Traffic Impact Analysis
Strong Rd at 27th St Subdivision

Salem, Oregon

June 20, 2018

completed with
MultiTech Engineering Services, Inc
Salem, Oregon

Prepared by:
Associated Transportation Engineering & Planning, Inc.
Salem, Oregon
June 19, 2018
ATEP 17-392

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Introduction:

The developer intends to build 225 single family home lots in 3 phases on tax lots 100 and 202 of tax map 08S03W Sec11D and tax lot 1600 of tax map 08S03W Sec12B in Salem, Oregon. The 38 acre site is east of Battle Creek Rd and west of Strong Rd in Salem. The site will be developed with access to both Battle Creek Rd and 27th St.

Figure 1 - Vicinity Map

Residents of the Strong Rd at 27th St Subdivision will use the transportation system and add traffic to the roadways in Salem. This analysis will consider the traffic impacts at the intersections of 1) Battle Creek Rd at Kuebler Blvd, 2) Battle Creek Rd at Reed Rd, 3) Reed Rd at Strong Rd, 4) Reed Rd at Fairview Industrial Dr. 5) Fairview Industrial Dr at Marietta St, 6) 27th St at Strong Rd, 7) 27th at Marietta St, 8) 27th at Keubler Blvd and the site accesses at Battle Creek Rd, Reed Rd and 2th St.

Summary of Findings:

When complete the 225 single family homes in the Strong Rd at 27th St Subdivision will generate an estimated 2124 trips each day. 167 of those trips will be in the AM Peak hour and 223 trips will be in the PM Peak hour. Each of the 3 phases of the project are modeled with 75 homes. The performance metrics at the studied intersections when all 3 phases are occupied are shown in the following table.

Intersection	AM Peak hour		PM Peak hour	
	LOS	v/c	LOS	v/c
Battle Creek at Reed	C	0.145	**F**	0.691
Battle Creek at Site Access	D	0.271	D	0.200
Reed at Strong	C	0.015	C	0.025
Reed at Fairview Industrial	**F**	**1.158**	**F**	0.594
Fairview at Marietta	C	0.456	C	0.040
Site Access at Strong	B	0.009	B	0.006
27th at Marietta	B	NA	B	0.112
27th at Kuebler	C	**0.863**	**E**	**0.875**
Battle Creek at Kuebler	D	**0.911**	**F**	**0.968**
Reed at Site Access	B	0.006	B	0.002

Figure 2 - Performance Metrics when Strong Rd at 27th St Subdivision is developed & occupied

Crash data from ODOT Crash Data Unit shows there were 69 crashes at the 7 intersections for which crash data was reviewed for the past 5 years. None were fatal crashes, 36 were injury crashes and 33 were property damage only crashes. The estimated crash rate per MEV is shown in Figure 3. Battle Creek at Reed has a crash rate (0.335) above the 90%ile for Oregon (0.293) for 3 legged stop controlled intersections. The mean crash rate in Oregon for 4 legged signal controlled intersections is 0.477 and the 90th %ile rate is 0.860. Battle Creek at Kuebler is at the 56th %ile.

Intersection	Fatal Crashes	Injury Crashes	Property Damage Crashes	Crashes/MEV	OR 90%ile
Battle Creek at Reed	**0**	**3**	**4**	**0.335**	**0.293**
Reed at Strong	0	0	1	0.101	0.293
Reed at Fairview Ind.	0	2	0	0.097	0.408
Fairview at Marietta	0	1	1	0.151	0.293
27th at Strong	0	0	0	0.000	0.293
27th at Kuebler	0	9	8	0.244	0.860
Battle Creek at Kuebler	0	21	19	0.496	0.860
Total	0	36	33		

Figure 3 - Crashes per MEV at selected intersections from 2011 through 2015

History and Existing Conditions:

Traffic from the planned homes will travel from the site to access the transportation system. The site is generally open rolling hills in southeast Salem. Battle Creek Rd and Kuebler Blvd are important commuter routes in Salem and carry large volumes of traffic. Battle Creek Rd at Reed Rd is a 3 legged stop controlled intersection with a crash rate above the 90%ile rate in Oregon. Even though traffic signal warrants are met at this intersection, the recommended mitigation is to add a left turn lane on the Reed Rd approach at the intersection Kuebler Blvd at Battle Creek Rd is a major signalized intersection and monitoring its performance in the PM Peak hour traffic period should continue

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Battle Creek Rd at Reed Rd	Two-way stop	HCM 6th Edition	SB Left	0.105	19.5	C
11	Reed Rd at Strong Rd	Two-way stop	HCM 6th Edition	WB Left	0.009	13.6	B
16	Reed Rd at Fairview Industrial Dr	Two-way stop	HCM 6th Edition	NB Left	0.833	116.4	F
21	Fairview Industrial Dr at Marietta St	Two-way stop	HCM 6th Edition	EB Left	0.353	17.8	C
31	27th Ave at Marietta St	Two-way stop	HCM 6th Edition	WB Left	0.014	10.8	B
36	27th at Kuebler Blvd	Signalized	HCM 6th Edition	SB Left	0.729	19.6	B
41	Keubler Blvd at Battle Creek Rd	Signalized	HCM 6th Edition	NB Right	0.807	39.0	D

Existing AM Peak Hour Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Battle Creek Rd at Reed Rd	Two-way stop	HCM 6th Edition	SB Left	0.661	35.4	E
11	Reed Rd at Strong Rd	Two-way stop	HCM 6th Edition	WB Left	0.018	14.3	B
16	Reed Rd at Fairview Industrial Dr	Two-way stop	HCM 6th Edition	NB Left	0.366	34.3	D
21	Fairview Industrial Dr at Marietta St	Two-way stop	HCM 6th Edition	EB Left	0.031	14.0	B
31	27th Ave at Marietta St	Two-way stop	HCM 6th Edition	WB Left	0.079	9.9	A
36	27th at Kuebler Blvd	Signalized	HCM 6th Edition	WB Left	0.756	36.3	D
41	Keubler Blvd at Battle Creek Rd	Signalized	HCM 6th Edition	SB Thru	0.829	42.5	D

Existing PM Peak Hour Summary

Figure 4 - Existing Traffic Conditions

Traffic Conditions when Strong Rd at 27th St Subdivision are Complete:

Strong Rd at 27th St Subdivision will add 167 trips to the AM Peak hour traffic and 223 trips to the PM Peak hour traffic. This study will assume the subdivision will be built in 3 phases with 75 single family home lots in each phase. This study will assume 10% of the traffic from the site will travel south of the Keubler Blvd at Battle Creek intersection, 30% will travel west and 35% will travel east of the intersection. 7% will travel north on Battle Creek Rd, 6% will travel east on Marietta St and 2% will travel south of the 27th at Kuebler Blvd intersection. The intersection of Reed Rd at Battle Creek should be monitored for capacity and safety issues. Adding a separate left turn lane on the Reed Rd approach will address the capacity issues and help solve the safety issues. The intersection of Battle Creek at Kuebler Blvd is nearing capacity and should be monitored. The intersection of Reed Rd at Fairview Industrial Dr needs to be studied and reconfigured. changing it to AWSC will improve the performance and accommodate the volume of NBLT traffic in the AM Peak hour period.

The study assumed that traffic will continue to grow at 1.6% per year over the next 10 years consistent with growth projects used for Salem east of the Willamette River.

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Battle Creek Rd at Reed Rd	Two-way stop	HCM 6th Edition	SB Left	0.117	20.4	C
6	Battle Creek Rd at Site Access	Two-way stop	HCM 6th Edition	WB Left	0.076	19.9	C
11	Reed Rd at Strong Rd	Two-way stop	HCM 6th Edition	WB Left	0.010	14.0	B
16	Reed Rd at Fairview Industrial Dr	Two-way stop	HCM 6th Edition	NB Left	0.909	149.8	F
21	Fairview Industrial Dr at Marietta St	Two-way stop	HCM 6th Edition	EB Left	0.379	18.7	C
26	East Access at Strong Rd	Two-way stop	HCM 6th Edition	EB Left	0.003	10.1	B
31	27th Ave at Marietta St	Two-way stop	HCM 6th Edition	WB Left	0.015	11.2	B
41	Keubler Blvd at Battle Creek Rd	Signalized	HCM 6th Edition	NB Right	0.831	41.1	D
42	Reed at Site Access	Two-way stop	HCM 6th Edition	WB Left	0.002	11.4	B

2020 AM Peak Hour Summary with Phase 1 Complete

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Battle Creek Rd at Reed Rd	Two-way stop	HCM 6th Edition	SB Left	0.711	40.7	E
6	Battle Creek Rd at Site Access	Two-way stop	HCM 6th Edition	WB Left	0.053	21.7	C
11	Reed Rd at Strong Rd	Two-way stop	HCM 6th Edition	WB Left	0.019	14.9	B
16	Reed Rd at Fairview Industrial Dr	Two-way stop	HCM 6th Edition	NB Left	0.418	38.6	E
21	Fairview Industrial Dr at Marietta St	Two-way stop	HCM 6th Edition	EB Left	0.033	14.5	B
26	East Access at Strong Rd	Two-way stop	HCM 6th Edition	EB Thru	0.029	10.4	B
31	27th Ave at Marietta St	Two-way stop	HCM 6th Edition	WB Left	0.087	10.3	B
36	27th at Kuebler Blvd	Signalized	HCM 6th Edition	SB Left	0.784	40.6	D
41	Keubler Blvd at Battle Creek Rd	Signalized	HCM 6th Edition	WB Left	0.865	81.5	F
42	Reed at Site Access	Two-way stop	HCM 6th Edition	WB Left	0.000	10.8	B

2020 PM Peak Hour Summary with Phase 1 Complete

Figure 5 – 2020 Traffic Conditions with Phase 1 (75 lots) Complete

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Battle Creek Rd at Reed Rd	Two-way stop	HCM 6th Edition	SB Left	0.131	22.0	C
6	Battle Creek Rd at Site Access	Two-way stop	HCM 6th Edition	WB Left	0.170	24.5	C
11	Reed Rd at Strong Rd	Two-way stop	HCM 6th Edition	WB Left	0.010	14.7	B
16	Reed Rd at Fairview Industrial Dr	Two-way stop	HCM 6th Edition	NB Left	1.025	205.7	F
21	Fairview Industrial Dr at Marietta St	Two-way stop	HCM 6th Edition	EB Left	0.413	20.2	C
26	East Access at Strong Rd	Two-way stop	HCM 6th Edition	EB Left	0.004	10.4	B
31	27th Ave at Marietta St	Two-way stop	HCM 6th Edition	WB Left	0.017	11.7	B
36	27th at Kuebler Blvd	Signalized	HCM 6th Edition	SB Left	0.813	24.1	C
41	Keubler Blvd at Battle Creek Rd	Signalized	HCM 6th Edition	NB Right	0.871	46.3	D
42	Reed at Site Access	Two-way stop	HCM 6th Edition	WB Left	0.002	11.7	B

2023 AM Peak Hour Summary with Phase 2 Complete

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Battle Creek Rd at Reed Rd	Two-way stop	HCM 6th Edition	SB Left	0.800	53.0	F
6	Battle Creek Rd at Site Access	Two-way stop	HCM 6th Edition	WB Left	0.123	25.9	D
11	Reed Rd at Strong Rd	Two-way stop	HCM 6th Edition	WB Left	0.020	15.6	C
16	Reed Rd at Fairview Industrial Dr	Two-way stop	HCM 6th Edition	NB Left	0.502	47.8	E
21	Fairview Industrial Dr at Marietta St	Two-way stop	HCM 6th Edition	EB Left	0.038	15.1	C
26	East Access at Strong Rd	Two-way stop	HCM 6th Edition	EB Left	0.006	10.7	B
31	27th Ave at Marietta St	Two-way stop	HCM 6th Edition	WB Left	0.098	10.8	B
36	27th at Kuebler Blvd	Signalized	HCM 6th Edition	SB Left	0.829	50.1	D
41	Keubler Blvd at Battle Creek Rd	Signalized	HCM 6th Edition	WB Left	0.916	99.7	F
42	Reed at Site Access	Two-way stop	HCM 6th Edition	WB Left	0.002	11.0	B

2023 PM Peak Hour Summary with Phase 2 Complete

Figure 6 – 2023 Traffic Conditions with Phase 2 (150 lots) Complete

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Battle Creek Rd at Reed Rd	Two-way stop	HCM 6th Edition	SB Left	0.145	23.5	C
6	Battle Creek Rd at Site Access	Two-way stop	HCM 6th Edition	WB Left	0.271	29.0	D
11	Reed Rd at Strong Rd	Two-way stop	HCM 6th Edition	WB Left	0.015	15.5	C
16	Reed Rd at Fairview Industrial Dr	Two-way stop	HCM 6th Edition	NB Left	1.158	275.6	F
21	Fairview Industrial Dr at Marietta St	Two-way stop	HCM 6th Edition	EB Left	0.456	22.3	C
26	East Access at Strong Rd	Two-way stop	HCM 6th Edition	EB Left	0.009	10.7	B
31	27th Ave at Marietta St	Two-way stop	HCM 6th Edition	WB Left	0.022	12.4	B
36	27th at Kuebler Blvd	Signalized	HCM 6th Edition	SB Left	0.863	33.1	C
41	Keubler Blvd at Battle Creek Rd	Signalized	HCM 6th Edition	NB Right	0.911	57.6	E
42	Reed at Site Access	Two-way stop	HCM 6th Edition	WB Left	0.006	11.9	B

2026 AM Peak Hour Summary with Phase 3 Complete

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Battle Creek Rd at Reed Rd	Two-way stop	HCM 6th Edition	SB Left	0.891	70.7	F
6	Battle Creek Rd at Site Access	Two-way stop	HCM 6th Edition	WB Left	0.200	30.5	D
11	Reed Rd at Strong Rd	Two-way stop	HCM 6th Edition	WB Left	0.025	16.5	C
16	Reed Rd at Fairview Industrial Dr	All-way stop	HCM 6th Edition	WB Thru	0.612	14.1	B
21	Fairview Industrial Dr at Marietta St	Two-way stop	HCM 6th Edition	EB Left	0.040	15.8	C
26	East Access at Strong Rd	Two-way stop	HCM 6th Edition	EB Left	0.006	11.3	B
31	27th Ave at Marietta St	Two-way stop	HCM 6th Edition	WB Left	0.112	11.4	B
36	27th at Kuebler Blvd	Signalized	HCM 6th Edition	SB Left	0.875	64.5	E
41	Keubler Blvd at Battle Creek Rd	Signalized	HCM 6th Edition	WB Left	0.968	118.6	F
42	Reed at Site Access	Two-way stop	HCM 6th Edition	WB Left	0.002	11.2	B

2026 PM Peak Hour Summary with Phase 3 Complete

Figure 7 – 2026 Traffic Conditions with Phase 3 (225 lots) Complete

All the studied intersections perform within accepted parameters with expected traffic from the apartments.

Summary:

The development of 75 single family home lots in each of 3 phases (225 total home lots) in the planned Strong Rd at 27th St Subdivision will add traffic to the transportation system. Crash data indicates safety problems at the Reed Rd at Battle Creek Rd. The intersection will also be nearing capactiy with the homes in the Strong Rd at 27th St subdivision. Performance can be mitigated by adding a left turn lane to Reed Rd at the intersection. Safety issues should be monitored on an ongoing basis. The intersection of Battle Creek Rd at Keubler Blvd is a major intersection conveying a large volume of traffic during peak hour traffic periods. The v/c will exceed 0.900 with the second phase of the project and planning for improvements or alternative routes should be started. xxxxxxxx

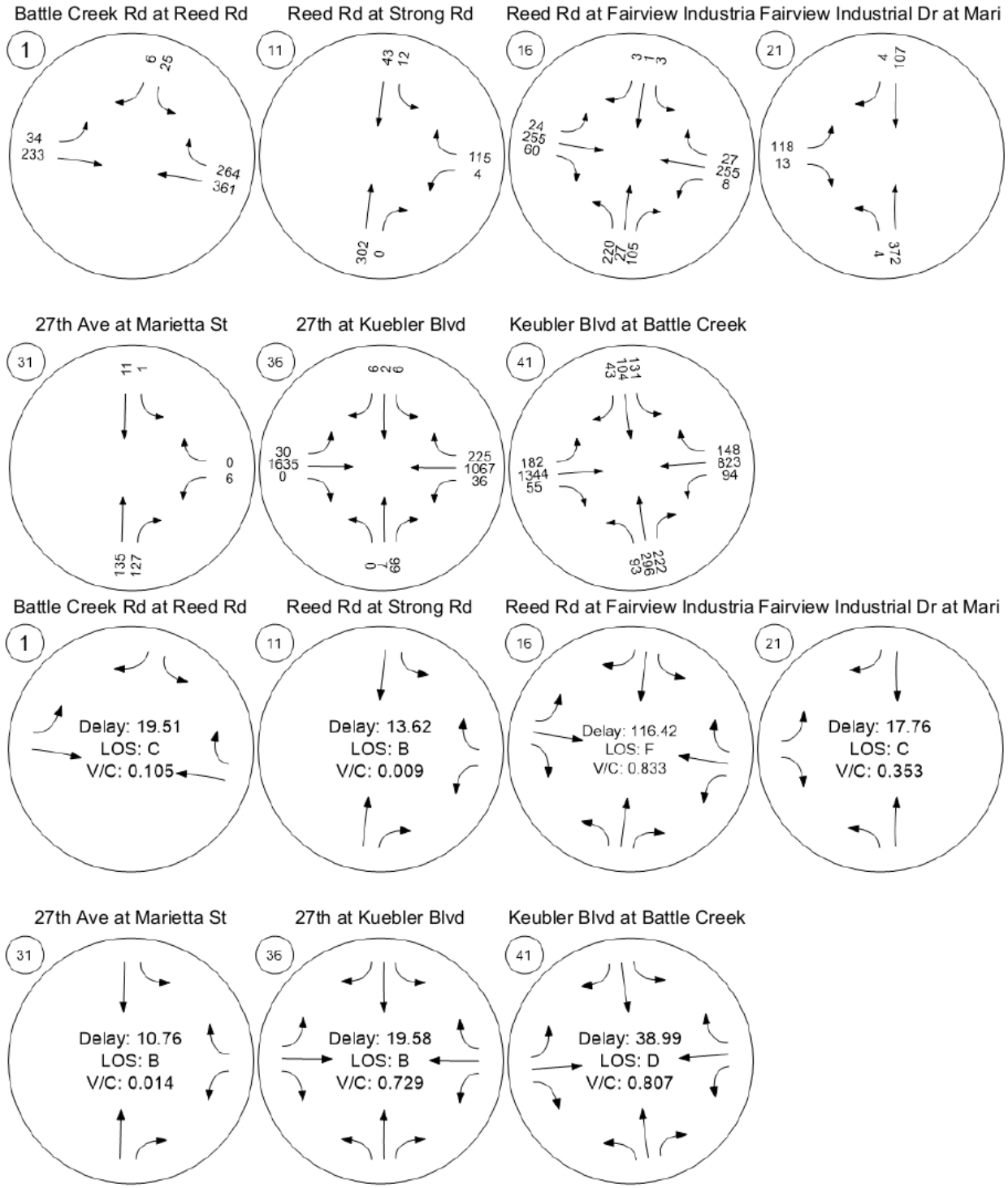


Figure 8 - Existing AM Peak hour Counts & Performance Metrics

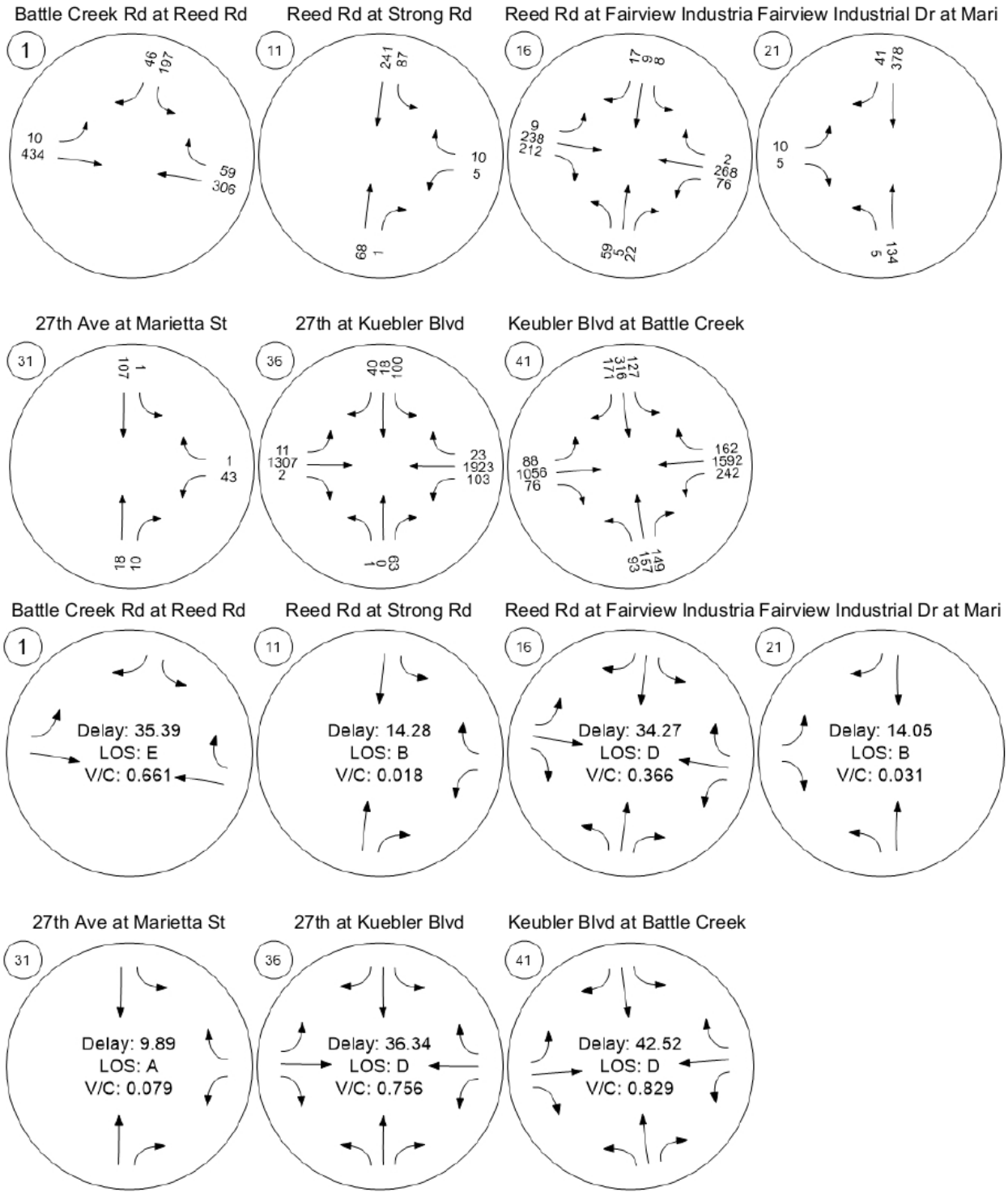
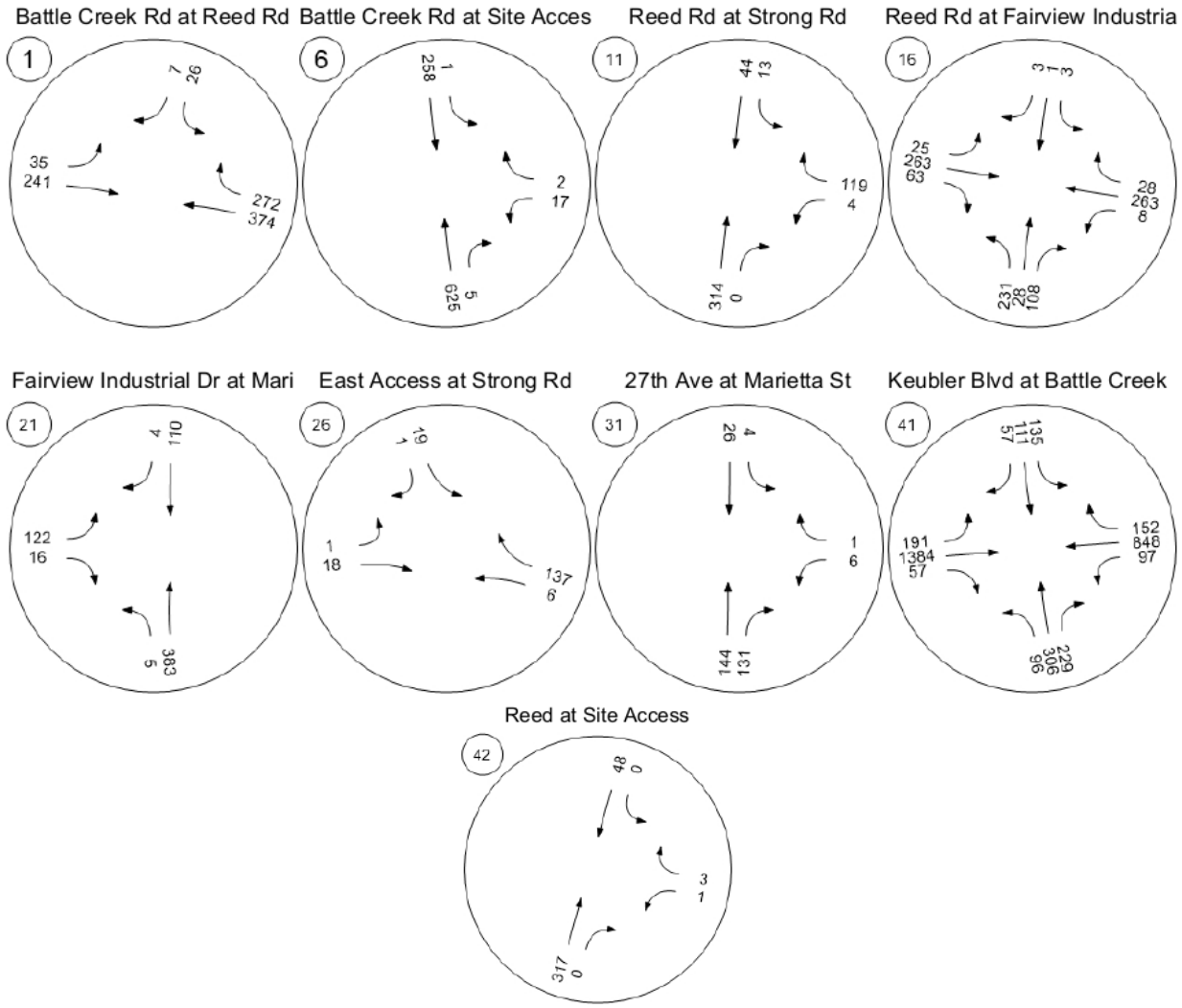


Figure 9 - Existing PM Peak hour Counts & Performance Metrics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26
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Battle Creek Rd at Site Acces
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Reed Rd at Strong Rd
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Reed Rd at Fairview Industria
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Fairview Industrial Dr at Mari
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122
16
5
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East Access at Strong Rd
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Keubler Blvd at Battle Creek
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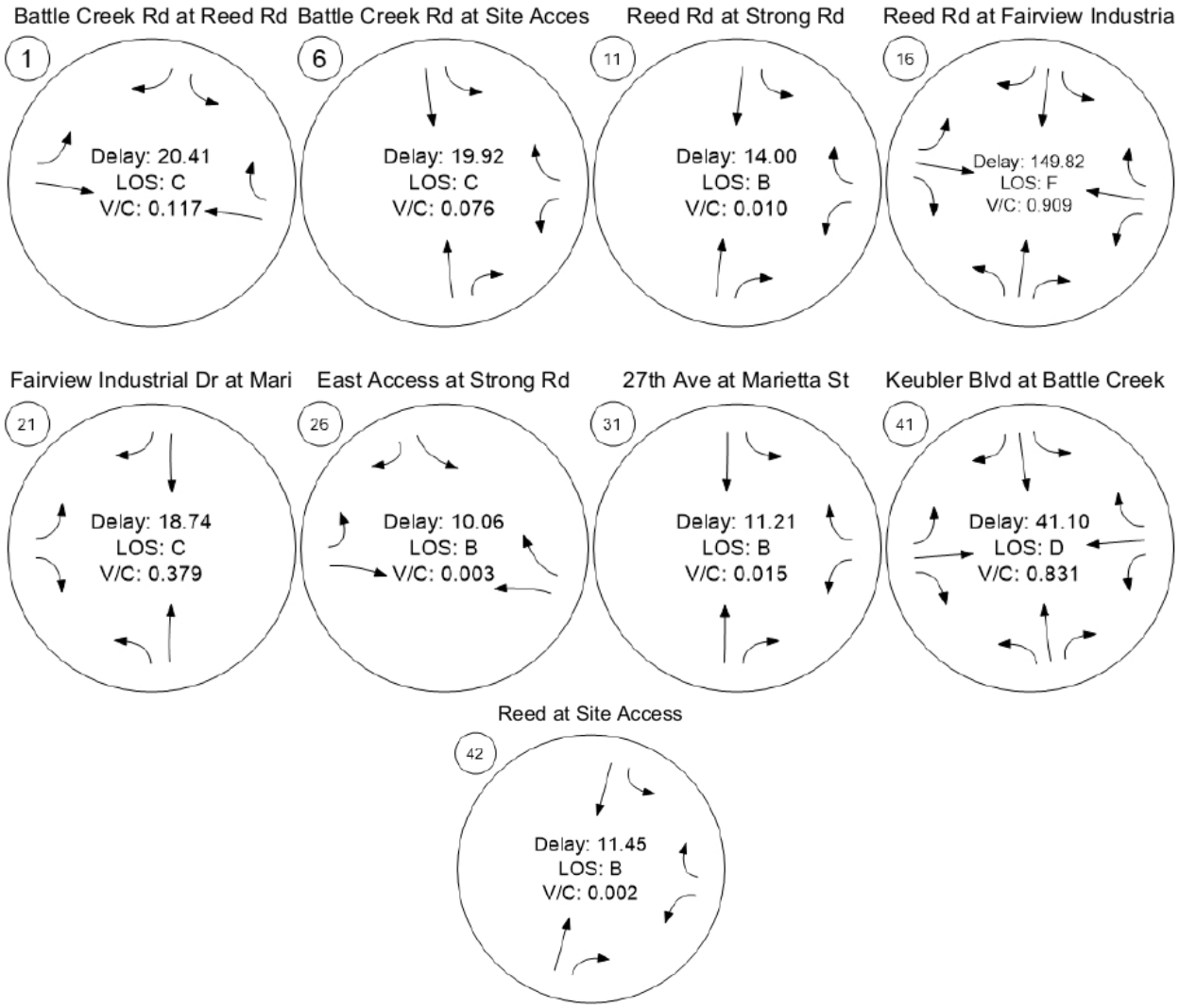
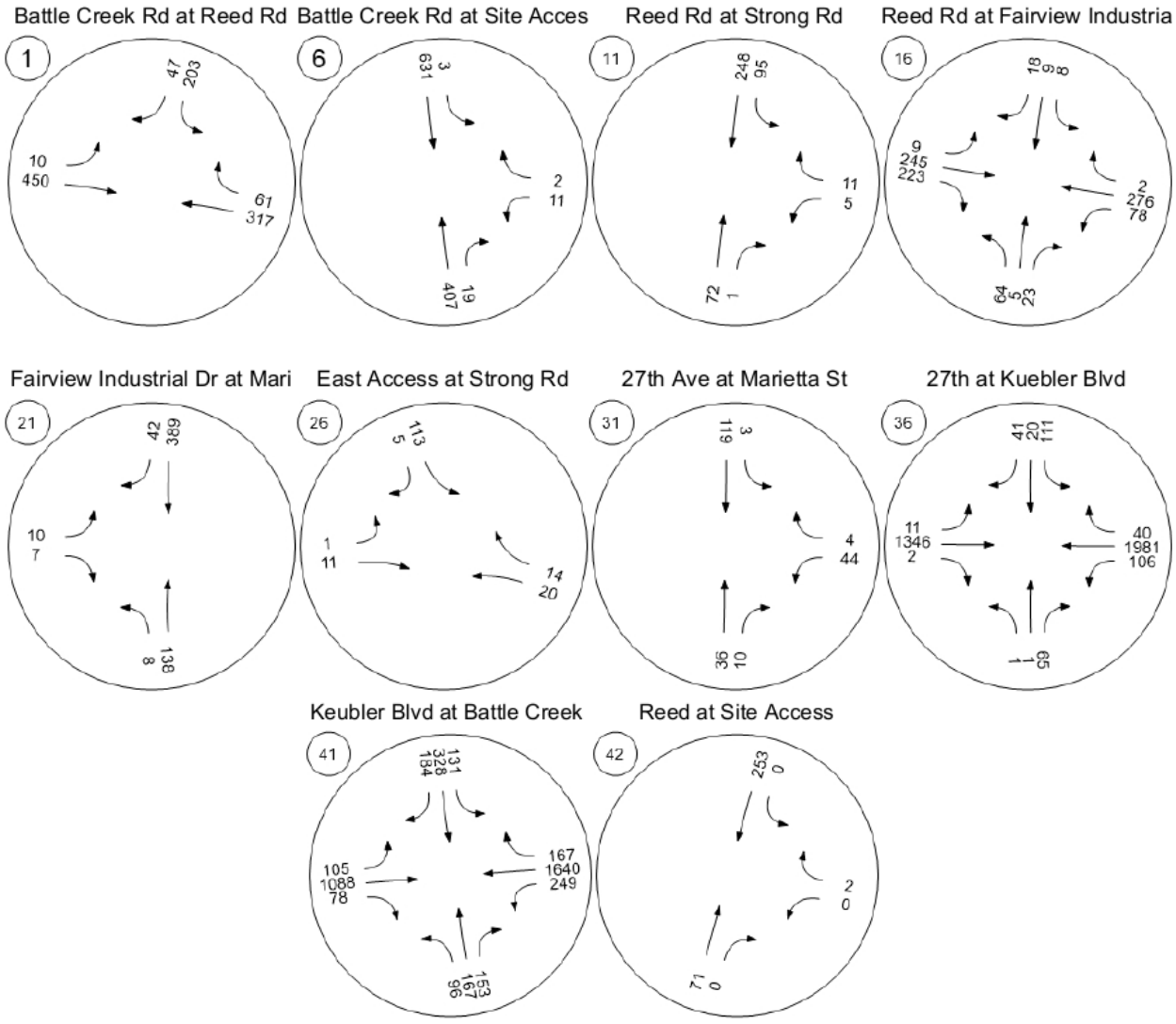


Figure 10 - 2020 AM Peak hour Counts & Performance Metrics with Phase 1 Complete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East Access at Strong Rd
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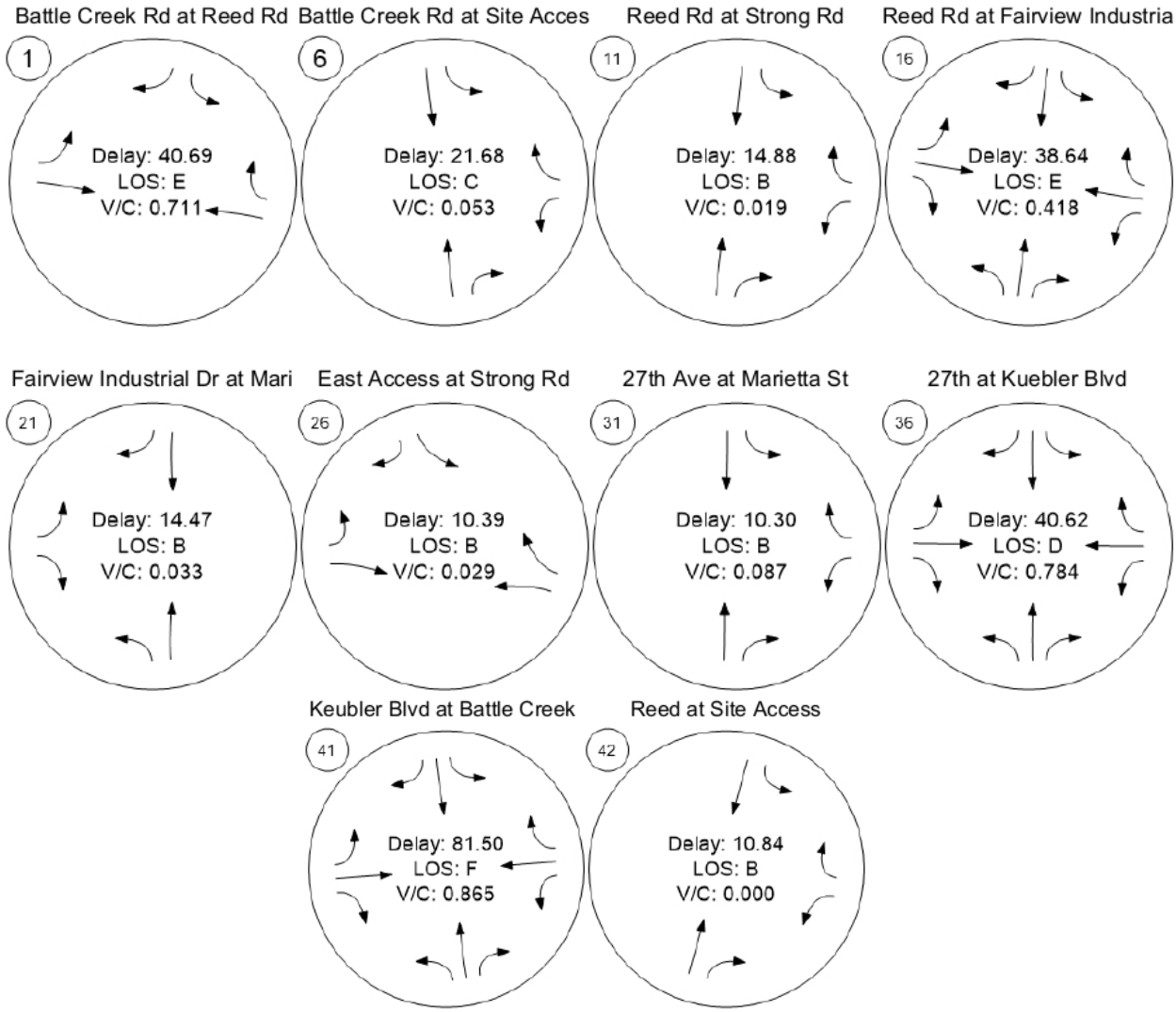
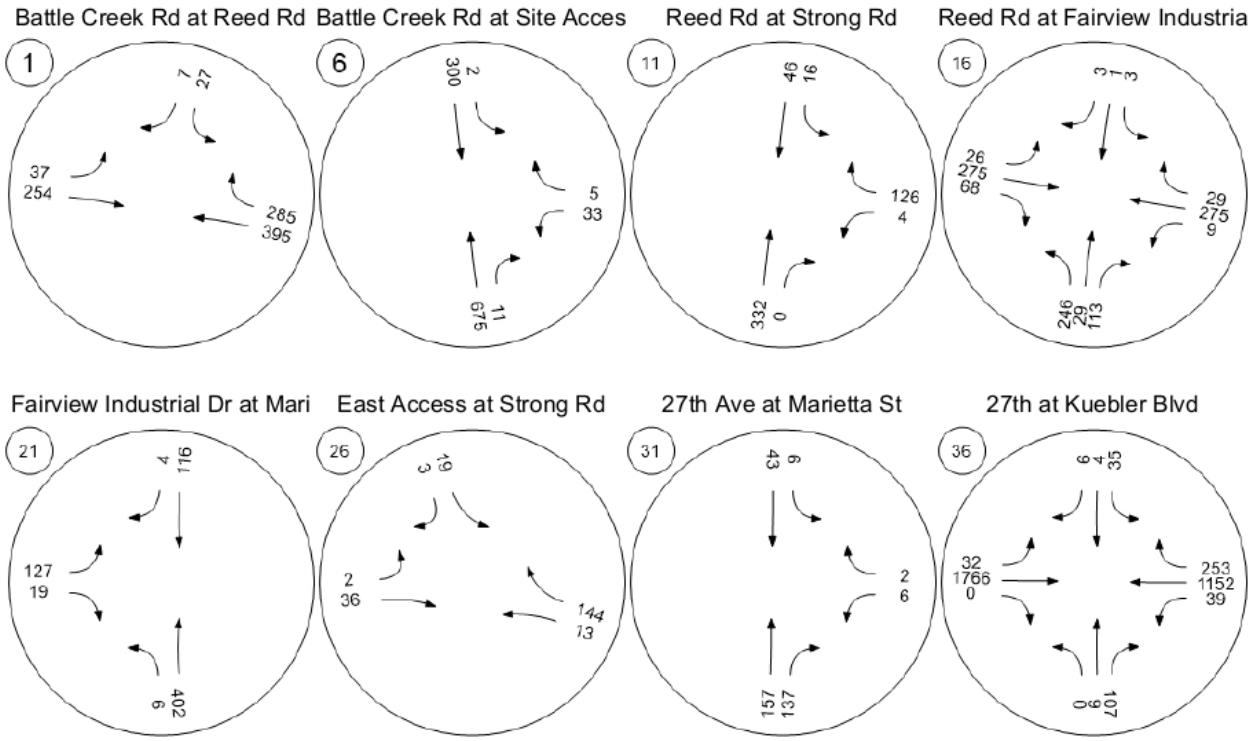


Figure 11 - 2020 PM Peak hour Counts & Performance Metrics with Phase 1 Complete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Fairview Industrial Dr at Mari
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East Access at Strong Rd
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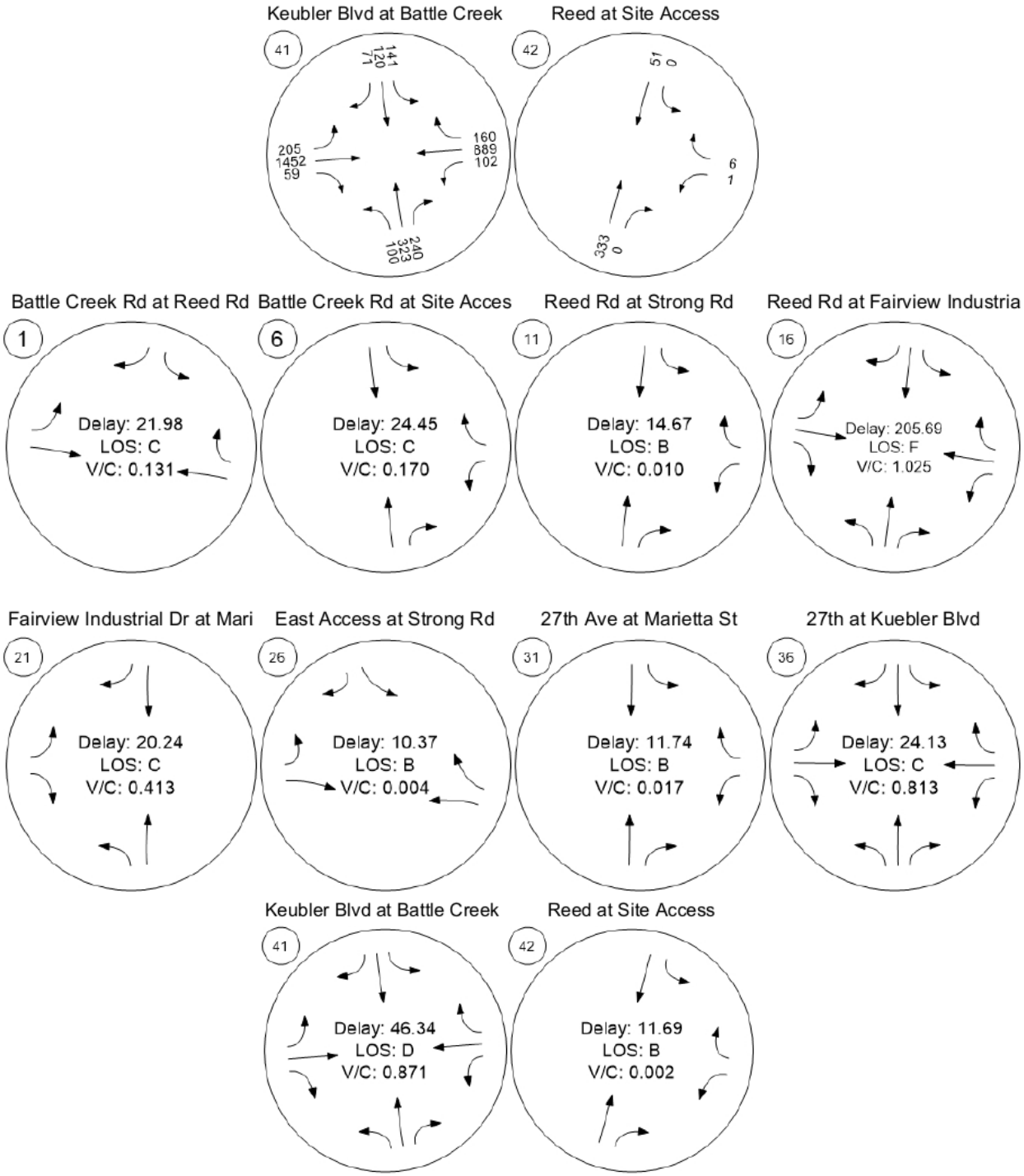
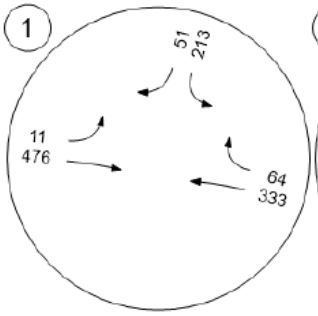
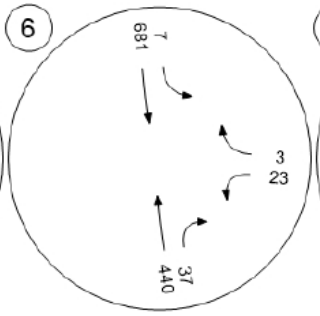


Figure 12 - 2023 AM Peak hour Counts & Performance Metrics with Phase 2 Complete

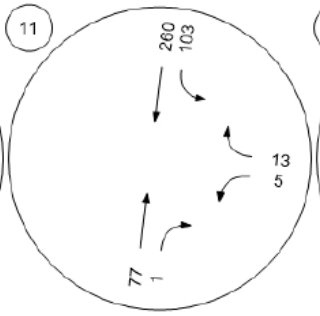
Battle Creek Rd at Reed Rd



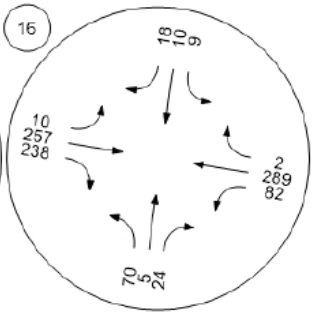
Battle Creek Rd at Site Acces



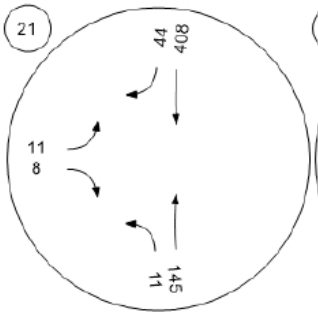
Reed Rd at Strong Rd



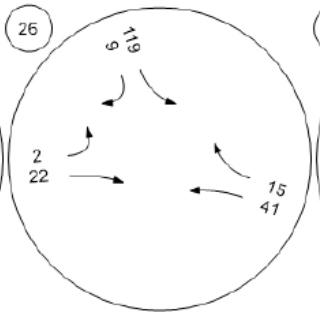
Reed Rd at Fairview Industria



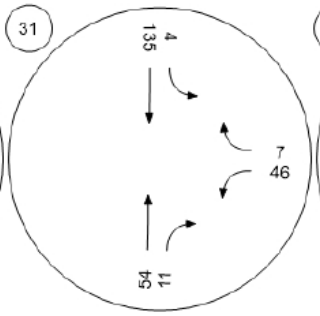
Fairview Industrial Dr at Mari



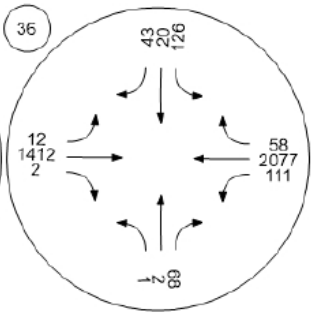
East Access at Strong Rd



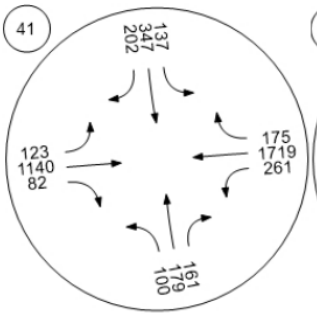
27th Ave at Marietta St



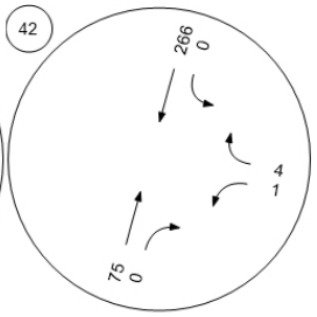
27th at Kuebler Blvd



Keubler Blvd at Battle Creek



Reed at Site Access



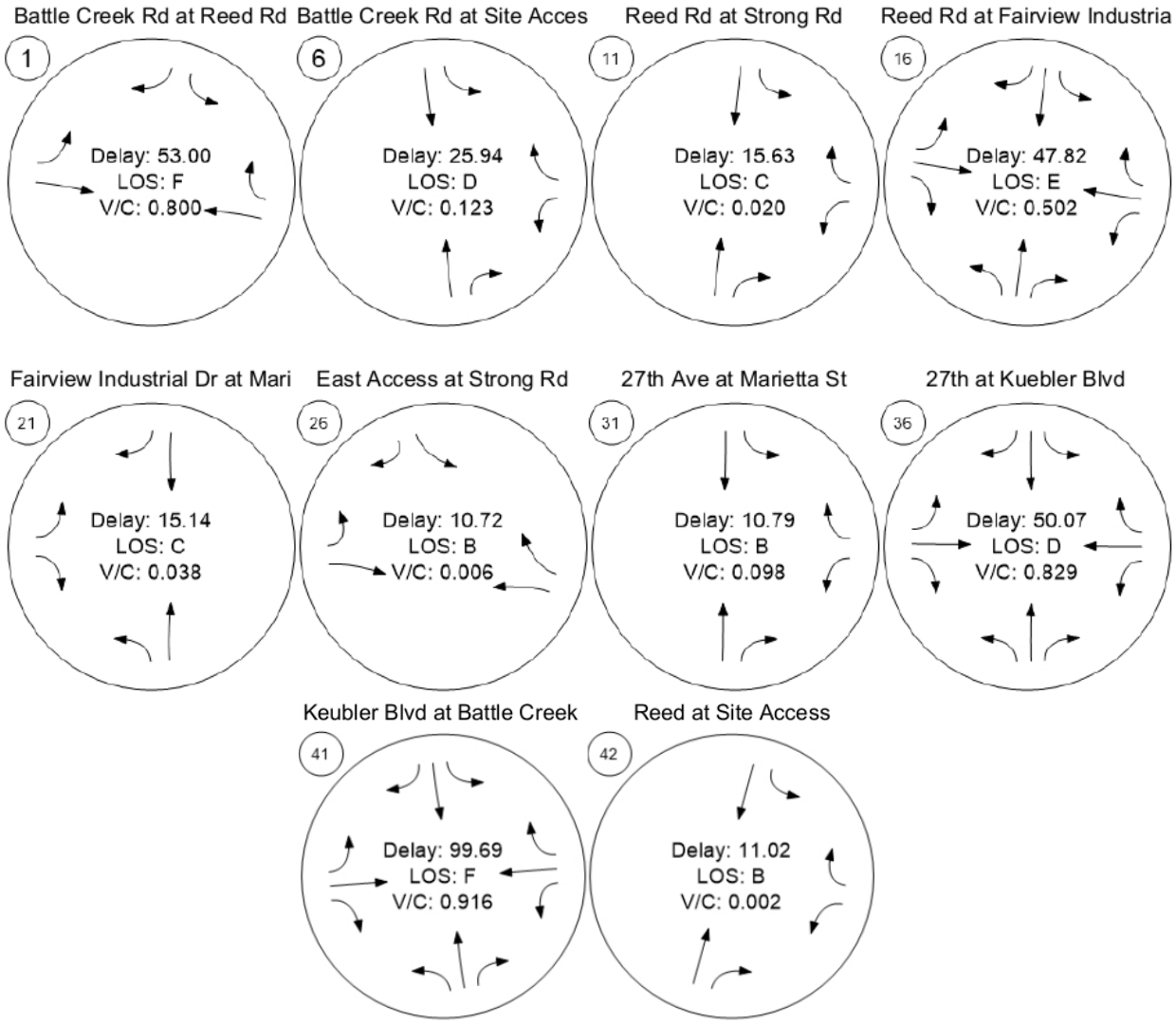
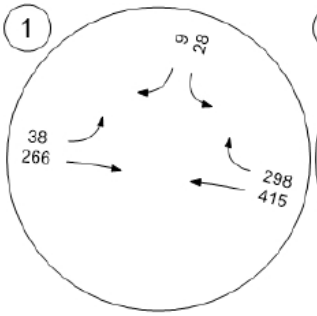
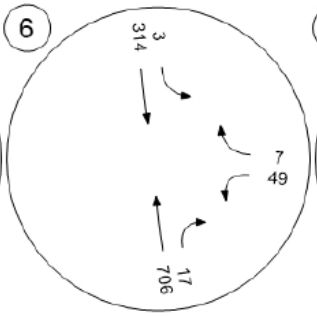


Figure 13 - 2023 PM Peak hour Counts & Performance Metrics with Phase 2 Complete

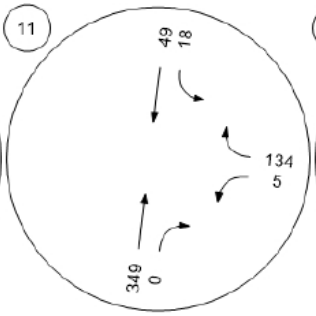
Battle Creek Rd at Reed Rd



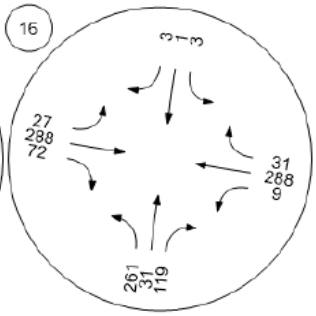
Battle Creek Rd at Site Acces



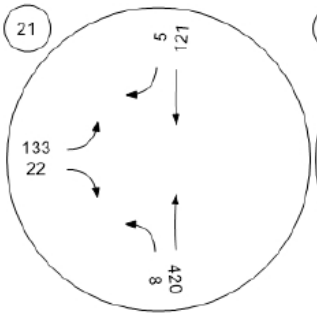
Reed Rd at Strong Rd



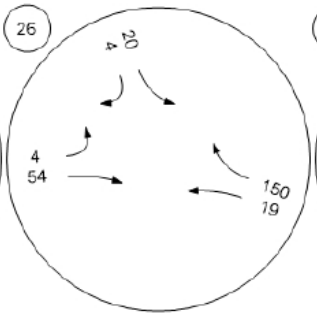
Reed Rd at Fairview Industria



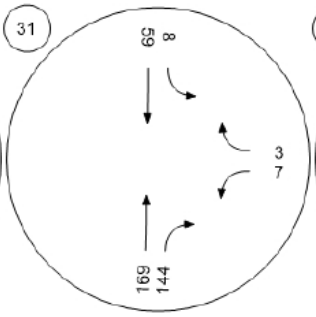
Fairview Industrial Dr at Mari



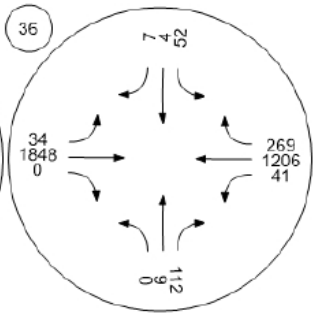
East Access at Strong Rd



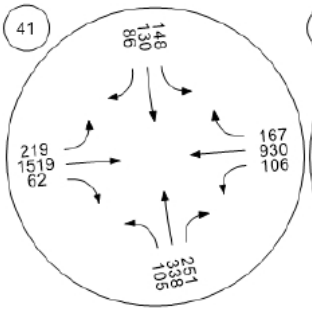
27th Ave at Marietta St



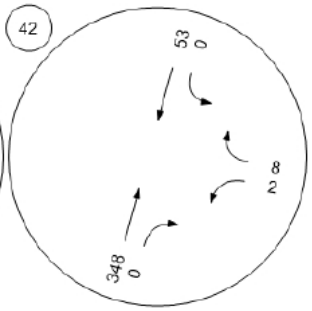
27th at Kuebler Blvd



Keubler Blvd at Battle Creek



Reed at Site Access



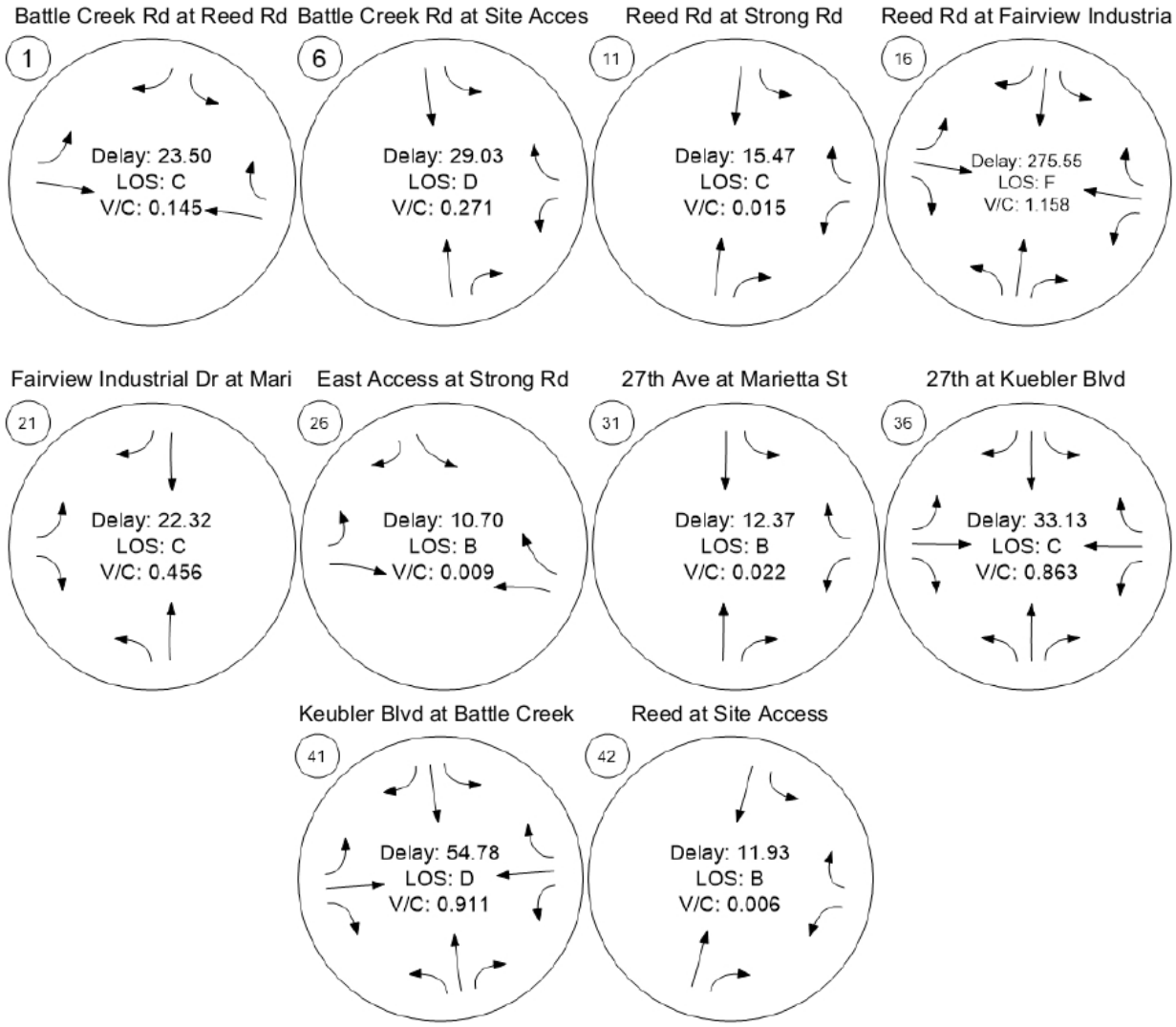
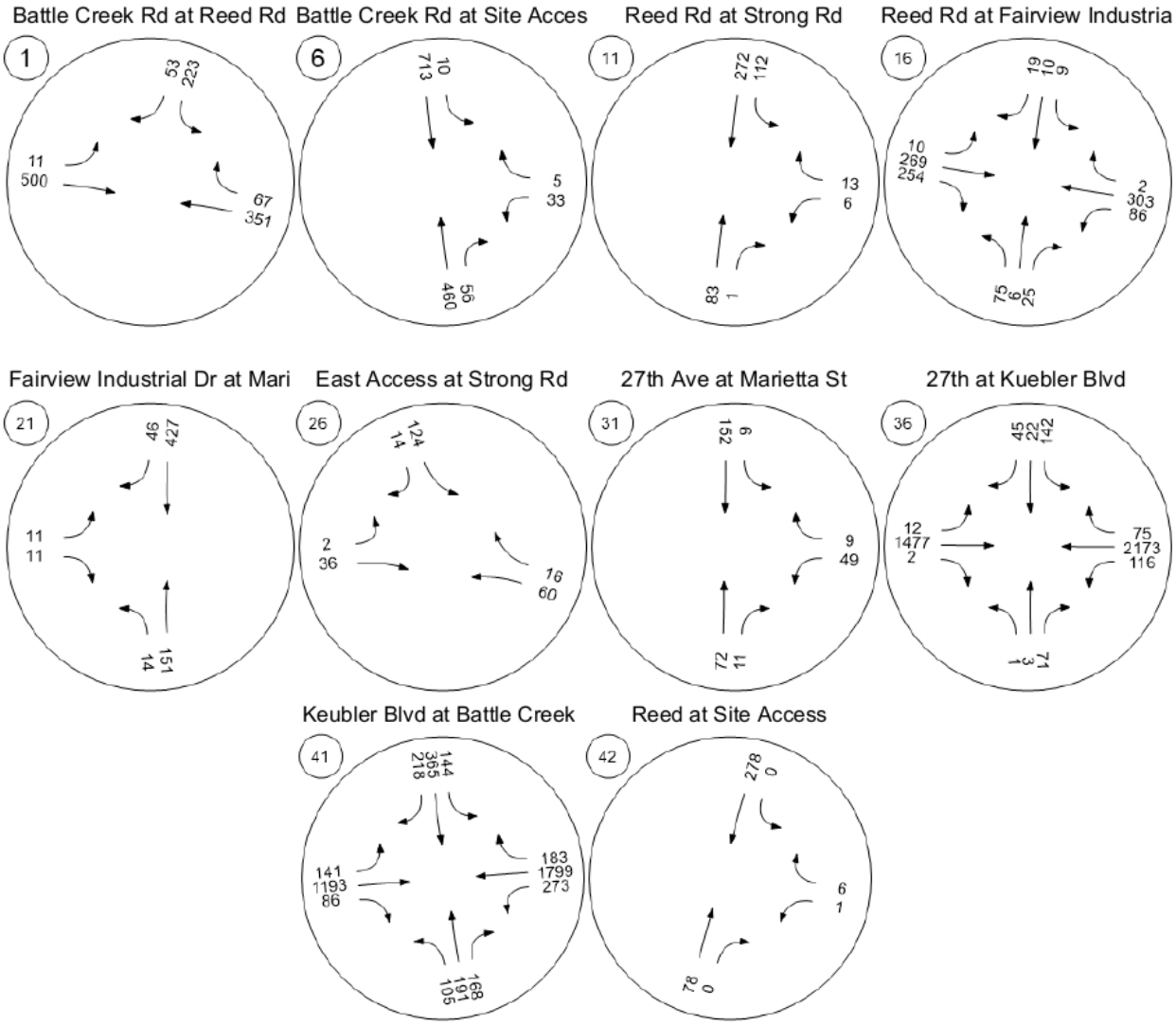


Figure 14 - 2026 AM Peak hour Counts & Performance Metrics with Phase 3 Complete


Battle Creek Rd at Reed Rd
1
53
223
11
500
67
351
Battle Creek Rd at Site Acces
6
10
713
5
33
56
460
Reed Rd at Strong Rd
11
272
112
13
6
83
1
Reed Rd at Fairview Industria
16
19
10
9
10
269
254
2
303
86
75
6
25
Fairview Industrial Dr at Mari
21
46
427
11
11
151
14
East Access at Strong Rd
26
124
14
2
36
16
60
27th Ave at Marietta St
31
152
6
9
49
72
11
27th at Kuebler Blvd
36
45
22
142
12
1477
2
75
2173
116
71
3
1
Keubler Blvd at Battle Creek
41
144
365
218
183
1799
273
141
1193
86
168
191
105
Reed at Site Access
42
278
0
6
1
78
0

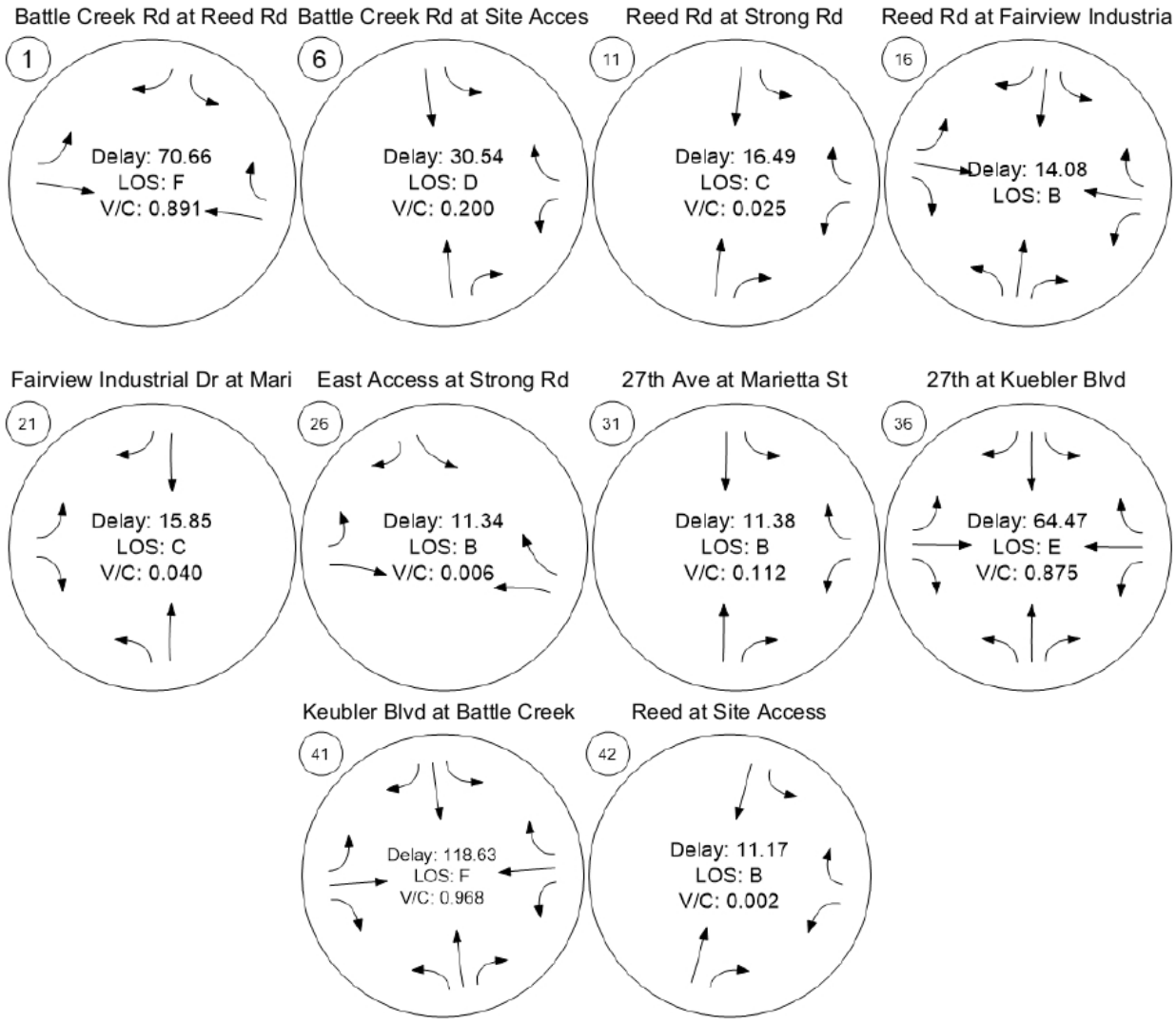


Figure 15 - 2026 PM Peak hour Counts & Performance Metrics with Phase 3 Complete

Type of peak hour being reported: Intersection Peak

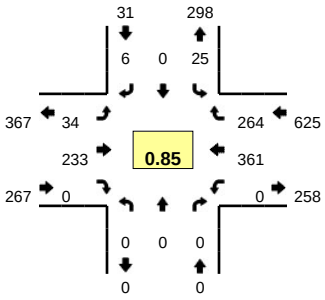
Method for determining peak hour: Total Entering Volume

LOCATION: Reed Rd SE -- Battle Creek Rd SE

CITY/STATE: Salem, OR

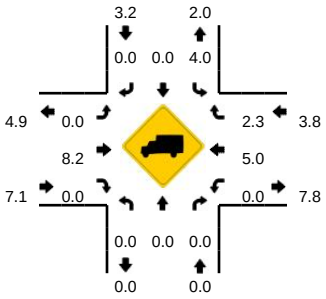
QC JOB #: 14711001

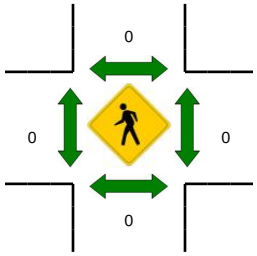
DATE: Wed, May 16 2018

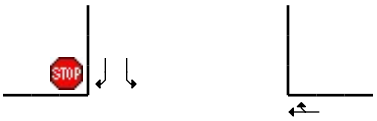


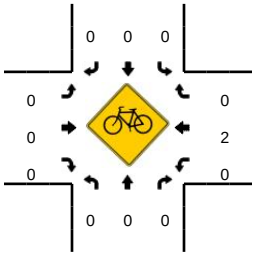
Peak-Hour: 7:10 AM -- 8:10 AM

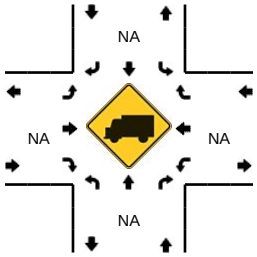
Peak 15-Min: 7:45 AM -- 8:00 AM

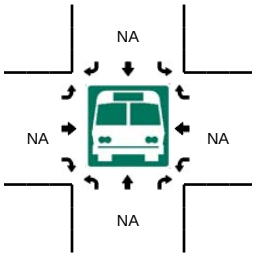












5-Min Count Period Beginning At	Reed Rd SE (Northbound)				Reed Rd SE (Southbound)				Battle Creek Rd SE (Eastbound)				Battle Creek Rd SE (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	0	2	0	1	0	1	11	0	0	0	26	12	0	53	
7:05 AM	0	0	0	0	0	0	1	0	1	20	0	0	0	24	5	0	51	
7:10 AM	0	0	0	0	1	0	1	0	1	15	0	0	0	35	18	0	71	
7:15 AM	0	0	0	0	4	0	0	0	1	24	0	0	0	40	17	0	86	
7:20 AM	0	0	0	0	2	0	0	0	3	17	0	0	0	22	14	0	58	
7:25 AM	0	0	0	0	0	0	0	0	2	14	0	0	0	26	22	0	64	
7:30 AM	0	0	0	0	0	0	0	0	2	18	0	0	0	24	14	0	58	
7:35 AM	0	0	0	0	1	0	1	0	2	24	0	0	0	36	22	0	86	
7:40 AM	0	0	0	0	3	0	0	0	2	17	0	0	0	28	29	0	79	
7:45 AM	0	0	0	0	2	0	0	0	2	19	0	0	0	45	20	0	88	
7:50 AM	0	0	0	0	3	0	0	0	4	21	0	0	0	30	32	0	90	
7:55 AM	0	0	0	0	3	0	1	0	4	30	0	0	0	26	30	0	94	878
8:00 AM	0	0	0	0	3	0	2	0	5	12	0	0	0	20	30	0	72	897
8:05 AM	0	0	0	0	3	0	1	0	6	22	0	0	0	29	16	0	77	923
8:10 AM	0	0	0	0	8	0	0	0	4	13	0	0	0	16	14	0	55	907
8:15 AM	0	0	0	0	0	0	4	0	2	12	0	0	0	13	20	0	51	872
8:20 AM	0	0	0	0	5	0	2	0	0	10	0	0	0	20	23	0	60	874
8:25 AM	0	0	0	0	2	0	3	0	3	9	0	0	0	23	13	0	53	863
8:30 AM	0	0	0	0	4	0	2	0	3	15	0	0	0	19	8	0	51	856
8:35 AM	0	0	0	0	2	0	1	0	2	22	0	0	0	22	9	0	58	828
8:40 AM	0	0	0	0	5	0	2	0	1	19	0	0	0	33	17	0	77	826
8:45 AM	0	0	0	0	4	0	1	0	3	21	0	0	0	23	13	0	65	803
8:50 AM	0	0	0	0	3	0	1	0	0	14	0	0	0	25	18	0	61	774
8:55 AM	0	0	0	0	2	0	1	0	4	21	0	0	0	26	18	0	72	752

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	32	0	4	0	40	280	0	0	0	404	328	0	1088
Heavy Trucks	0	0	0		0	0	0		0	16	0		0	28	4		48
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/29/2018 3:44 PM

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

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: Reed Rd SE -- Strong Rd SE

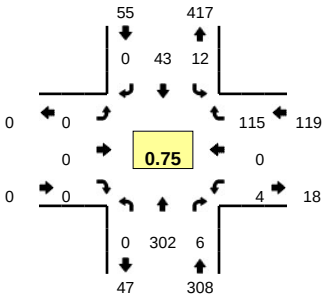
QC JOB #: 14711003

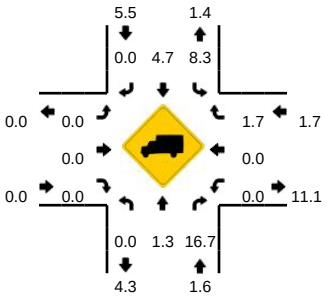
CITY/STATE: Salem, OR

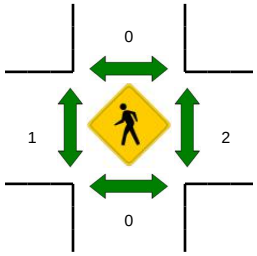
DATE: Wed, May 16 2018

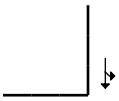
Peak-Hour: 7:25 AM -- 8:25 AM

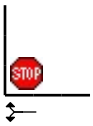
Peak 15-Min: 7:50 AM -- 8:05 AM

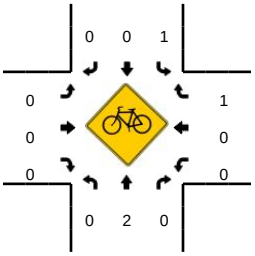


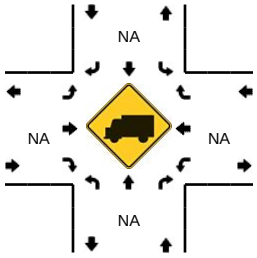


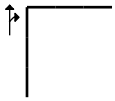


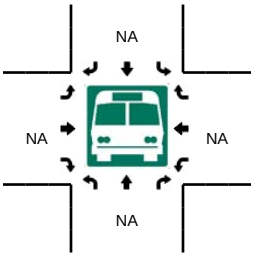












5-Min Count Period Beginning At	Reed Rd SE (Northbound)				Reed Rd SE (Southbound)				Strong Rd SE (Eastbound)				Strong Rd SE (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	11	0	0	1	3	0	1	0	0	0	0	0	0	3	0	19	
7:05 AM	0	9	0	0	0	1	0	0	0	0	0	0	0	0	7	0	17	
7:10 AM	0	14	0	0	0	2	0	0	0	0	0	0	0	0	7	0	23	
7:15 AM	0	17	0	0	1	3	0	0	0	0	0	0	0	0	6	0	27	
7:20 AM	0	18	0	0	0	2	0	0	0	0	0	0	0	0	5	0	25	
7:25 AM	0	25	0	0	0	1	0	0	0	0	0	0	0	0	10	0	36	
7:30 AM	0	17	0	0	1	0	0	0	0	0	0	0	0	0	9	0	27	
7:35 AM	0	20	0	0	0	2	0	0	0	0	0	0	0	0	9	0	31	
7:40 AM	0	31	1	0	1	4	0	0	0	0	0	0	0	0	6	0	43	
7:45 AM	0	24	0	0	1	2	0	0	0	0	0	0	0	0	14	0	41	
7:50 AM	0	23	1	0	3	2	0	0	0	0	0	0	0	0	15	0	44	
7:55 AM	0	42	0	0	0	5	0	0	0	0	0	0	0	0	16	0	63	396
8:00 AM	0	35	0	0	1	5	0	0	0	0	0	0	0	0	12	0	53	430
8:05 AM	0	21	1	0	1	5	0	0	0	0	0	0	1	0	7	0	36	449
8:10 AM	0	18	1	0	1	6	0	0	0	0	0	0	2	0	5	0	33	459
8:15 AM	0	22	1	0	2	7	0	0	0	0	0	0	0	0	5	0	37	469
8:20 AM	0	24	1	0	1	4	0	0	0	0	0	0	1	0	7	0	38	482
8:25 AM	0	15	0	0	0	4	0	0	0	0	0	0	1	0	7	0	27	473
8:30 AM	0	14	0	0	0	5	0	0	0	0	0	0	0	0	6	0	25	471
8:35 AM	0	8	1	0	1	5	0	0	0	0	0	0	0	0	6	0	21	461
8:40 AM	0	20	0	0	3	3	0	0	0	0	0	0	1	0	4	0	31	449
8:45 AM	0	15	2	0	0	3	0	0	0	0	0	0	0	0	4	0	24	432
8:50 AM	0	17	0	0	0	2	0	0	0	0	0	0	1	0	5	0	25	413
8:55 AM	0	15	1	0	1	5	0	0	0	0	0	0	0	0	7	0	29	379

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	400	4	0	16	48	0	0	0	0	0	0	0	0	172	0	640
Heavy Trucks	0	8	0		0	0	0		0	0	0		0	0	0		8
Pedestrians		0				0				4				0			4
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/29/2018 3:44 PM

