0		1.10	0.0%	25	54	25	54
Powell Rd & Liberty St	Tuesday, May 6, 2025	U03	EBLT	2	0	4%	2	0	1%	1.10	1.4%	2	2	3	3
			EBTH	334	13		443	4		1.10	1.4%	393	521	503	667
			EBRT	51	3		48	0		1.10	1.4%	60	56	77	72
			WBLT	0	0	5%	1	0	1%	1.10	1.0%	0	1	0	1
			WBTH	348	18		450	3		1.10	1.0%	402	520	482	624
		U05	WBRT	30	1		27	0		1.10	1.0%	35	31	42	37
			NBLT	0	0	4%	1	0	1%	1.10	2.4%	0	1	0	2
			NBTH	217	8		432	4		1.10	2.4%	267	532	396	788
			NBRT	35	2		50	0		1.10	2.4%	43	62	64	91
			SBLT	0	0		1	0		1.10	2.4%	0	1	0	2

Powell Rd & Grace Dr	Tuesday, May 6, 2025	U03	SBTH	265	7	4%	267	1	0%	1.10	2.4%	326	329	483	487
			SBRT	62	7		81	0		1.10	2.4%	76	100	113	148
			EBLT	44	0		55	1		1.10	1.0%	51	64	61	76
			EBTH	323	14	4%	420	3	1%	1.10	1.0%	373	485	448	582
			WBTH	362	12	4%	459	2	0%	1.10	1.0%	418	530	502	636
			WBRT	141	8		175	0		1.10	1.0%	163	202	195	243
			SBLT	168	6		140	0		1.10	0.0%	185	154	185	154
			SBRT	19	0	3%	25	0	0%	1.10	0.0%	21	28	21	28
Powell Rd & Bartholomew Blvd	Tuesday, May 6, 2025	U03	EBLT	13	0		27	0		1.10	1.0%	15	31	18	37
			EBTH	461	18	4%	486	3	1%	1.10	1.0%	532	561	639	674
			EBRT	16	3		40	0		1.10	1.0%	18	46	22	55
			WBLT	1	1		8	1		1.10	1.0%	1	9	1	11
			WBTH	460	17	4%	592	3	1%	1.10	1.0%	531	684	638	821
			WBRT	11	0		14	0		1.10	1.0%	13	16	15	19
		U07*	NBLT	21	1		23	0		1.10	0.0%	23	25	23	25
			NBTH	3	0	3%	4	0	0%	1.10	0.0%	3	4	3	4
			NBRT	12	0		7	0		1.10	0.0%	13	8	13	8
			SBLT	24	2		22	0		1.10	0.0%	26	24	26	24
			SBTH	7	0	5%	3	0	0%	1.10	0.0%	8	3	8	3
			SBRT	25	1		17	0		1.10	0.0%	28	19	28	19
Powell Rd & Bennett Pkwy	Tuesday, May 6, 2025	U03	EBLT	2	0		5	0		1.10	1.0%	2	6	3	7
			EBTH	547	21	4%	510	3	1%	1.10	1.0%	632	589	758	707
			EBRT	5	0		11	0		1.10	1.0%	6	13	7	15
			WBLT	69	1		94	0		1.10	1.0%	80	109	96	130
			WBTH	467	16	3%	635	2	0%	1.10	1.0%	539	733	647	880
			WBRT	4	1		9	1		1.10	1.0%	5	10	6	12
		U07*	NBLT	13	0		18	0		1.10	0.0%	14	20	14	20
			NBTH	0	0	0%	4	0	1%	1.10	0.0%	0	4	0	4
			NBRT	99	0		144	1		1.10	0.0%	109	158	109	158
			SBLT	5	1		4	0		1.10	0.0%	6	4	6	4
			SBTH	1	0	18%	0	0	9%	1.10	0.0%	1	0	1	0
			SBRT	5	1		7	1		1.10	0.0%	6	8	6	8
N Liberty St & Seldom Seen Rd	Tuesday, May 6, 2025	U05	NBLT	117	3		236	0		1.10	2.4%	144	291	213	430
			NBTH	312	10	3%	474	4	1%	1.10	2.4%	384	584	569	864
			SBTH	389	9		364	1		1.10	2.4%	479	448	709	664
		U06	SBRT	121	3	2%	186	1	0%	1.10	2.4%	149	229	221	339
			EBLT	104	7		242	0		1.10	0.6%	118	274	132	307
			EBRT	184	5	4%	211	0	0%	1.10	0.6%	208	239	233	268
N Liberty St & Grace Dr	Tuesday, May 6, 2025	U05	NBLT	2	0		0	0		1.10	2.4%	2	0	4	0
			NBTH	230	5	2%	428	3	1%	1.10	2.4%	283	527	419	780
			NBRT	26	0		38	1		1.10	2.4%	32	47	47	69
			SBLT	213	7		184	0		1.10	2.4%	262	227	388	335
			SBTH	325	8	3%	323	1	0%	1.10	2.4%	400	398	593	589
			SBRT	6	0		2	0		1.10	2.4%	7	2	11	4
		U07*	EBLT	1	0		3	0		1.10	0.0%	1	3	1	3
			EBTH	1	0	6%	2	0	0%	1.10	0.0%	1	2	1	2
			EBRT	1	1		4	0		1.10	0.0%	1	4	1	4
			WBLT	37	4		51	0		1.10	0.0%	41	56	41	56
			WBTH	6	0	2%	0	0	0%	1.10	0.0%	7	0	7	0
Liberty Rd & Bennett Pkwy	Tuesday, May 6, 2025	U05	WBRT	157	8		238	0		1.10	0.0%	173	262	173	262
			NBTH	266	4		476	3		1.10	2.4%	328	586	485	868
			NBRT	97	1	1%	184	1	1%	1.10	2.4%	120	227	177	335
			SBLT	17	1		33	0		1.10	2.4%	21	41	31	60
		U07*	SBTH	300	6	2%	318	0	0%	1.10	2.4%	370	392	547	580
			WBLT	118	2		95	0		1.10	0.0%	130	105	130	105
			WBRT	32	1	2%	29	0	0%	1.10	0.0%	35	32	35	32
			NBLT	107	0		196	1		1.10	2.4%	132	241	195	357
Liberty Rd & Murphy Pkwy	Tuesday, May 6, 2025	U05	NBTH	334	5	1%	642	4	1%	1.10	2.4%	411	791	609	1171
			SBTH	392	7		372	0		1.10	2.4%	483	458	715	678
			SBRT	34	2	2%	49	0	0%	1.10	2.4%	42	60	62	89
		U07*	EBLT	34	0		29	0		1.10	0.0%	37	32	37	32
			EBRT	130	3		164	0	0%	1.10	0.0%	143	180	143	180

* Indicates that the assumed DHV Factor matches U03, U04, and U05



APPENDIX B: Synchro Intersection Analyses



2030 AM Peak

Lanes, Volumes, Timings

3: Sawmill Pkwy & Powell Rd

07/17/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	194	325	157	115	262	112	180	581	93	240	937	197
Future Volume (vph)	194	325	157	115	262	112	180	581	93	240	937	197
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	10	11	11	11	12	12	12	12	12	12
Storage Length (ft)	365		135	490		250	300		165	350		135
Storage Lanes	2		1	1		1	2		1	2		1
Taper Length (ft)	100			50			100			135		
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	0.95	0.97	0.95	1.00	0.97	0.95	1.00
Fr _t			0.850		0.955				0.850			0.850
Fl _t Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3319	3421	1478	1711	3267	0	3433	3539	1583	3433	3539	1583
Fl _t Permitted	0.950			0.499			0.950			0.950		
Satd. Flow (perm)	3319	3421	1478	899	3267	0	3433	3539	1583	3433	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			171		53				101			164
Link Speed (mph)		45			35			45			45	
Link Distance (ft)		709			507			694			804	
Travel Time (s)		10.7			9.9			10.5			12.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	211	353	171	125	285	122	196	632	101	261	1018	214
Shared Lane Traffic (%)												
Lane Group Flow (vph)	211	353	171	125	407	0	196	632	101	261	1018	214
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		22			22			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		50			50			50			50	
Two way Left Turn Lane												
Headway Factor	1.04	1.04	1.09	1.04	1.04	1.04	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	pm+ov	pm+pt	NA		Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	5	2	7	1	6		7	4	1	3	8	5

2030 AM Peak 1:26 pm 06/20/2025 Baseline

Synchro 12 Report

Page 1

Lanes, Volumes, Timings

3: Sawmill Pkwy & Powell Rd

07/17/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases			2	6					4			8
Detector Phase	5	2	7	1	6		7	4	1	3	8	5
Switch Phase												
Minimum Initial (s)	7.0	20.0	7.0	7.0	20.0		7.0	10.0	7.0	7.0	10.0	7.0
Minimum Split (s)	24.0	26.0	24.0	22.5	26.0		24.0	24.0	22.5	22.5	24.0	24.0
Total Split (s)	24.0	27.5	24.0	22.5	26.0		24.0	37.5	22.5	22.5	36.0	24.0
Total Split (%)	21.8%	25.0%	21.8%	20.5%	23.6%		21.8%	34.1%	20.5%	20.5%	32.7%	21.8%
Maximum Green (s)	18.0	21.5	18.0	16.5	20.0		18.0	31.5	16.5	16.5	30.0	18.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag		Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Min	None	None	Min		None	None	None	None	None	None
Walk Time (s)	7.0	7.0	7.0		7.0		7.0	7.0			7.0	7.0
Flash Don't Walk (s)	11.0	11.0	11.0		11.0		11.0	11.0			11.0	11.0
Pedestrian Calls (#/hr)	0	0	0		0		0	0			0	0
Act Effect Green (s)	11.5	21.3	38.2	30.3	20.1		10.9	28.9	45.2	12.6	30.6	48.1
Actuated g/C Ratio	0.12	0.22	0.39	0.31	0.21		0.11	0.30	0.47	0.13	0.32	0.50
v/c Ratio	0.54	0.47	0.25	0.34	0.57		0.51	0.60	0.13	0.59	0.91	0.25
Control Delay (s/veh)	46.0	36.5	4.3	23.4	34.4		46.0	32.7	3.6	45.9	46.0	4.7
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	46.0	36.5	4.3	23.4	34.4		46.0	32.7	3.6	45.9	46.0	4.7
LOS	D	D	A	C	C		D	C	A	D	D	A
Approach Delay (s/veh)		31.7			31.8			32.3			40.1	
Approach LOS		C			C			C			D	

Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 97.1

Natural Cycle: 110

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.91

Intersection Signal Delay (s/veh): 35.3

Intersection LOS: D

Intersection Capacity Utilization 74.8%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 3: Sawmill Pkwy & Powell Rd

 Ø1	 Ø2	 Ø3	 Ø4
22.5 s	27.5 s	22.5 s	37.5 s
 Ø5	 Ø6	 Ø7	 Ø8
24 s	26 s	24 s	36 s

Lanes, Volumes, Timings

12: Murphy Pkwy/Village Point Dr & Powell Rd /Powell Rd

07/17/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	34	500	84	26	487	9	90	9	56	6	13	21
Future Volume (vph)	34	500	84	26	487	9	90	9	56	6	13	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	10	11	11	12	11	11	11	11	11
Storage Length (ft)	75		0	90		0	165		0	30		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	30			65			30			50		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.978			0.997			0.871			0.907	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1652	1700	0	1652	1795	0	1770	1568	0	1711	1633	0
Flt Permitted	0.372			0.298			0.367			0.816		
Satd. Flow (perm)	647	1700	0	518	1795	0	684	1568	0	1469	1633	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		13			1			61			23	
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		608			898			513			487	
Travel Time (s)		11.8			17.5			14.0			13.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	37	543	91	28	529	10	98	10	61	7	14	23
Shared Lane Traffic (%)												
Lane Group Flow (vph)	37	634	0	28	539	0	98	71	0	7	37	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		30			30			30			30	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.04	1.04	1.00	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		2			6		7	4			8	

2030 AM Peak 1:26 pm 06/20/2025 Baseline

Synchro 12 Report

Page 5

Lanes, Volumes, Timings

12: Murphy Pkwy/Village Point Dr & Powell Rd /Powell Rd

07/17/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2			6			4			8		
Detector Phase	2	2		6	6		7	4		8	8	
Switch Phase												
Minimum Initial (s)	20.0	20.0		20.0	20.0		7.0	10.0		10.0	10.0	
Minimum Split (s)	44.0	44.0		26.0	26.0		16.0	24.0		24.0	24.0	
Total Split (s)	70.0	70.0		70.0	70.0		16.0	40.0		24.0	24.0	
Total Split (%)	63.6%	63.6%		63.6%	63.6%		14.5%	36.4%		21.8%	21.8%	
Maximum Green (s)	64.0	64.0		64.0	64.0		10.0	34.0		18.0	18.0	
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		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Lead/Lag							Lead			Lag	Lag	
Lead-Lag Optimize?							Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		Min	Min		None	None		None	None	
Walk Time (s)	7.0	7.0		7.0	7.0			7.0		7.0	7.0	
Flash Don't Walk (s)	11.0	11.0		11.0	11.0			11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0			0		0	0	
Act Effect Green (s)	36.2	36.2		36.2	36.2		17.0	18.7		11.0	11.0	
Actuated g/C Ratio	0.60	0.60		0.60	0.60		0.28	0.31		0.18	0.18	
v/c Ratio	0.10	0.62		0.09	0.50		0.28	0.14		0.03	0.12	
Control Delay (s/veh)	10.7	15.9		11.0	13.6		19.7	7.7		30.3	19.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	10.7	15.9		11.0	13.6		19.7	7.7		30.3	19.3	
LOS	B	B		B	B		B	A		C	B	
Approach Delay (s/veh)		15.6			13.4			14.7			21.0	
Approach LOS		B			B			B			C	

Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 60.7

Natural Cycle: 85

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.62

Intersection Signal Delay (s/veh): 14.8

Intersection LOS: B

Intersection Capacity Utilization 53.1%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 12: Murphy Pkwy/Village Point Dr & Powell Rd /Powell Rd



Lanes, Volumes, Timings

18: S Liberty St/N Liberty St & Powell Rd

07/17/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	393	60	0	402	35	0	267	43	0	326	76
Future Volume (vph)	2	393	60	0	402	35	0	267	43	0	326	76
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11	11	11	11	11	11	11
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.982			0.989			0.981			0.974	
Flt Protected												
Satd. Flow (prot)	0	1768	0	0	1781	0	0	1766	0	0	1754	0
Flt Permitted		0.998										
Satd. Flow (perm)	0	1765	0	0	1781	0	0	1766	0	0	1754	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		348			373			1292			1041	
Travel Time (s)		9.5			10.2			35.2			28.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2	427	65	0	437	38	0	290	47	0	354	83
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	494	0	0	475	0	0	337	0	0	437	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		20			20			20			20	
Two way Left Turn Lane												
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2			2			2			2	
Detector Template	Left	Thru			Thru			Thru			Thru	
Leading Detector (ft)	20	100			100			100			100	
Trailing Detector (ft)	0	0			0			0			0	
Detector 1 Position(ft)	0	0			0			0			0	
Detector 1 Size(ft)	20	6			6			6			6	
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0			0.0			0.0	
Detector 1 Queue (s)	0.0	0.0			0.0			0.0			0.0	
Detector 1 Delay (s)	0.0	0.0			0.0			0.0			0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA			NA			NA			NA	
Protected Phases		2			6			4			8	
Permitted Phases	2											
Detector Phase	2	2			6			4			8	
Switch Phase												

2030 AM Peak 1:26 pm 06/20/2025 Baseline

Synchro 12 Report

Page 8

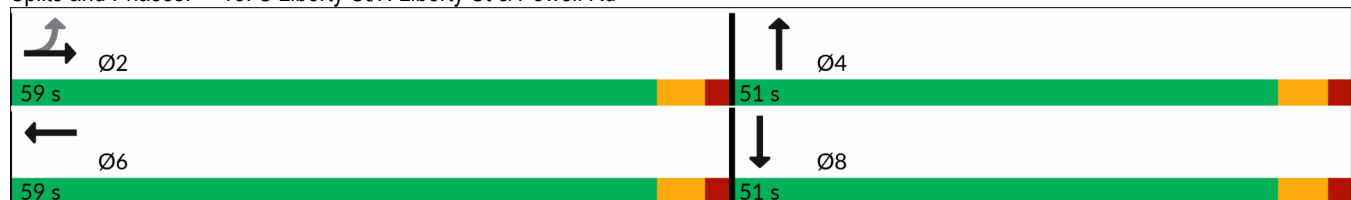
Lanes, Volumes, Timings

18: S Liberty St/N Liberty St & Powell Rd

07/17/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	20.0	20.0			20.0			10.0			10.0	
Minimum Split (s)	26.0	26.0			26.0			24.0			24.0	
Total Split (s)	59.0	59.0			59.0			51.0			51.0	
Total Split (%)	53.6%	53.6%			53.6%			46.4%			46.4%	
Maximum Green (s)	53.0	53.0			53.0			45.0			45.0	
Yellow Time (s)	4.0	4.0			4.0			4.0			4.0	
All-Red Time (s)	2.0	2.0			2.0			2.0			2.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		6.0			6.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0			3.0			3.0			3.0	
Recall Mode	Min	Min			Min			None			None	
Walk Time (s)	7.0	7.0			7.0			7.0			7.0	
Flash Don't Walk (s)	11.0	11.0			11.0			11.0			11.0	
Pedestrian Calls (#/hr)	0	0			0			0			0	
Act Effct Green (s)		26.5			26.5			21.7			21.7	
Actuated g/C Ratio		0.44			0.44			0.36			0.36	
v/c Ratio		0.64			0.61			0.54			0.70	
Control Delay (s/veh)		19.4			18.6			19.7			24.1	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay (s/veh)		19.4			18.6			19.7			24.1	
LOS		B			B			B			C	
Approach Delay (s/veh)		19.4			18.6			19.7			24.1	
Approach LOS		B			B			B			C	
Intersection Summary												
Area Type:	Other											
Cycle Length: 110												
Actuated Cycle Length: 60.9												
Natural Cycle: 55												
Control Type: Semi Act-Uncoord												
Maximum v/c Ratio: 0.70												
Intersection Signal Delay (s/veh): 20.4												
Intersection Capacity Utilization 57.7%												
Analysis Period (min) 15												
Intersection LOS: C												
ICU Level of Service B												