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

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: Reed Rd SE -- Fairview Industrial Dr SE

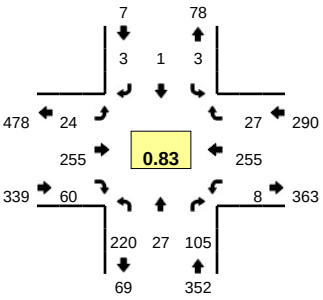
QC JOB #: 14711013

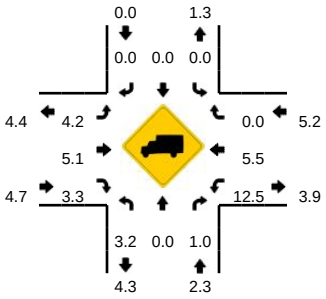
CITY/STATE: Marion, OR

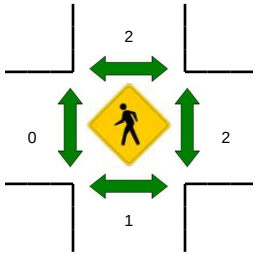
DATE: Wed, May 16 2018

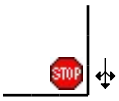
Peak-Hour: 7:25 AM -- 8:25 AM

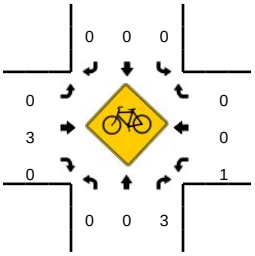
Peak 15-Min: 7:45 AM -- 8:00 AM

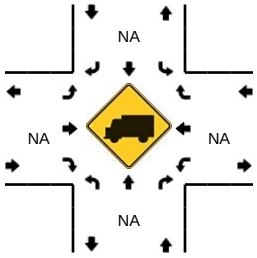


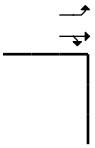


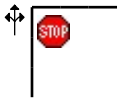


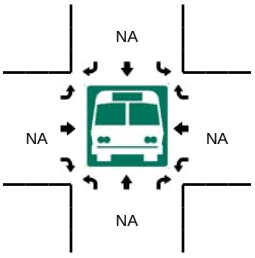












5-Min Count Period Beginning At	Reed Rd SE (Northbound)				Reed Rd SE (Southbound)				Fairview Industrial Dr SE (Eastbound)				Fairview Industrial Dr SE (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	8	0	2	0	0	0	0	0	0	8	1	0	0	8	0	0	27	
7:05 AM	10	2	1	0	0	0	0	0	1	14	2	0	1	21	0	0	52	
7:10 AM	9	1	5	0	0	0	0	0	0	17	2	0	0	20	0	0	54	
7:15 AM	12	1	6	0	0	0	0	0	0	15	5	0	1	16	1	0	57	
7:20 AM	13	0	11	0	0	0	0	0	0	25	2	0	0	13	2	0	66	
7:25 AM	23	3	7	0	0	0	0	0	0	24	3	0	0	19	0	0	79	
7:30 AM	13	0	10	0	0	0	1	0	1	21	1	0	0	23	3	0	73	
7:35 AM	21	2	5	0	1	0	0	0	0	14	3	0	1	25	1	0	73	
7:40 AM	20	1	6	0	0	0	0	0	4	20	4	0	2	23	2	0	82	
7:45 AM	20	2	13	0	0	0	0	0	7	21	4	0	0	24	4	0	95	
7:50 AM	17	6	10	0	0	0	0	0	4	21	5	0	2	23	5	0	93	
7:55 AM	20	3	18	0	0	0	0	0	1	29	8	0	0	30	2	0	111	862
8:00 AM	22	3	11	0	0	0	1	0	4	18	5	0	1	17	0	0	82	917
8:05 AM	18	4	8	0	0	0	0	0	3	19	5	0	2	16	4	0	79	944
8:10 AM	12	0	5	0	1	1	0	0	0	19	5	0	0	18	3	0	64	954
8:15 AM	10	1	2	0	1	0	1	0	0	27	10	0	0	20	1	0	73	970
8:20 AM	24	2	10	0	0	0	0	0	0	22	7	0	0	17	2	0	84	988
8:25 AM	12	1	5	0	0	1	0	0	0	17	2	0	2	18	0	0	58	967
8:30 AM	10	3	5	0	0	0	2	0	1	14	4	0	2	14	0	0	55	949
8:35 AM	6	1	3	0	0	1	2	0	0	14	6	0	1	18	1	0	53	929
8:40 AM	11	0	9	0	0	1	0	0	1	18	4	0	2	17	1	0	64	911
8:45 AM	5	1	10	0	0	0	1	0	2	18	5	0	0	12	0	0	54	870
8:50 AM	12	3	5	0	1	0	3	0	4	23	2	0	2	13	0	0	68	845
8:55 AM	17	1	9	0	0	0	3	0	0	25	5	0	1	19	0	0	80	814

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	228	44	164	0	0	0	0	0	48	284	68	0	8	308	44	0	1196
Heavy Trucks	4	0	0		0	0	0		0	8	0		0	24	0		36
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	2	0		0	0	0		2
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/29/2018 3:44 PM

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

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

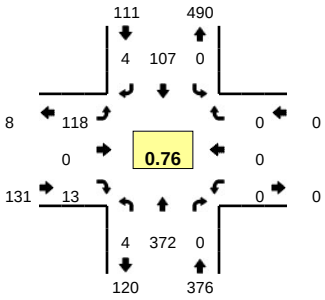
LOCATION: Fairview Industrial Dr SE -- Marietta St SE

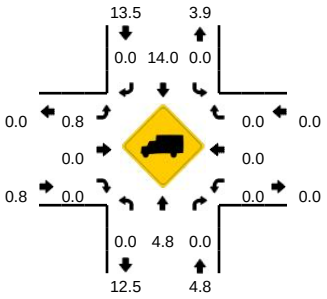
QC JOB #: 14711015

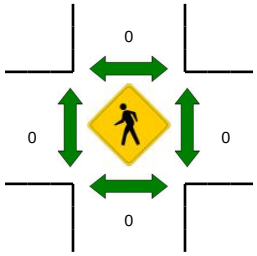
CITY/STATE: Salem, OR

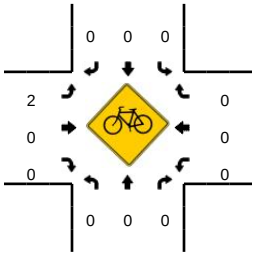
DATE: Wed, May 16 2018

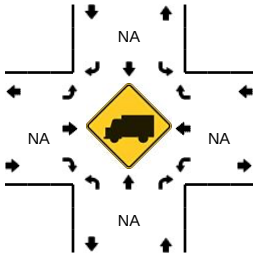
Peak-Hour: 7:20 AM -- 8:20 AM
Peak 15-Min: 7:45 AM -- 8:00 AM

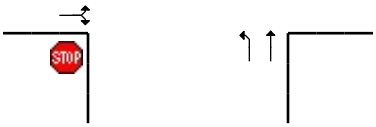


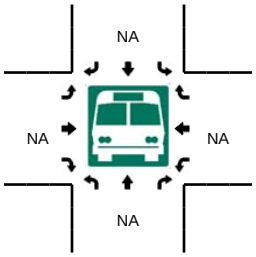












5-Min Count Period Beginning At	Fairview Industrial Dr SE (Northbound)				Fairview Industrial Dr SE (Southbound)				Marietta St SE (Eastbound)				Marietta St SE (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	20	0	0	0	3	0	0	4	0	0	0	0	0	0	0	27	
7:05 AM	0	24	0	0	0	7	0	0	0	0	0	0	0	0	0	0	31	
7:10 AM	1	20	0	0	0	5	0	0	6	0	0	0	0	0	0	0	32	
7:15 AM	0	24	0	0	0	6	1	0	5	0	0	0	0	0	0	0	36	
7:20 AM	1	24	0	0	0	14	0	0	10	0	1	0	0	0	0	0	50	
7:25 AM	0	23	0	0	0	6	0	0	13	0	1	0	0	0	0	0	43	
7:30 AM	0	29	0	0	0	12	0	0	6	0	0	0	0	0	0	0	47	
7:35 AM	1	34	0	0	0	9	0	0	3	0	2	0	0	0	0	0	49	
7:40 AM	1	34	0	0	0	10	0	0	12	0	3	0	0	0	0	0	60	
7:45 AM	0	40	0	0	0	10	0	0	14	0	0	0	0	0	0	0	64	
7:50 AM	0	45	0	0	0	6	1	0	17	0	2	0	0	0	0	0	71	
7:55 AM	0	38	0	0	0	14	0	0	13	0	2	0	0	0	0	0	67	577
8:00 AM	0	24	0	0	0	5	2	0	9	0	1	0	0	0	0	0	41	591
8:05 AM	0	24	0	0	0	7	1	0	9	0	0	0	0	0	0	0	41	601
8:10 AM	0	25	0	0	0	6	0	0	3	0	1	0	0	0	0	0	35	604
8:15 AM	1	32	0	0	0	8	0	0	9	0	0	0	0	0	0	0	50	618
8:20 AM	1	25	0	0	0	5	1	0	10	0	0	0	0	0	0	0	42	610
8:25 AM	0	22	0	0	0	9	0	0	4	0	0	0	0	0	0	0	35	602
8:30 AM	0	20	0	0	0	5	0	0	5	0	0	0	0	0	0	0	30	585
8:35 AM	0	24	0	0	0	8	1	0	5	0	0	0	0	0	0	0	38	574
8:40 AM	1	17	0	0	0	4	0	0	6	0	0	0	0	0	0	0	28	542
8:45 AM	0	16	0	0	0	12	1	0	5	0	0	0	0	0	0	0	34	512
8:50 AM	1	24	0	0	0	5	0	0	4	0	0	0	0	0	0	0	34	475
8:55 AM	0	19	0	0	0	7	1	0	5	0	0	0	0	0	0	0	32	440

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	492	0	0	0	120	4	0	176	0	16	0	0	0	0	0	808
Heavy Trucks	0	20	0		0	8	0		0	0	0		0	0	0		28
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/29/2018 3:44 PM

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

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

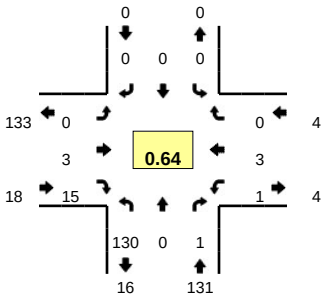
LOCATION: 27th Ave SE -- Strong Rd SE

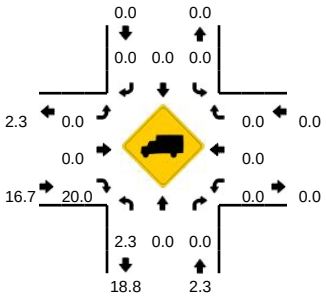
QC JOB #: 14711005

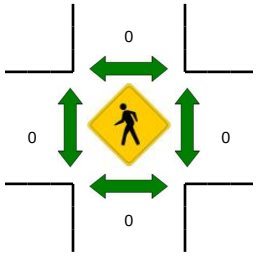
CITY/STATE: Salem, OR

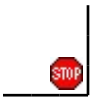
DATE: Wed, May 16 2018

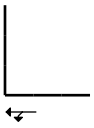
Peak-Hour: 7:45 AM -- 8:45 AM
Peak 15-Min: 7:45 AM -- 8:00 AM

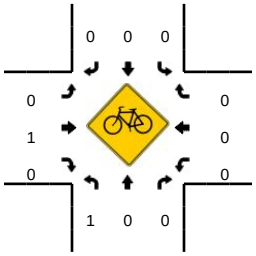


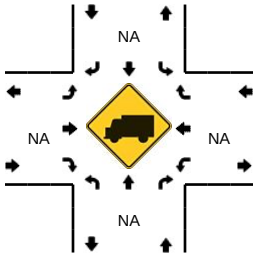


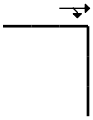


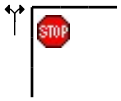


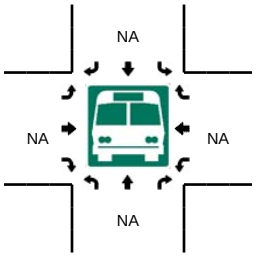












5-Min Count Period Beginning At	27th Ave SE (Northbound)				27th Ave SE (Southbound)				Strong Rd SE (Eastbound)				Strong Rd SE (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	4	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	5	
7:05 AM	7	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	8	
7:10 AM	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	
7:15 AM	8	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	9	
7:20 AM	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	
7:25 AM	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	
7:30 AM	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	
7:35 AM	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	
7:40 AM	4	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	5	
7:45 AM	16	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	18	
7:50 AM	20	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	22	
7:55 AM	17	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	20	129
8:00 AM	14	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	15	139
8:05 AM	9	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	11	142
8:10 AM	5	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	7	143
8:15 AM	10	0	0	0	0	0	0	0	0	0	3	0	1	0	0	0	14	148
8:20 AM	8	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	9	151
8:25 AM	7	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	8	149
8:30 AM	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	151
8:35 AM	9	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	10	149
8:40 AM	5	0	0	0	0	0	0	0	0	1	3	0	0	0	0	0	9	153
8:45 AM	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	138
8:50 AM	7	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	9	125
8:55 AM	7	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	8	113

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	212	0	4	0	0	0	0	0	0	4	20	0	0	0	0	0	240
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	0	0		0
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/29/2018 3:44 PM

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

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: 27th Ave SE -- Marietta St SE

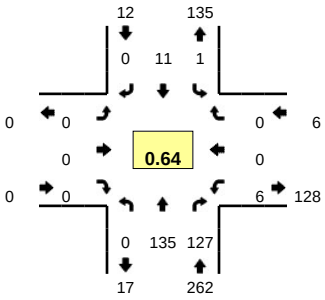
QC JOB #: 14711007

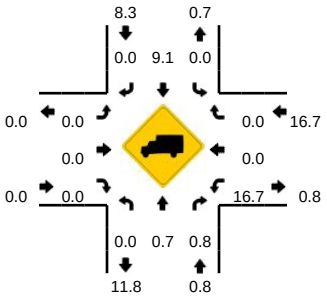
CITY/STATE: Salem, OR

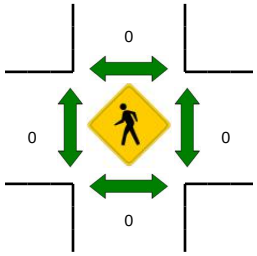
DATE: Wed, May 16 2018

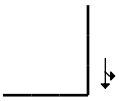
Peak-Hour: 7:20 AM -- 8:20 AM

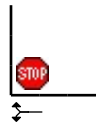
Peak 15-Min: 7:45 AM -- 8:00 AM

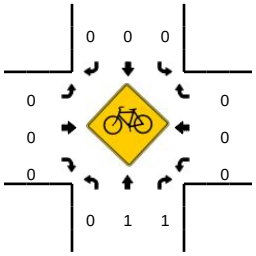


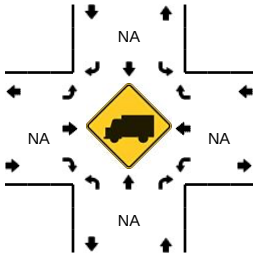


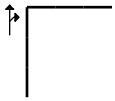


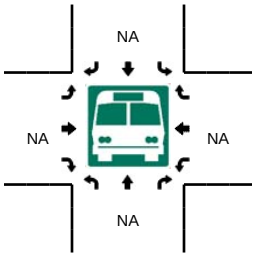












5-Min Count Period Beginning At	27th Ave SE (Northbound)				27th Ave SE (Southbound)				Marietta St SE (Eastbound)				Marietta St SE (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	4	2	0	0	1	0	0	0	0	0	0	0	0	0	0	7	
7:05 AM	0	7	3	0	0	0	0	0	0	0	0	0	0	0	0	0	10	
7:10 AM	0	6	5	0	0	0	0	0	0	0	0	0	0	0	0	0	11	
7:15 AM	0	8	8	0	0	0	0	0	0	0	0	0	0	0	0	0	16	
7:20 AM	0	7	13	0	0	0	0	0	0	0	0	0	1	0	0	0	21	
7:25 AM	0	11	9	0	0	0	0	0	0	0	0	0	0	0	0	0	20	
7:30 AM	0	8	7	0	0	0	0	0	0	0	0	0	0	0	0	0	15	
7:35 AM	0	12	6	0	0	0	0	0	0	0	0	0	1	0	0	0	19	
7:40 AM	0	6	13	0	1	0	0	0	0	0	0	0	1	0	0	0	21	
7:45 AM	0	18	15	0	0	1	0	0	0	0	0	0	1	0	0	0	35	
7:50 AM	0	23	18	0	0	1	0	0	0	0	0	0	1	0	0	0	43	
7:55 AM	0	14	15	0	0	3	0	0	0	0	0	0	0	0	0	0	32	250
8:00 AM	0	12	9	0	0	0	0	0	0	0	0	0	0	0	0	0	21	264
8:05 AM	0	9	7	0	0	2	0	0	0	0	0	0	1	0	0	0	19	273
8:10 AM	0	5	6	0	0	0	0	0	0	0	0	0	0	0	0	0	11	273
8:15 AM	0	10	9	0	0	4	0	0	0	0	0	0	0	0	0	0	23	280
8:20 AM	0	8	9	0	0	2	0	0	0	0	0	0	1	0	0	0	20	279
8:25 AM	0	7	4	0	0	0	0	0	0	0	0	0	0	0	0	0	11	270
8:30 AM	0	9	5	0	0	0	0	0	0	0	0	0	0	0	0	0	14	269
8:35 AM	0	10	6	0	0	1	0	0	0	0	0	0	1	0	0	0	18	268
8:40 AM	0	3	6	0	0	3	0	0	0	0	0	0	0	0	0	0	12	259
8:45 AM	0	3	2	0	0	0	0	0	0	0	0	0	2	0	0	0	7	231
8:50 AM	0	8	3	0	0	1	0	0	0	0	0	0	1	0	0	0	13	201
8:55 AM	0	7	7	0	0	1	0	0	0	0	0	0	0	0	0	0	15	184

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	220	192	0	0	20	0	0	0	0	0	0	8	0	0	0	440
Heavy Trucks	0	0	0		0	0	0		0	0	0		4	0	0		4
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/29/2018 3:44 PM

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

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

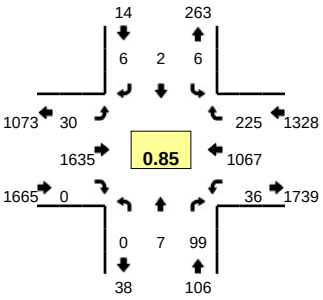
LOCATION: 27th Ave SE -- Kuebler Blvd

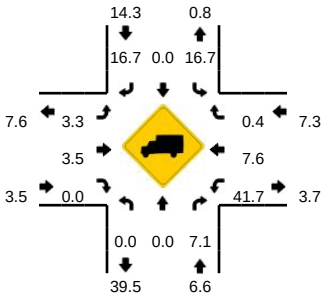
CITY/STATE: Salem, OR

QC JOB #: 14711009

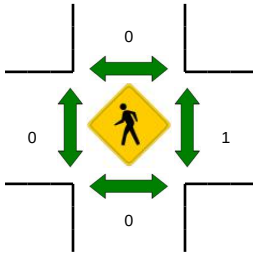
DATE: Wed, May 16 2018

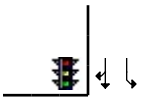
Peak-Hour: 7:10 AM -- 8:10 AM
Peak 15-Min: 7:40 AM -- 7:55 AM

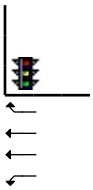


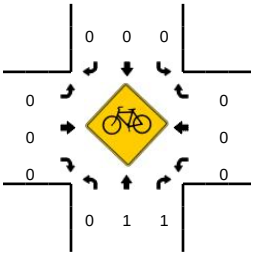


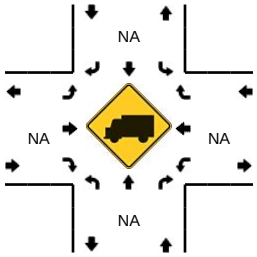
Quality Counts
TRANSPORTATION DATA COLLECTION SERVICES

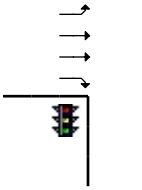


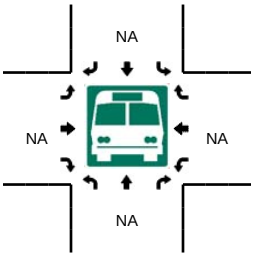












5-Min Count Period Beginning At	27th Ave SE (Northbound)				27th Ave SE (Southbound)				Kuebler Blvd (Eastbound)				Kuebler Blvd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	6	0	1	0	0	0	1	83	0	0	2	66	4	0	163	
7:05 AM	0	0	7	0	0	0	0	0	1	121	0	0	3	63	7	0	202	
7:10 AM	0	0	6	0	0	0	0	0	2	154	0	0	2	68	9	0	241	
7:15 AM	0	0	6	0	0	0	0	0	0	136	0	0	5	96	16	0	259	
7:20 AM	0	1	5	0	0	0	0	0	4	120	0	0	0	71	14	0	215	
7:25 AM	0	0	5	0	0	0	0	0	1	126	0	0	2	80	19	0	233	
7:30 AM	0	0	10	0	0	0	0	0	1	126	0	0	4	80	17	0	238	
7:35 AM	0	0	11	0	0	0	1	0	3	146	0	0	3	70	14	0	248	
7:40 AM	0	1	13	0	0	0	0	1	2	154	0	0	2	101	21	0	295	
7:45 AM	0	0	10	0	0	1	1	0	4	165	0	0	6	110	25	0	322	
7:50 AM	0	2	15	0	1	0	1	0	5	141	0	0	2	97	30	0	294	
7:55 AM	0	1	6	0	2	1	1	0	3	141	0	0	4	102	29	0	290	3000
8:00 AM	0	1	6	0	0	0	1	0	3	122	0	0	1	97	16	0	247	3084
8:05 AM	0	1	6	0	2	0	1	0	2	104	0	0	5	95	15	0	231	3113
8:10 AM	0	0	4	0	0	0	3	0	2	126	1	0	1	91	11	0	239	3111
8:15 AM	0	0	4	0	1	0	0	0	2	117	0	0	3	89	15	0	231	3083
8:20 AM	1	0	8	0	5	0	1	0	1	94	0	0	3	96	15	0	224	3092
8:25 AM	0	0	4	0	0	0	0	0	1	90	0	0	3	73	11	0	182	3041
8:30 AM	0	0	4	0	1	0	0	0	2	84	0	0	3	82	13	0	189	2992
8:35 AM	0	0	5	0	0	0	1	0	1	95	0	0	4	103	15	0	224	2968
8:40 AM	0	0	3	0	2	0	1	0	2	76	0	0	5	93	7	0	189	2862
8:45 AM	0	0	2	0	1	0	1	0	0	110	0	0	1	83	8	0	206	2746
8:50 AM	0	0	7	0	1	1	2	0	2	100	0	0	7	95	9	0	224	2676
8:55 AM	0	0	4	0	0	0	0	0	3	91	1	0	4	90	11	0	204	2590

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	12	152	0	4	4	8	4	44	1840	0	0	40	1232	304	0	3644
Heavy Trucks	0	0	8		0	0	4		0	52	0		12	100	0		176
Pedestrians		0				0				0				4			4
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/29/2018 3:44 PM

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

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

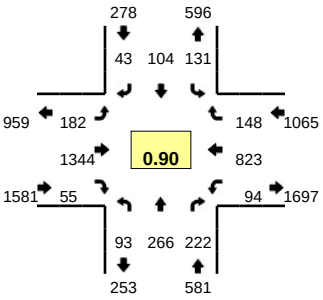
LOCATION: Battle Creek Rd SE -- Kuebler Blvd

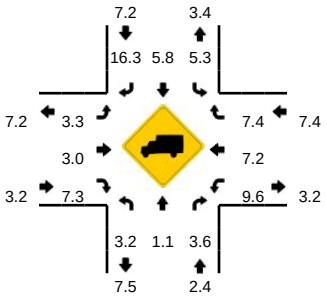
QC JOB #: 14711011

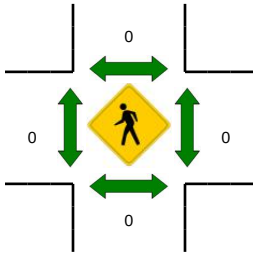
CITY/STATE: Salem, OR

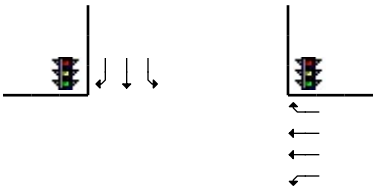
DATE: Wed, May 16 2018

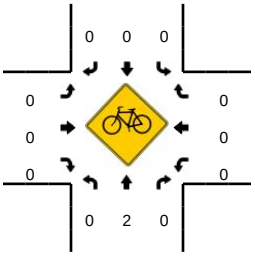
Peak-Hour: 7:10 AM -- 8:10 AM
Peak 15-Min: 7:45 AM -- 8:00 AM

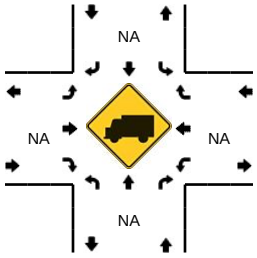


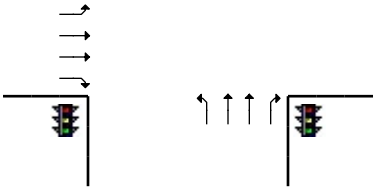


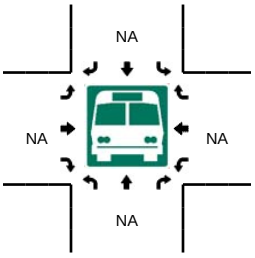












5-Min Count Period Beginning At	Battle Creek Rd SE (Northbound)				Battle Creek Rd SE (Southbound)				Kuebler Blvd (Eastbound)				Kuebler Blvd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	6	14	13	0	7	1	2	0	10	67	2	0	5	50	5	0	182	
7:05 AM	9	17	13	0	12	6	0	0	6	111	8	0	4	49	4	0	239	
7:10 AM	8	34	20	0	14	6	1	0	19	111	4	0	4	61	6	0	288	
7:15 AM	2	26	24	0	12	8	5	0	10	99	3	0	9	68	14	0	280	
7:20 AM	6	22	15	0	11	10	2	0	8	112	5	0	4	66	8	0	269	
7:25 AM	5	16	19	0	13	8	2	0	19	113	4	0	5	52	9	0	265	
7:30 AM	10	24	23	0	6	3	1	0	16	95	5	0	13	56	8	0	260	
7:35 AM	7	23	13	0	12	12	6	0	12	141	4	0	5	66	9	0	310	
7:40 AM	12	27	19	0	13	3	3	0	15	125	5	0	6	68	13	0	309	
7:45 AM	9	24	25	0	6	14	4	0	17	128	3	0	9	73	27	0	339	
7:50 AM	9	16	16	0	13	10	5	0	18	128	2	0	7	80	14	0	318	
7:55 AM	7	19	9	0	9	11	6	0	16	123	7	0	9	87	18	0	321	3380
8:00 AM	13	18	25	0	12	13	4	0	19	80	9	0	11	69	12	0	285	3483
8:05 AM	5	17	14	0	10	6	4	0	13	89	4	0	12	77	10	0	261	3505
8:10 AM	6	12	8	0	10	9	5	0	8	110	4	0	11	85	9	0	277	3494
8:15 AM	6	17	14	0	10	6	3	0	16	76	4	0	7	69	7	0	235	3449
8:20 AM	6	20	22	0	2	5	6	0	16	75	6	0	8	64	7	0	237	3417
8:25 AM	4	15	10	0	7	5	2	0	4	72	5	0	12	72	11	0	219	3371
8:30 AM	2	12	10	0	9	8	4	0	6	59	6	0	13	51	9	0	189	3300
8:35 AM	9	13	15	0	6	11	7	0	6	75	3	0	13	68	12	0	238	3228
8:40 AM	9	18	13	0	8	9	6	0	8	54	3	0	10	81	14	0	233	3152
8:45 AM	9	15	6	0	17	16	6	0	11	82	4	0	11	67	4	0	248	3061
8:50 AM	8	30	18	0	8	13	4	0	9	62	13	0	9	62	12	0	248	2991
8:55 AM	10	15	19	0	11	13	6	0	11	73	5	0	8	87	8	0	266	2936

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	100	236	200	0	112	140	60	0	204	1516	48	0	100	960	236	0	3912
Heavy Trucks	0	8	4		4	8	4		4	44	0		4	60	20		160
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad Stopped Buses																	

Comments:

Report generated on 5/29/2018 3:44 PM

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

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: Reed Rd SE -- Battle Creek Rd SE

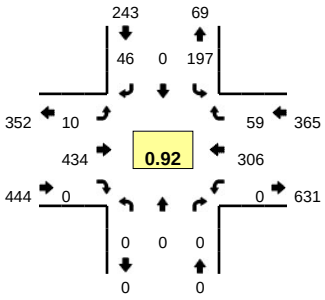
CITY/STATE: Salem, OR

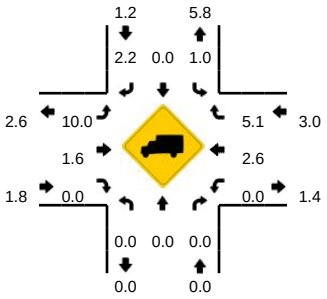
QC JOB #: 14711002

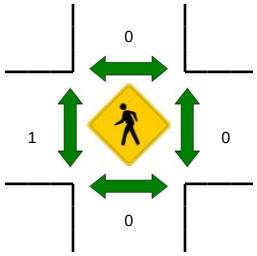
DATE: Wed, May 16 2018

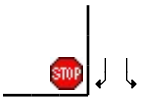
Peak-Hour: 4:30 PM -- 5:30 PM

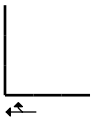
Peak 15-Min: 5:05 PM -- 5:20 PM

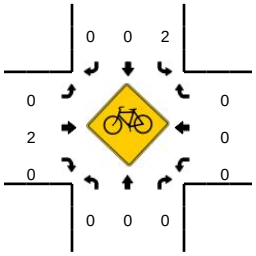


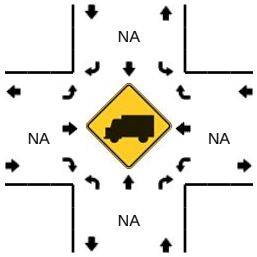


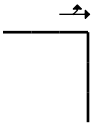


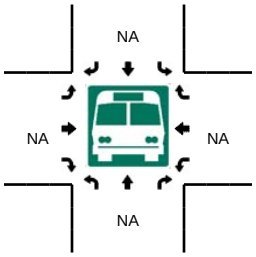












5-Min Count Period Beginning At	Reed Rd SE (Northbound)				Reed Rd SE (Southbound)				Battle Creek Rd SE (Eastbound)				Battle Creek Rd SE (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	15	0	2	0	0	26	0	0	0	21	3	0	67	
4:05 PM	0	0	0	0	22	0	2	0	1	35	0	0	0	30	2	0	92	
4:10 PM	0	0	0	0	18	0	1	0	0	23	0	0	0	20	6	0	68	
4:15 PM	0	0	0	0	17	0	4	0	0	33	0	0	0	27	8	0	89	
4:20 PM	0	0	0	0	8	0	1	0	0	37	0	0	0	29	5	0	80	
4:25 PM	0	0	0	0	16	0	5	0	0	25	0	0	0	25	5	0	76	
4:30 PM	0	0	0	0	15	0	3	0	2	36	0	0	0	27	2	0	85	
4:35 PM	0	0	0	0	26	0	6	0	2	29	0	0	0	22	7	0	92	
4:40 PM	0	0	0	0	21	0	4	0	0	35	0	0	0	20	6	0	86	
4:45 PM	0	0	0	0	8	0	2	0	0	38	0	0	0	21	5	0	74	
4:50 PM	0	0	0	0	13	0	3	0	2	27	0	0	0	23	8	0	76	
4:55 PM	0	0	0	0	13	0	5	0	0	39	0	0	0	24	6	0	87	972
5:00 PM	0	0	0	0	18	0	6	0	0	43	0	0	0	26	2	0	95	1000
5:05 PM	0	0	0	0	25	0	4	0	1	33	0	0	0	26	4	0	93	1001
5:10 PM	0	0	0	0	18	0	5	0	1	35	0	0	0	25	3	0	87	1020
5:15 PM	0	0	0	0	12	0	3	0	1	53	0	0	0	34	3	0	106	1037
5:20 PM	0	0	0	0	15	0	1	0	1	43	0	0	0	23	7	0	90	1047
5:25 PM	0	0	0	0	13	0	4	0	0	23	0	0	0	35	6	0	81	1052
5:30 PM	0	0	0	0	8	0	6	0	3	26	0	0	0	27	9	0	79	1046
5:35 PM	0	0	0	0	16	0	6	0	1	20	0	0	0	28	7	0	78	1032
5:40 PM	0	0	0	0	12	0	3	0	0	35	0	0	0	28	2	0	80	1026
5:45 PM	0	0	0	0	9	0	1	0	1	35	0	0	0	35	3	0	84	1036
5:50 PM	0	0	0	0	8	0	2	0	4	29	0	0	0	23	3	0	69	1029
5:55 PM	0	0	0	0	9	0	2	0	2	20	0	1	0	17	2	0	53	995

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	220	0	48	0	12	484	0	0	0	340	40	0	1144
Heavy Trucks	0	0	0		0	0	0		0	4	0		0	4	8		16
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/29/2018 3:44 PM

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

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

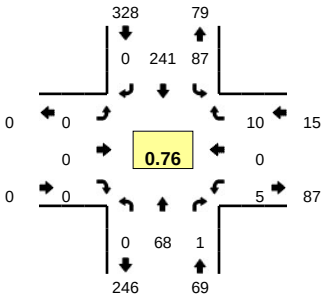
LOCATION: Reed Rd SE -- Strong Rd SE

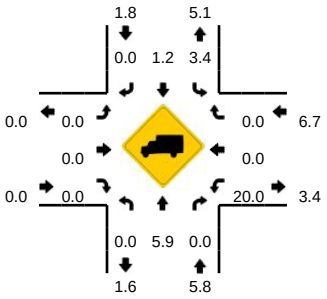
QC JOB #: 14711004

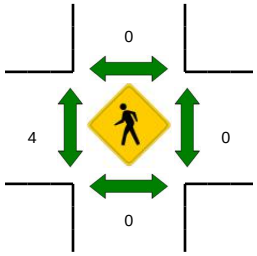
CITY/STATE: Salem, OR

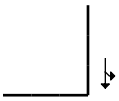
DATE: Wed, May 16 2018

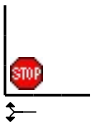
Peak-Hour: 4:25 PM -- 5:25 PM
Peak 15-Min: 5:00 PM -- 5:15 PM

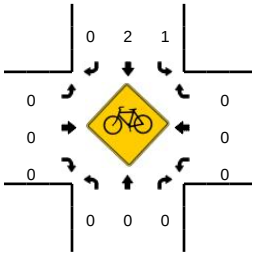


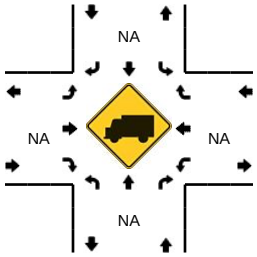


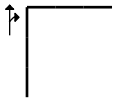


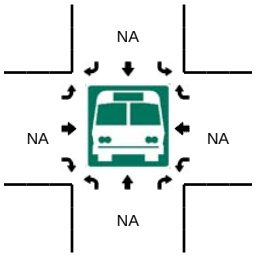












5-Min Count Period Beginning At	Reed Rd SE (Northbound)				Reed Rd SE (Southbound)				Strong Rd SE (Eastbound)				Strong Rd SE (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	3	0	0	11	21	0	0	0	0	0	0	0	0	0	0	35	
4:05 PM	0	2	0	0	3	24	0	0	0	0	0	0	1	0	2	0	32	
4:10 PM	0	6	0	0	7	15	0	0	0	0	0	0	0	0	3	0	31	
4:15 PM	0	8	0	0	5	19	0	0	0	0	0	0	0	0	2	0	34	
4:20 PM	0	4	0	0	2	12	0	0	0	0	0	0	1	0	4	0	23	
4:25 PM	0	5	0	0	5	16	0	0	0	0	0	0	1	0	0	0	27	
4:30 PM	0	4	0	0	7	29	0	0	0	0	0	0	0	0	2	0	42	
4:35 PM	0	9	0	0	1	25	0	0	0	0	0	0	1	0	0	0	36	
4:40 PM	0	4	0	0	3	21	0	0	0	0	0	0	0	0	1	0	29	
4:45 PM	0	6	0	0	3	12	0	1	0	0	0	0	0	0	2	0	24	
4:50 PM	0	11	1	0	6	20	0	0	0	0	0	0	0	0	2	0	40	
4:55 PM	0	3	0	0	0	15	0	0	0	0	0	0	0	0	2	0	20	373
5:00 PM	0	5	0	0	17	24	0	0	0	0	0	0	1	0	0	0	47	385
5:05 PM	0	4	0	0	16	28	0	0	0	0	0	0	2	0	0	0	50	403
5:10 PM	0	4	0	0	14	20	0	0	0	0	0	0	0	0	1	0	39	411
5:15 PM	0	4	0	0	6	12	0	0	0	0	0	0	0	0	0	0	22	399
5:20 PM	0	9	0	0	8	19	0	0	0	0	0	0	0	0	0	0	36	412
5:25 PM	0	4	1	0	5	12	0	0	0	0	0	0	2	0	1	0	25	410
5:30 PM	0	8	0	0	6	16	0	0	0	0	0	0	2	0	0	0	32	400
5:35 PM	0	12	1	0	4	21	0	0	0	0	0	0	0	0	0	0	38	402
5:40 PM	0	2	0	0	6	13	0	0	0	0	0	0	1	0	2	0	24	397
5:45 PM	0	1	0	0	2	9	0	0	0	0	0	0	1	0	3	0	16	389
5:50 PM	0	8	0	0	2	8	0	0	0	0	0	0	0	0	1	0	19	368
5:55 PM	0	4	2	0	3	11	0	0	0	0	0	0	0	0	1	0	21	369

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	52	0	0	188	288	0	0	0	0	0	0	12	0	4	0	544
Heavy Trucks	0	8	0		0	0	0		0	0	0		4	0	0		12
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	1	0		0	0	0		0	0	0		1
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/29/2018 3:44 PM

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

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: Reed Rd SE -- Fairview Industrial Dr SE

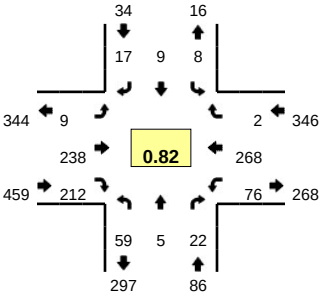
QC JOB #: 14711014

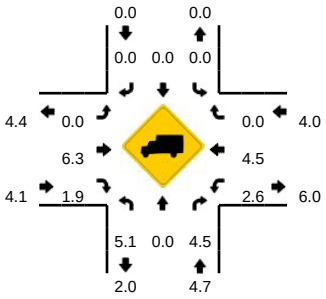
CITY/STATE: Marion, OR

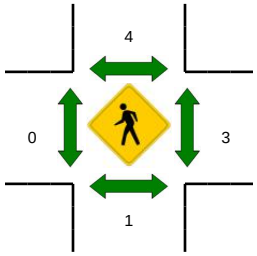
DATE: Wed, May 16 2018

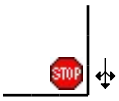
Peak-Hour: 4:15 PM -- 5:15 PM

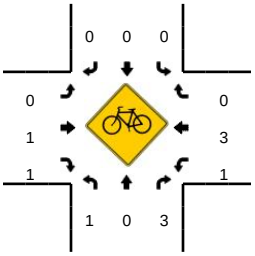
Peak 15-Min: 5:00 PM -- 5:15 PM

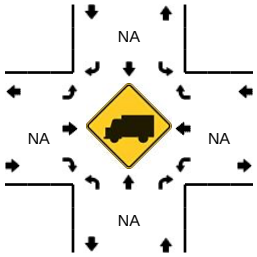


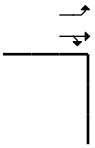


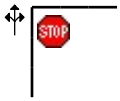


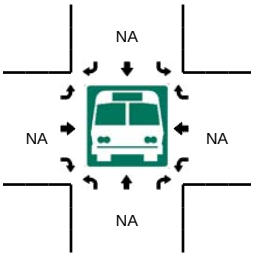












5-Min Count Period Beginning At	Reed Rd SE (Northbound)				Reed Rd SE (Southbound)				Fairview Industrial Dr SE (Eastbound)				Fairview Industrial Dr SE (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	3	0	0	0	1	0	2	0	1	15	23	0	5	25	0	0	75	
4:05 PM	3	0	2	0	0	1	2	0	0	34	13	0	11	24	0	0	90	
4:10 PM	5	0	1	0	1	1	2	0	0	21	11	0	7	16	1	0	66	
4:15 PM	5	0	4	0	0	0	1	0	0	19	23	0	2	17	1	0	72	
4:20 PM	7	1	3	0	0	0	0	0	1	20	7	0	4	14	0	0	57	
4:25 PM	2	0	1	0	0	1	1	0	1	18	18	0	5	13	0	0	60	
4:30 PM	6	0	2	0	1	2	2	0	0	19	26	0	10	31	0	0	99	
4:35 PM	8	0	2	0	1	1	1	0	2	18	15	0	5	28	1	0	82	
4:40 PM	4	0	0	0	1	0	0	0	0	16	17	0	4	21	0	0	63	
4:45 PM	6	0	3	0	0	0	3	0	2	17	7	0	9	21	0	0	68	
4:50 PM	7	3	2	0	1	1	2	0	0	21	15	0	7	24	0	0	83	
4:55 PM	4	0	2	0	0	1	2	0	1	16	10	0	5	18	0	0	59	874
5:00 PM	3	1	1	0	1	1	1	0	1	30	24	0	12	28	0	0	103	902
5:05 PM	2	0	0	0	2	2	4	0	0	28	26	0	7	34	0	0	105	917
5:10 PM	5	0	2	0	1	0	0	0	1	16	24	0	6	19	0	0	74	925
5:15 PM	3	0	0	0	1	1	2	0	1	11	12	0	2	16	0	0	49	902
5:20 PM	6	0	2	0	1	0	3	0	2	18	18	0	5	10	0	0	65	910
5:25 PM	4	1	2	0	1	0	0	0	0	15	10	0	3	13	0	0	49	899
5:30 PM	4	0	0	0	1	1	1	0	0	8	18	0	4	30	0	0	67	867
5:35 PM	8	0	4	0	1	1	0	0	0	16	12	0	10	20	0	0	72	857
5:40 PM	3	1	0	0	0	1	0	0	0	5	8	0	6	14	0	0	38	832
5:45 PM	1	1	1	0	0	0	1	0	0	10	9	0	0	9	0	0	32	796
5:50 PM	5	0	0	0	0	0	0	0	1	3	7	0	3	9	0	0	28	741
5:55 PM	4	0	0	0	0	0	0	0	1	11	10	0	2	6	0	0	34	716

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	40	4	12	0	16	12	20	0	8	296	296	0	100	324	0	0	1128
Heavy Trucks	4	0	0		0	0	0		0	20	0		0	16	0		40
Pedestrians		0				0				0				0			0
Bicycles	1	0	3		0	0	0		0	0	0		0	1	0		5
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/29/2018 3:44 PM

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

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: Fairview Industrial Dr SE -- Marietta St SE

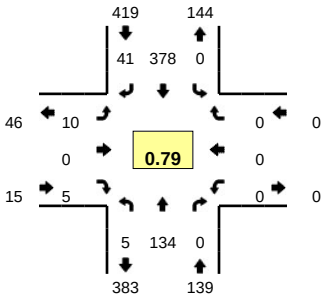
QC JOB #: 14711016

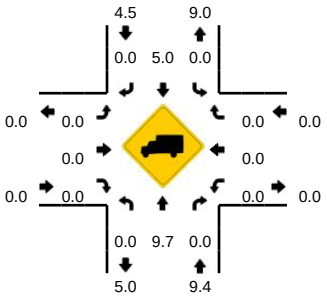
CITY/STATE: Salem, OR

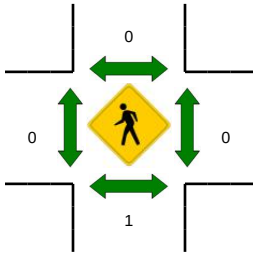
DATE: Wed, May 16 2018

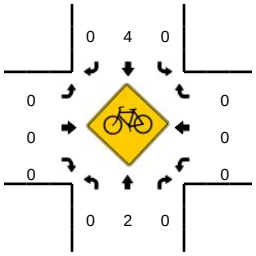
Peak-Hour: 4:10 PM -- 5:10 PM

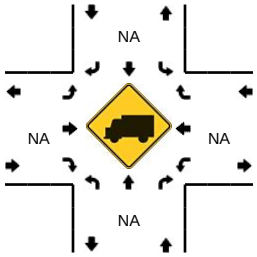
Peak 15-Min: 4:55 PM -- 5:10 PM

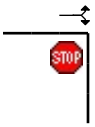


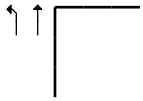


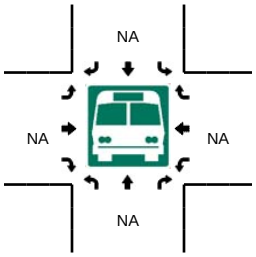












5-Min Count Period Beginning At	Fairview Industrial Dr SE (Northbound)				Fairview Industrial Dr SE (Southbound)				Marietta St SE (Eastbound)				Marietta St SE (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	1	7	0	0	0	18	2	0	0	0	0	0	0	0	0	0	28	
4:05 PM	2	9	0	0	0	41	1	0	1	0	2	0	0	0	0	0	56	
4:10 PM	0	8	0	0	0	35	3	0	2	0	0	0	0	0	0	0	48	
4:15 PM	0	9	0	0	0	35	1	0	0	0	0	0	0	0	0	0	45	
4:20 PM	0	5	0	0	0	26	3	0	2	0	0	0	0	0	0	0	36	
4:25 PM	1	9	0	0	0	23	0	0	1	0	0	0	0	0	0	0	34	
4:30 PM	0	12	0	0	0	34	7	0	0	0	1	0	0	0	0	0	54	
4:35 PM	1	9	0	0	0	30	1	0	0	0	2	0	0	0	0	0	43	
4:40 PM	1	13	0	0	0	30	2	0	0	0	0	0	0	0	0	0	46	
4:45 PM	1	17	0	0	0	23	1	0	1	0	1	0	0	0	0	0	44	
4:50 PM	0	11	0	0	0	27	3	0	1	0	0	0	0	0	0	0	42	
4:55 PM	0	14	0	0	0	23	2	0	1	0	1	0	0	0	0	0	41	517
5:00 PM	0	16	0	0	0	50	10	0	0	0	0	0	0	0	0	0	76	565
5:05 PM	1	11	0	0	0	42	8	0	2	0	0	0	0	0	0	0	64	573
5:10 PM	0	7	0	0	0	27	4	0	1	0	1	0	0	0	0	0	40	565
5:15 PM	0	10	0	0	0	25	5	0	0	0	0	0	0	0	0	0	40	560
5:20 PM	0	7	0	0	0	21	3	0	1	0	0	0	0	0	0	0	32	556
5:25 PM	0	2	0	0	0	25	3	0	1	0	0	0	0	0	0	0	31	553
5:30 PM	0	13	0	0	0	19	1	0	0	0	0	0	0	0	0	0	33	532
5:35 PM	0	7	0	0	0	30	0	0	0	0	1	0	0	0	0	0	38	527
5:40 PM	0	6	0	0	0	12	3	0	1	0	0	0	0	0	0	0	22	503
5:45 PM	1	8	0	0	0	13	2	0	0	0	0	0	0	0	0	0	24	483
5:50 PM	0	5	0	0	0	11	1	0	0	0	0	0	0	0	0	0	17	458
5:55 PM	0	5	0	0	0	15	0	0	2	0	0	0	0	0	0	0	22	439

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	164	0	0	0	460	80	0	12	0	4	0	0	0	0	0	724
Heavy Trucks	0	8	0		0	24	0		0	0	0		0	0	0		32
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	3	0		0	0	0		0	0	0		3
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/29/2018 3:44 PM

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

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

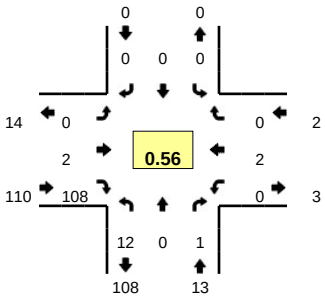
LOCATION: 27th Ave SE -- Strong Rd SE

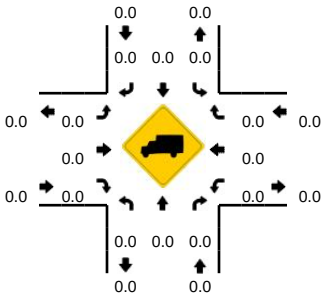
QC JOB #: 14711006

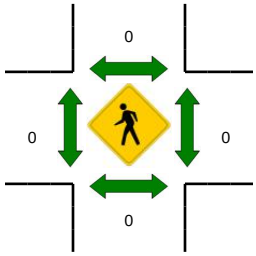
CITY/STATE: Salem, OR

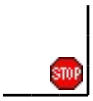
DATE: Wed, May 16 2018

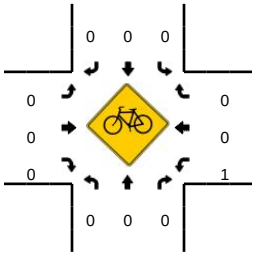
Peak-Hour: 4:45 PM -- 5:45 PM
Peak 15-Min: 5:00 PM -- 5:15 PM

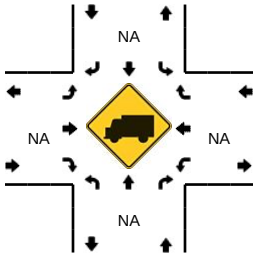


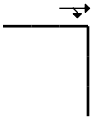


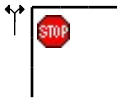


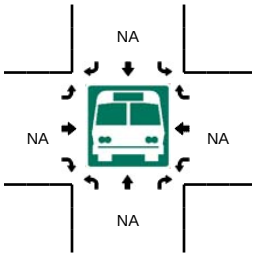












5-Min Count Period Beginning At	27th Ave SE (Northbound)				27th Ave SE (Southbound)				Strong Rd SE (Eastbound)				Strong Rd SE (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	0	0	0	0	0	0	7	0	0	0	0	0	7	
4:05 PM	4	0	0	0	0	0	0	0	0	0	8	0	0	0	0	0	12	
4:10 PM	2	0	0	0	0	0	0	0	0	0	8	0	0	0	0	0	10	
4:15 PM	4	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0	9	
4:20 PM	3	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	5	
4:25 PM	1	0	0	0	0	0	0	0	0	0	3	0	0	1	0	0	5	
4:30 PM	2	0	0	0	0	0	0	0	0	1	8	0	0	0	0	0	11	
4:35 PM	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	4	
4:40 PM	2	0	0	0	0	0	0	0	0	1	2	0	0	0	0	0	5	
4:45 PM	3	0	0	0	0	0	0	0	0	0	5	0	0	1	0	0	9	
4:50 PM	1	0	0	0	0	0	0	0	0	1	4	0	0	0	0	0	6	
4:55 PM	1	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	3	86
5:00 PM	0	0	1	0	0	0	0	0	0	0	15	0	0	0	0	0	16	95
5:05 PM	0	0	0	0	0	0	0	0	0	0	24	0	0	1	0	0	25	108
5:10 PM	1	0	0	0	0	0	0	0	0	0	14	0	0	0	0	0	15	113
5:15 PM	0	0	0	0	0	0	0	0	0	0	7	0	0	0	0	0	7	111
5:20 PM	0	0	0	0	0	0	0	0	0	1	8	0	0	0	0	0	9	115
5:25 PM	2	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0	8	118
5:30 PM	1	0	0	0	0	0	0	0	0	0	8	0	0	0	0	0	9	116
5:35 PM	0	0	0	0	0	0	0	0	0	0	8	0	0	0	0	0	8	120
5:40 PM	3	0	0	0	0	0	0	0	0	0	7	0	0	0	0	0	10	125
5:45 PM	3	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	5	121
5:50 PM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	116
5:55 PM	0	0	0	0	0	0	0	0	0	1	7	0	0	0	0	0	8	121

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	0	4	0	0	0	0	0	0	0	212	0	0	4	0	0	224
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	0	0		0
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/29/2018 3:44 PM

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

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

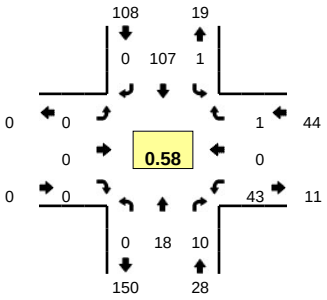
LOCATION: 27th Ave SE -- Marietta St SE

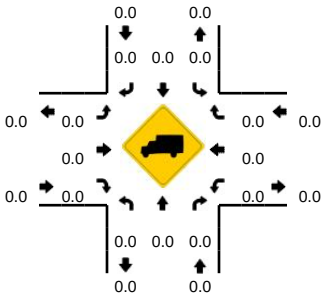
QC JOB #: 14711008

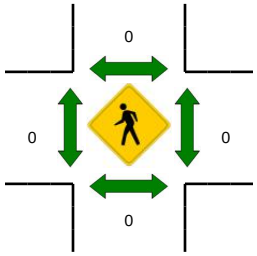
CITY/STATE: Salem, OR

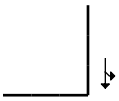
DATE: Wed, May 16 2018

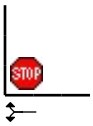
Peak-Hour: 4:45 PM -- 5:45 PM
Peak 15-Min: 5:00 PM -- 5:15 PM

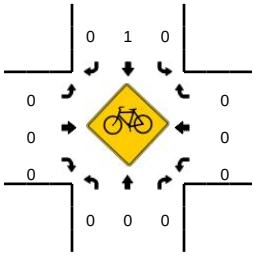


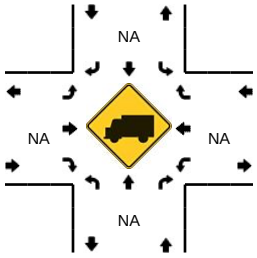


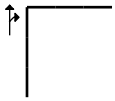


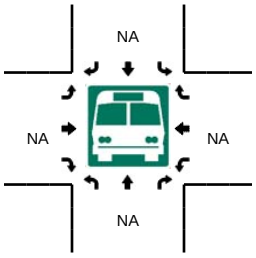












5-Min Count Period Beginning At	27th Ave SE (Northbound)				27th Ave SE (Southbound)				Marietta St SE (Eastbound)				Marietta St SE (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	0	7	0	0	0	0	0	0	3	0	0	0	10	
4:05 PM	0	4	4	0	0	5	0	0	0	0	0	0	4	0	0	0	17	
4:10 PM	0	2	0	0	0	9	0	0	0	0	0	0	2	0	0	0	13	
4:15 PM	0	3	0	0	0	6	0	0	0	0	0	0	2	0	0	0	11	
4:20 PM	0	3	3	0	0	2	0	0	0	0	0	0	2	0	0	0	10	
4:25 PM	0	1	2	0	0	2	0	0	0	0	0	0	0	0	0	0	5	
4:30 PM	0	2	0	0	0	7	0	0	0	0	0	0	5	0	0	0	14	
4:35 PM	0	0	2	0	0	5	0	0	0	0	0	0	4	0	0	0	11	
4:40 PM	0	2	0	0	0	2	0	0	0	0	0	0	3	0	0	0	7	
4:45 PM	0	4	1	0	0	6	0	0	0	0	0	0	0	0	0	0	11	
4:50 PM	0	1	1	0	0	4	0	0	0	0	0	0	4	0	0	0	10	
4:55 PM	0	3	1	0	0	2	0	0	0	0	0	0	2	0	0	0	8	127
5:00 PM	0	2	1	0	0	12	0	0	0	0	0	0	4	0	0	0	19	136
5:05 PM	0	1	1	0	0	26	0	0	0	0	0	0	12	0	0	0	40	159
5:10 PM	0	1	0	0	0	12	0	0	0	0	0	0	4	0	1	0	18	164
5:15 PM	0	0	0	0	0	10	0	0	0	0	0	0	5	0	0	0	15	168
5:20 PM	0	0	0	0	0	8	0	0	0	0	0	0	2	0	0	0	10	168
5:25 PM	0	2	2	0	0	5	0	0	0	0	0	0	6	0	0	0	15	178
5:30 PM	0	1	0	0	0	9	0	0	0	0	0	0	1	0	0	0	11	175
5:35 PM	0	0	3	0	1	7	0	0	0	0	0	0	0	0	0	0	11	175
5:40 PM	0	3	0	0	0	6	0	0	0	0	0	0	3	0	0	0	12	180
5:45 PM	0	3	0	0	0	1	0	0	0	0	0	0	2	0	0	0	6	175
5:50 PM	0	1	0	0	0	1	0	0	0	0	0	0	1	0	0	0	3	168
5:55 PM	0	0	1	0	0	7	0	0	0	0	0	0	2	0	0	0	10	170

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	16	8	0	0	200	0	0	0	0	0	0	80	0	4	0	308
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	0	0		0
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/29/2018 3:44 PM

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

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

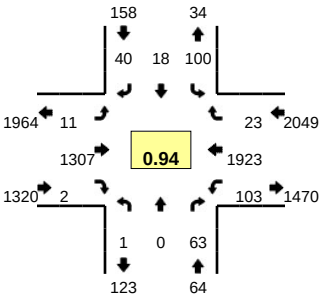
LOCATION: 27th Ave SE -- Kuebler Blvd

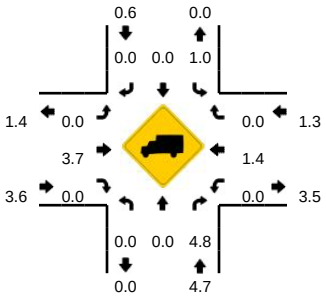
QC JOB #: 14711010

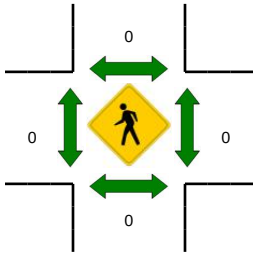
CITY/STATE: Salem, OR

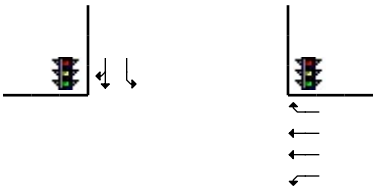
DATE: Wed, May 16 2018

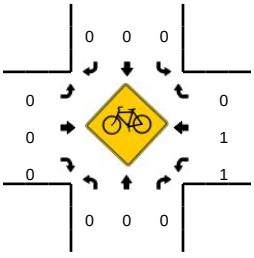
Peak-Hour: 4:40 PM -- 5:40 PM
Peak 15-Min: 5:10 PM -- 5:25 PM

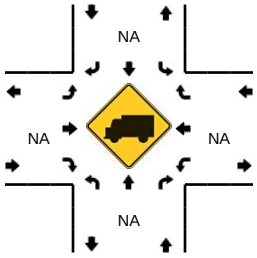


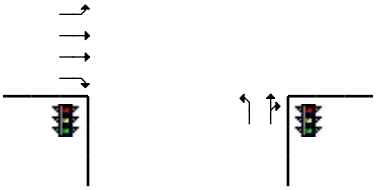


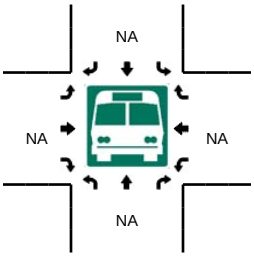












5-Min Count Period Beginning At	27th Ave SE (Northbound)				27th Ave SE (Southbound)				Kuebler Blvd (Eastbound)				Kuebler Blvd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	3	0	5	0	2	0	0	106	0	0	10	128	1	0	255	
4:05 PM	0	0	5	0	5	0	4	0	1	96	0	0	4	157	5	0	277	
4:10 PM	0	0	9	0	8	0	1	0	0	106	1	0	6	155	2	0	288	
4:15 PM	0	0	2	0	10	1	0	0	1	113	0	0	4	138	3	0	272	
4:20 PM	0	0	3	0	2	0	3	0	4	117	0	0	7	166	5	0	307	
4:25 PM	0	0	3	0	2	1	0	0	1	85	0	0	9	151	2	0	254	
4:30 PM	0	0	8	0	8	1	4	0	4	114	1	0	9	120	1	0	270	
4:35 PM	0	1	6	0	10	1	0	0	1	110	0	0	4	155	0	0	288	
4:40 PM	0	0	10	0	1	0	1	0	2	94	0	0	12	158	1	0	279	
4:45 PM	0	0	9	0	5	0	1	0	2	131	0	0	6	152	4	0	310	
4:50 PM	0	0	4	0	6	1	4	0	0	118	0	0	4	145	4	0	286	
4:55 PM	0	0	4	0	3	1	1	0	1	104	0	0	9	168	0	0	291	3377
5:00 PM	0	0	4	0	4	1	3	0	0	115	0	0	9	154	3	0	293	3415
5:05 PM	0	0	8	0	34	3	11	0	1	98	1	0	9	127	3	0	295	3433
5:10 PM	0	0	4	0	11	3	2	0	1	109	0	0	8	187	0	0	325	3470
5:15 PM	0	0	9	0	12	0	3	0	0	105	0	0	14	183	0	0	326	3524
5:20 PM	1	0	3	0	7	4	4	0	0	110	0	0	5	169	1	0	304	3521
5:25 PM	0	0	3	0	3	1	5	0	1	112	0	0	11	158	2	0	296	3563
5:30 PM	0	0	3	0	6	2	3	0	1	94	1	0	8	168	1	0	287	3580
5:35 PM	0	0	2	0	8	2	2	0	2	117	0	0	8	154	4	0	299	3591
5:40 PM	0	1	6	0	4	0	1	0	3	99	0	0	13	136	1	0	264	3576
5:45 PM	0	0	3	0	4	0	2	0	2	87	0	0	3	159	2	0	262	3528
5:50 PM	0	1	3	0	1	0	1	0	1	94	0	0	6	172	0	0	279	3521
5:55 PM	0	0	4	0	4	1	2	0	0	98	0	0	5	130	1	0	245	3475

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	0	64	0	120	28	36	0	4	1296	0	0	108	2156	4	0	3820
Heavy Trucks	0	0	4		0	0	0		0	40	0		0	32	0		76
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/29/2018 3:44 PM

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

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

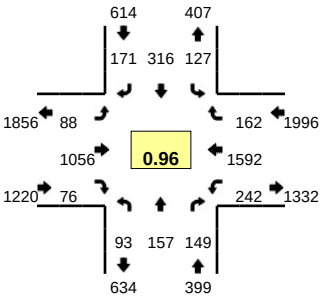
LOCATION: Battle Creek Rd SE -- Kuebler Blvd

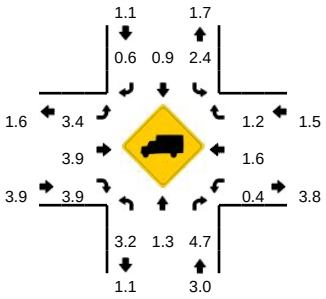
QC JOB #: 14711012

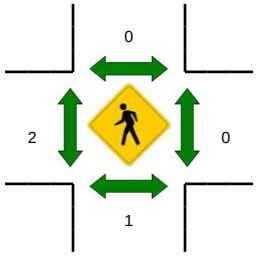
CITY/STATE: Salem, OR

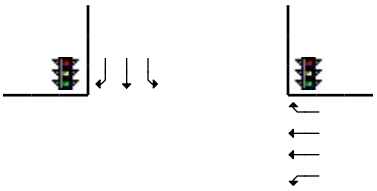
DATE: Wed, May 16 2018

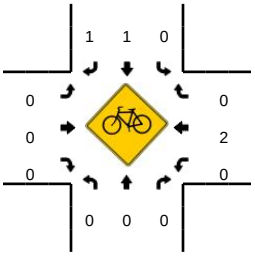
Peak-Hour: 4:40 PM -- 5:40 PM
Peak 15-Min: 5:10 PM -- 5:25 PM

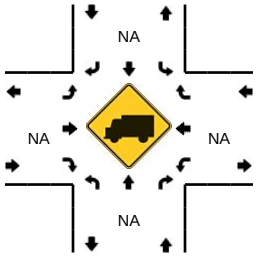


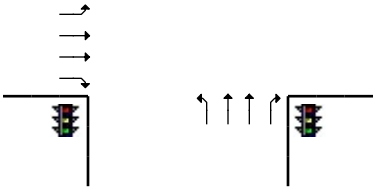


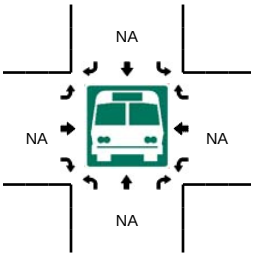












5-Min Count Period Beginning At	Battle Creek Rd SE (Northbound)				Battle Creek Rd SE (Southbound)				Kuebler Blvd (Eastbound)				Kuebler Blvd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	12	19	7	0	12	19	9	0	1	71	7	0	19	103	7	0	286	
4:05 PM	8	9	13	0	4	29	26	0	8	74	4	0	19	107	16	0	317	
4:10 PM	7	8	11	0	13	17	11	0	4	101	6	0	11	157	16	0	362	
4:15 PM	9	12	12	0	11	22	16	0	7	87	3	0	21	103	13	0	316	
4:20 PM	7	13	11	0	10	34	7	0	5	84	7	0	18	125	17	0	338	
4:25 PM	6	6	5	0	6	25	12	0	6	97	4	0	12	127	20	0	326	
4:30 PM	6	8	14	0	14	18	14	0	5	81	7	0	22	95	21	0	305	
4:35 PM	6	9	17	0	9	35	22	0	10	77	5	0	9	105	11	0	315	
4:40 PM	11	10	9	0	9	18	16	0	11	92	7	0	25	128	11	0	347	
4:45 PM	9	10	11	0	14	24	10	0	7	107	4	0	15	144	13	0	368	
4:50 PM	17	15	14	0	20	30	14	0	7	79	5	0	17	111	12	0	341	
4:55 PM	8	6	12	0	9	27	16	0	11	80	11	0	19	133	11	0	343	3964
5:00 PM	2	13	10	0	13	27	9	0	6	100	6	0	14	134	14	0	348	4026
5:05 PM	10	12	14	0	15	35	18	0	4	80	6	0	19	116	18	0	347	4056
5:10 PM	3	14	13	0	9	34	20	0	7	64	4	0	34	118	10	0	330	4024
5:15 PM	7	15	11	0	10	25	19	0	8	105	8	0	22	159	14	0	403	4111
5:20 PM	6	14	13	0	13	28	14	0	6	90	9	0	17	151	11	0	372	4145
5:25 PM	9	20	15	0	3	32	16	0	9	68	4	0	18	99	15	0	308	4127
5:30 PM	1	12	13	0	8	15	8	0	5	94	7	0	21	168	20	0	372	4194
5:35 PM	10	16	14	0	4	21	11	0	7	97	5	0	21	131	13	0	350	4229
5:40 PM	7	17	15	0	9	36	16	0	5	76	5	0	19	93	16	0	314	4196
5:45 PM	6	14	11	0	7	24	12	0	8	68	5	0	22	144	12	0	333	4161
5:50 PM	9	10	11	0	5	17	6	0	2	86	3	0	22	136	18	0	325	4145
5:55 PM	7	10	9	0	11	24	10	0	5	65	8	0	19	98	10	0	276	4078

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	64	172	148	0	128	348	212	0	84	1036	84	0	292	1712	140	0	4420
Heavy Trucks	0	4	4		0	4	0		4	48	4		0	40	0		108
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/29/2018 3:44 PM

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

OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
CRASH SUMMARIES BY YEAR BY COLLISION TYPE

SE Battle Creek Rd & SE Reed Rd
January 1, 2012 through December 31, 2016

COLLISION TYPE	FATAL CRASHES	NON-FATAL CRASHES	PROPERTY DAMAGE ONLY	TOTAL CRASHES	PEOPLE KILLED	PEOPLE INJURED	TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER-SECTION	INTER-SECTION RELATED	OFF-ROAD
YEAR: 2016														
REAR-END	0	0	2	2	0	0	0	1	1	2	0	2	0	0
TURNING MOVEMENTS	0	1	0	1	0	1	0	1	0	0	1	1	0	0
2016 TOTAL	0	1	2	3	0	1	0	2	1	2	1	3	0	0
YEAR: 2015														
REAR-END	0	1	0	1	0	2	0	1	0	1	0	1	0	0
2015 TOTAL	0	1	0	1	0	2	0	1	0	1	0	1	0	0
YEAR: 2014														
FIXED / OTHER OBJECT	0	1	0	1	0	1	0	0	1	0	1	1	0	1
2014 TOTAL	0	1	0	1	0	1	0	0	1	0	1	1	0	1
YEAR: 2012														
FIXED / OTHER OBJECT	0	0	1	1	0	0	0	0	0	0	1	1	0	1
TURNING MOVEMENTS	0	0	1	1	0	0	0	1	0	1	0	1	0	0
2012 TOTAL	0	0	2	2	0	0	0	1	0	1	1	2	0	1
FINAL TOTAL	0	3	4	7	0	4	0	4	2	4	3	7	0	2

Disclaimer: A higher number of crashes may be reported as of 2011 compared to prior years. This does not reflect an increase in annual crashes. The higher numbers result from a change to an internal departmental process that allows the Crash Analysis and Reporting Unit to add previously unavailable, non-fatal crash reports to the annual data file. Please be aware of this change when comparing pre-2011 crash statistics.

OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
CRASH SUMMARIES BY YEAR BY COLLISION TYPE

SE Strong Rd & SE Reed Rd
January 1, 2012 through December 31, 2016

COLLISION TYPE	FATAL CRASHES	NON-FATAL CRASHES	PROPERTY DAMAGE ONLY	TOTAL CRASHES	PEOPLE KILLED	PEOPLE INJURED	TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER-SECTION	INTER-SECTION RELATED	OFF-ROAD
YEAR: 2016														
FIXED / OTHER OBJECT	0	0	1	1	0	0	0	0	1	0	1	1	0	1
2016 TOTAL	0	0	1	1	0	0	0	0	1	0	1	1	0	1
FINAL TOTAL	0	0	1	1	0	0	0	0	1	0	1	1	0	1

Disclaimer: A higher number of crashes may be reported as of 2011 compared to prior years. This does not reflect an increase in annual crashes. The higher numbers result from a change to an internal departmental process that allows the Crash Analysis and Reporting Unit to add previously unavailable, non-fatal crash reports to the annual data file. Please be aware of this change when comparing pre-2011 crash statistics.

TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT

CRASH SUMMARIES BY YEAR BY COLLISION TYPE

SE Fairview Industrial Rd & SE Reed Rd

January 1, 2012 through December 31, 2016

COLLISION TYPE	FATAL CRASHES	NON-FATAL CRASHES	PROPERTY DAMAGE ONLY	TOTAL CRASHES	PEOPLE KILLED	PEOPLE INJURED	TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER-SECTION	INTER-SECTION RELATED	OFF-ROAD
YEAR: 2016														
ANGLE	0	1	0	1	0	1	0	1	0	1	0	1	0	0
2016 TOTAL	0	1	0	1	0	1	0	1	0	1	0	1	0	0
YEAR: 2014														
ANGLE	0	1	0	1	0	1	0	0	1	1	0	1	0	0
2014 TOTAL	0	1	0	1	0	1	0	0	1	1	0	1	0	0
FINAL TOTAL	0	2	0	2	0	2	0	1	1	2	0	2	0	0

Disclaimer: A higher number of crashes may be reported as of 2011 compared to prior years. This does not reflect an increase in annual crashes. The higher numbers result from a change to an internal departmental process that allows the Crash Analysis and Reporting Unit to add previously unavailable, non-fatal crash reports to the annual data file. Please be aware of this change when comparing pre-2011 crash statistics.

TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT

CRASH SUMMARIES BY YEAR BY COLLISION TYPE

SE Fairview Industrial Rd & SE Marietta St

January 1, 2012 through December 31, 2016

COLLISION TYPE	FATAL CRASHES	NON-FATAL CRASHES	PROPERTY DAMAGE ONLY	TOTAL CRASHES	PEOPLE KILLED	PEOPLE INJURED	TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER-SECTION	INTER-SECTION RELATED	OFF-ROAD
YEAR: 2015														
TURNING MOVEMENTS	0	1	0	1	0	1	0	1	0	1	0	1	0	0
2015 TOTAL	0	1	0	1	0	1	0	1	0	1	0	1	0	0
YEAR: 2012														
TURNING MOVEMENTS	0	0	1	1	0	0	0	1	0	1	0	1	0	0
2012 TOTAL	0	0	1	1	0	0	0	1	0	1	0	1	0	0
FINAL TOTAL	0	1	1	2	0	1	0	2	0	2	0	2	0	0

Disclaimer: A higher number of crashes may be reported as of 2011 compared to prior years. This does not reflect an increase in annual crashes. The higher numbers result from a change to an internal departmental process that allows the Crash Analysis and Reporting Unit to add previously unavailable, non-fatal crash reports to the annual data file. Please be aware of this change when comparing pre-2011 crash statistics.

OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
CRASH SUMMARIES BY YEAR BY COLLISION TYPE

SE Strong Rd & SE 27th Ave
January 1, 2012 through December 31, 2016

COLLISION TYPE	FATAL CRASHES	NON-FATAL CRASHES	PROPERTY DAMAGE ONLY	TOTAL CRASHES	PEOPLE KILLED	PEOPLE INJURED	TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER-SECTION	INTER-SECTION RELATED	OFF-ROAD
YEAR:														
TOTAL														
FINAL TOTAL														

Disclaimer: A higher number of crashes may be reported as of 2011 compared to prior years. This does not reflect an increase in annual crashes. The higher numbers result from a change to an internal departmental process that allows the Crash Analysis and Reporting Unit to add previously unavailable, non-fatal crash reports to the annual data file. Please be aware of this change when comparing pre-2011 crash statistics.

TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT

CRASH SUMMARIES BY YEAR BY COLLISION TYPE

SE Kuebler Blvd & SE 27th Ave

January 1, 2012 through December 31, 2016

COLLISION TYPE	FATAL CRASHES	NON-FATAL CRASHES	PROPERTY DAMAGE ONLY	TOTAL CRASHES	PEOPLE KILLED	PEOPLE INJURED	TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER-SECTION	INTER-SECTION RELATED	OFF-ROAD
YEAR: 2016														
TURNING MOVEMENTS	0	0	1	1	0	0	0	0	1	1	0	1	0	0
2016 TOTAL	0	0	1	1	0	0	0	0	1	1	0	1	0	0
YEAR: 2015														
REAR-END	0	2	1	3	0	3	0	1	2	3	0	3	0	0
TURNING MOVEMENTS	0	1	0	1	0	1	0	1	0	1	0	1	0	0
2015 TOTAL	0	3	1	4	0	4	0	2	2	4	0	4	0	0
YEAR: 2014														
REAR-END	0	2	3	5	0	2	0	3	2	5	0	5	0	0
2014 TOTAL	0	2	3	5	0	2	0	3	2	5	0	5	0	0
YEAR: 2013														
REAR-END	0	2	2	4	0	4	1	3	1	3	1	4	0	0
2013 TOTAL	0	2	2	4	0	4	1	3	1	3	1	4	0	0
YEAR: 2012														
REAR-END	0	1	1	2	0	1	0	2	0	1	1	2	0	0
TURNING MOVEMENTS	0	1	0	1	0	2	0	1	0	1	0	1	0	0
2012 TOTAL	0	2	1	3	0	3	0	3	0	2	1	3	0	0
FINAL TOTAL	0	9	8	17	0	13	1	11	6	15	2	17	0	0

Disclaimer: A higher number of crashes may be reported as of 2011 compared to prior years. This does not reflect an increase in annual crashes. The higher numbers result from a change to an internal departmental process that allows the Crash Analysis and Reporting Unit to add previously unavailable, non-fatal crash reports to the annual data file. Please be aware of this change when comparing pre-2011 crash statistics.

TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT

CRASH SUMMARIES BY YEAR BY COLLISION TYPE

SE Kuebler Blvd & SE Battle Creek Rd

January 1, 2012 through December 31, 2016

COLLISION TYPE	FATAL CRASHES	NON-FATAL CRASHES	PROPERTY DAMAGE ONLY	TOTAL CRASHES	PEOPLE KILLED	PEOPLE INJURED	TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER-SECTION	INTER-SECTION RELATED	OFF-ROAD
YEAR: 2016														
ANGLE	0	2	0	2	0	2	0	2	0	1	1	2	0	0
REAR-END	0	2	2	4	0	2	1	3	1	4	0	4	0	0
SIDESWIPE - OVERTAKING	0	0	1	1	0	0	0	1	0	1	0	1	0	0
TURNING MOVEMENTS	0	0	2	2	0	0	0	2	0	2	0	2	0	0
2016 TOTAL	0	4	5	9	0	4	1	8	1	8	1	9	0	0
YEAR: 2015														
HEAD-ON	0	1	0	1	0	1	0	1	0	0	1	1	0	0
REAR-END	0	3	5	8	0	5	0	5	1	7	1	8	0	0
TURNING MOVEMENTS	0	1	0	1	0	1	0	0	1	0	1	1	0	0
2015 TOTAL	0	5	5	10	0	7	0	6	2	7	3	10	0	0
YEAR: 2014														
REAR-END	0	2	2	4	0	2	0	4	0	4	0	4	0	0
TURNING MOVEMENTS	0	1	2	3	0	1	0	3	0	3	0	3	0	0
2014 TOTAL	0	3	4	7	0	3	0	7	0	7	0	7	0	0
YEAR: 2013														
REAR-END	0	4	2	6	0	5	0	3	3	6	0	6	0	0
TURNING MOVEMENTS	0	1	1	2	0	1	0	0	2	1	1	2	0	0
2013 TOTAL	0	5	3	8	0	6	0	3	5	7	1	8	0	0
YEAR: 2012														
REAR-END	0	3	2	5	0	10	0	4	1	5	0	5	0	0
TURNING MOVEMENTS	0	1	0	1	0	2	0	1	0	0	1	1	0	0
2012 TOTAL	0	4	2	6	0	12	0	5	1	5	1	6	0	0
FINAL TOTAL	0	21	19	40	0	32	1	29	9	34	6	40	0	0

Disclaimer: A higher number of crashes may be reported as of 2011 compared to prior years. This does not reflect an increase in annual crashes. The higher numbers result from a change to an internal departmental process that allows the Crash Analysis and Reporting Unit to add previously unavailable, non-fatal crash reports to the annual data file. Please be aware of this change when comparing pre-2011 crash statistics.