Splits and Phases: 18: S Liberty St/N Liberty St & Powell Rd



Lanes, Volumes, Timings

22: Powell Rd & Grace Dr

07/17/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	51	373	0	0	418	163	0	0	0	185	0	21
Future Volume (vph)	51	373	0	0	418	163	0	0	0	185	0	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	10	10	10	12	12	12
Storage Length (ft)	90		0	50		0	0		0	250		0
Storage Lanes	1		0	1		0	0		0	1		0
Taper Length (ft)	50			50			25			50		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.958							0.850
Flt Protected	0.950									0.950		
Satd. Flow (prot)	1770	1863	0	1863	1785	0	0	1739	0	1770	1583	0
Flt Permitted	0.202									0.757		
Satd. Flow (perm)	376	1863	0	1863	1785	0	0	1739	0	1410	1583	0
Right Turn on Red			Yes			Yes			Yes			No
Satd. Flow (RTOR)					26							
Link Speed (mph)		25			35			25			25	
Link Distance (ft)		344			320			104			460	
Travel Time (s)		9.4			6.2			2.8			12.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	55	405	0	0	454	177	0	0	0	201	0	23
Shared Lane Traffic (%)												
Lane Group Flow (vph)	55	405	0	0	631	0	0	0	0	201	23	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		35			60			25			50	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.09	1.09	1.09	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		Perm	NA					Perm	NA	
Protected Phases	5	2			6			4			8	

2030 AM Peak 1:26 pm 06/20/2025 Baseline

Synchro 12 Report

Page 10

Lanes, Volumes, Timings

22: Powell Rd & Grace Dr

07/17/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2			6			4			8		
Detector Phase	5	2		6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	7.0	20.0		20.0	20.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	13.0	26.0		26.0	26.0		24.0	24.0		22.5	22.5	
Total Split (s)	13.0	76.0		63.0	63.0		34.0	34.0		34.0	34.0	
Total Split (%)	11.8%	69.1%		57.3%	57.3%		30.9%	30.9%		30.9%	30.9%	
Maximum Green (s)	7.0	70.0		57.0	57.0		28.0	28.0		28.0	28.0	
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		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0			6.0		6.0	6.0	
Lead/Lag	Lead			Lag								
Lead-Lag Optimize?	Yes			Yes								
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	Min		Min	Min		None	None		None	None	
Walk Time (s)				7.0	7.0		7.0	7.0				
Flash Don't Walk (s)				11.0	11.0		11.0	11.0				
Pedestrian Calls (#/hr)				0	0		0	0				
Act Effect Green (s)	40.1	40.1			33.6					17.2	17.2	
Actuated g/C Ratio	0.57	0.57			0.48					0.24	0.24	
v/c Ratio	0.15	0.38			0.73					0.59	0.06	
Control Delay (s/veh)	7.7	9.4			21.9					35.5	26.9	
Queue Delay	0.0	0.0			0.0					0.0	0.0	
Total Delay (s/veh)	7.7	9.4			21.9					35.5	26.9	
LOS	A	A			C					D	C	
Approach Delay (s/veh)		9.2			21.9						34.7	
Approach LOS		A			C						C	

Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 70.7

Natural Cycle: 70

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.73

Intersection Signal Delay (s/veh): 19.6

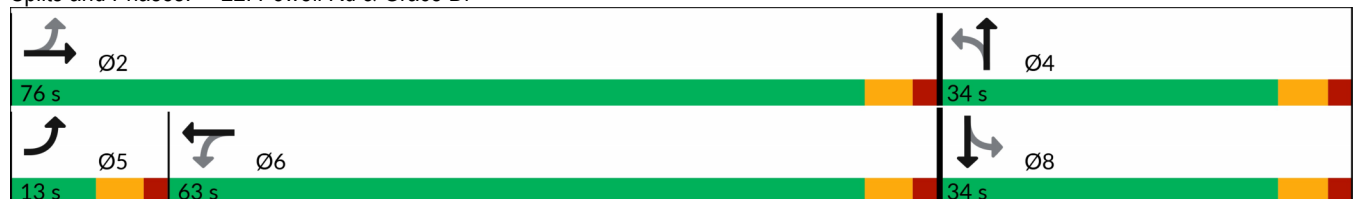
Intersection LOS: B

Intersection Capacity Utilization 62.6%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 22: Powell Rd & Grace Dr



Lanes, Volumes, Timings

27: N Liberty St & Seldom Seen Rd

07/17/2025



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	118	208	144	384	479	149
Future Volume (vph)	118	208	144	384	479	149
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	285	190			0
Storage Lanes	1	1	1			0
Taper Length (ft)	25		55			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850			0.968	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1770	1583	1770	1863	1803	0
Flt Permitted	0.950		0.131			
Satd. Flow (perm)	1770	1583	244	1863	1803	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		148			24	
Link Speed (mph)	35			35	35	
Link Distance (ft)	1316			795	614	
Travel Time (s)	25.6			15.5	12.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	128	226	157	417	521	162
Shared Lane Traffic (%)						
Lane Group Flow (vph)	128	226	157	417	683	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	40			40	40	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1	1	1	2	2	
Detector Template	Left	Right	Left	Thru	Thru	
Leading Detector (ft)	20	20	20	100	100	
Trailing Detector (ft)	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	
Detector 1 Size(ft)	20	20	20	6	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot	pm+ov	pm+pt	NA	NA	
Protected Phases	4	5	5	2	6	
Permitted Phases		4	2			

2030 AM Peak 1:26 pm 06/20/2025 Baseline

Synchro 12 Report

Page 13

Lanes, Volumes, Timings

27: N Liberty St & Seldom Seen Rd

07/17/2025



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Detector Phase	4	5	5	2	6	
Switch Phase						
Minimum Initial (s)	7.0	10.0	10.0	20.0	20.0	
Minimum Split (s)	24.0	16.0	16.0	26.0	26.0	
Total Split (s)	24.0	16.0	16.0	46.0	30.0	
Total Split (%)	34.3%	22.9%	22.9%	65.7%	42.9%	
Maximum Green (s)	18.0	10.0	10.0	40.0	24.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	
Lead/Lag		Lead	Lead		Lag	
Lead-Lag Optimize?		Yes	Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	Min	Min	
Walk Time (s)	7.0			7.0	7.0	
Flash Don't Walk (s)	11.0			11.0	11.0	
Pedestrian Calls (#/hr)	0			0	0	
Act Effect Green (s)	9.9	22.8	40.7	42.2	24.4	
Actuated g/C Ratio	0.17	0.38	0.69	0.71	0.41	
v/c Ratio	0.44	0.32	0.37	0.31	0.91	
Control Delay (s/veh)	28.3	5.9	8.1	6.0	37.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	28.3	5.9	8.1	6.0	37.5	
LOS	C	A	A	A	D	
Approach Delay (s/veh)	14.0			6.6	37.5	
Approach LOS	B			A	D	

Intersection Summary

Area Type: Other

Cycle Length: 70

Actuated Cycle Length: 59.4

Natural Cycle: 75

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.91

Intersection Signal Delay (s/veh): 21.3

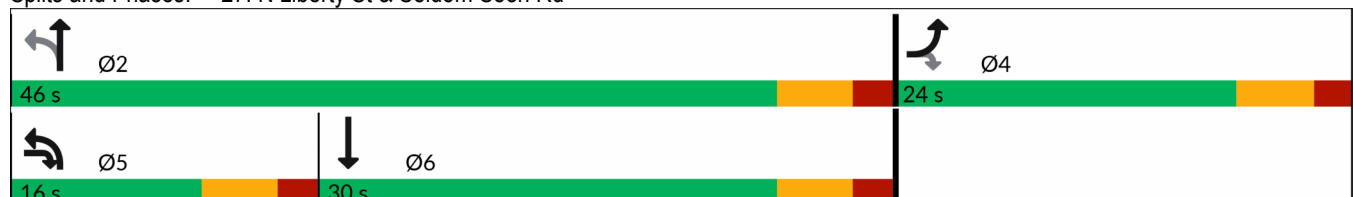
Intersection LOS: C

Intersection Capacity Utilization 64.1%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 27: N Liberty St & Seldom Seen Rd



Lanes, Volumes, Timings

30: N Liberty St & Grace Dr

07/17/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	1	1	41	7	173	2	283	32	262	400	7
Future Volume (vph)	1	1	1	41	7	173	2	283	32	262	400	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	11	11	11	11	11	11	11
Storage Length (ft)	0		0	90		0	70		0	300		0
Storage Lanes	0		0	1		1	1		0	1		0
Taper Length (ft)	25			50			50			60		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.955				0.850		0.985			0.997	
Flt Protected		0.984			0.959		0.950			0.950		
Satd. Flow (prot)	0	1750	0	0	1786	1531	1711	1774	0	1711	1795	0
Flt Permitted		0.914			0.756		0.506			0.368		
Satd. Flow (perm)	0	1626	0	0	1408	1531	911	1774	0	663	1795	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1				188		9			2	
Link Speed (mph)		30			30			25			25	
Link Distance (ft)		109			303			905			731	
Travel Time (s)		2.5			6.9			24.7			19.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1	1	1	45	8	188	2	308	35	285	435	8
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	3	0	0	53	188	2	343	0	285	443	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			30			40			25	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	

2030 AM Peak 1:26 pm 06/20/2025 Baseline

Synchro 12 Report

Page 15

Lanes, Volumes, Timings

30: N Liberty St & Grace Dr

07/17/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4			8		8	2			6		
Detector Phase	4	4		8	8	8	2	2		1	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0	10.0	20.0	20.0		7.0	20.0	
Minimum Split (s)	24.0	24.0		24.0	24.0	24.0	26.0	26.0		13.0	26.0	
Total Split (s)	24.0	24.0		24.0	24.0	24.0	28.0	28.0		18.0	46.0	
Total Split (%)	34.3%	34.3%		34.3%	34.3%	34.3%	40.0%	40.0%		25.7%	65.7%	
Maximum Green (s)	18.0	18.0		18.0	18.0	18.0	22.0	22.0		12.0	40.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.0			6.0	6.0	6.0	6.0		6.0	6.0	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	Min	Min		None	Min	
Walk Time (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0			7.0	
Flash Don't Walk (s)	11.0	11.0		11.0	11.0	11.0	11.0	11.0			11.0	
Pedestrian Calls (#/hr)	0	0		0	0	0	0	0			0	
Act Effect Green (s)		10.2			10.2	10.2	20.4	20.4		36.2	36.2	
Actuated g/C Ratio		0.17			0.17	0.17	0.35	0.35		0.62	0.62	
v/c Ratio		0.01			0.22	0.44	0.01	0.55		0.49	0.40	
Control Delay (s/veh)		19.3			24.0	8.0	13.5	19.3		8.1	6.9	
Queue Delay		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)		19.3			24.0	8.0	13.5	19.3		8.1	6.9	
LOS		B			C	A	B	B		A	A	
Approach Delay (s/veh)		19.3			11.6			19.3			7.3	
Approach LOS		B			B			B			A	

Intersection Summary

Area Type: Other

Cycle Length: 70

Actuated Cycle Length: 58.4

Natural Cycle: 65

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.55

Intersection Signal Delay (s/veh): 11.3

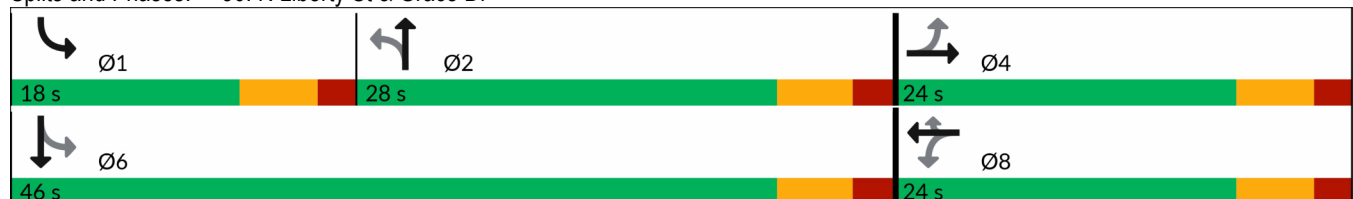
Intersection LOS: B

Intersection Capacity Utilization 61.5%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 30: N Liberty St & Grace Dr



Lanes, Volumes, Timings

35: Bennett Pkwy/Cressingham Ln & Powell Rd

07/17/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	632	6	80	539	5	14	0	109	6	1	6
Future Volume (vph)	2	632	6	80	539	5	14	0	109	6	1	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	12	11	11	11	11	11	11	11
Storage Length (ft)	60		0	90		55	60		0	40		0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (ft)	40			40			40			50		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.998				0.850		0.850			0.869	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1711	1797	0	1711	1770	1454	1711	1531	0	1711	1565	0
Flt Permitted	0.361			0.306			0.752			0.681		
Satd. Flow (perm)	650	1797	0	551	1770	1454	1354	1531	0	1226	1565	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1				30		300			7	
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		820			1007			396			309	
Travel Time (s)		16.0			19.6			10.8			8.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2	687	7	87	586	5	15	0	118	7	1	7
Shared Lane Traffic (%)						10%						
Lane Group Flow (vph)	2	694	0	87	587	4	15	118	0	7	8	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		30			20			30			40	
Two way Left Turn Lane												
Headway Factor	1.04	1.04	1.04	1.04	1.00	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	

2030 AM Peak 1:26 pm 06/20/2025 Baseline

Synchro 12 Report

Page 19

Lanes, Volumes, Timings

35: Bennett Pkwy/Cressingham Ln & Powell Rd

07/17/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2			6		6	4			8		
Detector Phase	2	2		6	6	6	4	4		8	8	
Switch Phase												
Minimum Initial (s)	20.0	20.0		20.0	20.0	20.0	10.0	10.0		10.0	10.0	
Minimum Split (s)	26.0	26.0		26.0	26.0	26.0	22.5	22.5		24.0	24.0	
Total Split (s)	82.0	82.0		82.0	82.0	82.0	28.0	28.0		28.0	28.0	
Total Split (%)	74.5%	74.5%		74.5%	74.5%	74.5%	25.5%	25.5%		25.5%	25.5%	
Maximum Green (s)	76.0	76.0		76.0	76.0	76.0	22.0	22.0		22.0	22.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		Min	Min	Min	None	None		None	None	
Walk Time (s)	7.0	7.0		7.0	7.0	7.0				7.0	7.0	
Flash Don't Walk (s)	11.0	11.0		11.0	11.0	11.0				11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0	0				0	0	
Act Effect Green (s)	28.7	28.7		28.7	28.7	28.7	10.1	10.1		10.1	10.1	
Actuated g/C Ratio	0.62	0.62		0.62	0.62	0.62	0.22	0.22		0.22	0.22	
v/c Ratio	0.00	0.62		0.25	0.53	0.00	0.05	0.21		0.03	0.02	
Control Delay (s/veh)	5.0	10.7		8.3	9.2	0.0	17.3	0.8		17.2	12.0	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	5.0	10.7		8.3	9.2	0.0	17.3	0.8		17.2	12.0	
LOS	A	B		A	A	A	B	A		B	B	
Approach Delay (s/veh)		10.6			9.0			2.7			14.4	
Approach LOS		B			A			A			B	

Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 46

Natural Cycle: 60

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.62

Intersection Signal Delay (s/veh): 9.3

Intersection LOS: A

Intersection Capacity Utilization 73.6%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 35: Bennett Pkwy/Cressingham Ln & Powell Rd



Intersection												
Int Delay, s/veh	18.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	19	523	104	138	472	8	56	2	125	3	4	11
Future Vol, veh/h	19	523	104	138	472	8	56	2	125	3	4	11
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	170	-	-	125	-	125	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	21	568	113	150	513	9	61	2	136	3	4	12
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	522	0	0	682	0	0	1482	1488	625	1424	1536	513
Stage 1	-	-	-	-	-	-	666	666	-	813	813	-
Stage 2	-	-	-	-	-	-	815	822	-	611	723	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1045	-	-	911	-	-	103	124	485	113	116	561
Stage 1	-	-	-	-	-	-	449	457	-	372	392	-
Stage 2	-	-	-	-	-	-	371	388	-	481	431	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1045	-	-	911	-	-	80	102	485	66	95	561
Mov Cap-2 Maneuver	-	-	-	-	-	-	80	102	-	66	95	-
Stage 1	-	-	-	-	-	-	440	448	-	311	327	-
Stage 2	-	-	-	-	-	-	300	324	-	338	422	-
Approach	EB			WB			NB			SB		
HCM Ctrl Dly, s/v	0.25			2.17			136.11			29.3		
HCM LOS							F			D		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	187	1045	-	-	911	-	-	168				
HCM Lane V/C Ratio	1.065	0.02	-	-	0.165	-	-	0.117				
HCM Ctrl Dly (s/v)	136.1	8.5	-	-	9.7	-	-	29.3				
HCM Lane LOS	F	A	-	-	A	-	-	D				
HCM 95th %tile Q(veh)	9.4	0.1	-	-	0.6	-	-	0.4				

Intersection

Int Delay, s/veh 0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	507	8	1	511	7	1	0	4	0	0	25
Future Vol, veh/h	0	507	8	1	511	7	1	0	4	0	0	25
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	Stop
Storage Length	-	-	-	-	-	-	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	551	9	1	555	8	1	0	4	0	0	27

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	560	0	0	1113	1121	555	-	-	559
Stage 1	-	-	-	-	-	-	555	555	-	-	-	-
Stage 2	-	-	-	-	-	-	558	565	-	-	-	-
Critical Hdwy	-	-	-	4.12	-	-	7.12	6.52	6.22	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	-	-	-
Follow-up Hdwy	-	-	-	2.218	-	-	3.518	4.018	3.318	-	-	3.318
Pot Cap-1 Maneuver	0	-	-	1011	-	-	186	206	531	0	0	528
Stage 1	0	-	-	-	-	-	516	513	-	0	0	-
Stage 2	0	-	-	-	-	-	514	508	-	0	0	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	1011	-	-	176	206	531	-	-	528
Mov Cap-2 Maneuver	-	-	-	-	-	-	176	206	-	-	-	-
Stage 1	-	-	-	-	-	-	516	513	-	-	-	-
Stage 2	-	-	-	-	-	-	487	507	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0	0.02	14.66	12.18
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	378	-	-	3	-	-	528
HCM Lane V/C Ratio	0.014	-	-	0.001	-	-	0.051
HCM Ctrl Dly (s/v)	14.7	-	-	8.6	0	-	12.2
HCM Lane LOS	B	-	-	A	A	-	B
HCM 95th %tile Q(veh)	0	-	-	0	-	-	0.2

Intersection												
Int Delay, s/veh	2.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	15	532	18	1	531	13	23	3	13	26	8	28
Future Vol, veh/h	15	532	18	1	531	13	23	3	13	26	8	28
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	200	-	-	60	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	16	578	20	1	577	14	25	3	14	28	9	30

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	591	0	0	598	0	0	1204	1214	588	1199	1217	584
Stage 1	-	-	-	-	-	-	621	621	-	586	586	-
Stage 2	-	-	-	-	-	-	584	593	-	613	630	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	984	-	-	979	-	-	161	181	509	162	181	511
Stage 1	-	-	-	-	-	-	475	479	-	496	497	-
Stage 2	-	-	-	-	-	-	498	493	-	480	475	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	984	-	-	979	-	-	141	178	509	152	178	511
Mov Cap-2 Maneuver	-	-	-	-	-	-	141	178	-	152	178	-
Stage 1	-	-	-	-	-	-	467	472	-	496	496	-
Stage 2	-	-	-	-	-	-	459	493	-	456	467	-

Approach	EB			WB			NB			SB		
HCM Ctrl Dly, s/v	0.23			0.02			29.27			27.14		
HCM LOS							D			D		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	190	984	-	-	979	-	-	229
HCM Lane V/C Ratio	0.223	0.017	-	-	0.001	-	-	0.294
HCM Ctrl Dly (s/v)	29.3	8.7	-	-	8.7	-	-	27.1
HCM Lane LOS	D	A	-	-	A	-	-	D
HCM 95th %tile Q(veh)	0.8	0.1	-	-	0	-	-	1.2

Intersection

Int Delay, s/veh 4.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	130	35	328	120	21	370
Future Vol, veh/h	130	35	328	120	21	370
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	141	38	357	130	23	402

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	870	422	0
Stage 1	422	-	-
Stage 2	448	-	-
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	322	632	-
Stage 1	662	-	-
Stage 2	644	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	313	632	-
Mov Cap-2 Maneuver	313	-	-
Stage 1	662	-	-
Stage 2	626	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	25.51	0	0.45
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	351	97
HCM Lane V/C Ratio	-	-	0.511	0.021
HCM Ctrl Dly (s/v)	-	-	25.5	8.4
HCM Lane LOS	-	-	D	A
HCM 95th %tile Q(veh)	-	-	2.8	0.1

Intersection

Int Delay, s/veh 3.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	37	143	132	411	483	42
Future Vol, veh/h	37	143	132	411	483	42
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	140	0	275	-	-	-
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	40	155	143	447	525	46

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1282	548	571	0	-	0
Stage 1	548	-	-	-	-	-
Stage 2	734	-	-	-	-	-
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	183	536	1002	-	-	-
Stage 1	579	-	-	-	-	-
Stage 2	475	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	156	536	1002	-	-	-
Mov Cap-2 Maneuver	156	-	-	-	-	-
Stage 1	496	-	-	-	-	-
Stage 2	475	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	18.82	2.23	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1002	-	156	536	-	-
HCM Lane V/C Ratio	0.143	-	0.257	0.29	-	-
HCM Ctrl Dly (s/v)	9.2	-	35.8	14.4	-	-
HCM Lane LOS	A	-	E	B	-	-
HCM 95th %tile Q(veh)	0.5	-	1	1.2	-	-



2030 PM Peak

Lanes, Volumes, Timings

3: Sawmill Pkwy & Powell Rd

07/17/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	387	455	179	201	407	185	276	1231	99	301	847	186
Future Volume (vph)	387	455	179	201	407	185	276	1231	99	301	847	186
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	10	11	11	11	12	12	12	12	12	12
Storage Length (ft)	365		135	490		250	300		165	350		135
Storage Lanes	2		1	1		1	2		1	2		1
Taper Length (ft)	100			50			100			135		
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	0.95	0.97	0.95	1.00	0.97	0.95	1.00
Fr't			0.850		0.953				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3319	3421	1478	1711	3260	0	3433	3539	1583	3433	3539	1583
Flt Permitted	0.950			0.300			0.950			0.950		
Satd. Flow (perm)	3319	3421	1478	540	3260	0	3433	3539	1583	3433	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			90		53				82			82
Link Speed (mph)		45			35			45			45	
Link Distance (ft)		709			507			694			804	
Travel Time (s)		10.7			9.9			10.5			12.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	421	495	195	218	442	201	300	1338	108	327	921	202
Shared Lane Traffic (%)												
Lane Group Flow (vph)	421	495	195	218	643	0	300	1338	108	327	921	202
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		22			22			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		50			50			50			50	
Two way Left Turn Lane												
Headway Factor	1.04	1.04	1.09	1.04	1.04	1.04	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	pm+ov	pm+pt	NA		Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	5	2	7	1	6		7	4	1	3	8	5

2030 PM Peak 9:41 pm 12/22/2024 Baseline

Synchro 12 Report

Page 1

Lanes, Volumes, Timings

3: Sawmill Pkwy & Powell Rd

07/17/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases			2	6					4			8
Detector Phase	5	2	7	1	6		7	4	1	3	8	5
Switch Phase												
Minimum Initial (s)	7.0	20.0	7.0	7.0	20.0		7.0	10.0	7.0	7.0	10.0	7.0
Minimum Split (s)	24.0	26.0	24.0	22.5	26.0		24.0	26.0	22.5	22.5	26.0	24.0
Total Split (s)	24.0	28.0	24.0	22.5	26.5		24.0	47.0	22.5	22.5	45.5	24.0
Total Split (%)	20.0%	23.3%	20.0%	18.8%	22.1%		20.0%	39.2%	18.8%	18.8%	37.9%	20.0%
Maximum Green (s)	18.0	22.0	18.0	16.5	20.5		18.0	41.0	16.5	16.5	39.5	18.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag		Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Min	None	None	Min		None	None	None	None	None	None
Walk Time (s)	7.0	7.0	7.0		7.0		7.0	7.0			7.0	7.0
Flash Don't Walk (s)	11.0	11.0	11.0		11.0		11.0	11.0			11.0	11.0
Pedestrian Calls (#/hr)	0	0	0		0		0	0			0	0
Act Effect Green (s)	17.4	23.2	44.4	35.3	20.5		15.2	41.0	61.8	15.2	41.0	64.5
Actuated g/C Ratio	0.15	0.20	0.38	0.30	0.17		0.13	0.35	0.52	0.13	0.35	0.55
v/c Ratio	0.86	0.74	0.32	0.71	1.06		0.68	1.09	0.12	0.74	0.75	0.22
Control Delay (s/veh)	67.5	52.9	15.4	41.2	95.4		57.4	90.8	5.0	60.6	39.2	9.0
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	67.5	52.9	15.4	41.2	95.4		57.4	90.8	5.0	60.6	39.2	9.0
LOS	E	D	B	D	F		E	F	A	E	D	A
Approach Delay (s/veh)		51.8			81.7			79.7			39.8	
Approach LOS		D			F			E			D	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 118.2

Natural Cycle: 130

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 1.09

Intersection Signal Delay (s/veh): 62.9

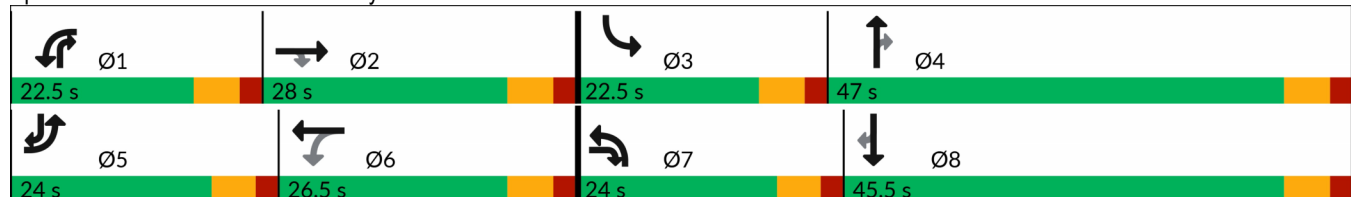
Intersection LOS: E

Intersection Capacity Utilization 90.8%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 3: Sawmill Pkwy & Powell Rd



Lanes, Volumes, Timings

12: Murphy Pkwy/Village Point Dr & Powell Rd /Powell Rd

07/17/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	34	653	94	64	674	33	165	24	54	21	19	45
Future Volume (vph)	34	653	94	64	674	33	165	24	54	21	19	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	10	11	11	12	11	11	11	11	11
Storage Length (ft)	75		0	90		0	165		0	30		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	30			65			30			50		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.981			0.993			0.896			0.895	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1652	1706	0	1652	1788	0	1770	1613	0	1711	1612	0
Flt Permitted	0.198			0.168			0.393			0.702		
Satd. Flow (perm)	344	1706	0	292	1788	0	732	1613	0	1264	1612	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		11			4			59			49	
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		608			898			513			487	
Travel Time (s)		11.8			17.5			14.0			13.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	37	710	102	70	733	36	179	26	59	23	21	49
Shared Lane Traffic (%)												
Lane Group Flow (vph)	37	812	0	70	769	0	179	85	0	23	70	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		30			30			30			30	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.04	1.04	1.00	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		2			6		7	4			8	

2030 PM Peak 9:41 pm 12/22/2024 Baseline

Synchro 12 Report

Page 5

Lanes, Volumes, Timings

12: Murphy Pkwy/Village Point Dr & Powell Rd /Powell Rd

07/17/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2			6			4			8		
Detector Phase	2	2		6	6		7	4		8	8	
Switch Phase												
Minimum Initial (s)	20.0	20.0		20.0	20.0		7.0	10.0		10.0	10.0	
Minimum Split (s)	26.0	26.0		26.0	26.0		13.0	24.0		24.0	24.0	
Total Split (s)	80.0	80.0		80.0	80.0		16.0	40.0		24.0	24.0	
Total Split (%)	66.7%	66.7%		66.7%	66.7%		13.3%	33.3%		20.0%	20.0%	
Maximum Green (s)	74.0	74.0		74.0	74.0		10.0	34.0		18.0	18.0	
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		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Lead/Lag							Lead			Lag	Lag	
Lead-Lag Optimize?							Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		Min	Min		None	None		None	None	
Walk Time (s)	7.0	7.0		7.0	7.0			7.0		7.0	7.0	
Flash Don't Walk (s)	11.0	11.0		11.0	11.0			11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0			0		0	0	
Act Effect Green (s)	43.9	43.9		43.9	43.9		22.2	23.0		11.4	11.4	
Actuated g/C Ratio	0.55	0.55		0.55	0.55		0.28	0.29		0.14	0.14	
v/c Ratio	0.20	0.86		0.43	0.78		0.53	0.17		0.13	0.26	
Control Delay (s/veh)	11.7	25.3		20.4	20.2		33.5	13.0		41.5	20.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	11.7	25.3		20.4	20.2		33.5	13.0		41.5	20.9	
LOS	B	C		C	C		C	B		D	C	
Approach Delay (s/veh)		24.7			20.2			26.9			26.0	
Approach LOS		C			C			C			C	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 79.6

Natural Cycle: 90

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.86

Intersection Signal Delay (s/veh): 23.2

Intersection LOS: C

Intersection Capacity Utilization 79.0%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 12: Murphy Pkwy/Village Point Dr & Powell Rd /Powell Rd



Lanes, Volumes, Timings

18: S Liberty St/N Liberty St & Powell Rd

07/17/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	521	56	1	520	31	1	532	62	1	329	100
Future Volume (vph)	2	521	56	1	520	31	1	532	62	1	329	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11	11	11	11	11	11	11
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.987			0.992			0.986			0.969	
Flt Protected												
Satd. Flow (prot)	0	1777	0	0	1786	0	0	1775	0	0	1745	0
Flt Permitted		0.999			0.999						0.999	
Satd. Flow (perm)	0	1775	0	0	1784	0	0	1775	0	0	1743	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		348			373			1292			1041	
Travel Time (s)		9.5			10.2			35.2			28.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2	566	61	1	565	34	1	578	67	1	358	109
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	629	0	0	600	0	0	646	0	0	468	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		20			20			20			20	
Two way Left Turn Lane												
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		6	6		4	4		8	8	
Switch Phase												

2030 PM Peak 9:41 pm 12/22/2024 Baseline

Synchro 12 Report

Page 8

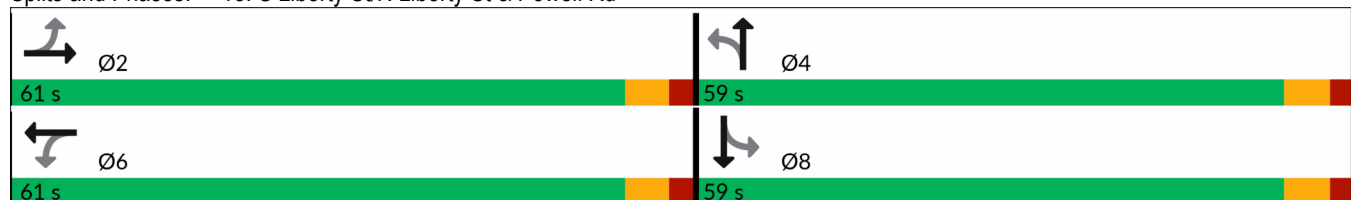
Lanes, Volumes, Timings

18: S Liberty St/N Liberty St & Powell Rd

07/17/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	20.0	20.0		20.0	20.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	26.0	26.0		26.0	26.0		24.0	24.0		24.0	24.0	
Total Split (s)	61.0	61.0		61.0	61.0		59.0	59.0		59.0	59.0	
Total Split (%)	50.8%	50.8%		50.8%	50.8%		49.2%	49.2%		49.2%	49.2%	
Maximum Green (s)	55.0	55.0		55.0	55.0		53.0	53.0		53.0	53.0	
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		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		6.0			6.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		Min	Min		None	None		None	None	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		39.9			39.9			40.3			40.3	
Actuated g/C Ratio		0.43			0.43			0.43			0.43	
v/c Ratio		0.83			0.79			0.84			0.62	
Control Delay (s/veh)		35.3			32.5			36.4			26.0	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay (s/veh)		35.3			32.5			36.4			26.0	
LOS		D			C			D			C	
Approach Delay (s/veh)		35.3			32.5			36.4			26.0	
Approach LOS		D			C			D			C	
Intersection Summary												
Area Type:	Other											
Cycle Length: 120												
Actuated Cycle Length: 93.2												
Natural Cycle: 70												
Control Type: Semi Act-Uncoord												
Maximum v/c Ratio: 0.84												
Intersection Signal Delay (s/veh): 33.0						Intersection LOS: C						
Intersection Capacity Utilization 74.9%						ICU Level of Service D						
Analysis Period (min) 15												

Splits and Phases: 18: S Liberty St/N Liberty St & Powell Rd



Lanes, Volumes, Timings

22: Powell Rd & Grace Dr

07/17/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	64	485	0	0	530	202	0	0	0	154	0	28
Future Volume (vph)	64	485	0	0	530	202	0	0	0	154	0	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	10	10	10	12	12	12
Storage Length (ft)	90		0	50		0	0		0	250		0
Storage Lanes	1		0	1		0	0		0	1		0
Taper Length (ft)	50			50			25			50		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.959						0.850	
Flt Protected	0.950									0.950		
Satd. Flow (prot)	1770	1863	0	1863	1786	0	0	1739	0	1770	1583	0
Flt Permitted	0.135									0.757		
Satd. Flow (perm)	251	1863	0	1863	1786	0	0	1739	0	1410	1583	0
Right Turn on Red			Yes			Yes			Yes			No
Satd. Flow (RTOR)					27							
Link Speed (mph)		25			35			25			25	
Link Distance (ft)		344			320			104			460	
Travel Time (s)		9.4			6.2			2.8			12.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	70	527	0	0	576	220	0	0	0	167	0	30
Shared Lane Traffic (%)												
Lane Group Flow (vph)	70	527	0	0	796	0	0	0	0	167	30	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		35			60			25			50	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.09	1.09	1.09	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		Perm	NA					Perm	NA	
Protected Phases	5	2			6			4			8	

2030 PM Peak 9:41 pm 12/22/2024 Baseline

Synchro 12 Report

Page 10

Lanes, Volumes, Timings

22: Powell Rd & Grace Dr

07/17/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2			6			4			8		
Detector Phase	5	2		6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	7.0	20.0		20.0	20.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	13.0	26.0		26.0	26.0		24.0	24.0		22.5	22.5	
Total Split (s)	13.0	88.5		75.5	75.5		31.5	31.5		31.5	31.5	
Total Split (%)	10.8%	73.8%		62.9%	62.9%		26.3%	26.3%		26.3%	26.3%	
Maximum Green (s)	7.0	82.5		69.5	69.5		25.5	25.5		25.5	25.5	
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		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0			6.0		6.0	6.0	
Lead/Lag	Lead			Lag								
Lead-Lag Optimize?	Yes			Yes								
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	Min		Min	Min		None	None		None	None	
Walk Time (s)				7.0	7.0		7.0	7.0				
Flash Don't Walk (s)				11.0	11.0		11.0	11.0				
Pedestrian Calls (#/hr)				0	0		0	0				
Act Effct Green (s)	53.9	53.9			44.3					16.7	16.7	
Actuated g/C Ratio	0.64	0.64			0.53					0.20	0.20	
v/c Ratio	0.23	0.44			0.84					0.60	0.10	
Control Delay (s/veh)	7.3	8.5			26.0					45.7	34.7	
Queue Delay	0.0	0.0			0.0					0.0	0.0	
Total Delay (s/veh)	7.3	8.5			26.0					45.7	34.7	
LOS	A	A			C					D	C	
Approach Delay (s/veh)		8.3			26.0						44.0	
Approach LOS		A			C						D	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 84.1