18-392 Strong at 27th Subdivision TIA

Vistro File: J:\...\18-392 Reed Rd Subdivision - TIA.vistro
Report File: J:\...\18-392 AM Existing.pdf

Scenario 1 AM Existing
6/19/2018

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Battle Creek Rd at Reed Rd	Two-way stop	HCM 6th Edition	SB Left	0.105	19.5	C
11	Reed Rd at Strong Rd	Two-way stop	HCM 6th Edition	WB Left	0.009	13.6	B
16	Reed Rd at Fairview Industrial Dr	Two-way stop	HCM 6th Edition	NB Left	0.833	116.4	F
21	Fairview Industrial Dr at Marietta St	Two-way stop	HCM 6th Edition	EB Left	0.353	17.8	C
31	27th Ave at Marietta St	Two-way stop	HCM 6th Edition	WB Left	0.014	10.8	B
36	27th at Kuebler Blvd	Signalized	HCM 6th Edition	SB Left	0.729	19.6	B
41	Keubler Blvd at Battle Creek Rd	Signalized	HCM 6th Edition	NB Right	0.807	39.0	D

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. for all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Battle Creek Rd at Reed Rd

Control Type:	Two-way stop	Delay (sec / veh):	19.5
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.105

Intersection Setup

Name	Reed Rd		Battle Creek Rd		Battle Creek Rd	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Reed Rd		Battle Creek Rd		Battle Creek Rd	
Base Volume Input [veh/h]	25	6	34	233	361	264
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	3.20	3.20	7.10	7.10	3.80	3.80
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	25	6	34	233	361	264
Peak Hour Factor	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	2	10	69	106	78
Total Analysis Volume [veh/h]	29	7	40	274	425	311
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.10	0.01	0.05	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	19.51	12.13	9.46	0.00	0.00	0.00
Movement LOS	C	B	A	A	A	A
95th-Percentile Queue Length [veh]	0.35	0.04	1.72	1.72	0.00	0.00
95th-Percentile Queue Length [ft]	8.67	1.04	43.09	43.09	0.00	0.00
d_A, Approach Delay [s/veh]	18.08		1.21		0.00	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	0.95					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 11: Reed Rd at Strong Rd

Control Type:	Two-way stop	Delay (sec / veh):	13.6
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.009

Intersection Setup

Name	Reed Rd		Reed Rd		Strong Rd	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Reed Rd		Reed Rd		Strong Rd	
Base Volume Input [veh/h]	302	0	12	43	4	115
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	1.60	1.60	5.50	5.50	1.70	1.70
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	302	0	12	43	4	115
Peak Hour Factor	0.7500	0.7500	0.7500	0.7500	0.7500	0.7500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	101	0	4	14	1	38
Total Analysis Volume [veh/h]	403	0	16	57	5	153
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.01	0.00	0.01	0.24
d_M, Delay for Movement [s/veh]	0.00	0.00	8.21	0.00	13.62	12.37
Movement LOS	A	A	A	A	B	B
95th-Percentile Queue Length [veh]	0.00	0.00	0.21	0.21	0.96	0.96
95th-Percentile Queue Length [ft]	0.00	0.00	5.14	5.14	24.03	24.03
d_A, Approach Delay [s/veh]	0.00		1.80		12.41	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	3.30					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 16: Reed Rd at Fairview Industrial Dr

Control Type:	Two-way stop	Delay (sec / veh):	116.4
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.833

Intersection Setup

Name	Reed Rd			Reed Rd			Fairview Industrial Dr			Fairview Industrial Dr		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	250.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Reed Rd			Reed Rd			Fairview Industrial Dr			Fairview Industrial Dr		
Base Volume Input [veh/h]	220	27	105	3	1	3	24	255	60	8	255	27
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.30	2.30	2.30	0.00	0.00	0.00	4.70	4.70	4.70	5.20	5.20	5.20
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	220	27	105	3	1	3	24	255	60	8	255	27
Peak Hour Factor	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	66	8	32	1	0	1	7	77	18	2	77	8
Total Analysis Volume [veh/h]	265	33	127	4	1	4	29	307	72	10	307	33
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.83	0.10	0.18	0.02	0.00	0.01	0.02	0.00	0.00	0.01	0.00	0.00
d_M, Delay for Movement [s/veh]	116.42	116.22	110.25	21.93	16.62	10.29	8.06	0.00	0.00	8.12	0.00	0.00
Movement LOS	F	F	F	C	C	B	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	15.71	15.71	15.71	0.08	0.08	0.08	0.07	0.00	0.00	0.03	0.00	0.00
95th-Percentile Queue Length [ft]	392.67	392.67	392.67	2.09	2.09	2.09	1.85	0.00	0.00	0.65	0.00	0.00
d_A, Approach Delay [s/veh]	114.56			16.17			0.57			0.23		
Approach LOS	F			C			A			A		
d_I, Intersection Delay [s/veh]	41.23											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 21: Fairview Industrial Dr at Marietta St

Control Type:	Two-way stop	Delay (sec / veh):	17.8
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.353

Intersection Setup

Name	Fairview Industrial Dr		Fairview Industrial Dr		Marietta St	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Fairview Industrial Dr		Fairview Industrial Dr		Marietta St	
Base Volume Input [veh/h]	4	372	107	4	118	13
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	4.80	4.80	13.50	13.50	0.80	0.80
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	4	372	107	4	118	13
Peak Hour Factor	0.7600	0.7600	0.7600	0.7600	0.7600	0.7600
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	122	35	1	39	4
Total Analysis Volume [veh/h]	5	489	141	5	155	17
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.35	0.02
d_M, Delay for Movement [s/veh]	7.55	0.00	0.00	0.00	17.76	13.51
Movement LOS	A	A	A	A	C	B
95th-Percentile Queue Length [veh]	0.01	0.00	0.00	0.00	1.70	1.70
95th-Percentile Queue Length [ft]	0.27	0.00	0.00	0.00	42.48	42.48
d_A, Approach Delay [s/veh]	0.08		0.00		17.34	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	3.72					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 31: 27th Ave at Marietta St

Control Type:	Two-way stop	Delay (sec / veh):	10.8
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.014

Intersection Setup

Name	27th Ave		Strong Rd		Marietta St	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	27th Ave		Strong Rd		Marietta St	
Base Volume Input [veh/h]	135	127	1	11	6	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.80	0.80	8.30	8.30	16.70	16.70
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	135	127	1	11	6	0
Peak Hour Factor	0.6400	0.6400	0.6400	0.6400	0.6400	0.6400
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	53	50	0	4	2	0
Total Analysis Volume [veh/h]	211	198	2	17	9	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	8.23	0.00	10.76	10.25
Movement LOS	A	A	A	A	B	B
95th-Percentile Queue Length [veh]	0.00	0.00	0.05	0.05	0.04	0.04
95th-Percentile Queue Length [ft]	0.00	0.00	1.30	1.30	1.08	1.08
d_A, Approach Delay [s/veh]	0.00		0.87		10.76	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.26					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 36: 27th at Kuebler Blvd

Control Type:	Signalized	Delay (sec / veh):	19.6
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.729

Intersection Setup

Name	27th Ave			27th Ave			Kuebler Blvd			Kuebler Blvd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	1	1	0	1
Pocket Length [ft]	125.00	100.00	100.00	100.00	100.00	100.00	250.00	100.00	200.00	350.00	100.00	175.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	27th Ave			27th Ave			Kuebler Blvd			Kuebler Blvd		
Base Volume Input [veh/h]	0	7	99	6	2	6	30	1635	0	36	1067	225
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	6.60	6.60	6.60	14.30	14.30	14.30	3.50	3.50	3.50	7.30	7.30	7.30
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	7	99	6	2	6	30	1635	0	36	1067	225
Peak Hour Factor	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	2	29	2	1	2	9	481	0	11	314	66
Total Analysis Volume [veh/h]	0	8	116	7	2	7	35	1924	0	42	1255	265
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	9	19	0	9	19	0	34	83	0	9	58	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	L	C	R	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	0	21	1	22	3	78	78	4	79	79
g / C, Green / Cycle	0.00	0.17	0.01	0.18	0.03	0.65	0.65	0.03	0.66	0.66
(v / s)_i Volume / Saturation Flow Rate	0.00	0.09	0.00	0.01	0.02	0.61	0.00	0.03	0.41	0.19
s, saturation flow rate [veh/h]	1544	1391	1445	1334	1584	3166	1413	1535	3068	1370
c, Capacity [veh/h]	0	239	13	241	46	2067	923	51	2016	900
d1, Uniform Delay [s]	0.00	45.20	59.23	40.59	57.87	18.44	0.00	57.66	11.94	8.75
k, delay calibration	0.11	0.50	0.11	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.00	7.85	31.22	0.29	22.68	2.36	0.00	26.53	0.32	0.18
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.00	0.52	0.54	0.04	0.76	0.93	0.00	0.82	0.62	0.29
d, Delay for Lane Group [s/veh]	0.00	53.05	90.45	40.88	80.54	20.80	0.00	84.19	12.25	8.93
Lane Group LOS	A	D	F	D	F	C	A	F	B	A
Critical Lane Group	No	Yes	Yes	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh]	0.00	3.89	0.32	0.24	1.34	21.95	0.00	1.64	9.15	2.85
50th-Percentile Queue Length [ft]	0.00	97.20	8.10	6.02	33.60	548.84	0.00	41.09	228.67	71.20
95th-Percentile Queue Length [veh]	0.00	7.00	0.58	0.43	2.42	29.64	0.00	2.96	14.11	5.13
95th-Percentile Queue Length [ft]	0.00	174.97	14.57	10.84	60.48	740.94	0.00	73.96	352.68	128.16

Movement, Approach, & Intersection Results

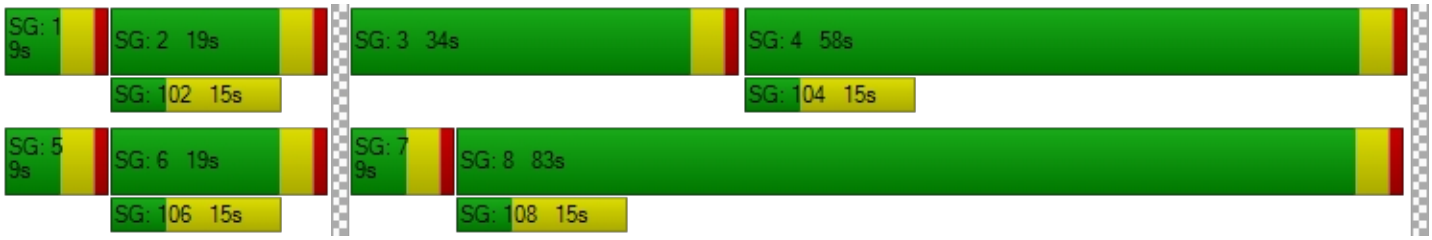
d_M, Delay for Movement [s/veh]	0.00	53.05	53.05	90.45	40.88	40.88	80.54	20.80	0.00	84.19	12.25	8.93
Movement LOS	A	D	D	F	D	D	F	C	A	F	B	A
d_A, Approach Delay [s/veh]	53.05			62.56			21.87			13.62		
Approach LOS	D			E			C			B		
d_I, Intersection Delay [s/veh]	19.58											
Intersection LOS	B											
Intersection V/C	0.729											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	51.34	51.34	51.34	51.34
l_p,int, Pedestrian LOS Score for Intersection	2.010	2.061	2.992	3.055
Crosswalk LOS	B	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	250	250	1317	900
d_b, Bicycle Delay [s]	45.94	45.94	7.00	18.15
l_b,int, Bicycle LOS Score for Intersection	1.764	1.586	3.176	2.848
Bicycle LOS	A	A	C	C

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 41: Keubler Blvd at Battle Creek Rd

Control Type:	Signalized	Delay (sec / veh):	39.0
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.807

Intersection Setup

Name	Battle Creek Rd			Battle Creek Rd			Kuebler Blvd			Kuebler Blvd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	1	0	1	1	0	1	1	0	1
Pocket Length [ft]	100.00	100.00	150.00	275.00	100.00	275.00	350.00	100.00	350.00	250.00	100.00	250.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Battle Creek Rd			Battle Creek Rd			Kuebler Blvd			Kuebler Blvd		
Base Volume Input [veh/h]	93	296	222	131	104	43	182	1344	55	94	823	148
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.40	2.40	2.40	7.20	7.20	7.20	3.20	3.20	3.20	7.40	7.40	7.40
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	93	296	222	131	104	43	182	1344	55	94	823	148
Peak Hour Factor	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	26	82	62	36	29	12	51	373	15	26	229	41
Total Analysis Volume [veh/h]	103	329	247	146	116	48	202	1493	61	104	914	164
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	110
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	12	23	0	15	26	0	35	60	0	12	37	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	110	110	110	110	110	110	110	110	110	110	110	110
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	8	21	21	11	24	24	16	54	54	8	46	46
g / C, Green / Cycle	0.07	0.19	0.19	0.10	0.21	0.21	0.15	0.49	0.49	0.07	0.42	0.42
(v / s)_i Volume / Saturation Flow Rate	0.06	0.10	0.17	0.10	0.07	0.04	0.13	0.47	0.04	0.07	0.30	0.12
s, saturation flow rate [veh/h]	1598	3194	1426	1536	1613	1371	1587	3174	1417	1533	3066	1369
c, Capacity [veh/h]	117	600	268	154	347	295	232	1566	699	112	1289	575
d1, Uniform Delay [s]	50.53	40.47	43.91	49.22	36.54	35.14	45.96	26.66	14.75	50.72	26.34	21.00
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering 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
d2, Incremental Delay [s]	18.48	3.58	38.22	23.11	2.59	1.18	9.65	4.22	0.05	25.18	0.73	0.27
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression 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

Lane Group Results

X, volume / capacity	0.88	0.55	0.92	0.95	0.33	0.16	0.87	0.95	0.09	0.93	0.71	0.29
d, Delay for Lane Group [s/veh]	69.02	44.06	82.13	72.33	39.13	36.33	55.61	30.88	14.81	75.89	27.07	21.27
Lane Group LOS	E	D	F	E	D	D	E	C	B	E	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh]	3.40	4.32	9.40	4.96	2.89	1.15	6.00	18.65	0.81	3.62	9.78	2.80
50th-Percentile Queue Length [ft]	85.04	108.11	235.00	124.01	72.23	28.69	149.89	466.16	20.30	90.58	244.38	70.07
95th-Percentile Queue Length [veh]	6.12	7.73	14.43	8.61	5.20	2.07	10.01	25.73	1.46	6.52	14.90	5.04
95th-Percentile Queue Length [ft]	153.07	193.37	360.71	215.33	130.01	51.64	250.28	643.21	36.54	163.04	372.57	126.12

Movement, Approach, & Intersection Results

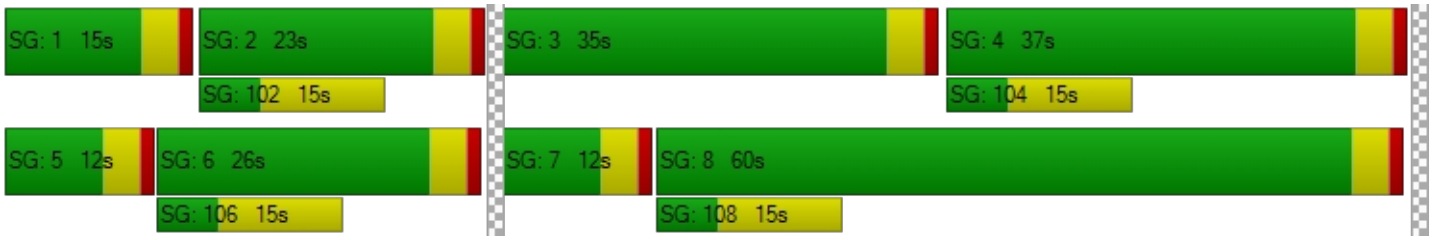
d_M, Delay for Movement [s/veh]	69.02	44.06	82.13	72.33	39.13	36.33	55.61	30.88	14.81	75.89	27.07	21.27
Movement LOS	E	D	F	E	D	D	E	C	B	E	C	C
d_A, Approach Delay [s/veh]	61.69			54.33			33.17			30.56		
Approach LOS	E			D			C			C		
d_I, Intersection Delay [s/veh]	38.99											
Intersection LOS	D											
Intersection V/C	0.807											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	46.37	46.37	46.37	46.37
l_p,int, Pedestrian LOS Score for Intersection	2.498	2.507	2.922	2.963
Crosswalk LOS	B	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	345	400	1018	600
d_b, Bicycle Delay [s]	37.64	35.20	13.25	26.95
l_b,int, Bicycle LOS Score for Intersection	2.120	2.071	3.008	2.535
Bicycle LOS	B	B	C	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



18-392 Strong at 27th Subdivision TIA

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Scenario 1 AM Existing
6/19/2018

Turning Movement Volume: Summary

ID	Intersection Name	Southbound		Eastbound		Westbound		Total Volume
		Left	Right	Left	Thru	Thru	Right	
1	Battle Creek Rd at Reed Rd	25	6	34	233	361	264	923

ID	Intersection Name	Northbound		Southbound		Westbound		Total Volume
		Thru	Right	Left	Thru	Left	Right	
11	Reed Rd at Strong Rd	302	0	12	43	4	115	476

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
16	Reed Rd at Fairview Industrial Dr	220	27	105	3	1	3	24	255	60	8	255	27	988

ID	Intersection Name	Northbound		Southbound		Eastbound		Total Volume
		Left	Thru	Thru	Right	Left	Right	
21	Fairview Industrial Dr at Marietta St	4	372	107	4	118	13	618

ID	Intersection Name	Northbound		Southbound		Westbound		Total Volume
		Thru	Right	Left	Thru	Left	Right	
31	27th Ave at Marietta St	135	127	1	11	6	0	280

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
36	27th at Kuebler Blvd	0	7	99	6	2	6	30	1635	0	36	1067	225	3113

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
41	Keubler Blvd at Battle Creek Rd	93	296	222	131	104	43	182	1344	55	94	823	148	3535

18-392 Strong at 27th Subdivision TIA

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Scenario 1 AM Existing
6/19/2018

Turning Movement Volume: Detail

ID	Intersection Name	Volume Type	Southbound		Eastbound		Westbound		Total Volume
			Left	Right	Left	Thru	Thru	Right	
1	Battle Creek Rd at Reed Rd	Final Base	25	6	34	233	361	264	923
		Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0
		Future Total	**25**	**6**	**34**	**233**	**361**	**264**	**923**

ID	Intersection Name	Volume Type	Northbound		Southbound		Westbound		Total Volume
			Thru	Right	Left	Thru	Left	Right	
11	Reed Rd at Strong Rd	Final Base	302	0	12	43	4	115	476
		Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0
		Future Total	**302**	**0**	**12**	**43**	**4**	**115**	**476**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
16	Reed Rd at Fairview Industrial Dr	Final Base	220	27	105	3	1	3	24	255	60	8	255	27	988
		Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**220**	**27**	**105**	**3**	**1**	**3**	**24**	**255**	**60**	**8**	**255**	**27**	**988**

ID	Intersection Name	Volume Type	Northbound		Southbound		Eastbound		Total Volume
			Left	Thru	Thru	Right	Left	Right	
21	Fairview Industrial Dr at Marietta St	Final Base	4	372	107	4	118	13	618
		Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0
		Future Total	**4**	**372**	**107**	**4**	**118**	**13**	**618**

ID	Intersection Name	Volume Type	Northbound		Southbound		Westbound		Total Volume
			Thru	Right	Left	Thru	Left	Right	
31	27th Ave at Marietta St	Final Base	135	127	1	11	6	0	280
		Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0
		Future Total	**135**	**127**	**1**	**11**	**6**	**0**	**280**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
36	27th at Kuebler Blvd	Final Base	0	7	99	6	2	6	30	1635	0	36	1067	225	3113
		Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**0**	**7**	**99**	**6**	**2**	**6**	**30**	**1635**	**0**	**36**	**1067**	**225**	**3113**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
41	Keubler Blvd at Battle Creek Rd	Final Base	93	296	222	131	104	43	182	1344	55	94	823	148	3535
		Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**93**	**296**	**222**	**131**	**104**	**43**	**182**	**1344**	**55**	**94**	**823**	**148**	**3535**

Signal Warrants Report For Intersection 1: Battle Creek Rd at Reed Rd

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	E, W
Minor Approaches	N
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	E	W	N
1	625	267	31
2	600	256	30
3	588	251	29
4	500	214	25
5	475	203	24
6	425	182	21
7	394	168	20
8	375	160	19
9	300	128	15
10	281	120	14
11	281	120	14
12	269	115	13
13	244	104	12
14	225	96	11
15	225	96	11
16	219	93	11
17	125	53	6
18	69	29	3
19	63	27	3
20	25	11	1
21	19	8	1
22	19	8	1
23	13	5	1
24	13	5	1

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	892	2	31	No	No	No	No	No	No	No	No	No	No
2	2	856	2	30	No	No	No	No	No	No	No	No	No	No
3	2	839	2	29	No	No	No	No	No	No	No	No	No	No
4	2	714	2	25	No	No	No	No	No	No	No	No	No	No
5	2	678	2	24	No	No	No	No	No	No	No	No	No	No
6	2	607	2	21	No	No	No	No	No	No	No	No	No	No
7	2	562	2	20	No	No	No	No	No	No	No	No	No	No
8	2	535	2	19	No	No	No	No	No	No	No	No	No	No
9	2	428	2	15	No	No	No	No	No	No	No	No	No	No
10	2	401	2	14	No	No	No	No	No	No	No	No	No	No
11	2	401	2	14	No	No	No	No	No	No	No	No	No	No
12	2	384	2	13	No	No	No	No	No	No	No	No	No	No
13	2	348	2	12	No	No	No	No	No	No	No	No	No	No
14	2	321	2	11	No	No	No	No	No	No	No	No	No	No
15	2	321	2	11	No	No	No	No	No	No	No	No	No	No
16	2	312	2	11	No	No	No	No	No	No	No	No	No	No
17	2	178	2	6	No	No	No	No	No	No	No	No	No	No
18	2	98	2	3	No	No	No	No	No	No	No	No	No	No
19	2	90	2	3	No	No	No	No	No	No	No	No	No	No
20	2	36	2	1	No	No	No	No	No	No	No	No	No	No
21	2	27	2	1	No	No	No	No	No	No	No	No	No	No
22	2	27	2	1	No	No	No	No	No	No	No	No	No	No
23	2	18	2	1	No	No	No	No	No	No	No	No	No	No
24	2	18	2	1	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	N
Total Stopped Delay Per Vehicle on Minor Approach (s)	18.1
Number of Lanes on Minor Street Approach	2
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:09
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	31
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	923
Number of Approaches on Intersection	3
Total Volume Condition Met	Yes
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

Signal Warrants Report For Intersection 11: Reed Rd at Strong Rd

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	N, S
Minor Approaches	E
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	N	S	E
1	55	302	119
2	53	290	114
3	52	284	112
4	44	242	95
5	42	230	90
6	37	205	81
7	35	190	75
8	33	181	71
9	26	145	57
10	25	136	54
11	25	136	54
12	24	130	51
13	21	118	46
14	20	109	43
15	20	109	43
16	19	106	42
17	11	60	24
18	6	33	13
19	6	30	12
20	2	12	5
21	2	9	4
22	2	9	4
23	1	6	2
24	1	6	2

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	357	1	119	No	No	No	Yes	No	No	No	No	No	No
2	2	343	1	114	No	No	No	Yes	No	No	No	No	No	No
3	2	336	1	112	No	No	No	Yes	No	No	No	No	No	No
4	2	286	1	95	No	No	No	No	No	No	No	No	No	No
5	2	272	1	90	No	No	No	No	No	No	No	No	No	No
6	2	242	1	81	No	No	No	No	No	No	No	No	No	No
7	2	225	1	75	No	No	No	No	No	No	No	No	No	No
8	2	214	1	71	No	No	No	No	No	No	No	No	No	No
9	2	171	1	57	No	No	No	No	No	No	No	No	No	No
10	2	161	1	54	No	No	No	No	No	No	No	No	No	No
11	2	161	1	54	No	No	No	No	No	No	No	No	No	No
12	2	154	1	51	No	No	No	No	No	No	No	No	No	No
13	2	139	1	46	No	No	No	No	No	No	No	No	No	No
14	2	129	1	43	No	No	No	No	No	No	No	No	No	No
15	2	129	1	43	No	No	No	No	No	No	No	No	No	No
16	2	125	1	42	No	No	No	No	No	No	No	No	No	No
17	2	71	1	24	No	No	No	No	No	No	No	No	No	No
18	2	39	1	13	No	No	No	No	No	No	No	No	No	No
19	2	36	1	12	No	No	No	No	No	No	No	No	No	No
20	2	14	1	5	No	No	No	No	No	No	No	No	No	No
21	2	11	1	4	No	No	No	No	No	No	No	No	No	No
22	2	11	1	4	No	No	No	No	No	No	No	No	No	No
23	2	7	1	2	No	No	No	No	No	No	No	No	No	No
24	2	7	1	2	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	3	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	E
Total Stopped Delay Per Vehicle on Minor Approach (s)	12.4
Number of Lanes on Minor Street Approach	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:24
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	119
High Minor Volume Condition Met	Yes
Total Entering Volume on All Approaches During Same Hour	476
Number of Approaches on Intersection	3
Total Volume Condition Met	No
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

Signal Warrants Report For Intersection 16: Reed Rd at Fairview Industrial Dr

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	Yes

Intersection Warrants Parameters

Major Approaches	E, W
Minor Approaches	N, S
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets	
	E	W	N	S
1	290	339	7	352
2	278	325	7	338
3	273	319	7	331
4	232	271	6	282
5	220	258	5	268
6	197	231	5	239
7	183	214	4	222
8	174	203	4	211
9	139	163	3	169
10	131	153	3	158
11	131	153	3	158
12	125	146	3	151
13	113	132	3	137
14	104	122	3	127
15	104	122	3	127
16	102	119	2	123
17	58	68	1	70
18	32	37	1	39
19	29	34	1	35
20	12	14	0	14
21	9	10	0	11
22	9	10	0	11
23	6	7	0	7
24	6	7	0	7

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	4	629	2	359	Yes	Yes	Yes	Yes	No	No	No	Yes	Yes	No
2	4	603	2	345	Yes	Yes	Yes	Yes	No	No	No	Yes	Yes	No
3	4	592	2	338	No	Yes	Yes	Yes	No	No	No	Yes	Yes	No
4	4	503	2	288	No	Yes	Yes	Yes	No	No	No	No	No	No
5	4	478	2	273	No	No	Yes	Yes	No	No	No	No	No	No
6	4	428	2	244	No	No	Yes	Yes	No	No	No	No	No	No
7	4	397	2	226	No	No	No	Yes	No	No	No	No	No	No
8	4	377	2	215	No	No	No	Yes	No	No	No	No	No	No
9	4	302	2	172	No	No	No	No	No	No	No	No	No	No
10	4	284	2	161	No	No	No	No	No	No	No	No	No	No
11	4	284	2	161	No	No	No	No	No	No	No	No	No	No
12	4	271	2	154	No	No	No	No	No	No	No	No	No	No
13	4	245	2	140	No	No	No	No	No	No	No	No	No	No
14	4	226	2	130	No	No	No	No	No	No	No	No	No	No
15	4	226	2	130	No	No	No	No	No	No	No	No	No	No
16	4	221	2	125	No	No	No	No	No	No	No	No	No	No
17	4	126	2	71	No	No	No	No	No	No	No	No	No	No
18	4	69	2	40	No	No	No	No	No	No	No	No	No	No
19	4	63	2	36	No	No	No	No	No	No	No	No	No	No
20	4	26	2	14	No	No	No	No	No	No	No	No	No	No
21	4	19	2	11	No	No	No	No	No	No	No	No	No	No
22	4	19	2	11	No	No	No	No	No	No	No	No	No	No
23	4	13	2	7	No	No	No	No	No	No	No	No	No	No
24	4	13	2	7	No	No	No	No	No	No	No	No	No	No
Hours Met					2	4	6	8	0	0	0	3	3	0

Warrant 3 Condition A

Orientation	N	S
Total Stopped Delay Per Vehicle on Minor Approach (s)	16.2	114.6
Number of Lanes on Minor Street Approach	1	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:01	11:12
Delay Condition Met	No	Yes
Volume on Minor Street Approach During Same Hour	7	352
High Minor Volume Condition Met	No	Yes
Total Entering Volume on All Approaches During Same Hour	988	988
Number of Approaches on Intersection	4	4
Total Volume Condition Met	Yes	Yes
Warrant Met for Approach	No	Yes
Warrant Met for Intersection	**Yes**	

Signal Warrants Report For Intersection 21: Fairview Industrial Dr at Marietta St

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	S, N
Minor Approaches	W
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	S	N	W
1	376	111	131
2	361	107	126
3	353	104	123
4	301	89	105
5	286	84	100
6	256	75	89
7	237	70	83
8	226	67	79
9	180	53	63
10	169	50	59
11	169	50	59
12	162	48	56
13	147	43	51
14	135	40	47
15	135	40	47
16	132	39	46
17	75	22	26
18	41	12	14
19	38	11	13
20	15	4	5
21	11	3	4
22	11	3	4
23	8	2	3
24	8	2	3

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	3	487	1	131	No	Yes	Yes	Yes	No	No	No	No	No	No
2	3	468	1	126	No	No	Yes	Yes	No	No	No	No	No	No
3	3	457	1	123	No	No	Yes	Yes	No	No	No	No	No	No
4	3	390	1	105	No	No	No	Yes	No	No	No	No	No	No
5	3	370	1	100	No	No	No	Yes	No	No	No	No	No	No
6	3	331	1	89	No	No	No	No	No	No	No	No	No	No
7	3	307	1	83	No	No	No	No	No	No	No	No	No	No
8	3	293	1	79	No	No	No	No	No	No	No	No	No	No
9	3	233	1	63	No	No	No	No	No	No	No	No	No	No
10	3	219	1	59	No	No	No	No	No	No	No	No	No	No
11	3	219	1	59	No	No	No	No	No	No	No	No	No	No
12	3	210	1	56	No	No	No	No	No	No	No	No	No	No
13	3	190	1	51	No	No	No	No	No	No	No	No	No	No
14	3	175	1	47	No	No	No	No	No	No	No	No	No	No
15	3	175	1	47	No	No	No	No	No	No	No	No	No	No
16	3	171	1	46	No	No	No	No	No	No	No	No	No	No
17	3	97	1	26	No	No	No	No	No	No	No	No	No	No
18	3	53	1	14	No	No	No	No	No	No	No	No	No	No
19	3	49	1	13	No	No	No	No	No	No	No	No	No	No
20	3	19	1	5	No	No	No	No	No	No	No	No	No	No
21	3	14	1	4	No	No	No	No	No	No	No	No	No	No
22	3	14	1	4	No	No	No	No	No	No	No	No	No	No
23	3	10	1	3	No	No	No	No	No	No	No	No	No	No
24	3	10	1	3	No	No	No	No	No	No	No	No	No	No
Hours Met					0	1	3	5	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	W
Total Stopped Delay Per Vehicle on Minor Approach (s)	17.3
Number of Lanes on Minor Street Approach	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:37
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	131
High Minor Volume Condition Met	Yes
Total Entering Volume on All Approaches During Same Hour	618
Number of Approaches on Intersection	3
Total Volume Condition Met	No
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

Signal Warrants Report For Intersection 31: 27th Ave at Marietta St

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	N, S
Minor Approaches	E
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	N	S	E
1	12	262	6
2	12	252	6
3	11	246	6
4	10	210	5
5	9	199	5
6	8	178	4
7	8	165	4
8	7	157	4
9	6	126	3
10	5	118	3
11	5	118	3
12	5	113	3
13	5	102	2
14	4	94	2
15	4	94	2
16	4	92	2
17	2	52	1
18	1	29	1
19	1	26	1
20	0	10	0
21	0	8	0
22	0	8	0
23	0	5	0
24	0	5	0

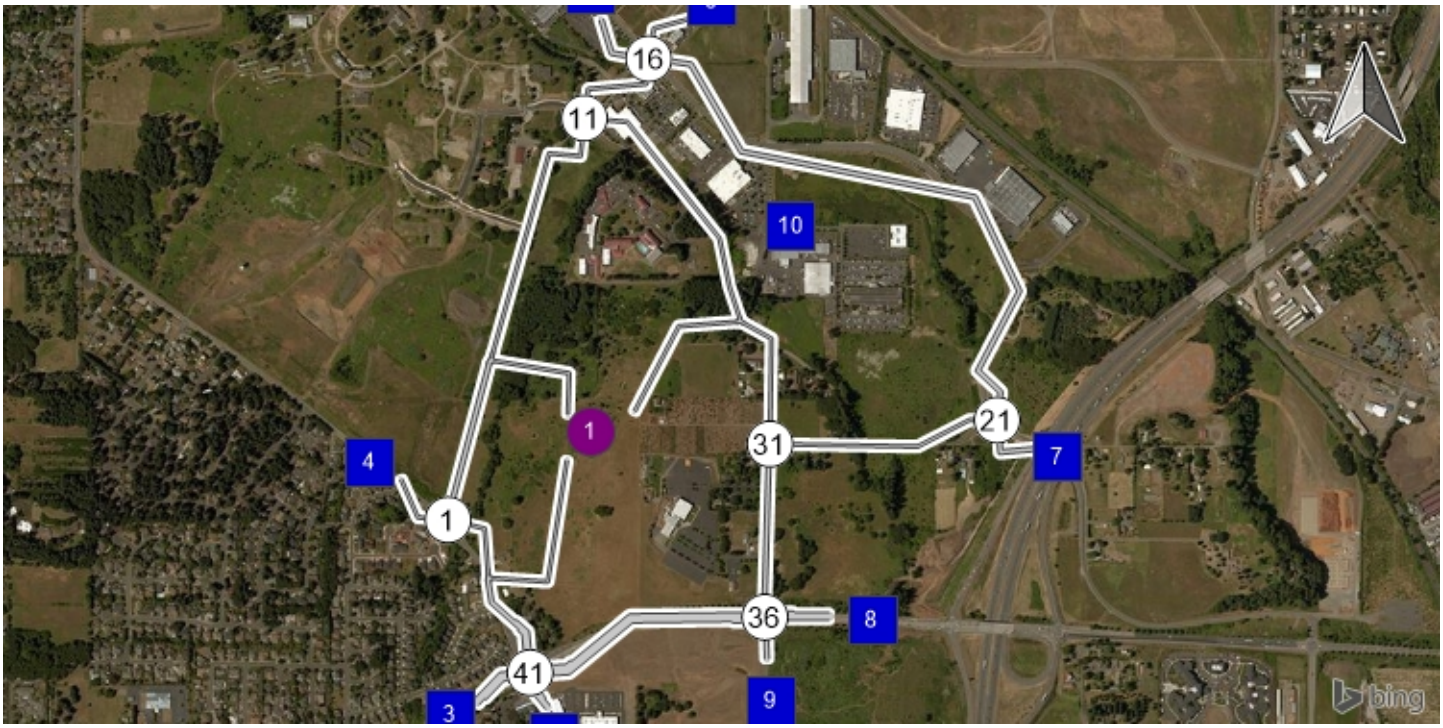
Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	274	1	6	No	No	No	No	No	No	No	No	No	No
2	2	264	1	6	No	No	No	No	No	No	No	No	No	No
3	2	257	1	6	No	No	No	No	No	No	No	No	No	No
4	2	220	1	5	No	No	No	No	No	No	No	No	No	No
5	2	208	1	5	No	No	No	No	No	No	No	No	No	No
6	2	186	1	4	No	No	No	No	No	No	No	No	No	No
7	2	173	1	4	No	No	No	No	No	No	No	No	No	No
8	2	164	1	4	No	No	No	No	No	No	No	No	No	No
9	2	132	1	3	No	No	No	No	No	No	No	No	No	No
10	2	123	1	3	No	No	No	No	No	No	No	No	No	No
11	2	123	1	3	No	No	No	No	No	No	No	No	No	No
12	2	118	1	3	No	No	No	No	No	No	No	No	No	No
13	2	107	1	2	No	No	No	No	No	No	No	No	No	No
14	2	98	1	2	No	No	No	No	No	No	No	No	No	No
15	2	98	1	2	No	No	No	No	No	No	No	No	No	No
16	2	96	1	2	No	No	No	No	No	No	No	No	No	No
17	2	54	1	1	No	No	No	No	No	No	No	No	No	No
18	2	30	1	1	No	No	No	No	No	No	No	No	No	No
19	2	27	1	1	No	No	No	No	No	No	No	No	No	No
20	2	10	1	0	No	No	No	No	No	No	No	No	No	No
21	2	8	1	0	No	No	No	No	No	No	No	No	No	No
22	2	8	1	0	No	No	No	No	No	No	No	No	No	No
23	2	5	1	0	No	No	No	No	No	No	No	No	No	No
24	2	5	1	0	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

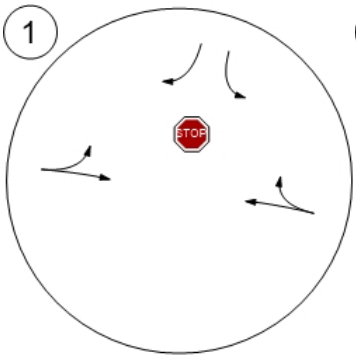
Warrant 3 Condition A

Orientation	E
Total Stopped Delay Per Vehicle on Minor Approach (s)	10.8
Number of Lanes on Minor Street Approach	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:01
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	6
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	280
Number of Approaches on Intersection	3
Total Volume Condition Met	No
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

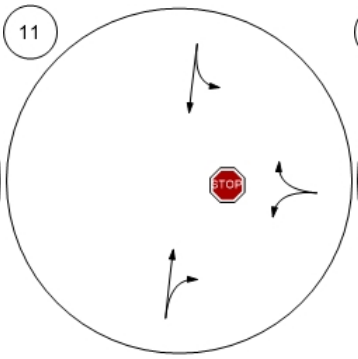
Report Figure 1: Lane Configuration and Traffic Control



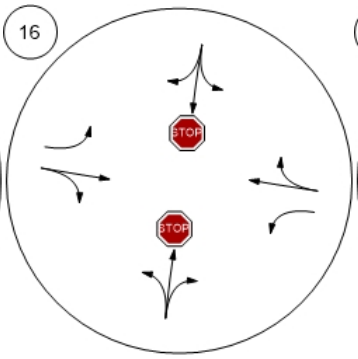
Battle Creek Rd at Reed Rd



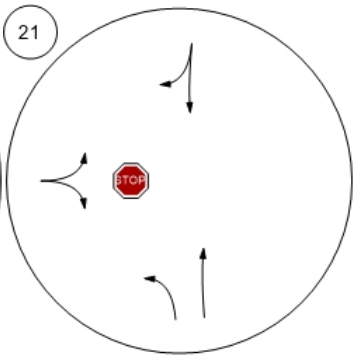
Reed Rd at Strong Rd



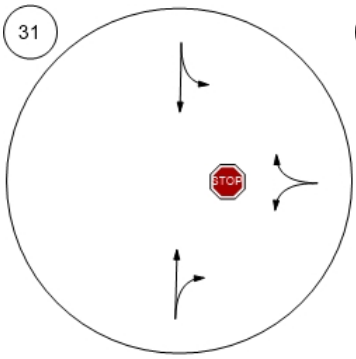
Reed Rd at Fairview Industria



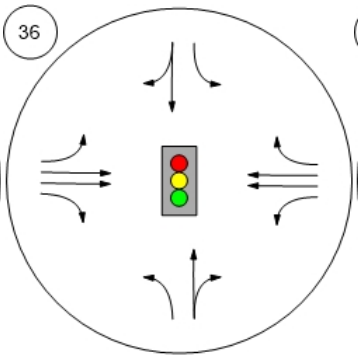
Fairview Industrial Dr at Mari



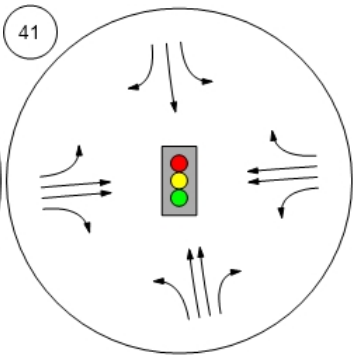
27th Ave at Marietta St



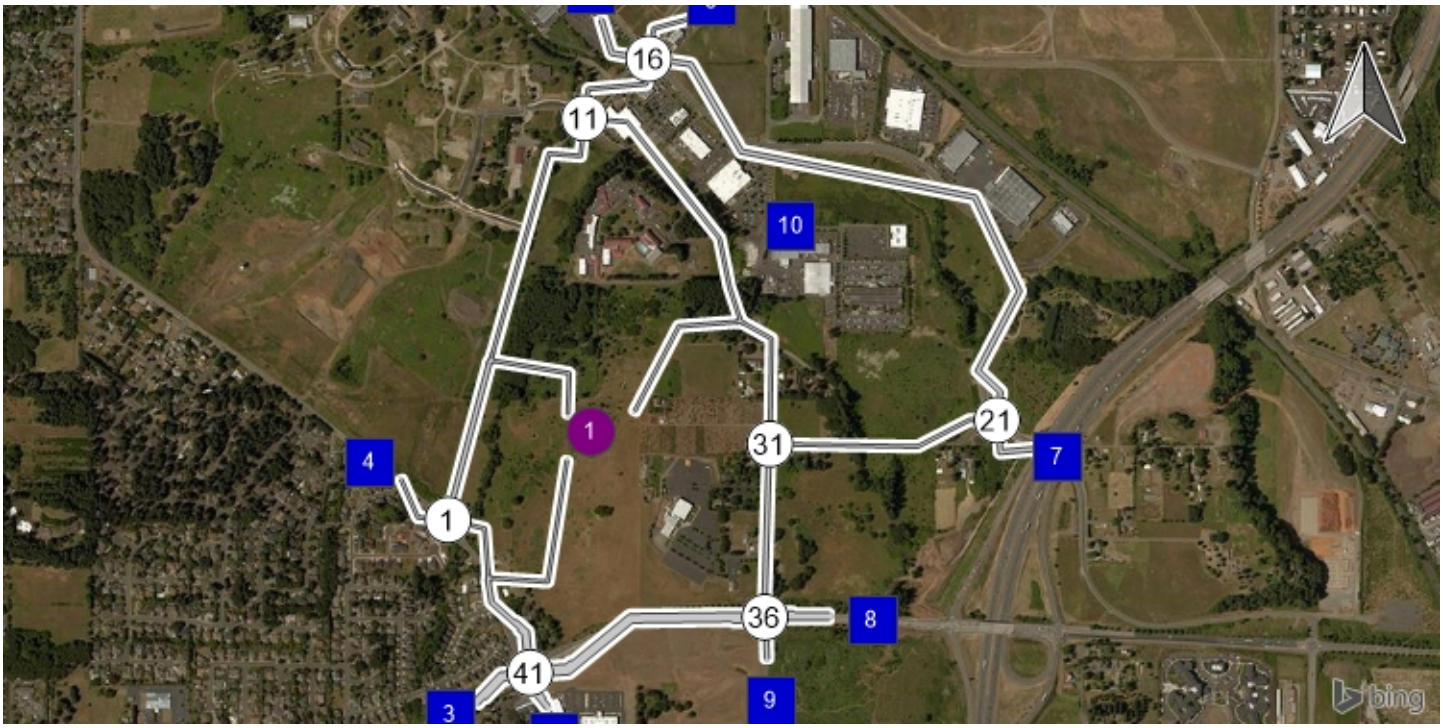
27th at Kuebler Blvd



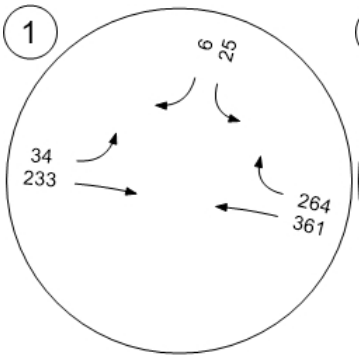
Keubler Blvd at Battle Creek



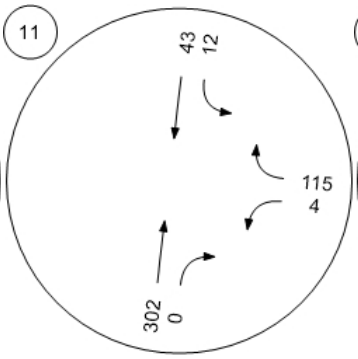
Report Figure 2a: Traffic Volume - Base Volume



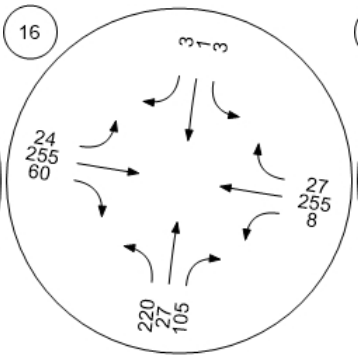
Battle Creek Rd at Reed Rd



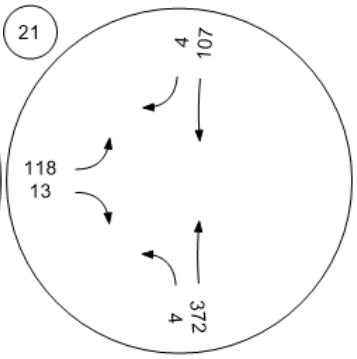
Reed Rd at Strong Rd



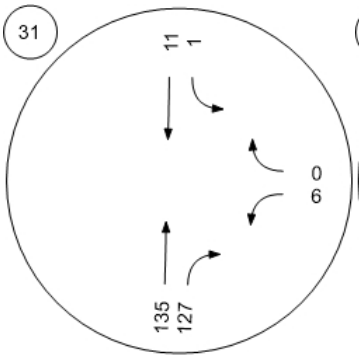
Reed Rd at Fairview Industria



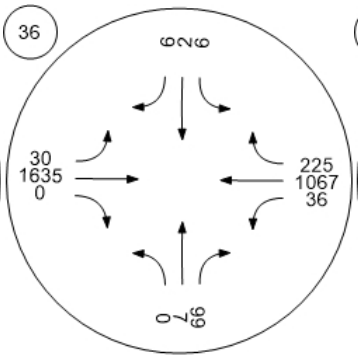
Fairview Industrial Dr at Mari



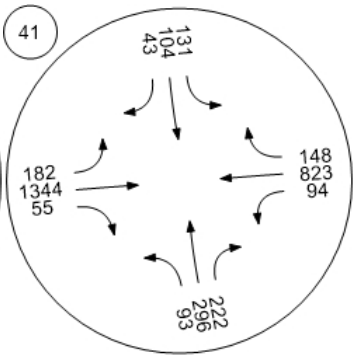
27th Ave at Marietta St



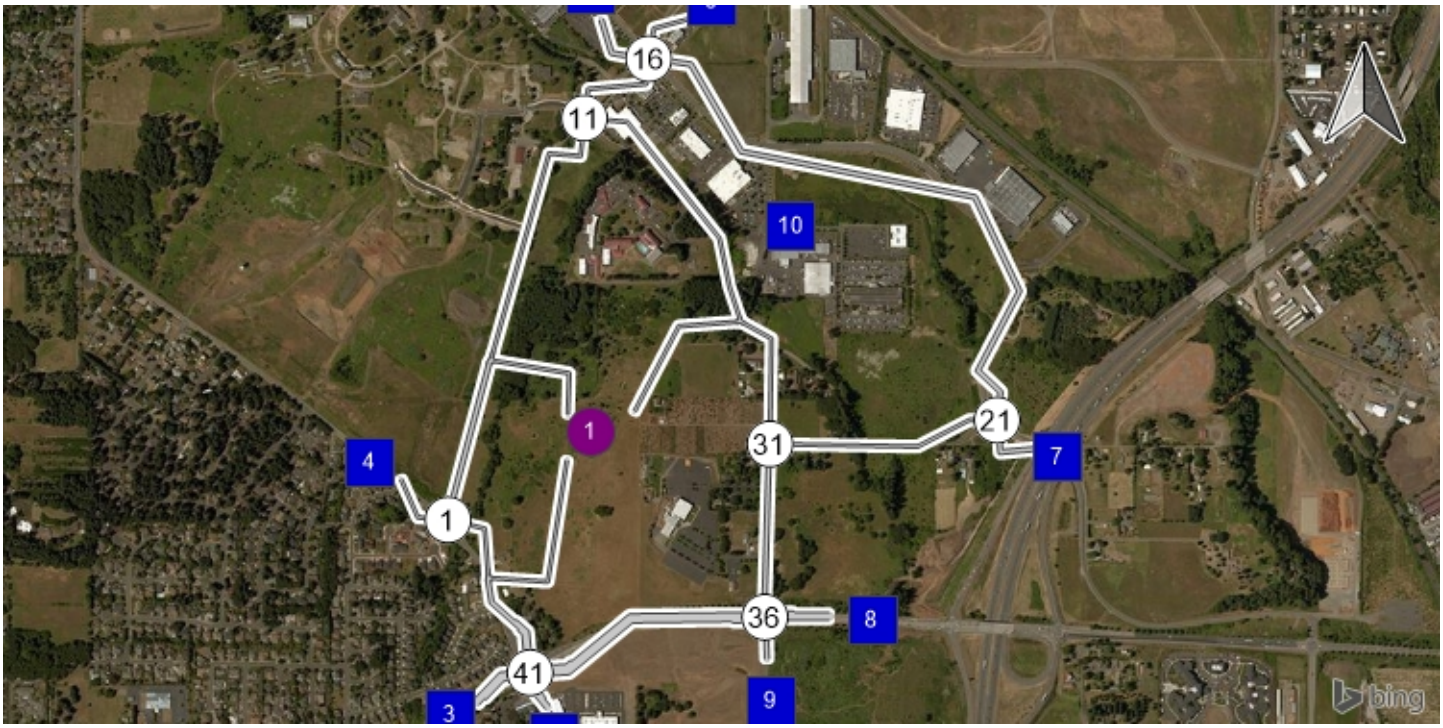
27th at Kuebler Blvd



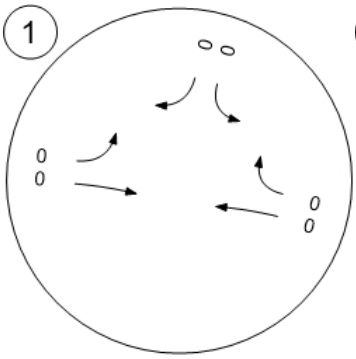
Keubler Blvd at Battle Creek



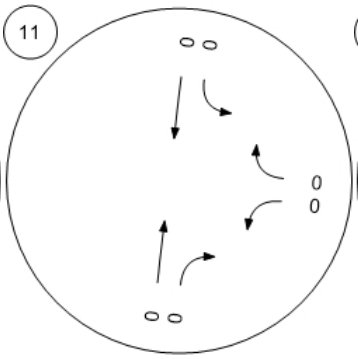
Report Figure 2d: Traffic Volume - Net New Site Trips



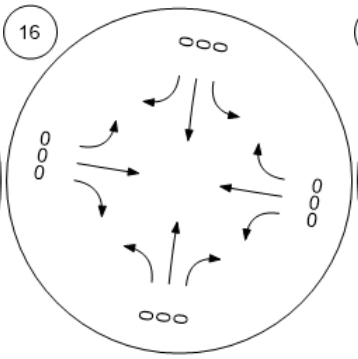
Battle Creek Rd at Reed Rd



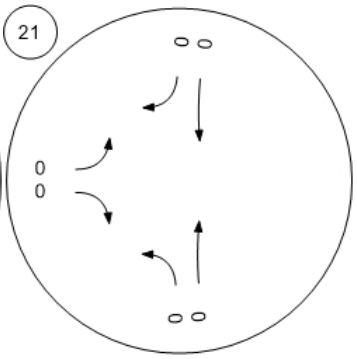
Reed Rd at Strong Rd



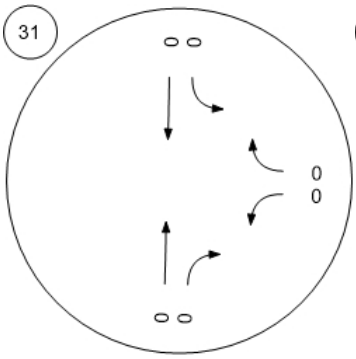
Reed Rd at Fairview Industria



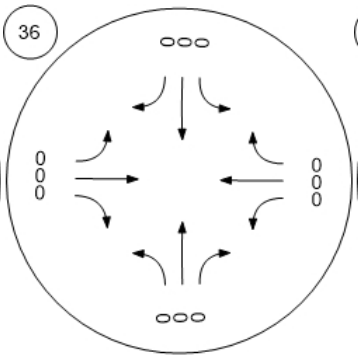
Fairview Industrial Dr at Mari



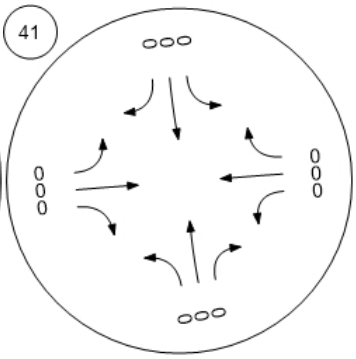
27th Ave at Marietta St



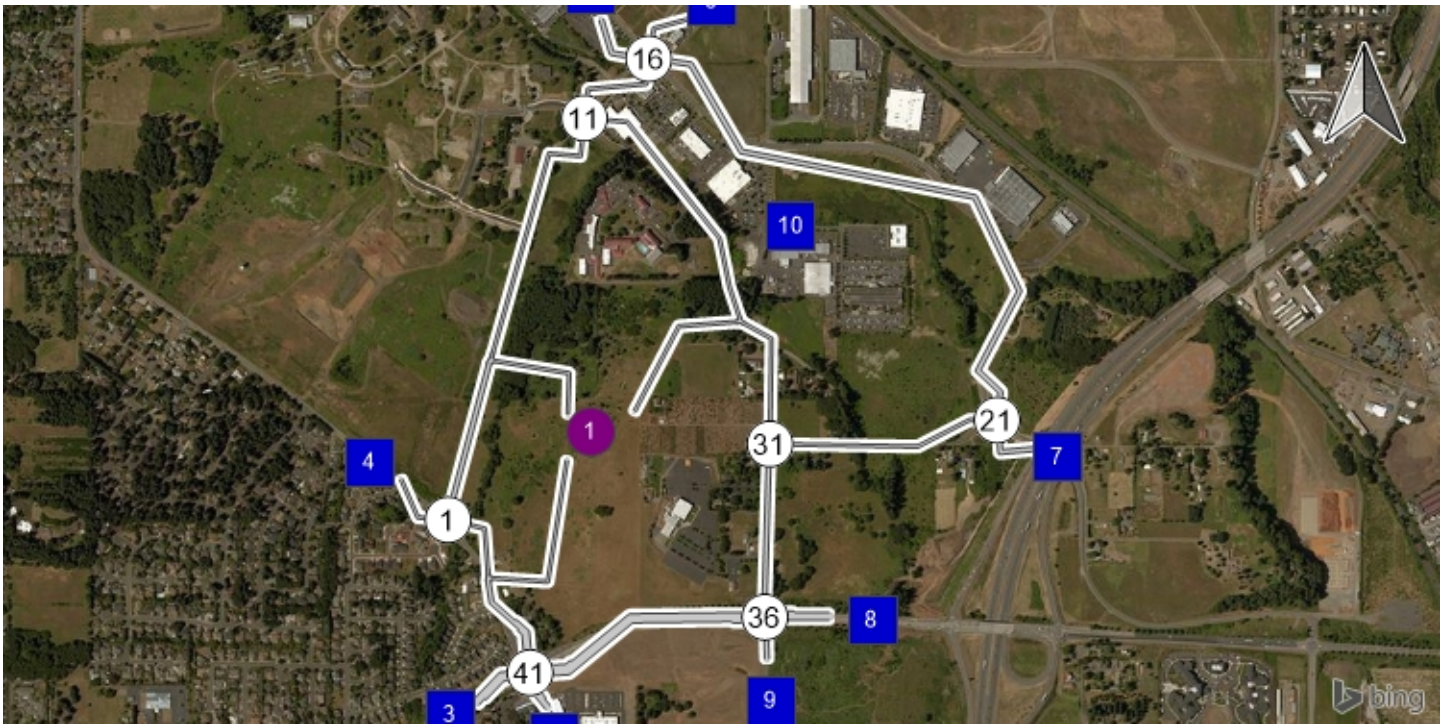
27th at Kuebler Blvd



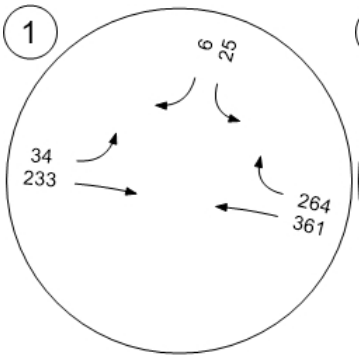
Keubler Blvd at Battle Creek



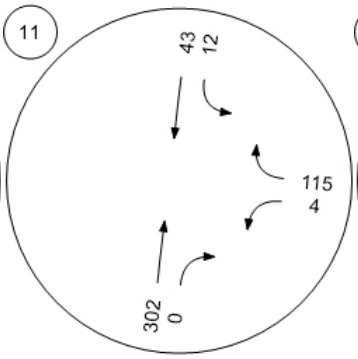
Report Figure 2f: Traffic Volume - Future Total Volume



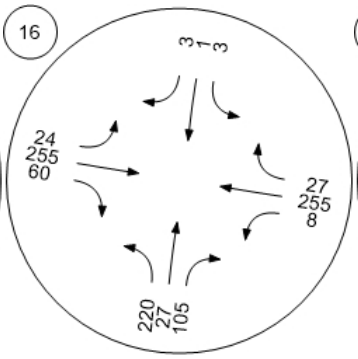
Battle Creek Rd at Reed Rd



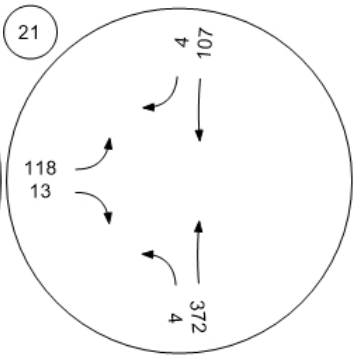
Reed Rd at Strong Rd



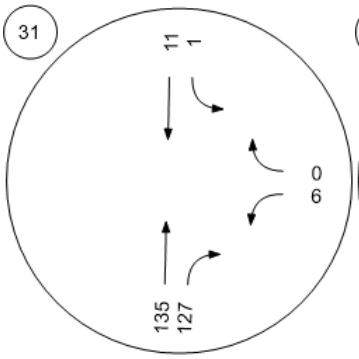
Reed Rd at Fairview Industria



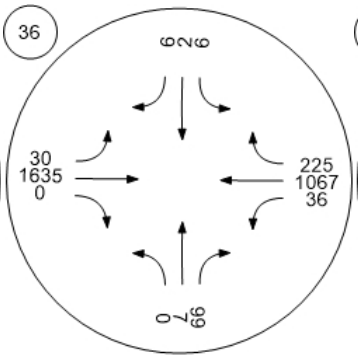
Fairview Industrial Dr at Mari



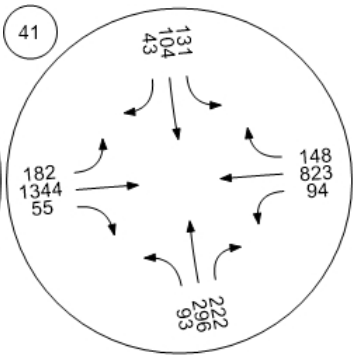
27th Ave at Marietta St



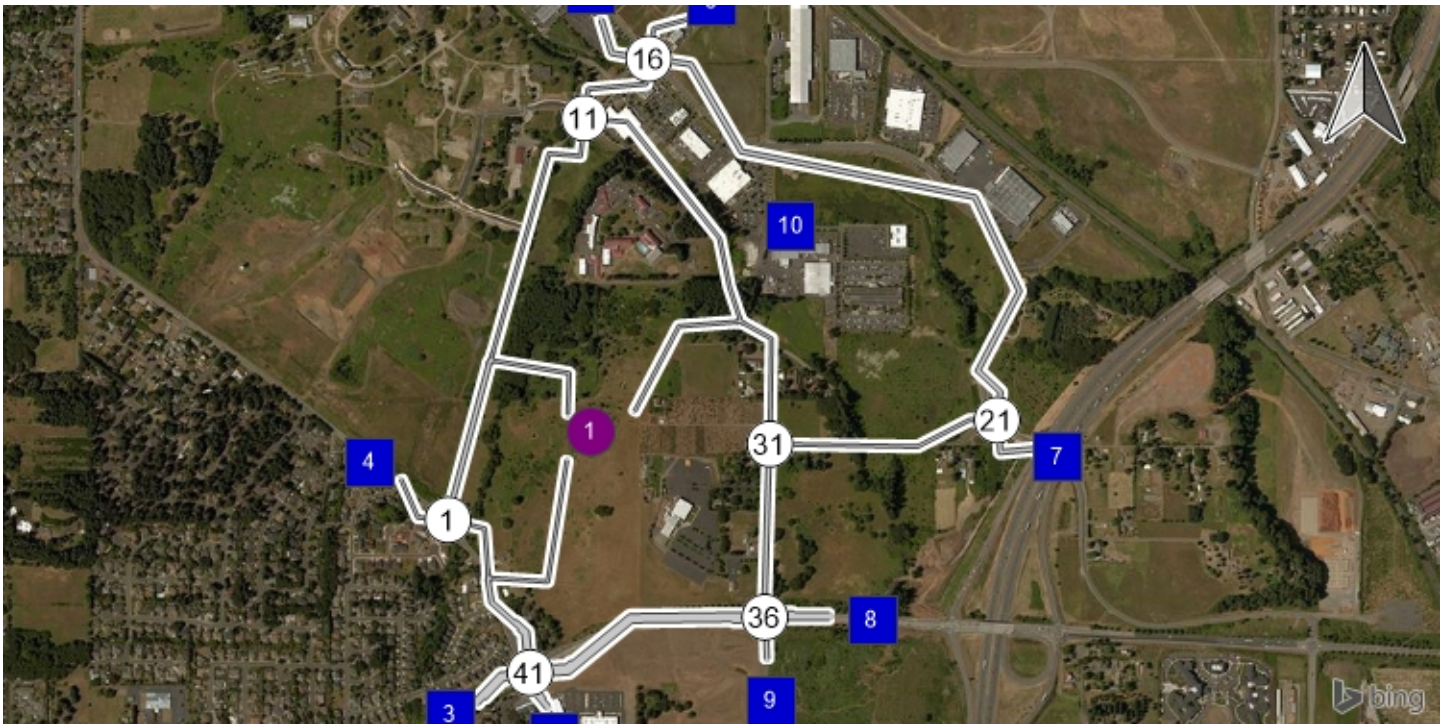
27th at Kuebler Blvd

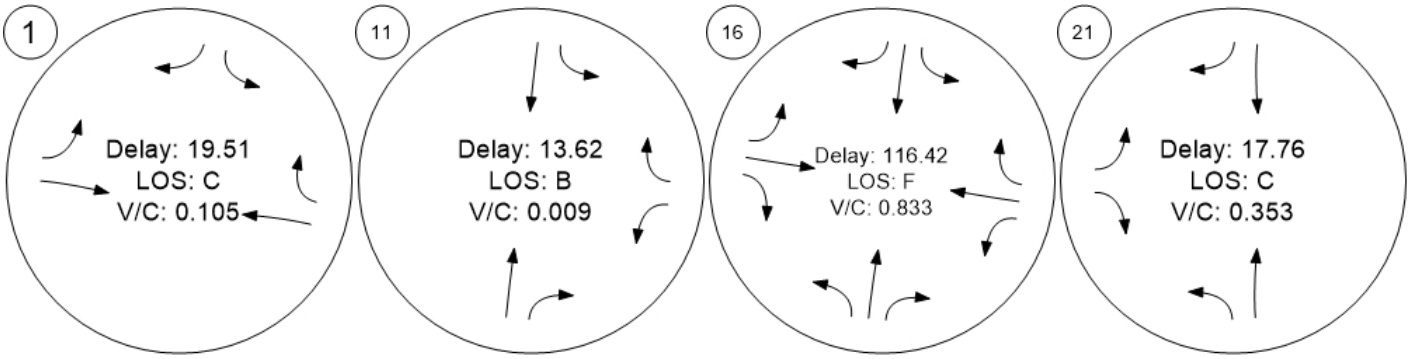


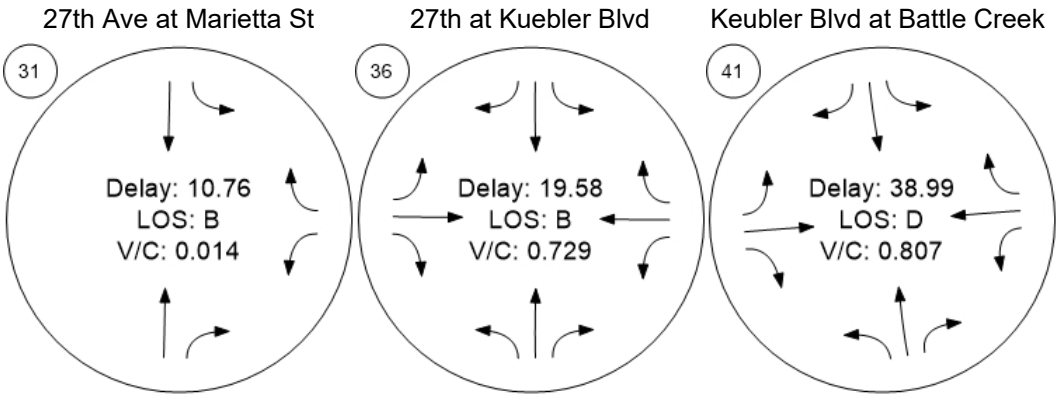
Keubler Blvd at Battle Creek



Report Figure 3: Traffic Conditions







18-392 Strong at 27th Subdivision TIA

Vistro File: J:\...\18-392 Reed Rd Subdivision - TIA.vistro
Scenario 3 AM Dev 2020 Ph 1
Report File: J:\...\18-392 AM Dev Ph 1.pdf
6/19/2018

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Battle Creek Rd at Reed Rd	Two-way stop	HCM 6th Edition	SB Left	0.117	20.4	C
6	Battle Creek Rd at Site Access	Two-way stop	HCM 6th Edition	WB Left	0.076	19.9	C
11	Reed Rd at Strong Rd	Two-way stop	HCM 6th Edition	WB Left	0.010	14.0	B
16	Reed Rd at Fairview Industrial Dr	Two-way stop	HCM 6th Edition	NB Left	0.909	149.8	F
21	Fairview Industrial Dr at Marietta St	Two-way stop	HCM 6th Edition	EB Left	0.379	18.7	C
26	East Access at Strong Rd	Two-way stop	HCM 6th Edition	EB Left	0.003	10.1	B
31	27th Ave at Marietta St	Two-way stop	HCM 6th Edition	WB Left	0.015	11.2	B
41	Keubler Blvd at Battle Creek Rd	Signalized	HCM 6th Edition	NB Right	0.831	41.1	D
42	Reed at Site Access	Two-way stop	HCM 6th Edition	WB Left	0.002	11.4	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. for all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Battle Creek Rd at Reed Rd

Control Type:	Two-way stop	Delay (sec / veh):	20.4
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.117

Intersection Setup

Name	Reed Rd		Battle Creek Rd		Battle Creek Rd	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Reed Rd		Battle Creek Rd		Battle Creek Rd	
Base Volume Input [veh/h]	25	6	34	233	361	264
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	3.20	3.20	7.10	7.10	3.80	3.80
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	1	0	1	2	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	26	7	35	241	374	272
Peak Hour Factor	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	2	10	71	110	80
Total Analysis Volume [veh/h]	31	8	41	284	440	320
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.12	0.02	0.05	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	20.41	12.34	9.57	0.00	0.00	0.00
Movement LOS	C	B	A	A	A	A
95th-Percentile Queue Length [veh]	0.39	0.05	1.88	1.88	0.00	0.00
95th-Percentile Queue Length [ft]	9.83	1.22	46.94	46.94	0.00	0.00
d_A, Approach Delay [s/veh]	18.76		1.21		0.00	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	1.00					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 6: Battle Creek Rd at Site Access

Control Type:	Two-way stop	Delay (sec / veh):	19.9
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.076

Intersection Setup

Name	Battle Creek Rd		Battle Creek Rd		Site Access	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Battle Creek Rd		Battle Creek Rd		Site Access	
Base Volume Input [veh/h]	625	0	0	258	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	5	1	0	17	2
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	625	5	1	258	17	2
Peak Hour Factor	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	180	1	0	74	5	1
Total Analysis Volume [veh/h]	718	6	1	297	20	2
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.00	0.08	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	9.10	0.00	19.92	14.59
Movement LOS	A	A	A	A	C	B
95th-Percentile Queue Length [veh]	0.00	0.00	1.51	1.51	0.26	0.26
95th-Percentile Queue Length [ft]	0.00	0.00	37.71	37.71	6.56	6.56
d_A, Approach Delay [s/veh]	0.00		0.03		19.43	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	0.42					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 11: Reed Rd at Strong Rd

Control Type:	Two-way stop	Delay (sec / veh):	14.0
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.010

Intersection Setup

Name	Reed Rd		Reed Rd		Strong Rd	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Reed Rd		Reed Rd		Strong Rd	
Base Volume Input [veh/h]	302	0	12	43	4	115
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	1.60	1.60	5.50	5.50	1.70	1.70
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	3	0	1	0	0	1
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	314	0	13	44	4	119
Peak Hour Factor	0.7500	0.7500	0.7500	0.7500	0.7500	0.7500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	105	0	4	15	1	40
Total Analysis Volume [veh/h]	419	0	17	59	5	159
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.02	0.00	0.01	0.25
d_M, Delay for Movement [s/veh]	0.00	0.00	8.26	0.00	14.00	12.67
Movement LOS	A	A	A	A	B	B
95th-Percentile Queue Length [veh]	0.00	0.00	0.22	0.22	1.04	1.04
95th-Percentile Queue Length [ft]	0.00	0.00	5.44	5.44	25.92	25.92
d_A, Approach Delay [s/veh]	0.00		1.85		12.71	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	3.38					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 16: Reed Rd at Fairview Industrial Dr

Control Type:	Two-way stop	Delay (sec / veh):	149.8
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.909

Intersection Setup

Name	Reed Rd			Reed Rd			Fairview Industrial Dr			Fairview Industrial Dr		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	250.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Reed Rd			Reed Rd			Fairview Industrial Dr			Fairview Industrial Dr		
Base Volume Input [veh/h]	220	27	105	3	1	3	24	255	60	8	255	27
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.30	2.30	2.30	0.00	0.00	0.00	4.70	4.70	4.70	5.20	5.20	5.20
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	4	0	0	0	0	0	0	0	1	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	231	28	108	3	1	3	25	263	63	8	263	28
Peak Hour Factor	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	70	8	33	1	0	1	8	79	19	2	79	8
Total Analysis Volume [veh/h]	278	34	130	4	1	4	30	317	76	10	317	34
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.91	0.11	0.19	0.02	0.00	0.01	0.03	0.00	0.00	0.01	0.00	0.00
d_M, Delay for Movement [s/veh]	149.82	149.55	143.27	22.93	17.07	10.39	8.10	0.00	0.00	8.16	0.00	0.00
Movement LOS	F	F	F	C	C	B	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	18.44	18.44	18.44	0.09	0.09	0.09	0.08	0.00	0.00	0.03	0.00	0.00
95th-Percentile Queue Length [ft]	461.11	461.11	461.11	2.19	2.19	2.19	1.93	0.00	0.00	0.66	0.00	0.00
d_A, Approach Delay [s/veh]	147.87			16.70			0.57			0.23		
Approach LOS	F			C			A			A		
d_I, Intersection Delay [s/veh]	53.31											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 21: Fairview Industrial Dr at Marietta St

Control Type:	Two-way stop	Delay (sec / veh):	18.7
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.379

Intersection Setup

Name	Fairview Industrial Dr		Fairview Industrial Dr		Marietta St	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Fairview Industrial Dr		Fairview Industrial Dr		Marietta St	
Base Volume Input [veh/h]	4	372	107	4	118	13
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	4.80	4.80	13.50	13.50	0.80	0.80
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	1	0	0	0	0	3
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	5	383	110	4	122	16
Peak Hour Factor	0.7600	0.7600	0.7600	0.7600	0.7600	0.7600
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	126	36	1	40	5
Total Analysis Volume [veh/h]	7	504	145	5	161	21
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.01	0.00	0.00	0.38	0.02
d_M, Delay for Movement [s/veh]	7.56	0.00	0.00	0.00	18.74	14.25
Movement LOS	A	A	A	A	C	B
95th-Percentile Queue Length [veh]	0.01	0.00	0.00	0.00	1.91	1.91
95th-Percentile Queue Length [ft]	0.37	0.00	0.00	0.00	47.81	47.81
d_A, Approach Delay [s/veh]	0.10		0.00		18.22	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	4.00					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 26: East Access at Strong Rd

Control Type:	Two-way stop	Delay (sec / veh):	10.1
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.003

Intersection Setup

Name	Strong Rd		East Access		Strong Rd	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Strong Rd		East Access		Strong Rd	
Base Volume Input [veh/h]	18	0	0	0	0	133
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	1	1	18	6	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	19	1	1	18	6	137
Peak Hour Factor	0.6400	0.6400	0.6400	0.6400	0.6400	0.6400
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	0	0	7	2	54
Total Analysis Volume [veh/h]	30	2	2	28	9	214
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Stop	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance		No	
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.03	0.01	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	10.06	9.33	7.29	0.00
Movement LOS	A	A	B	A	A	A
95th-Percentile Queue Length [veh]	0.00	0.00	0.11	0.11	0.49	0.49
95th-Percentile Queue Length [ft]	0.00	0.00	2.73	2.73	12.28	12.28
d_A, Approach Delay [s/veh]	0.00		9.38		0.29	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	1.22					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 31: 27th Ave at Marietta St

Control Type:	Two-way stop	Delay (sec / veh):	11.2
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.015

Intersection Setup

Name	27th Ave		Strong Rd		Marietta St	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	27th Ave		Strong Rd		Marietta St	
Base Volume Input [veh/h]	135	127	1	11	6	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.80	0.80	8.30	8.30	16.70	16.70
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	5	0	3	15	0	1
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	144	131	4	26	6	1
Peak Hour Factor	0.6400	0.6400	0.6400	0.6400	0.6400	0.6400
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	56	51	2	10	2	0
Total Analysis Volume [veh/h]	225	205	6	41	9	2
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.01	0.00	0.02	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	8.30	0.00	11.21	10.39
Movement LOS	A	A	A	A	B	B
95th-Percentile Queue Length [veh]	0.00	0.00	0.13	0.13	0.06	0.06
95th-Percentile Queue Length [ft]	0.00	0.00	3.35	3.35	1.39	1.39
d_A, Approach Delay [s/veh]	0.00		1.06		11.06	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.35					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 41: Keubler Blvd at Battle Creek Rd

Control Type:	Signalized	Delay (sec / veh):	41.1
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.831

Intersection Setup

Name	Battle Creek Rd			Battle Creek Rd			Kuebler Blvd			Kuebler Blvd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	1	0	1	1	0	1	1	0	1
Pocket Length [ft]	100.00	100.00	150.00	275.00	100.00	275.00	350.00	100.00	350.00	250.00	100.00	250.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Battle Creek Rd			Battle Creek Rd			Kuebler Blvd			Kuebler Blvd		
Base Volume Input [veh/h]	93	296	222	131	104	43	182	1344	55	94	823	148
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.40	2.40	2.40	7.20	7.20	7.20	3.20	3.20	3.20	7.40	7.40	7.40
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	1	0	0	4	13	4	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	96	306	229	135	111	57	191	1384	57	97	848	152
Peak Hour Factor	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	27	85	64	38	31	16	53	384	16	27	236	42
Total Analysis Volume [veh/h]	107	340	254	150	123	63	212	1538	63	108	942	169
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	110
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	12	23	0	15	26	0	35	60	0	12	37	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	110	110	110	110	110	110	110	110	110	110	110	110
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	8	20	20	11	23	23	17	55	55	8	47	47
g / C, Green / Cycle	0.07	0.18	0.18	0.10	0.21	0.21	0.15	0.50	0.50	0.07	0.42	0.42
(v / s)_i Volume / Saturation Flow Rate	0.07	0.11	0.18	0.10	0.08	0.05	0.13	0.48	0.04	0.07	0.31	0.12
s, saturation flow rate [veh/h]	1598	3194	1426	1536	1613	1371	1587	3174	1417	1533	3066	1369
c, Capacity [veh/h]	116	574	256	154	334	284	242	1593	711	112	1295	578
d1, Uniform Delay [s]	50.68	41.44	45.05	49.37	37.47	36.28	45.61	26.48	14.28	50.87	26.49	20.94
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering 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
d2, Incremental Delay [s]	23.11	4.46	54.21	28.19	3.12	1.80	9.70	5.14	0.05	32.00	0.80	0.28
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression 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

Lane Group Results

X, volume / capacity	0.92	0.59	0.99	0.98	0.37	0.22	0.88	0.97	0.09	0.97	0.73	0.29
d, Delay for Lane Group [s/veh]	73.78	45.90	99.26	77.56	40.58	38.08	55.31	31.62	14.34	82.87	27.29	21.21
Lane Group LOS	E	D	F	E	D	D	E	C	B	F	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh]	3.67	4.58	10.72	5.30	3.13	1.55	6.28	19.52	0.82	3.95	10.17	2.89
50th-Percentile Queue Length [ft]	91.65	114.46	267.91	132.42	78.34	38.82	157.11	488.01	20.57	98.76	254.31	72.21
95th-Percentile Queue Length [veh]	6.60	8.09	16.08	9.07	5.64	2.80	10.40	26.77	1.48	7.11	15.40	5.20
95th-Percentile Queue Length [ft]	164.98	202.19	402.12	226.78	141.02	69.88	259.89	669.16	37.03	177.77	385.08	129.99