Natural Cycle: 80

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.84

Intersection Signal Delay (s/veh): 21.6

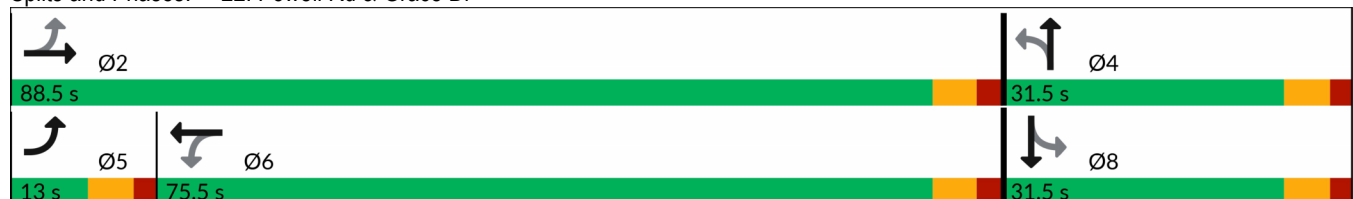
Intersection LOS: C

Intersection Capacity Utilization 69.6%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 22: Powell Rd & Grace Dr



Lanes, Volumes, Timings

27: N Liberty St & Seldom Seen Rd

07/17/2025



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	274	239	291	584	448	229
Future Volume (vph)	274	239	291	584	448	229
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	285	190			0
Storage Lanes	1	1	1			0
Taper Length (ft)	25		55			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850			0.954	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1770	1583	1770	1863	1777	0
Flt Permitted	0.950		0.133			
Satd. Flow (perm)	1770	1583	248	1863	1777	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		169			40	
Link Speed (mph)	35			35	35	
Link Distance (ft)	1316			795	614	
Travel Time (s)	25.6			15.5	12.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	298	260	316	635	487	249
Shared Lane Traffic (%)						
Lane Group Flow (vph)	298	260	316	635	736	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	40			40	40	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1	1	1	2	2	
Detector Template	Left	Right	Left	Thru	Thru	
Leading Detector (ft)	20	20	20	100	100	
Trailing Detector (ft)	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	
Detector 1 Size(ft)	20	20	20	6	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot	pm+ov	pm+pt	NA	NA	
Protected Phases	4	5	5	2	6	
Permitted Phases		4	2			

2030 PM Peak 9:41 pm 12/22/2024 Baseline

Synchro 12 Report

Page 13

Lanes, Volumes, Timings

27: N Liberty St & Seldom Seen Rd

07/17/2025



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Detector Phase	4	5	5	2	6	
Switch Phase						
Minimum Initial (s)	7.0	10.0	10.0	20.0	20.0	
Minimum Split (s)	24.0	16.0	16.0	26.0	26.0	
Total Split (s)	24.0	16.0	16.0	46.0	30.0	
Total Split (%)	34.3%	22.9%	22.9%	65.7%	42.9%	
Maximum Green (s)	18.0	10.0	10.0	40.0	24.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	
Lead/Lag		Lead	Lead		Lag	
Lead-Lag Optimize?		Yes	Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	Min	Min	
Walk Time (s)	7.0			7.0	7.0	
Flash Don't Walk (s)	11.0			11.0	11.0	
Pedestrian Calls (#/hr)	0			0	0	
Act Effect Green (s)	15.2	31.2	40.1	40.1	24.1	
Actuated g/C Ratio	0.23	0.46	0.60	0.60	0.36	
v/c Ratio	0.75	0.32	0.84	0.57	1.11	
Control Delay (s/veh)	36.7	5.2	36.4	11.5	94.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	36.7	5.2	36.4	11.5	94.7	
LOS	D	A	D	B	F	
Approach Delay (s/veh)	22.0			19.8	94.7	
Approach LOS	C			B	F	

Intersection Summary

Area Type: Other

Cycle Length: 70

Actuated Cycle Length: 67.3

Natural Cycle: 90

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 1.11

Intersection Signal Delay (s/veh): 44.9

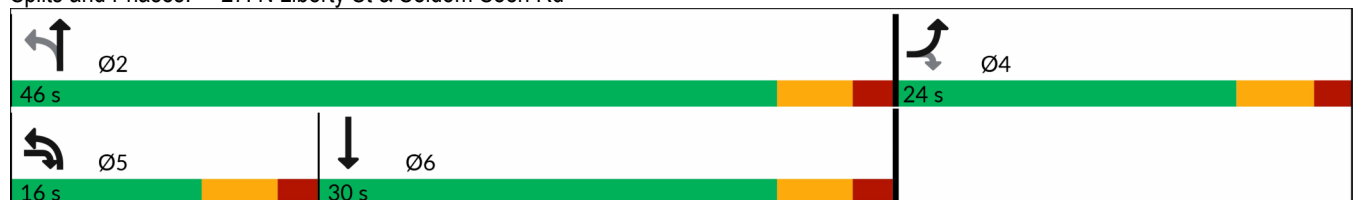
Intersection LOS: D

Intersection Capacity Utilization 83.8%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 27: N Liberty St & Seldom Seen Rd



Lanes, Volumes, Timings

30: N Liberty St & Grace Dr

07/17/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	2	4	56	0	262	0	527	47	227	398	2
Future Volume (vph)	3	2	4	56	0	262	0	527	47	227	398	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	11	11	11	11	11	11	11
Storage Length (ft)	0		0	90		0	70		0	300		0
Storage Lanes	0		0	1		1	1		0	1		0
Taper Length (ft)	25			50			50			60		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.940				0.850		0.988			0.999	
Flt Protected		0.984			0.950					0.950		
Satd. Flow (prot)	0	1723	0	0	1770	1531	1801	1779	0	1711	1799	0
Flt Permitted		0.908			0.752					0.168		
Satd. Flow (perm)	0	1590	0	0	1401	1531	1801	1779	0	303	1799	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4				285		7			1	
Link Speed (mph)		30			30			25			25	
Link Distance (ft)		109			303			905			731	
Travel Time (s)		2.5			6.9			24.7			19.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	3	2	4	61	0	285	0	573	51	247	433	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	9	0	0	61	285	0	624	0	247	435	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			30			40			25	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	

2030 PM Peak 9:41 pm 12/22/2024 Baseline

Synchro 12 Report
Page 15

Lanes, Volumes, Timings

30: N Liberty St & Grace Dr

07/17/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4			8		8	2			6		
Detector Phase	4	4		8	8	8	2	2		1	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0	10.0	20.0	20.0		7.0	20.0	
Minimum Split (s)	24.0	24.0		24.0	24.0	24.0	26.0	26.0		13.0	26.0	
Total Split (s)	24.0	24.0		24.0	24.0	24.0	33.0	33.0		13.0	46.0	
Total Split (%)	34.3%	34.3%		34.3%	34.3%	34.3%	47.1%	47.1%		18.6%	65.7%	
Maximum Green (s)	18.0	18.0		18.0	18.0	18.0	27.0	27.0		7.0	40.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.0			6.0	6.0	6.0	6.0		6.0	6.0	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	Min	Min		None	Min	
Walk Time (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0			7.0	
Flash Don't Walk (s)	11.0	11.0		11.0	11.0	11.0	11.0	11.0			11.0	
Pedestrian Calls (#/hr)	0	0		0	0	0	0	0			0	
Act Effect Green (s)		10.8			10.8	10.8		25.3		38.3	38.3	
Actuated g/C Ratio		0.18			0.18	0.18		0.41		0.63	0.63	
v/c Ratio		0.03			0.25	0.56		0.84		0.70	0.39	
Control Delay (s/veh)		17.6			25.1	8.3		29.3		20.0	7.0	
Queue Delay		0.0			0.0	0.0		0.0		0.0	0.0	
Total Delay (s/veh)		17.6			25.1	8.3		29.3		20.0	7.0	
LOS		B			C	A		C		B	A	
Approach Delay (s/veh)		17.6			11.3			29.3			11.7	
Approach LOS		B			B			C			B	

Intersection Summary

Area Type: Other

Cycle Length: 70

Actuated Cycle Length: 61.2

Natural Cycle: 70

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.84

Intersection Signal Delay (s/veh): 18.3

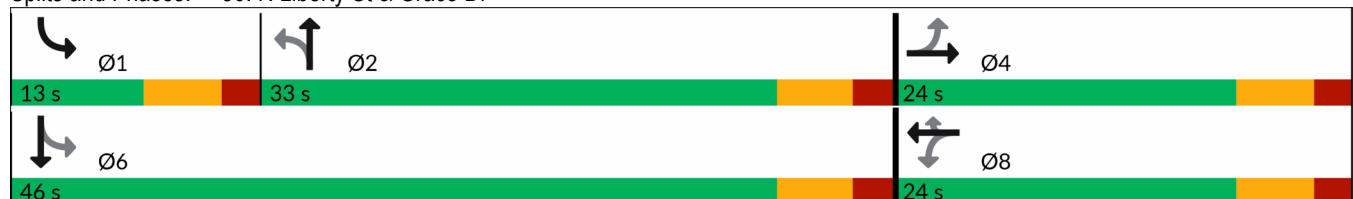
Intersection LOS: B

Intersection Capacity Utilization 70.1%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 30: N Liberty St & Grace Dr



Lanes, Volumes, Timings

35: Bennett Pkwy/Cressingham Ln & Powell Rd

07/17/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	589	13	109	733	10	20	4	158	4	0	8
Future Volume (vph)	6	589	13	109	733	10	20	4	158	4	0	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	12	11	11	11	11	11	11	11
Storage Length (ft)	60		0	90		55	60		0	40		0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (ft)	40			40			40			50		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.997				0.850		0.853			0.850	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1711	1795	0	1711	1770	1454	1711	1536	0	1711	1531	0
Flt Permitted	0.193			0.323			0.752			0.646		
Satd. Flow (perm)	348	1795	0	582	1770	1454	1354	1536	0	1163	1531	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2				27		172			260	
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		833			1007			396			309	
Travel Time (s)		16.2			19.6			10.8			8.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	7	640	14	118	797	11	22	4	172	4	0	9
Shared Lane Traffic (%)						10%						
Lane Group Flow (vph)	7	654	0	118	798	10	22	176	0	4	9	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		30			20			30			40	
Two way Left Turn Lane												
Headway Factor	1.04	1.04	1.04	1.04	1.00	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	

2030 PM Peak 9:41 pm 12/22/2024 Baseline

Synchro 12 Report

Page 19

Lanes, Volumes, Timings

35: Bennett Pkwy/Cressingham Ln & Powell Rd

07/17/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2			6		6	4			8		
Detector Phase	2	2		6	6	6	4	4		8	8	
Switch Phase												
Minimum Initial (s)	20.0	20.0		20.0	20.0	20.0	10.0	10.0		10.0	10.0	
Minimum Split (s)	26.0	26.0		31.0	31.0	31.0	22.5	22.5		24.0	24.0	
Total Split (s)	93.0	93.0		93.0	93.0	93.0	27.0	27.0		27.0	27.0	
Total Split (%)	77.5%	77.5%		77.5%	77.5%	77.5%	22.5%	22.5%		22.5%	22.5%	
Maximum Green (s)	87.0	87.0		87.0	87.0	87.0	21.0	21.0		21.0	21.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		Min	Min	Min	None	None		None	None	
Walk Time (s)	7.0	7.0		7.0	7.0	7.0				7.0	7.0	
Flash Don't Walk (s)	11.0	11.0		11.0	11.0	11.0				11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0	0				0	0	
Act Effect Green (s)	30.3	30.3		30.3	30.3	30.3	10.4	10.4		10.4	10.4	
Actuated g/C Ratio	0.57	0.57		0.57	0.57	0.57	0.20	0.20		0.20	0.20	
v/c Ratio	0.04	0.64		0.36	0.79	0.01	0.08	0.40		0.02	0.02	
Control Delay (s/veh)	4.7	10.4		9.0	15.0	0.7	22.9	8.3		22.5	0.1	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	4.7	10.4		9.0	15.0	0.7	22.9	8.3		22.5	0.1	
LOS	A	B		A	B	A	C	A		C	A	
Approach Delay (s/veh)		10.4			14.1			9.9			7.0	
Approach LOS		B			B			A			A	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 53.1

Natural Cycle: 60

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.79

Intersection Signal Delay (s/veh): 12.2

Intersection LOS: B

Intersection Capacity Utilization 80.4%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 35: Bennett Pkwy/Cressingham Ln & Powell Rd



HCM 7th TWSC

9: Sawmill Rd & Powell Rd/Powell Rd

07/17/2025

Intersection												
Int Delay, s/veh	70.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	34	738	108	169	789	21	33	7	130	9	2	53
Future Vol, veh/h	34	738	108	169	789	21	33	7	130	9	2	53
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	170	-	-	125	-	125	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	37	802	117	184	858	23	36	8	141	10	2	58

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	880	0	0	920	0	0	2161	2183	861	2105	2218	858
Stage 1	-	-	-	-	-	-	935	935	-	1225	1225	-
Stage 2	-	-	-	-	-	-	1226	1248	-	880	993	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	768	-	-	742	-	-	~ 34	46	355	38	44	357
Stage 1	-	-	-	-	-	-	319	344	-	219	251	-
Stage 2	-	-	-	-	-	-	218	245	-	342	323	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	768	-	-	742	-	-	~ 20	33	355	13	31	357
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 20	33	-	13	31	-
Stage 1	-	-	-	-	-	-	303	328	-	165	189	-
Stage 2	-	-	-	-	-	-	136	184	-	191	308	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0.38	1.97	\$ 785.86	194.67
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	75	768	-	-	742	-	-	72
HCM Lane V/C Ratio	2.467	0.048	-	-	0.247	-	-	0.965
HCM Ctrl Dly (s/v)	\$ 785.9	9.9	-	-	11.4	-	-	194.7
HCM Lane LOS	F	A	-	-	B	-	-	F
HCM 95th %tile Q(veh)	17.7	0.2	-	-	1	-	-	5

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

Intersection

Int Delay, s/veh 1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	639	2	0	649	2	8	0	11	0	0	54
Future Vol, veh/h	0	639	2	0	649	2	8	0	11	0	0	54
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	Stop
Storage Length	-	-	-	-	-	-	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	695	2	0	705	2	9	0	12	0	0	59

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	697	0	0	1401	1403	696	-	-	707
Stage 1	-	-	-	-	-	-	696	696	-	-	-	-
Stage 2	-	-	-	-	-	-	705	708	-	-	-	-
Critical Hdwy	-	-	-	4.12	-	-	7.12	6.52	6.22	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	-	-	-
Follow-up Hdwy	-	-	-	2.218	-	-	3.518	4.018	3.318	-	-	3.318
Pot Cap-1 Maneuver	0	-	-	899	-	-	118	140	442	0	0	436
Stage 1	0	-	-	-	-	-	432	443	-	0	0	-
Stage 2	0	-	-	-	-	-	427	438	-	0	0	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	899	-	-	102	140	442	-	-	436
Mov Cap-2 Maneuver	-	-	-	-	-	-	102	140	-	-	-	-
Stage 1	-	-	-	-	-	-	432	443	-	-	-	-
Stage 2	-	-	-	-	-	-	369	438	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0	0	27.08	14.55
HCM LOS			D	B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	184	-	-	899	-	-	436
HCM Lane V/C Ratio	0.113	-	-	-	-	-	0.135
HCM Ctrl Dly (s/v)	27.1	-	-	0	-	-	14.5
HCM Lane LOS	D	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.4	-	-	0	-	-	0.5

Intersection												
Int Delay, s/veh	3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	31	561	46	9	684	16	25	4	8	24	3	19
Future Vol, veh/h	31	561	46	9	684	16	25	4	8	24	3	19
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	200	-	-	60	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	34	610	50	10	743	17	27	4	9	26	3	21

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	761	0	0	660	0	0	1467	1483	635	1451	1499	752
Stage 1	-	-	-	-	-	-	702	702	-	772	772	-
Stage 2	-	-	-	-	-	-	765	780	-	679	727	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	851	-	-	928	-	-	106	125	479	109	122	410
Stage 1	-	-	-	-	-	-	429	440	-	392	409	-
Stage 2	-	-	-	-	-	-	396	406	-	441	429	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	851	-	-	928	-	-	93	119	479	98	116	410
Mov Cap-2 Maneuver	-	-	-	-	-	-	93	119	-	98	116	-
Stage 1	-	-	-	-	-	-	412	423	-	388	405	-
Stage 2	-	-	-	-	-	-	369	401	-	412	412	-

Approach	EB			WB			NB			SB		
HCM Ctrl Dly, s/v	0.46			0.11			51.73			42.43		
HCM LOS							F			E		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	116	851	-	-	928	-	-	145
HCM Lane V/C Ratio	0.347	0.04	-	-	0.011	-	-	0.345
HCM Ctrl Dly (s/v)	51.7	9.4	-	-	8.9	-	-	42.4
HCM Lane LOS	F	A	-	-	A	-	-	E
HCM 95th %tile Q(veh)	1.4	0.1	-	-	0	-	-	1.4

HCM 7th TWSC

32: S Liberty St & Bennett Pkwy

07/17/2025

Intersection

Int Delay, s/veh 6.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	105	32	586	227	41	392
Future Vol, veh/h	105	32	586	227	41	392
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	114	35	637	247	45	426

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	1276	760	0
Stage 1	760	-	-
Stage 2	515	-	-
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	184	406	-
Stage 1	462	-	-
Stage 2	600	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	170	406	-
Mov Cap-2 Maneuver	170	-	-
Stage 1	462	-	-
Stage 2	554	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	64.64	0	0.95
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	197	170
HCM Lane V/C Ratio	-	-	0.757	0.058
HCM Ctrl Dly (s/v)	-	-	64.6	10
HCM Lane LOS	-	-	F	A
HCM 95th %tile Q(veh)	-	-	5.1	0.2

Intersection

Int Delay, s/veh 5.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	32	180	241	791	458	60
Future Vol, veh/h	32	180	241	791	458	60
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	140	0	275	-	-	-
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	35	196	262	860	498	65

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	1914	530	563
Stage 1	530	-	-
Stage 2	1384	-	-
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	74	549	1008
Stage 1	590	-	-
Stage 2	232	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	55	549	1008
Mov Cap-2 Maneuver	55	-	-
Stage 1	437	-	-
Stage 2	232	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	35.01	2.29	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1008	-	55	549	-	-
HCM Lane V/C Ratio	0.26	-	0.631	0.357	-	-
HCM Ctrl Dly (s/v)	9.8	-	146.7	15.2	-	-
HCM Lane LOS	A	-	F	C	-	-
HCM 95th %tile Q(veh)	1	-	2.6	1.6	-	-



2050 AM Peak

Lanes, Volumes, Timings

3: Sawmill Pkwy & Powell Rd

07/17/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	249	416	200	148	336	143	191	615	98	274	1068	225
Future Volume (vph)	249	416	200	148	336	143	191	615	98	274	1068	225
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	10	11	11	11	12	12	12	12	12	12
Storage Length (ft)	365		135	490		250	300		165	350		135
Storage Lanes	2		1	1		1	2		1	2		1
Taper Length (ft)	100			50			100			135		
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	0.95	0.97	0.95	1.00	0.97	0.95	1.00
Fr't			0.850		0.955				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3319	3421	1478	1711	3267	0	3433	3539	1583	3433	3539	1583
Flt Permitted	0.950			0.387			0.950			0.950		
Satd. Flow (perm)	3319	3421	1478	697	3267	0	3433	3539	1583	3433	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			155		52				89			134
Link Speed (mph)		45			35			45			45	
Link Distance (ft)		709			507			694			804	
Travel Time (s)		10.7			9.9			10.5			12.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	271	452	217	161	365	155	208	668	107	298	1161	245
Shared Lane Traffic (%)												
Lane Group Flow (vph)	271	452	217	161	520	0	208	668	107	298	1161	245
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		22			22			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		50			50			50			50	
Two way Left Turn Lane												
Headway Factor	1.04	1.04	1.09	1.04	1.04	1.04	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	pm+ov	pm+pt	NA		Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	5	2	7	1	6		7	4	1	3	8	5

2050 AM Peak 1:11 pm 06/20/2025 Baseline

Synchro 12 Report

Page 1

Lanes, Volumes, Timings

3: Sawmill Pkwy & Powell Rd

07/17/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases			2	6					4			8
Detector Phase	5	2	7	1	6		7	4	1	3	8	5
Switch Phase												
Minimum Initial (s)	7.0	20.0	7.0	7.0	20.0		7.0	10.0	7.0	7.0	10.0	7.0
Minimum Split (s)	24.0	26.0	24.0	22.5	26.0		24.0	24.0	22.5	22.5	24.0	24.0
Total Split (s)	24.0	27.5	24.0	22.5	26.0		24.0	37.5	22.5	22.5	36.0	24.0
Total Split (%)	21.8%	25.0%	21.8%	20.5%	23.6%		21.8%	34.1%	20.5%	20.5%	32.7%	21.8%
Maximum Green (s)	18.0	21.5	18.0	16.5	20.0		18.0	31.5	16.5	16.5	30.0	18.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag		Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Min	None	None	Min		None	None	None	None	None	None
Walk Time (s)	7.0	7.0	7.0		7.0		7.0	7.0			7.0	7.0
Flash Don't Walk (s)	11.0	11.0	11.0		11.0		11.0	11.0			11.0	11.0
Pedestrian Calls (#/hr)	0	0	0		0		0	0			0	0
Act Effect Green (s)	13.4	21.7	39.1	31.9	20.1		11.4	28.5	46.3	13.5	30.7	50.1
Actuated g/C Ratio	0.13	0.22	0.39	0.32	0.20		0.11	0.29	0.46	0.14	0.31	0.50
v/c Ratio	0.61	0.61	0.32	0.47	0.74		0.53	0.66	0.14	0.64	1.07	0.28
Control Delay (s/veh)	47.1	40.2	8.4	25.8	41.9		47.3	35.7	5.0	48.1	81.3	7.4
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	47.1	40.2	8.4	25.8	41.9		47.3	35.7	5.0	48.1	81.3	7.4
LOS	D	D	A	C	D		D	D	A	D	F	A
Approach Delay (s/veh)		34.8			38.1			34.8			64.9	
Approach LOS		C			D			C			E	

Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 99.6

Natural Cycle: 110

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 1.07

Intersection Signal Delay (s/veh): 47.2

Intersection LOS: D

Intersection Capacity Utilization 80.2%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 3: Sawmill Pkwy & Powell Rd

 Ø1	 Ø2	 Ø3	 Ø4
22.5 s	27.5 s	22.5 s	37.5 s
 Ø5	 Ø6	 Ø7	 Ø8
24 s	26 s	24 s	36 s

Lanes, Volumes, Timings

12: Murphy Pkwy/Village Point Dr & Powell Rd /Powell Rd

07/17/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	44	640	107	33	624	12	90	9	56	6	13	21
Future Volume (vph)	44	640	107	33	624	12	90	9	56	6	13	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	10	11	11	12	11	11	11	11	11
Storage Length (ft)	75		0	90		0	165		0	30		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	30			65			30			50		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.979			0.997			0.871			0.907	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1652	1702	0	1652	1795	0	1770	1568	0	1711	1633	0
Flt Permitted	0.263			0.178			0.370			0.833		
Satd. Flow (perm)	457	1702	0	309	1795	0	689	1568	0	1500	1633	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		14			2			61			23	
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		608			898			513			487	
Travel Time (s)		11.8			17.5			14.0			13.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	48	696	116	36	678	13	98	10	61	7	14	23
Shared Lane Traffic (%)												
Lane Group Flow (vph)	48	812	0	36	691	0	98	71	0	7	37	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		30			30			30			30	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.04	1.04	1.00	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		2			6		7	4			8	

2050 AM Peak 1:11 pm 06/20/2025 Baseline

Synchro 12 Report

Page 5

Lanes, Volumes, Timings

12: Murphy Pkwy/Village Point Dr & Powell Rd /Powell Rd

07/17/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2			6			4			8		
Detector Phase	2	2		6	6		7	4		8	8	
Switch Phase												
Minimum Initial (s)	20.0	20.0		20.0	20.0		7.0	10.0		10.0	10.0	
Minimum Split (s)	26.0	26.0		26.0	26.0		13.0	24.0		24.0	24.0	
Total Split (s)	73.0	73.0		73.0	73.0		13.0	37.0		24.0	24.0	
Total Split (%)	66.4%	66.4%		66.4%	66.4%		11.8%	33.6%		21.8%	21.8%	
Maximum Green (s)	67.0	67.0		67.0	67.0		7.0	31.0		18.0	18.0	
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		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Lead/Lag							Lead			Lag	Lag	
Lead-Lag Optimize?							Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		Min	Min		Max	None		None	None	
Walk Time (s)	7.0	7.0		7.0	7.0			7.0		7.0	7.0	
Flash Don't Walk (s)	11.0	11.0		11.0	11.0			11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0			0		0	0	
Act Effect Green (s)	39.6	39.6		39.6	39.6		16.6	17.7		11.4	11.4	
Actuated g/C Ratio	0.57	0.57		0.57	0.57		0.24	0.25		0.16	0.16	
v/c Ratio	0.19	0.84		0.21	0.68		0.33	0.16		0.03	0.13	
Control Delay (s/veh)	9.7	21.3		11.1	14.5		28.7	11.0		37.5	23.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	9.7	21.3		11.1	14.5		28.7	11.0		37.5	23.2	
LOS	A	C		B	B		C	B		D	C	
Approach Delay (s/veh)		20.7			14.3			21.3			25.5	
Approach LOS		C			B			C			C	

Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 69.8

Natural Cycle: 90

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.84

Intersection Signal Delay (s/veh): 18.3

Intersection LOS: B

Intersection Capacity Utilization 61.8%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 12: Murphy Pkwy/Village Point Dr & Powell Rd /Powell Rd



Lanes, Volumes, Timings

18: S Liberty St/N Liberty St & Powell Rd

07/17/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	503	77	0	482	42	0	396	64	0	483	113
Future Volume (vph)	3	503	77	0	482	42	0	396	64	0	483	113
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11	11	11	11	11	11	11
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.982			0.989			0.981			0.974	
Flt Protected												
Satd. Flow (prot)	0	1768	0	0	1781	0	0	1766	0	0	1754	0
Flt Permitted		0.998										
Satd. Flow (perm)	0	1765	0	0	1781	0	0	1766	0	0	1754	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		348			373			1292			1041	
Travel Time (s)		9.5			10.2			35.2			28.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	3	547	84	0	524	46	0	430	70	0	525	123
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	634	0	0	570	0	0	500	0	0	648	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		20			20			20			20	
Two way Left Turn Lane												
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2			2			2			2	
Detector Template	Left	Thru			Thru			Thru			Thru	
Leading Detector (ft)	20	100			100			100			100	
Trailing Detector (ft)	0	0			0			0			0	
Detector 1 Position(ft)	0	0			0			0			0	
Detector 1 Size(ft)	20	6			6			6			6	
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0			0.0			0.0	
Detector 1 Queue (s)	0.0	0.0			0.0			0.0			0.0	
Detector 1 Delay (s)	0.0	0.0			0.0			0.0			0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA			NA			NA			NA	
Protected Phases		2			6			4			8	
Permitted Phases	2											
Detector Phase	2	2			6			4			8	
Switch Phase												

2050 AM Peak 1:11 pm 06/20/2025 Baseline

Synchro 12 Report

Page 8

Lanes, Volumes, Timings

18: S Liberty St/N Liberty St & Powell Rd

07/17/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	20.0	20.0			20.0			10.0			10.0	
Minimum Split (s)	26.0	26.0			26.0			24.0			24.0	
Total Split (s)	57.0	57.0			57.0			53.0			53.0	
Total Split (%)	51.8%	51.8%			51.8%			48.2%			48.2%	
Maximum Green (s)	51.0	51.0			51.0			47.0			47.0	
Yellow Time (s)	4.0	4.0			4.0			4.0			4.0	
All-Red Time (s)	2.0	2.0			2.0			2.0			2.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		6.0			6.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0			3.0			3.0			3.0	
Recall Mode	Min	Min			Min			None			None	
Walk Time (s)	7.0	7.0			7.0			7.0			7.0	
Flash Don't Walk (s)	11.0	11.0			11.0			11.0			11.0	
Pedestrian Calls (#/hr)	0	0			0			0			0	
Act Effct Green (s)		38.6			38.6			38.3			38.3	
Actuated g/C Ratio		0.43			0.43			0.43			0.43	
v/c Ratio		0.83			0.74			0.66			0.87	
Control Delay (s/veh)		34.5			29.0			26.9			38.4	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay (s/veh)		34.5			29.0			26.9			38.4	
LOS		C			C			C			D	
Approach Delay (s/veh)		34.5			29.0			26.9			38.4	
Approach LOS		C			C			C			D	
Intersection Summary												
Area Type:	Other											
Cycle Length: 110												
Actuated Cycle Length: 89.6												
Natural Cycle: 70												
Control Type: Semi Act-Uncoord												
Maximum v/c Ratio: 0.87												
Intersection Signal Delay (s/veh): 32.6					Intersection LOS: C							
Intersection Capacity Utilization 75.9%					ICU Level of Service D							
Analysis Period (min) 15												

Splits and Phases: 18: S Liberty St/N Liberty St & Powell Rd



Lanes, Volumes, Timings

22: Powell Rd & Grace Dr

07/17/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	61	448	0	0	502	195	0	0	0	185	0	21
Future Volume (vph)	61	448	0	0	502	195	0	0	0	185	0	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	10	10	10	12	12	12
Storage Length (ft)	90		0	50		0	0		0	250		0
Storage Lanes	1		0	1		0	0		0	1		0
Taper Length (ft)	50			50			25			50		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.958							0.850
Flt Protected	0.950									0.950		
Satd. Flow (prot)	1770	1863	0	1863	1785	0	0	1739	0	1770	1583	0
Flt Permitted	0.136									0.757		
Satd. Flow (perm)	253	1863	0	1863	1785	0	0	1739	0	1410	1583	0
Right Turn on Red			Yes			Yes			Yes			No
Satd. Flow (RTOR)					28							
Link Speed (mph)		25			35			25			25	
Link Distance (ft)		344			320			104			460	
Travel Time (s)		9.4			6.2			2.8			12.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	66	487	0	0	546	212	0	0	0	201	0	23
Shared Lane Traffic (%)												
Lane Group Flow (vph)	66	487	0	0	758	0	0	0	0	201	23	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		35			60			25			50	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.09	1.09	1.09	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		Perm	NA					Perm	NA	
Protected Phases	5	2			6			4			8	

2050 AM Peak 1:11 pm 06/20/2025 Baseline

Synchro 12 Report

Page 10

Lanes, Volumes, Timings

22: Powell Rd & Grace Dr

07/17/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2			6			4			8		
Detector Phase	5	2		6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	7.0	20.0		20.0	20.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	13.0	26.0		26.0	26.0		24.0	24.0		22.5	22.5	
Total Split (s)	13.0	79.0		66.0	66.0		31.0	31.0		31.0	31.0	
Total Split (%)	11.8%	71.8%		60.0%	60.0%		28.2%	28.2%		28.2%	28.2%	
Maximum Green (s)	7.0	73.0		60.0	60.0		25.0	25.0		25.0	25.0	
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		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0			6.0		6.0	6.0	
Lead/Lag	Lead			Lag								
Lead-Lag Optimize?	Yes			Yes								
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	Min		Min	Min		None	None		None	None	
Walk Time (s)				7.0	7.0		7.0	7.0				
Flash Don't Walk (s)				11.0	11.0		11.0	11.0				
Pedestrian Calls (#/hr)				0	0		0	0				
Act Effct Green (s)	49.9	49.9			40.3					17.7	17.7	
Actuated g/C Ratio	0.62	0.62			0.50					0.22	0.22	
v/c Ratio	0.22	0.42			0.84					0.65	0.07	
Control Delay (s/veh)	7.7	9.0			27.5					44.7	31.5	
Queue Delay	0.0	0.0			0.0					0.0	0.0	
Total Delay (s/veh)	7.7	9.0			27.5					44.7	31.5	
LOS	A	A			C					D	C	
Approach Delay (s/veh)		8.8			27.5						43.3	
Approach LOS		A			C						D	

Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 81

Natural Cycle: 80

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.84

Intersection Signal Delay (s/veh): 23.1

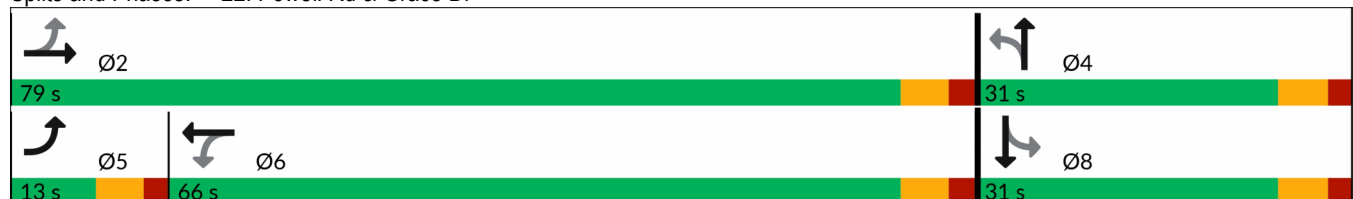
Intersection LOS: C

Intersection Capacity Utilization 69.4%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 22: Powell Rd & Grace Dr



Lanes, Volumes, Timings

27: N Liberty St & Seldom Seen Rd

07/17/2025



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	132	233	213	569	709	221
Future Volume (vph)	132	233	213	569	709	221
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	285	190			0
Storage Lanes	1	1	1			0
Taper Length (ft)	25		55			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850			0.968	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1770	1583	1770	1863	1803	0
Flt Permitted	0.950		0.131			
Satd. Flow (perm)	1770	1583	244	1863	1803	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		54			24	
Link Speed (mph)	35			35	35	
Link Distance (ft)	1316			795	614	
Travel Time (s)	25.6			15.5	12.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	143	253	232	618	771	240
Shared Lane Traffic (%)						
Lane Group Flow (vph)	143	253	232	618	1011	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	40			40	40	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1	1	1	2	2	
Detector Template	Left	Right	Left	Thru	Thru	
Leading Detector (ft)	20	20	20	100	100	
Trailing Detector (ft)	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	
Detector 1 Size(ft)	20	20	20	6	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot	pm+ov	pm+pt	NA	NA	
Protected Phases	4	5	5	2	6	
Permitted Phases		4	2			

2050 AM Peak 1:11 pm 06/20/2025 Baseline

Synchro 12 Report

Page 13

Lanes, Volumes, Timings

27: N Liberty St & Seldom Seen Rd

07/17/2025



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Detector Phase	4	5	5	2	6	
Switch Phase						
Minimum Initial (s)	7.0	10.0	10.0	20.0	20.0	
Minimum Split (s)	24.0	16.0	16.0	26.0	26.0	
Total Split (s)	24.0	16.0	16.0	46.0	30.0	
Total Split (%)	34.3%	22.9%	22.9%	65.7%	42.9%	
Maximum Green (s)	18.0	10.0	10.0	40.0	24.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	
Lead/Lag		Lead	Lead		Lag	
Lead-Lag Optimize?		Yes	Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	Min	Min	
Walk Time (s)	7.0			7.0	7.0	
Flash Don't Walk (s)	11.0			11.0	11.0	
Pedestrian Calls (#/hr)	0			0	0	
Act Effect Green (s)	10.3	23.2	40.7	42.2	24.4	
Actuated g/C Ratio	0.17	0.39	0.68	0.71	0.41	
v/c Ratio	0.47	0.39	0.55	0.47	1.35	
Control Delay (s/veh)	28.7	11.4	13.6	7.7	188.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	28.7	11.4	13.6	7.7	188.1	
LOS	C	B	B	A	F	
Approach Delay (s/veh)	17.6			9.3	188.1	
Approach LOS	B			A	F	