Movement, Approach, & Intersection Results

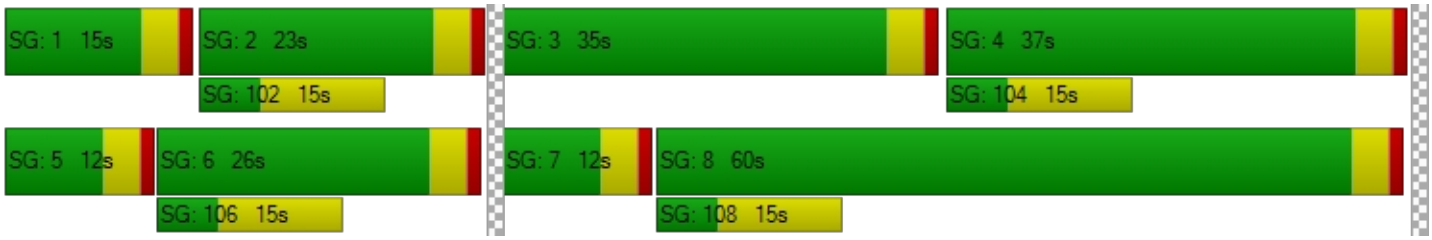
d_M, Delay for Movement [s/veh]	73.78	45.90	99.26	77.56	40.58	38.08	55.31	31.62	14.34	82.87	27.29	21.21
Movement LOS	E	D	F	E	D	D	E	C	B	F	C	C
d_A, Approach Delay [s/veh]	69.49			56.62			33.79			31.37		
Approach LOS	E			E			C			C		
d_I, Intersection Delay [s/veh]	41.10											
Intersection LOS	D											
Intersection V/C	0.831											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	46.37	46.37	46.37	46.37
l_p,int, Pedestrian LOS Score for Intersection	2.505	2.517	2.939	2.978
Crosswalk LOS	B	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	345	400	1018	600
d_b, Bicycle Delay [s]	37.64	35.20	13.25	26.95
l_b,int, Bicycle LOS Score for Intersection	2.138	2.114	3.055	2.565
Bicycle LOS	B	B	C	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 42: Reed at Site Access

Control Type:	Two-way stop	Delay (sec / veh):	11.4
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.002

Intersection Setup

Name	Reed Rd		Reed Rd		Site Access	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Reed Rd		Reed Rd		Site Access	
Base Volume Input [veh/h]	308	0	0	47	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	1	3
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	317	0	0	48	1	3
Peak Hour Factor	0.8000	0.8000	0.8000	0.8000	0.8000	0.8000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	99	0	0	15	0	1
Total Analysis Volume [veh/h]	396	0	0	60	1	4
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.01
d_M, Delay for Movement [s/veh]	0.00	0.00	8.10	0.00	11.45	10.56
Movement LOS	A	A	A	A	B	B
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.00	0.02	0.02
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	0.00	0.60	0.60
d_A, Approach Delay [s/veh]	0.00		0.00		10.73	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.12					
Intersection LOS	B					

18-392 Strong at 27th Subdivision TIA

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Report File: J:\...\18-392 AM Dev Ph 1.pdf
Scenario 3 AM Dev 2020 Ph 1
6/19/2018

Turning Movement Volume: Summary

ID	Intersection Name	Southbound		Eastbound		Westbound		Total Volume
		Left	Right	Left	Thru	Thru	Right	
1	Battle Creek Rd at Reed Rd	26	7	35	241	374	272	955

ID	Intersection Name	Northbound		Southbound		Westbound		Total Volume
		Thru	Right	Left	Thru	Left	Right	
6	Battle Creek Rd at Site Access	625	5	1	258	17	2	908

ID	Intersection Name	Northbound		Southbound		Westbound		Total Volume
		Thru	Right	Left	Thru	Left	Right	
11	Reed Rd at Strong Rd	314	0	13	44	4	119	494

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
16	Reed Rd at Fairview Industrial Dr	231	28	108	3	1	3	25	263	63	8	263	28	1024

ID	Intersection Name	Northbound		Southbound		Eastbound		Total Volume
		Left	Thru	Thru	Right	Left	Right	
21	Fairview Industrial Dr at Marietta St	5	383	110	4	122	16	640

ID	Intersection Name	Southbound		Eastbound		Westbound		Total Volume
		Left	Right	Left	Thru	Thru	Right	
26	East Access at Strong Rd	19	1	1	18	6	137	182

ID	Intersection Name	Northbound		Southbound		Westbound		Total Volume
		Thru	Right	Left	Thru	Left	Right	
31	27th Ave at Marietta St	144	131	4	26	6	1	312

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
41	Keubler Blvd at Battle Creek Rd	96	306	229	135	111	57	191	1384	57	97	848	152	3663

ID	Intersection Name	Northbound		Southbound		Westbound		Total Volume
		Thru	Right	Left	Thru	Left	Right	
42	Reed at Site Access	317	0	0	48	1	3	369

18-392 Strong at 27th Subdivision TIA

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Report File: J:\...\18-392 AM Dev Ph 1.pdf

Scenario 3 AM Dev 2020 Ph 1
6/19/2018

Turning Movement Volume: Detail

ID	Intersection Name	Volume Type	Southbound		Eastbound		Westbound		Total Volume
			Left	Right	Left	Thru	Thru	Right	
1	Battle Creek Rd at Reed Rd	Final Base	25	6	34	233	361	264	923
		Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	0	1	0	1	2	0	4
		Other	0	0	0	0	0	0	0
		Future Total	**26**	**7**	**35**	**241**	**374**	**272**	**955**

ID	Intersection Name	Volume Type	Northbound		Southbound		Westbound		Total Volume
			Thru	Right	Left	Thru	Left	Right	
6	Battle Creek Rd at Site Access	Final Base	625	0	0	258	0	0	883
		Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	0	5	1	0	17	2	25
		Other	0	0	0	0	0	0	0
		Future Total	**625**	**5**	**1**	**258**	**17**	**2**	**908**

ID	Intersection Name	Volume Type	Northbound		Southbound		Westbound		Total Volume
			Thru	Right	Left	Thru	Left	Right	
11	Reed Rd at Strong Rd	Final Base	302	0	12	43	4	115	476
		Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	3	0	1	0	0	1	5
		Other	0	0	0	0	0	0	0
		Future Total	**314**	**0**	**13**	**44**	**4**	**119**	**494**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
16	Reed Rd at Fairview Industrial Dr	Final Base	220	27	105	3	1	3	24	255	60	8	255	27	988
		Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	4	0	0	0	0	0	0	0	1	0	0	0	5
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**231**	**28**	**108**	**3**	**1**	**3**	**25**	**263**	**63**	**8**	**263**	**28**	**1024**

ID	Intersection Name	Volume Type	Northbound		Southbound		Eastbound		Total Volume
			Left	Thru	Thru	Right	Left	Right	
21	Fairview Industrial Dr at Marietta St	Final Base	4	372	107	4	118	13	618
		Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	1	0	0	0	0	3	4
		Other	0	0	0	0	0	0	0
		Future Total	**5**	**383**	**110**	**4**	**122**	**16**	**640**

ID	Intersection Name	Volume Type	Southbound		Eastbound		Westbound		Total Volume
			Left	Right	Left	Thru	Thru	Right	
26	East Access at Strong Rd	Final Base	18	0	0	0	0	133	151
		Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	0	1	1	18	6	0	26
		Other	0	0	0	0	0	0	0
		Future Total	**19**	**1**	**1**	**18**	**6**	**137**	**182**

ID	Intersection Name	Volume Type	Northbound		Southbound		Westbound		Total Volume
			Thru	Right	Left	Thru	Left	Right	
31	27th Ave at Marietta St	Final Base	135	127	1	11	6	0	280
		Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	5	0	3	15	0	1	24
		Other	0	0	0	0	0	0	0
		Future Total	**144**	**131**	**4**	**26**	**6**	**1**	**312**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
41	Keubler Blvd at Battle Creek Rd	Final Base	93	296	222	131	104	43	182	1344	55	94	823	148	3535
		Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	1	0	0	4	13	4	0	0	0	0	0	22
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**96**	**306**	**229**	**135**	**111**	**57**	**191**	**1384**	**57**	**97**	**848**	**152**	**3663**

ID	Intersection Name	Volume Type	Northbound		Southbound		Westbound		Total Volume
			Thru	Right	Left	Thru	Left	Right	
42	Reed at Site Access	Final Base	308	0	0	47	0	0	355
		Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	1	3	4
		Other	0	0	0	0	0	0	0
		Future Total	**317**	**0**	**0**	**48**	**1**	**3**	**369**

Signal Warrants Report For Intersection 1: Battle Creek Rd at Reed Rd

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	E, W
Minor Approaches	N
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	E	W	N
1	646	276	33
2	620	265	32
3	607	259	31
4	517	221	26
5	491	210	25
6	439	188	22
7	407	174	21
8	388	166	20
9	310	132	16
10	291	124	15
11	291	124	15
12	278	119	14
13	252	108	13
14	233	99	12
15	233	99	12
16	226	97	12
17	129	55	7
18	71	30	4
19	65	28	3
20	26	11	1
21	19	8	1
22	19	8	1
23	13	6	1
24	13	6	1

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	922	2	33	No	No	No	No	No	No	No	No	No	No
2	2	885	2	32	No	No	No	No	No	No	No	No	No	No
3	2	866	2	31	No	No	No	No	No	No	No	No	No	No
4	2	738	2	26	No	No	No	No	No	No	No	No	No	No
5	2	701	2	25	No	No	No	No	No	No	No	No	No	No
6	2	627	2	22	No	No	No	No	No	No	No	No	No	No
7	2	581	2	21	No	No	No	No	No	No	No	No	No	No
8	2	554	2	20	No	No	No	No	No	No	No	No	No	No
9	2	442	2	16	No	No	No	No	No	No	No	No	No	No
10	2	415	2	15	No	No	No	No	No	No	No	No	No	No
11	2	415	2	15	No	No	No	No	No	No	No	No	No	No
12	2	397	2	14	No	No	No	No	No	No	No	No	No	No
13	2	360	2	13	No	No	No	No	No	No	No	No	No	No
14	2	332	2	12	No	No	No	No	No	No	No	No	No	No
15	2	332	2	12	No	No	No	No	No	No	No	No	No	No
16	2	323	2	12	No	No	No	No	No	No	No	No	No	No
17	2	184	2	7	No	No	No	No	No	No	No	No	No	No
18	2	101	2	4	No	No	No	No	No	No	No	No	No	No
19	2	93	2	3	No	No	No	No	No	No	No	No	No	No
20	2	37	2	1	No	No	No	No	No	No	No	No	No	No
21	2	27	2	1	No	No	No	No	No	No	No	No	No	No
22	2	27	2	1	No	No	No	No	No	No	No	No	No	No
23	2	19	2	1	No	No	No	No	No	No	No	No	No	No
24	2	19	2	1	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	N
Total Stopped Delay Per Vehicle on Minor Approach (s)	18.8
Number of Lanes on Minor Street Approach	2
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:10
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	33
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	955
Number of Approaches on Intersection	3
Total Volume Condition Met	Yes
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

Signal Warrants Report For Intersection 6: Battle Creek Rd at Site Access

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	S, N
Minor Approaches	E
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	S	N	E
1	630	259	19
2	605	249	18
3	592	243	18
4	504	207	15
5	479	197	14
6	428	176	13
7	397	163	12
8	378	155	11
9	302	124	9
10	284	117	9
11	284	117	9
12	271	111	8
13	246	101	7
14	227	93	7
15	227	93	7
16	221	91	7
17	126	52	4
18	69	28	2
19	63	26	2
20	25	10	1
21	19	8	1
22	19	8	1
23	13	5	0
24	13	5	0

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	889	1	19	No	No	No	No	No	No	No	No	No	No
2	2	854	1	18	No	No	No	No	No	No	No	No	No	No
3	2	835	1	18	No	No	No	No	No	No	No	No	No	No
4	2	711	1	15	No	No	No	No	No	No	No	No	No	No
5	2	676	1	14	No	No	No	No	No	No	No	No	No	No
6	2	604	1	13	No	No	No	No	No	No	No	No	No	No
7	2	560	1	12	No	No	No	No	No	No	No	No	No	No
8	2	533	1	11	No	No	No	No	No	No	No	No	No	No
9	2	426	1	9	No	No	No	No	No	No	No	No	No	No
10	2	401	1	9	No	No	No	No	No	No	No	No	No	No
11	2	401	1	9	No	No	No	No	No	No	No	No	No	No
12	2	382	1	8	No	No	No	No	No	No	No	No	No	No
13	2	347	1	7	No	No	No	No	No	No	No	No	No	No
14	2	320	1	7	No	No	No	No	No	No	No	No	No	No
15	2	320	1	7	No	No	No	No	No	No	No	No	No	No
16	2	312	1	7	No	No	No	No	No	No	No	No	No	No
17	2	178	1	4	No	No	No	No	No	No	No	No	No	No
18	2	97	1	2	No	No	No	No	No	No	No	No	No	No
19	2	89	1	2	No	No	No	No	No	No	No	No	No	No
20	2	35	1	1	No	No	No	No	No	No	No	No	No	No
21	2	27	1	1	No	No	No	No	No	No	No	No	No	No
22	2	27	1	1	No	No	No	No	No	No	No	No	No	No
23	2	18	1	0	No	No	No	No	No	No	No	No	No	No
24	2	18	1	0	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	E
Total Stopped Delay Per Vehicle on Minor Approach (s)	19.4
Number of Lanes on Minor Street Approach	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:06
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	19
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	908
Number of Approaches on Intersection	3
Total Volume Condition Met	Yes
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

Signal Warrants Report For Intersection 11: Reed Rd at Strong Rd

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	N, S
Minor Approaches	E
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	N	S	E
1	57	314	123
2	55	301	118
3	54	295	116
4	46	251	98
5	43	239	93
6	39	214	84
7	36	198	77
8	34	188	74
9	27	151	59
10	26	141	55
11	26	141	55
12	25	135	53
13	22	122	48
14	21	113	44
15	21	113	44
16	20	110	43
17	11	63	25
18	6	35	14
19	6	31	12
20	2	13	5
21	2	9	4
22	2	9	4
23	1	6	2
24	1	6	2

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	371	1	123	No	No	No	Yes	No	No	No	No	No	No
2	2	356	1	118	No	No	No	Yes	No	No	No	No	No	No
3	2	349	1	116	No	No	No	Yes	No	No	No	No	No	No
4	2	297	1	98	No	No	No	No	No	No	No	No	No	No
5	2	282	1	93	No	No	No	No	No	No	No	No	No	No
6	2	253	1	84	No	No	No	No	No	No	No	No	No	No
7	2	234	1	77	No	No	No	No	No	No	No	No	No	No
8	2	222	1	74	No	No	No	No	No	No	No	No	No	No
9	2	178	1	59	No	No	No	No	No	No	No	No	No	No
10	2	167	1	55	No	No	No	No	No	No	No	No	No	No
11	2	167	1	55	No	No	No	No	No	No	No	No	No	No
12	2	160	1	53	No	No	No	No	No	No	No	No	No	No
13	2	144	1	48	No	No	No	No	No	No	No	No	No	No
14	2	134	1	44	No	No	No	No	No	No	No	No	No	No
15	2	134	1	44	No	No	No	No	No	No	No	No	No	No
16	2	130	1	43	No	No	No	No	No	No	No	No	No	No
17	2	74	1	25	No	No	No	No	No	No	No	No	No	No
18	2	41	1	14	No	No	No	No	No	No	No	No	No	No
19	2	37	1	12	No	No	No	No	No	No	No	No	No	No
20	2	15	1	5	No	No	No	No	No	No	No	No	No	No
21	2	11	1	4	No	No	No	No	No	No	No	No	No	No
22	2	11	1	4	No	No	No	No	No	No	No	No	No	No
23	2	7	1	2	No	No	No	No	No	No	No	No	No	No
24	2	7	1	2	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	3	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	E
Total Stopped Delay Per Vehicle on Minor Approach (s)	12.7
Number of Lanes on Minor Street Approach	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:26
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	123
High Minor Volume Condition Met	Yes
Total Entering Volume on All Approaches During Same Hour	494
Number of Approaches on Intersection	3
Total Volume Condition Met	No
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

Signal Warrants Report For Intersection 16: Reed Rd at Fairview Industrial Dr

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	Yes

Intersection Warrants Parameters

Major Approaches	E, W
Minor Approaches	N, S
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets	
	E	W	N	S
1	299	351	7	367
2	287	337	7	352
3	281	330	7	345
4	239	281	6	294
5	227	267	5	279
6	203	239	5	250
7	188	221	4	231
8	179	211	4	220
9	144	168	3	176
10	135	158	3	165
11	135	158	3	165
12	129	151	3	158
13	117	137	3	143
14	108	126	3	132
15	108	126	3	132
16	105	123	2	128
17	60	70	1	73
18	33	39	1	40
19	30	35	1	37
20	12	14	0	15
21	9	11	0	11
22	9	11	0	11
23	6	7	0	7
24	6	7	0	7

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	4	650	2	374	Yes	Yes	Yes	Yes	No	No	Yes	Yes	Yes	No
2	4	624	2	359	Yes	Yes	Yes	Yes	No	No	No	Yes	Yes	No
3	4	611	2	352	Yes	Yes	Yes	Yes	No	No	No	Yes	Yes	No
4	4	520	2	300	No	Yes	Yes	Yes	No	No	No	Yes	No	No
5	4	494	2	284	No	Yes	Yes	Yes	No	No	No	No	No	No
6	4	442	2	255	No	No	Yes	Yes	No	No	No	No	No	No
7	4	409	2	235	No	No	No	Yes	No	No	No	No	No	No
8	4	390	2	224	No	No	No	Yes	No	No	No	No	No	No
9	4	312	2	179	No	No	No	No	No	No	No	No	No	No
10	4	293	2	168	No	No	No	No	No	No	No	No	No	No
11	4	293	2	168	No	No	No	No	No	No	No	No	No	No
12	4	280	2	161	No	No	No	No	No	No	No	No	No	No
13	4	254	2	146	No	No	No	No	No	No	No	No	No	No
14	4	234	2	135	No	No	No	No	No	No	No	No	No	No
15	4	234	2	135	No	No	No	No	No	No	No	No	No	No
16	4	228	2	130	No	No	No	No	No	No	No	No	No	No
17	4	130	2	74	No	No	No	No	No	No	No	No	No	No
18	4	72	2	41	No	No	No	No	No	No	No	No	No	No
19	4	65	2	38	No	No	No	No	No	No	No	No	No	No
20	4	26	2	15	No	No	No	No	No	No	No	No	No	No
21	4	20	2	11	No	No	No	No	No	No	No	No	No	No
22	4	20	2	11	No	No	No	No	No	No	No	No	No	No
23	4	13	2	7	No	No	No	No	No	No	No	No	No	No
24	4	13	2	7	No	No	No	No	No	No	No	No	No	No
Hours Met					3	5	6	8	0	0	1	4	3	0

Warrant 3 Condition A

Orientation	N	S
Total Stopped Delay Per Vehicle on Minor Approach (s)	16.7	147.9
Number of Lanes on Minor Street Approach	1	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:01	15:04
Delay Condition Met	No	Yes
Volume on Minor Street Approach During Same Hour	7	367
High Minor Volume Condition Met	No	Yes
Total Entering Volume on All Approaches During Same Hour	1024	1024
Number of Approaches on Intersection	4	4
Total Volume Condition Met	Yes	Yes
Warrant Met for Approach	No	Yes
Warrant Met for Intersection	**Yes**	

Signal Warrants Report For Intersection 21: Fairview Industrial Dr at Marietta St

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	S, N
Minor Approaches	W
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	S	N	W
1	388	114	138
2	372	109	132
3	365	107	130
4	310	91	110
5	295	87	105
6	264	78	94
7	244	72	87
8	233	68	83
9	186	55	66
10	175	51	62
11	175	51	62
12	167	49	59
13	151	44	54
14	140	41	50
15	140	41	50
16	136	40	48
17	78	23	28
18	43	13	15
19	39	11	14
20	16	5	6
21	12	3	4
22	12	3	4
23	8	2	3
24	8	2	3

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	3	502	1	138	No	Yes	Yes	Yes	No	No	No	No	No	No
2	3	481	1	132	No	Yes	Yes	Yes	No	No	No	No	No	No
3	3	472	1	130	No	No	Yes	Yes	No	No	No	No	No	No
4	3	401	1	110	No	No	No	Yes	No	No	No	No	No	No
5	3	382	1	105	No	No	No	Yes	No	No	No	No	No	No
6	3	342	1	94	No	No	No	Yes	No	No	No	No	No	No
7	3	316	1	87	No	No	No	No	No	No	No	No	No	No
8	3	301	1	83	No	No	No	No	No	No	No	No	No	No
9	3	241	1	66	No	No	No	No	No	No	No	No	No	No
10	3	226	1	62	No	No	No	No	No	No	No	No	No	No
11	3	226	1	62	No	No	No	No	No	No	No	No	No	No
12	3	216	1	59	No	No	No	No	No	No	No	No	No	No
13	3	195	1	54	No	No	No	No	No	No	No	No	No	No
14	3	181	1	50	No	No	No	No	No	No	No	No	No	No
15	3	181	1	50	No	No	No	No	No	No	No	No	No	No
16	3	176	1	48	No	No	No	No	No	No	No	No	No	No
17	3	101	1	28	No	No	No	No	No	No	No	No	No	No
18	3	56	1	15	No	No	No	No	No	No	No	No	No	No
19	3	50	1	14	No	No	No	No	No	No	No	No	No	No
20	3	21	1	6	No	No	No	No	No	No	No	No	No	No
21	3	15	1	4	No	No	No	No	No	No	No	No	No	No
22	3	15	1	4	No	No	No	No	No	No	No	No	No	No
23	3	10	1	3	No	No	No	No	No	No	No	No	No	No
24	3	10	1	3	No	No	No	No	No	No	No	No	No	No
Hours Met					0	2	3	6	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	W
Total Stopped Delay Per Vehicle on Minor Approach (s)	18.2
Number of Lanes on Minor Street Approach	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:41
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	138
High Minor Volume Condition Met	Yes
Total Entering Volume on All Approaches During Same Hour	640
Number of Approaches on Intersection	3
Total Volume Condition Met	No
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

Signal Warrants Report For Intersection 26: East Access at Strong Rd

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	E, N
Minor Approaches	W
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	E	N	W
1	143	20	19
2	137	19	18
3	134	19	18
4	114	16	15
5	109	15	14
6	97	14	13
7	90	13	12
8	86	12	11
9	69	10	9
10	64	9	9
11	64	9	9
12	61	9	8
13	56	8	7
14	51	7	7
15	51	7	7
16	50	7	7
17	29	4	4
18	16	2	2
19	14	2	2
20	6	1	1
21	4	1	1
22	4	1	1
23	3	0	0
24	3	0	0

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	163	1	19	No	No	No	No	No	No	No	No	No	No
2	2	156	1	18	No	No	No	No	No	No	No	No	No	No
3	2	153	1	18	No	No	No	No	No	No	No	No	No	No
4	2	130	1	15	No	No	No	No	No	No	No	No	No	No
5	2	124	1	14	No	No	No	No	No	No	No	No	No	No
6	2	111	1	13	No	No	No	No	No	No	No	No	No	No
7	2	103	1	12	No	No	No	No	No	No	No	No	No	No
8	2	98	1	11	No	No	No	No	No	No	No	No	No	No
9	2	79	1	9	No	No	No	No	No	No	No	No	No	No
10	2	73	1	9	No	No	No	No	No	No	No	No	No	No
11	2	73	1	9	No	No	No	No	No	No	No	No	No	No
12	2	70	1	8	No	No	No	No	No	No	No	No	No	No
13	2	64	1	7	No	No	No	No	No	No	No	No	No	No
14	2	58	1	7	No	No	No	No	No	No	No	No	No	No
15	2	58	1	7	No	No	No	No	No	No	No	No	No	No
16	2	57	1	7	No	No	No	No	No	No	No	No	No	No
17	2	33	1	4	No	No	No	No	No	No	No	No	No	No
18	2	18	1	2	No	No	No	No	No	No	No	No	No	No
19	2	16	1	2	No	No	No	No	No	No	No	No	No	No
20	2	7	1	1	No	No	No	No	No	No	No	No	No	No
21	2	5	1	1	No	No	No	No	No	No	No	No	No	No
22	2	5	1	1	No	No	No	No	No	No	No	No	No	No
23	2	3	1	0	No	No	No	No	No	No	No	No	No	No
24	2	3	1	0	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	W
Total Stopped Delay Per Vehicle on Minor Approach (s)	9.4
Number of Lanes on Minor Street Approach	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:02
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	19
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	182
Number of Approaches on Intersection	3
Total Volume Condition Met	No
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

Signal Warrants Report For Intersection 31: 27th Ave at Marietta St

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	N, S
Minor Approaches	E
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	N	S	E
1	30	275	7
2	29	264	7
3	28	259	7
4	24	220	6
5	23	209	5
6	20	187	5
7	19	173	4
8	18	165	4
9	14	132	3
10	14	124	3
11	14	124	3
12	13	118	3
13	12	107	3
14	11	99	3
15	11	99	3
16	11	96	2
17	6	55	1
18	3	30	1
19	3	28	1
20	1	11	0
21	1	8	0
22	1	8	0
23	1	6	0
24	1	6	0

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	305	1	7	No	No	No	No	No	No	No	No	No	No
2	2	293	1	7	No	No	No	No	No	No	No	No	No	No
3	2	287	1	7	No	No	No	No	No	No	No	No	No	No
4	2	244	1	6	No	No	No	No	No	No	No	No	No	No
5	2	232	1	5	No	No	No	No	No	No	No	No	No	No
6	2	207	1	5	No	No	No	No	No	No	No	No	No	No
7	2	192	1	4	No	No	No	No	No	No	No	No	No	No
8	2	183	1	4	No	No	No	No	No	No	No	No	No	No
9	2	146	1	3	No	No	No	No	No	No	No	No	No	No
10	2	138	1	3	No	No	No	No	No	No	No	No	No	No
11	2	138	1	3	No	No	No	No	No	No	No	No	No	No
12	2	131	1	3	No	No	No	No	No	No	No	No	No	No
13	2	119	1	3	No	No	No	No	No	No	No	No	No	No
14	2	110	1	3	No	No	No	No	No	No	No	No	No	No
15	2	110	1	3	No	No	No	No	No	No	No	No	No	No
16	2	107	1	2	No	No	No	No	No	No	No	No	No	No
17	2	61	1	1	No	No	No	No	No	No	No	No	No	No
18	2	33	1	1	No	No	No	No	No	No	No	No	No	No
19	2	31	1	1	No	No	No	No	No	No	No	No	No	No
20	2	12	1	0	No	No	No	No	No	No	No	No	No	No
21	2	9	1	0	No	No	No	No	No	No	No	No	No	No
22	2	9	1	0	No	No	No	No	No	No	No	No	No	No
23	2	7	1	0	No	No	No	No	No	No	No	No	No	No
24	2	7	1	0	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	E
Total Stopped Delay Per Vehicle on Minor Approach (s)	11.1
Number of Lanes on Minor Street Approach	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:01
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	7
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	312
Number of Approaches on Intersection	3
Total Volume Condition Met	No
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

Signal Warrants Report For Intersection 42: Reed at Site Access

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	N, S
Minor Approaches	E
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	N	S	E
1	48	317	4
2	46	304	4
3	45	298	4
4	38	254	3
5	36	241	3
6	33	216	3
7	30	200	3
8	29	190	2
9	23	152	2
10	22	143	2
11	22	143	2
12	21	136	2
13	19	124	2
14	17	114	1
15	17	114	1
16	17	111	1
17	10	63	1
18	5	35	0
19	5	32	0
20	2	13	0
21	1	10	0
22	1	10	0
23	1	6	0
24	1	6	0

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	365	1	4	No	No	No	No	No	No	No	No	No	No
2	2	350	1	4	No	No	No	No	No	No	No	No	No	No
3	2	343	1	4	No	No	No	No	No	No	No	No	No	No
4	2	292	1	3	No	No	No	No	No	No	No	No	No	No
5	2	277	1	3	No	No	No	No	No	No	No	No	No	No
6	2	249	1	3	No	No	No	No	No	No	No	No	No	No
7	2	230	1	3	No	No	No	No	No	No	No	No	No	No
8	2	219	1	2	No	No	No	No	No	No	No	No	No	No
9	2	175	1	2	No	No	No	No	No	No	No	No	No	No
10	2	165	1	2	No	No	No	No	No	No	No	No	No	No
11	2	165	1	2	No	No	No	No	No	No	No	No	No	No
12	2	157	1	2	No	No	No	No	No	No	No	No	No	No
13	2	143	1	2	No	No	No	No	No	No	No	No	No	No
14	2	131	1	1	No	No	No	No	No	No	No	No	No	No
15	2	131	1	1	No	No	No	No	No	No	No	No	No	No
16	2	128	1	1	No	No	No	No	No	No	No	No	No	No
17	2	73	1	1	No	No	No	No	No	No	No	No	No	No
18	2	40	1	0	No	No	No	No	No	No	No	No	No	No
19	2	37	1	0	No	No	No	No	No	No	No	No	No	No
20	2	15	1	0	No	No	No	No	No	No	No	No	No	No
21	2	11	1	0	No	No	No	No	No	No	No	No	No	No
22	2	11	1	0	No	No	No	No	No	No	No	No	No	No
23	2	7	1	0	No	No	No	No	No	No	No	No	No	No
24	2	7	1	0	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	E
Total Stopped Delay Per Vehicle on Minor Approach (s)	10.7
Number of Lanes on Minor Street Approach	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:00
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	4
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	369
Number of Approaches on Intersection	3
Total Volume Condition Met	No
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

18-392 Strong at 27th Subdivision TIA

Vistro File: J:\...\18-392 Reed Rd Subdivision - TIA.vistro
Report File: J:\...\18-392 AM Dev Ph 1.pdf

Scenario 3 AM Dev 2020 Ph 1
6/19/2018

Trip Generation summary

Added Trips

Zone ID: Name	Land Use variables	Code	Ind. Var.	Rate	Quantity	% In	% Out	Trips In	Trips Out	Total Trips	% of Total Trips
1: 18-392 Reed Rd Sub	Homes	ITE 210	Home	0.740	75.000	25.00	75.00	14	42	56	100.00
					Added Trips Total			**14**	**42**	**56**	**100.00**

18-392 Strong at 27th Subdivision TIA

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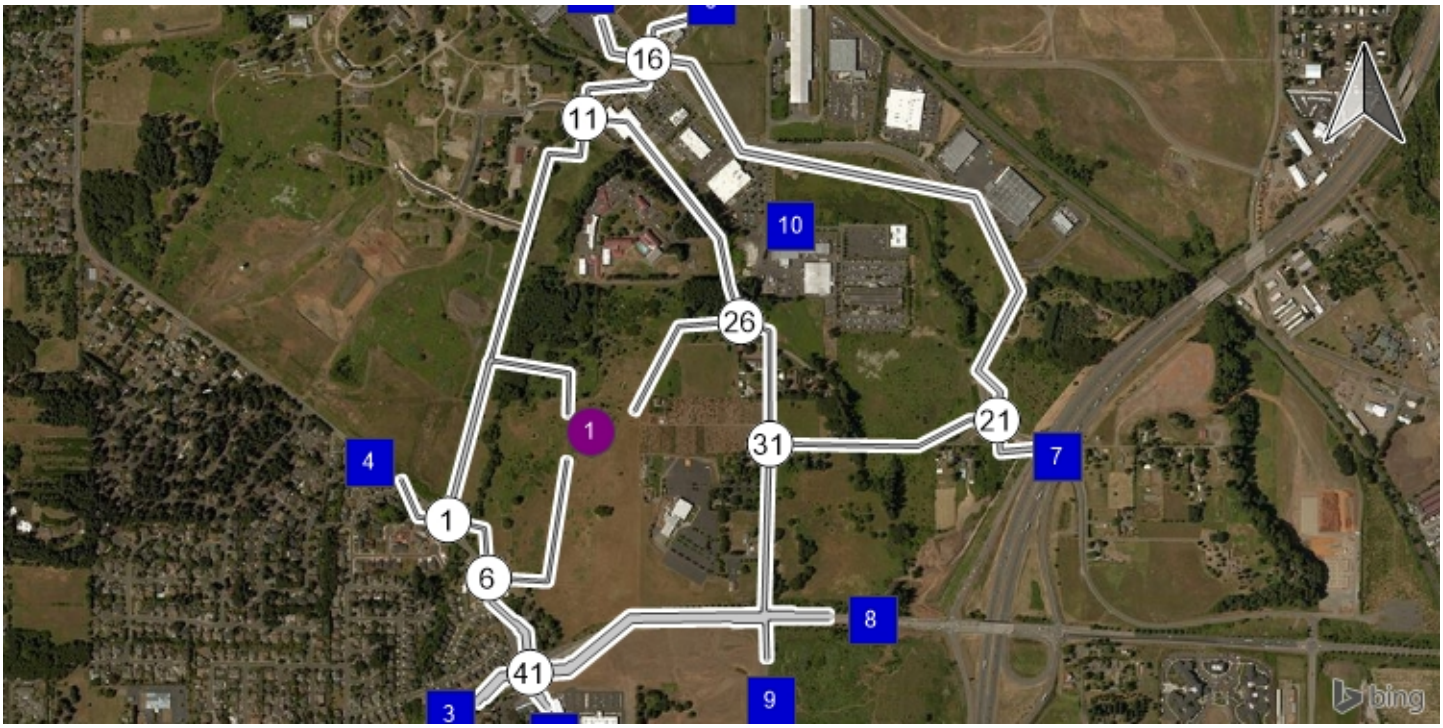
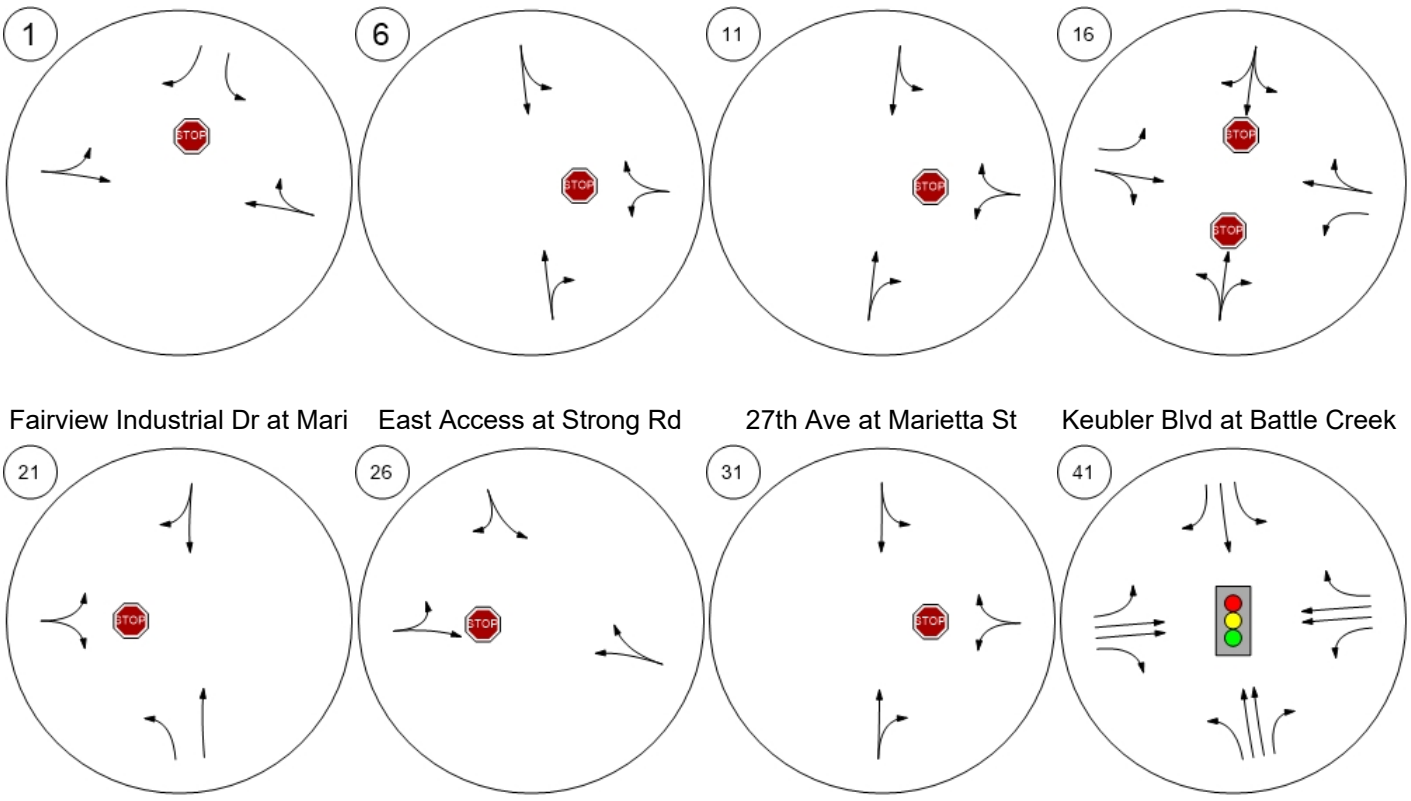
Scenario 3 AM Dev 2020 Ph 1
Report File: J:\...\18-392 AM Dev Ph 1.pdf
6/19/2018

Trip Distribution summary

Zone / Gate	Zone 1: 18-392 Reed Rd Sub			
	To 18-392 Reed Rd Sub:		From 18-392 Reed Rd Sub:	
	Share %	Trips	Share %	Trips
2: Gate	10.00	1	10.00	4
3: Gate	30.00	4	30.00	13
4: Gate	7.00	1	7.00	3
5: Gate	10.00	1	10.00	4
6: Gate	0.00	0	0.00	0
7: Gate	6.00	1	6.00	3
8: Gate	35.00	5	35.00	14
9: Gate	2.00	0	2.00	1
10: Gate	0.00	0	0.00	0
Total	**100.00**	**13**	**100.00**	**42**

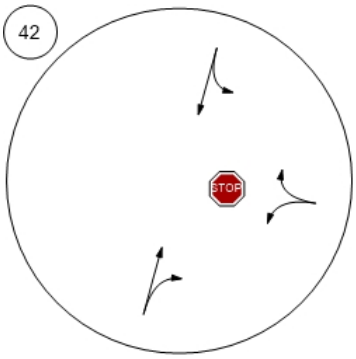
Report Figure 1: Lane Configuration and Traffic Control



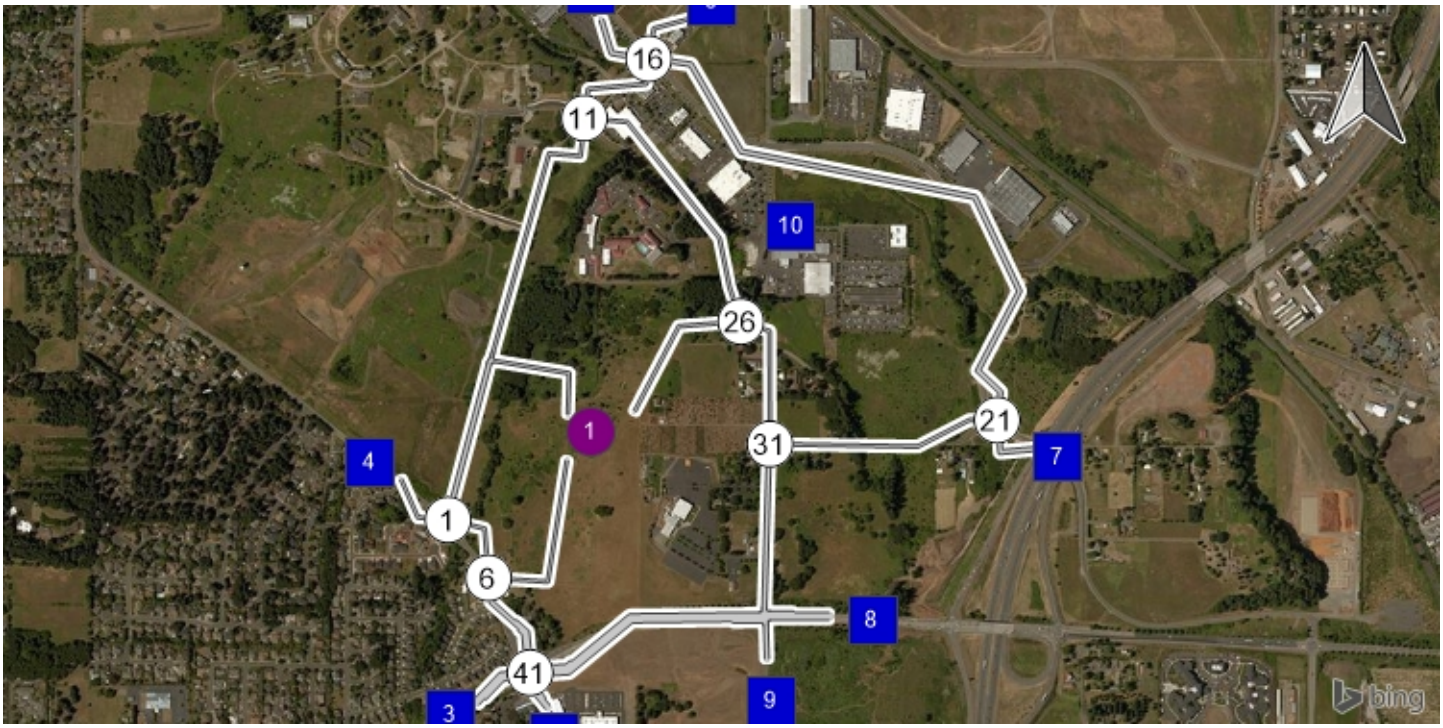


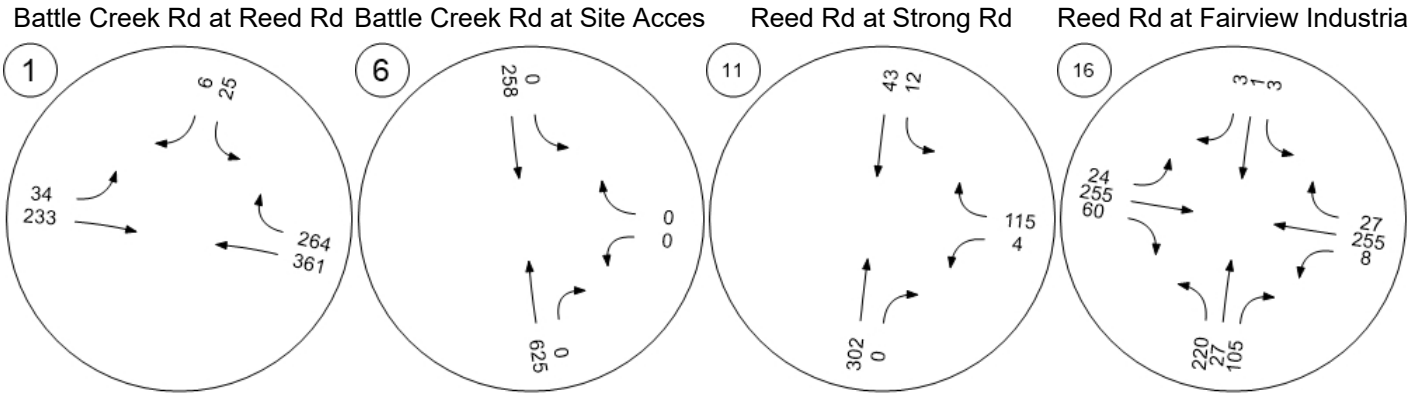
Report Figure 1: Lane Configuration and Traffic Control

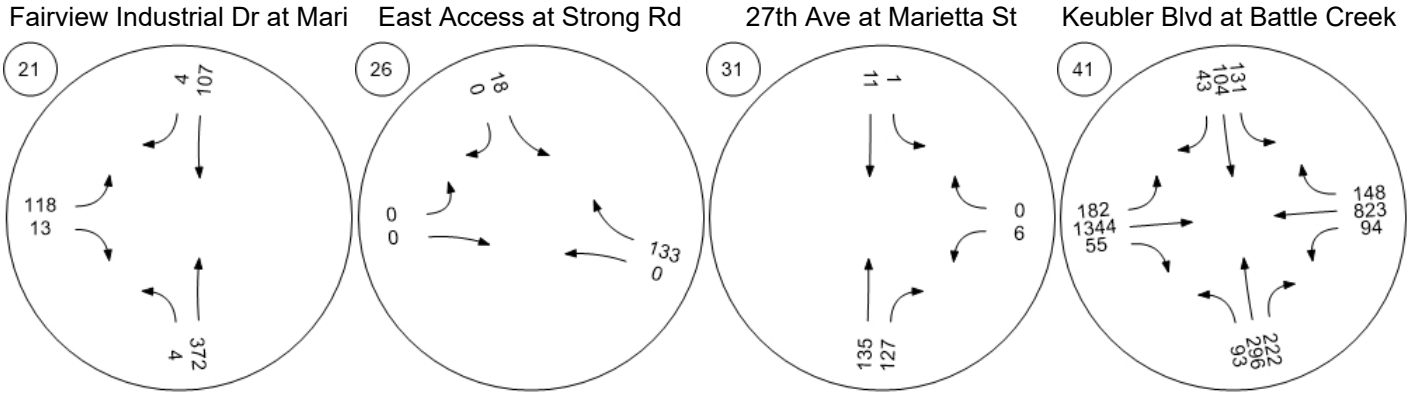
Reed at Site Access



Report Figure 2a: Traffic Volume - Base Volume

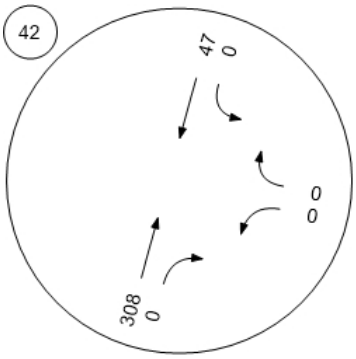




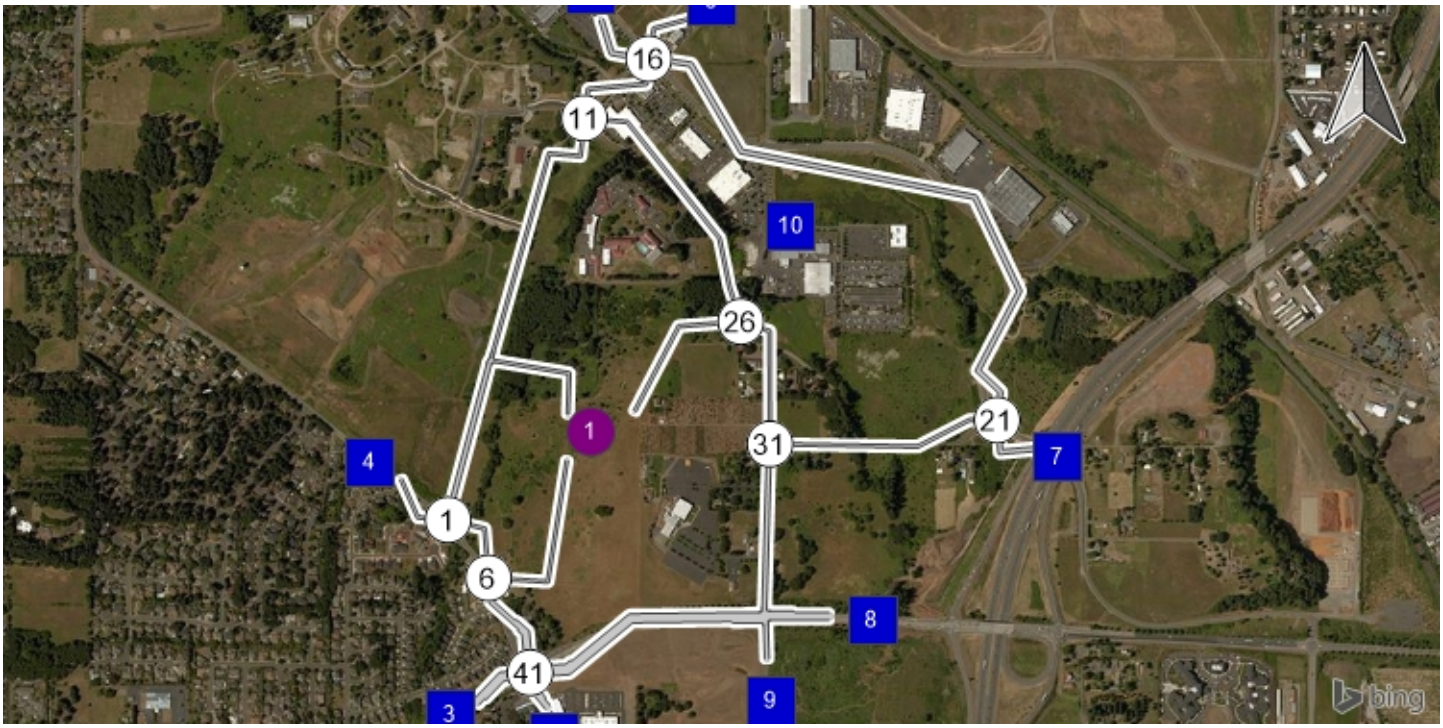


Report Figure 2a: Traffic Volume - Base Volume

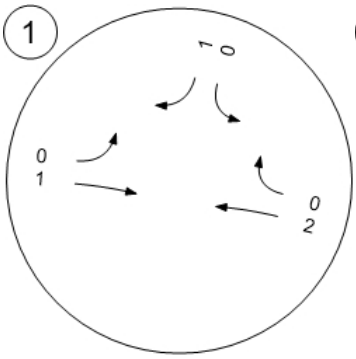
Reed at Site Access



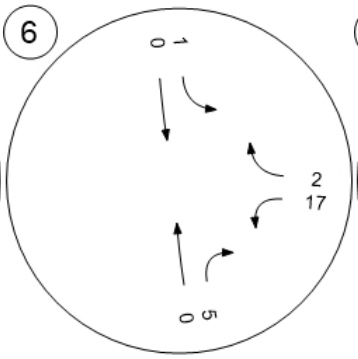
Report Figure 2d: Traffic Volume - Net New Site Trips



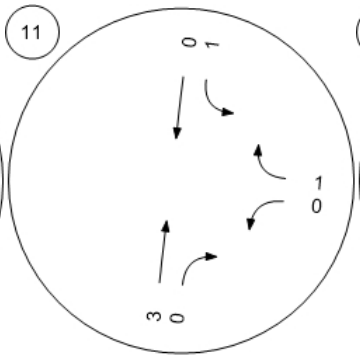
Battle Creek Rd at Reed Rd



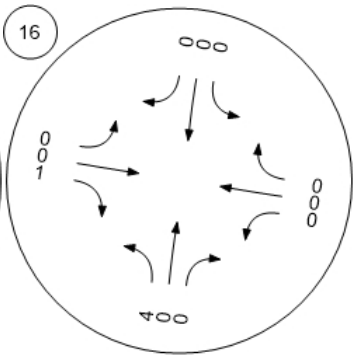
Battle Creek Rd at Site Acces



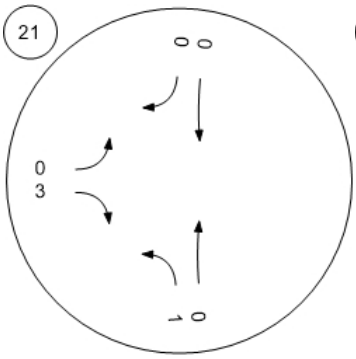
Reed Rd at Strong Rd



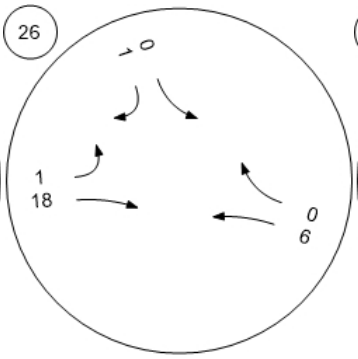
Reed Rd at Fairview Industria



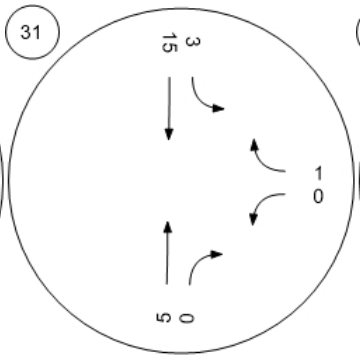
Fairview Industrial Dr at Mari



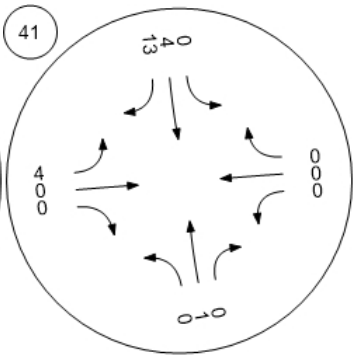
East Access at Strong Rd



27th Ave at Marietta St

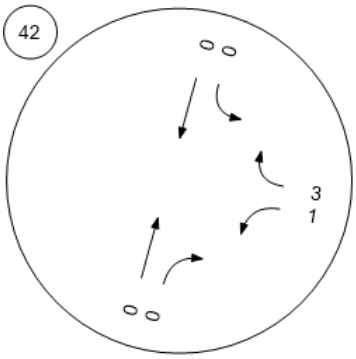


Keubler Blvd at Battle Creek

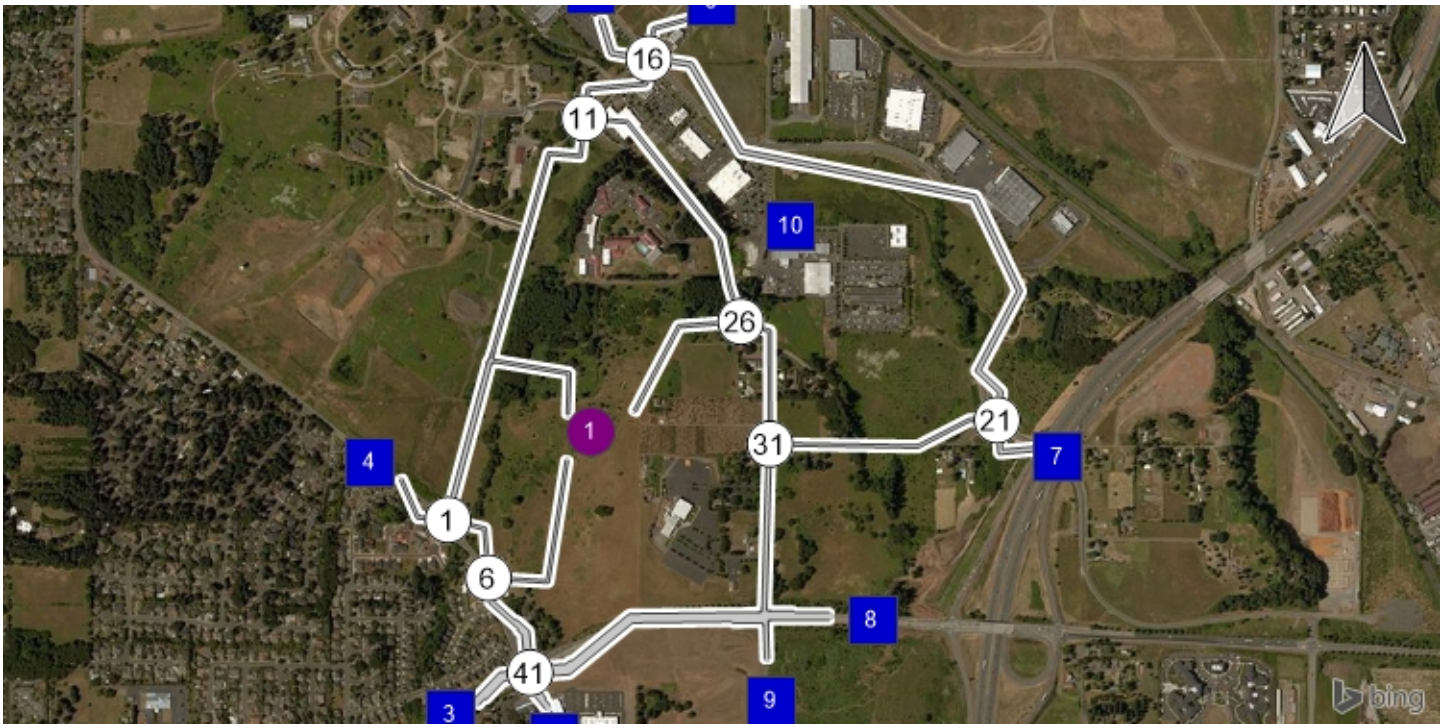


Report Figure 2d: Traffic Volume - Net New Site Trips

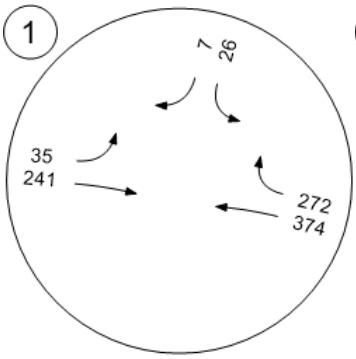
Reed at Site Access



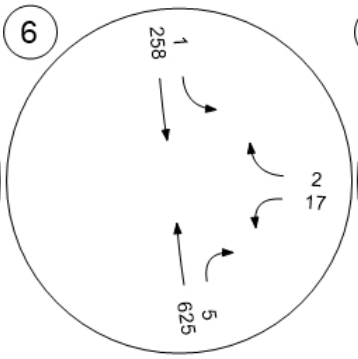
Report Figure 2f: Traffic Volume - Future Total Volume



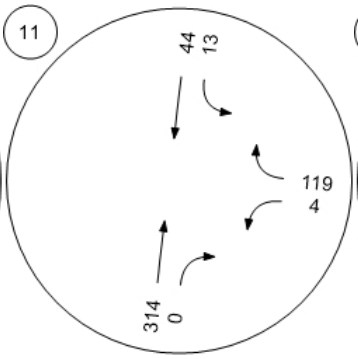
Battle Creek Rd at Reed Rd



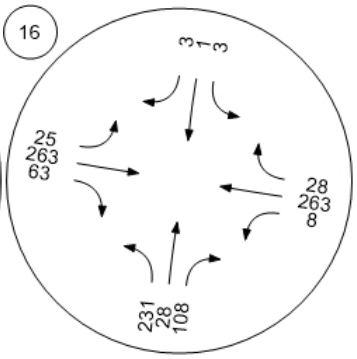
Battle Creek Rd at Site Acces



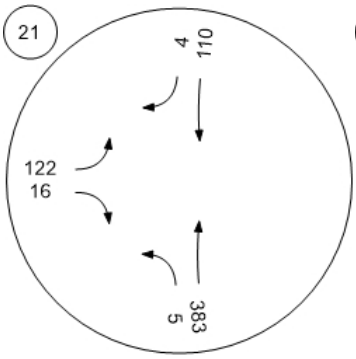
Reed Rd at Strong Rd



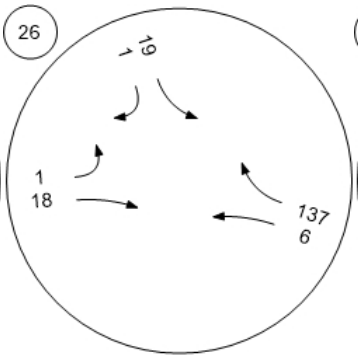
Reed Rd at Fairview Industria



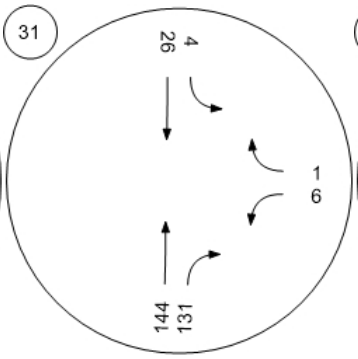
Fairview Industrial Dr at Mari



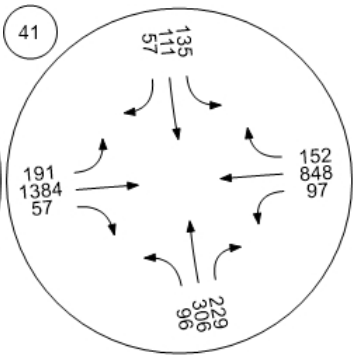
East Access at Strong Rd



27th Ave at Marietta St

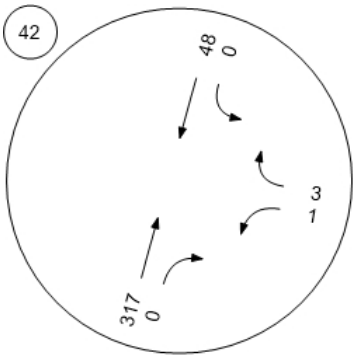


Keubler Blvd at Battle Creek

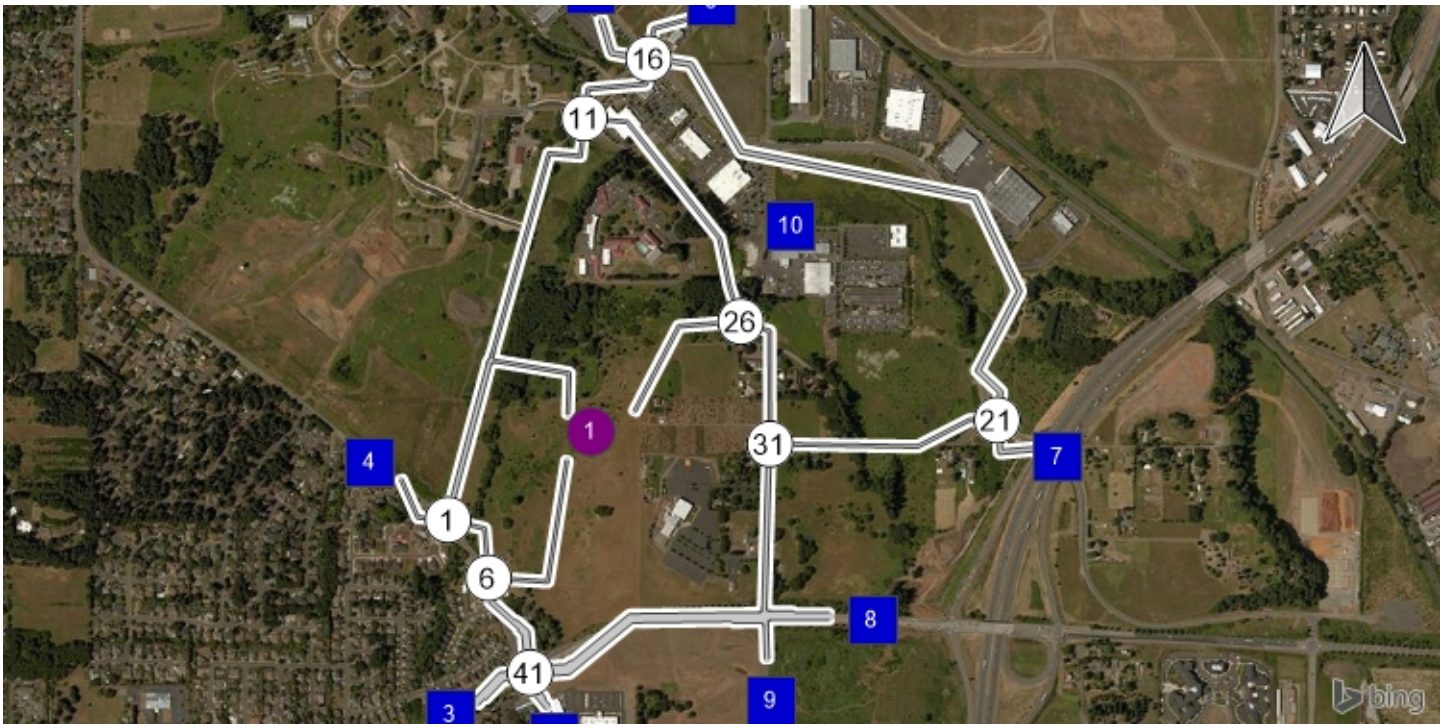


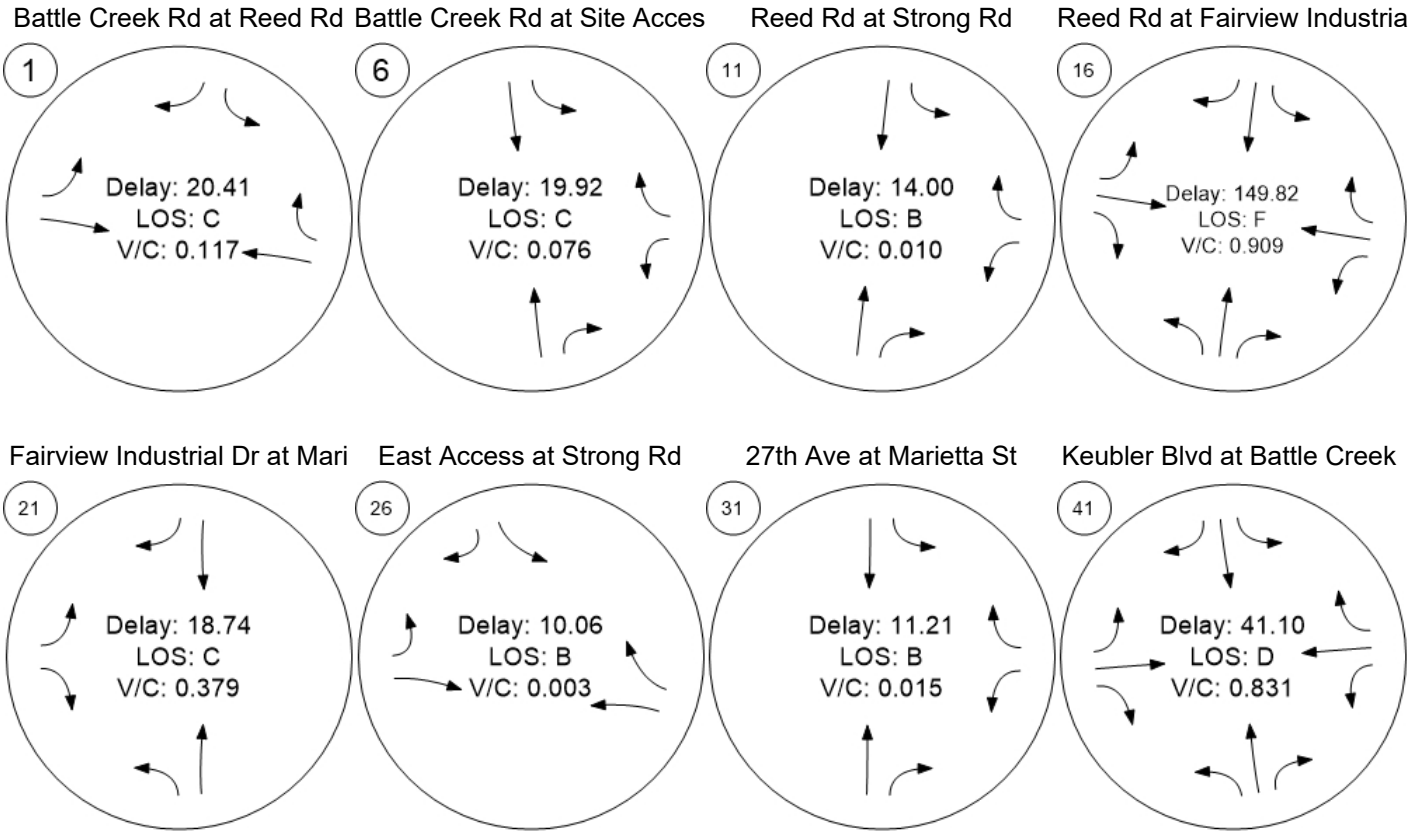
Report Figure 2f: Traffic Volume - Future Total Volume

Reed at Site Access



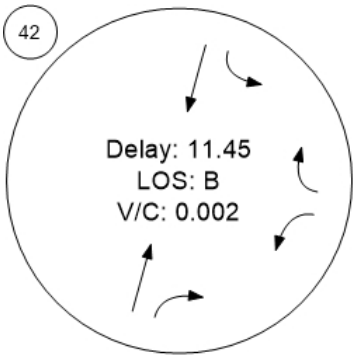
Report Figure 3: Traffic Conditions





Report Figure 3: Traffic Conditions

Reed at Site Access



18-392 Strong at 27th Subdivision TIA

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Scenario 5 AM Dev 2023 Ph 2
6/19/2018

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Battle Creek Rd at Reed Rd	Two-way stop	HCM 6th Edition	SB Left	0.131	22.0	C
6	Battle Creek Rd at Site Access	Two-way stop	HCM 6th Edition	WB Left	0.170	24.5	C
11	Reed Rd at Strong Rd	Two-way stop	HCM 6th Edition	WB Left	0.010	14.7	B
16	Reed Rd at Fairview Industrial Dr	Two-way stop	HCM 6th Edition	NB Left	1.025	205.7	F
21	Fairview Industrial Dr at Marietta St	Two-way stop	HCM 6th Edition	EB Left	0.413	20.2	C
26	East Access at Strong Rd	Two-way stop	HCM 6th Edition	EB Left	0.004	10.4	B
31	27th Ave at Marietta St	Two-way stop	HCM 6th Edition	WB Left	0.017	11.7	B
36	27th at Kuebler Blvd	Signalized	HCM 6th Edition	SB Left	0.813	24.1	C
41	Keubler Blvd at Battle Creek Rd	Signalized	HCM 6th Edition	NB Right	0.871	46.3	D
42	Reed at Site Access	Two-way stop	HCM 6th Edition	WB Left	0.002	11.7	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. for all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Battle Creek Rd at Reed Rd

Control Type:	Two-way stop	Delay (sec / veh):	22.0
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.131

Intersection Setup

Name	Reed Rd		Battle Creek Rd		Battle Creek Rd	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Reed Rd		Battle Creek Rd		Battle Creek Rd	
Base Volume Input [veh/h]	25	6	34	233	361	264
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	3.20	3.20	7.10	7.10	3.80	3.80
Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	1	0	2	5	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	27	7	37	254	395	285
Peak Hour Factor	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	2	11	75	116	84
Total Analysis Volume [veh/h]	32	8	44	299	465	335
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.13	0.02	0.05	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	21.98	12.66	9.76	0.00	0.00	0.00
Movement LOS	C	B	A	A	A	A
95th-Percentile Queue Length [veh]	0.45	0.05	2.17	2.17	0.00	0.00
95th-Percentile Queue Length [ft]	11.14	1.28	54.13	54.13	0.00	0.00
d_A, Approach Delay [s/veh]	20.12		1.25		0.00	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	1.04					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 6: Battle Creek Rd at Site Access

Control Type:	Two-way stop	Delay (sec / veh):	24.5
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.170

Intersection Setup

Name	Battle Creek Rd		Battle Creek Rd		Site Access	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Battle Creek Rd		Battle Creek Rd		Site Access	
Base Volume Input [veh/h]	625	0	0	278	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	11	2	0	33	5
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	675	11	2	300	33	5
Peak Hour Factor	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	194	3	1	86	9	1
Total Analysis Volume [veh/h]	776	13	2	345	38	6
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.00	0.17	0.02
d_M, Delay for Movement [s/veh]	0.00	0.00	9.34	0.00	24.45	17.53
Movement LOS	A	A	A	A	C	C
95th-Percentile Queue Length [veh]	0.00	0.00	2.08	2.08	0.66	0.66
95th-Percentile Queue Length [ft]	0.00	0.00	52.01	52.01	16.54	16.54
d_A, Approach Delay [s/veh]	0.00		0.05		23.51	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	0.89					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 11: Reed Rd at Strong Rd

Control Type:	Two-way stop	Delay (sec / veh):	14.7
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.010

Intersection Setup

Name	Reed Rd		Reed Rd		Strong Rd	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Reed Rd		Reed Rd		Strong Rd	
Base Volume Input [veh/h]	302	0	12	43	4	115
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	1.60	1.60	5.50	5.50	1.70	1.70
Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	6	0	3	0	0	2
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	332	0	16	46	4	126
Peak Hour Factor	0.7500	0.7500	0.7500	0.7500	0.7500	0.7500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	111	0	5	15	1	42
Total Analysis Volume [veh/h]	443	0	21	61	5	168
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.02	0.00	0.01	0.27
d_M, Delay for Movement [s/veh]	0.00	0.00	8.34	0.00	14.67	13.16
Movement LOS	A	A	A	A	B	B
95th-Percentile Queue Length [veh]	0.00	0.00	0.24	0.24	1.16	1.16
95th-Percentile Queue Length [ft]	0.00	0.00	6.04	6.04	29.02	29.02
d_A, Approach Delay [s/veh]	0.00		2.14		13.21	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	3.52					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 16: Reed Rd at Fairview Industrial Dr

Control Type:	Two-way stop	Delay (sec / veh):	205.7
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.025

Intersection Setup

Name	Reed Rd			Reed Rd			Fairview Industrial Dr			Fairview Industrial Dr		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	250.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Reed Rd			Reed Rd			Fairview Industrial Dr			Fairview Industrial Dr		
Base Volume Input [veh/h]	220	27	105	3	1	3	24	255	60	8	255	27
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.30	2.30	2.30	0.00	0.00	0.00	4.70	4.70	4.70	5.20	5.20	5.20
Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	8	0	0	0	0	0	0	0	3	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	246	29	113	3	1	3	26	275	68	9	275	29
Peak Hour Factor	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	74	9	34	1	0	1	8	83	20	3	83	9
Total Analysis Volume [veh/h]	296	35	136	4	1	4	31	331	82	11	331	35
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	1.02	0.12	0.20	0.02	0.00	0.01	0.03	0.00	0.00	0.01	0.00	0.00
d_M, Delay for Movement [s/veh]	205.69	205.33	198.58	24.56	17.76	10.53	8.14	0.00	0.00	8.22	0.00	0.00
Movement LOS	F	F	F	C	C	B	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	22.67	22.67	22.67	0.09	0.09	0.09	0.08	0.00	0.00	0.03	0.00	0.00
95th-Percentile Queue Length [ft]	566.85	566.85	566.85	2.35	2.35	2.35	2.03	0.00	0.00	0.74	0.00	0.00
d_A, Approach Delay [s/veh]	203.59			17.57			0.57			0.24		
Approach LOS	F			C			A			A		
d_I, Intersection Delay [s/veh]	73.69											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 21: Fairview Industrial Dr at Marietta St

Control Type:	Two-way stop	Delay (sec / veh):	20.2
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.413

Intersection Setup

Name	Fairview Industrial Dr		Fairview Industrial Dr		Marietta St	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Fairview Industrial Dr		Fairview Industrial Dr		Marietta St	
Base Volume Input [veh/h]	4	372	107	4	118	13
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	4.80	4.80	13.50	13.50	0.80	0.80
Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	2	0	0	0	0	5
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	6	402	116	4	127	19
Peak Hour Factor	0.7600	0.7600	0.7600	0.7600	0.7600	0.7600
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	132	38	1	42	6
Total Analysis Volume [veh/h]	8	529	153	5	167	25
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.01	0.00	0.00	0.41	0.03
d_M, Delay for Movement [s/veh]	7.58	0.00	0.00	0.00	20.24	15.38
Movement LOS	A	A	A	A	C	C
95th-Percentile Queue Length [veh]	0.02	0.00	0.00	0.00	2.20	2.20
95th-Percentile Queue Length [ft]	0.43	0.00	0.00	0.00	55.09	55.09
d_A, Approach Delay [s/veh]	0.11		0.00		19.61	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	4.31					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 26: East Access at Strong Rd

Control Type:	Two-way stop	Delay (sec / veh):	10.4
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.004

Intersection Setup

Name	Strong Rd		East Access		Strong Rd	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Strong Rd		East Access		Strong Rd	
Base Volume Input [veh/h]	18	0	0	0	0	133
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	3	2	36	13	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	19	3	2	36	13	144
Peak Hour Factor	0.6400	0.6400	0.6400	0.6400	0.6400	0.6400
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	1	1	14	5	56
Total Analysis Volume [veh/h]	30	5	3	56	20	225
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Stop	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance		No	
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.07	0.01	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	10.37	9.50	7.31	0.00
Movement LOS	A	A	B	A	A	A
95th-Percentile Queue Length [veh]	0.00	0.00	0.22	0.22	0.55	0.55
95th-Percentile Queue Length [ft]	0.00	0.00	5.57	5.57	13.72	13.72
d_A, Approach Delay [s/veh]	0.00		9.54		0.60	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	2.09					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 31: 27th Ave at Marietta St

Control Type:	Two-way stop	Delay (sec / veh):	11.7
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.017

Intersection Setup

Name	27th Ave		Strong Rd		Marietta St	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	27th Ave		Strong Rd		Marietta St	
Base Volume Input [veh/h]	135	127	1	11	6	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.80	0.80	8.30	8.30	16.70	16.70
Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	11	0	5	31	0	2
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	157	137	6	43	6	2
Peak Hour Factor	0.6400	0.6400	0.6400	0.6400	0.6400	0.6400
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	61	54	2	17	2	1
Total Analysis Volume [veh/h]	245	214	9	67	9	3
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.01	0.00	0.02	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	8.39	0.00	11.74	10.59
Movement LOS	A	A	A	A	B	B
95th-Percentile Queue Length [veh]	0.00	0.00	0.23	0.23	0.06	0.06
95th-Percentile Queue Length [ft]	0.00	0.00	5.73	5.73	1.61	1.61
d_A, Approach Delay [s/veh]	0.00		0.99		11.45	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.39					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 36: 27th at Kuebler Blvd

Control Type:	Signalized	Delay (sec / veh):	24.1
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.813

Intersection Setup

Name	27th Ave			27th Ave			Kuebler Blvd			Kuebler Blvd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	1	1	0	1
Pocket Length [ft]	125.00	100.00	100.00	100.00	100.00	100.00	250.00	100.00	200.00	350.00	100.00	175.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	27th Ave			27th Ave			Kuebler Blvd			Kuebler Blvd		
Base Volume Input [veh/h]	0	7	99	6	2	6	30	1635	0	36	1067	225
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	6.60	6.60	6.60	14.30	14.30	14.30	3.50	3.50	3.50	7.30	7.30	7.30
Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	1	0	29	2	0	0	0	0	0	0	10
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	9	107	35	4	6	32	1766	0	39	1152	253
Peak Hour Factor	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	3	31	10	1	2	9	519	0	11	339	74
Total Analysis Volume [veh/h]	0	11	126	41	5	7	38	2078	0	46	1355	298
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	9	19	0	9	19	0	34	83	0	9	58	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	L	C	R	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	0	16	4	20	4	80	80	4	80	80
g / C, Green / Cycle	0.00	0.13	0.03	0.17	0.03	0.66	0.66	0.04	0.67	0.67
(v / s)_i Volume / Saturation Flow Rate	0.00	0.10	0.03	0.01	0.02	0.66	0.00	0.03	0.44	0.22
s, saturation flow rate [veh/h]	1544	1395	1445	1375	1584	3166	1413	1535	3068	1370
c, Capacity [veh/h]	0	187	48	231	48	2096	936	56	2051	916
d1, Uniform Delay [s]	0.00	49.85	57.68	41.91	57.84	19.93	0.00	57.42	11.80	8.42
k, delay calibration	0.11	0.50	0.11	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.00	22.05	30.55	0.43	25.36	7.34	0.00	24.39	0.37	0.20
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.00	0.73	0.85	0.05	0.80	0.99	0.00	0.82	0.66	0.33
d, Delay for Lane Group [s/veh]	0.00	71.90	88.23	42.34	83.20	27.28	0.00	81.82	12.17	8.63
Lane Group LOS	A	E	F	D	F	C	A	F	B	A
Critical Lane Group	No	Yes	Yes	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh]	0.00	5.10	1.65	0.33	1.48	27.40	0.00	1.77	9.98	3.15
50th-Percentile Queue Length [ft]	0.00	127.41	41.23	8.21	37.04	685.10	0.00	44.15	249.53	78.80
95th-Percentile Queue Length [veh]	0.00	8.80	2.97	0.59	2.67	35.99	0.00	3.18	15.16	5.67
95th-Percentile Queue Length [ft]	0.00	219.97	74.21	14.78	66.68	899.73	0.00	79.47	379.06	141.85

Movement, Approach, & Intersection Results

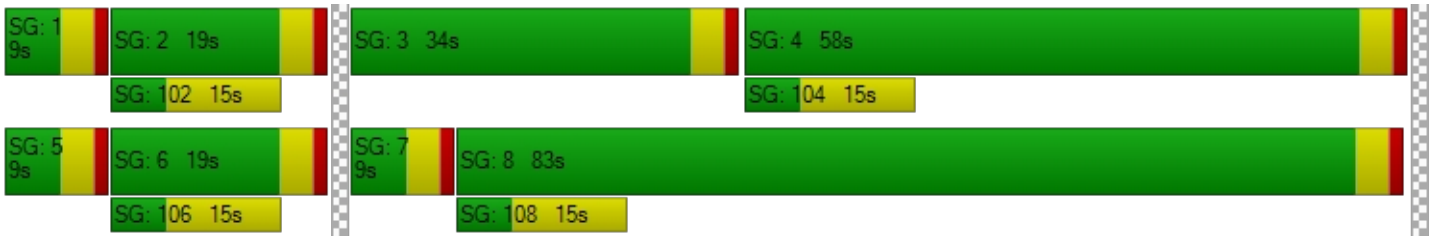
d_M, Delay for Movement [s/veh]	0.00	71.90	71.90	88.23	42.34	42.34	83.20	27.28	0.00	81.82	12.17	8.63
Movement LOS	A	E	E	F	D	D	F	C	A	F	B	A
d_A, Approach Delay [s/veh]	71.90			77.84			28.28			13.43		
Approach LOS	E			E			C			B		
d_I, Intersection Delay [s/veh]	24.13											
Intersection LOS	C											
Intersection V/C	0.813											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	51.34	51.34	51.34	51.34
I_p,int, Pedestrian LOS Score for Intersection	2.017	2.085	3.033	3.109
Crosswalk LOS	B	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	250	250	1317	900
d_b, Bicycle Delay [s]	45.94	45.94	7.00	18.15
I_b,int, Bicycle LOS Score for Intersection	1.786	1.647	3.305	2.961
Bicycle LOS	A	A	C	C

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 41: Keubler Blvd at Battle Creek Rd

Control Type:	Signalized	Delay (sec / veh):	46.3
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.871

Intersection Setup

Name	Battle Creek Rd			Battle Creek Rd			Kuebler Blvd			Kuebler Blvd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	1	0	1	1	0	1	1	0	1
Pocket Length [ft]	100.00	100.00	150.00	275.00	100.00	275.00	350.00	100.00	350.00	250.00	100.00	250.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Battle Creek Rd			Battle Creek Rd			Kuebler Blvd			Kuebler Blvd		
Base Volume Input [veh/h]	93	296	222	131	104	43	182	1344	55	94	823	148
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.40	2.40	2.40	7.20	7.20	7.20	3.20	3.20	3.20	7.40	7.40	7.40
Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	3	0	0	8	25	8	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	100	323	240	141	120	71	205	1452	59	102	889	160
Peak Hour Factor	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	28	90	67	39	33	20	57	403	16	28	247	44
Total Analysis Volume [veh/h]	111	359	267	157	133	79	228	1613	66	113	988	178
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	110
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	12	23	0	15	26	0	35	60	0	12	37	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	110	110	110	110	110	110	110	110	110	110	110	110
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	8	19	19	11	22	22	18	56	56	8	46	46
g / C, Green / Cycle	0.07	0.17	0.17	0.10	0.20	0.20	0.16	0.51	0.51	0.07	0.42	0.42
(v / s)_i Volume / Saturation Flow Rate	0.07	0.11	0.19	0.10	0.08	0.06	0.14	0.51	0.05	0.07	0.32	0.13
s, saturation flow rate [veh/h]	1598	3194	1426	1536	1613	1371	1587	3174	1417	1533	3066	1369
c, Capacity [veh/h]	116	556	248	154	325	276	258	1611	719	112	1281	572
d1, Uniform Delay [s]	50.82	42.28	45.43	49.50	38.24	37.24	45.06	27.08	13.99	51.00	27.49	21.42
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering 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
d2, Incremental Delay [s]	28.94	5.70	78.73	39.26	3.79	2.60	9.71	10.72	0.05	42.63	1.01	0.31
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression 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

Lane Group Results

X, volume / capacity	0.95	0.65	1.08	1.02	0.41	0.29	0.88	1.00	0.09	1.01	0.77	0.31
d, Delay for Lane Group [s/veh]	79.76	47.98	124.16	88.77	42.04	39.83	54.76	37.80	14.04	93.63	28.51	21.72
Lane Group LOS	E	D	F	F	D	D	D	F	B	F	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh]	3.97	4.96	12.15	5.88	3.46	2.00	6.74	22.26	0.85	4.39	11.03	3.09
50th-Percentile Queue Length [ft]	99.28	124.11	303.75	147.02	86.61	50.12	168.54	556.47	21.28	109.67	275.66	77.33
95th-Percentile Queue Length [veh]	7.15	8.62	18.51	9.94	6.24	3.61	11.00	30.03	1.53	7.85	16.47	5.57
95th-Percentile Queue Length [ft]	178.70	215.47	462.86	248.40	155.90	90.21	275.00	750.66	38.31	196.29	411.80	139.20

Movement, Approach, & Intersection Results

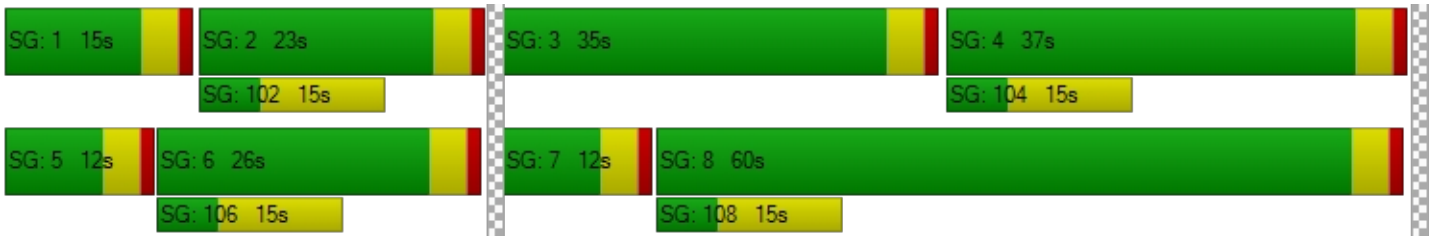
d_M, Delay for Movement [s/veh]	79.76	47.98	124.16	88.77	42.04	39.83	54.76	37.80	14.04	93.63	28.51	21.72
Movement LOS	E	D	F	F	D	D	D	F	B	F	C	C
d_A, Approach Delay [s/veh]	80.36			61.45			39.01			33.32		
Approach LOS	F			E			D			C		
d_I, Intersection Delay [s/veh]	46.34											
Intersection LOS	D											
Intersection V/C	0.871											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	46.37	46.37	46.37	46.37
l_p,int, Pedestrian LOS Score for Intersection	2.516	2.532	2.965	3.003
Crosswalk LOS	B	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	345	400	1018	600
d_b, Bicycle Delay [s]	37.64	35.20	13.25	26.95
l_b,int, Bicycle LOS Score for Intersection	2.168	2.168	3.133	2.615
Bicycle LOS	B	B	C	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 42: Reed at Site Access

Control Type:	Two-way stop	Delay (sec / veh):	11.7
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.002

Intersection Setup

Name	Reed Rd		Reed Rd		Site Access	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Reed Rd		Reed Rd		Site Access	
Base Volume Input [veh/h]	308	0	0	47	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	1	6
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	333	0	0	51	1	6
Peak Hour Factor	0.8000	0.8000	0.8000	0.8000	0.8000	0.8000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	104	0	0	16	0	2
Total Analysis Volume [veh/h]	416	0	0	64	1	8
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.01
d_M, Delay for Movement [s/veh]	0.00	0.00	8.15	0.00	11.69	10.74
Movement LOS	A	A	A	A	B	B
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.00	0.04	0.04
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	0.00	1.10	1.10
d_A, Approach Delay [s/veh]	0.00		0.00		10.85	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.20					
Intersection LOS	B					

18-392 Strong at 27th Subdivision TIA

Vistro File: J:\...\18-392 Reed Rd Subdivision - TIA.vistro
Report File: J:\...\18-392 AM Dev Ph 2.pdf

Scenario 5 AM Dev 2023 Ph 2
6/19/2018

Turning Movement Volume: Summary

ID	Intersection Name	Southbound		Eastbound		Westbound		Total Volume
		Left	Right	Left	Thru	Thru	Right	
1	Battle Creek Rd at Reed Rd	27	7	37	254	395	285	1005

ID	Intersection Name	Northbound		Southbound		Westbound		Total Volume
		Thru	Right	Left	Thru	Left	Right	
6	Battle Creek Rd at Site Access	675	11	2	300	33	5	1026

ID	Intersection Name	Northbound		Southbound		Westbound		Total Volume
		Thru	Right	Left	Thru	Left	Right	
11	Reed Rd at Strong Rd	332	0	16	46	4	126	524

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
16	Reed Rd at Fairview Industrial Dr	246	29	113	3	1	3	26	275	68	9	275	29	1077

ID	Intersection Name	Northbound		Southbound		Eastbound		Total Volume
		Left	Thru	Thru	Right	Left	Right	
21	Fairview Industrial Dr at Marietta St	6	402	116	4	127	19	674

ID	Intersection Name	Southbound		Eastbound		Westbound		Total Volume
		Left	Right	Left	Thru	Thru	Right	
26	East Access at Strong Rd	19	3	2	36	13	144	217

ID	Intersection Name	Northbound		Southbound		Westbound		Total Volume
		Thru	Right	Left	Thru	Left	Right	
31	27th Ave at Marietta St	157	137	6	43	6	2	351

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
36	27th at Kuebler Blvd	0	9	107	35	4	6	32	1766	0	39	1152	253	3403

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
41	Keubler Blvd at Battle Creek Rd	100	323	240	141	120	71	205	1452	59	102	889	160	3862

ID	Intersection Name	Northbound		Southbound		Westbound		Total Volume
		Thru	Right	Left	Thru	Left	Right	
42	Reed at Site Access	333	0	0	51	1	6	391

18-392 Strong at 27th Subdivision TIA

Vistro File: J:\...\18-392 Reed Rd Subdivision - TIA.vistro
Report File: J:\...\18-392 AM Dev Ph 2.pdf

Scenario 5 AM Dev 2023 Ph 2
6/19/2018

Turning Movement Volume: Detail

ID	Intersection Name	Volume Type	Southbound		Eastbound		Westbound		Total Volume
			Left	Right	Left	Thru	Thru	Right	
1	Battle Creek Rd at Reed Rd	Final Base	25	6	34	233	361	264	923
		Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	0	1	0	2	5	0	8
		Other	0	0	0	0	0	0	0
		Future Total	**27**	**7**	**37**	**254**	**395**	**285**	**1005**

ID	Intersection Name	Volume Type	Northbound		Southbound		Westbound		Total Volume
			Thru	Right	Left	Thru	Left	Right	
6	Battle Creek Rd at Site Access	Final Base	625	0	0	278	0	0	903
		Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	0	11	2	0	33	5	51
		Other	0	0	0	0	0	0	0
		Future Total	**675**	**11**	**2**	**300**	**33**	**5**	**1026**

ID	Intersection Name	Volume Type	Northbound		Southbound		Westbound		Total Volume
			Thru	Right	Left	Thru	Left	Right	
11	Reed Rd at Strong Rd	Final Base	302	0	12	43	4	115	476
		Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	6	0	3	0	0	2	11
		Other	0	0	0	0	0	0	0
		Future Total	**332**	**0**	**16**	**46**	**4**	**126**	**524**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
16	Reed Rd at Fairview Industrial Dr	Final Base	220	27	105	3	1	3	24	255	60	8	255	27	988
		Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	8	0	0	0	0	0	0	0	3	0	0	0	11
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**246**	**29**	**113**	**3**	**1**	**3**	**26**	**275**	**68**	**9**	**275**	**29**	**1077**

ID	Intersection Name	Volume Type	Northbound		Southbound		Eastbound		Total Volume
			Left	Thru	Thru	Right	Left	Right	
21	Fairview Industrial Dr at Marietta St	Final Base	4	372	107	4	118	13	618
		Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	2	0	0	0	0	5	7
		Other	0	0	0	0	0	0	0
		Future Total	**6**	**402**	**116**	**4**	**127**	**19**	**674**

ID	Intersection Name	Volume Type	Southbound		Eastbound		Westbound		Total Volume
			Left	Right	Left	Thru	Thru	Right	
26	East Access at Strong Rd	Final Base	18	0	0	0	0	133	151
		Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	0	3	2	36	13	0	54
		Other	0	0	0	0	0	0	0
		Future Total	**19**	**3**	**2**	**36**	**13**	**144**	**217**

ID	Intersection Name	Volume Type	Northbound		Southbound		Westbound		Total Volume
			Thru	Right	Left	Thru	Left	Right	
31	27th Ave at Marietta St	Final Base	135	127	1	11	6	0	280
		Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	11	0	5	31	0	2	49
		Other	0	0	0	0	0	0	0
		Future Total	**157**	**137**	**6**	**43**	**6**	**2**	**351**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
36	27th at Kuebler Blvd	Final Base	0	7	99	6	2	6	30	1635	0	36	1067	225	3113
		Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	1	0	29	2	0	0	0	0	0	0	10	42
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**0**	**9**	**107**	**35**	**4**	**6**	**32**	**1766**	**0**	**39**	**1152**	**253**	**3403**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
41	Keubler Blvd at Battle Creek Rd	Final Base	93	296	222	131	104	43	182	1344	55	94	823	148	3535
		Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	3	0	0	8	25	8	0	0	0	0	0	44
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**100**	**323**	**240**	**141**	**120**	**71**	**205**	**1452**	**59**	**102**	**889**	**160**	**3862**

ID	Intersection Name	Volume Type	Northbound		Southbound		Westbound		Total Volume
			Thru	Right	Left	Thru	Left	Right	
42	Reed at Site Access	Final Base	308	0	0	47	0	0	355
		Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	1	6	7
		Other	0	0	0	0	0	0	0
		Future Total	**333**	**0**	**0**	**51**	**1**	**6**	**391**

Signal Warrants Report For Intersection 1: Battle Creek Rd at Reed Rd

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	E, W
Minor Approaches	N
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	E	W	N
1	680	291	34
2	653	279	33
3	639	274	32
4	544	233	27
5	517	221	26
6	462	198	23
7	428	183	21
8	408	175	20
9	326	140	16
10	306	131	15
11	306	131	15
12	292	125	15
13	265	113	13
14	245	105	12
15	245	105	12
16	238	102	12
17	136	58	7
18	75	32	4
19	68	29	3
20	27	12	1
21	20	9	1
22	20	9	1
23	14	6	1
24	14	6	1

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	971	2	34	No	No	No	No	No	No	No	No	No	No
2	2	932	2	33	No	No	No	No	No	No	No	No	No	No
3	2	913	2	32	No	No	No	No	No	No	No	No	No	No
4	2	777	2	27	No	No	No	No	No	No	No	No	No	No
5	2	738	2	26	No	No	No	No	No	No	No	No	No	No
6	2	660	2	23	No	No	No	No	No	No	No	No	No	No
7	2	611	2	21	No	No	No	No	No	No	No	No	No	No
8	2	583	2	20	No	No	No	No	No	No	No	No	No	No
9	2	466	2	16	No	No	No	No	No	No	No	No	No	No
10	2	437	2	15	No	No	No	No	No	No	No	No	No	No
11	2	437	2	15	No	No	No	No	No	No	No	No	No	No
12	2	417	2	15	No	No	No	No	No	No	No	No	No	No
13	2	378	2	13	No	No	No	No	No	No	No	No	No	No
14	2	350	2	12	No	No	No	No	No	No	No	No	No	No
15	2	350	2	12	No	No	No	No	No	No	No	No	No	No
16	2	340	2	12	No	No	No	No	No	No	No	No	No	No
17	2	194	2	7	No	No	No	No	No	No	No	No	No	No
18	2	107	2	4	No	No	No	No	No	No	No	No	No	No
19	2	97	2	3	No	No	No	No	No	No	No	No	No	No
20	2	39	2	1	No	No	No	No	No	No	No	No	No	No
21	2	29	2	1	No	No	No	No	No	No	No	No	No	No
22	2	29	2	1	No	No	No	No	No	No	No	No	No	No
23	2	20	2	1	No	No	No	No	No	No	No	No	No	No
24	2	20	2	1	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	N
Total Stopped Delay Per Vehicle on Minor Approach (s)	20.1
Number of Lanes on Minor Street Approach	2
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:11
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	34
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	1005
Number of Approaches on Intersection	3
Total Volume Condition Met	Yes
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

Signal Warrants Report For Intersection 6: Battle Creek Rd at Site Access

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	S, N
Minor Approaches	E
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	S	N	E
1	686	302	38
2	659	290	36
3	645	284	36
4	549	242	30
5	521	230	29
6	466	205	26
7	432	190	24
8	412	181	23
9	329	145	18
10	309	136	17
11	309	136	17
12	295	130	16
13	268	118	15
14	247	109	14
15	247	109	14
16	240	106	13
17	137	60	8
18	75	33	4
19	69	30	4
20	27	12	2
21	21	9	1
22	21	9	1
23	14	6	1
24	14	6	1

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	988	1	38	No	No	No	No	No	No	No	No	No	No
2	2	949	1	36	No	No	No	No	No	No	No	No	No	No
3	2	929	1	36	No	No	No	No	No	No	No	No	No	No
4	2	791	1	30	No	No	No	No	No	No	No	No	No	No
5	2	751	1	29	No	No	No	No	No	No	No	No	No	No
6	2	671	1	26	No	No	No	No	No	No	No	No	No	No
7	2	622	1	24	No	No	No	No	No	No	No	No	No	No
8	2	593	1	23	No	No	No	No	No	No	No	No	No	No
9	2	474	1	18	No	No	No	No	No	No	No	No	No	No
10	2	445	1	17	No	No	No	No	No	No	No	No	No	No
11	2	445	1	17	No	No	No	No	No	No	No	No	No	No
12	2	425	1	16	No	No	No	No	No	No	No	No	No	No
13	2	386	1	15	No	No	No	No	No	No	No	No	No	No
14	2	356	1	14	No	No	No	No	No	No	No	No	No	No
15	2	356	1	14	No	No	No	No	No	No	No	No	No	No
16	2	346	1	13	No	No	No	No	No	No	No	No	No	No
17	2	197	1	8	No	No	No	No	No	No	No	No	No	No
18	2	108	1	4	No	No	No	No	No	No	No	No	No	No
19	2	99	1	4	No	No	No	No	No	No	No	No	No	No
20	2	39	1	2	No	No	No	No	No	No	No	No	No	No
21	2	30	1	1	No	No	No	No	No	No	No	No	No	No
22	2	30	1	1	No	No	No	No	No	No	No	No	No	No
23	2	20	1	1	No	No	No	No	No	No	No	No	No	No
24	2	20	1	1	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	E
Total Stopped Delay Per Vehicle on Minor Approach (s)	23.5
Number of Lanes on Minor Street Approach	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:14
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	38
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	1026
Number of Approaches on Intersection	3
Total Volume Condition Met	Yes
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

Signal Warrants Report For Intersection 11: Reed Rd at Strong Rd

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	N, S
Minor Approaches	E
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	N	S	E
1	62	332	130
2	60	319	125
3	58	312	122
4	50	266	104
5	47	252	99
6	42	226	88
7	39	209	82
8	37	199	78
9	30	159	62
10	28	149	59
11	28	149	59
12	27	143	56
13	24	129	51
14	22	120	47
15	22	120	47
16	22	116	46
17	12	66	26
18	7	37	14
19	6	33	13
20	2	13	5
21	2	10	4
22	2	10	4
23	1	7	3
24	1	7	3

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	394	1	130	No	No	No	Yes	No	No	No	No	No	No
2	2	379	1	125	No	No	No	Yes	No	No	No	No	No	No
3	2	370	1	122	No	No	No	Yes	No	No	No	No	No	No
4	2	316	1	104	No	No	No	No	No	No	No	No	No	No
5	2	299	1	99	No	No	No	No	No	No	No	No	No	No
6	2	268	1	88	No	No	No	No	No	No	No	No	No	No
7	2	248	1	82	No	No	No	No	No	No	No	No	No	No
8	2	236	1	78	No	No	No	No	No	No	No	No	No	No
9	2	189	1	62	No	No	No	No	No	No	No	No	No	No
10	2	177	1	59	No	No	No	No	No	No	No	No	No	No
11	2	177	1	59	No	No	No	No	No	No	No	No	No	No
12	2	170	1	56	No	No	No	No	No	No	No	No	No	No
13	2	153	1	51	No	No	No	No	No	No	No	No	No	No
14	2	142	1	47	No	No	No	No	No	No	No	No	No	No
15	2	142	1	47	No	No	No	No	No	No	No	No	No	No
16	2	138	1	46	No	No	No	No	No	No	No	No	No	No
17	2	78	1	26	No	No	No	No	No	No	No	No	No	No
18	2	44	1	14	No	No	No	No	No	No	No	No	No	No
19	2	39	1	13	No	No	No	No	No	No	No	No	No	No
20	2	15	1	5	No	No	No	No	No	No	No	No	No	No
21	2	12	1	4	No	No	No	No	No	No	No	No	No	No
22	2	12	1	4	No	No	No	No	No	No	No	No	No	No
23	2	8	1	3	No	No	No	No	No	No	No	No	No	No
24	2	8	1	3	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	3	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	E
Total Stopped Delay Per Vehicle on Minor Approach (s)	13.2
Number of Lanes on Minor Street Approach	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:28
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	130
High Minor Volume Condition Met	Yes
Total Entering Volume on All Approaches During Same Hour	524
Number of Approaches on Intersection	3
Total Volume Condition Met	No
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

Signal Warrants Report For Intersection 16: Reed Rd at Fairview Industrial Dr

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	Yes

Intersection Warrants Parameters

Major Approaches	E, W
Minor Approaches	N, S
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets	
	E	W	N	S
1	313	369	7	388
2	300	354	7	372
3	294	347	7	365
4	250	295	6	310
5	238	280	5	295
6	213	251	5	264
7	197	232	4	244
8	188	221	4	233
9	150	177	3	186
10	141	166	3	175
11	141	166	3	175
12	135	159	3	167
13	122	144	3	151
14	113	133	3	140
15	113	133	3	140
16	110	129	2	136
17	63	74	1	78
18	34	41	1	43
19	31	37	1	39
20	13	15	0	16
21	9	11	0	12
22	9	11	0	12
23	6	7	0	8
24	6	7	0	8

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	4	682	2	395	Yes	Yes	Yes	Yes	No	No	Yes	Yes	Yes	No
2	4	654	2	379	Yes	Yes	Yes	Yes	No	No	Yes	Yes	Yes	No
3	4	641	2	372	Yes	Yes	Yes	Yes	No	No	Yes	Yes	Yes	No
4	4	545	2	316	No	Yes	Yes	Yes	No	No	No	Yes	No	No
5	4	518	2	300	No	Yes	Yes	Yes	No	No	No	Yes	No	No
6	4	464	2	269	No	No	Yes	Yes	No	No	No	No	No	No
7	4	429	2	248	No	No	Yes	Yes	No	No	No	No	No	No
8	4	409	2	237	No	No	No	Yes	No	No	No	No	No	No
9	4	327	2	189	No	No	No	No	No	No	No	No	No	No
10	4	307	2	178	No	No	No	No	No	No	No	No	No	No
11	4	307	2	178	No	No	No	No	No	No	No	No	No	No
12	4	294	2	170	No	No	No	No	No	No	No	No	No	No
13	4	266	2	154	No	No	No	No	No	No	No	No	No	No
14	4	246	2	143	No	No	No	No	No	No	No	No	No	No
15	4	246	2	143	No	No	No	No	No	No	No	No	No	No
16	4	239	2	138	No	No	No	No	No	No	No	No	No	No
17	4	137	2	79	No	No	No	No	No	No	No	No	No	No
18	4	75	2	44	No	No	No	No	No	No	No	No	No	No
19	4	68	2	40	No	No	No	No	No	No	No	No	No	No
20	4	28	2	16	No	No	No	No	No	No	No	No	No	No
21	4	20	2	12	No	No	No	No	No	No	No	No	No	No
22	4	20	2	12	No	No	No	No	No	No	No	No	No	No
23	4	13	2	8	No	No	No	No	No	No	No	No	No	No
24	4	13	2	8	No	No	No	No	No	No	No	No	No	No
Hours Met					3	5	7	8	0	0	3	5	3	0

Warrant 3 Condition A

Orientation	N	S
Total Stopped Delay Per Vehicle on Minor Approach (s)	17.6	203.6
Number of Lanes on Minor Street Approach	1	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:02	21:56
Delay Condition Met	No	Yes
Volume on Minor Street Approach During Same Hour	7	388
High Minor Volume Condition Met	No	Yes
Total Entering Volume on All Approaches During Same Hour	1077	1077
Number of Approaches on Intersection	4	4
Total Volume Condition Met	Yes	Yes
Warrant Met for Approach	No	Yes
Warrant Met for Intersection	**Yes**	

Signal Warrants Report For Intersection 21: Fairview Industrial Dr at Marietta St

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	S, N
Minor Approaches	W
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	S	N	W
1	408	120	146
2	392	115	140
3	384	113	137
4	326	96	117
5	310	91	111
6	277	82	99
7	257	76	92
8	245	72	88
9	196	58	70
10	184	54	66
11	184	54	66
12	175	52	63
13	159	47	57
14	147	43	53
15	147	43	53
16	143	42	51
17	82	24	29
18	45	13	16
19	41	12	15
20	16	5	6
21	12	4	4
22	12	4	4
23	8	2	3
24	8	2	3

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	3	528	1	146	No	Yes	Yes	Yes	No	No	No	Yes	No	No
2	3	507	1	140	No	Yes	Yes	Yes	No	No	No	Yes	No	No
3	3	497	1	137	No	Yes	Yes	Yes	No	No	No	No	No	No
4	3	422	1	117	No	No	Yes	Yes	No	No	No	No	No	No
5	3	401	1	111	No	No	No	Yes	No	No	No	No	No	No
6	3	359	1	99	No	No	No	Yes	No	No	No	No	No	No
7	3	333	1	92	No	No	No	No	No	No	No	No	No	No
8	3	317	1	88	No	No	No	No	No	No	No	No	No	No
9	3	254	1	70	No	No	No	No	No	No	No	No	No	No
10	3	238	1	66	No	No	No	No	No	No	No	No	No	No
11	3	238	1	66	No	No	No	No	No	No	No	No	No	No
12	3	227	1	63	No	No	No	No	No	No	No	No	No	No
13	3	206	1	57	No	No	No	No	No	No	No	No	No	No
14	3	190	1	53	No	No	No	No	No	No	No	No	No	No
15	3	190	1	53	No	No	No	No	No	No	No	No	No	No
16	3	185	1	51	No	No	No	No	No	No	No	No	No	No
17	3	106	1	29	No	No	No	No	No	No	No	No	No	No
18	3	58	1	16	No	No	No	No	No	No	No	No	No	No
19	3	53	1	15	No	No	No	No	No	No	No	No	No	No
20	3	21	1	6	No	No	No	No	No	No	No	No	No	No
21	3	16	1	4	No	No	No	No	No	No	No	No	No	No
22	3	16	1	4	No	No	No	No	No	No	No	No	No	No
23	3	10	1	3	No	No	No	No	No	No	No	No	No	No
24	3	10	1	3	No	No	No	No	No	No	No	No	No	No
Hours Met					0	3	4	6	0	0	0	2	0	0

Warrant 3 Condition A

Orientation	W
Total Stopped Delay Per Vehicle on Minor Approach (s)	19.6
Number of Lanes on Minor Street Approach	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:47
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	146
High Minor Volume Condition Met	Yes
Total Entering Volume on All Approaches During Same Hour	674
Number of Approaches on Intersection	3
Total Volume Condition Met	Yes
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

Signal Warrants Report For Intersection 26: East Access at Strong Rd

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	E, N
Minor Approaches	W
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	E	N	W
1	157	22	38
2	151	21	36
3	148	21	36
4	126	18	30
5	119	17	29
6	107	15	26
7	99	14	24
8	94	13	23
9	75	11	18
10	71	10	17
11	71	10	17
12	68	9	16
13	61	9	15
14	57	8	14
15	57	8	14
16	55	8	13
17	31	4	8
18	17	2	4
19	16	2	4
20	6	1	2
21	5	1	1
22	5	1	1
23	3	0	1
24	3	0	1

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	179	1	38	No	No	No	No	No	No	No	No	No	No
2	2	172	1	36	No	No	No	No	No	No	No	No	No	No
3	2	169	1	36	No	No	No	No	No	No	No	No	No	No
4	2	144	1	30	No	No	No	No	No	No	No	No	No	No
5	2	136	1	29	No	No	No	No	No	No	No	No	No	No
6	2	122	1	26	No	No	No	No	No	No	No	No	No	No
7	2	113	1	24	No	No	No	No	No	No	No	No	No	No
8	2	107	1	23	No	No	No	No	No	No	No	No	No	No
9	2	86	1	18	No	No	No	No	No	No	No	No	No	No
10	2	81	1	17	No	No	No	No	No	No	No	No	No	No
11	2	81	1	17	No	No	No	No	No	No	No	No	No	No
12	2	77	1	16	No	No	No	No	No	No	No	No	No	No
13	2	70	1	15	No	No	No	No	No	No	No	No	No	No
14	2	65	1	14	No	No	No	No	No	No	No	No	No	No
15	2	65	1	14	No	No	No	No	No	No	No	No	No	No
16	2	63	1	13	No	No	No	No	No	No	No	No	No	No
17	2	35	1	8	No	No	No	No	No	No	No	No	No	No
18	2	19	1	4	No	No	No	No	No	No	No	No	No	No
19	2	18	1	4	No	No	No	No	No	No	No	No	No	No
20	2	7	1	2	No	No	No	No	No	No	No	No	No	No
21	2	6	1	1	No	No	No	No	No	No	No	No	No	No
22	2	6	1	1	No	No	No	No	No	No	No	No	No	No
23	2	3	1	1	No	No	No	No	No	No	No	No	No	No
24	2	3	1	1	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	W
Total Stopped Delay Per Vehicle on Minor Approach (s)	9.5
Number of Lanes on Minor Street Approach	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:06
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	38
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	217
Number of Approaches on Intersection	3
Total Volume Condition Met	No
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

Signal Warrants Report For Intersection 31: 27th Ave at Marietta St

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	N, S
Minor Approaches	E
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	N	S	E
1	49	294	8
2	47	282	8
3	46	276	8
4	39	235	6
5	37	223	6
6	33	200	5
7	31	185	5
8	29	176	5
9	24	141	4
10	22	132	4
11	22	132	4
12	21	126	3
13	19	115	3
14	18	106	3
15	18	106	3
16	17	103	3
17	10	59	2
18	5	32	1
19	5	29	1
20	2	12	0
21	1	9	0
22	1	9	0
23	1	6	0
24	1	6	0

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	343	1	8	No	No	No	No	No	No	No	No	No	No
2	2	329	1	8	No	No	No	No	No	No	No	No	No	No
3	2	322	1	8	No	No	No	No	No	No	No	No	No	No
4	2	274	1	6	No	No	No	No	No	No	No	No	No	No
5	2	260	1	6	No	No	No	No	No	No	No	No	No	No
6	2	233	1	5	No	No	No	No	No	No	No	No	No	No
7	2	216	1	5	No	No	No	No	No	No	No	No	No	No
8	2	205	1	5	No	No	No	No	No	No	No	No	No	No
9	2	165	1	4	No	No	No	No	No	No	No	No	No	No
10	2	154	1	4	No	No	No	No	No	No	No	No	No	No
11	2	154	1	4	No	No	No	No	No	No	No	No	No	No
12	2	147	1	3	No	No	No	No	No	No	No	No	No	No
13	2	134	1	3	No	No	No	No	No	No	No	No	No	No
14	2	124	1	3	No	No	No	No	No	No	No	No	No	No
15	2	124	1	3	No	No	No	No	No	No	No	No	No	No
16	2	120	1	3	No	No	No	No	No	No	No	No	No	No
17	2	69	1	2	No	No	No	No	No	No	No	No	No	No
18	2	37	1	1	No	No	No	No	No	No	No	No	No	No
19	2	34	1	1	No	No	No	No	No	No	No	No	No	No
20	2	14	1	0	No	No	No	No	No	No	No	No	No	No
21	2	10	1	0	No	No	No	No	No	No	No	No	No	No
22	2	10	1	0	No	No	No	No	No	No	No	No	No	No
23	2	7	1	0	No	No	No	No	No	No	No	No	No	No
24	2	7	1	0	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	E
Total Stopped Delay Per Vehicle on Minor Approach (s)	11.5
Number of Lanes on Minor Street Approach	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:01
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	8
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	351
Number of Approaches on Intersection	3
Total Volume Condition Met	No
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

Signal Warrants Report For Intersection 42: Reed at Site Access

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	N, S
Minor Approaches	E
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	N	S	E
1	51	333	7
2	49	320	7
3	48	313	7
4	41	266	6
5	39	253	5
6	35	226	5
7	32	210	4
8	31	200	4
9	24	160	3
10	23	150	3
11	23	150	3
12	22	143	3
13	20	130	3
14	18	120	3
15	18	120	3
16	18	117	2
17	10	67	1
18	6	37	1
19	5	33	1
20	2	13	0
21	2	10	0
22	2	10	0
23	1	7	0
24	1	7	0

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	384	1	7	No	No	No	No	No	No	No	No	No	No
2	2	369	1	7	No	No	No	No	No	No	No	No	No	No
3	2	361	1	7	No	No	No	No	No	No	No	No	No	No
4	2	307	1	6	No	No	No	No	No	No	No	No	No	No
5	2	292	1	5	No	No	No	No	No	No	No	No	No	No
6	2	261	1	5	No	No	No	No	No	No	No	No	No	No
7	2	242	1	4	No	No	No	No	No	No	No	No	No	No
8	2	231	1	4	No	No	No	No	No	No	No	No	No	No
9	2	184	1	3	No	No	No	No	No	No	No	No	No	No
10	2	173	1	3	No	No	No	No	No	No	No	No	No	No
11	2	173	1	3	No	No	No	No	No	No	No	No	No	No
12	2	165	1	3	No	No	No	No	No	No	No	No	No	No
13	2	150	1	3	No	No	No	No	No	No	No	No	No	No
14	2	138	1	3	No	No	No	No	No	No	No	No	No	No
15	2	138	1	3	No	No	No	No	No	No	No	No	No	No
16	2	135	1	2	No	No	No	No	No	No	No	No	No	No
17	2	77	1	1	No	No	No	No	No	No	No	No	No	No
18	2	43	1	1	No	No	No	No	No	No	No	No	No	No
19	2	38	1	1	No	No	No	No	No	No	No	No	No	No
20	2	15	1	0	No	No	No	No	No	No	No	No	No	No
21	2	12	1	0	No	No	No	No	No	No	No	No	No	No
22	2	12	1	0	No	No	No	No	No	No	No	No	No	No
23	2	8	1	0	No	No	No	No	No	No	No	No	No	No
24	2	8	1	0	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	E
Total Stopped Delay Per Vehicle on Minor Approach (s)	10.8
Number of Lanes on Minor Street Approach	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:01
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	7
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	391
Number of Approaches on Intersection	3
Total Volume Condition Met	No
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

18-392 Strong at 27th Subdivision TIA

Vistro File: J:\...\18-392 Reed Rd Subdivision - TIA.vistro
Report File: J:\...\18-392 AM Dev Ph 2.pdf

Scenario 5 AM Dev 2023 Ph 2
6/19/2018

Trip Generation summary

Added Trips

Zone ID: Name	Land Use variables	Code	Ind. Var.	Rate	Quantity	% In	% Out	Trips In	Trips Out	Total Trips	% of Total Trips
1: 18-392 Reed Rd Sub	Homes	ITE 210	Home	0.740	150.000	25.00	75.00	28	83	111	100.00
					Added Trips Total			**28**	**83**	**111**	**100.00**

18-392 Strong at 27th Subdivision TIA

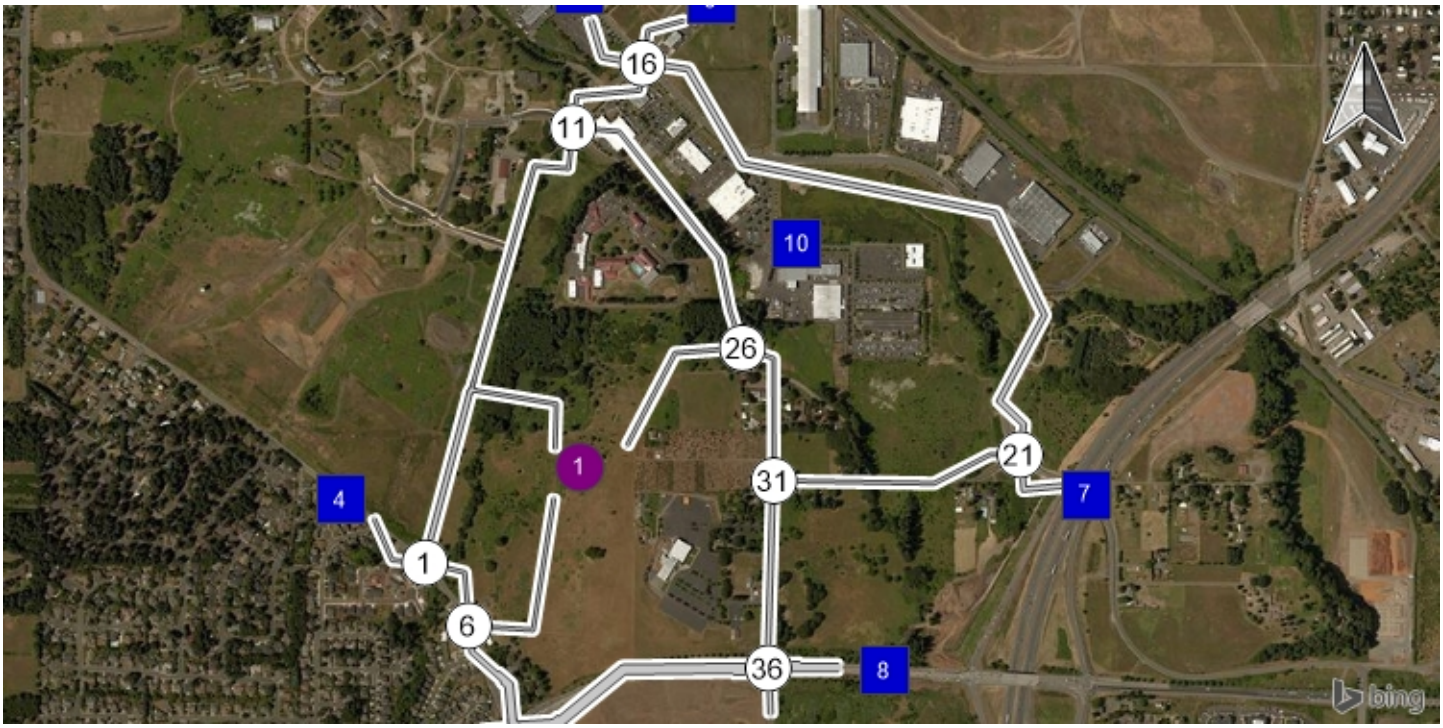
Vistro File: J:\...\18-392 Reed Rd Subdivision - TIA.vistro
Report File: J:\...\18-392 AM Dev Ph 2.pdf

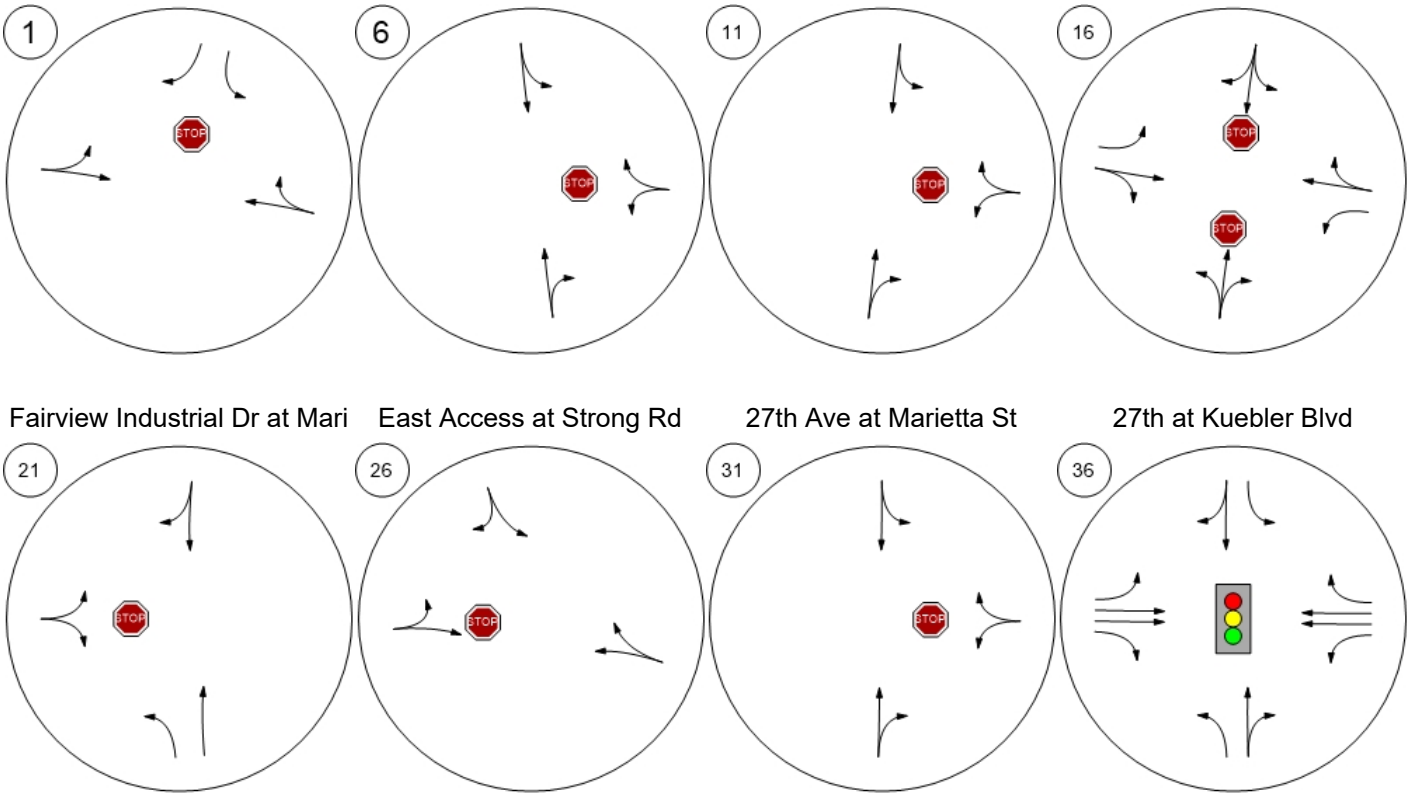
Scenario 5 AM Dev 2023 Ph 2
6/19/2018

Trip Distribution summary

Zone / Gate	Zone 1: 18-392 Reed Rd Sub			
	To 18-392 Reed Rd Sub:		From 18-392 Reed Rd Sub:	
	Share %	Trips	Share %	Trips
2: Gate	10.00	3	10.00	8
3: Gate	30.00	8	30.00	25
4: Gate	7.00	2	7.00	6
5: Gate	10.00	3	10.00	8
6: Gate	0.00	0	0.00	0
7: Gate	6.00	2	6.00	5
8: Gate	35.00	10	35.00	29
9: Gate	2.00	1	2.00	2
10: Gate	0.00	0	0.00	0
Total	**100.00**	**29**	**100.00**	**83**

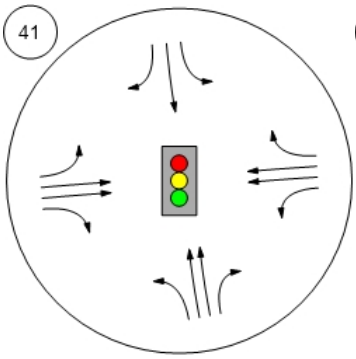
Report Figure 1: Lane Configuration and Traffic Control



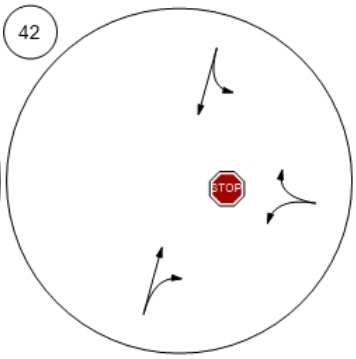


Report Figure 1: Lane Configuration and Traffic Control

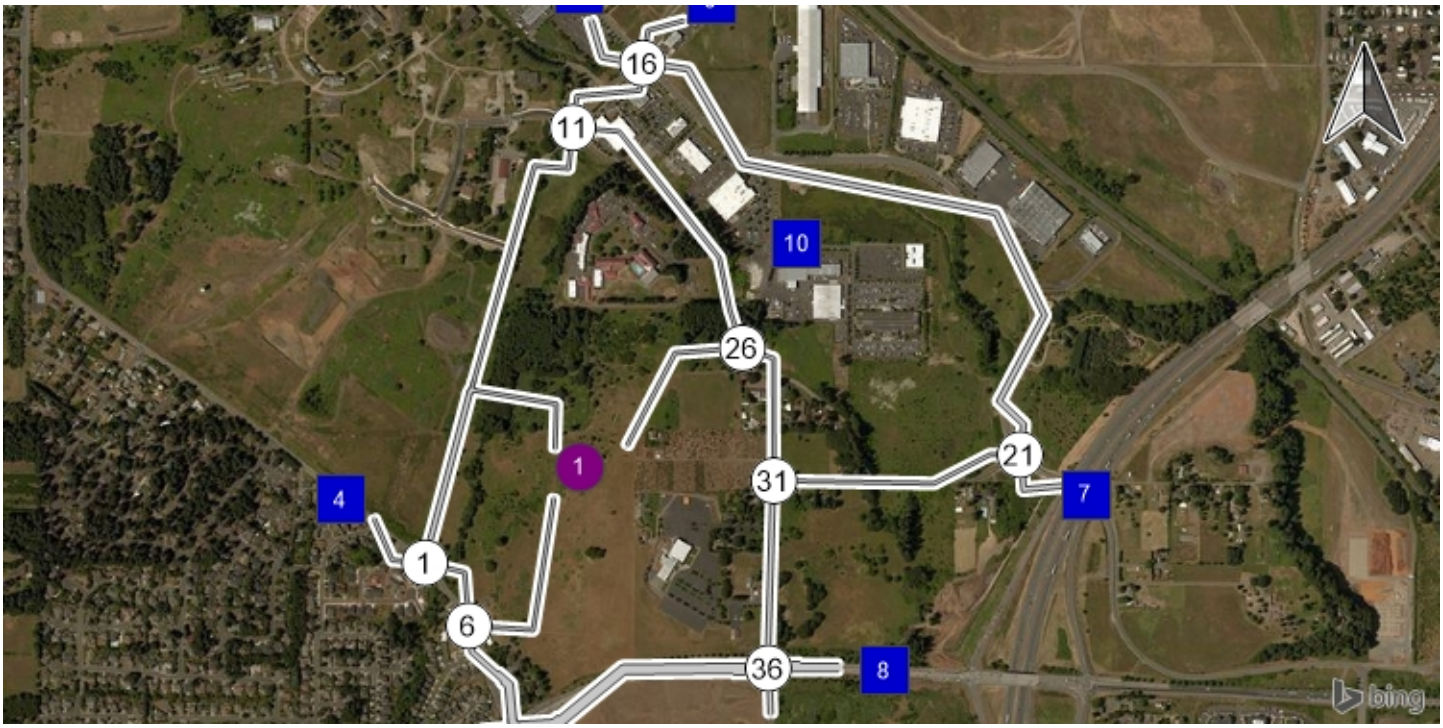
Keubler Blvd at Battle Creek



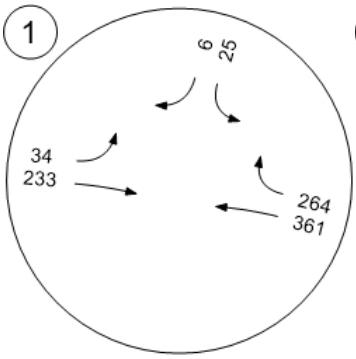
Reed at Site Access



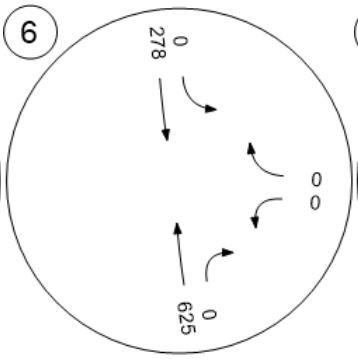
Report Figure 2a: Traffic Volume - Base Volume



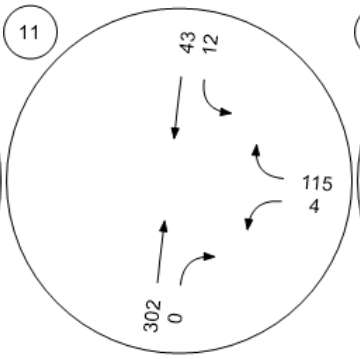
Battle Creek Rd at Reed Rd



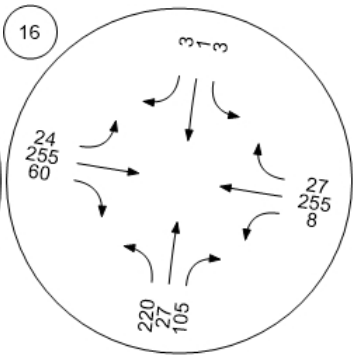
Battle Creek Rd at Site Acces



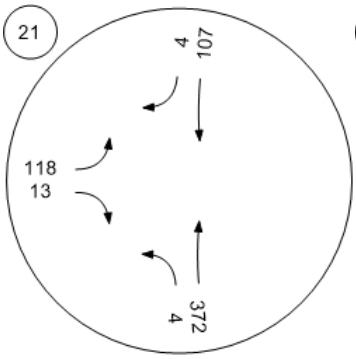
Reed Rd at Strong Rd



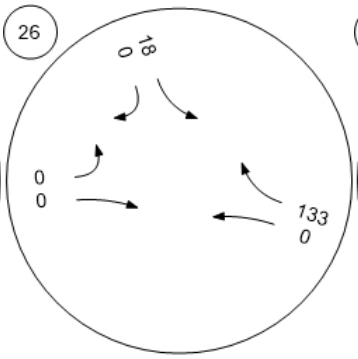
Reed Rd at Fairview Industria



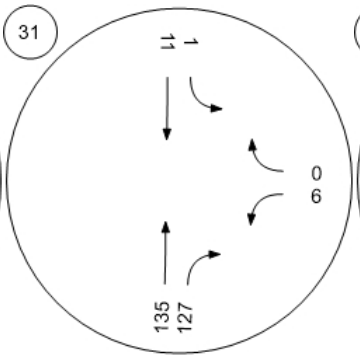
Fairview Industrial Dr at Mari



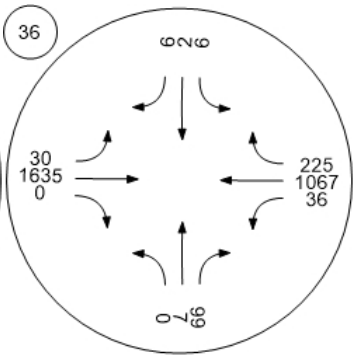
East Access at Strong Rd



27th Ave at Marietta St

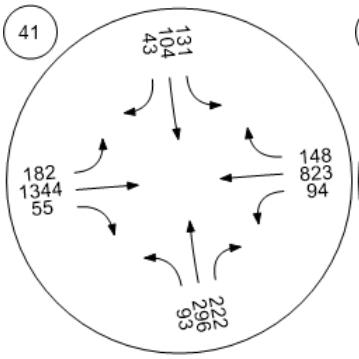


27th at Kuebler Blvd

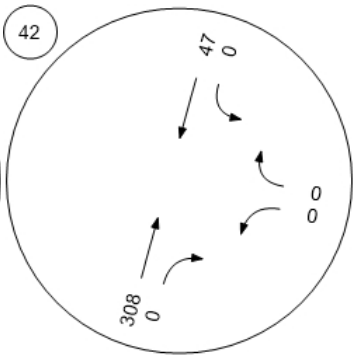


Report Figure 2a: Traffic Volume - Base Volume

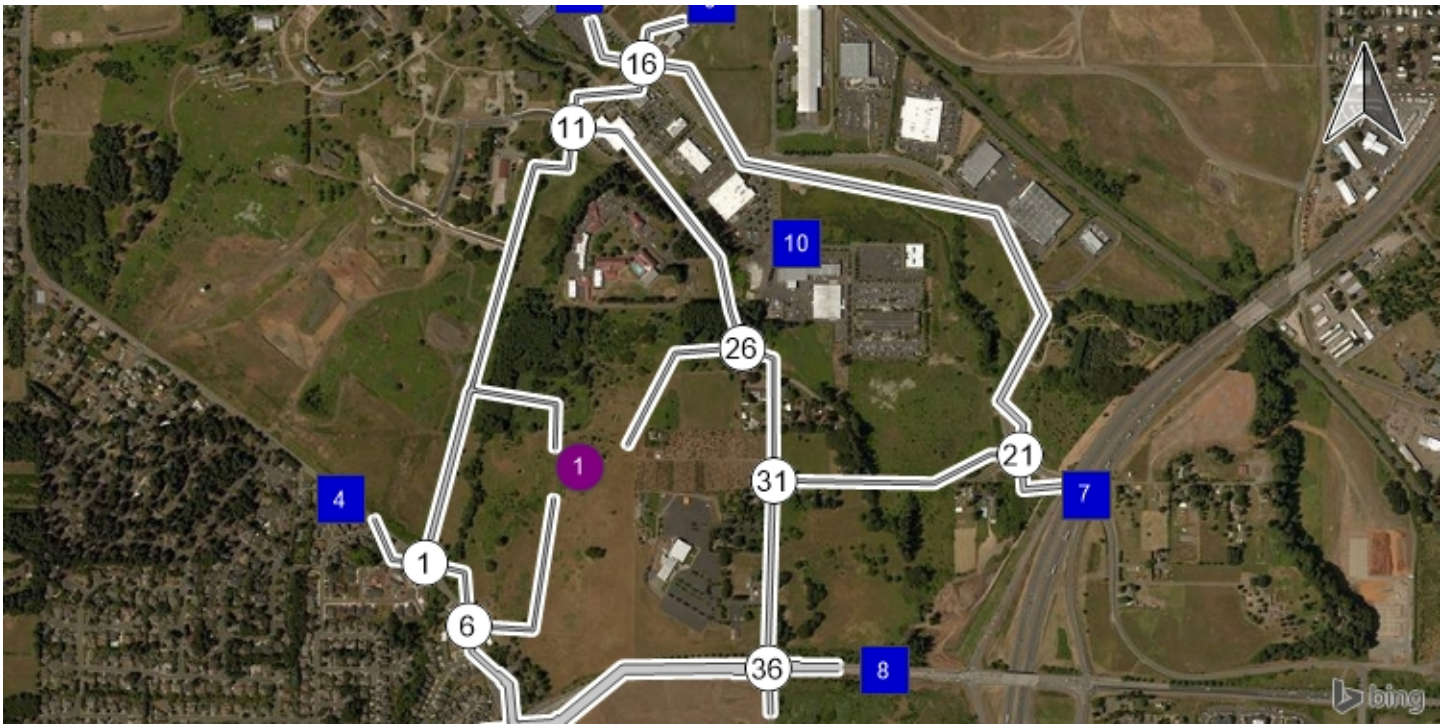
Keubler Blvd at Battle Creek

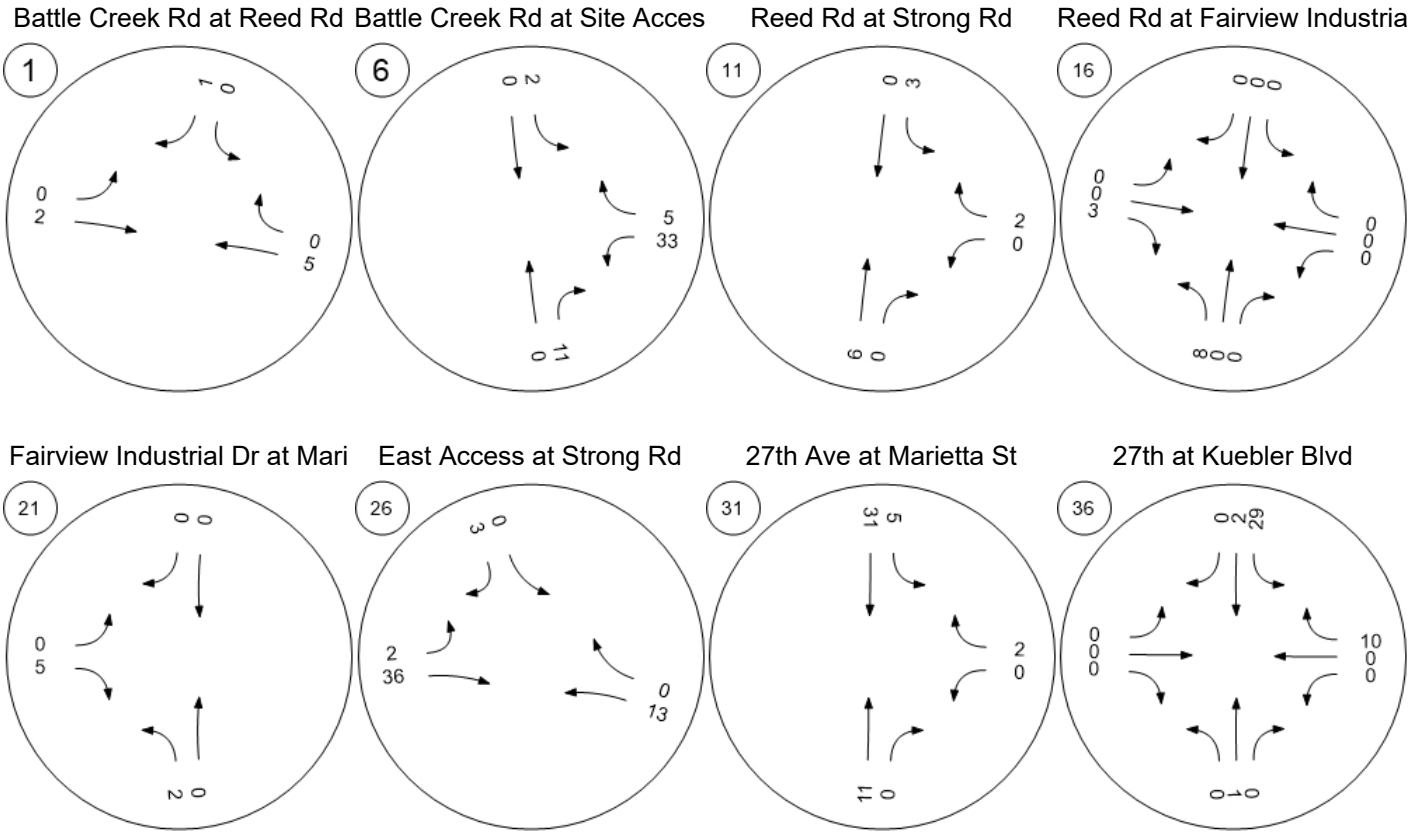


Reed at Site Access



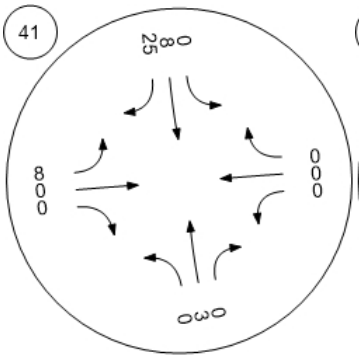
Report Figure 2d: Traffic Volume - Net New Site Trips



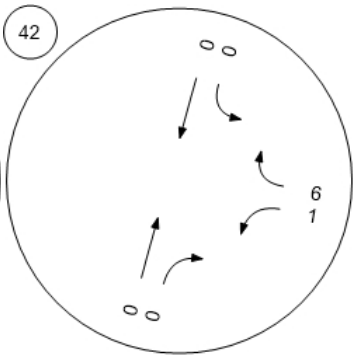


Report Figure 2d: Traffic Volume - Net New Site Trips

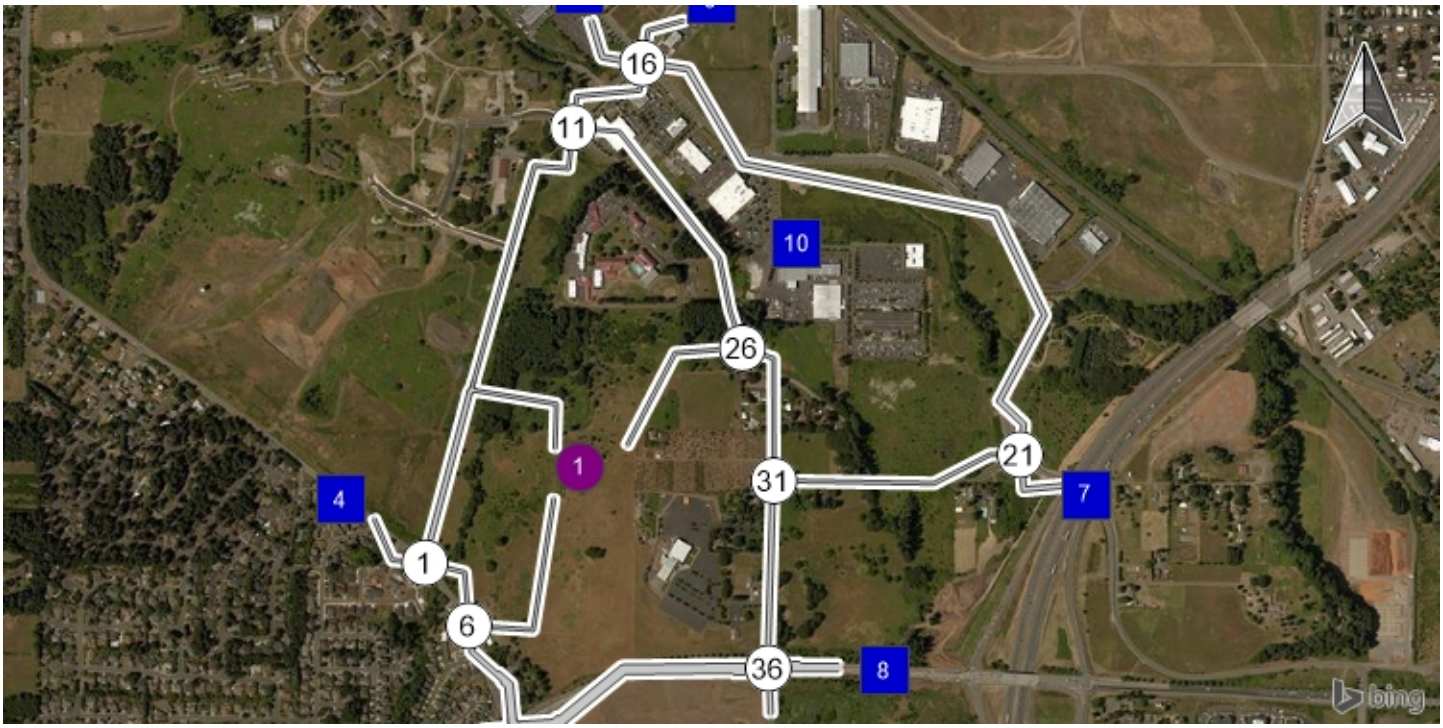
Keubler Blvd at Battle Creek



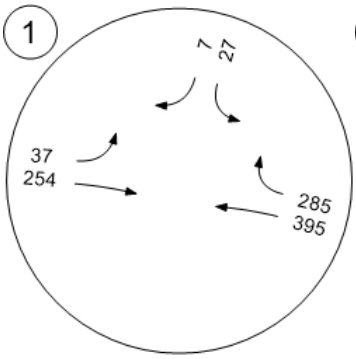
Reed at Site Access



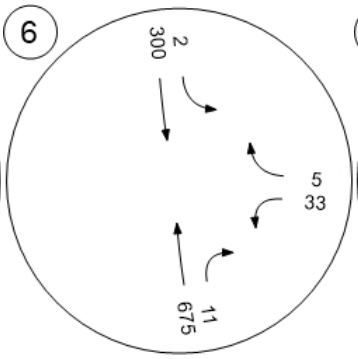
Report Figure 2f: Traffic Volume - Future Total Volume



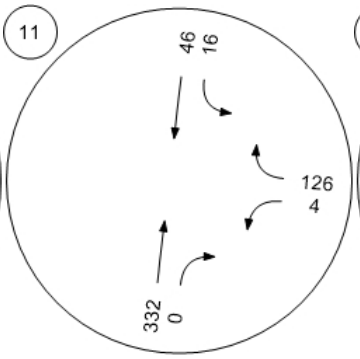
Battle Creek Rd at Reed Rd



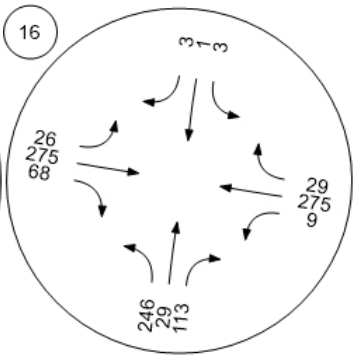
Battle Creek Rd at Site Acces



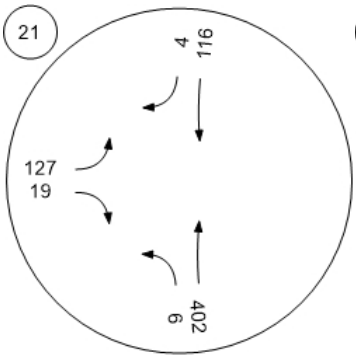
Reed Rd at Strong Rd



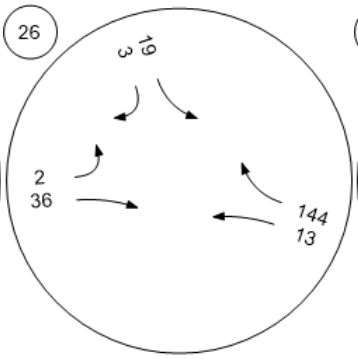
Reed Rd at Fairview Industria



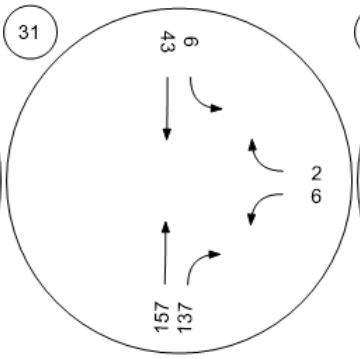
Fairview Industrial Dr at Mari



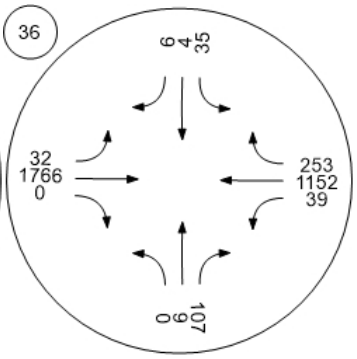
East Access at Strong Rd



27th Ave at Marietta St

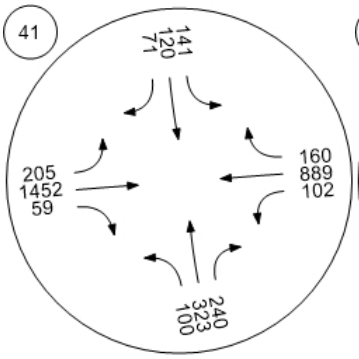


27th at Kuebler Blvd

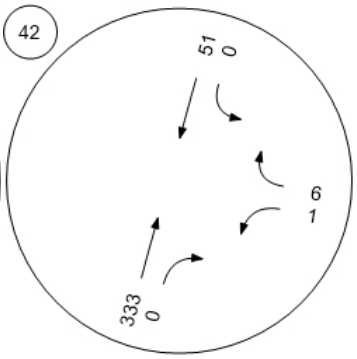


Report Figure 2f: Traffic Volume - Future Total Volume

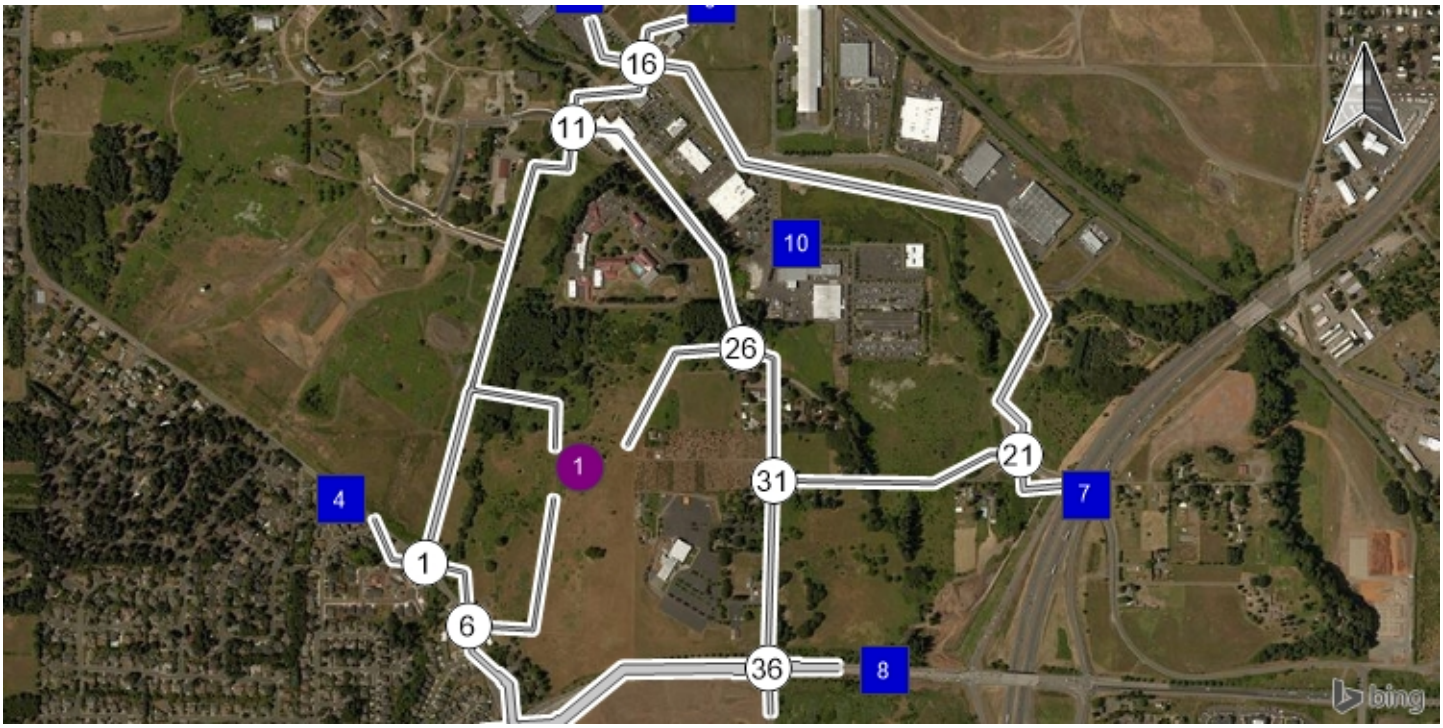
Keubler Blvd at Battle Creek

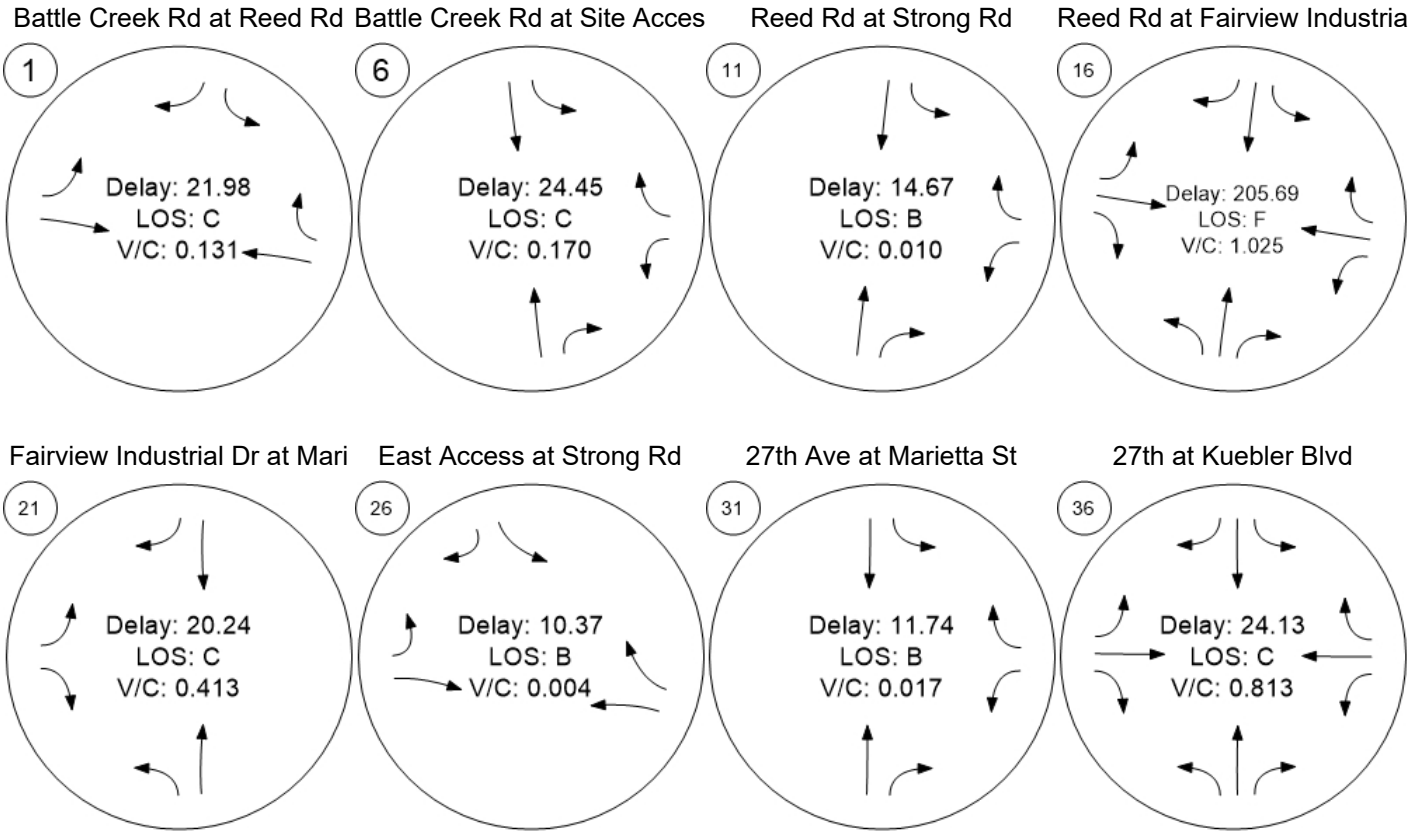


Reed at Site Access



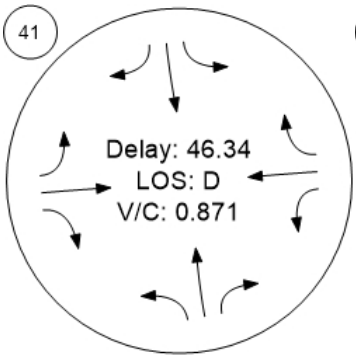
Report Figure 3: Traffic Conditions



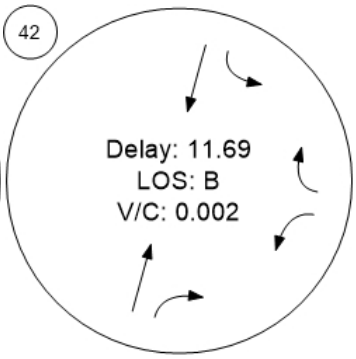


Report Figure 3: Traffic Conditions

Keubler Blvd at Battle Creek



Reed at Site Access



18-392 Strong at 27th Subdivision TIA

Vistro File: J:\...\18-392 Reed Rd Subdivision - TIA.vistro
Report File: J:\...\18-392 AM Dev Ph 3.pdf

Scenario 7 AM Dev 2026 Ph 3
6/19/2018

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Battle Creek Rd at Reed Rd	Two-way stop	HCM 6th Edition	SB Left	0.145	23.5	C
6	Battle Creek Rd at Site Access	Two-way stop	HCM 6th Edition	WB Left	0.271	29.0	D
11	Reed Rd at Strong Rd	Two-way stop	HCM 6th Edition	WB Left	0.015	15.5	C
16	Reed Rd at Fairview Industrial Dr	Two-way stop	HCM 6th Edition	NB Left	1.158	275.6	F
21	Fairview Industrial Dr at Marietta St	Two-way stop	HCM 6th Edition	EB Left	0.456	22.3	C
26	East Access at Strong Rd	Two-way stop	HCM 6th Edition	EB Left	0.009	10.7	B
31	27th Ave at Marietta St	Two-way stop	HCM 6th Edition	WB Left	0.022	12.4	B
36	27th at Kuebler Blvd	Signalized	HCM 6th Edition	SB Left	0.863	33.1	C
41	Keubler Blvd at Battle Creek Rd	Signalized	HCM 6th Edition	NB Right	0.911	57.6	E
42	Reed at Site Access	Two-way stop	HCM 6th Edition	WB Left	0.006	11.9	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. for all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Battle Creek Rd at Reed Rd

Control Type:	Two-way stop	Delay (sec / veh):	23.5
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.145