Intersection Summary

Area Type: Other

Cycle Length: 70

Actuated Cycle Length: 59.8

Natural Cycle: 90

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 1.35

Intersection Signal Delay (s/veh): 90.8

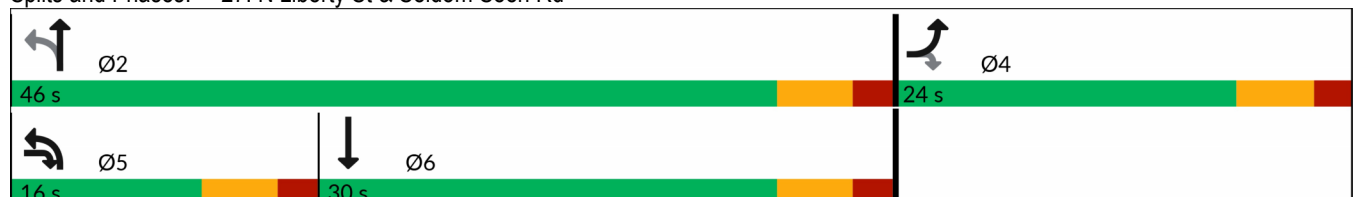
Intersection LOS: F

Intersection Capacity Utilization 84.9%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 27: N Liberty St & Seldom Seen Rd



Lanes, Volumes, Timings

30: N Liberty St & Grace Dr

07/17/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	1	1	41	7	173	4	419	47	388	593	11
Future Volume (vph)	1	1	1	41	7	173	4	419	47	388	593	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	11	11	11	11	11	11	11
Storage Length (ft)	0		0	90		0	70		0	300		0
Storage Lanes	0		0	1		1	1		0	1		0
Taper Length (ft)	25			50			50			60		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.955				0.850		0.985			0.997	
Flt Protected		0.984			0.959		0.950			0.950		
Satd. Flow (prot)	0	1750	0	0	1786	1531	1711	1774	0	1711	1795	0
Flt Permitted		0.914			0.756		0.415			0.175		
Satd. Flow (perm)	0	1626	0	0	1408	1531	747	1774	0	315	1795	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1				188		8			2	
Link Speed (mph)		30			30			25			25	
Link Distance (ft)		109			303			905			731	
Travel Time (s)		2.5			6.9			24.7			19.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1	1	1	45	8	188	4	455	51	422	645	12
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	3	0	0	53	188	4	506	0	422	657	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			30			40			25	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	

2050 AM Peak 1:11 pm 06/20/2025 Baseline

Synchro 12 Report

Page 15

Lanes, Volumes, Timings

30: N Liberty St & Grace Dr

07/17/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4			8		8	2			6		
Detector Phase	4	4		8	8	8	2	2		1	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0	10.0	20.0	20.0		7.0	20.0	
Minimum Split (s)	24.0	24.0		24.0	24.0	24.0	26.0	26.0		13.0	26.0	
Total Split (s)	24.0	24.0		24.0	24.0	24.0	26.0	26.0		20.0	46.0	
Total Split (%)	34.3%	34.3%		34.3%	34.3%	34.3%	37.1%	37.1%		28.6%	65.7%	
Maximum Green (s)	18.0	18.0		18.0	18.0	18.0	20.0	20.0		14.0	40.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.0			6.0	6.0	6.0	6.0		6.0	6.0	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	Min	Min		None	Min	
Walk Time (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0			7.0	
Flash Don't Walk (s)	11.0	11.0		11.0	11.0	11.0	11.0	11.0			11.0	
Pedestrian Calls (#/hr)	0	0		0	0	0	0	0			0	
Act Effect Green (s)		10.2			10.2	10.2	20.0	20.0		39.9	39.9	
Actuated g/C Ratio		0.16			0.16	0.16	0.32	0.32		0.64	0.64	
v/c Ratio		0.01			0.23	0.46	0.02	0.88		0.82	0.57	
Control Delay (s/veh)		20.0			25.4	8.4	15.0	39.6		26.6	8.7	
Queue Delay		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)		20.0			25.4	8.4	15.0	39.6		26.6	8.7	
LOS		B			C	A	B	D		C	A	
Approach Delay (s/veh)		20.0			12.1			39.4			15.7	
Approach LOS		B			B			D			B	

Intersection Summary

Area Type: Other

Cycle Length: 70

Actuated Cycle Length: 62.1

Natural Cycle: 75

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.88

Intersection Signal Delay (s/veh): 21.8

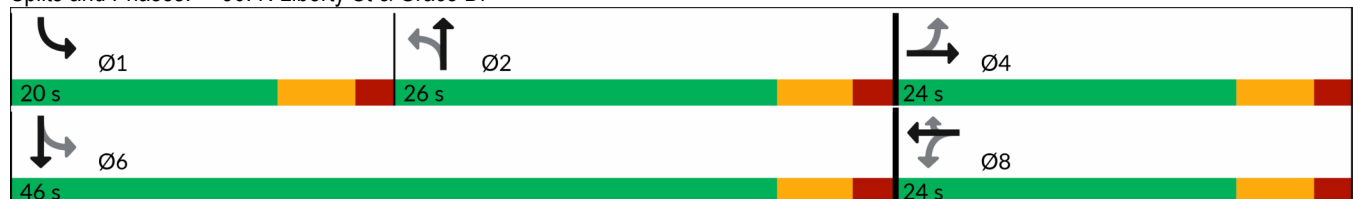
Intersection LOS: C

Intersection Capacity Utilization 71.9%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 30: N Liberty St & Grace Dr



Lanes, Volumes, Timings

35: Bennett Pkwy/Cressingham Ln & Powell Rd

07/17/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	758	7	96	647	6	14	0	109	6	1	6
Future Volume (vph)	3	758	7	96	647	6	14	0	109	6	1	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	12	11	11	11	11	11	11	11
Storage Length (ft)	60		0	90		55	60		0	40		0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (ft)	40			40			40			50		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.999				0.850		0.850			0.869	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1711	1799	0	1711	1770	1454	1711	1531	0	1711	1565	0
Flt Permitted	0.294			0.237			0.752			0.681		
Satd. Flow (perm)	529	1799	0	427	1770	1454	1354	1531	0	1226	1565	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1				30		245			7	
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		834			1007			396			309	
Travel Time (s)		16.2			19.6			10.8			8.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	3	824	8	104	703	7	15	0	118	7	1	7
Shared Lane Traffic (%)						10%						
Lane Group Flow (vph)	3	832	0	104	704	6	15	118	0	7	8	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		30			20			30			40	
Two way Left Turn Lane												
Headway Factor	1.04	1.04	1.04	1.04	1.00	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	

2050 AM Peak 1:11 pm 06/20/2025 Baseline

Synchro 12 Report

Page 19

Lanes, Volumes, Timings

35: Bennett Pkwy/Cressingham Ln & Powell Rd

07/17/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2			6		6	4			8		
Detector Phase	2	2		6	6	6	4	4		8	8	
Switch Phase												
Minimum Initial (s)	20.0	20.0		20.0	20.0	20.0	10.0	10.0		10.0	10.0	
Minimum Split (s)	26.0	26.0		26.0	26.0	26.0	22.5	22.5		24.0	24.0	
Total Split (s)	85.0	85.0		85.0	85.0	85.0	25.0	25.0		25.0	25.0	
Total Split (%)	77.3%	77.3%		77.3%	77.3%	77.3%	22.7%	22.7%		22.7%	22.7%	
Maximum Green (s)	79.0	79.0		79.0	79.0	79.0	19.0	19.0		19.0	19.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		Ped	Ped	Ped	None	None		None	None	
Walk Time (s)	7.0	7.0		7.0	7.0	7.0				7.0	7.0	
Flash Don't Walk (s)	11.0	11.0		11.0	11.0	11.0				11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0	0				0	0	
Act Effect Green (s)	34.9	34.9		34.9	34.9	34.9	10.3	10.3		10.3	10.3	
Actuated g/C Ratio	0.67	0.67		0.67	0.67	0.67	0.20	0.20		0.20	0.20	
v/c Ratio	0.01	0.69		0.36	0.59	0.01	0.06	0.24		0.03	0.03	
Control Delay (s/veh)	4.0	11.2		10.1	9.2	0.0	21.9	1.1		21.7	14.9	
Queue Delay	0.0	0.1		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	4.0	11.4		10.1	9.2	0.0	21.9	1.1		21.7	14.9	
LOS	A	B		B	A	A	C	A		C	B	
Approach Delay (s/veh)		11.3			9.3			3.5			18.0	
Approach LOS		B			A			A			B	

Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 51.9

Natural Cycle: 60

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.69

Intersection Signal Delay (s/veh): 9.9

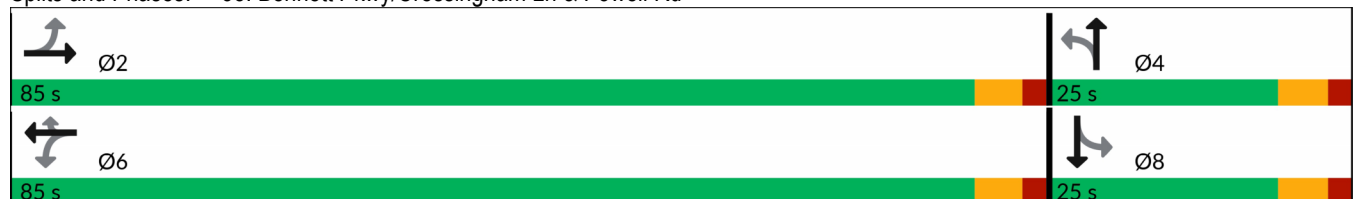
Intersection LOS: A

Intersection Capacity Utilization 80.3%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 35: Bennett Pkwy/Cressingham Ln & Powell Rd



Intersection												
Int Delay, s/veh	80											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	24	669	133	176	604	11	62	2	138	3	4	11
Future Vol, veh/h	24	669	133	176	604	11	62	2	138	3	4	11
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	170	-	-	125	-	125	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	26	727	145	191	657	12	67	2	150	3	4	12

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	668	0	0	872	0	0	1893	1903	799	1820	1963	657
Stage 1	-	-	-	-	-	-	852	852	-	1039	1039	-
Stage 2	-	-	-	-	-	-	1041	1051	-	780	924	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	921	-	-	774	-	-	~ 53	69	385	60	63	465
Stage 1	-	-	-	-	-	-	354	376	-	278	308	-
Stage 2	-	-	-	-	-	-	278	304	-	388	348	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	921	-	-	774	-	-	~ 35	50	385	26	46	465
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 35	50	-	26	46	-
Stage 1	-	-	-	-	-	-	344	365	-	210	232	-
Stage 2	-	-	-	-	-	-	200	229	-	229	338	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0.26	2.49	\$ 710.55	64.36
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	94	921	-	-	774	-	-	80
HCM Lane V/C Ratio	2.347	0.028	-	-	0.247	-	-	0.246
HCM Ctrl Dly (s/v)	\$ 710.5	9	-	-	11.2	-	-	64.4
HCM Lane LOS	F	A	-	-	B	-	-	F
HCM 95th %tile Q(veh)	19.9	0.1	-	-	1	-	-	0.9

Notes

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

Intersection

Int Delay, s/veh 0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	649	11	2	654	9	1	0	4	0	0	25
Future Vol, veh/h	0	649	11	2	654	9	1	0	4	0	0	25
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	Stop
Storage Length	-	-	-	-	-	-	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	705	12	2	711	10	1	0	4	0	0	27

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	717	0	0	1427	1436	711	-	-	716
Stage 1	-	-	-	-	-	-	711	711	-	-	-	-
Stage 2	-	-	-	-	-	-	715	725	-	-	-	-
Critical Hdwy	-	-	-	4.12	-	-	7.12	6.52	6.22	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	-	-	-
Follow-up Hdwy	-	-	-	2.218	-	-	3.518	4.018	3.318	-	-	3.318
Pot Cap-1 Maneuver	0	-	-	884	-	-	113	133	433	0	0	430
Stage 1	0	-	-	-	-	-	424	436	-	0	0	-
Stage 2	0	-	-	-	-	-	422	430	-	0	0	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	884	-	-	105	133	433	-	-	430
Mov Cap-2 Maneuver	-	-	-	-	-	-	105	133	-	-	-	-
Stage 1	-	-	-	-	-	-	424	436	-	-	-	-
Stage 2	-	-	-	-	-	-	393	428	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0	0.03	18.77	13.93
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	267	-	-	5	-	-	430
HCM Lane V/C Ratio	0.02	-	-	0.002	-	-	0.063
HCM Ctrl Dly (s/v)	18.8	-	-	9.1	0	-	13.9
HCM Lane LOS	C	-	-	A	A	-	B
HCM 95th %tile Q(veh)	0.1	-	-	0	-	-	0.2

Intersection												
Int Delay, s/veh	3.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	18	639	22	1	638	15	23	3	13	26	8	28
Future Vol, veh/h	18	639	22	1	638	15	23	3	13	26	8	28
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	200	-	-	60	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	20	695	24	1	693	16	25	3	14	28	9	30

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	710	0	0	718	0	0	1446	1458	707	1439	1461	702
Stage 1	-	-	-	-	-	-	746	746	-	704	704	-
Stage 2	-	-	-	-	-	-	700	712	-	735	758	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	889	-	-	883	-	-	110	129	436	111	129	438
Stage 1	-	-	-	-	-	-	406	421	-	428	440	-
Stage 2	-	-	-	-	-	-	430	436	-	411	415	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	889	-	-	883	-	-	93	126	436	102	126	438
Mov Cap-2 Maneuver	-	-	-	-	-	-	93	126	-	102	126	-
Stage 1	-	-	-	-	-	-	397	411	-	427	439	-
Stage 2	-	-	-	-	-	-	392	435	-	386	406	-

Approach	EB			WB			NB			SB		
HCM Ctrl Dly, s/v	0.24			0.01			45.81			42.16		
HCM LOS							E			E		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	129	889	-	-	883	-	-	162
HCM Lane V/C Ratio	0.328	0.022	-	-	0.001	-	-	0.416
HCM Ctrl Dly (s/v)	45.8	9.1	-	-	9.1	-	-	42.2
HCM Lane LOS	E	A	-	-	A	-	-	E
HCM 95th %tile Q(veh)	1.3	0.1	-	-	0	-	-	1.8

Intersection						
Int Delay, s/veh	10.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	130	35	485	177	31	547
Future Vol, veh/h	130	35	485	177	31	547
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	141	38	527	192	34	595
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1285	623	0	0	720	0
Stage 1	623	-	-	-	-	-
Stage 2	662	-	-	-	-	-
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	182	486	-	-	882	-
Stage 1	535	-	-	-	-	-
Stage 2	513	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	171	486	-	-	882	-
Mov Cap-2 Maneuver	171	-	-	-	-	-
Stage 1	535	-	-	-	-	-
Stage 2	484	-	-	-	-	-
Approach	WB	NB	SB			
HCM Ctrl Dly, s/v	90	0	0.5			
HCM LOS	F					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	198	97	-	
HCM Lane V/C Ratio	-	-	0.904	0.038	-	
HCM Ctrl Dly (s/v)	-	-	90	9.2	0	
HCM Lane LOS	-	-	F	A	A	
HCM 95th %tile Q(veh)	-	-	7.1	0.1	-	

Intersection

Int Delay, s/veh 6.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	37	143	195	609	715	62
Future Vol, veh/h	37	143	195	609	715	62
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	140	0	275	-	-	-
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	40	155	212	662	777	67

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1897	811	845	0	-	0
Stage 1	811	-	-	-	-	-
Stage 2	1086	-	-	-	-	-
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	76	379	792	-	-	-
Stage 1	437	-	-	-	-	-
Stage 2	324	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	56	379	792	-	-	-
Mov Cap-2 Maneuver	56	-	-	-	-	-
Stage 1	320	-	-	-	-	-
Stage 2	324	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	50.25	2.72	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	792	-	56	379	-	-
HCM Lane V/C Ratio	0.268	-	0.719	0.41	-	-
HCM Ctrl Dly (s/v)	11.2	-	163.7	20.9	-	-
HCM Lane LOS	B	-	F	C	-	-
HCM 95th %tile Q(veh)	1.1	-	3	1.9	-	-



2050 PM Peak

Lanes, Volumes, Timings

3: Sawmill Pkwy & Powell Rd

07/17/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	496	583	229	258	521	237	292	1305	105	343	966	212
Future Volume (vph)	496	583	229	258	521	237	292	1305	105	343	966	212
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	10	11	11	11	12	12	12	12	12	12
Storage Length (ft)	365		135	490		250	300		165	350		135
Storage Lanes	2		1	1		1	2		1	2		1
Taper Length (ft)	100			50			100			135		
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	0.95	0.97	0.95	1.00	0.97	0.95	1.00
Fr't			0.850		0.953				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3319	3421	1478	1711	3260	0	3433	3539	1583	3433	3539	1583
Flt Permitted	0.950			0.169			0.950			0.950		
Satd. Flow (perm)	3319	3421	1478	304	3260	0	3433	3539	1583	3433	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			58		56				55			55
Link Speed (mph)		45			35			45			45	
Link Distance (ft)		709			507			694			804	
Travel Time (s)		10.7			9.9			10.5			12.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	539	634	249	280	566	258	317	1418	114	373	1050	230
Shared Lane Traffic (%)												
Lane Group Flow (vph)	539	634	249	280	824	0	317	1418	114	373	1050	230
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		22			22			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		50			50			50			50	
Two way Left Turn Lane												
Headway Factor	1.04	1.04	1.09	1.04	1.04	1.04	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	pm+ov	pm+pt	NA		Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	5	2	7	1	6		7	4	1	3	8	5