Intersection Setup

Name	Reed Rd		Battle Creek Rd		Battle Creek Rd	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Reed Rd		Battle Creek Rd		Battle Creek Rd	
Base Volume Input [veh/h]	25	6	34	233	361	264
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	3.20	3.20	7.10	7.10	3.80	3.80
Growth Rate	1.13	1.13	1.13	1.13	1.13	1.13
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	2	0	3	7	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	28	9	38	266	415	298
Peak Hour Factor	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	3	11	78	122	88
Total Analysis Volume [veh/h]	33	11	45	313	488	351
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.15	0.02	0.06	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	23.50	13.04	9.94	0.00	0.00	0.00
Movement LOS	C	B	A	A	A	A
95th-Percentile Queue Length [veh]	0.50	0.07	2.46	2.46	0.00	0.00
95th-Percentile Queue Length [ft]	12.47	1.84	61.60	61.60	0.00	0.00
d_A, Approach Delay [s/veh]	20.88		1.25		0.00	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	1.10					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 6: Battle Creek Rd at Site Access

Control Type:	Two-way stop	Delay (sec / veh):	29.0
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.271

Intersection Setup

Name	Battle Creek Rd		Battle Creek Rd		Site Access	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Battle Creek Rd		Battle Creek Rd		Site Access	
Base Volume Input [veh/h]	625	0	0	278	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.13	1.13	1.13	1.13	1.13	1.13
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	17	3	0	49	7
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	706	17	3	314	49	7
Peak Hour Factor	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	203	5	1	90	14	2
Total Analysis Volume [veh/h]	811	20	3	361	56	8
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.00	0.27	0.02
d_M, Delay for Movement [s/veh]	0.00	0.00	9.51	0.00	29.03	21.25
Movement LOS	A	A	A	A	D	C
95th-Percentile Queue Length [veh]	0.00	0.00	2.39	2.39	1.17	1.17
95th-Percentile Queue Length [ft]	0.00	0.00	59.82	59.82	29.17	29.17
d_A, Approach Delay [s/veh]	0.00		0.08		28.06	
Approach LOS	A		A		D	
d_I, Intersection Delay [s/veh]	1.45					
Intersection LOS	D					

Intersection Level Of Service Report
Intersection 11: Reed Rd at Strong Rd

Control Type:	Two-way stop	Delay (sec / veh):	15.5
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.015

Intersection Setup

Name	Reed Rd		Reed Rd		Strong Rd	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Reed Rd		Reed Rd		Strong Rd	
Base Volume Input [veh/h]	302	0	12	43	4	115
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	1.60	1.60	5.50	5.50	1.70	1.70
Growth Rate	1.13	1.13	1.13	1.13	1.13	1.13
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	8	0	4	0	0	4
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	349	0	18	49	5	134
Peak Hour Factor	0.7500	0.7500	0.7500	0.7500	0.7500	0.7500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	116	0	6	16	2	45
Total Analysis Volume [veh/h]	465	0	24	65	7	179
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.02	0.00	0.01	0.30
d_M, Delay for Movement [s/veh]	0.00	0.00	8.41	0.00	15.47	13.78
Movement LOS	A	A	A	A	C	B
95th-Percentile Queue Length [veh]	0.00	0.00	0.27	0.27	1.34	1.34
95th-Percentile Queue Length [ft]	0.00	0.00	6.73	6.73	33.49	33.49
d_A, Approach Delay [s/veh]	0.00		2.27		13.85	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	3.75					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 16: Reed Rd at Fairview Industrial Dr

Control Type:	Two-way stop	Delay (sec / veh):	275.6
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.158

Intersection Setup

Name	Reed Rd			Reed Rd			Fairview Industrial Dr			Fairview Industrial Dr		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	250.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Reed Rd			Reed Rd			Fairview Industrial Dr			Fairview Industrial Dr		
Base Volume Input [veh/h]	220	27	105	3	1	3	24	255	60	8	255	27
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.30	2.30	2.30	0.00	0.00	0.00	4.70	4.70	4.70	5.20	5.20	5.20
Growth Rate	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	12	0	0	0	0	0	0	0	4	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	261	31	119	3	1	3	27	288	72	9	288	31
Peak Hour Factor	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	79	9	36	1	0	1	8	87	22	3	87	9
Total Analysis Volume [veh/h]	314	37	143	4	1	4	33	347	87	11	347	37
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	1.16	0.13	0.22	0.02	0.00	0.01	0.03	0.00	0.00	0.01	0.00	0.00
d_M, Delay for Movement [s/veh]	275.55	275.08	267.75	26.68	18.58	10.71	8.19	0.00	0.00	8.28	0.00	0.00
Movement LOS	F	F	F	D	C	B	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	27.52	27.52	27.52	0.10	0.10	0.10	0.09	0.00	0.00	0.03	0.00	0.00
95th-Percentile Queue Length [ft]	687.92	687.92	687.92	2.56	2.56	2.56	2.20	0.00	0.00	0.75	0.00	0.00
d_A, Approach Delay [s/veh]	273.26			18.69			0.58			0.23		
Approach LOS	F			C			A			A		
d_I, Intersection Delay [s/veh]	99.28											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 21: Fairview Industrial Dr at Marietta St

Control Type:	Two-way stop	Delay (sec / veh):	22.3
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.456

Intersection Setup

Name	Fairview Industrial Dr		Fairview Industrial Dr		Marietta St	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Fairview Industrial Dr		Fairview Industrial Dr		Marietta St	
Base Volume Input [veh/h]	4	372	107	4	118	13
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	4.80	4.80	13.50	13.50	0.80	0.80
Growth Rate	1.13	1.13	1.13	1.13	1.13	1.13
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	3	0	0	0	0	7
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	8	420	121	5	133	22
Peak Hour Factor	0.7600	0.7600	0.7600	0.7600	0.7600	0.7600
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	138	40	2	44	7
Total Analysis Volume [veh/h]	11	553	159	7	175	29
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.01	0.00	0.00	0.46	0.03
d_M, Delay for Movement [s/veh]	7.60	0.00	0.00	0.00	22.32	17.01
Movement LOS	A	A	A	A	C	C
95th-Percentile Queue Length [veh]	0.02	0.00	0.00	0.00	2.61	2.61
95th-Percentile Queue Length [ft]	0.60	0.00	0.00	0.00	65.21	65.21
d_A, Approach Delay [s/veh]	0.15		0.00		21.57	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	4.80					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 26: East Access at Strong Rd

Control Type:	Two-way stop	Delay (sec / veh):	10.7
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.009

Intersection Setup

Name	Strong Rd		East Access		Strong Rd	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Strong Rd		East Access		Strong Rd	
Base Volume Input [veh/h]	18	0	0	0	0	133
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.13	1.13	1.13	1.13	1.13	1.13
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	4	4	54	19	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	20	4	4	54	19	150
Peak Hour Factor	0.6400	0.6400	0.6400	0.6400	0.6400	0.6400
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	2	2	21	7	59
Total Analysis Volume [veh/h]	31	6	6	84	30	234
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Stop	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance		No	
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.01	0.10	0.02	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	10.70	9.70	7.33	0.00
Movement LOS	A	A	B	A	A	A
95th-Percentile Queue Length [veh]	0.00	0.00	0.36	0.36	0.60	0.60
95th-Percentile Queue Length [ft]	0.00	0.00	8.91	8.91	15.02	15.02
d_A, Approach Delay [s/veh]	0.00		9.77		0.83	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	2.81					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 31: 27th Ave at Marietta St

Control Type:	Two-way stop	Delay (sec / veh):	12.4
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.022

Intersection Setup

Name	27th Ave		Strong Rd		Marietta St	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	27th Ave		Strong Rd		Marietta St	
Base Volume Input [veh/h]	135	127	1	11	6	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.80	0.80	8.30	8.30	16.70	16.70
Growth Rate	1.13	1.13	1.13	1.13	1.13	1.13
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	16	0	7	47	0	3
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	169	144	8	59	7	3
Peak Hour Factor	0.6400	0.6400	0.6400	0.6400	0.6400	0.6400
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	66	56	3	23	3	1
Total Analysis Volume [veh/h]	264	225	13	92	11	5
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.01	0.00	0.02	0.01
d_M, Delay for Movement [s/veh]	0.00	0.00	8.50	0.00	12.37	10.84
Movement LOS	A	A	A	A	B	B
95th-Percentile Queue Length [veh]	0.00	0.00	0.34	0.34	0.09	0.09
95th-Percentile Queue Length [ft]	0.00	0.00	8.38	8.38	2.30	2.30
d_A, Approach Delay [s/veh]	0.00		1.05		11.90	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.49					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 36: 27th at Kuebler Blvd

Control Type:	Signalized	Delay (sec / veh):	33.1
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.863

Intersection Setup

Name	27th Ave			27th Ave			Kuebler Blvd			Kuebler Blvd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	1	1	0	1
Pocket Length [ft]	125.00	100.00	100.00	100.00	100.00	100.00	250.00	100.00	200.00	350.00	100.00	175.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	27th Ave			27th Ave			Kuebler Blvd			Kuebler Blvd		
Base Volume Input [veh/h]	0	7	99	6	2	6	30	1635	0	36	1067	225
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	6.60	6.60	6.60	14.30	14.30	14.30	3.50	3.50	3.50	7.30	7.30	7.30
Growth Rate	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	1	0	45	2	0	0	0	0	0	0	15
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	9	112	52	4	7	34	1848	0	41	1206	269
Peak Hour Factor	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	3	33	15	1	2	10	544	0	12	355	79
Total Analysis Volume [veh/h]	0	11	132	61	5	8	40	2174	0	48	1419	316
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	9	19	0	9	19	0	34	83	0	9	58	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	L	C	R	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	0	15	5	20	4	79	79	5	80	80
g / C, Green / Cycle	0.00	0.13	0.04	0.17	0.03	0.66	0.66	0.04	0.67	0.67
(v / s)_i Volume / Saturation Flow Rate	0.00	0.10	0.04	0.01	0.03	0.69	0.00	0.03	0.46	0.23
s, saturation flow rate [veh/h]	1544	1394	1445	1368	1584	3166	1413	1535	3068	1370
c, Capacity [veh/h]	0	176	60	230	49	2091	934	59	2048	914
d1, Uniform Delay [s]	0.00	51.05	57.50	41.95	57.78	20.37	0.00	57.30	12.34	8.62
k, delay calibration	0.11	0.50	0.11	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.00	32.19	56.69	0.47	25.70	21.98	0.00	23.34	0.43	0.22
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.00	0.81	1.01	0.06	0.81	1.04	0.00	0.82	0.69	0.35
d, Delay for Lane Group [s/veh]	0.00	83.24	114.19	42.42	83.48	42.34	0.00	80.64	12.77	8.85
Lane Group LOS	A	F	F	D	F	F	A	F	B	A
Critical Lane Group	No	Yes	Yes	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh]	0.00	5.76	2.78	0.36	1.56	32.29	0.00	1.83	10.92	3.42
50th-Percentile Queue Length [ft]	0.00	143.93	69.50	8.91	38.99	807.16	0.00	45.64	272.91	85.41
95th-Percentile Queue Length [veh]	0.00	9.69	5.00	0.64	2.81	43.06	0.00	3.29	16.33	6.15
95th-Percentile Queue Length [ft]	0.00	242.31	125.09	16.04	70.19	1076.39	0.00	82.16	408.37	153.73

Movement, Approach, & Intersection Results

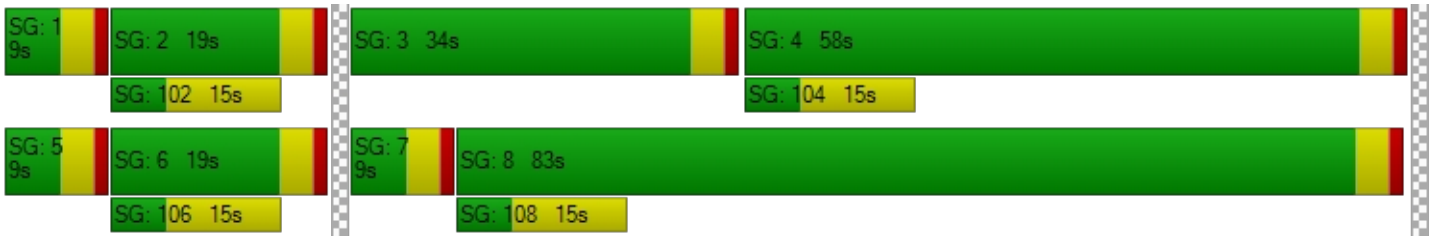
d_M, Delay for Movement [s/veh]	0.00	83.24	83.24	114.19	42.42	42.42	83.48	42.34	0.00	80.64	12.77	8.85
Movement LOS	A	F	F	F	D	D	F	F	A	F	B	A
d_A, Approach Delay [s/veh]	83.24			101.58			43.09			13.90		
Approach LOS	F			F			D			B		
d_I, Intersection Delay [s/veh]	33.13											
Intersection LOS	C											
Intersection V/C	0.863											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	51.34	51.34	51.34	51.34
l_p,int, Pedestrian LOS Score for Intersection	2.019	2.099	3.060	3.142
Crosswalk LOS	B	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	250	250	1317	900
d_b, Bicycle Delay [s]	45.94	45.94	7.00	18.15
l_b,int, Bicycle LOS Score for Intersection	1.796	1.682	3.386	3.031
Bicycle LOS	A	A	C	C

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 41: Keubler Blvd at Battle Creek Rd

Control Type:	Signalized	Delay (sec / veh):	57.6
Analysis Method:	HCM 6th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.911

Intersection Setup

Name	Battle Creek Rd			Battle Creek Rd			Kuebler Blvd			Kuebler Blvd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	1	0	1	1	0	1	1	0	1
Pocket Length [ft]	100.00	100.00	150.00	275.00	100.00	275.00	350.00	100.00	350.00	250.00	100.00	250.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Battle Creek Rd			Battle Creek Rd			Kuebler Blvd			Kuebler Blvd		
Base Volume Input [veh/h]	93	296	222	131	104	43	182	1344	55	94	823	148
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.40	2.40	2.40	7.20	7.20	7.20	3.20	3.20	3.20	7.40	7.40	7.40
Growth Rate	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	4	0	0	12	37	13	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	105	338	251	148	130	86	219	1519	62	106	930	167
Peak Hour Factor	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	29	94	70	41	36	24	61	422	17	29	258	46
Total Analysis Volume [veh/h]	117	376	279	164	144	96	243	1688	69	118	1033	186
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	24	26	0	17	19	0	36	64	0	13	41	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	11	22	22	13	25	25	20	60	60	9	48	48
g / C, Green / Cycle	0.09	0.18	0.18	0.11	0.20	0.20	0.17	0.50	0.50	0.08	0.40	0.40
(v / s)_i Volume / Saturation Flow Rate	0.07	0.12	0.20	0.11	0.09	0.07	0.15	0.53	0.05	0.08	0.34	0.14
s, saturation flow rate [veh/h]	1598	3194	1426	1536	1613	1371	1587	3174	1417	1533	3066	1369
c, Capacity [veh/h]	141	589	263	166	330	281	270	1583	707	115	1237	552
d1, Uniform Delay [s]	53.84	45.24	48.94	53.40	41.67	40.81	48.78	30.08	15.85	55.50	32.19	24.70
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.14	0.12	0.11	0.11	0.11	0.11
I, Upstream Filtering 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
d2, Incremental Delay [s]	11.76	5.22	72.49	28.99	4.15	3.30	12.90	33.76	0.06	45.49	1.56	0.36
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression 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

Lane Group Results

X, volume / capacity	0.83	0.64	1.06	0.99	0.44	0.34	0.90	1.07	0.10	1.02	0.83	0.34
d, Delay for Lane Group [s/veh]	65.59	50.46	121.42	82.39	45.83	44.11	61.68	63.84	15.91	100.99	33.75	25.06
Lane Group LOS	E	D	F	F	D	D	E	F	B	F	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh]	3.93	5.61	13.14	6.27	4.12	2.70	8.08	29.22	1.01	4.93	13.49	3.71
50th-Percentile Queue Length [ft]	98.33	140.24	328.42	156.71	102.98	67.45	201.93	730.49	25.32	123.34	337.35	92.74
95th-Percentile Queue Length [veh]	7.08	9.49	19.66	10.37	7.41	4.86	12.74	40.04	1.82	8.65	19.52	6.68
95th-Percentile Queue Length [ft]	177.00	237.34	491.58	259.36	185.36	121.41	318.45	1000.94	45.58	216.13	487.96	166.93

Movement, Approach, & Intersection Results

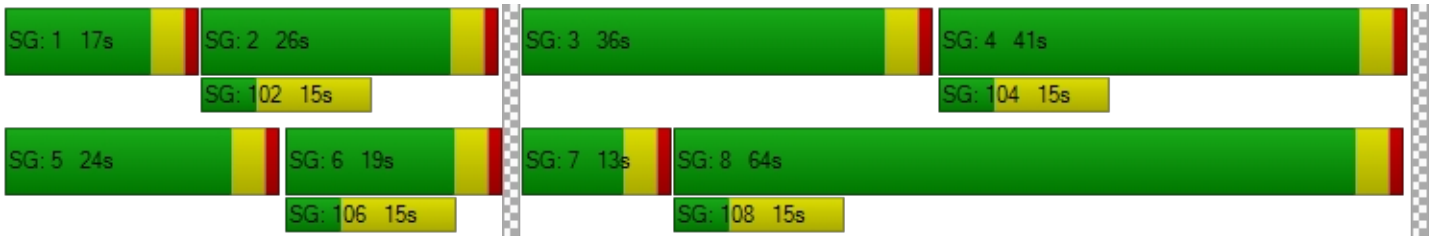
d_M, Delay for Movement [s/veh]	65.59	50.46	121.42	82.39	45.83	44.11	61.68	63.84	15.91	100.99	33.75	25.06
Movement LOS	E	D	F	F	D	D	E	F	B	F	C	C
d_A, Approach Delay [s/veh]	78.40			60.26			61.92			38.47		
Approach LOS	E			E			E			D		
d_I, Intersection Delay [s/veh]	57.64											
Intersection LOS	E											
Intersection V/C	0.911											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	51.34	51.34	51.34	51.34
l_p,int, Pedestrian LOS Score for Intersection	2.530	2.551	2.996	3.032
Crosswalk LOS	B	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	367	250	1000	617
d_b, Bicycle Delay [s]	40.02	45.94	15.00	28.70
l_b,int, Bicycle LOS Score for Intersection	2.197	2.226	3.210	2.663
Bicycle LOS	B	B	C	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 42: Reed at Site Access

Control Type:	Two-way stop	Delay (sec / veh):	11.9
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.006

Intersection Setup

Name	Reed Rd		Reed Rd		Site Access	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Reed Rd		Reed Rd		Site Access	
Base Volume Input [veh/h]	308	0	0	47	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.13	1.13	1.13	1.13	1.13	1.13
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	2	8
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	348	0	0	53	2	8
Peak Hour Factor	0.8000	0.8000	0.8000	0.8000	0.8000	0.8000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	109	0	0	17	1	3
Total Analysis Volume [veh/h]	435	0	0	66	3	10
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.01	0.02
d_M, Delay for Movement [s/veh]	0.00	0.00	8.20	0.00	11.93	10.93
Movement LOS	A	A	A	A	B	B
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.00	0.07	0.07
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	0.00	1.67	1.67
d_A, Approach Delay [s/veh]	0.00		0.00		11.16	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.28					
Intersection LOS	B					

18-392 Strong at 27th Subdivision TIA

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Scenario 7 AM Dev 2026 Ph 3
6/19/2018

Turning Movement Volume: Summary

ID	Intersection Name	Southbound		Eastbound		Westbound		Total Volume
		Left	Right	Left	Thru	Thru	Right	
1	Battle Creek Rd at Reed Rd	28	9	38	266	415	298	1054

ID	Intersection Name	Northbound		Southbound		Westbound		Total Volume
		Thru	Right	Left	Thru	Left	Right	
6	Battle Creek Rd at Site Access	706	17	3	314	49	7	1096

ID	Intersection Name	Northbound		Southbound		Westbound		Total Volume
		Thru	Right	Left	Thru	Left	Right	
11	Reed Rd at Strong Rd	349	0	18	49	5	134	555

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
16	Reed Rd at Fairview Industrial Dr	261	31	119	3	1	3	27	288	72	9	288	31	1133

ID	Intersection Name	Northbound		Southbound		Eastbound		Total Volume
		Left	Thru	Thru	Right	Left	Right	
21	Fairview Industrial Dr at Marietta St	8	420	121	5	133	22	709

ID	Intersection Name	Southbound		Eastbound		Westbound		Total Volume
		Left	Right	Left	Thru	Thru	Right	
26	East Access at Strong Rd	20	4	4	54	19	150	251

ID	Intersection Name	Northbound		Southbound		Westbound		Total Volume
		Thru	Right	Left	Thru	Left	Right	
31	27th Ave at Marietta St	169	144	8	59	7	3	390

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
36	27th at Kuebler Blvd	0	9	112	52	4	7	34	1848	0	41	1206	269	3582

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
41	Keubler Blvd at Battle Creek Rd	105	338	251	148	130	86	219	1519	62	106	930	167	4061

ID	Intersection Name	Northbound		Southbound		Westbound		Total Volume
		Thru	Right	Left	Thru	Left	Right	
42	Reed at Site Access	348	0	0	53	2	8	411

18-392 Strong at 27th Subdivision TIA

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Report File: J:\...\18-392 AM Dev Ph 3.pdf

Scenario 7 AM Dev 2026 Ph 3
6/19/2018

Turning Movement Volume: Detail

ID	Intersection Name	Volume Type	Southbound		Eastbound		Westbound		Total Volume
			Left	Right	Left	Thru	Thru	Right	
1	Battle Creek Rd at Reed Rd	Final Base	25	6	34	233	361	264	923
		Growth Rate	1.13	1.13	1.13	1.13	1.13	1.13	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	0	2	0	3	7	0	12
		Other	0	0	0	0	0	0	0
		Future Total	**28**	**9**	**38**	**266**	**415**	**298**	**1054**

ID	Intersection Name	Volume Type	Northbound		Southbound		Westbound		Total Volume
			Thru	Right	Left	Thru	Left	Right	
6	Battle Creek Rd at Site Access	Final Base	625	0	0	278	0	0	903
		Growth Rate	1.13	1.13	1.13	1.13	1.13	1.13	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	0	17	3	0	49	7	76
		Other	0	0	0	0	0	0	0
		Future Total	**706**	**17**	**3**	**314**	**49**	**7**	**1096**

ID	Intersection Name	Volume Type	Northbound		Southbound		Westbound		Total Volume
			Thru	Right	Left	Thru	Left	Right	
11	Reed Rd at Strong Rd	Final Base	302	0	12	43	4	115	476
		Growth Rate	1.13	1.13	1.13	1.13	1.13	1.13	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	8	0	4	0	0	4	16
		Other	0	0	0	0	0	0	0
		Future Total	**349**	**0**	**18**	**49**	**5**	**134**	**555**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
16	Reed Rd at Fairview Industrial Dr	Final Base	220	27	105	3	1	3	24	255	60	8	255	27	988
		Growth Rate	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	12	0	0	0	0	0	0	0	4	0	0	0	16
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**261**	**31**	**119**	**3**	**1**	**3**	**27**	**288**	**72**	**9**	**288**	**31**	**1133**

ID	Intersection Name	Volume Type	Northbound		Southbound		Eastbound		Total Volume
			Left	Thru	Thru	Right	Left	Right	
21	Fairview Industrial Dr at Marietta St	Final Base	4	372	107	4	118	13	618
		Growth Rate	1.13	1.13	1.13	1.13	1.13	1.13	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	3	0	0	0	0	7	10
		Other	0	0	0	0	0	0	0
		Future Total	**8**	**420**	**121**	**5**	**133**	**22**	**709**

ID	Intersection Name	Volume Type	Southbound		Eastbound		Westbound		Total Volume
			Left	Right	Left	Thru	Thru	Right	
26	East Access at Strong Rd	Final Base	18	0	0	0	0	133	151
		Growth Rate	1.13	1.13	1.13	1.13	1.13	1.13	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	0	4	4	54	19	0	81
		Other	0	0	0	0	0	0	0
		Future Total	**20**	**4**	**4**	**54**	**19**	**150**	**251**

ID	Intersection Name	Volume Type	Northbound		Southbound		Westbound		Total Volume
			Thru	Right	Left	Thru	Left	Right	
31	27th Ave at Marietta St	Final Base	135	127	1	11	6	0	280
		Growth Rate	1.13	1.13	1.13	1.13	1.13	1.13	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	16	0	7	47	0	3	73
		Other	0	0	0	0	0	0	0
		Future Total	**169**	**144**	**8**	**59**	**7**	**3**	**390**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
36	27th at Kuebler Blvd	Final Base	0	7	99	6	2	6	30	1635	0	36	1067	225	3113
		Growth Rate	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	1	0	45	2	0	0	0	0	0	0	15	63
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**0**	**9**	**112**	**52**	**4**	**7**	**34**	**1848**	**0**	**41**	**1206**	**269**	**3582**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
41	Keubler Blvd at Battle Creek Rd	Final Base	93	296	222	131	104	43	182	1344	55	94	823	148	3535
		Growth Rate	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	4	0	0	12	37	13	0	0	0	0	0	66
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**105**	**338**	**251**	**148**	**130**	**86**	**219**	**1519**	**62**	**106**	**930**	**167**	**4061**

ID	Intersection Name	Volume Type	Northbound		Southbound		Westbound		Total Volume
			Thru	Right	Left	Thru	Left	Right	
42	Reed at Site Access	Final Base	308	0	0	47	0	0	355
		Growth Rate	1.13	1.13	1.13	1.13	1.13	1.13	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	2	8	10
		Other	0	0	0	0	0	0	0
		Future Total	**348**	**0**	**0**	**53**	**2**	**8**	**411**

Signal Warrants Report For Intersection 1: Battle Creek Rd at Reed Rd

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	E, W
Minor Approaches	N
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	E	W	N
1	713	304	37
2	684	292	36
3	670	286	35
4	570	243	30
5	542	231	28
6	485	207	25
7	449	192	23
8	428	182	22
9	342	146	18
10	321	137	17
11	321	137	17
12	307	131	16
13	278	119	14
14	257	109	13
15	257	109	13
16	250	106	13
17	143	61	7
18	78	33	4
19	71	30	4
20	29	12	1
21	21	9	1
22	21	9	1
23	14	6	1
24	14	6	1

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	1017	2	37	No	No	No	No	No	No	No	No	No	No
2	2	976	2	36	No	No	No	No	No	No	No	No	No	No
3	2	956	2	35	No	No	No	No	No	No	No	No	No	No
4	2	813	2	30	No	No	No	No	No	No	No	No	No	No
5	2	773	2	28	No	No	No	No	No	No	No	No	No	No
6	2	692	2	25	No	No	No	No	No	No	No	No	No	No
7	2	641	2	23	No	No	No	No	No	No	No	No	No	No
8	2	610	2	22	No	No	No	No	No	No	No	No	No	No
9	2	488	2	18	No	No	No	No	No	No	No	No	No	No
10	2	458	2	17	No	No	No	No	No	No	No	No	No	No
11	2	458	2	17	No	No	No	No	No	No	No	No	No	No
12	2	438	2	16	No	No	No	No	No	No	No	No	No	No
13	2	397	2	14	No	No	No	No	No	No	No	No	No	No
14	2	366	2	13	No	No	No	No	No	No	No	No	No	No
15	2	366	2	13	No	No	No	No	No	No	No	No	No	No
16	2	356	2	13	No	No	No	No	No	No	No	No	No	No
17	2	204	2	7	No	No	No	No	No	No	No	No	No	No
18	2	111	2	4	No	No	No	No	No	No	No	No	No	No
19	2	101	2	4	No	No	No	No	No	No	No	No	No	No
20	2	41	2	1	No	No	No	No	No	No	No	No	No	No
21	2	30	2	1	No	No	No	No	No	No	No	No	No	No
22	2	30	2	1	No	No	No	No	No	No	No	No	No	No
23	2	20	2	1	No	No	No	No	No	No	No	No	No	No
24	2	20	2	1	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	N
Total Stopped Delay Per Vehicle on Minor Approach (s)	20.9
Number of Lanes on Minor Street Approach	2
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:12
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	37
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	1054
Number of Approaches on Intersection	3
Total Volume Condition Met	Yes
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

Signal Warrants Report For Intersection 6: Battle Creek Rd at Site Access

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	S, N
Minor Approaches	E
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	S	N	E
1	723	317	56
2	694	304	54
3	680	298	53
4	578	254	45
5	549	241	43
6	492	216	38
7	455	200	35
8	434	190	34
9	347	152	27
10	325	143	25
11	325	143	25
12	311	136	24
13	282	124	22
14	260	114	20
15	260	114	20
16	253	111	20
17	145	63	11
18	80	35	6
19	72	32	6
20	29	13	2
21	22	10	2
22	22	10	2
23	14	6	1
24	14	6	1

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	1040	1	56	No	No	No	No	No	No	Yes	Yes	No	No
2	2	998	1	54	No	No	No	No	No	No	Yes	Yes	No	No
3	2	978	1	53	No	No	No	No	No	No	Yes	Yes	No	No
4	2	832	1	45	No	No	No	No	No	No	No	Yes	No	No
5	2	790	1	43	No	No	No	No	No	No	No	Yes	No	No
6	2	708	1	38	No	No	No	No	No	No	No	No	No	No
7	2	655	1	35	No	No	No	No	No	No	No	No	No	No
8	2	624	1	34	No	No	No	No	No	No	No	No	No	No
9	2	499	1	27	No	No	No	No	No	No	No	No	No	No
10	2	468	1	25	No	No	No	No	No	No	No	No	No	No
11	2	468	1	25	No	No	No	No	No	No	No	No	No	No
12	2	447	1	24	No	No	No	No	No	No	No	No	No	No
13	2	406	1	22	No	No	No	No	No	No	No	No	No	No
14	2	374	1	20	No	No	No	No	No	No	No	No	No	No
15	2	374	1	20	No	No	No	No	No	No	No	No	No	No
16	2	364	1	20	No	No	No	No	No	No	No	No	No	No
17	2	208	1	11	No	No	No	No	No	No	No	No	No	No
18	2	115	1	6	No	No	No	No	No	No	No	No	No	No
19	2	104	1	6	No	No	No	No	No	No	No	No	No	No
20	2	42	1	2	No	No	No	No	No	No	No	No	No	No
21	2	32	1	2	No	No	No	No	No	No	No	No	No	No
22	2	32	1	2	No	No	No	No	No	No	No	No	No	No
23	2	20	1	1	No	No	No	No	No	No	No	No	No	No
24	2	20	1	1	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	3	5	0	0

Warrant 3 Condition A

Orientation	E
Total Stopped Delay Per Vehicle on Minor Approach (s)	28.1
Number of Lanes on Minor Street Approach	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:26
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	56
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	1096
Number of Approaches on Intersection	3
Total Volume Condition Met	Yes
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

Signal Warrants Report For Intersection 11: Reed Rd at Strong Rd

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	N, S
Minor Approaches	E
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	N	S	E
1	67	349	139
2	64	335	133
3	63	328	131
4	54	279	111
5	51	265	106
6	46	237	95
7	42	220	88
8	40	209	83
9	32	168	67
10	30	157	63
11	30	157	63
12	29	150	60
13	26	136	54
14	24	126	50
15	24	126	50
16	23	122	49
17	13	70	28
18	7	38	15
19	7	35	14
20	3	14	6
21	2	10	4
22	2	10	4
23	1	7	3
24	1	7	3

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	416	1	139	No	No	No	Yes	No	No	No	No	No	No
2	2	399	1	133	No	No	No	Yes	No	No	No	No	No	No
3	2	391	1	131	No	No	No	Yes	No	No	No	No	No	No
4	2	333	1	111	No	No	No	No	No	No	No	No	No	No
5	2	316	1	106	No	No	No	No	No	No	No	No	No	No
6	2	283	1	95	No	No	No	No	No	No	No	No	No	No
7	2	262	1	88	No	No	No	No	No	No	No	No	No	No
8	2	249	1	83	No	No	No	No	No	No	No	No	No	No
9	2	200	1	67	No	No	No	No	No	No	No	No	No	No
10	2	187	1	63	No	No	No	No	No	No	No	No	No	No
11	2	187	1	63	No	No	No	No	No	No	No	No	No	No
12	2	179	1	60	No	No	No	No	No	No	No	No	No	No
13	2	162	1	54	No	No	No	No	No	No	No	No	No	No
14	2	150	1	50	No	No	No	No	No	No	No	No	No	No
15	2	150	1	50	No	No	No	No	No	No	No	No	No	No
16	2	145	1	49	No	No	No	No	No	No	No	No	No	No
17	2	83	1	28	No	No	No	No	No	No	No	No	No	No
18	2	45	1	15	No	No	No	No	No	No	No	No	No	No
19	2	42	1	14	No	No	No	No	No	No	No	No	No	No
20	2	17	1	6	No	No	No	No	No	No	No	No	No	No
21	2	12	1	4	No	No	No	No	No	No	No	No	No	No
22	2	12	1	4	No	No	No	No	No	No	No	No	No	No
23	2	8	1	3	No	No	No	No	No	No	No	No	No	No
24	2	8	1	3	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	3	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	E
Total Stopped Delay Per Vehicle on Minor Approach (s)	13.8
Number of Lanes on Minor Street Approach	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:32
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	139
High Minor Volume Condition Met	Yes
Total Entering Volume on All Approaches During Same Hour	555
Number of Approaches on Intersection	3
Total Volume Condition Met	No
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

Signal Warrants Report For Intersection 16: Reed Rd at Fairview Industrial Dr

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	Yes
#3	Peak Hour	Yes

Intersection Warrants Parameters

Major Approaches	E, W
Minor Approaches	N, S
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets	
	E	W	N	S
1	328	387	7	411
2	315	372	7	395
3	308	364	7	386
4	262	310	6	329
5	249	294	5	312
6	223	263	5	279
7	207	244	4	259
8	197	232	4	247
9	157	186	3	197
10	148	174	3	185
11	148	174	3	185
12	141	166	3	177
13	128	151	3	160
14	118	139	3	148
15	118	139	3	148
16	115	135	2	144
17	66	77	1	82
18	36	43	1	45
19	33	39	1	41
20	13	15	0	16
21	10	12	0	12
22	10	12	0	12
23	7	8	0	8
24	7	8	0	8

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	4	715	2	418	Yes	Yes	Yes	Yes	No	No	Yes	Yes	Yes	Yes
2	4	687	2	402	Yes	Yes	Yes	Yes	No	No	Yes	Yes	Yes	No
3	4	672	2	393	Yes	Yes	Yes	Yes	No	No	Yes	Yes	Yes	No
4	4	572	2	335	No	Yes	Yes	Yes	No	No	No	Yes	Yes	No
5	4	543	2	317	No	Yes	Yes	Yes	No	No	No	Yes	No	No
6	4	486	2	284	No	Yes	Yes	Yes	No	No	No	No	No	No
7	4	451	2	263	No	No	Yes	Yes	No	No	No	No	No	No
8	4	429	2	251	No	No	Yes	Yes	No	No	No	No	No	No
9	4	343	2	200	No	No	No	Yes	No	No	No	No	No	No
10	4	322	2	188	No	No	No	No	No	No	No	No	No	No
11	4	322	2	188	No	No	No	No	No	No	No	No	No	No
12	4	307	2	180	No	No	No	No	No	No	No	No	No	No
13	4	279	2	163	No	No	No	No	No	No	No	No	No	No
14	4	257	2	151	No	No	No	No	No	No	No	No	No	No
15	4	257	2	151	No	No	No	No	No	No	No	No	No	No
16	4	250	2	146	No	No	No	No	No	No	No	No	No	No
17	4	143	2	83	No	No	No	No	No	No	No	No	No	No
18	4	79	2	46	No	No	No	No	No	No	No	No	No	No
19	4	72	2	42	No	No	No	No	No	No	No	No	No	No
20	4	28	2	16	No	No	No	No	No	No	No	No	No	No
21	4	22	2	12	No	No	No	No	No	No	No	No	No	No
22	4	22	2	12	No	No	No	No	No	No	No	No	No	No
23	4	15	2	8	No	No	No	No	No	No	No	No	No	No
24	4	15	2	8	No	No	No	No	No	No	No	No	No	No
Hours Met					3	6	8	9	0	0	3	5	4	1

Warrant 3 Condition A

Orientation	N	S
Total Stopped Delay Per Vehicle on Minor Approach (s)	18.7	273.3
Number of Lanes on Minor Street Approach	1	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:02	31:11
Delay Condition Met	No	Yes
Volume on Minor Street Approach During Same Hour	7	411
High Minor Volume Condition Met	No	Yes
Total Entering Volume on All Approaches During Same Hour	1133	1133
Number of Approaches on Intersection	4	4
Total Volume Condition Met	Yes	Yes
Warrant Met for Approach	No	Yes
Warrant Met for Intersection	**Yes**	

Signal Warrants Report For Intersection 21: Fairview Industrial Dr at Marietta St

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	S, N
Minor Approaches	W
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	S	N	W
1	428	126	155
2	411	121	149
3	402	118	146
4	342	101	124
5	325	96	118
6	291	86	105
7	270	79	98
8	257	76	93
9	205	60	74
10	193	57	70
11	193	57	70
12	184	54	67
13	167	49	60
14	154	45	56
15	154	45	56
16	150	44	54
17	86	25	31
18	47	14	17
19	43	13	16
20	17	5	6
21	13	4	5
22	13	4	5
23	9	3	3
24	9	3	3

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	3	554	1	155	No	Yes	Yes	Yes	No	No	No	Yes	No	No
2	3	532	1	149	No	Yes	Yes	Yes	No	No	No	Yes	No	No
3	3	520	1	146	No	Yes	Yes	Yes	No	No	No	Yes	No	No
4	3	443	1	124	No	No	Yes	Yes	No	No	No	No	No	No
5	3	421	1	118	No	No	Yes	Yes	No	No	No	No	No	No
6	3	377	1	105	No	No	No	Yes	No	No	No	No	No	No
7	3	349	1	98	No	No	No	Yes	No	No	No	No	No	No
8	3	333	1	93	No	No	No	No	No	No	No	No	No	No
9	3	265	1	74	No	No	No	No	No	No	No	No	No	No
10	3	250	1	70	No	No	No	No	No	No	No	No	No	No
11	3	250	1	70	No	No	No	No	No	No	No	No	No	No
12	3	238	1	67	No	No	No	No	No	No	No	No	No	No
13	3	216	1	60	No	No	No	No	No	No	No	No	No	No
14	3	199	1	56	No	No	No	No	No	No	No	No	No	No
15	3	199	1	56	No	No	No	No	No	No	No	No	No	No
16	3	194	1	54	No	No	No	No	No	No	No	No	No	No
17	3	111	1	31	No	No	No	No	No	No	No	No	No	No
18	3	61	1	17	No	No	No	No	No	No	No	No	No	No
19	3	56	1	16	No	No	No	No	No	No	No	No	No	No
20	3	22	1	6	No	No	No	No	No	No	No	No	No	No
21	3	17	1	5	No	No	No	No	No	No	No	No	No	No
22	3	17	1	5	No	No	No	No	No	No	No	No	No	No
23	3	12	1	3	No	No	No	No	No	No	No	No	No	No
24	3	12	1	3	No	No	No	No	No	No	No	No	No	No
Hours Met					0	3	5	7	0	0	0	3	0	0

Warrant 3 Condition A

Orientation	W
Total Stopped Delay Per Vehicle on Minor Approach (s)	21.6
Number of Lanes on Minor Street Approach	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:55
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	155
High Minor Volume Condition Met	Yes
Total Entering Volume on All Approaches During Same Hour	709
Number of Approaches on Intersection	3
Total Volume Condition Met	Yes
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

Signal Warrants Report For Intersection 26: East Access at Strong Rd

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	E, N
Minor Approaches	W
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	E	N	W
1	169	24	58
2	162	23	56
3	159	23	55
4	135	19	46
5	128	18	44
6	115	16	39
7	106	15	37
8	101	14	35
9	81	12	28
10	76	11	26
11	76	11	26
12	73	10	25
13	66	9	23
14	61	9	21
15	61	9	21
16	59	8	20
17	34	5	12
18	19	3	6
19	17	2	6
20	7	1	2
21	5	1	2
22	5	1	2
23	3	0	1
24	3	0	1

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	193	1	58	No	No	No	No	No	No	No	No	No	No
2	2	185	1	56	No	No	No	No	No	No	No	No	No	No
3	2	182	1	55	No	No	No	No	No	No	No	No	No	No
4	2	154	1	46	No	No	No	No	No	No	No	No	No	No
5	2	146	1	44	No	No	No	No	No	No	No	No	No	No
6	2	131	1	39	No	No	No	No	No	No	No	No	No	No
7	2	121	1	37	No	No	No	No	No	No	No	No	No	No
8	2	115	1	35	No	No	No	No	No	No	No	No	No	No
9	2	93	1	28	No	No	No	No	No	No	No	No	No	No
10	2	87	1	26	No	No	No	No	No	No	No	No	No	No
11	2	87	1	26	No	No	No	No	No	No	No	No	No	No
12	2	83	1	25	No	No	No	No	No	No	No	No	No	No
13	2	75	1	23	No	No	No	No	No	No	No	No	No	No
14	2	70	1	21	No	No	No	No	No	No	No	No	No	No
15	2	70	1	21	No	No	No	No	No	No	No	No	No	No
16	2	67	1	20	No	No	No	No	No	No	No	No	No	No
17	2	39	1	12	No	No	No	No	No	No	No	No	No	No
18	2	22	1	6	No	No	No	No	No	No	No	No	No	No
19	2	19	1	6	No	No	No	No	No	No	No	No	No	No
20	2	8	1	2	No	No	No	No	No	No	No	No	No	No
21	2	6	1	2	No	No	No	No	No	No	No	No	No	No
22	2	6	1	2	No	No	No	No	No	No	No	No	No	No
23	2	3	1	1	No	No	No	No	No	No	No	No	No	No
24	2	3	1	1	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	W
Total Stopped Delay Per Vehicle on Minor Approach (s)	9.8
Number of Lanes on Minor Street Approach	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:09
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	58
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	251
Number of Approaches on Intersection	3
Total Volume Condition Met	No
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

Signal Warrants Report For Intersection 31: 27th Ave at Marietta St

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	N, S
Minor Approaches	E
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	N	S	E
1	67	313	10
2	64	300	10
3	63	294	9
4	54	250	8
5	51	238	8
6	46	213	7
7	42	197	6
8	40	188	6
9	32	150	5
10	30	141	5
11	30	141	5
12	29	135	4
13	26	122	4
14	24	113	4
15	24	113	4
16	23	110	4
17	13	63	2
18	7	34	1
19	7	31	1
20	3	13	0
21	2	9	0
22	2	9	0
23	1	6	0
24	1	6	0

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	380	1	10	No	No	No	No	No	No	No	No	No	No
2	2	364	1	10	No	No	No	No	No	No	No	No	No	No
3	2	357	1	9	No	No	No	No	No	No	No	No	No	No
4	2	304	1	8	No	No	No	No	No	No	No	No	No	No
5	2	289	1	8	No	No	No	No	No	No	No	No	No	No
6	2	259	1	7	No	No	No	No	No	No	No	No	No	No
7	2	239	1	6	No	No	No	No	No	No	No	No	No	No
8	2	228	1	6	No	No	No	No	No	No	No	No	No	No
9	2	182	1	5	No	No	No	No	No	No	No	No	No	No
10	2	171	1	5	No	No	No	No	No	No	No	No	No	No
11	2	171	1	5	No	No	No	No	No	No	No	No	No	No
12	2	164	1	4	No	No	No	No	No	No	No	No	No	No
13	2	148	1	4	No	No	No	No	No	No	No	No	No	No
14	2	137	1	4	No	No	No	No	No	No	No	No	No	No
15	2	137	1	4	No	No	No	No	No	No	No	No	No	No
16	2	133	1	4	No	No	No	No	No	No	No	No	No	No
17	2	76	1	2	No	No	No	No	No	No	No	No	No	No
18	2	41	1	1	No	No	No	No	No	No	No	No	No	No
19	2	38	1	1	No	No	No	No	No	No	No	No	No	No
20	2	16	1	0	No	No	No	No	No	No	No	No	No	No
21	2	11	1	0	No	No	No	No	No	No	No	No	No	No
22	2	11	1	0	No	No	No	No	No	No	No	No	No	No
23	2	7	1	0	No	No	No	No	No	No	No	No	No	No
24	2	7	1	0	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	E
Total Stopped Delay Per Vehicle on Minor Approach (s)	11.9
Number of Lanes on Minor Street Approach	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:01
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	10
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	390
Number of Approaches on Intersection	3
Total Volume Condition Met	No
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

Signal Warrants Report For Intersection 42: Reed at Site Access

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	N, S
Minor Approaches	E
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	N	S	E
1	53	348	10
2	51	334	10
3	50	327	9
4	42	278	8
5	40	264	8
6	36	237	7
7	33	219	6
8	32	209	6
9	25	167	5
10	24	157	5
11	24	157	5
12	23	150	4
13	21	136	4
14	19	125	4
15	19	125	4
16	19	122	4
17	11	70	2
18	6	38	1
19	5	35	1
20	2	14	0
21	2	10	0
22	2	10	0
23	1	7	0
24	1	7	0

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	401	1	10	No	No	No	No	No	No	No	No	No	No
2	2	385	1	10	No	No	No	No	No	No	No	No	No	No
3	2	377	1	9	No	No	No	No	No	No	No	No	No	No
4	2	320	1	8	No	No	No	No	No	No	No	No	No	No
5	2	304	1	8	No	No	No	No	No	No	No	No	No	No
6	2	273	1	7	No	No	No	No	No	No	No	No	No	No
7	2	252	1	6	No	No	No	No	No	No	No	No	No	No
8	2	241	1	6	No	No	No	No	No	No	No	No	No	No
9	2	192	1	5	No	No	No	No	No	No	No	No	No	No
10	2	181	1	5	No	No	No	No	No	No	No	No	No	No
11	2	181	1	5	No	No	No	No	No	No	No	No	No	No
12	2	173	1	4	No	No	No	No	No	No	No	No	No	No
13	2	157	1	4	No	No	No	No	No	No	No	No	No	No
14	2	144	1	4	No	No	No	No	No	No	No	No	No	No
15	2	144	1	4	No	No	No	No	No	No	No	No	No	No
16	2	141	1	4	No	No	No	No	No	No	No	No	No	No
17	2	81	1	2	No	No	No	No	No	No	No	No	No	No
18	2	44	1	1	No	No	No	No	No	No	No	No	No	No
19	2	40	1	1	No	No	No	No	No	No	No	No	No	No
20	2	16	1	0	No	No	No	No	No	No	No	No	No	No
21	2	12	1	0	No	No	No	No	No	No	No	No	No	No
22	2	12	1	0	No	No	No	No	No	No	No	No	No	No
23	2	8	1	0	No	No	No	No	No	No	No	No	No	No
24	2	8	1	0	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	E
Total Stopped Delay Per Vehicle on Minor Approach (s)	11.2
Number of Lanes on Minor Street Approach	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:01
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	10
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	411
Number of Approaches on Intersection	3
Total Volume Condition Met	No
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

18-392 Strong at 27th Subdivision TIA

Vistro File: J:\...\18-392 Reed Rd Subdivision - TIA.vistro
Report File: J:\...\18-392 AM Dev Ph 3.pdf

Scenario 7 AM Dev 2026 Ph 3
6/19/2018

Trip Generation summary

Added Trips

Zone ID: Name	Land Use variables	Code	Ind. Var.	Rate	Quantity	% In	% Out	Trips In	Trips Out	Total Trips	% of Total Trips
1: 18-392 Reed Rd Sub	Homes	ITE 210	Home	0.740	225.000	25.00	75.00	42	124	166	100.00
					Added Trips Total			**42**	**124**	**166**	**100.00**

18-392 Strong at 27th Subdivision TIA

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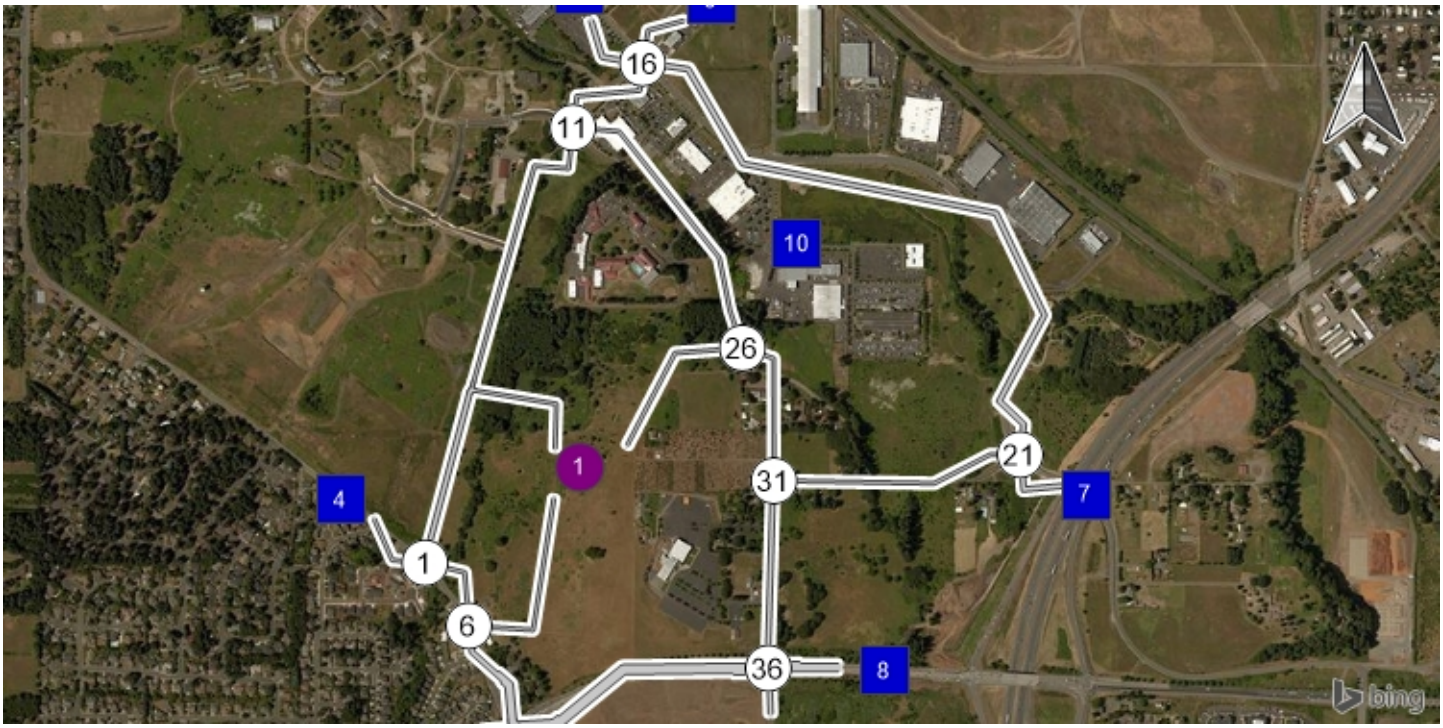
Report File: J:\...\18-392 AM Dev Ph 3.pdf

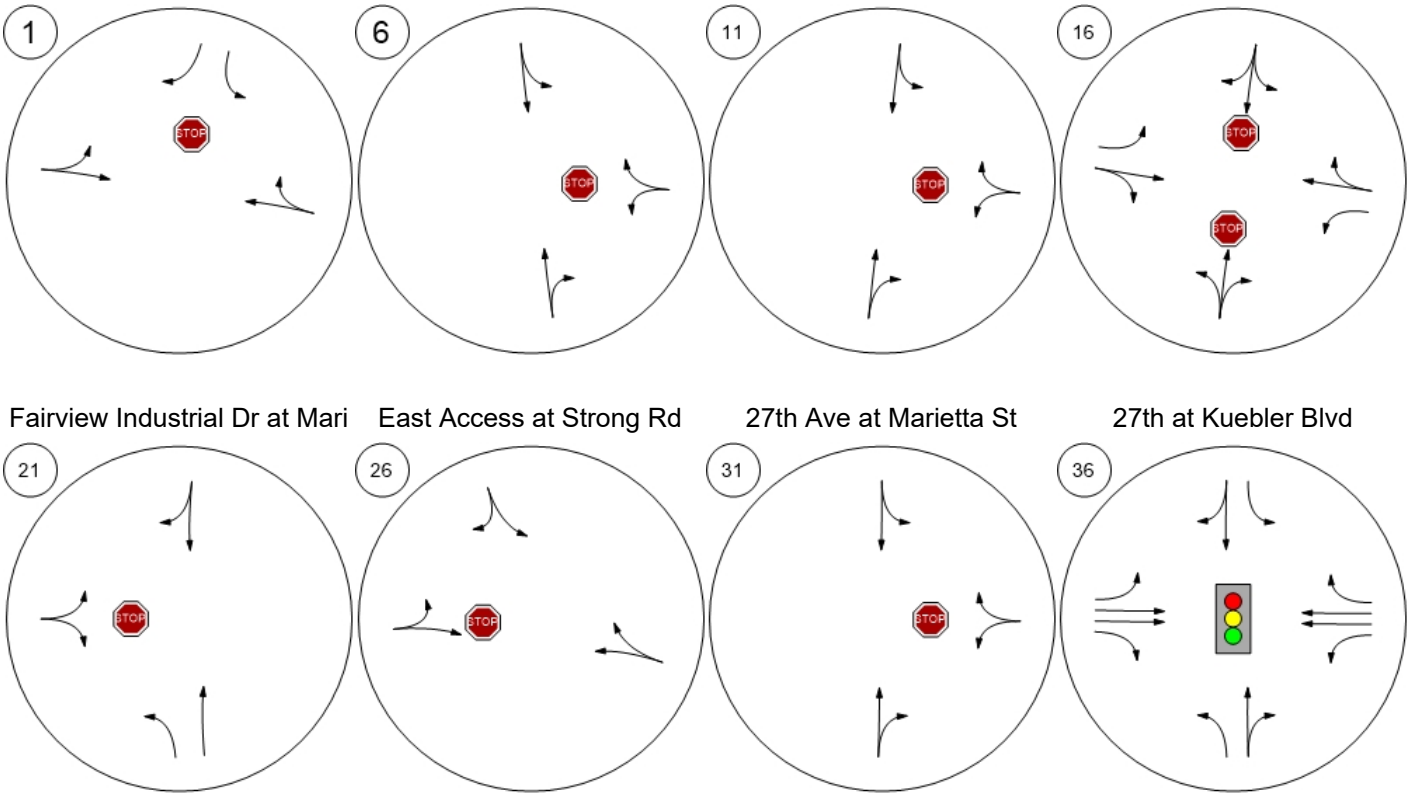
Scenario 7 AM Dev 2026 Ph 3
6/19/2018

Trip Distribution summary

Zone / Gate	Zone 1: 18-392 Reed Rd Sub			
	To 18-392 Reed Rd Sub:		From 18-392 Reed Rd Sub:	
	Share %	Trips	Share %	Trips
2: Gate	10.00	4	10.00	12
3: Gate	30.00	13	30.00	37
4: Gate	7.00	3	7.00	9
5: Gate	10.00	4	10.00	12
6: Gate	0.00	0	0.00	0
7: Gate	6.00	3	6.00	7
8: Gate	35.00	15	35.00	45
9: Gate	2.00	1	2.00	2
10: Gate	0.00	0	0.00	0
Total	**100.00**	**43**	**100.00**	**124**

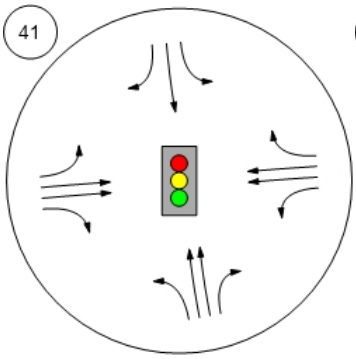
Report Figure 1: Lane Configuration and Traffic Control



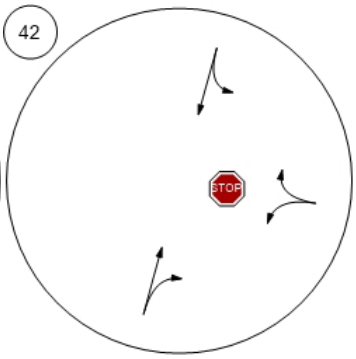


Report Figure 1: Lane Configuration and Traffic Control

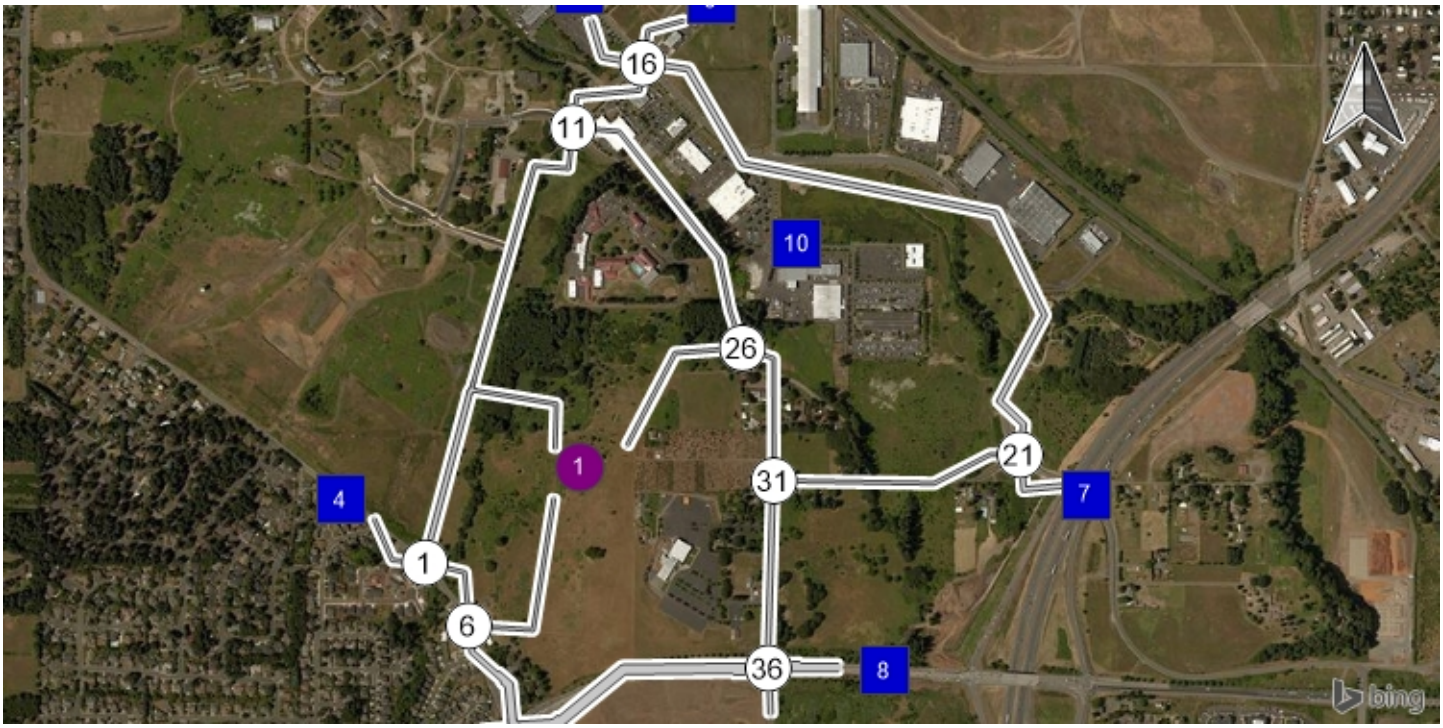
Keubler Blvd at Battle Creek



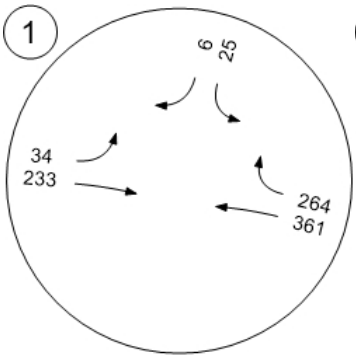
Reed at Site Access



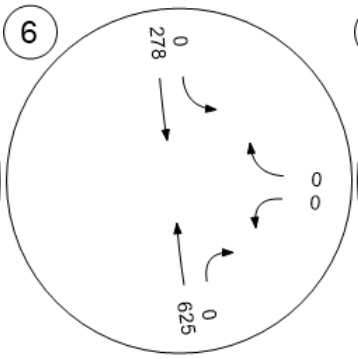
Report Figure 2a: Traffic Volume - Base Volume



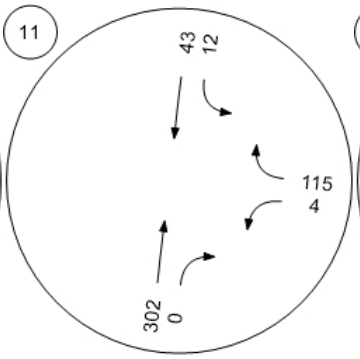
Battle Creek Rd at Reed Rd



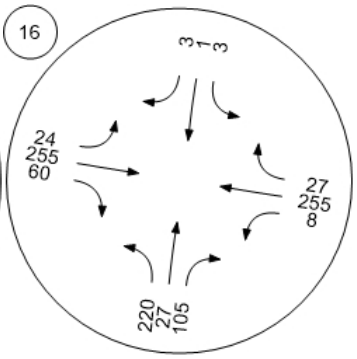
Battle Creek Rd at Site Acces



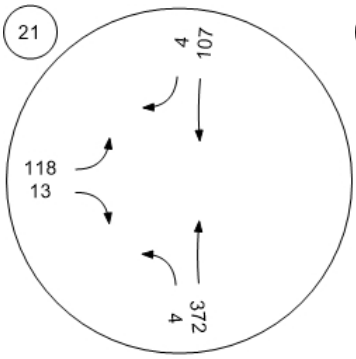
Reed Rd at Strong Rd



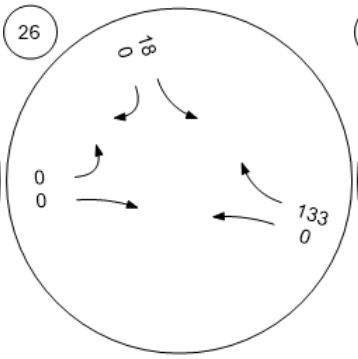
Reed Rd at Fairview Industria



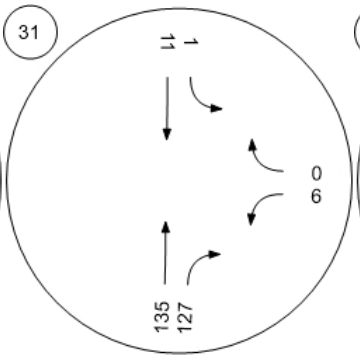
Fairview Industrial Dr at Mari



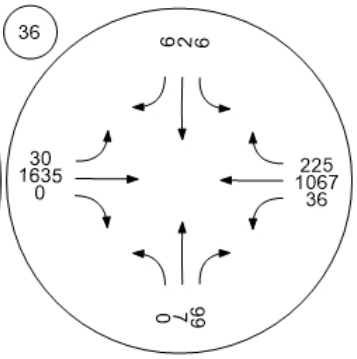
East Access at Strong Rd



27th Ave at Marietta St

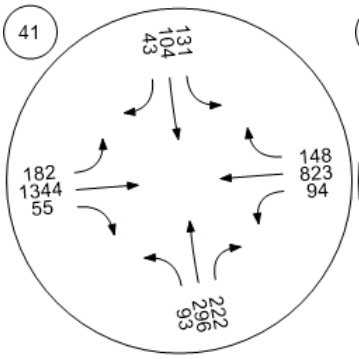


27th at Kuebler Blvd

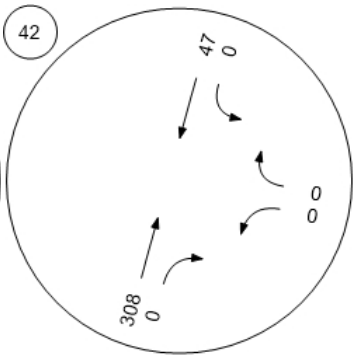


Report Figure 2a: Traffic Volume - Base Volume

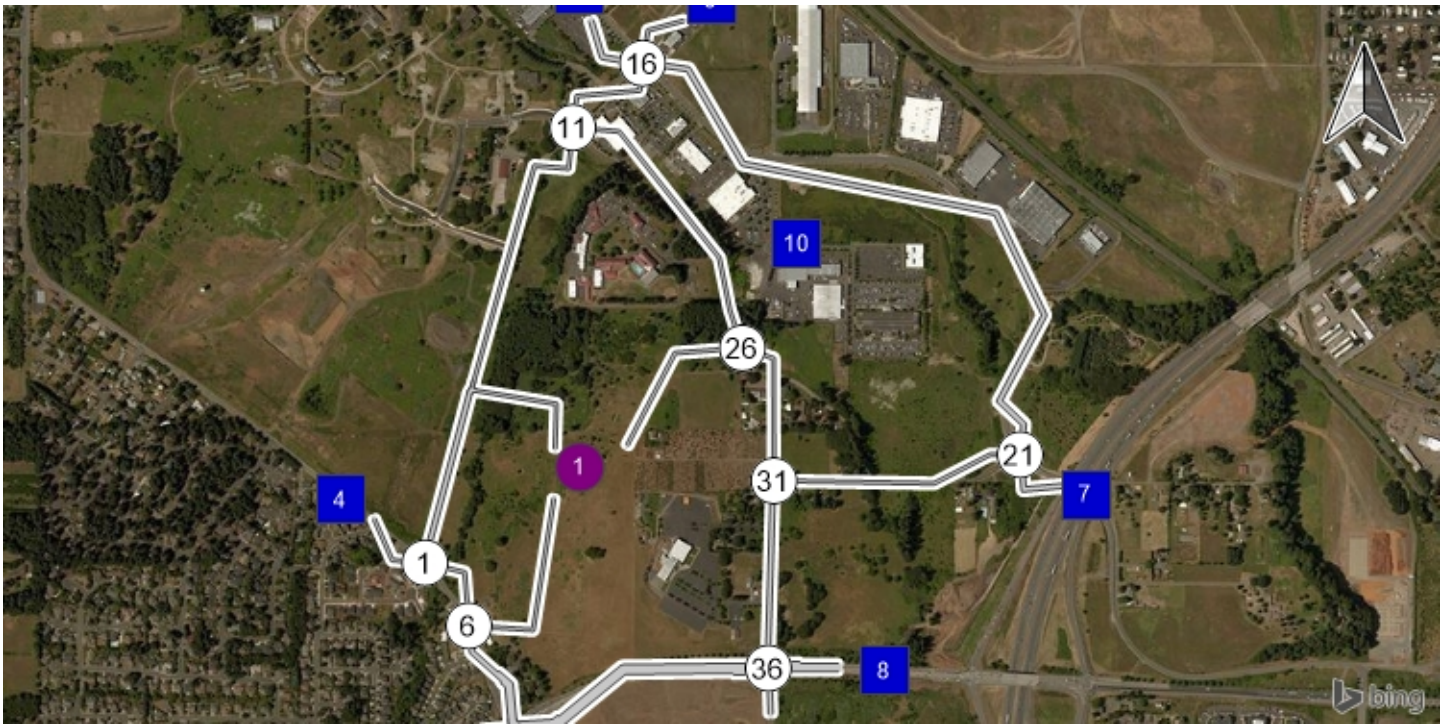
Keubler Blvd at Battle Creek



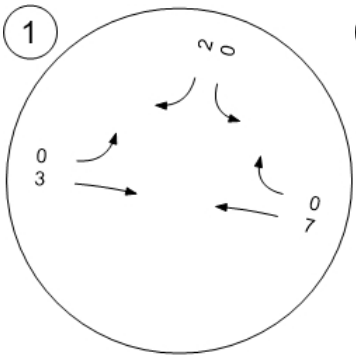
Reed at Site Access



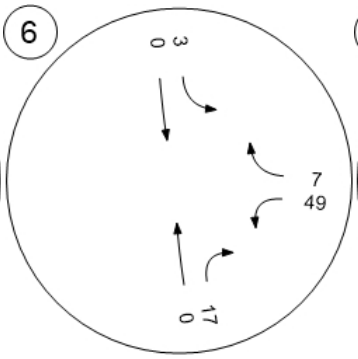
Report Figure 2d: Traffic Volume - Net New Site Trips



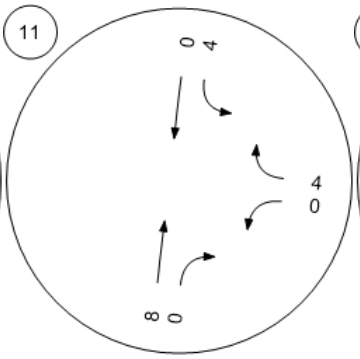
Battle Creek Rd at Reed Rd



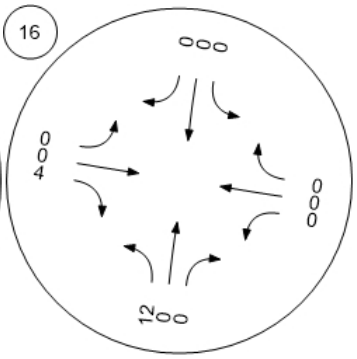
Battle Creek Rd at Site Acces



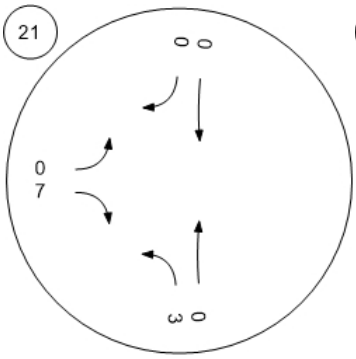
Reed Rd at Strong Rd



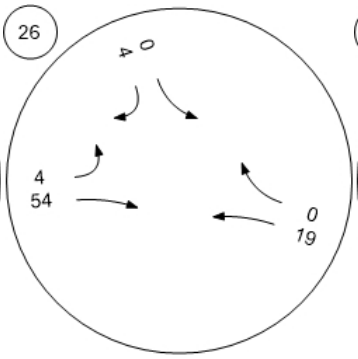
Reed Rd at Fairview Industria



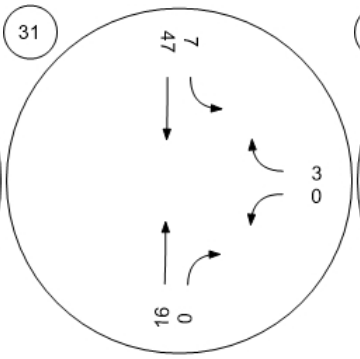
Fairview Industrial Dr at Mari



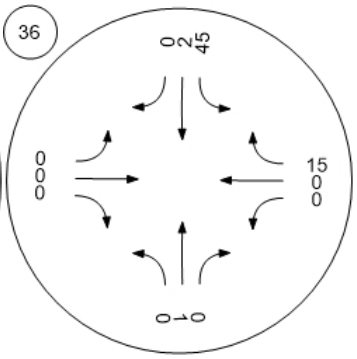
East Access at Strong Rd



27th Ave at Marietta St

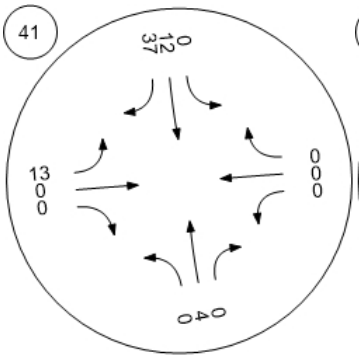


27th at Kuebler Blvd

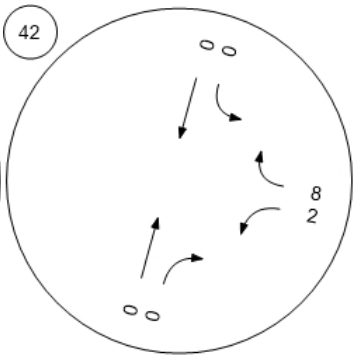


Report Figure 2d: Traffic Volume - Net New Site Trips

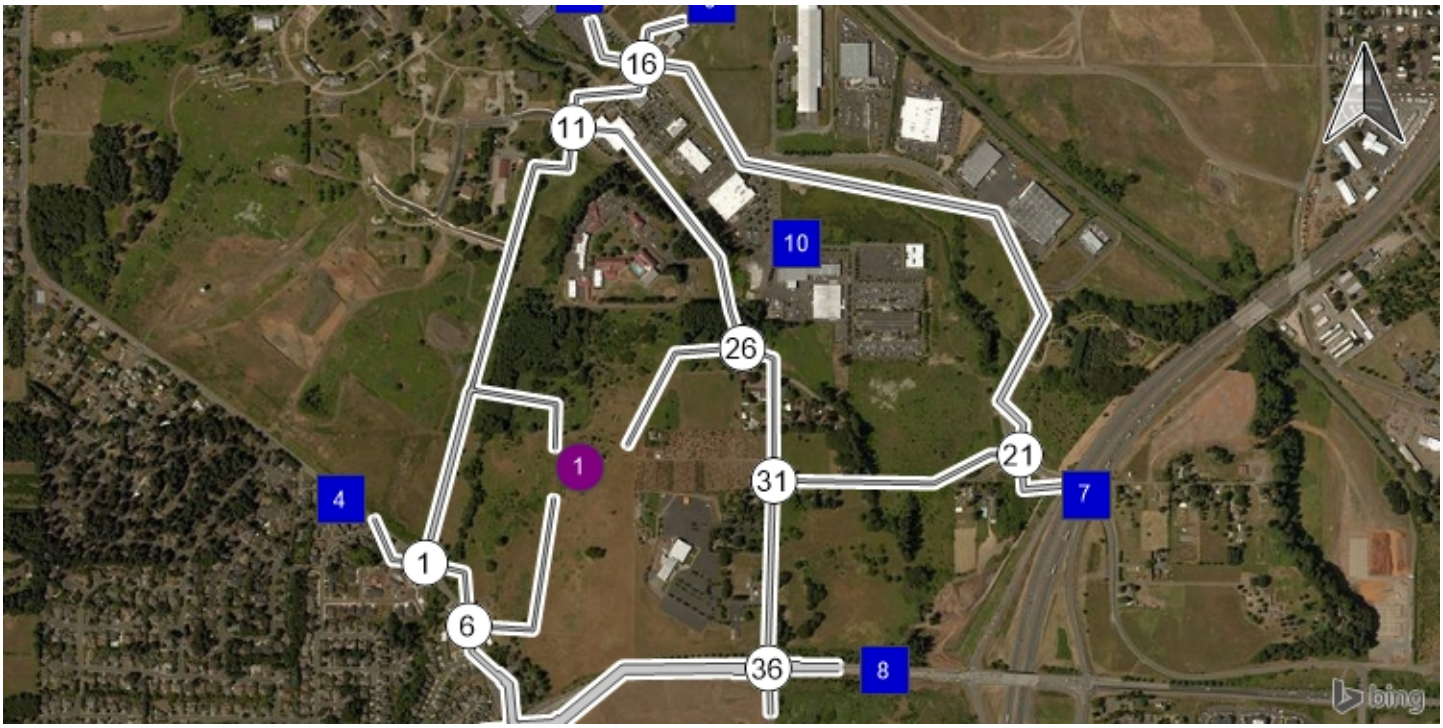
Keubler Blvd at Battle Creek



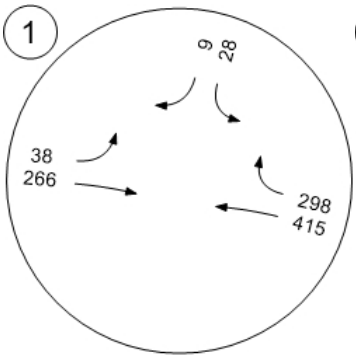
Reed at Site Access



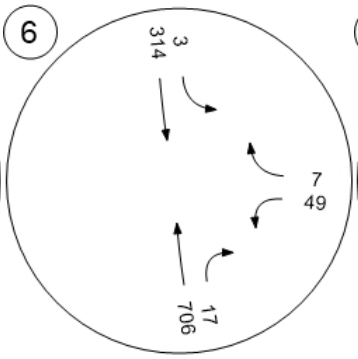
Report Figure 2f: Traffic Volume - Future Total Volume



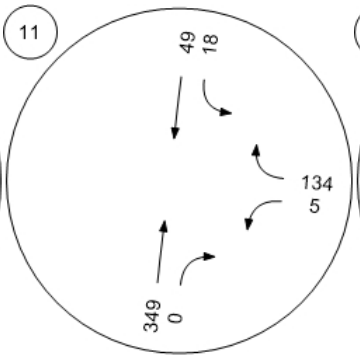
Battle Creek Rd at Reed Rd



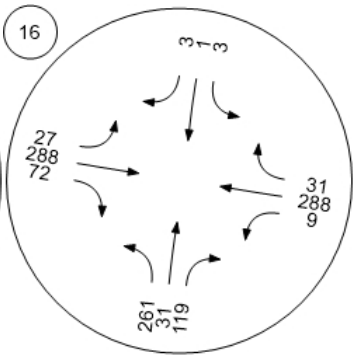
Battle Creek Rd at Site Acces



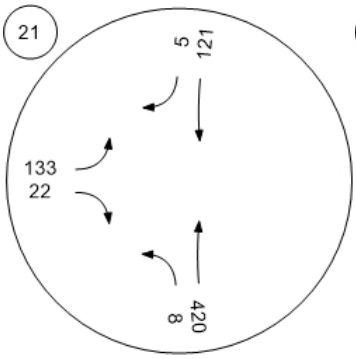
Reed Rd at Strong Rd



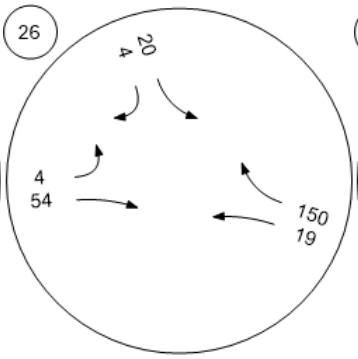
Reed Rd at Fairview Industria



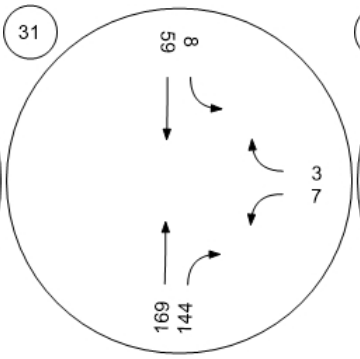
Fairview Industrial Dr at Mari



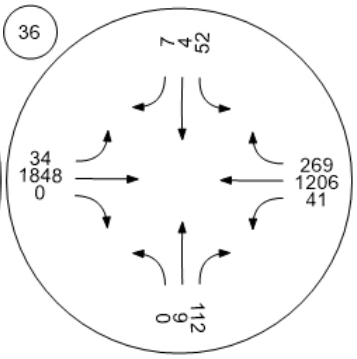
East Access at Strong Rd



27th Ave at Marietta St

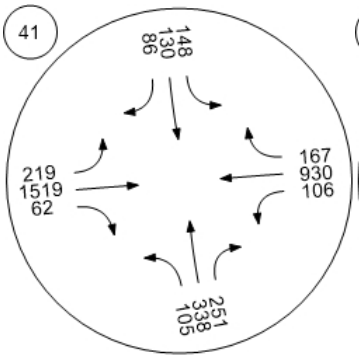


27th at Kuebler Blvd

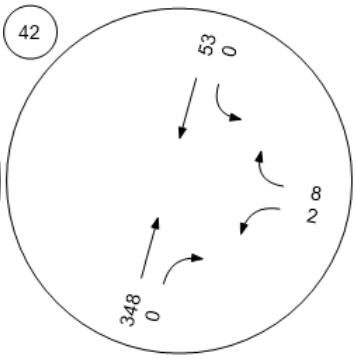


Report Figure 2f: Traffic Volume - Future Total Volume

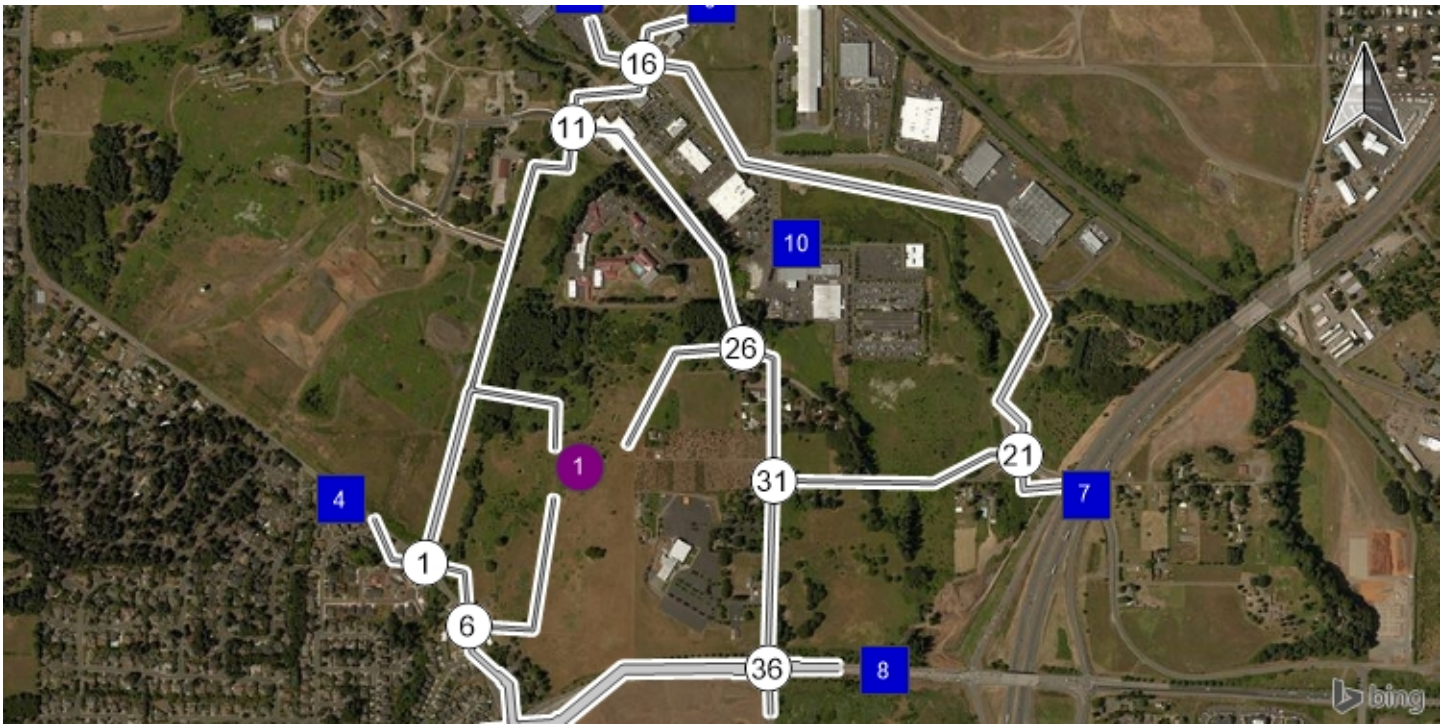
Keubler Blvd at Battle Creek

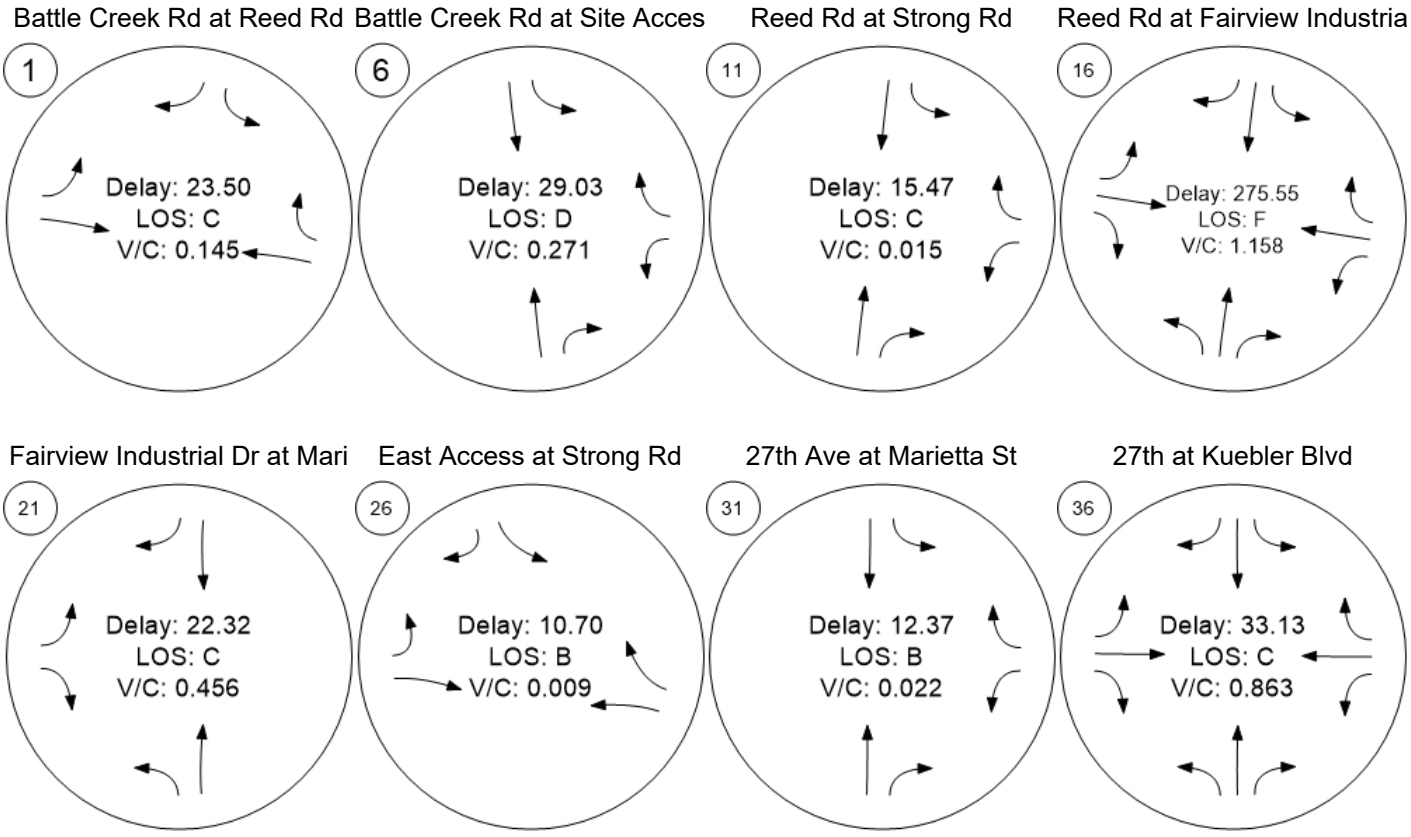


Reed at Site Access



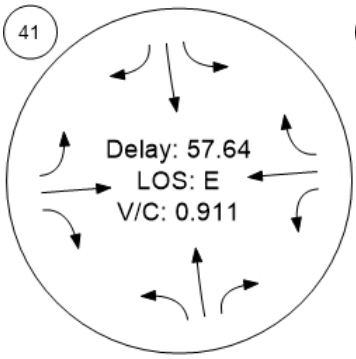
Report Figure 3: Traffic Conditions



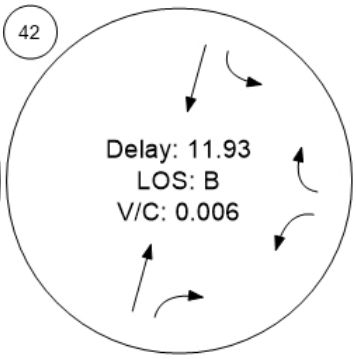


Report Figure 3: Traffic Conditions

Keubler Blvd at Battle Creek



Reed at Site Access



18-392 Strong at 27th Subdivision TIA

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Report File: J:\...\18-392 PM Existing.pdf

Scenario 2 PM Existing
6/19/2018

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Battle Creek Rd at Reed Rd	Two-way stop	HCM 6th Edition	SB Left	0.661	35.4	E
11	Reed Rd at Strong Rd	Two-way stop	HCM 6th Edition	WB Left	0.018	14.3	B
16	Reed Rd at Fairview Industrial Dr	Two-way stop	HCM 6th Edition	NB Left	0.366	34.3	D
21	Fairview Industrial Dr at Marietta St	Two-way stop	HCM 6th Edition	EB Left	0.031	14.0	B
31	27th Ave at Marietta St	Two-way stop	HCM 6th Edition	WB Left	0.079	9.9	A
36	27th at Kuebler Blvd	Signalized	HCM 6th Edition	WB Left	0.756	36.3	D
41	Keubler Blvd at Battle Creek Rd	Signalized	HCM 6th Edition	SB Thru	0.829	42.5	D

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. for all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Battle Creek Rd at Reed Rd

Control Type:	Two-way stop	Delay (sec / veh):	35.4
Analysis Method:	HCM 6th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.661

Intersection Setup

Name	Reed Rd		Battle Creek Rd		Battle Creek Rd	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Reed Rd		Battle Creek Rd		Battle Creek Rd	
Base Volume Input [veh/h]	197	46	10	434	306	59
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	1.20	1.20	1.80	1.80	3.00	3.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	197	46	10	434	306	59
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	54	13	3	118	83	16
Total Analysis Volume [veh/h]	214	50	11	472	333	64
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.66	0.07	0.01	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	35.39	10.70	8.13	0.00	0.00	0.00
Movement LOS	E	B	A	A	A	A
95th-Percentile Queue Length [veh]	4.43	0.24	2.08	2.08	0.00	0.00
95th-Percentile Queue Length [ft]	110.63	5.92	52.02	52.02	0.00	0.00
d_A, Approach Delay [s/veh]	30.71		0.19		0.00	
Approach LOS	D		A		A	
d_I, Intersection Delay [s/veh]	7.17					
Intersection LOS	E					

Intersection Level Of Service Report
Intersection 11: Reed Rd at Strong Rd

Control Type:	Two-way stop	Delay (sec / veh):	14.3
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.018

Intersection Setup

Name	Reed Rd		Reed Rd		Strong Rd	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Reed Rd		Reed Rd		Strong Rd	
Base Volume Input [veh/h]	68	1	87	241	5	10
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	5.80	5.80	1.80	1.80	6.70	6.70
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	68	1	87	241	5	10
Peak Hour Factor	0.7600	0.7600	0.7600	0.7600	0.7600	0.7600
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	22	0	29	79	2	3
Total Analysis Volume [veh/h]	89	1	114	317	7	13
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.08	0.00	0.02	0.01
d_M, Delay for Movement [s/veh]	0.00	0.00	7.59	0.00	14.28	8.95
Movement LOS	A	A	A	A	B	A
95th-Percentile Queue Length [veh]	0.00	0.00	1.19	1.19	0.10	0.10
95th-Percentile Queue Length [ft]	0.00	0.00	29.79	29.79	2.42	2.42
d_A, Approach Delay [s/veh]	0.00		2.01		10.82	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	2.00					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 16: Reed Rd at Fairview Industrial Dr

Control Type:	Two-way stop	Delay (sec / veh):	34.3
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.366

Intersection Setup

Name	Reed Rd			Reed Rd			Fairview Industrial Dr			Fairview Industrial Dr		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	250.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Reed Rd			Reed Rd			Fairview Industrial Dr			Fairview Industrial Dr		
Base Volume Input [veh/h]	59	5	22	8	9	17	9	238	212	76	268	2
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	4.70	4.70	4.70	0.00	0.00	0.00	4.10	4.10	4.10	4.00	4.00	4.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	59	5	22	8	9	17	9	238	212	76	268	2
Peak Hour Factor	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	18	2	7	2	3	5	3	73	65	23	82	1
Total Analysis Volume [veh/h]	72	6	27	10	11	21	11	290	259	93	327	2
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.37	0.03	0.04	0.05	0.06	0.03	0.01	0.00	0.00	0.09	0.00	0.00
d_M, Delay for Movement [s/veh]	34.27	31.67	21.72	24.56	25.11	11.80	7.98	0.00	0.00	8.92	0.00	0.00
Movement LOS	D	D	C	C	D	B	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	2.06	2.06	2.06	0.46	0.46	0.46	0.03	0.00	0.00	0.30	0.00	0.00
95th-Percentile Queue Length [ft]	51.47	51.47	51.47	11.51	11.51	11.51	0.68	0.00	0.00	7.58	0.00	0.00
d_A, Approach Delay [s/veh]	30.89			18.32			0.16			1.97		
Approach LOS	D			C			A			A		
d_I, Intersection Delay [s/veh]	4.37											
Intersection LOS	D											

Intersection Level Of Service Report
Intersection 21: Fairview Industrial Dr at Marietta St

Control Type:	Two-way stop	Delay (sec / veh):	14.0
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.031

Intersection Setup

Name	Fairview Industrial Dr		Fairview Industrial Dr		Marietta St	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Fairview Industrial Dr		Fairview Industrial Dr		Marietta St	
Base Volume Input [veh/h]	5	134	378	41	10	5
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	9.40	9.40	4.50	4.50	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	5	134	378	41	10	5
Peak Hour Factor	0.7900	0.7900	0.7900	0.7900	0.7900	0.7900
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	42	120	13	3	2
Total Analysis Volume [veh/h]	6	170	478	52	13	6
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.00	0.03	0.01
d_M, Delay for Movement [s/veh]	8.62	0.00	0.00	0.00	14.05	11.64
Movement LOS	A	A	A	A	B	B
95th-Percentile Queue Length [veh]	0.02	0.00	0.00	0.00	0.13	0.13
95th-Percentile Queue Length [ft]	0.45	0.00	0.00	0.00	3.27	3.27
d_A, Approach Delay [s/veh]	0.29		0.00		13.29	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.42					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 31: 27th Ave at Marietta St

Control Type:	Two-way stop	Delay (sec / veh):	9.9
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.079

Intersection Setup

Name	27th Ave		Strong Rd		Marietta St	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	27th Ave		Strong Rd		Marietta St	
Base Volume Input [veh/h]	18	10	1	107	43	1
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	18	10	1	107	43	1
Peak Hour Factor	0.6800	0.6800	0.6800	0.6800	0.6800	0.6800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	4	0	39	16	0
Total Analysis Volume [veh/h]	26	15	1	157	63	1
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.08	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	7.28	0.00	9.89	8.83
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.00	0.00	0.33	0.33	0.26	0.26
95th-Percentile Queue Length [ft]	0.00	0.00	8.31	8.31	6.47	6.47
d_A, Approach Delay [s/veh]	0.00		0.05		9.87	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	2.43					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 36: 27th at Kuebler Blvd

Control Type:	Signalized	Delay (sec / veh):	36.3
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.756

Intersection Setup

Name	27th Ave			27th Ave			Kuebler Blvd			Kuebler Blvd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	1	1	0	1
Pocket Length [ft]	125.00	100.00	100.00	100.00	100.00	100.00	250.00	100.00	200.00	350.00	100.00	175.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	27th Ave			27th Ave			Kuebler Blvd			Kuebler Blvd		
Base Volume Input [veh/h]	1	0	63	100	18	40	11	1307	2	103	1923	23
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	4.70	4.70	4.70	0.60	0.60	0.60	3.60	3.60	3.60	1.30	1.30	1.30
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1	0	63	100	18	40	11	1307	2	103	1923	23
Peak Hour Factor	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	17	27	5	11	3	348	1	27	511	6
Total Analysis Volume [veh/h]	1	0	67	106	19	43	12	1390	2	110	2046	24
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	9	19	0	9	19	0	34	83	0	9	58	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	L	C	R	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	0	16	5	20	2	78	78	5	82	82
g / C, Green / Cycle	0.00	0.13	0.04	0.17	0.01	0.65	0.65	0.04	0.68	0.68
(v / s)_i Volume / Saturation Flow Rate	0.00	0.05	0.07	0.04	0.01	0.44	0.00	0.07	0.63	0.02
s, saturation flow rate [veh/h]	1568	1400	1621	1516	1582	3163	1412	1612	3222	1439
c, Capacity [veh/h]	2	182	68	258	22	2066	923	67	2195	980
d1, Uniform Delay [s]	59.86	47.72	57.50	43.08	58.80	12.87	7.22	57.50	16.71	6.20
k, delay calibration	0.11	0.50	0.11	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	92.03	5.67	269.63	2.19	19.56	0.39	0.00	299.48	2.26	0.01
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.43	0.37	1.57	0.24	0.55	0.67	0.00	1.63	0.93	0.02
d, Delay for Lane Group [s/veh]	151.89	53.39	327.13	45.28	78.36	13.25	7.22	356.98	18.97	6.21
Lane Group LOS	F	D	F	D	E	B	A	F	B	A
Critical Lane Group	No	Yes	Yes	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh]	0.09	2.13	7.12	1.76	0.48	10.84	0.02	7.64	22.34	0.19
50th-Percentile Queue Length [ft]	2.25	53.13	178.08	43.99	12.04	271.10	0.44	191.05	558.55	4.78
95th-Percentile Queue Length [veh]	0.16	3.83	12.64	3.17	0.87	16.24	0.03	13.48	30.09	0.34
95th-Percentile Queue Length [ft]	4.05	95.64	316.08	79.19	21.68	406.12	0.79	336.90	752.35	8.61

Movement, Approach, & Intersection Results

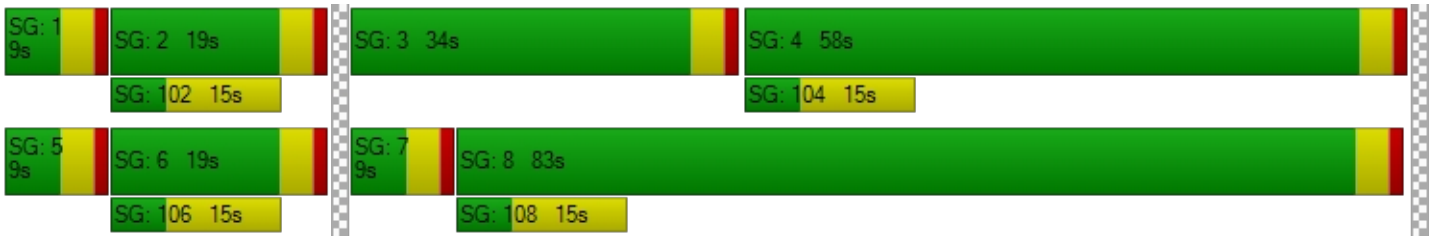
d_M, Delay for Movement [s/veh]	151.89	53.39	53.39	327.13	45.28	45.28	78.36	13.25	7.22	356.98	18.97	6.21
Movement LOS	F	D	D	F	D	D	E	B	A	F	B	A
d_A, Approach Delay [s/veh]	54.83			223.11			13.80			35.88		
Approach LOS	D			F			B			D		
d_I, Intersection Delay [s/veh]	36.34											
Intersection LOS	D											
Intersection V/C	0.756											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	51.34	51.34	51.34	51.34
l_p,int, Pedestrian LOS Score for Intersection	2.020	2.022	3.036	3.076
Crosswalk LOS	B	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	250	250	1317	900
d_b, Bicycle Delay [s]	45.94	45.94	7.00	18.15
l_b,int, Bicycle LOS Score for Intersection	1.672	1.837	2.718	3.358
Bicycle LOS	A	A	B	C

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 41: Keubler Blvd at Battle Creek Rd

Control Type:	Signalized	Delay (sec / veh):	42.5
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.829

Intersection Setup

Name	Battle Creek Rd			Battle Creek Rd			Kuebler Blvd			Kuebler Blvd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	1	0	1	1	0	1	1	0	1
Pocket Length [ft]	100.00	100.00	150.00	275.00	100.00	275.00	350.00	100.00	350.00	250.00	100.00	250.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Battle Creek Rd			Battle Creek Rd			Kuebler Blvd			Kuebler Blvd		
Base Volume Input [veh/h]	93	157	149	127	316	171	88	1056	76	242	1592	162
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	3.00	3.00	3.00	1.10	1.10	1.10	3.90	3.90	3.90	1.50	1.50	1.50
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	93	157	149	127	316	171	88	1056	76	242	1592	162
Peak Hour Factor	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	24	41	39	33	82	45	23	275	20	63	415	42
Total Analysis Volume [veh/h]	97	164	155	132	329	178	92	1100	79	252	1658	169
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	12	19	0	21	28	0	12	46	0	34	68	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	8	21	21	12	24	24	8	51	51	21	64	64
g / C, Green / Cycle	0.07	0.17	0.17	0.10	0.20	0.20	0.07	0.42	0.42	0.17	0.53	0.53
(v / s)_i Volume / Saturation Flow Rate	0.06	0.05	0.11	0.08	0.19	0.12	0.06	0.35	0.06	0.16	0.52	0.12
s, saturation flow rate [veh/h]	1590	3179	1419	1614	1695	1441	1578	3156	1409	1609	3217	1436
c, Capacity [veh/h]	106	552	246	156	345	294	105	1333	595	279	1703	760
d1, Uniform Delay [s]	55.65	43.20	46.00	53.30	47.20	43.40	55.49	30.72	21.20	48.59	27.44	15.07
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.18	0.11	0.11
I, Upstream Filtering 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
d2, Incremental Delay [s]	23.83	1.37	11.57	11.51	37.75	8.98	18.92	1.35	0.10	15.52	5.71	0.15
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression 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

Lane Group Results

X, volume / capacity	0.91	0.30	0.63	0.84	0.95	0.61	0.87	0.83	0.13	0.90	0.97	0.22
d, Delay for Lane Group [s/veh]	79.48	44.57	57.57	64.81	84.95	52.39	74.40	32.08	21.30	64.11	33.15	15.22
Lane Group LOS	E	D	E	E	F	D	E	C	C	E	C	B
Critical Lane Group	Yes	No	No	No	Yes	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh]	3.62	2.24	5.09	4.41	13.29	5.54	3.31	14.05	1.38	8.57	23.23	2.48
50th-Percentile Queue Length [ft]	90.48	55.97	127.16	110.34	332.16	138.51	82.80	351.32	34.62	214.35	580.63	62.01
95th-Percentile Queue Length [veh]	6.51	4.03	8.79	7.86	19.26	9.40	5.96	20.20	2.49	13.38	31.13	4.46
95th-Percentile Queue Length [ft]	162.87	100.75	219.63	196.48	481.61	235.02	149.03	505.02	62.31	334.40	778.22	111.61

Movement, Approach, & Intersection Results

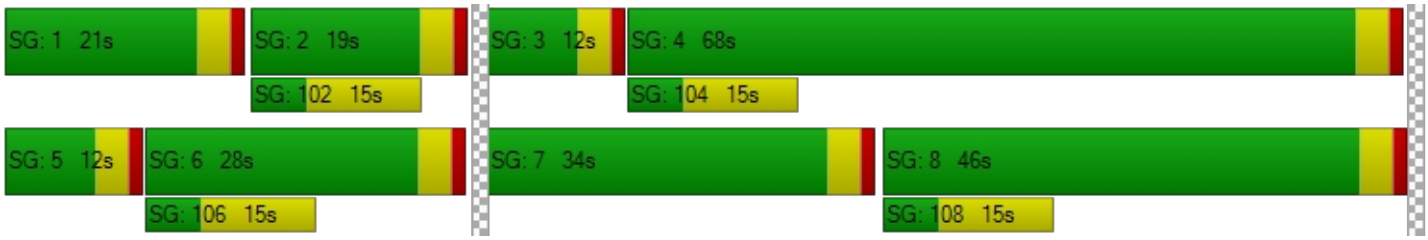
d_M, Delay for Movement [s/veh]	79.48	44.57	57.57	64.81	84.95	52.39	74.40	32.08	21.30	64.11	33.15	15.22
Movement LOS	E	D	E	E	F	D	E	C	C	E	C	B
d_A, Approach Delay [s/veh]	57.56			71.72			34.47			35.45		
Approach LOS	E			E			C			D		
d_I, Intersection Delay [s/veh]	42.52											
Intersection LOS	D											
Intersection V/C	0.829											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	51.34	51.34	51.34	51.34
l_p,int, Pedestrian LOS Score for Intersection	2.525	2.523	2.989	3.031
Crosswalk LOS	B	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	250	400	700	1067
d_b, Bicycle Delay [s]	45.94	38.40	25.35	13.07
l_b,int, Bicycle LOS Score for Intersection	1.903	2.614	2.608	3.275
Bicycle LOS	A	B	B	C

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



18-392 Strong at 27th Subdivision TIA

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Scenario 2 PM Existing
6/19/2018

Turning Movement Volume: Summary

ID	Intersection Name	Southbound		Eastbound		Westbound		Total Volume
		Left	Right	Left	Thru	Thru	Right	
1	Battle Creek Rd at Reed Rd	197	46	10	434	306	59	1052

ID	Intersection Name	Northbound		Southbound		Westbound		Total Volume
		Thru	Right	Left	Thru	Left	Right	
11	Reed Rd at Strong Rd	68	1	87	241	5	10	412

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
16	Reed Rd at Fairview Industrial Dr	59	5	22	8	9	17	9	238	212	76	268	2	925

ID	Intersection Name	Northbound		Southbound		Eastbound		Total Volume
		Left	Thru	Thru	Right	Left	Right	
21	Fairview Industrial Dr at Marietta St	5	134	378	41	10	5	573

ID	Intersection Name	Northbound		Southbound		Westbound		Total Volume
		Thru	Right	Left	Thru	Left	Right	
31	27th Ave at Marietta St	18	10	1	107	43	1	180

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
36	27th at Kuebler Blvd	1	0	63	100	18	40	11	1307	2	103	1923	23	3591

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
41	Keubler Blvd at Battle Creek Rd	93	157	149	127	316	171	88	1056	76	242	1592	162	4229

18-392 Strong at 27th Subdivision TIA

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Scenario 2 PM Existing
6/19/2018

Turning Movement Volume: Detail

ID	Intersection Name	Volume Type	Southbound		Eastbound		Westbound		Total Volume
			Left	Right	Left	Thru	Thru	Right	
1	Battle Creek Rd at Reed Rd	Final Base	197	46	10	434	306	59	1052
		Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0
		Future Total	**197**	**46**	**10**	**434**	**306**	**59**	**1052**

ID	Intersection Name	Volume Type	Northbound		Southbound		Westbound		Total Volume
			Thru	Right	Left	Thru	Left	Right	
11	Reed Rd at Strong Rd	Final Base	68	1	87	241	5	10	412
		Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0
		Future Total	**68**	**1**	**87**	**241**	**5**	**10**	**412**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
16	Reed Rd at Fairview Industrial Dr	Final Base	59	5	22	8	9	17	9	238	212	76	268	2	925
		Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**59**	**5**	**22**	**8**	**9**	**17**	**9**	**238**	**212**	**76**	**268**	**2**	**925**

ID	Intersection Name	Volume Type	Northbound		Southbound		Eastbound		Total Volume
			Left	Thru	Thru	Right	Left	Right	
21	Fairview Industrial Dr at Marietta St	Final Base	5	134	378	41	10	5	573
		Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0
		Future Total	**5**	**134**	**378**	**41**	**10**	**5**	**573**

ID	Intersection Name	Volume Type	Northbound		Southbound		Westbound		Total Volume
			Thru	Right	Left	Thru	Left	Right	
31	27th Ave at Marietta St	Final Base	18	10	1	107	43	1	180
		Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0
		Future Total	**18**	**10**	**1**	**107**	**43**	**1**	**180**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
36	27th at Kuebler Blvd	Final Base	1	0	63	100	18	40	11	1307	2	103	1923	23	3591
		Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**1**	**0**	**63**	**100**	**18**	**40**	**11**	**1307**	**2**	**103**	**1923**	**23**	**3591**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
41	Keubler Blvd at Battle Creek Rd	Final Base	93	157	149	127	316	171	88	1056	76	242	1592	162	4229
		Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**93**	**157**	**149**	**127**	**316**	**171**	**88**	**1056**	**76**	**242**	**1592**	**162**	**4229**

Signal Warrants Report For Intersection 1: Battle Creek Rd at Reed Rd

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	E, W
Minor Approaches	N
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	E	W	N
1	365	444	243
2	350	426	233
3	343	417	228
4	292	355	194
5	277	337	185
6	248	302	165
7	230	280	153
8	219	266	146
9	175	213	117
10	164	200	109
11	164	200	109
12	157	191	104
13	142	173	95
14	131	160	87
15	131	160	87
16	128	155	85
17	73	89	49
18	40	49	27
19	37	44	24
20	15	18	10
21	11	13	7
22	11	13	7
23	7	9	5
24	7	9	5

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	809	2	243	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	No	No
2	2	776	2	233	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	No	No
3	2	760	2	228	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	No	No
4	2	647	2	194	No	Yes	Yes	Yes	No	No	Yes	Yes	No	No
5	2	614	2	185	No	Yes	Yes	Yes	No	No	No	Yes	No	No
6	2	550	2	165	No	Yes	Yes	Yes	No	No	No	Yes	No	No
7	2	510	2	153	No	No	Yes	Yes	No	No	No	Yes	No	No
8	2	485	2	146	No	No	Yes	Yes	No	No	No	No	No	No
9	2	388	2	117	No	No	No	Yes	No	No	No	No	No	No
10	2	364	2	109	No	No	No	No	No	No	No	No	No	No
11	2	364	2	109	No	No	No	No	No	No	No	No	No	No
12	2	348	2	104	No	No	No	No	No	No	No	No	No	No
13	2	315	2	95	No	No	No	No	No	No	No	No	No	No
14	2	291	2	87	No	No	No	No	No	No	No	No	No	No
15	2	291	2	87	No	No	No	No	No	No	No	No	No	No
16	2	283	2	85	No	No	No	No	No	No	No	No	No	No
17	2	162	2	49	No	No	No	No	No	No	No	No	No	No
18	2	89	2	27	No	No	No	No	No	No	No	No	No	No
19	2	81	2	24	No	No	No	No	No	No	No	No	No	No
20	2	33	2	10	No	No	No	No	No	No	No	No	No	No
21	2	24	2	7	No	No	No	No	No	No	No	No	No	No
22	2	24	2	7	No	No	No	No	No	No	No	No	No	No
23	2	16	2	5	No	No	No	No	No	No	No	No	No	No
24	2	16	2	5	No	No	No	No	No	No	No	No	No	No
Hours Met					3	6	8	9	0	3	4	7	0	0

Warrant 3 Condition A

Orientation	N
Total Stopped Delay Per Vehicle on Minor Approach (s)	30.7
Number of Lanes on Minor Street Approach	2
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	2:04
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	243
High Minor Volume Condition Met	Yes
Total Entering Volume on All Approaches During Same Hour	1052
Number of Approaches on Intersection	3
Total Volume Condition Met	Yes
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

Signal Warrants Report For Intersection 11: Reed Rd at Strong Rd

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	N, S
Minor Approaches	E
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	N	S	E
1	328	69	15
2	315	66	14
3	308	65	14
4	262	55	12
5	249	52	11
6	223	47	10
7	207	43	9
8	197	41	9
9	157	33	7
10	148	31	7
11	148	31	7
12	141	30	6
13	128	27	6
14	118	25	5
15	118	25	5
16	115	24	5
17	66	14	3
18	36	8	2
19	33	7	2
20	13	3	1
21	10	2	0
22	10	2	0
23	7	1	0
24	7	1	0

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	397	1	15	No	No	No	No	No	No	No	No	No	No
2	2	381	1	14	No	No	No	No	No	No	No	No	No	No
3	2	373	1	14	No	No	No	No	No	No	No	No	No	No
4	2	317	1	12	No	No	No	No	No	No	No	No	No	No
5	2	301	1	11	No	No	No	No	No	No	No	No	No	No
6	2	270	1	10	No	No	No	No	No	No	No	No	No	No
7	2	250	1	9	No	No	No	No	No	No	No	No	No	No
8	2	238	1	9	No	No	No	No	No	No	No	No	No	No
9	2	190	1	7	No	No	No	No	No	No	No	No	No	No
10	2	179	1	7	No	No	No	No	No	No	No	No	No	No
11	2	179	1	7	No	No	No	No	No	No	No	No	No	No
12	2	171	1	6	No	No	No	No	No	No	No	No	No	No
13	2	155	1	6	No	No	No	No	No	No	No	No	No	No
14	2	143	1	5	No	No	No	No	No	No	No	No	No	No
15	2	143	1	5	No	No	No	No	No	No	No	No	No	No
16	2	139	1	5	No	No	No	No	No	No	No	No	No	No
17	2	80	1	3	No	No	No	No	No	No	No	No	No	No
18	2	44	1	2	No	No	No	No	No	No	No	No	No	No
19	2	40	1	2	No	No	No	No	No	No	No	No	No	No
20	2	16	1	1	No	No	No	No	No	No	No	No	No	No
21	2	12	1	0	No	No	No	No	No	No	No	No	No	No
22	2	12	1	0	No	No	No	No	No	No	No	No	No	No
23	2	8	1	0	No	No	No	No	No	No	No	No	No	No
24	2	8	1	0	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	E
Total Stopped Delay Per Vehicle on Minor Approach (s)	10.8
Number of Lanes on Minor Street Approach	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:02
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	15
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	412
Number of Approaches on Intersection	3
Total Volume Condition Met	No
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

Signal Warrants Report For Intersection 16: Reed Rd at Fairview Industrial Dr

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	E, W
Minor Approaches	N, S
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets	
	E	W	N	S
1	346	459	34	86
2	332	441	33	83
3	325	431	32	81
4	277	367	27	69
5	263	349	26	65
6	235	312	23	58
7	218	289	21	54
8	208	275	20	52
9	166	220	16	41
10	156	207	15	39
11	156	207	15	39
12	149	197	15	37
13	135	179	13	34
14	125	165	12	31
15	125	165	12	31
16	121	161	12	30
17	69	92	7	17
18	38	50	4	9
19	35	46	3	9
20	14	18	1	3
21	10	14	1	3
22	10	14	1	3
23	7	9	1	2
24	7	9	1	2

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	4	805	2	120	No	No	No	Yes	No	Yes	Yes	Yes	No	No
2	4	773	2	116	No	No	No	No	No	Yes	Yes	Yes	No	No
3	4	756	2	113	No	No	No	No	No	Yes	Yes	Yes	No	No
4	4	644	2	96	No	No	No	No	No	No	Yes	Yes	No	No
5	4	612	2	91	No	No	No	No	No	No	No	Yes	No	No
6	4	547	2	81	No	No	No	No	No	No	No	Yes	No	No
7	4	507	2	75	No	No	No	No	No	No	No	Yes	No	No
8	4	483	2	72	No	No	No	No	No	No	No	No	No	No
9	4	386	2	57	No	No	No	No	No	No	No	No	No	No
10	4	363	2	54	No	No	No	No	No	No	No	No	No	No
11	4	363	2	54	No	No	No	No	No	No	No	No	No	No
12	4	346	2	52	No	No	No	No	No	No	No	No	No	No
13	4	314	2	47	No	No	No	No	No	No	No	No	No	No
14	4	290	2	43	No	No	No	No	No	No	No	No	No	No
15	4	290	2	43	No	No	No	No	No	No	No	No	No	No
16	4	282	2	42	No	No	No	No	No	No	No	No	No	No
17	4	161	2	24	No	No	No	No	No	No	No	No	No	No
18	4	88	2	13	No	No	No	No	No	No	No	No	No	No
19	4	81	2	12	No	No	No	No	No	No	No	No	No	No
20	4	32	2	4	No	No	No	No	No	No	No	No	No	No
21	4	24	2	4	No	No	No	No	No	No	No	No	No	No
22	4	24	2	4	No	No	No	No	No	No	No	No	No	No
23	4	16	2	3	No	No	No	No	No	No	No	No	No	No
24	4	16	2	3	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	1	0	3	4	7	0	0

Warrant 3 Condition A

Orientation	N	S
Total Stopped Delay Per Vehicle on Minor Approach (s)	18.3	30.9
Number of Lanes on Minor Street Approach	1	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:10	0:44
Delay Condition Met	No	No
Volume on Minor Street Approach During Same Hour	34	86
High Minor Volume Condition Met	No	No
Total Entering Volume on All Approaches During Same Hour	925	925
Number of Approaches on Intersection	4	4
Total Volume Condition Met	Yes	Yes
Warrant Met for Approach	No	No
Warrant Met for Intersection	**No**	

Signal Warrants Report For Intersection 21: Fairview Industrial Dr at Marietta St

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	S, N
Minor Approaches	W
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	S	N	W
1	139	419	15
2	133	402	14
3	131	394	14
4	111	335	12
5	106	318	11
6	95	285	10
7	88	264	9
8	83	251	9
9	67	201	7
10	63	189	7
11	63	189	7
12	60	180	6
13	54	163	6
14	50	151	5
15	50	151	5
16	49	147	5
17	28	84	3
18	15	46	2
19	14	42	2
20	6	17	1
21	4	13	0
22	4	13	0
23	3	8	0
24	3	8	0

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	3	558	1	15	No	No	No	No	No	No	No	No	No	No
2	3	535	1	14	No	No	No	No	No	No	No	No	No	No
3	3	525	1	14	No	No	No	No	No	No	No	No	No	No
4	3	446	1	12	No	No	No	No	No	No	No	No	No	No
5	3	424	1	11	No	No	No	No	No	No	No	No	No	No
6	3	380	1	10	No	No	No	No	No	No	No	No	No	No
7	3	352	1	9	No	No	No	No	No	No	No	No	No	No
8	3	334	1	9	No	No	No	No	No	No	No	No	No	No
9	3	268	1	7	No	No	No	No	No	No	No	No	No	No
10	3	252	1	7	No	No	No	No	No	No	No	No	No	No
11	3	252	1	7	No	No	No	No	No	No	No	No	No	No
12	3	240	1	6	No	No	No	No	No	No	No	No	No	No
13	3	217	1	6	No	No	No	No	No	No	No	No	No	No
14	3	201	1	5	No	No	No	No	No	No	No	No	No	No
15	3	201	1	5	No	No	No	No	No	No	No	No	No	No
16	3	196	1	5	No	No	No	No	No	No	No	No	No	No
17	3	112	1	3	No	No	No	No	No	No	No	No	No	No
18	3	61	1	2	No	No	No	No	No	No	No	No	No	No
19	3	56	1	2	No	No	No	No	No	No	No	No	No	No
20	3	23	1	1	No	No	No	No	No	No	No	No	No	No
21	3	17	1	0	No	No	No	No	No	No	No	No	No	No
22	3	17	1	0	No	No	No	No	No	No	No	No	No	No
23	3	11	1	0	No	No	No	No	No	No	No	No	No	No
24	3	11	1	0	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	W
Total Stopped Delay Per Vehicle on Minor Approach (s)	13.3
Number of Lanes on Minor Street Approach	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:03
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	15
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	573
Number of Approaches on Intersection	3
Total Volume Condition Met	No
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

Signal Warrants Report For Intersection 31: 27th Ave at Marietta St

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	N, S
Minor Approaches	E
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	N	S	E
1	108	28	44
2	104	27	42
3	102	26	41
4	86	22	35
5	82	21	33
6	73	19	30
7	68	18	28
8	65	17	26
9	52	13	21
10	49	13	20
11	49	13	20
12	46	12	19
13	42	11	17
14	39	10	16
15	39	10	16
16	38	10	15
17	22	6	9
18	12	3	5
19	11	3	4
20	4	1	2
21	3	1	1
22	3	1	1
23	2	1	1
24	2	1	1

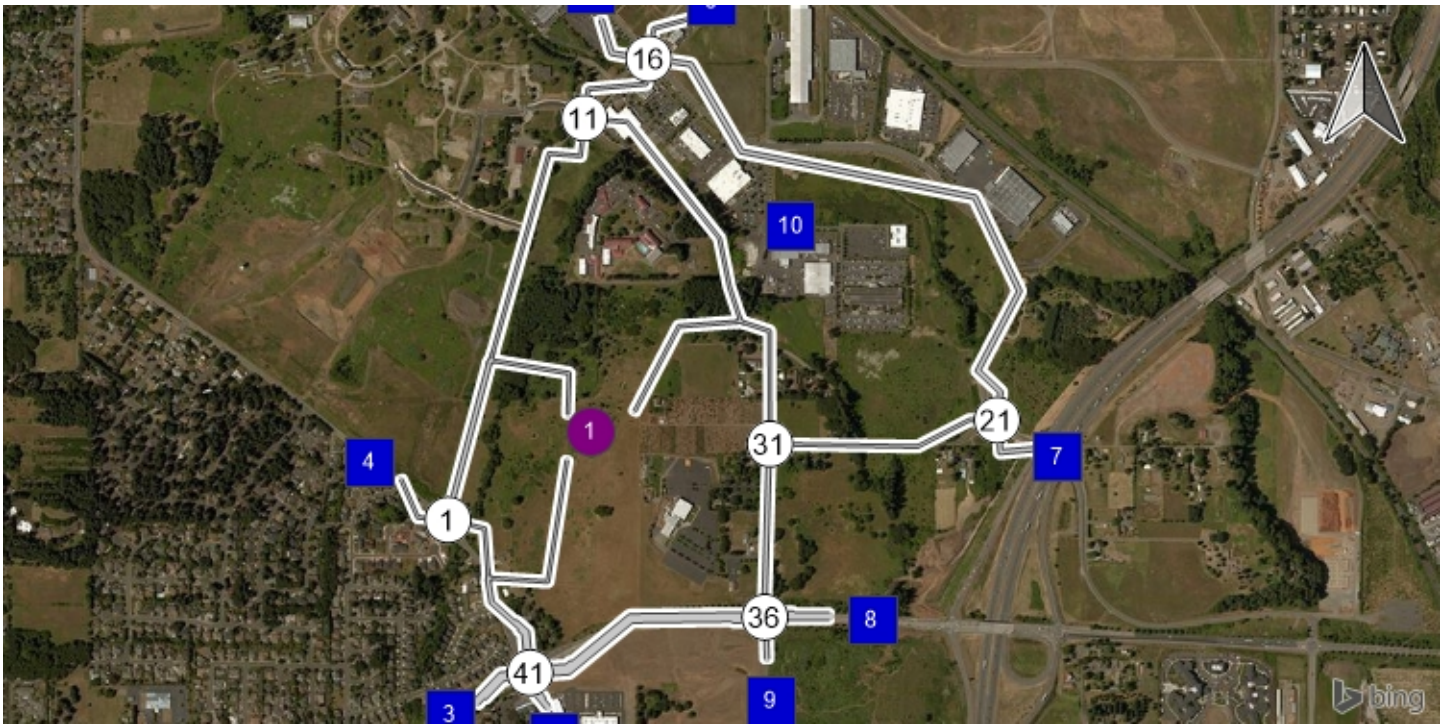
Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	136	1	44	No	No	No	No	No	No	No	No	No	No
2	2	131	1	42	No	No	No	No	No	No	No	No	No	No
3	2	128	1	41	No	No	No	No	No	No	No	No	No	No
4	2	108	1	35	No	No	No	No	No	No	No	No	No	No
5	2	103	1	33	No	No	No	No	No	No	No	No	No	No
6	2	92	1	30	No	No	No	No	No	No	No	No	No	No
7	2	86	1	28	No	No	No	No	No	No	No	No	No	No
8	2	82	1	26	No	No	No	No	No	No	No	No	No	No
9	2	65	1	21	No	No	No	No	No	No	No	No	No	No
10	2	62	1	20	No	No	No	No	No	No	No	No	No	No
11	2	62	1	20	No	No	No	No	No	No	No	No	No	No
12	2	58	1	19	No	No	No	No	No	No	No	No	No	No
13	2	53	1	17	No	No	No	No	No	No	No	No	No	No
14	2	49	1	16	No	No	No	No	No	No	No	No	No	No
15	2	49	1	16	No	No	No	No	No	No	No	No	No	No
16	2	48	1	15	No	No	No	No	No	No	No	No	No	No
17	2	28	1	9	No	No	No	No	No	No	No	No	No	No
18	2	15	1	5	No	No	No	No	No	No	No	No	No	No
19	2	14	1	4	No	No	No	No	No	No	No	No	No	No
20	2	5	1	2	No	No	No	No	No	No	No	No	No	No
21	2	4	1	1	No	No	No	No	No	No	No	No	No	No
22	2	4	1	1	No	No	No	No	No	No	No	No	No	No
23	2	3	1	1	No	No	No	No	No	No	No	No	No	No
24	2	3	1	1	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

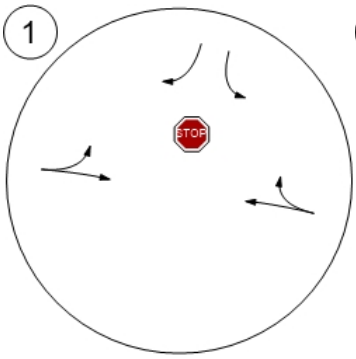
Warrant 3 Condition A

Orientation	E
Total Stopped Delay Per Vehicle on Minor Approach (s)	9.9
Number of Lanes on Minor Street Approach	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:07
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	44
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	180
Number of Approaches on Intersection	3
Total Volume Condition Met	No
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

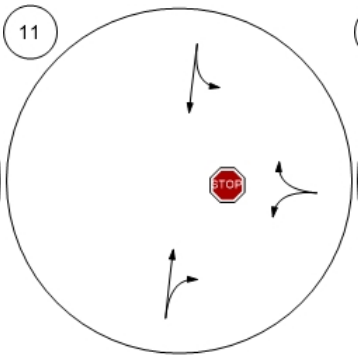
Report Figure 1: Lane Configuration and Traffic Control



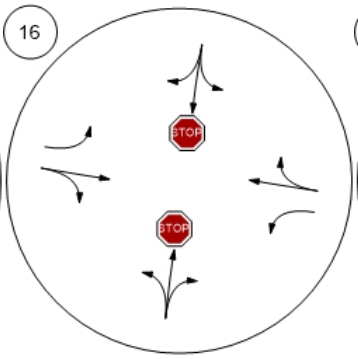
Battle Creek Rd at Reed Rd



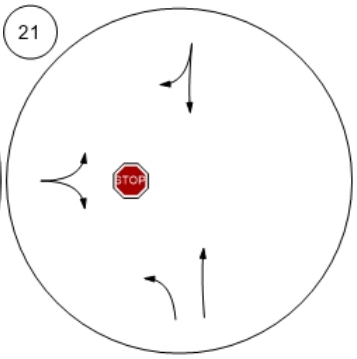
Reed Rd at Strong Rd



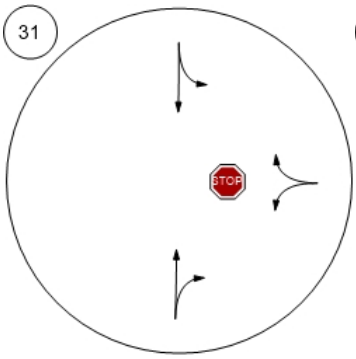
Reed Rd at Fairview Industria



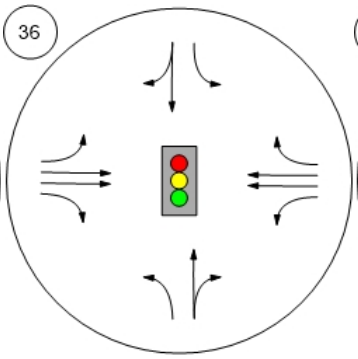
Fairview Industrial Dr at Mari



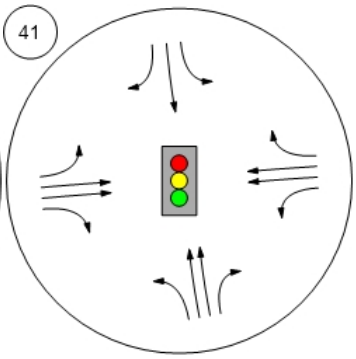
27th Ave at Marietta St



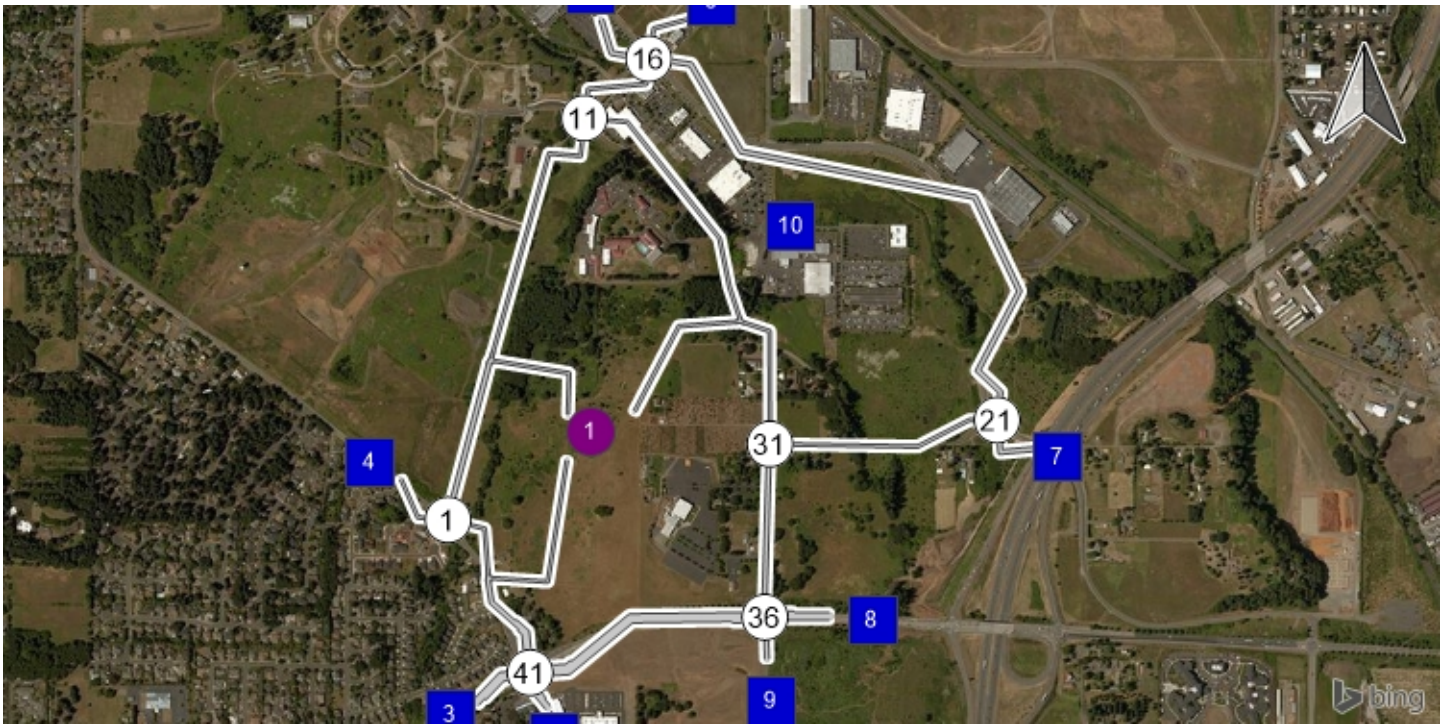
27th at Kuebler Blvd



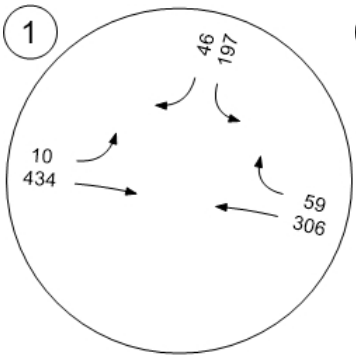
Keubler Blvd at Battle Creek



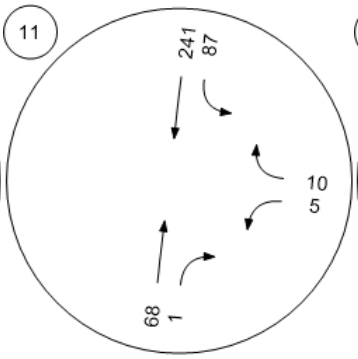
Report Figure 2a: Traffic Volume - Base Volume



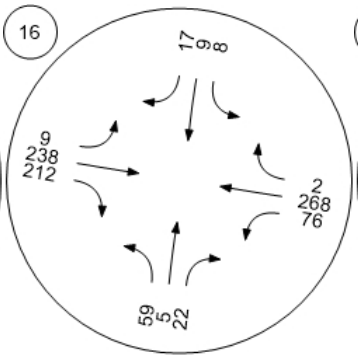
Battle Creek Rd at Reed Rd



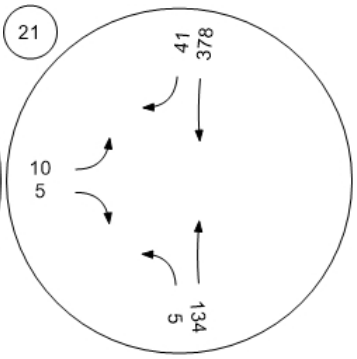
Reed Rd at Strong Rd



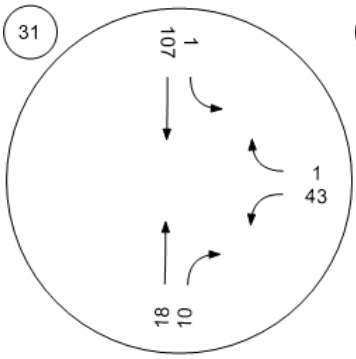
Reed Rd at Fairview Industria



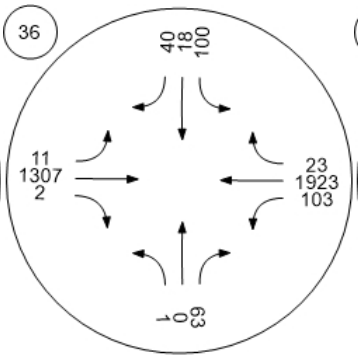
Fairview Industrial Dr at Mari



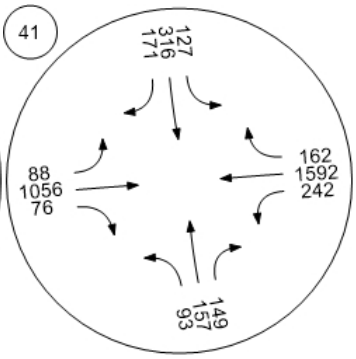
27th Ave at Marietta St



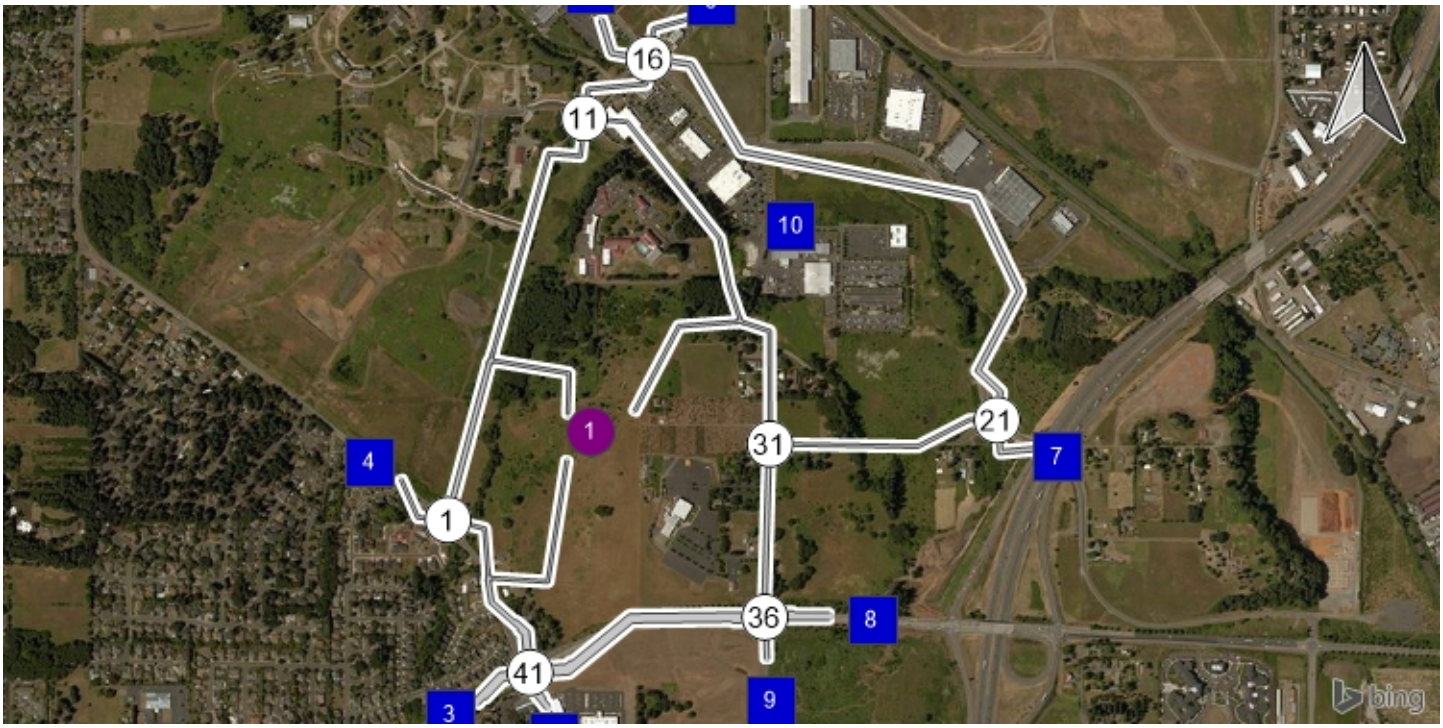
27th at Kuebler Blvd



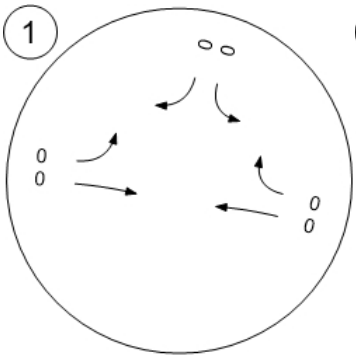
Keubler Blvd at Battle Creek



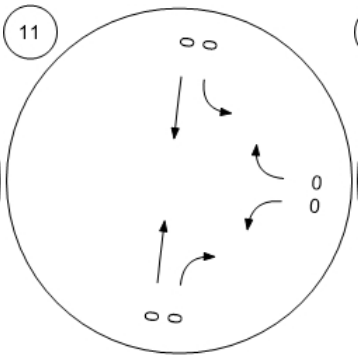
Report Figure 2d: Traffic Volume - Net New Site Trips



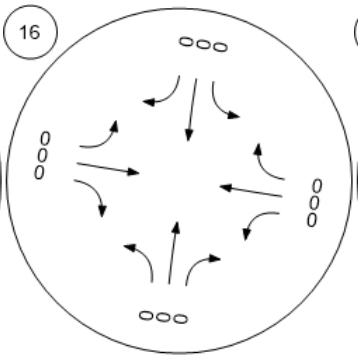
Battle Creek Rd at Reed Rd



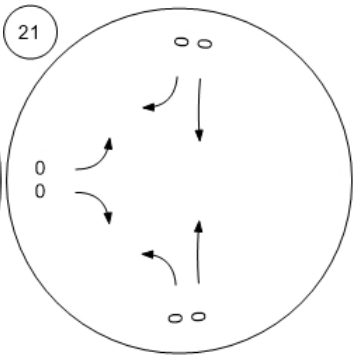
Reed Rd at Strong Rd



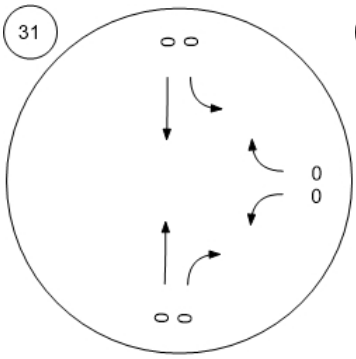
Reed Rd at Fairview Industria



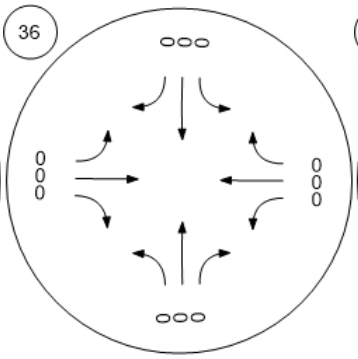
Fairview Industrial Dr at Mari



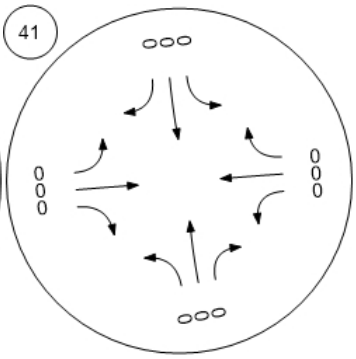
27th Ave at Marietta St



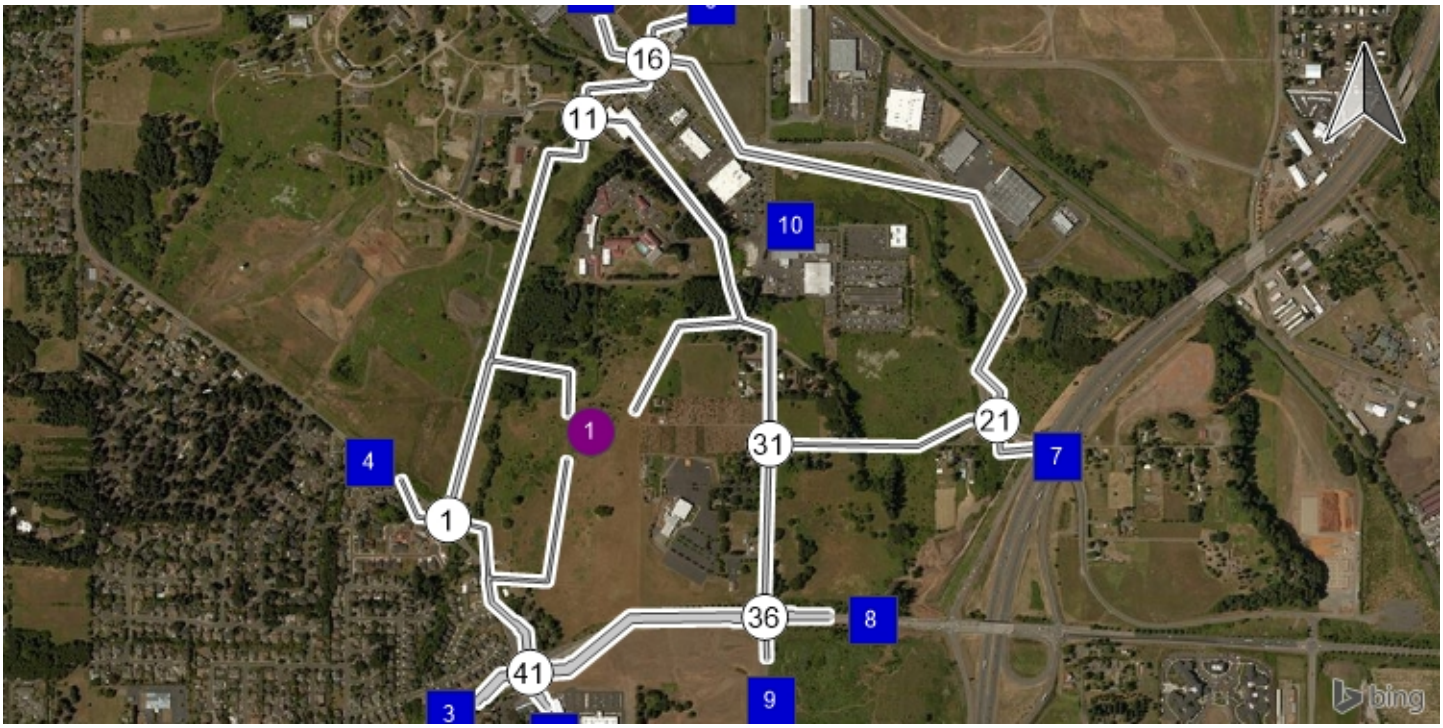
27th at Kuebler Blvd



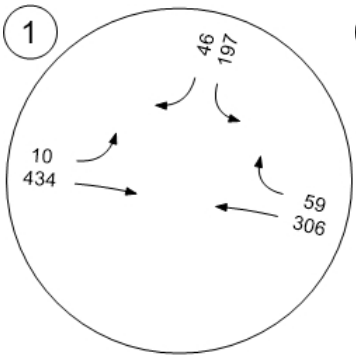
Keubler Blvd at Battle Creek



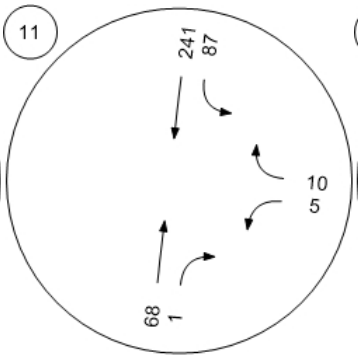
Report Figure 2f: Traffic Volume - Future Total Volume



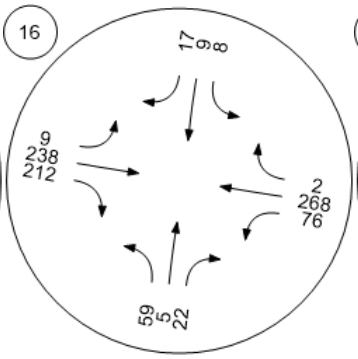
Battle Creek Rd at Reed Rd



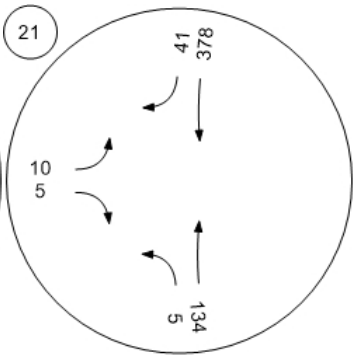
Reed Rd at Strong Rd



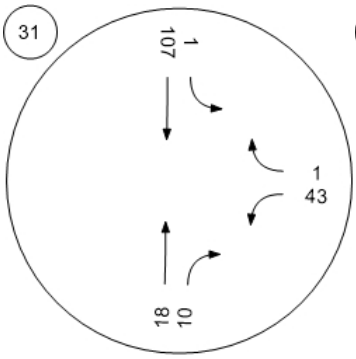
Reed Rd at Fairview Industria



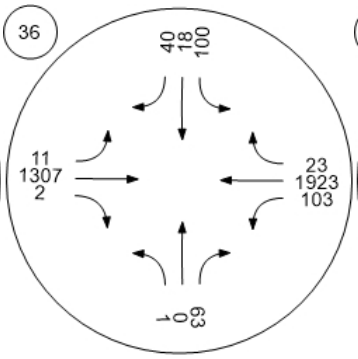
Fairview Industrial Dr at Mari



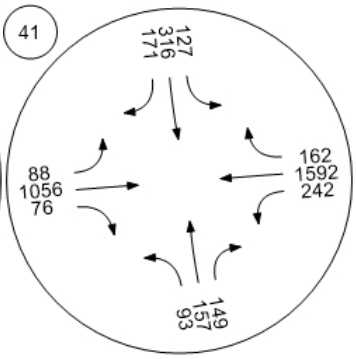
27th Ave at Marietta St



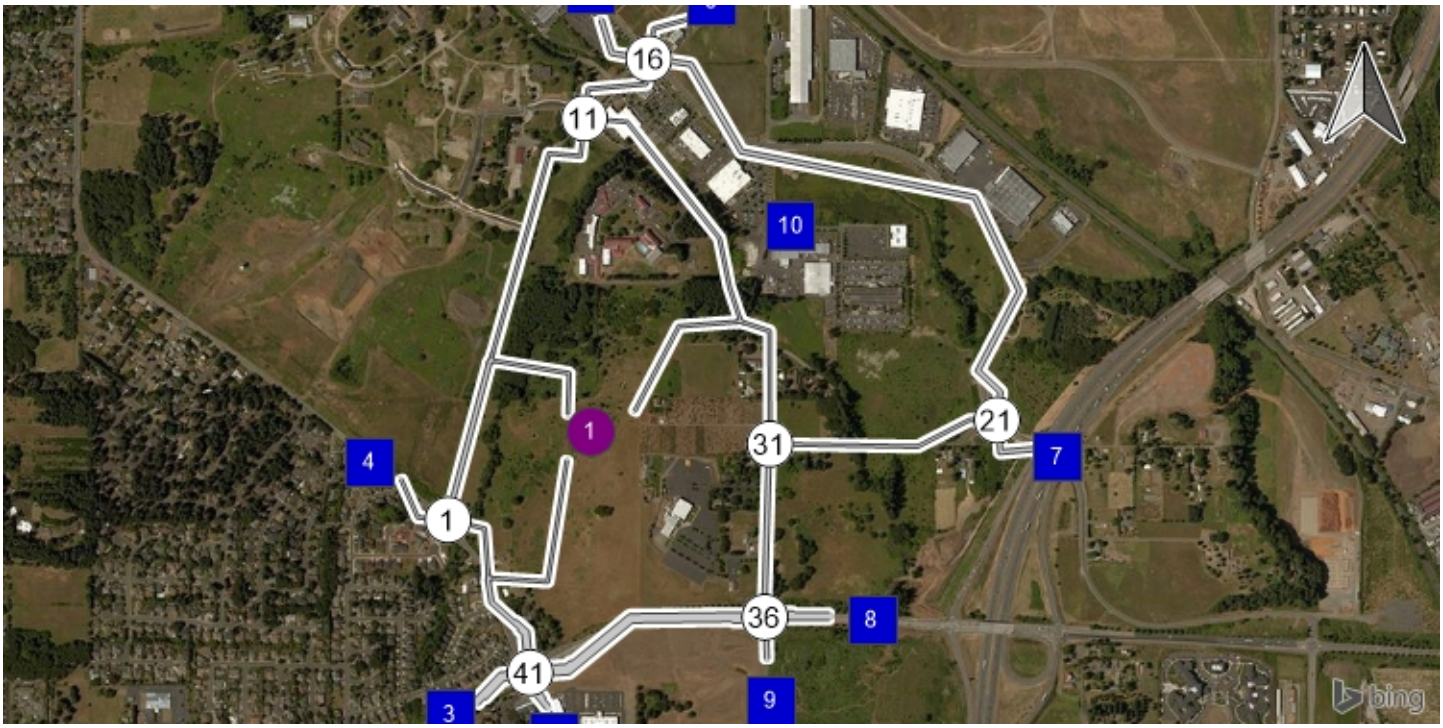
27th at Kuebler Blvd



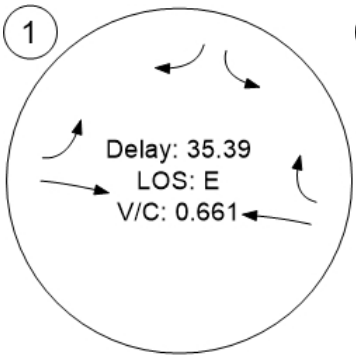
Keubler Blvd at Battle Creek



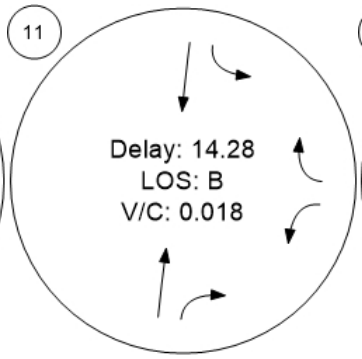
Report Figure 3: Traffic Conditions



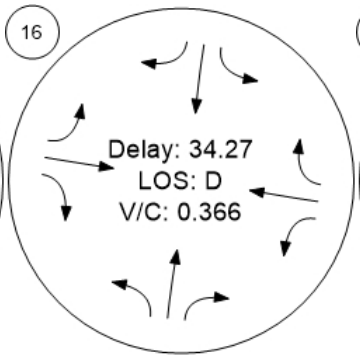
Battle Creek Rd at Reed Rd



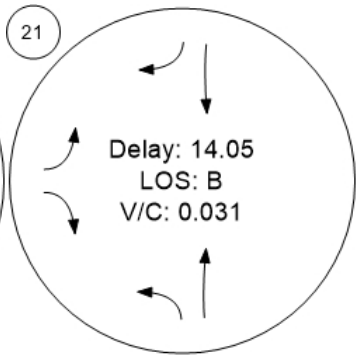
Reed Rd at Strong Rd



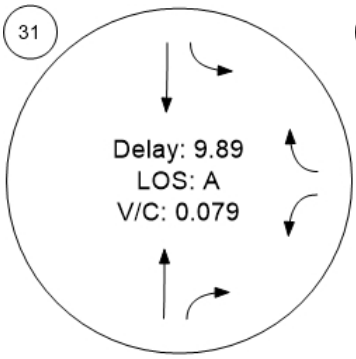
Reed Rd at Fairview Industria



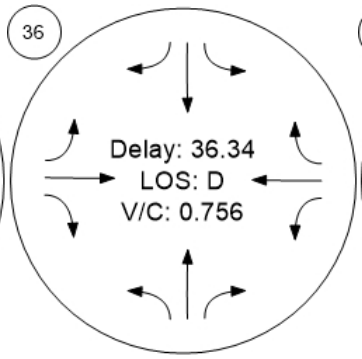
Fairview Industrial Dr at Mari



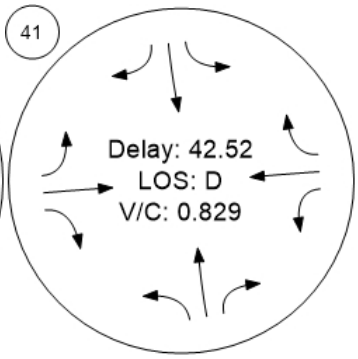
27th Ave at Marietta St



27th at Kuebler Blvd



Keubler Blvd at Battle Creek



18-392 Strong at 27th Subdivision TIA

Vistro File: J:\...\18-392 Reed Rd Subdivision - TIA.vistro
Report File: J:\...\18-392 PM Dev Ph 1.pdf

Scenario 4 PM Dev 2020 Ph 1
6/19/2018

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Battle Creek Rd at Reed Rd	Two-way stop	HCM 6th Edition	SB Left	0.711	40.7	E
6	Battle Creek Rd at Site Access	Two-way stop	HCM 6th Edition	WB Left	0.053	21.7	C
11	Reed Rd at Strong Rd	Two-way stop	HCM 6th Edition	WB Left	0.019	14.9	B
16	Reed Rd at Fairview Industrial Dr	Two-way stop	HCM 6th Edition	NB Left	0.418	38.6	E
21	Fairview Industrial Dr at Marietta St	Two-way stop	HCM 6th Edition	EB Left	0.033	14.5	B
26	East Access at Strong Rd	Two-way stop	HCM 6th Edition	EB Thru	0.029	10.4	B
31	27th Ave at Marietta St	Two-way stop	HCM 6th Edition	WB Left	0.087	10.3	B
36	27th at Kuebler Blvd	Signalized	HCM 6th Edition	SB Left	0.784	40.6	D
41	Keubler Blvd at Battle Creek Rd	Signalized	HCM 6th Edition	WB Left	0.865	81.5	F
42	Reed at Site Access	Two-way stop	HCM 6th Edition	WB Left	0.000	10.8	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. for all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Battle Creek Rd at Reed Rd

Control Type:	Two-way stop	Delay (sec / veh):	40.7
Analysis Method:	HCM 6th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.711

Intersection Setup

Name	Reed Rd		Battle Creek Rd		Battle Creek Rd	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Reed Rd		Battle Creek Rd		Battle Creek Rd	
Base Volume Input [veh/h]	197	46	10	434	306	59
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	1.20	1.20	1.80	1.80	3.00	3.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	3	2	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	203	47	10	450	317	61
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	55	13	3	122	86	17
Total Analysis Volume [veh/h]	221	51	11	489	345	66
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.71	0.08	0.01	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	40.69	10.81	8.16	0.00	0.00	0.00
Movement LOS	E	B	A	A	A	A
95th-Percentile Queue Length [veh]	5.09	0.25	2.25	2.25	0.00	0.00
95th-Percentile Queue Length [ft]	127.19	6.15	56.23	56.23	0.00	0.00
d_A, Approach Delay [s/veh]	35.09		0.18		0.00	
Approach LOS	E		A		A	
d_I, Intersection Delay [s/veh]	8.14					
Intersection LOS	E					

Intersection Level Of Service Report
Intersection 6: Battle Creek Rd at Site Access

Control Type:	Two-way stop	Delay (sec / veh):	21.7
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.053

Intersection Setup

Name	Battle Creek Rd		Battle Creek Rd		Site Access	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Battle Creek Rd		Battle Creek Rd		Site Access	
Base Volume Input [veh/h]	407	0	0	631	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	19	3	0	11	2
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	407	19	3	631	11	2
Peak Hour Factor	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	108	5	1	168	3	1
Total Analysis Volume [veh/h]	433	20	3	671	12	2
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.01	0.05	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	8.26	0.00	21.68	11.71
Movement LOS	A	A	A	A	C	B
95th-Percentile Queue Length [veh]	0.00	0.00	4.32	4.32	0.18	0.18
95th-Percentile Queue Length [ft]	0.00	0.00	107.98	107.98	4.42	4.42
d_A, Approach Delay [s/veh]	0.00		0.04		20.26	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	0.27					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 11: Reed Rd at Strong Rd

Control Type:	Two-way stop	Delay (sec / veh):	14.9
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.019

Intersection Setup

Name	Reed Rd		Reed Rd		Strong Rd	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Reed Rd		Reed Rd		Strong Rd	
Base Volume Input [veh/h]	68	1	87	241	5	10
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	5.80	5.80	1.80	1.80	6.70	6.70
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	2	0	5	0	0	1
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	72	1	95	248	5	11
Peak Hour Factor	0.7600	0.7600	0.7600	0.7600	0.7600	0.7600
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	24	0	31	82	2	4
Total Analysis Volume [veh/h]	95	1	125	326	7	14
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.08	0.00	0.02	0.01
d_M, Delay for Movement [s/veh]	0.00	0.00	7.62	0.00	14.88	9.00
Movement LOS	A	A	A	A	B	A
95th-Percentile Queue Length [veh]	0.00	0.00	1.28	1.28	0.10	0.10
95th-Percentile Queue Length [ft]	0.00	0.00	31.97	31.97	2.60	2.60
d_A, Approach Delay [s/veh]	0.00		2.11		10.96	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	2.08					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 16: Reed Rd at Fairview Industrial Dr