2050 PM Peak 1:12 pm 06/20/2025 Baseline

Synchro 12 Report

Page 1

Lanes, Volumes, Timings

3: Sawmill Pkwy & Powell Rd

07/17/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases			2	6					4			8
Detector Phase	5	2	7	1	6		7	4	1	3	8	5
Switch Phase												
Minimum Initial (s)	7.0	20.0	7.0	7.0	20.0		7.0	10.0	7.0	7.0	10.0	7.0
Minimum Split (s)	22.5	24.5	22.5	22.5	24.5		22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	22.5	31.0	22.5	22.5	31.0		22.5	44.0	22.5	22.5	44.0	22.5
Total Split (%)	18.8%	25.8%	18.8%	18.8%	25.8%		18.8%	36.7%	18.8%	18.8%	36.7%	18.8%
Maximum Green (s)	18.0	26.5	18.0	18.0	26.5		18.0	39.5	18.0	18.0	39.5	18.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lead	Lead	Lag		Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Min	None	None	Min		None	None	None	None	None	None
Walk Time (s)	7.0	7.0	7.0		7.0		7.0	7.0			7.0	7.0
Flash Don't Walk (s)	11.0	11.0	11.0		11.0		11.0	11.0			11.0	11.0
Pedestrian Calls (#/hr)	0	0	0		0		0	0			0	0
Act Effect Green (s)	18.0	27.2	47.3	43.9	26.5		15.7	39.5	61.4	16.6	40.5	63.0
Actuated g/C Ratio	0.15	0.23	0.40	0.37	0.22		0.13	0.33	0.52	0.14	0.34	0.53
v/c Ratio	1.07	0.81	0.40	0.88	1.07		0.70	1.20	0.13	0.78	0.87	0.27
Control Delay (s/veh)	108.6	53.0	21.4	57.8	93.5		58.0	135.9	8.5	61.0	46.1	12.6
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	108.6	53.0	21.4	57.8	93.5		58.0	135.9	8.5	61.0	46.1	12.6
LOS	F	D	C	E	F		E	F	A	E	D	B
Approach Delay (s/veh)		68.5			84.5			114.7			44.8	
Approach LOS		E			F			F			D	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 118.7

Natural Cycle: 145

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 1.20

Intersection Signal Delay (s/veh): 79.1

Intersection LOS: E

Intersection Capacity Utilization 97.0%

ICU Level of Service F

Analysis Period (min) 15

Splits and Phases: 3: Sawmill Pkwy & Powell Rd

 Ø1	 Ø2	 Ø3	 Ø4
22.5 s	31 s	22.5 s	44 s
 Ø5	 Ø6	 Ø7	 Ø8
22.5 s	31 s	22.5 s	44 s

Lanes, Volumes, Timings

12: Murphy Pkwy/Village Point Dr & Powell Rd /Powell Rd

07/17/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	44	836	121	81	863	42	165	24	54	21	19	45
Future Volume (vph)	44	836	121	81	863	42	165	24	54	21	19	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	10	11	11	12	11	11	11	11	11
Storage Length (ft)	75		0	90		0	165		0	30		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	30			65			30			50		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.981			0.993			0.896			0.895	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1652	1706	0	1652	1788	0	1770	1613	0	1711	1612	0
Flt Permitted	0.152			0.121			0.393			0.702		
Satd. Flow (perm)	264	1706	0	210	1788	0	732	1613	0	1264	1612	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		12			4			59			49	
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		608			898			513			487	
Travel Time (s)		11.8			17.5			14.0			13.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	48	909	132	88	938	46	179	26	59	23	21	49
Shared Lane Traffic (%)												
Lane Group Flow (vph)	48	1041	0	88	984	0	179	85	0	23	70	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		30			30			30			30	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.04	1.04	1.00	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		2			6		7	4			8	

2050 PM Peak 1:12 pm 06/20/2025 Baseline

Synchro 12 Report

Page 5

Lanes, Volumes, Timings

12: Murphy Pkwy/Village Point Dr & Powell Rd /Powell Rd

07/17/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2			6			4			8		
Detector Phase	2	2		6	6		7	4		8	8	
Switch Phase												
Minimum Initial (s)	20.0	20.0		20.0	20.0		7.0	10.0		10.0	10.0	
Minimum Split (s)	26.0	26.0		26.0	26.0		13.0	24.0		24.0	24.0	
Total Split (s)	83.0	83.0		83.0	83.0		13.0	37.0		24.0	24.0	
Total Split (%)	69.2%	69.2%		69.2%	69.2%		10.8%	30.8%		20.0%	20.0%	
Maximum Green (s)	77.0	77.0		77.0	77.0		7.0	31.0		18.0	18.0	
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		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Lead/Lag							Lead			Lag	Lag	
Lead-Lag Optimize?							Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		Min	Min		Max	None		None	None	
Walk Time (s)	7.0	7.0		7.0	7.0			7.0		7.0	7.0	
Flash Don't Walk (s)	11.0	11.0		11.0	11.0			11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0			0		0	0	
Act Effect Green (s)	67.1	67.1		67.1	67.1		19.3	20.4		11.0	11.0	
Actuated g/C Ratio	0.68	0.68		0.68	0.68		0.19	0.21		0.11	0.11	
v/c Ratio	0.27	0.90		0.62	0.81		0.81	0.23		0.17	0.32	
Control Delay (s/veh)	11.6	26.2		33.5	18.9		67.2	17.0		50.1	24.8	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	11.6	26.2		33.5	18.9		67.2	17.0		50.1	24.8	
LOS	B	C		C	B		E	B		D	C	
Approach Delay (s/veh)		25.5			20.1			51.0			31.1	
Approach LOS		C			C			D			C	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 99.3

Natural Cycle: 110

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.90

Intersection Signal Delay (s/veh): 26.1

Intersection LOS: C

Intersection Capacity Utilization 93.1%

ICU Level of Service F

Analysis Period (min) 15

Splits and Phases: 12: Murphy Pkwy/Village Point Dr & Powell Rd /Powell Rd



Lanes, Volumes, Timings

18: S Liberty St/N Liberty St & Powell Rd

07/17/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	667	72	1	624	37	2	788	91	2	487	148
Future Volume (vph)	3	667	72	1	624	37	2	788	91	2	487	148
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11	11	11	11	11	11	11
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.987			0.992			0.986			0.969	
Flt Protected												
Satd. Flow (prot)	0	1777	0	0	1786	0	0	1775	0	0	1745	0
Flt Permitted		0.998			0.999			0.999			0.998	
Satd. Flow (perm)	0	1774	0	0	1784	0	0	1774	0	0	1741	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		348			373			1292			1041	
Travel Time (s)		9.5			10.2			35.2			28.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	3	725	78	1	678	40	2	857	99	2	529	161
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	806	0	0	719	0	0	958	0	0	692	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		20			20			20			20	
Two way Left Turn Lane												
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		6	6		4	4		8	8	
Switch Phase												

2050 PM Peak 1:12 pm 06/20/2025 Baseline

Synchro 12 Report

Page 8

Lanes, Volumes, Timings

18: S Liberty St/N Liberty St & Powell Rd

07/17/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	20.0	20.0		20.0	20.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	26.0	26.0		26.0	26.0		24.0	24.0		24.0	24.0	
Total Split (s)	56.0	56.0		56.0	56.0		64.0	64.0		64.0	64.0	
Total Split (%)	46.7%	46.7%		46.7%	46.7%		53.3%	53.3%		53.3%	53.3%	
Maximum Green (s)	50.0	50.0		50.0	50.0		58.0	58.0		58.0	58.0	
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		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		6.0			6.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		Min	Min		None	None		None	None	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		50.0			50.0			58.0			58.0	
Actuated g/C Ratio		0.42			0.42			0.48			0.48	
v/c Ratio		1.09			0.97			1.12			0.82	
Control Delay (s/veh)		94.7			60.9			99.1			36.5	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay (s/veh)		94.7			60.9			99.1			36.5	
LOS		F			E			F			D	
Approach Delay (s/veh)		94.7			60.9			99.1			36.5	
Approach LOS		F			E			F			D	
Intersection Summary												
Area Type:	Other											
Cycle Length: 120												
Actuated Cycle Length: 120												
Natural Cycle: 130												
Control Type: Semi Act-Uncoord												
Maximum v/c Ratio: 1.12												
Intersection Signal Delay (s/veh): 75.7						Intersection LOS: E						
Intersection Capacity Utilization 100.2%						ICU Level of Service G						
Analysis Period (min) 15												

Splits and Phases: 18: S Liberty St/N Liberty St & Powell Rd

	Ø2		Ø4
56 s		64 s	
	Ø6		Ø8
56 s		64 s	

Lanes, Volumes, Timings

22: Powell Rd & Grace Dr

07/17/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	76	582	0	0	636	243	0	0	0	154	0	28
Future Volume (vph)	76	582	0	0	636	243	0	0	0	154	0	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	10	10	10	12	12	12
Storage Length (ft)	90		0	50		0	0		0	250		0
Storage Lanes	1		0	1		0	0		0	1		0
Taper Length (ft)	50			50			25			50		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.959							0.850
Flt Protected	0.950									0.950		
Satd. Flow (prot)	1770	1863	0	1863	1786	0	0	1739	0	1770	1583	0
Flt Permitted	0.088									0.757		
Satd. Flow (perm)	164	1863	0	1863	1786	0	0	1739	0	1410	1583	0
Right Turn on Red			Yes			Yes			Yes			No
Satd. Flow (RTOR)					30							
Link Speed (mph)		25			35			25			25	
Link Distance (ft)		344			320			104			460	
Travel Time (s)		9.4			6.2			2.8			12.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	83	633	0	0	691	264	0	0	0	167	0	30
Shared Lane Traffic (%)												
Lane Group Flow (vph)	83	633	0	0	955	0	0	0	0	167	30	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		35			60			25			50	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.09	1.09	1.09	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		Perm	NA					Perm	NA	
Protected Phases	5	2			6			4			8	

2050 PM Peak 1:12 pm 06/20/2025 Baseline

Synchro 12 Report
Page 10

Lanes, Volumes, Timings

22: Powell Rd & Grace Dr

07/17/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2			6			4			8		
Detector Phase	5	2		6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	7.0	20.0		20.0	20.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	13.0	26.0		26.0	26.0		24.0	24.0		22.5	22.5	
Total Split (s)	13.0	93.0		80.0	80.0		27.0	27.0		27.0	27.0	
Total Split (%)	10.8%	77.5%		66.7%	66.7%		22.5%	22.5%		22.5%	22.5%	
Maximum Green (s)	7.0	87.0		74.0	74.0		21.0	21.0		21.0	21.0	
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		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0			6.0		6.0	6.0	
Lead/Lag	Lead			Lag								
Lead-Lag Optimize?	Yes			Yes								
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	Min		Min	Min		None	None		None	None	
Walk Time (s)				7.0	7.0		7.0	7.0				
Flash Don't Walk (s)				11.0	11.0		11.0	11.0				
Pedestrian Calls (#/hr)				0	0		0	0				
Act Effect Green (s)	66.4	66.4			57.0					17.1	17.1	
Actuated g/C Ratio	0.69	0.69			0.59					0.18	0.18	
v/c Ratio	0.34	0.50			0.90					0.67	0.11	
Control Delay (s/veh)	8.5	8.2			30.1					57.6	41.3	
Queue Delay	0.0	0.2			0.0					0.0	0.0	
Total Delay (s/veh)	8.5	8.4			30.1					57.6	41.3	
LOS	A	A			C					E	D	
Approach Delay (s/veh)		8.4			30.1						55.2	
Approach LOS		A			C						E	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 96.9

Natural Cycle: 90

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.90

Intersection Signal Delay (s/veh): 24.4

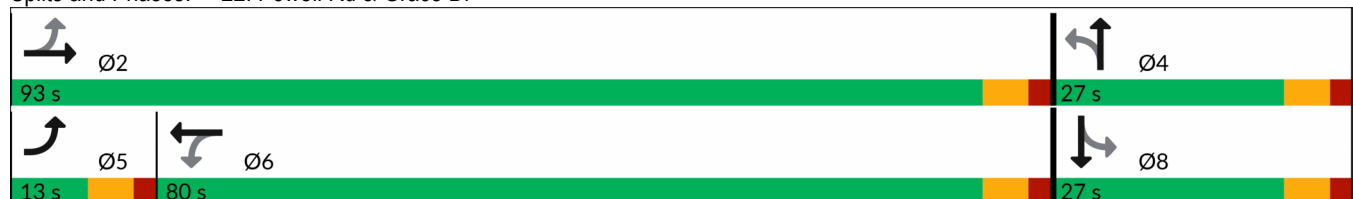
Intersection LOS: C

Intersection Capacity Utilization 77.6%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 22: Powell Rd & Grace Dr



Lanes, Volumes, Timings

27: N Liberty St & Seldom Seen Rd

07/17/2025



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	307	268	430	864	664	339
Future Volume (vph)	307	268	430	864	664	339
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	285	190			0
Storage Lanes	1	1	1			0
Taper Length (ft)	25		55			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850			0.954	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1770	1583	1770	1863	1777	0
Flt Permitted	0.950		0.125			
Satd. Flow (perm)	1770	1583	233	1863	1777	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		82			42	
Link Speed (mph)	35			35	35	
Link Distance (ft)	1316			795	614	
Travel Time (s)	25.6			15.5	12.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	334	291	467	939	722	368
Shared Lane Traffic (%)						
Lane Group Flow (vph)	334	291	467	939	1090	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	40			40	40	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1	1	1	2	2	
Detector Template	Left	Right	Left	Thru	Thru	
Leading Detector (ft)	20	20	20	100	100	
Trailing Detector (ft)	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	
Detector 1 Size(ft)	20	20	20	6	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot	pm+ov	pm+pt	NA	NA	
Protected Phases	4	5	5	2	6	
Permitted Phases		4	2			

2050 PM Peak 1:12 pm 06/20/2025 Baseline

Synchro 12 Report

Page 13

Lanes, Volumes, Timings

27: N Liberty St & Seldom Seen Rd

07/17/2025



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Detector Phase	4	5	5	2	6	
Switch Phase						
Minimum Initial (s)	7.0	7.0	7.0	20.0	20.0	
Minimum Split (s)	24.0	13.0	13.0	26.0	26.0	
Total Split (s)	24.0	14.0	14.0	46.0	32.0	
Total Split (%)	34.3%	20.0%	20.0%	65.7%	45.7%	
Maximum Green (s)	18.0	8.0	8.0	40.0	26.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	
Lead/Lag		Lead	Lead		Lag	
Lead-Lag Optimize?		Yes	Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	Min	Min	
Walk Time (s)	7.0			7.0	7.0	
Flash Don't Walk (s)	11.0			11.0	11.0	
Pedestrian Calls (#/hr)	0			0	0	
Act Effect Green (s)	16.2	30.2	40.0	40.0	26.0	
Actuated g/C Ratio	0.24	0.44	0.59	0.59	0.38	
v/c Ratio	0.80	0.39	1.48	0.86	1.55	
Control Delay (s/veh)	40.2	10.6	250.4	22.8	276.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	40.2	10.6	250.4	22.8	276.1	
LOS	D	B	F	C	F	
Approach Delay (s/veh)	26.4			98.4	276.1	
Approach LOS	C			F	F	

Intersection Summary

Area Type: Other

Cycle Length: 70

Actuated Cycle Length: 68.2

Natural Cycle: 140

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 1.55

Intersection Signal Delay (s/veh): 146.1

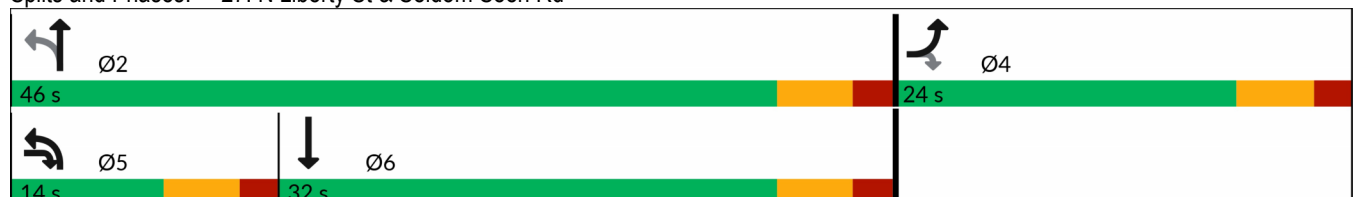
Intersection LOS: F

Intersection Capacity Utilization 111.4%

ICU Level of Service H

Analysis Period (min) 15

Splits and Phases: 27: N Liberty St & Seldom Seen Rd



Lanes, Volumes, Timings

30: N Liberty St & Grace Dr

07/17/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	2	4	56	0	262	0	780	69	335	589	4
Future Volume (vph)	3	2	4	56	0	262	0	780	69	335	589	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	11	11	11	11	11	11	11
Storage Length (ft)	0		0	90		0	70		0	300		0
Storage Lanes	0		0	1		1	1		0	1		0
Taper Length (ft)	25			50			50			60		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.940				0.850		0.988			0.999	
Flt Protected		0.984			0.950					0.950		
Satd. Flow (prot)	0	1723	0	0	1770	1531	1801	1779	0	1711	1799	0
Flt Permitted		0.909			0.752					0.121		
Satd. Flow (perm)	0	1592	0	0	1401	1531	1801	1779	0	218	1799	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4				270		7			1	
Link Speed (mph)		30			30			25			25	
Link Distance (ft)		109			303			905			731	
Travel Time (s)		2.5			6.9			24.7			19.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	3	2	4	61	0	285	0	848	75	364	640	4
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	9	0	0	61	285	0	923	0	364	644	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			30			40			25	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	

2050 PM Peak 1:12 pm 06/20/2025 Baseline

Synchro 12 Report
Page 15

Lanes, Volumes, Timings

30: N Liberty St & Grace Dr

07/17/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4			8		8	2			6		
Detector Phase	4	4		8	8	8	2	2		1	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0	10.0	20.0	20.0		7.0	20.0	
Minimum Split (s)	24.0	24.0		24.0	24.0	24.0	26.0	26.0		13.0	26.0	
Total Split (s)	24.0	24.0		24.0	24.0	24.0	33.0	33.0		13.0	46.0	
Total Split (%)	34.3%	34.3%		34.3%	34.3%	34.3%	47.1%	47.1%		18.6%	65.7%	
Maximum Green (s)	18.0	18.0		18.0	18.0	18.0	27.0	27.0		7.0	40.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.0			6.0	6.0	6.0	6.0		6.0	6.0	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	Min	Min		None	Min	
Walk Time (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0			7.0	
Flash Don't Walk (s)	11.0	11.0		11.0	11.0	11.0	11.0	11.0			11.0	
Pedestrian Calls (#/hr)	0	0		0	0	0	0	0			0	
Act Effect Green (s)		10.9			10.9	10.9		27.0		40.0	40.0	
Actuated g/C Ratio		0.17			0.17	0.17		0.43		0.63	0.63	
v/c Ratio		0.03			0.25	0.58		1.20		1.20	0.56	
Control Delay (s/veh)		17.6			25.2	9.5		125.4		134.6	9.2	
Queue Delay		0.0			0.0	0.0		0.0		0.0	0.0	
Total Delay (s/veh)		17.6			25.2	9.5		125.4		134.6	9.2	
LOS		B			C	A		F		F	A	
Approach Delay (s/veh)		17.6			12.3			125.4			54.5	
Approach LOS		B			B			F			D	

Intersection Summary

Area Type: Other

Cycle Length: 70

Actuated Cycle Length: 63

Natural Cycle: 110

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 1.20

Intersection Signal Delay (s/veh): 76.6

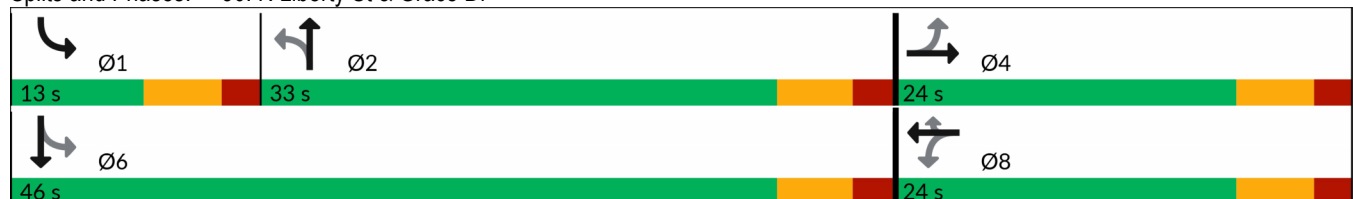
Intersection LOS: E

Intersection Capacity Utilization 87.1%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 30: N Liberty St & Grace Dr



Lanes, Volumes, Timings

35: Bennett Pkwy/Cressingham Ln & Powell Rd

07/17/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	7	707	15	130	880	12	20	4	158	4	0	8
Future Volume (vph)	7	707	15	130	880	12	20	4	158	4	0	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	12	11	11	11	11	11	11	11
Storage Length (ft)	60		0	90		55	60		0	40		0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (ft)	40			40			40			50		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.997				0.850		0.853			0.850	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1711	1795	0	1711	1770	1454	1711	1536	0	1711	1531	0
Flt Permitted	0.134			0.267			0.752			0.646		
Satd. Flow (perm)	241	1795	0	481	1770	1454	1354	1536	0	1163	1531	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2				27		172			206	
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		830			1007			396			309	
Travel Time (s)		16.2			19.6			10.8			8.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	8	768	16	141	957	13	22	4	172	4	0	9
Shared Lane Traffic (%)						10%						
Lane Group Flow (vph)	8	784	0	141	958	12	22	176	0	4	9	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		30			20			30			40	
Two way Left Turn Lane												
Headway Factor	1.04	1.04	1.04	1.04	1.00	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	

2050 PM Peak 1:12 pm 06/20/2025 Baseline

Synchro 12 Report

Page 19

Lanes, Volumes, Timings

35: Bennett Pkwy/Cressingham Ln & Powell Rd

07/17/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2			6		6	4			8		
Detector Phase	2	2		6	6	6	4	4		8	8	
Switch Phase												
Minimum Initial (s)	20.0	20.0		20.0	20.0	20.0	10.0	10.0		10.0	10.0	
Minimum Split (s)	26.0	26.0		26.0	26.0	26.0	22.5	22.5		24.0	24.0	
Total Split (s)	96.0	96.0		96.0	96.0	96.0	24.0	24.0		24.0	24.0	
Total Split (%)	80.0%	80.0%		80.0%	80.0%	80.0%	20.0%	20.0%		20.0%	20.0%	
Maximum Green (s)	90.0	90.0		90.0	90.0	90.0	18.0	18.0		18.0	18.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		Min	Min	Min	None	None		None	None	
Walk Time (s)	7.0	7.0		7.0	7.0	7.0				7.0	7.0	
Flash Don't Walk (s)	11.0	11.0		11.0	11.0	11.0				11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0	0				0	0	
Act Effect Green (s)	42.1	42.1		42.1	42.1	42.1	10.9	10.9		10.9	10.9	
Actuated g/C Ratio	0.64	0.64		0.64	0.64	0.64	0.17	0.17		0.17	0.17	
v/c Ratio	0.05	0.68		0.46	0.84	0.01	0.10	0.44		0.02	0.02	
Control Delay (s/veh)	4.4	10.3		10.7	16.6	0.5	31.3	10.4		31.0	0.1	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	4.4	10.3		10.7	16.6	0.5	31.3	10.4		31.0	0.1	
LOS	A	B		B	B	A	C	B		C	A	
Approach Delay (s/veh)		10.2			15.7			12.7			9.6	
Approach LOS		B			B			B			A	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 65.6

Natural Cycle: 75

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.84

Intersection Signal Delay (s/veh): 13.3

Intersection LOS: B

Intersection Capacity Utilization 88.2%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 35: Bennett Pkwy/Cressingham Ln & Powell Rd



Intersection

Int Delay, s/veh 413.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	44	945	139	217	1009	27	36	7	143	9	2	53
Future Vol, veh/h	44	945	139	217	1009	27	36	7	143	9	2	53
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	170	-	-	125	-	125	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	48	1027	151	236	1097	29	39	8	155	10	2	58

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1126	0	0	1178	0	0	2768	2796	1103	2695	2842	1097
Stage 1	-	-	-	-	-	-	1198	1198	-	1568	1568	-
Stage 2	-	-	-	-	-	-	1570	1598	-	1127	1274	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	620	-	-	593	-	-	~ 12	18	257	14	17	259
Stage 1	-	-	-	-	-	-	226	259	-	139	171	-
Stage 2	-	-	-	-	-	-	139	166	-	249	238	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	620	-	-	593	-	-	~ 5	10	257	~ 1	10	259
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 5	10	-	~ 1	10	-
Stage 1	-	-	-	-	-	-	209	239	-	84	103	-
Stage 2	-	-	-	-	-	-	64	100	-	88	220	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0.44	2.6	\$ 4331.43	\$ 4339.41
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	21	620	-	-	593	-	-	8
HCM Lane V/C Ratio	9.813	0.077	-	-	0.398	-	-	8.643
HCM Ctrl Dly (s/v)	\$ 4331.4	11.3	-	-	15	-	-	\$ 4339.4
HCM Lane LOS	F	B	-	-	C	-	-	F
HCM 95th %tile Q(veh)	25.7	0.2	-	-	1.9	-	-	10.2

Notes

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

Intersection

Int Delay, s/veh 1.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	818	3	0	830	3	8	0	11	0	0	54
Future Vol, veh/h	0	818	3	0	830	3	8	0	11	0	0	54
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	Stop
Storage Length	-	-	-	-	-	-	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	889	3	0	902	3	9	0	12	0	0	59

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	892	0	0	1793	1796	891	-	-	904
Stage 1	-	-	-	-	-	-	891	891	-	-	-	-
Stage 2	-	-	-	-	-	-	902	905	-	-	-	-
Critical Hdwy	-	-	-	4.12	-	-	7.12	6.52	6.22	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	-	-	-
Follow-up Hdwy	-	-	-	2.218	-	-	3.518	4.018	3.318	-	-	3.318
Pot Cap-1 Maneuver	0	-	-	760	-	-	63	80	341	0	0	335
Stage 1	0	-	-	-	-	-	337	361	-	0	0	-
Stage 2	0	-	-	-	-	-	332	355	-	0	0	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	760	-	-	52	80	341	-	-	335
Mov Cap-2 Maneuver	-	-	-	-	-	-	52	80	-	-	-	-
Stage 1	-	-	-	-	-	-	337	361	-	-	-	-
Stage 2	-	-	-	-	-	-	274	355	-	-	-	-

Approach	EB			WB			NB			SB		
HCM Ctrl Dly, s/v	0			0			49.32			17.99		
HCM LOS							E			C		

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	101	-	-	760	-	-	335
HCM Lane V/C Ratio	0.204	-	-	-	-	-	0.175
HCM Ctrl Dly (s/v)	49.3	-	-	0	-	-	18
HCM Lane LOS	E	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.7	-	-	0	-	-	0.6

Intersection												
Int Delay, s/veh	4.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	37	674	55	11	821	19	25	4	8	24	3	19
Future Vol, veh/h	37	674	55	11	821	19	25	4	8	24	3	19
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	200	-	-	60	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	40	733	60	12	892	21	27	4	9	26	3	21

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	913	0	0	792	0	0	1761	1780	763	1742	1799	903
Stage 1	-	-	-	-	-	-	843	843	-	927	927	-
Stage 2	-	-	-	-	-	-	918	937	-	815	873	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	746	-	-	828	-	-	66	82	405	68	80	336
Stage 1	-	-	-	-	-	-	358	380	-	322	347	-
Stage 2	-	-	-	-	-	-	326	343	-	371	368	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	746	-	-	828	-	-	55	77	405	59	74	336
Mov Cap-2 Maneuver	-	-	-	-	-	-	55	77	-	59	74	-
Stage 1	-	-	-	-	-	-	339	359	-	317	342	-
Stage 2	-	-	-	-	-	-	298	338	-	340	348	-

Approach	EB			WB			NB			SB		
HCM Ctrl Dly, s/v	0.49			0.12			108.97			84.84		
HCM LOS							F			F		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	71	746	-	-	828	-	-	91
HCM Lane V/C Ratio	0.57	0.054	-	-	0.014	-	-	0.55
HCM Ctrl Dly (s/v)	109	10.1	-	-	9.4	-	-	84.8
HCM Lane LOS	F	B	-	-	A	-	-	F
HCM 95th %tile Q(veh)	2.4	0.2	-	-	0	-	-	2.5

Intersection

Int Delay, s/veh 39.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	105	32	868	335	60	580
Future Vol, veh/h	105	32	868	335	60	580
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	114	35	943	364	65	630

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	1886	1126	0
Stage 1	1126	-	-
Stage 2	761	-	-
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	~ 78	249	-
Stage 1	310	-	-
Stage 2	461	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	~ 63	249	-
Mov Cap-2 Maneuver	~ 63	-	-
Stage 1	310	-	-
Stage 2	374	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	\$ 563.91	0	1.2
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	76	169
HCM Lane V/C Ratio	-	-	1.956	0.123
HCM Ctrl Dly (s/v)	-	-	\$ 563.9	12.8
HCM Lane LOS	-	-	F	B
HCM 95th %tile Q(veh)	-	-	13.3	0.4

Notes

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

Intersection						
Int Delay, s/veh	27.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	32	180	357	1171	678	89
Future Vol, veh/h	32	180	357	1171	678	89
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	140	0	275	-	-	-
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	35	196	388	1273	737	97

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	2834	785	834	0	-	0
Stage 1	785	-	-	-	-	-
Stage 2	2049	-	-	-	-	-
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	~ 19	393	799	-	-	-
Stage 1	449	-	-	-	-	-
Stage 2	108	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 10	393	799	-	-	-
Mov Cap-2 Maneuver	~ 10	-	-	-	-	-
Stage 1	231	-	-	-	-	-
Stage 2	108	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	\$ 302.29	3.2	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	799	-	10	393	-	-
HCM Lane V/C Ratio	0.485	-	3.503	0.498	-	-
HCM Ctrl Dly (s/v)	13.7	\$ 1873.6	22.9	-	-	-
HCM Lane LOS	B	-	F	C	-	-
HCM 95th %tile Q(veh)	2.7	-	5.5	2.7	-	-

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



Synchro Railroad Analyses



2030 AM Peak

Lanes, Volumes, Timings

39: RxR

07/21/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	515	0	0	537	0	0	0	0	0	1	0
Future Volume (vph)	0	515	0	0	537	0	0	0	0	0	1	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt												
Flt Protected												
Satd. Flow (prot)	0	1863	0	0	1863	0	0	1863	0	0	1863	0
Flt Permitted												
Satd. Flow (perm)	0	1863	0	0	1863	0	0	1863	0	0	1863	0
Right Turn on Red	Yes			Yes			Yes			Yes		
Satd. Flow (RTOR)												
Link Speed (mph)	25			25			25			25		
Link Distance (ft)	425			103			1016			507		
Travel Time (s)	11.6			2.8			27.7			13.8		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	560	0	0	584	0	0	0	0	0	1	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	560	0	0	584	0	0	0	0	0	1	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)	0			0			0			0		
Link Offset(ft)	0			0			0			0		
Crosswalk Width(ft)	16			16			16			16		
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
v/c Ratio	0.32			0.33						0.01		
Control Delay (s/veh)	4.8			4.9						808.0		
Queue Delay	6.8			13.0						0.0		
Total Delay (s/veh)	11.6			17.9						808.0		
Queue Length 50th (ft)	548			582						12		
Queue Length 95th (ft)	540			570						35		
Internal Link Dist (ft)	345			23			936			427		
Turn Bay Length (ft)												
Base Capacity (vph)	1754			1754						98		
Starvation Cap Reductn	1133			1148						0		
Spillback Cap Reductn	0			0						0		
Storage Cap Reductn	0			0						0		
Reduced v/c Ratio	0.90			0.96						0.01		
Intersection Summary												
Area Type:	Other											



2030 PM Peak

Lanes, Volumes, Timings

39: RXR

07/21/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	639	2	0	649	0	0	0	0	0	1	0
Future Volume (vph)	0	639	2	0	649	0	0	0	0	0	1	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt												
Flt Protected												
Satd. Flow (prot)	0	1863	0	0	1863	0	0	1863	0	0	1863	0
Flt Permitted												
Satd. Flow (perm)	0	1863	0	0	1863	0	0	1863	0	0	1863	0
Right Turn on Red	Yes			Yes			Yes			Yes		
Satd. Flow (RTOR)												
Link Speed (mph)	25			25			25			25		
Link Distance (ft)	442			86			1290			1482		
Travel Time (s)	12.1			2.3			35.2			40.4		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	695	2	0	705	0	0	0	0	0	1	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	697	0	0	705	0	0	0	0	0	1	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)	0			0			0			0		
Link Offset(ft)	0			0			0			0		
Crosswalk Width(ft)	16			16			16			16		
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
v/c Ratio	0.40			0.40			0.01			0.01		
Control Delay (s/veh)	5.5			5.6			808.0			808.0		
Queue Delay	8.1			14.9			0.0			0.0		
Total Delay (s/veh)	13.7			20.5			808.0			808.0		
Queue Length 50th (ft)	762			776			12			12		
Queue Length 95th (ft)	736			750			35			35		
Internal Link Dist (ft)	362			6			1210			1402		
Turn Bay Length (ft)												
Base Capacity (vph)	1754			1754			98			98		
Starvation Cap Reductn	1010			1038			0			0		
Spillback Cap Reductn	0			0			0			0		
Storage Cap Reductn	0			0			0			0		
Reduced v/c Ratio	0.94			0.98			0.01			0.01		
Intersection Summary												
Area Type:	Other											



2050 AM Peak

Lanes, Volumes, Timings

39: RxR

07/21/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	660	0	0	680	0	0	0	0	0	1	0
Future Volume (vph)	0	660	0	0	680	0	0	0	0	0	1	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt												
Flt Protected												
Satd. Flow (prot)	0	1863	0	0	1863	0	0	1863	0	0	1863	0
Flt Permitted												
Satd. Flow (perm)	0	1863	0	0	1863	0	0	1863	0	0	1863	0
Right Turn on Red	Yes			Yes			Yes			Yes		
Satd. Flow (RTOR)												
Link Speed (mph)	25			25			25			25		
Link Distance (ft)	426			102			1240			753		
Travel Time (s)	11.6			2.8			33.8			20.5		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	717	0	0	739	0	0	0	0	0	1	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	717	0	0	739	0	0	0	0	0	1	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)	0			0			0			0		
Link Offset(ft)	0			0			0			0		
Crosswalk Width(ft)	16			16			16			16		
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
v/c Ratio	0.41			0.42						0.01		
Control Delay (s/veh)	5.6			5.8						808.0		
Queue Delay	8.5			15.2						0.0		
Total Delay (s/veh)	14.1			21.0						808.0		
Queue Length 50th (ft)	797			838						12		
Queue Length 95th (ft)	769			807						35		
Internal Link Dist (ft)	346			22			1160			673		
Turn Bay Length (ft)												
Base Capacity (vph)	1754			1754						98		
Starvation Cap Reductn	993			1006						0		
Spillback Cap Reductn	0			0						0		
Storage Cap Reductn	0			0						0		
Reduced v/c Ratio	0.94			0.99						0.01		
Intersection Summary												
Area Type:	Other											



2050 PM Peak

Lanes, Volumes, Timings

39: RXR

07/21/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	821	0	0	892	0	0	0	0	0	1	0
Future Volume (vph)	0	821	0	0	892	0	0	0	0	0	1	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt												
Flt Protected												
Satd. Flow (prot)	0	1863	0	0	1863	0	0	1863	0	0	1863	0
Flt Permitted												
Satd. Flow (perm)	0	1863	0	0	1863	0	0	1863	0	0	1863	0
Right Turn on Red	Yes			Yes			Yes			Yes		
Satd. Flow (RTOR)												
Link Speed (mph)	25			25			25			30		
Link Distance (ft)	425			103			131			1272		
Travel Time (s)	11.6			2.8			3.6			28.9		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	892	0	0	970	0	0	0	0	0	1	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	892	0	0	970	0	0	0	0	0	1	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)	0			0			0			0		
Link Offset(ft)	0			0			0			0		
Crosswalk Width(ft)	16			16			16			16		
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
v/c Ratio	0.51			0.55						0.01		
Control Delay (s/veh)	6.9			7.6						808.0		
Queue Delay	10.9			18.1						0.0		
Total Delay (s/veh)	17.8			25.7						808.0		
Queue Length 50th (ft)	1170			1385						12		
Queue Length 95th (ft)	1104			1293						35		
Internal Link Dist (ft)	345			23			51			1192		
Turn Bay Length (ft)												
Base Capacity (vph)	1754			1754						98		
Starvation Cap Reductn	838			794						0		
Spillback Cap Reductn	0			0						0		
Storage Cap Reductn	0			0						0		
Reduced v/c Ratio	0.97			1.01						0.01		
Intersection Summary												
Area Type:	Other											