Control Type:	Two-way stop	Delay (sec / veh):	38.6
Analysis Method:	HCM 6th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.418

Intersection Setup

Name	Reed Rd			Reed Rd			Fairview Industrial Dr			Fairview Industrial Dr		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	250.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Reed Rd			Reed Rd			Fairview Industrial Dr			Fairview Industrial Dr		
Base Volume Input [veh/h]	59	5	22	8	9	17	9	238	212	76	268	2
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	4.70	4.70	4.70	0.00	0.00	0.00	4.10	4.10	4.10	4.00	4.00	4.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	3	0	0	0	0	0	0	0	5	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	64	5	23	8	9	18	9	245	223	78	276	2
Peak Hour Factor	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	20	2	7	2	3	5	3	75	68	24	84	1
Total Analysis Volume [veh/h]	78	6	28	10	11	22	11	299	272	95	337	2
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.42	0.03	0.05	0.05	0.06	0.03	0.01	0.00	0.00	0.10	0.00	0.00
d_M, Delay for Movement [s/veh]	38.64	35.73	25.18	25.72	26.28	12.04	8.01	0.00	0.00	9.01	0.00	0.00
Movement LOS	E	E	D	D	D	B	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	2.47	2.47	2.47	0.49	0.49	0.49	0.03	0.00	0.00	0.32	0.00	0.00
95th-Percentile Queue Length [ft]	61.83	61.83	61.83	12.24	12.24	12.24	0.69	0.00	0.00	7.92	0.00	0.00
d_A, Approach Delay [s/veh]	35.12			18.86			0.15			1.97		
Approach LOS	E			C			A			A		
d_I, Intersection Delay [s/veh]	4.86											
Intersection LOS	E											

Intersection Level Of Service Report
Intersection 21: Fairview Industrial Dr at Marietta St

Control Type:	Two-way stop	Delay (sec / veh):	14.5
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.033

Intersection Setup

Name	Fairview Industrial Dr		Fairview Industrial Dr		Marietta St	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Fairview Industrial Dr		Fairview Industrial Dr		Marietta St	
Base Volume Input [veh/h]	5	134	378	41	10	5
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	9.40	9.40	4.50	4.50	0.00	0.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	3	0	0	0	0	2
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	8	138	389	42	10	7
Peak Hour Factor	0.7900	0.7900	0.7900	0.7900	0.7900	0.7900
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	44	123	13	3	2
Total Analysis Volume [veh/h]	10	175	492	53	13	9
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.00	0.03	0.02
d_M, Delay for Movement [s/veh]	8.68	0.00	0.00	0.00	14.47	11.82
Movement LOS	A	A	A	A	B	B
95th-Percentile Queue Length [veh]	0.03	0.00	0.00	0.00	0.15	0.15
95th-Percentile Queue Length [ft]	0.77	0.00	0.00	0.00	3.83	3.83
d_A, Approach Delay [s/veh]	0.47		0.00		13.39	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.51					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 26: East Access at Strong Rd

Control Type:	Two-way stop	Delay (sec / veh):	10.4
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.029

Intersection Setup

Name	Strong Rd		East Access		Strong Rd	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Strong Rd		East Access		Strong Rd	
Base Volume Input [veh/h]	110	0	0	0	0	14
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	5	1	11	20	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	113	5	1	11	20	14
Peak Hour Factor	0.5600	0.5600	0.5600	0.5600	0.5600	0.5600
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	50	2	0	5	9	6
Total Analysis Volume [veh/h]	202	9	2	20	36	25
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Stop	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance		No	
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.03	0.03	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	10.17	10.39	7.71	0.00
Movement LOS	A	A	B	B	A	A
95th-Percentile Queue Length [veh]	0.00	0.00	0.10	0.10	0.14	0.14
95th-Percentile Queue Length [ft]	0.00	0.00	2.46	2.46	3.51	3.51
d_A, Approach Delay [s/veh]	0.00		10.37		4.55	
Approach LOS	A		B		A	
d_I, Intersection Delay [s/veh]	1.72					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 31: 27th Ave at Marietta St

Control Type:	Two-way stop	Delay (sec / veh):	10.3
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.087

Intersection Setup

Name	27th Ave		Strong Rd		Marietta St	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	27th Ave		Strong Rd		Marietta St	
Base Volume Input [veh/h]	18	10	1	107	43	1
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	17	0	2	9	0	3
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	36	10	3	119	44	4
Peak Hour Factor	0.6800	0.6800	0.6800	0.6800	0.6800	0.6800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	13	4	1	44	16	1
Total Analysis Volume [veh/h]	53	15	4	175	65	6
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.09	0.01
d_M, Delay for Movement [s/veh]	0.00	0.00	7.33	0.00	10.30	9.04
Movement LOS	A	A	A	A	B	A
95th-Percentile Queue Length [veh]	0.00	0.00	0.39	0.39	0.31	0.31
95th-Percentile Queue Length [ft]	0.00	0.00	9.80	9.80	7.66	7.66
d_A, Approach Delay [s/veh]	0.00		0.16		10.19	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	2.37					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 36: 27th at Kuebler Blvd

Control Type:	Signalized	Delay (sec / veh):	40.6
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.784

Intersection Setup

Name	27th Ave			27th Ave			Kuebler Blvd			Kuebler Blvd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	1	1	0	1
Pocket Length [ft]	125.00	100.00	100.00	100.00	100.00	100.00	250.00	100.00	200.00	350.00	100.00	175.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	27th Ave			27th Ave			Kuebler Blvd			Kuebler Blvd		
Base Volume Input [veh/h]	1	0	63	100	18	40	11	1307	2	103	1923	23
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	4.70	4.70	4.70	0.60	0.60	0.60	3.60	3.60	3.60	1.30	1.30	1.30
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	1	0	8	1	0	0	0	0	0	0	16
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1	1	65	111	20	41	11	1346	2	106	1981	40
Peak Hour Factor	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	17	30	5	11	3	358	1	28	527	11
Total Analysis Volume [veh/h]	1	1	69	118	21	44	12	1432	2	113	2107	43
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	9	19	0	9	19	0	34	83	0	9	58	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	L	C	R	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	0	15	5	20	2	79	79	5	82	82
g / C, Green / Cycle	0.00	0.13	0.04	0.17	0.01	0.66	0.66	0.04	0.68	0.68
(v / s)_i Volume / Saturation Flow Rate	0.00	0.05	0.07	0.04	0.01	0.45	0.00	0.07	0.65	0.03
s, saturation flow rate [veh/h]	1568	1403	1621	1520	1582	3163	1412	1612	3222	1439
c, Capacity [veh/h]	2	178	68	254	22	2076	927	67	2205	984
d1, Uniform Delay [s]	59.86	48.15	57.50	43.48	58.80	12.95	7.10	57.50	17.29	6.17
k, delay calibration	0.11	0.50	0.11	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	92.03	6.41	347.36	2.42	19.56	0.42	0.00	319.03	3.27	0.02
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.43	0.39	1.74	0.26	0.55	0.69	0.00	1.68	0.96	0.04
d, Delay for Lane Group [s/veh]	151.89	54.55	404.86	45.90	78.36	13.37	7.10	376.53	20.56	6.19
Lane Group LOS	F	D	F	D	E	B	A	F	C	A
Critical Lane Group	No	Yes	Yes	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh]	0.09	2.25	8.58	1.86	0.48	11.31	0.02	8.01	24.20	0.34
50th-Percentile Queue Length [ft]	2.25	56.25	214.62	46.53	12.04	282.71	0.43	200.18	604.97	8.57
95th-Percentile Queue Length [veh]	0.16	4.05	14.96	3.35	0.87	16.82	0.03	14.06	32.27	0.62
95th-Percentile Queue Length [ft]	4.05	101.25	374.08	83.75	21.68	420.59	0.78	351.41	806.66	15.42

Movement, Approach, & Intersection Results

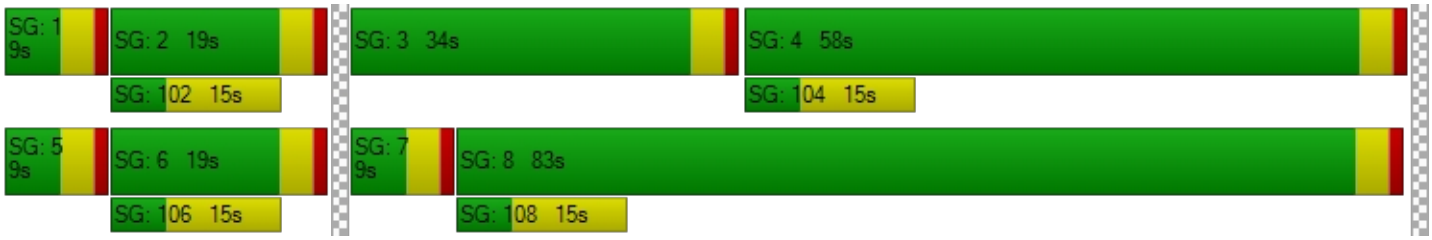
d_M, Delay for Movement [s/veh]	151.89	54.55	54.55	404.86	45.90	45.90	78.36	13.37	7.10	376.53	20.56	6.19
Movement LOS	F	D	D	F	D	D	E	B	A	F	C	A
d_A, Approach Delay [s/veh]	55.92			277.36			13.90			38.06		
Approach LOS	E			F			B			D		
d_I, Intersection Delay [s/veh]	40.62											
Intersection LOS	D											
Intersection V/C	0.784											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	51.34	51.34	51.34	51.34
l_p,int, Pedestrian LOS Score for Intersection	2.023	2.033	3.053	3.099
Crosswalk LOS	B	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	250	250	1317	900
d_b, Bicycle Delay [s]	45.94	45.94	7.00	18.15
l_b,int, Bicycle LOS Score for Intersection	1.677	1.862	2.753	3.427
Bicycle LOS	A	A	C	C

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 41: Keubler Blvd at Battle Creek Rd

Control Type:	Signalized	Delay (sec / veh):	81.5
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.865

Intersection Setup

Name	Battle Creek Rd			Battle Creek Rd			Kuebler Blvd			Kuebler Blvd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	1	0	1	1	0	1	1	0	1
Pocket Length [ft]	100.00	100.00	150.00	275.00	100.00	275.00	350.00	100.00	350.00	250.00	100.00	250.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Battle Creek Rd			Battle Creek Rd			Kuebler Blvd			Kuebler Blvd		
Base Volume Input [veh/h]	93	157	149	127	316	171	88	1056	76	242	1592	162
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	3.00	3.00	3.00	1.10	1.10	1.10	3.90	3.90	3.90	1.50	1.50	1.50
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	5	0	0	3	8	14	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	96	167	153	131	328	184	105	1088	78	249	1640	167
Peak Hour Factor	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	25	43	40	34	85	48	27	283	20	65	427	43
Total Analysis Volume [veh/h]	100	174	159	136	342	192	109	1133	81	259	1708	174
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	110
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	12	23	0	15	26	0	35	60	0	12	37	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	110	110	110	110	110	110	110	110	110	110	110	110
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	8	19	19	11	22	22	9	56	56	8	55	55
g / C, Green / Cycle	0.07	0.17	0.17	0.10	0.20	0.20	0.08	0.51	0.51	0.07	0.50	0.50
(v / s)_i Volume / Saturation Flow Rate	0.06	0.05	0.11	0.08	0.20	0.13	0.07	0.36	0.06	0.16	0.53	0.12
s, saturation flow rate [veh/h]	1590	3179	1419	1614	1695	1441	1578	3156	1409	1609	3217	1436
c, Capacity [veh/h]	116	555	248	161	341	290	134	1602	715	117	1594	712
d1, Uniform Delay [s]	50.46	39.64	42.20	48.70	43.93	40.48	49.48	20.81	14.15	51.00	27.75	15.93
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.15	0.12	0.11
I, Upstream Filtering 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
d2, Incremental Delay [s]	16.73	1.47	12.09	11.44	49.18	11.30	11.20	0.58	0.07	552.89	35.78	0.18
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression 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

Lane Group Results

X, volume / capacity	0.86	0.31	0.64	0.85	1.00	0.66	0.81	0.71	0.11	2.21	1.07	0.24
d, Delay for Lane Group [s/veh]	67.19	41.11	54.29	60.14	93.11	51.77	60.68	21.40	14.22	603.89	63.53	16.11
Lane Group LOS	E	D	D	E	F	D	E	C	B	F	F	B
Critical Lane Group	Yes	No	No	No	Yes	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh]	3.25	2.17	4.84	4.17	13.87	5.68	3.35	10.86	1.06	21.21	27.69	2.51
50th-Percentile Queue Length [ft]	81.34	54.28	120.88	104.22	346.74	142.04	83.83	271.54	26.43	530.33	692.18	62.79
95th-Percentile Queue Length [veh]	5.86	3.91	8.44	7.50	20.00	9.59	6.04	16.27	1.90	34.27	38.29	4.52
95th-Percentile Queue Length [ft]	146.42	97.70	211.04	187.60	499.95	239.77	150.90	406.66	47.58	856.66	957.30	113.02

Movement, Approach, & Intersection Results

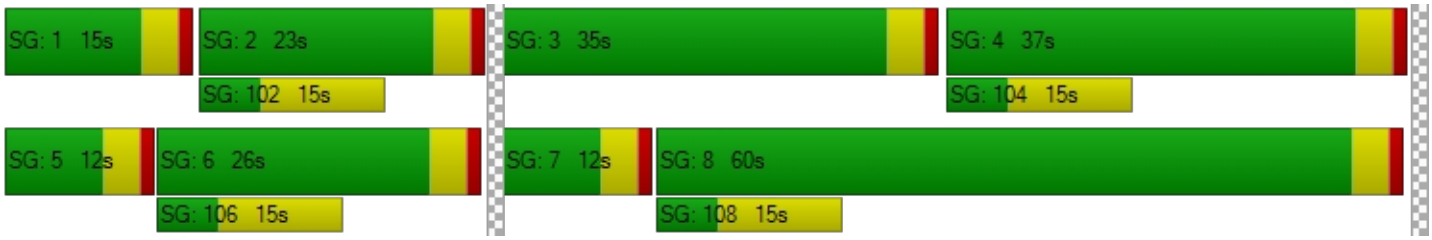
d_M, Delay for Movement [s/veh]	67.19	41.11	54.29	60.14	93.11	51.77	60.68	21.40	14.22	603.89	63.53	16.11
Movement LOS	E	D	D	E	F	D	E	C	B	F	F	B
d_A, Approach Delay [s/veh]	51.97			74.57			24.19			125.04		
Approach LOS	D			E			C			F		
d_I, Intersection Delay [s/veh]	81.50											
Intersection LOS	F											
Intersection V/C	0.865											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	46.37	46.37	46.37	46.37
l_p,int, Pedestrian LOS Score for Intersection	2.528	2.531	3.004	3.044
Crosswalk LOS	B	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	345	400	1018	600
d_b, Bicycle Delay [s]	37.64	35.20	13.25	26.95
l_b,int, Bicycle LOS Score for Intersection	1.917	2.665	2.651	3.326
Bicycle LOS	A	B	B	C

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 42: Reed at Site Access

Control Type:	Two-way stop	Delay (sec / veh):	10.8
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name	Reed Rd		Reed Rd		Site Access	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Reed Rd		Reed Rd		Site Access	
Base Volume Input [veh/h]	69	0	0	246	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	2
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	71	0	0	253	0	2
Peak Hour Factor	0.8400	0.8400	0.8400	0.8400	0.8400	0.8400
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	21	0	0	75	0	1
Total Analysis Volume [veh/h]	85	0	0	301	0	2
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	7.38	0.00	10.84	8.70
Movement LOS	A	A	A	A	B	A
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.00	0.01	0.01
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	0.00	0.15	0.15
d_A, Approach Delay [s/veh]	0.00		0.00		8.70	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.04					
Intersection LOS	B					

18-392 Strong at 27th Subdivision TIA

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Scenario 4 PM Dev 2020 Ph 1
6/19/2018

Turning Movement Volume: Summary

ID	Intersection Name	Southbound		Eastbound		Westbound		Total Volume
		Left	Right	Left	Thru	Thru	Right	
1	Battle Creek Rd at Reed Rd	203	47	10	450	317	61	1088

ID	Intersection Name	Northbound		Southbound		Westbound		Total Volume
		Thru	Right	Left	Thru	Left	Right	
6	Battle Creek Rd at Site Access	407	19	3	631	11	2	1073

ID	Intersection Name	Northbound		Southbound		Westbound		Total Volume
		Thru	Right	Left	Thru	Left	Right	
11	Reed Rd at Strong Rd	72	1	95	248	5	11	432

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
16	Reed Rd at Fairview Industrial Dr	64	5	23	8	9	18	9	245	223	78	276	2	960

ID	Intersection Name	Northbound		Southbound		Eastbound		Total Volume
		Left	Thru	Thru	Right	Left	Right	
21	Fairview Industrial Dr at Marietta St	8	138	389	42	10	7	594

ID	Intersection Name	Southbound		Eastbound		Westbound		Total Volume
		Left	Right	Left	Thru	Thru	Right	
26	East Access at Strong Rd	113	5	1	11	20	14	164

ID	Intersection Name	Northbound		Southbound		Westbound		Total Volume
		Thru	Right	Left	Thru	Left	Right	
31	27th Ave at Marietta St	36	10	3	119	44	4	216

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
36	27th at Kuebler Blvd	1	1	65	111	20	41	11	1346	2	106	1981	40	3725

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
41	Keubler Blvd at Battle Creek Rd	96	167	153	131	328	184	105	1088	78	249	1640	167	4386

ID	Intersection Name	Northbound		Southbound		Westbound		Total Volume
		Thru	Right	Left	Thru	Left	Right	
42	Reed at Site Access	71	0	0	253	0	2	326

18-392 Strong at 27th Subdivision TIA

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Report File: J:\...\18-392 PM Dev Ph 1.pdf

Scenario 4 PM Dev 2020 Ph 1
6/19/2018

Turning Movement Volume: Detail

ID	Intersection Name	Volume Type	Southbound		Eastbound		Westbound		Total Volume
			Left	Right	Left	Thru	Thru	Right	
1	Battle Creek Rd at Reed Rd	Final Base	197	46	10	434	306	59	1052
		Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	0	0	0	3	2	0	5
		Other	0	0	0	0	0	0	0
		Future Total	**203**	**47**	**10**	**450**	**317**	**61**	**1088**

ID	Intersection Name	Volume Type	Northbound		Southbound		Westbound		Total Volume
			Thru	Right	Left	Thru	Left	Right	
6	Battle Creek Rd at Site Access	Final Base	407	0	0	631	0	0	1038
		Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	0	19	3	0	11	2	35
		Other	0	0	0	0	0	0	0
		Future Total	**407**	**19**	**3**	**631**	**11**	**2**	**1073**

ID	Intersection Name	Volume Type	Northbound		Southbound		Westbound		Total Volume
			Thru	Right	Left	Thru	Left	Right	
11	Reed Rd at Strong Rd	Final Base	68	1	87	241	5	10	412
		Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	2	0	5	0	0	1	8
		Other	0	0	0	0	0	0	0
		Future Total	**72**	**1**	**95**	**248**	**5**	**11**	**432**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
16	Reed Rd at Fairview Industrial Dr	Final Base	59	5	22	8	9	17	9	238	212	76	268	2	925
		Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	3	0	0	0	0	0	0	0	5	0	0	0	8
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**64**	**5**	**23**	**8**	**9**	**18**	**9**	**245**	**223**	**78**	**276**	**2**	**960**

ID	Intersection Name	Volume Type	Northbound		Southbound		Eastbound		Total Volume
			Left	Thru	Thru	Right	Left	Right	
21	Fairview Industrial Dr at Marietta St	Final Base	5	134	378	41	10	5	573
		Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	3	0	0	0	0	2	5
		Other	0	0	0	0	0	0	0
		Future Total	**8**	**138**	**389**	**42**	**10**	**7**	**594**

ID	Intersection Name	Volume Type	Southbound		Eastbound		Westbound		Total Volume
			Left	Right	Left	Thru	Thru	Right	
26	East Access at Strong Rd	Final Base	110	0	0	0	0	14	124
		Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	0	5	1	11	20	0	37
		Other	0	0	0	0	0	0	0
		Future Total	**113**	**5**	**1**	**11**	**20**	**14**	**164**

ID	Intersection Name	Volume Type	Northbound		Southbound		Westbound		Total Volume
			Thru	Right	Left	Thru	Left	Right	
31	27th Ave at Marietta St	Final Base	18	10	1	107	43	1	180
		Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	17	0	2	9	0	3	31
		Other	0	0	0	0	0	0	0
		Future Total	**36**	**10**	**3**	**119**	**44**	**4**	**216**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
36	27th at Kuebler Blvd	Final Base	1	0	63	100	18	40	11	1307	2	103	1923	23	3591
		Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	1	0	8	1	0	0	0	0	0	0	16	26
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**1**	**1**	**65**	**111**	**20**	**41**	**11**	**1346**	**2**	**106**	**1981**	**40**	**3725**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
41	Keubler Blvd at Battle Creek Rd	Final Base	93	157	149	127	316	171	88	1056	76	242	1592	162	4229
		Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	5	0	0	3	8	14	0	0	0	0	0	30
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**96**	**167**	**153**	**131**	**328**	**184**	**105**	**1088**	**78**	**249**	**1640**	**167**	**4386**

ID	Intersection Name	Volume Type	Northbound		Southbound		Westbound		Total Volume
			Thru	Right	Left	Thru	Left	Right	
42	Reed at Site Access	Final Base	69	0	0	246	0	0	315
		Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	2	2
		Other	0	0	0	0	0	0	0
		Future Total	**71**	**0**	**0**	**253**	**0**	**2**	**326**

Signal Warrants Report For Intersection 1: Battle Creek Rd at Reed Rd

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	E, W
Minor Approaches	N
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	E	W	N
1	378	460	250
2	363	442	240
3	355	432	235
4	302	368	200
5	287	350	190
6	257	313	170
7	238	290	158
8	227	276	150
9	181	221	120
10	170	207	113
11	170	207	113
12	163	198	108
13	147	179	98
14	136	166	90
15	136	166	90
16	132	161	88
17	76	92	50
18	42	51	28
19	38	46	25
20	15	18	10
21	11	14	8
22	11	14	8
23	8	9	5
24	8	9	5

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	838	2	250	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	No	No
2	2	805	2	240	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	No	No
3	2	787	2	235	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	No	No
4	2	670	2	200	Yes	Yes	Yes	Yes	No	No	Yes	Yes	No	No
5	2	637	2	190	No	Yes	Yes	Yes	No	No	Yes	Yes	No	No
6	2	570	2	170	No	Yes	Yes	Yes	No	No	No	Yes	No	No
7	2	528	2	158	No	No	Yes	Yes	No	No	No	Yes	No	No
8	2	503	2	150	No	No	Yes	Yes	No	No	No	No	No	No
9	2	402	2	120	No	No	No	Yes	No	No	No	No	No	No
10	2	377	2	113	No	No	No	Yes	No	No	No	No	No	No
11	2	377	2	113	No	No	No	Yes	No	No	No	No	No	No
12	2	361	2	108	No	No	No	No	No	No	No	No	No	No
13	2	326	2	98	No	No	No	No	No	No	No	No	No	No
14	2	302	2	90	No	No	No	No	No	No	No	No	No	No
15	2	302	2	90	No	No	No	No	No	No	No	No	No	No
16	2	293	2	88	No	No	No	No	No	No	No	No	No	No
17	2	168	2	50	No	No	No	No	No	No	No	No	No	No
18	2	93	2	28	No	No	No	No	No	No	No	No	No	No
19	2	84	2	25	No	No	No	No	No	No	No	No	No	No
20	2	33	2	10	No	No	No	No	No	No	No	No	No	No
21	2	25	2	8	No	No	No	No	No	No	No	No	No	No
22	2	25	2	8	No	No	No	No	No	No	No	No	No	No
23	2	17	2	5	No	No	No	No	No	No	No	No	No	No
24	2	17	2	5	No	No	No	No	No	No	No	No	No	No
Hours Met					4	6	8	11	0	3	5	7	0	0

Warrant 3 Condition A

Orientation	N
Total Stopped Delay Per Vehicle on Minor Approach (s)	35.1
Number of Lanes on Minor Street Approach	2
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	2:26
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	250
High Minor Volume Condition Met	Yes
Total Entering Volume on All Approaches During Same Hour	1088
Number of Approaches on Intersection	3
Total Volume Condition Met	Yes
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

Signal Warrants Report For Intersection 6: Battle Creek Rd at Site Access

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	S, N
Minor Approaches	E
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	S	N	E
1	426	634	13
2	409	609	12
3	400	596	12
4	341	507	10
5	324	482	10
6	290	431	9
7	268	399	8
8	256	380	8
9	204	304	6
10	192	285	6
11	192	285	6
12	183	273	6
13	166	247	5
14	153	228	5
15	153	228	5
16	149	222	5
17	85	127	3
18	47	70	1
19	43	63	1
20	17	25	1
21	13	19	0
22	13	19	0
23	9	13	0
24	9	13	0

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	1060	1	13	No	No	No	No	No	No	No	No	No	No
2	2	1018	1	12	No	No	No	No	No	No	No	No	No	No
3	2	996	1	12	No	No	No	No	No	No	No	No	No	No
4	2	848	1	10	No	No	No	No	No	No	No	No	No	No
5	2	806	1	10	No	No	No	No	No	No	No	No	No	No
6	2	721	1	9	No	No	No	No	No	No	No	No	No	No
7	2	667	1	8	No	No	No	No	No	No	No	No	No	No
8	2	636	1	8	No	No	No	No	No	No	No	No	No	No
9	2	508	1	6	No	No	No	No	No	No	No	No	No	No
10	2	477	1	6	No	No	No	No	No	No	No	No	No	No
11	2	477	1	6	No	No	No	No	No	No	No	No	No	No
12	2	456	1	6	No	No	No	No	No	No	No	No	No	No
13	2	413	1	5	No	No	No	No	No	No	No	No	No	No
14	2	381	1	5	No	No	No	No	No	No	No	No	No	No
15	2	381	1	5	No	No	No	No	No	No	No	No	No	No
16	2	371	1	5	No	No	No	No	No	No	No	No	No	No
17	2	212	1	3	No	No	No	No	No	No	No	No	No	No
18	2	117	1	1	No	No	No	No	No	No	No	No	No	No
19	2	106	1	1	No	No	No	No	No	No	No	No	No	No
20	2	42	1	1	No	No	No	No	No	No	No	No	No	No
21	2	32	1	0	No	No	No	No	No	No	No	No	No	No
22	2	32	1	0	No	No	No	No	No	No	No	No	No	No
23	2	22	1	0	No	No	No	No	No	No	No	No	No	No
24	2	22	1	0	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	E
Total Stopped Delay Per Vehicle on Minor Approach (s)	20.3
Number of Lanes on Minor Street Approach	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:04
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	13
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	1073
Number of Approaches on Intersection	3
Total Volume Condition Met	Yes
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

Signal Warrants Report For Intersection 11: Reed Rd at Strong Rd

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	N, S
Minor Approaches	E
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	N	S	E
1	343	73	16
2	329	70	15
3	322	69	15
4	274	58	13
5	261	55	12
6	233	50	11
7	216	46	10
8	206	44	10
9	165	35	8
10	154	33	7
11	154	33	7
12	147	31	7
13	134	28	6
14	123	26	6
15	123	26	6
16	120	26	6
17	69	15	3
18	38	8	2
19	34	7	2
20	14	3	1
21	10	2	0
22	10	2	0
23	7	1	0
24	7	1	0

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	416	1	16	No	No	No	No	No	No	No	No	No	No
2	2	399	1	15	No	No	No	No	No	No	No	No	No	No
3	2	391	1	15	No	No	No	No	No	No	No	No	No	No
4	2	332	1	13	No	No	No	No	No	No	No	No	No	No
5	2	316	1	12	No	No	No	No	No	No	No	No	No	No
6	2	283	1	11	No	No	No	No	No	No	No	No	No	No
7	2	262	1	10	No	No	No	No	No	No	No	No	No	No
8	2	250	1	10	No	No	No	No	No	No	No	No	No	No
9	2	200	1	8	No	No	No	No	No	No	No	No	No	No
10	2	187	1	7	No	No	No	No	No	No	No	No	No	No
11	2	187	1	7	No	No	No	No	No	No	No	No	No	No
12	2	178	1	7	No	No	No	No	No	No	No	No	No	No
13	2	162	1	6	No	No	No	No	No	No	No	No	No	No
14	2	149	1	6	No	No	No	No	No	No	No	No	No	No
15	2	149	1	6	No	No	No	No	No	No	No	No	No	No
16	2	146	1	6	No	No	No	No	No	No	No	No	No	No
17	2	84	1	3	No	No	No	No	No	No	No	No	No	No
18	2	46	1	2	No	No	No	No	No	No	No	No	No	No
19	2	41	1	2	No	No	No	No	No	No	No	No	No	No
20	2	17	1	1	No	No	No	No	No	No	No	No	No	No
21	2	12	1	0	No	No	No	No	No	No	No	No	No	No
22	2	12	1	0	No	No	No	No	No	No	No	No	No	No
23	2	8	1	0	No	No	No	No	No	No	No	No	No	No
24	2	8	1	0	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	E
Total Stopped Delay Per Vehicle on Minor Approach (s)	11
Number of Lanes on Minor Street Approach	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:02
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	16
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	432
Number of Approaches on Intersection	3
Total Volume Condition Met	No
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

Signal Warrants Report For Intersection 16: Reed Rd at Fairview Industrial Dr

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	E, W
Minor Approaches	N, S
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets	
	E	W	N	S
1	356	477	35	92
2	342	458	34	88
3	335	448	33	86
4	285	382	28	74
5	271	363	27	70
6	242	324	24	63
7	224	301	22	58
8	214	286	21	55
9	171	229	17	44
10	160	215	16	41
11	160	215	16	41
12	153	205	15	40
13	139	186	14	36
14	128	172	13	33
15	128	172	13	33
16	125	167	12	32
17	71	95	7	18
18	39	52	4	10
19	36	48	4	9
20	14	19	1	4
21	11	14	1	3
22	11	14	1	3
23	7	10	1	2
24	7	10	1	2

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	4	833	2	127	No	No	No	Yes	No	Yes	Yes	Yes	No	No
2	4	800	2	122	No	No	No	Yes	No	Yes	Yes	Yes	No	No
3	4	783	2	119	No	No	No	Yes	No	Yes	Yes	Yes	No	No
4	4	667	2	102	No	No	No	No	No	No	Yes	Yes	No	No
5	4	634	2	97	No	No	No	No	No	No	Yes	Yes	No	No
6	4	566	2	87	No	No	No	No	No	No	No	Yes	No	No
7	4	525	2	80	No	No	No	No	No	No	No	Yes	No	No
8	4	500	2	76	No	No	No	No	No	No	No	No	No	No
9	4	400	2	61	No	No	No	No	No	No	No	No	No	No
10	4	375	2	57	No	No	No	No	No	No	No	No	No	No
11	4	375	2	57	No	No	No	No	No	No	No	No	No	No
12	4	358	2	55	No	No	No	No	No	No	No	No	No	No
13	4	325	2	50	No	No	No	No	No	No	No	No	No	No
14	4	300	2	46	No	No	No	No	No	No	No	No	No	No
15	4	300	2	46	No	No	No	No	No	No	No	No	No	No
16	4	292	2	44	No	No	No	No	No	No	No	No	No	No
17	4	166	2	25	No	No	No	No	No	No	No	No	No	No
18	4	91	2	14	No	No	No	No	No	No	No	No	No	No
19	4	84	2	13	No	No	No	No	No	No	No	No	No	No
20	4	33	2	5	No	No	No	No	No	No	No	No	No	No
21	4	25	2	4	No	No	No	No	No	No	No	No	No	No
22	4	25	2	4	No	No	No	No	No	No	No	No	No	No
23	4	17	2	3	No	No	No	No	No	No	No	No	No	No
24	4	17	2	3	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	3	0	3	5	7	0	0

Warrant 3 Condition A

Orientation	N	S
Total Stopped Delay Per Vehicle on Minor Approach (s)	18.9	35.1
Number of Lanes on Minor Street Approach	1	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:11	0:53
Delay Condition Met	No	No
Volume on Minor Street Approach During Same Hour	35	92
High Minor Volume Condition Met	No	No
Total Entering Volume on All Approaches During Same Hour	960	960
Number of Approaches on Intersection	4	4
Total Volume Condition Met	Yes	Yes
Warrant Met for Approach	No	No
Warrant Met for Intersection	**No**	

Signal Warrants Report For Intersection 21: Fairview Industrial Dr at Marietta St

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	S, N
Minor Approaches	W
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	S	N	W
1	146	431	17
2	140	414	16
3	137	405	16
4	117	345	14
5	111	328	13
6	99	293	12
7	92	272	11
8	88	259	10
9	70	207	8
10	66	194	8
11	66	194	8
12	63	185	7
13	57	168	7
14	53	155	6
15	53	155	6
16	51	151	6
17	29	86	3
18	16	47	2
19	15	43	2
20	6	17	1
21	4	13	1
22	4	13	1
23	3	9	0
24	3	9	0

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	3	577	1	17	No	No	No	No	No	No	No	No	No	No
2	3	554	1	16	No	No	No	No	No	No	No	No	No	No
3	3	542	1	16	No	No	No	No	No	No	No	No	No	No
4	3	462	1	14	No	No	No	No	No	No	No	No	No	No
5	3	439	1	13	No	No	No	No	No	No	No	No	No	No
6	3	392	1	12	No	No	No	No	No	No	No	No	No	No
7	3	364	1	11	No	No	No	No	No	No	No	No	No	No
8	3	347	1	10	No	No	No	No	No	No	No	No	No	No
9	3	277	1	8	No	No	No	No	No	No	No	No	No	No
10	3	260	1	8	No	No	No	No	No	No	No	No	No	No
11	3	260	1	8	No	No	No	No	No	No	No	No	No	No
12	3	248	1	7	No	No	No	No	No	No	No	No	No	No
13	3	225	1	7	No	No	No	No	No	No	No	No	No	No
14	3	208	1	6	No	No	No	No	No	No	No	No	No	No
15	3	208	1	6	No	No	No	No	No	No	No	No	No	No
16	3	202	1	6	No	No	No	No	No	No	No	No	No	No
17	3	115	1	3	No	No	No	No	No	No	No	No	No	No
18	3	63	1	2	No	No	No	No	No	No	No	No	No	No
19	3	58	1	2	No	No	No	No	No	No	No	No	No	No
20	3	23	1	1	No	No	No	No	No	No	No	No	No	No
21	3	17	1	1	No	No	No	No	No	No	No	No	No	No
22	3	17	1	1	No	No	No	No	No	No	No	No	No	No
23	3	12	1	0	No	No	No	No	No	No	No	No	No	No
24	3	12	1	0	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	W
Total Stopped Delay Per Vehicle on Minor Approach (s)	13.4
Number of Lanes on Minor Street Approach	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:03
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	17
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	594
Number of Approaches on Intersection	3
Total Volume Condition Met	No
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

Signal Warrants Report For Intersection 26: East Access at Strong Rd

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	E, N
Minor Approaches	W
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	E	N	W
1	34	118	12
2	33	113	12
3	32	111	11
4	27	94	10
5	26	90	9
6	23	80	8
7	21	74	8
8	20	71	7
9	16	57	6
10	15	53	5
11	15	53	5
12	15	51	5
13	13	46	5
14	12	42	4
15	12	42	4
16	12	41	4
17	7	24	2
18	4	13	1
19	3	12	1
20	1	5	0
21	1	4	0
22	1	4	0
23	1	2	0
24	1	2	0

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	152	1	12	No	No	No	No	No	No	No	No	No	No
2	2	146	1	12	No	No	No	No	No	No	No	No	No	No
3	2	143	1	11	No	No	No	No	No	No	No	No	No	No
4	2	121	1	10	No	No	No	No	No	No	No	No	No	No
5	2	116	1	9	No	No	No	No	No	No	No	No	No	No
6	2	103	1	8	No	No	No	No	No	No	No	No	No	No
7	2	95	1	8	No	No	No	No	No	No	No	No	No	No
8	2	91	1	7	No	No	No	No	No	No	No	No	No	No
9	2	73	1	6	No	No	No	No	No	No	No	No	No	No
10	2	68	1	5	No	No	No	No	No	No	No	No	No	No
11	2	68	1	5	No	No	No	No	No	No	No	No	No	No
12	2	66	1	5	No	No	No	No	No	No	No	No	No	No
13	2	59	1	5	No	No	No	No	No	No	No	No	No	No
14	2	54	1	4	No	No	No	No	No	No	No	No	No	No
15	2	54	1	4	No	No	No	No	No	No	No	No	No	No
16	2	53	1	4	No	No	No	No	No	No	No	No	No	No
17	2	31	1	2	No	No	No	No	No	No	No	No	No	No
18	2	17	1	1	No	No	No	No	No	No	No	No	No	No
19	2	15	1	1	No	No	No	No	No	No	No	No	No	No
20	2	6	1	0	No	No	No	No	No	No	No	No	No	No
21	2	5	1	0	No	No	No	No	No	No	No	No	No	No
22	2	5	1	0	No	No	No	No	No	No	No	No	No	No
23	2	3	1	0	No	No	No	No	No	No	No	No	No	No
24	2	3	1	0	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	W
Total Stopped Delay Per Vehicle on Minor Approach (s)	10.4
Number of Lanes on Minor Street Approach	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:02
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	12
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	164
Number of Approaches on Intersection	3
Total Volume Condition Met	No
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

Signal Warrants Report For Intersection 31: 27th Ave at Marietta St

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	N, S
Minor Approaches	E
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	N	S	E
1	122	46	48
2	117	44	46
3	115	43	45
4	98	37	38
5	93	35	36
6	83	31	33
7	77	29	30
8	73	28	29
9	59	22	23
10	55	21	22
11	55	21	22
12	52	20	21
13	48	18	19
14	44	17	17
15	44	17	17
16	43	16	17
17	24	9	10
18	13	5	5
19	12	5	5
20	5	2	2
21	4	1	1
22	4	1	1
23	2	1	1
24	2	1	1

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	168	1	48	No	No	No	No	No	No	No	No	No	No
2	2	161	1	46	No	No	No	No	No	No	No	No	No	No
3	2	158	1	45	No	No	No	No	No	No	No	No	No	No
4	2	135	1	38	No	No	No	No	No	No	No	No	No	No
5	2	128	1	36	No	No	No	No	No	No	No	No	No	No
6	2	114	1	33	No	No	No	No	No	No	No	No	No	No
7	2	106	1	30	No	No	No	No	No	No	No	No	No	No
8	2	101	1	29	No	No	No	No	No	No	No	No	No	No
9	2	81	1	23	No	No	No	No	No	No	No	No	No	No
10	2	76	1	22	No	No	No	No	No	No	No	No	No	No
11	2	76	1	22	No	No	No	No	No	No	No	No	No	No
12	2	72	1	21	No	No	No	No	No	No	No	No	No	No
13	2	66	1	19	No	No	No	No	No	No	No	No	No	No
14	2	61	1	17	No	No	No	No	No	No	No	No	No	No
15	2	61	1	17	No	No	No	No	No	No	No	No	No	No
16	2	59	1	17	No	No	No	No	No	No	No	No	No	No
17	2	33	1	10	No	No	No	No	No	No	No	No	No	No
18	2	18	1	5	No	No	No	No	No	No	No	No	No	No
19	2	17	1	5	No	No	No	No	No	No	No	No	No	No
20	2	7	1	2	No	No	No	No	No	No	No	No	No	No
21	2	5	1	1	No	No	No	No	No	No	No	No	No	No
22	2	5	1	1	No	No	No	No	No	No	No	No	No	No
23	2	3	1	1	No	No	No	No	No	No	No	No	No	No
24	2	3	1	1	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	E
Total Stopped Delay Per Vehicle on Minor Approach (s)	10.2
Number of Lanes on Minor Street Approach	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:08
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	48
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	216
Number of Approaches on Intersection	3
Total Volume Condition Met	No
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

Signal Warrants Report For Intersection 42: Reed at Site Access

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	N, S
Minor Approaches	E
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	N	S	E
1	253	71	2
2	243	68	2
3	238	67	2
4	202	57	2
5	192	54	2
6	172	48	1
7	159	45	1
8	152	43	1
9	121	34	1
10	114	32	1
11	114	32	1
12	109	31	1
13	99	28	1
14	91	26	1
15	91	26	1
16	89	25	1
17	51	14	0
18	28	8	0
19	25	7	0
20	10	3	0
21	8	2	0
22	8	2	0
23	5	1	0
24	5	1	0

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	324	1	2	No	No	No	No	No	No	No	No	No	No
2	2	311	1	2	No	No	No	No	No	No	No	No	No	No
3	2	305	1	2	No	No	No	No	No	No	No	No	No	No
4	2	259	1	2	No	No	No	No	No	No	No	No	No	No
5	2	246	1	2	No	No	No	No	No	No	No	No	No	No
6	2	220	1	1	No	No	No	No	No	No	No	No	No	No
7	2	204	1	1	No	No	No	No	No	No	No	No	No	No
8	2	195	1	1	No	No	No	No	No	No	No	No	No	No
9	2	155	1	1	No	No	No	No	No	No	No	No	No	No
10	2	146	1	1	No	No	No	No	No	No	No	No	No	No
11	2	146	1	1	No	No	No	No	No	No	No	No	No	No
12	2	140	1	1	No	No	No	No	No	No	No	No	No	No
13	2	127	1	1	No	No	No	No	No	No	No	No	No	No
14	2	117	1	1	No	No	No	No	No	No	No	No	No	No
15	2	117	1	1	No	No	No	No	No	No	No	No	No	No
16	2	114	1	1	No	No	No	No	No	No	No	No	No	No
17	2	65	1	0	No	No	No	No	No	No	No	No	No	No
18	2	36	1	0	No	No	No	No	No	No	No	No	No	No
19	2	32	1	0	No	No	No	No	No	No	No	No	No	No
20	2	13	1	0	No	No	No	No	No	No	No	No	No	No
21	2	10	1	0	No	No	No	No	No	No	No	No	No	No
22	2	10	1	0	No	No	No	No	No	No	No	No	No	No
23	2	6	1	0	No	No	No	No	No	No	No	No	No	No
24	2	6	1	0	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	E
Total Stopped Delay Per Vehicle on Minor Approach (s)	8.7
Number of Lanes on Minor Street Approach	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:00
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	2
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	326
Number of Approaches on Intersection	3
Total Volume Condition Met	No
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

18-392 Strong at 27th Subdivision TIA

Vistro File: J:\...\18-392 Reed Rd Subdivision - TIA.vistro
Report File: J:\...\18-392 PM Dev Ph 1.pdf

Scenario 4 PM Dev 2020 Ph 1
6/19/2018

Trip Generation summary

Added Trips

Zone ID: Name	Land Use variables	Code	Ind. Var.	Rate	Quantity	% In	% Out	Trips In	Trips Out	Total Trips	% of Total Trips
1: 18-392 Reed Rd Sub	Homes	ITE 210	Home	0.990	75.000	63.00	37.00	47	27	74	100.00
					Added Trips Total			**47**	**27**	**74**	**100.00**

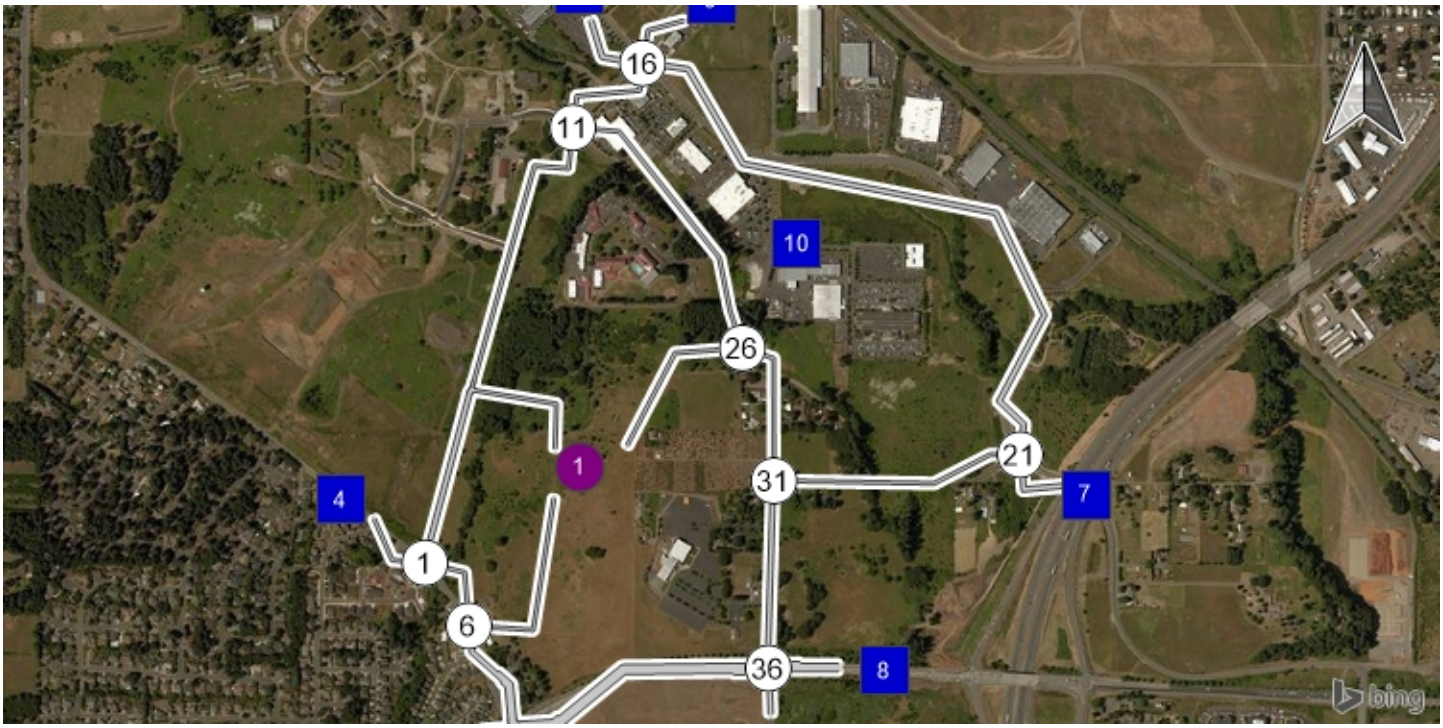
18-392 Strong at 27th Subdivision TIA

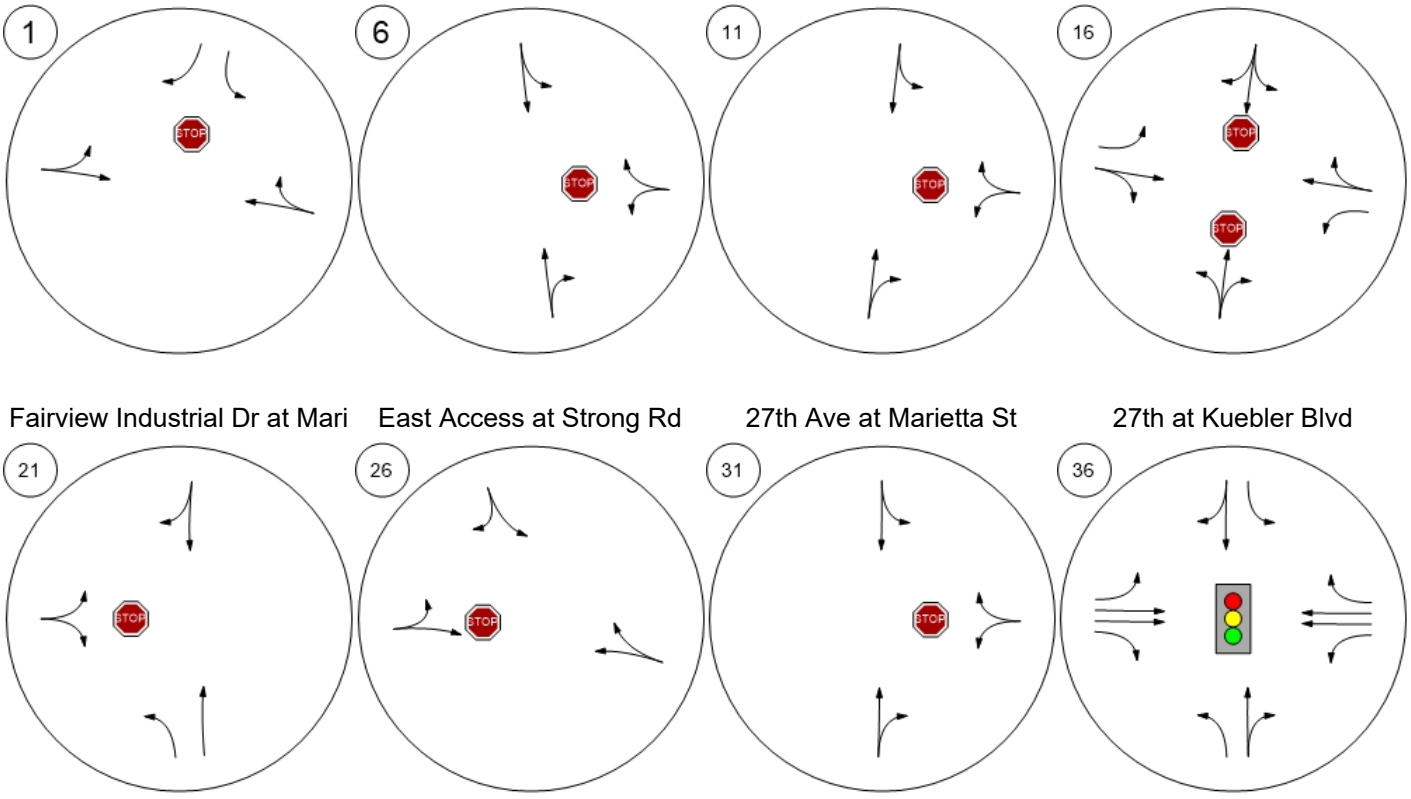
Vistro File: J:\...\18-392 Reed Rd Subdivision - TIA.vistro
Scenario 4 PM Dev 2020 Ph 1
Report File: J:\...\18-392 PM Dev Ph 1.pdf
6/19/2018

Trip Distribution summary

Zone / Gate	Zone 1: 18-392 Reed Rd Sub			
	To 18-392 Reed Rd Sub:		From 18-392 Reed Rd Sub:	
	Share %	Trips	Share %	Trips
2: Gate	10.00	5	10.00	3
3: Gate	30.00	14	30.00	8
4: Gate	7.00	3	7.00	2
5: Gate	10.00	5	10.00	3
6: Gate	0.00	0	0.00	0
7: Gate	6.00	3	6.00	2
8: Gate	35.00	16	35.00	8
9: Gate	2.00	1	2.00	1
10: Gate	0.00	0	0.00	0
Total	**100.00**	**47**	**100.00**	**27**

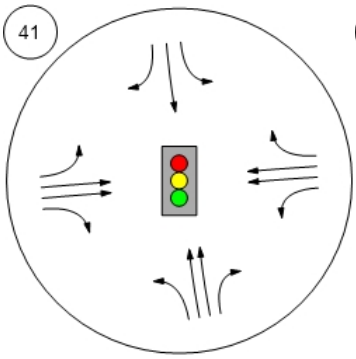
Report Figure 1: Lane Configuration and Traffic Control



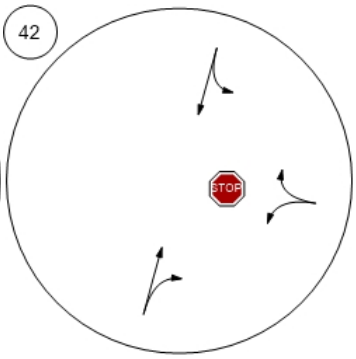


Report Figure 1: Lane Configuration and Traffic Control

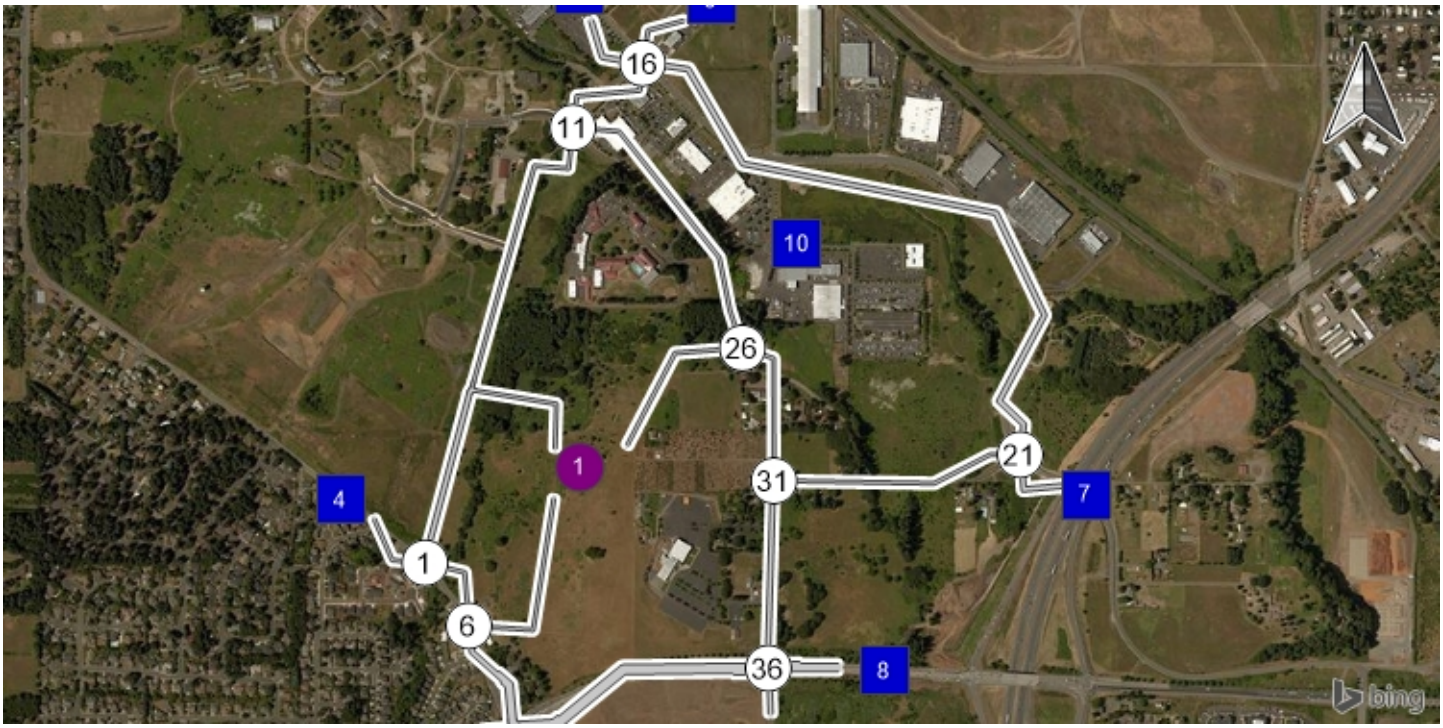
Keubler Blvd at Battle Creek



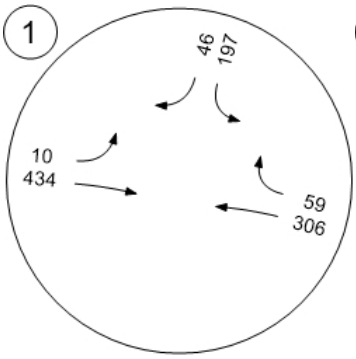
Reed at Site Access



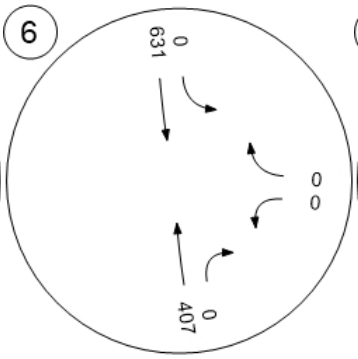
Report Figure 2a: Traffic Volume - Base Volume



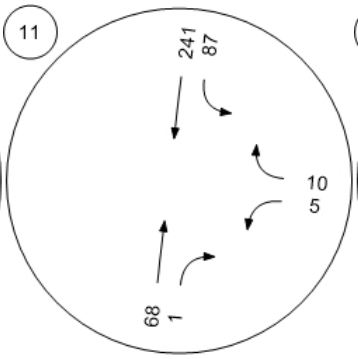
Battle Creek Rd at Reed Rd



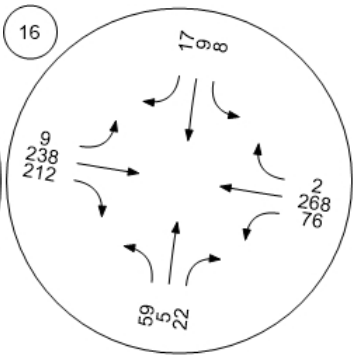
Battle Creek Rd at Site Acces



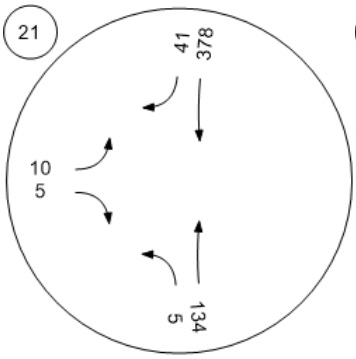
Reed Rd at Strong Rd



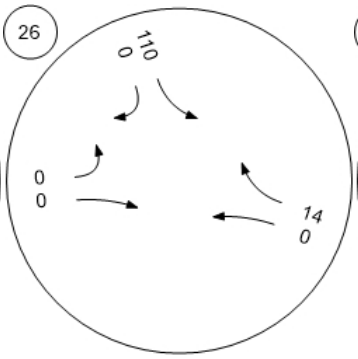
Reed Rd at Fairview Industria



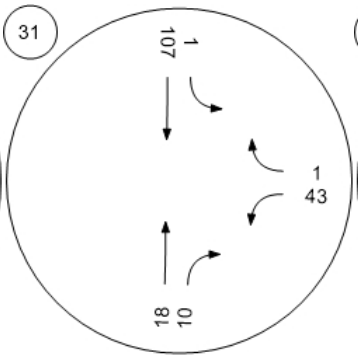
Fairview Industrial Dr at Mari



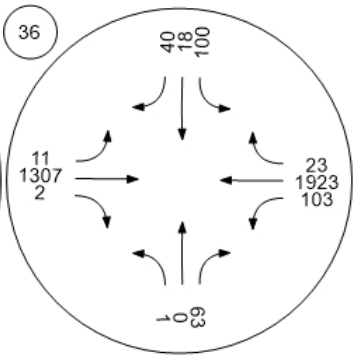
East Access at Strong Rd



27th Ave at Marietta St

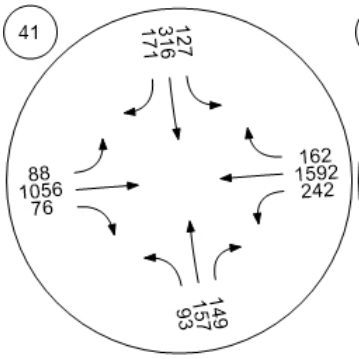


27th at Kuebler Blvd

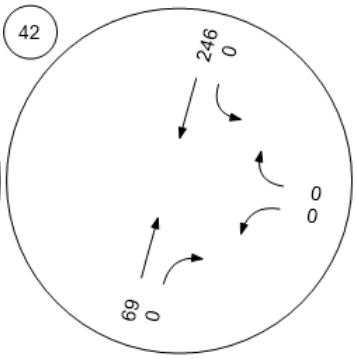


Report Figure 2a: Traffic Volume - Base Volume

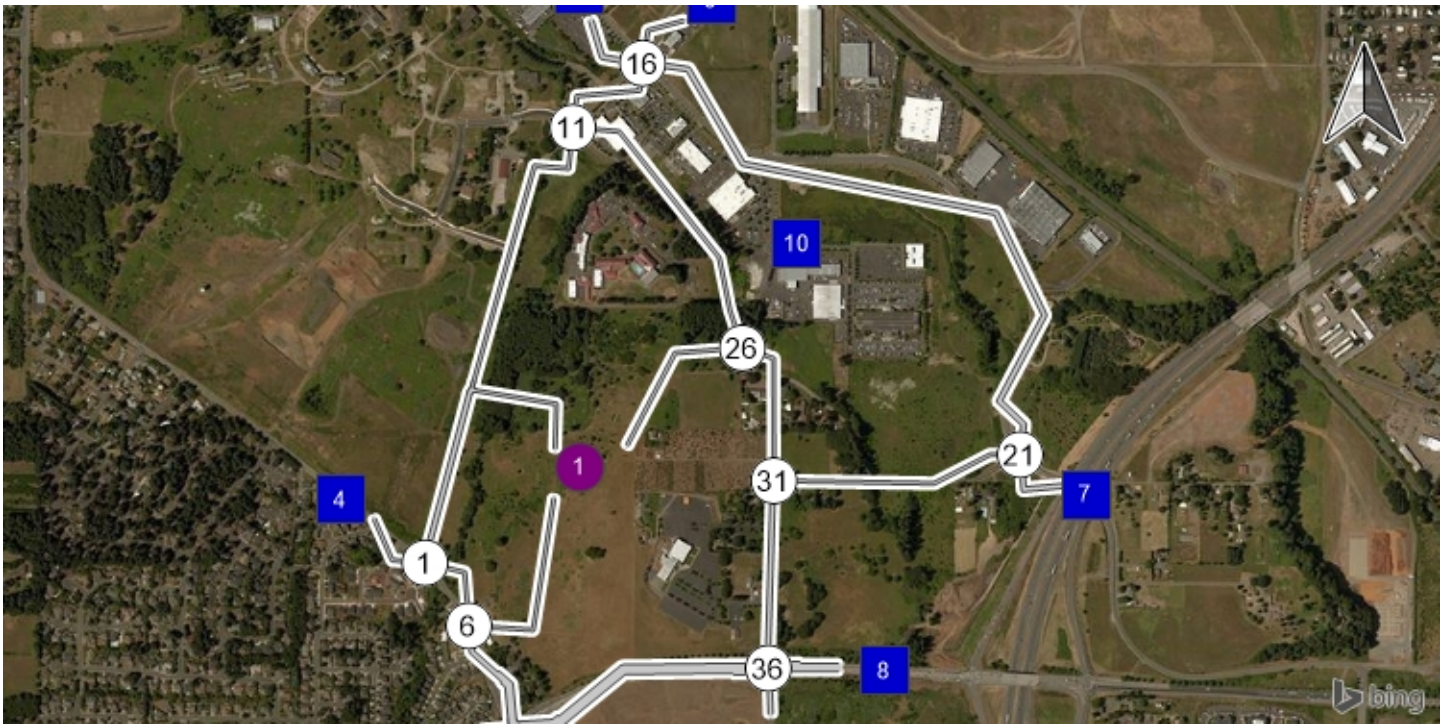
Keubler Blvd at Battle Creek



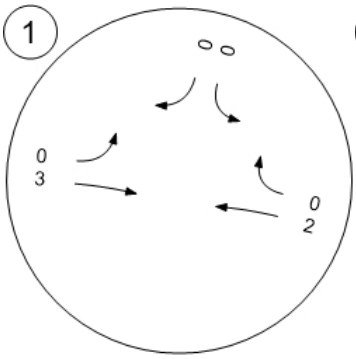
Reed at Site Access



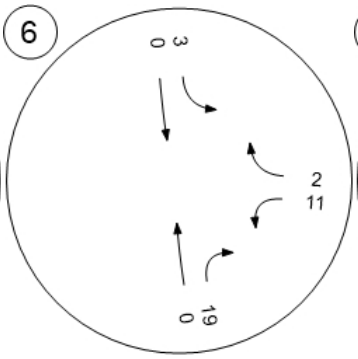
Report Figure 2d: Traffic Volume - Net New Site Trips



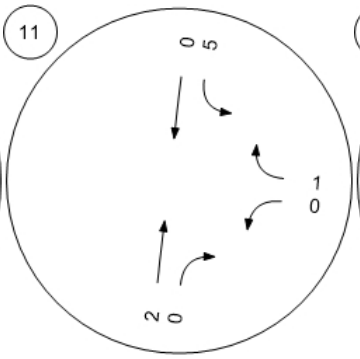
Battle Creek Rd at Reed Rd



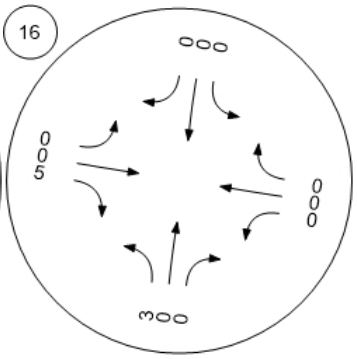
Battle Creek Rd at Site Acces



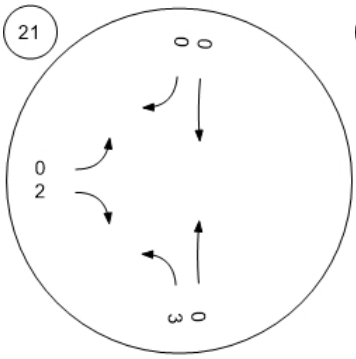
Reed Rd at Strong Rd



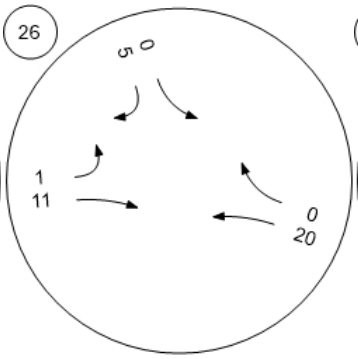
Reed Rd at Fairview Industria



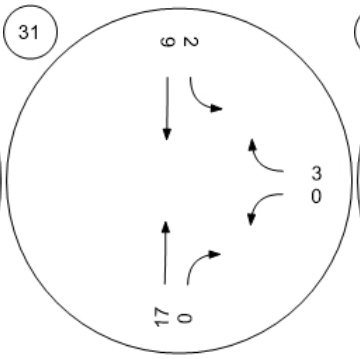
Fairview Industrial Dr at Mari



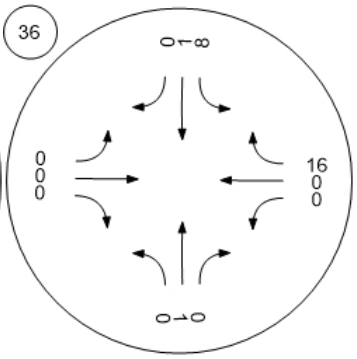
East Access at Strong Rd



27th Ave at Marietta St

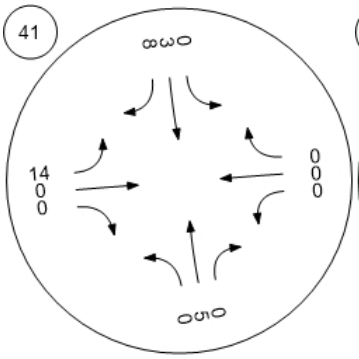


27th at Kuebler Blvd

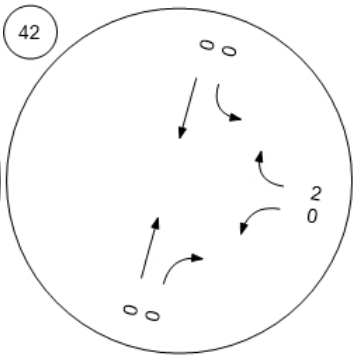


Report Figure 2d: Traffic Volume - Net New Site Trips

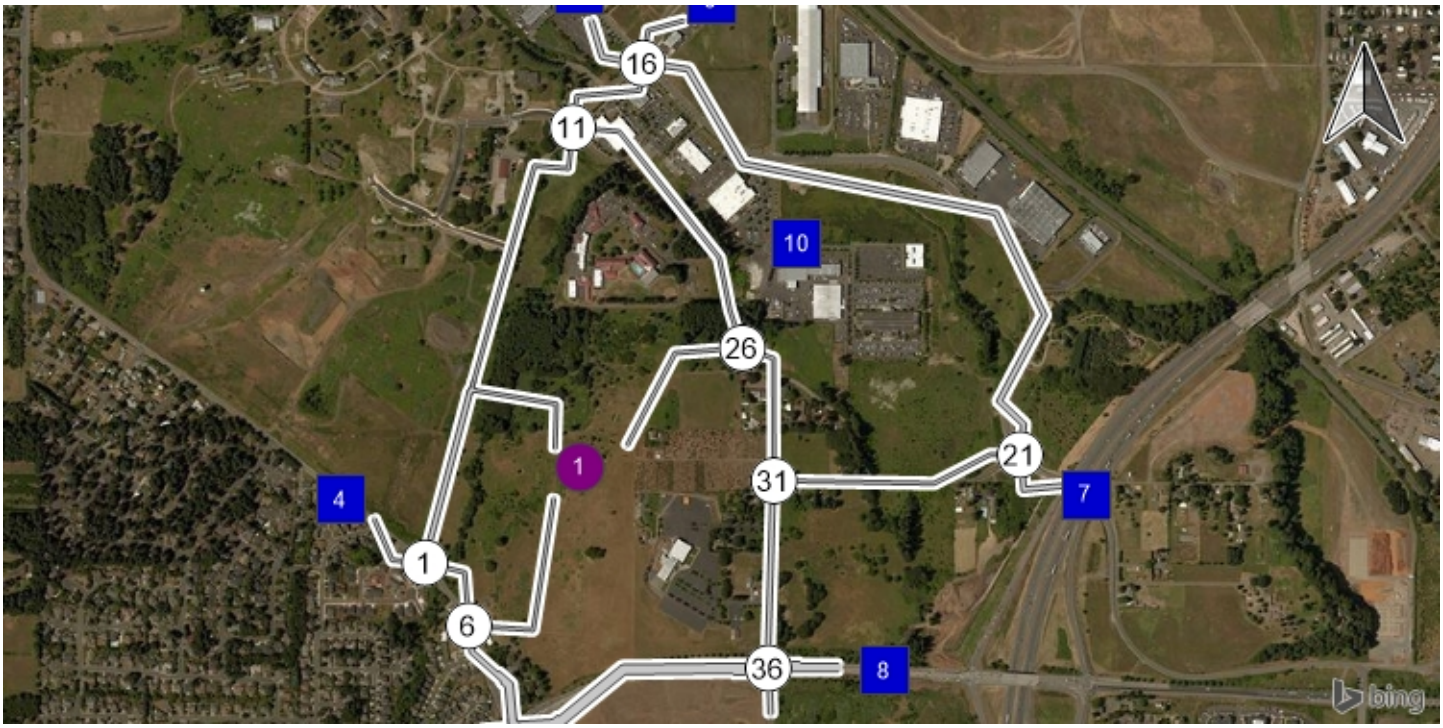
Keubler Blvd at Battle Creek



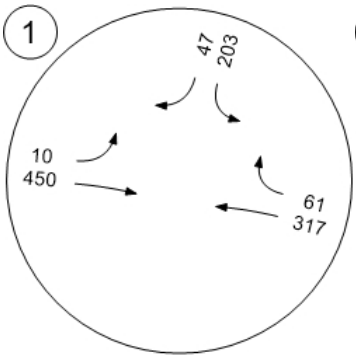
Reed at Site Access



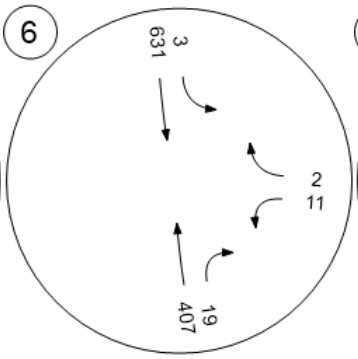
Report Figure 2f: Traffic Volume - Future Total Volume



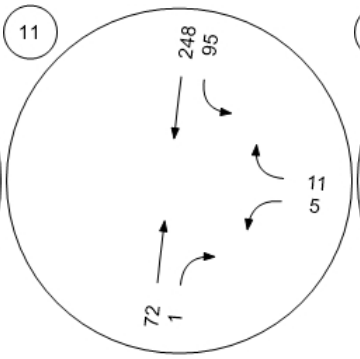
Battle Creek Rd at Reed Rd



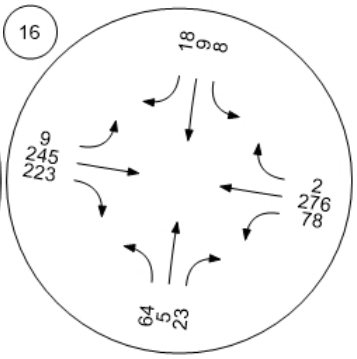
Battle Creek Rd at Site Acces



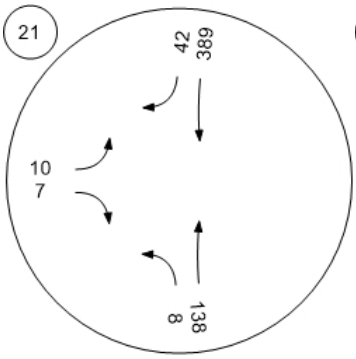
Reed Rd at Strong Rd



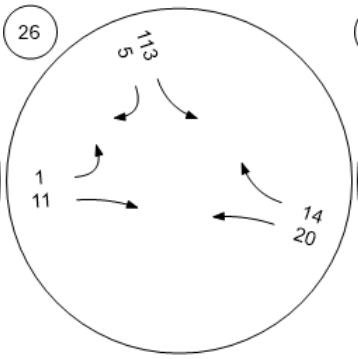
Reed Rd at Fairview Industria



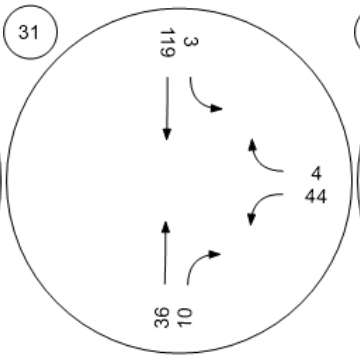
Fairview Industrial Dr at Mari



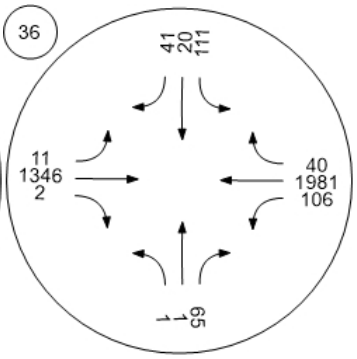
East Access at Strong Rd



27th Ave at Marietta St

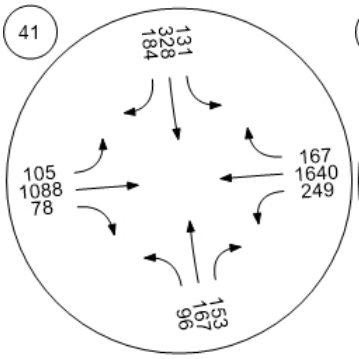


27th at Kuebler Blvd

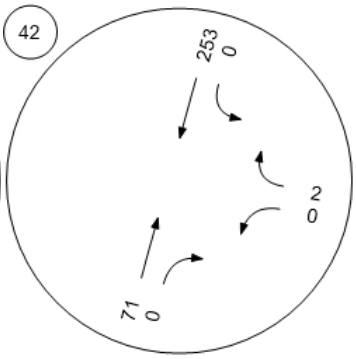


Report Figure 2f: Traffic Volume - Future Total Volume

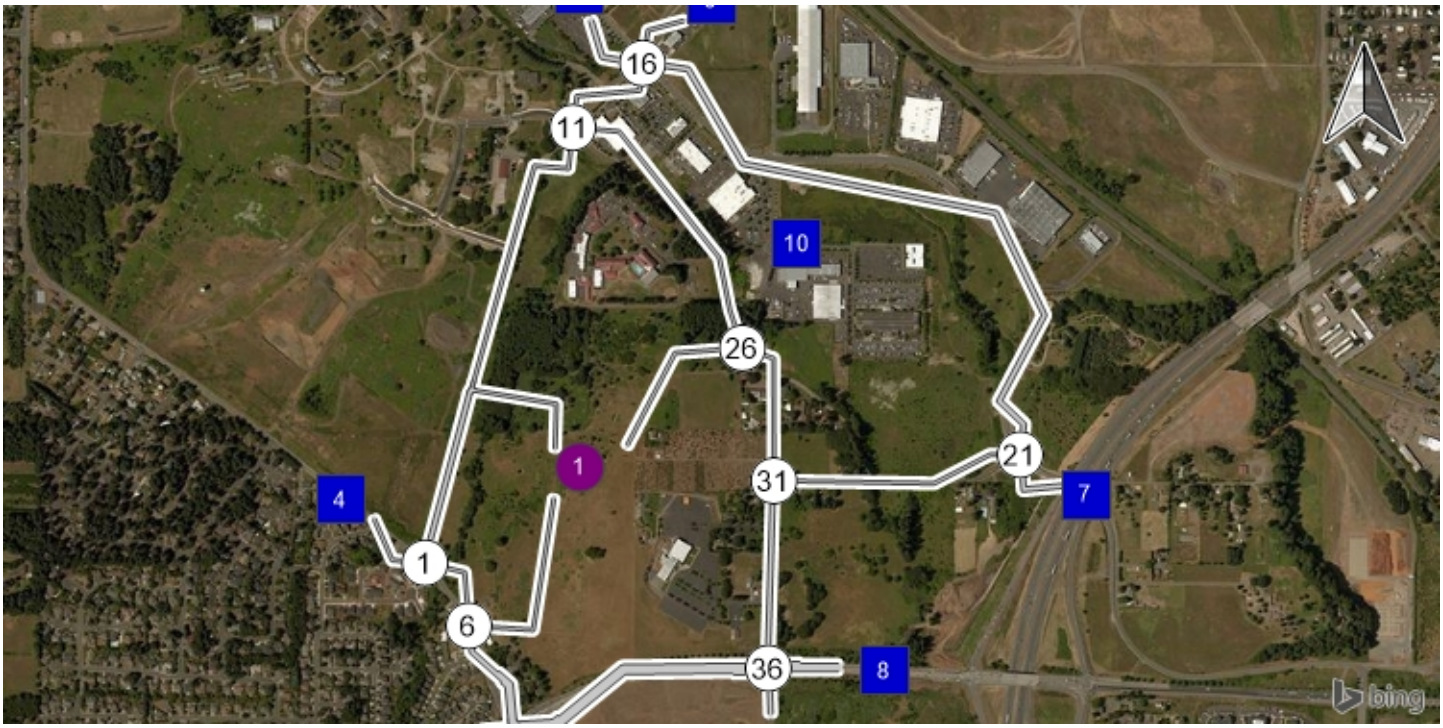
Keubler Blvd at Battle Creek

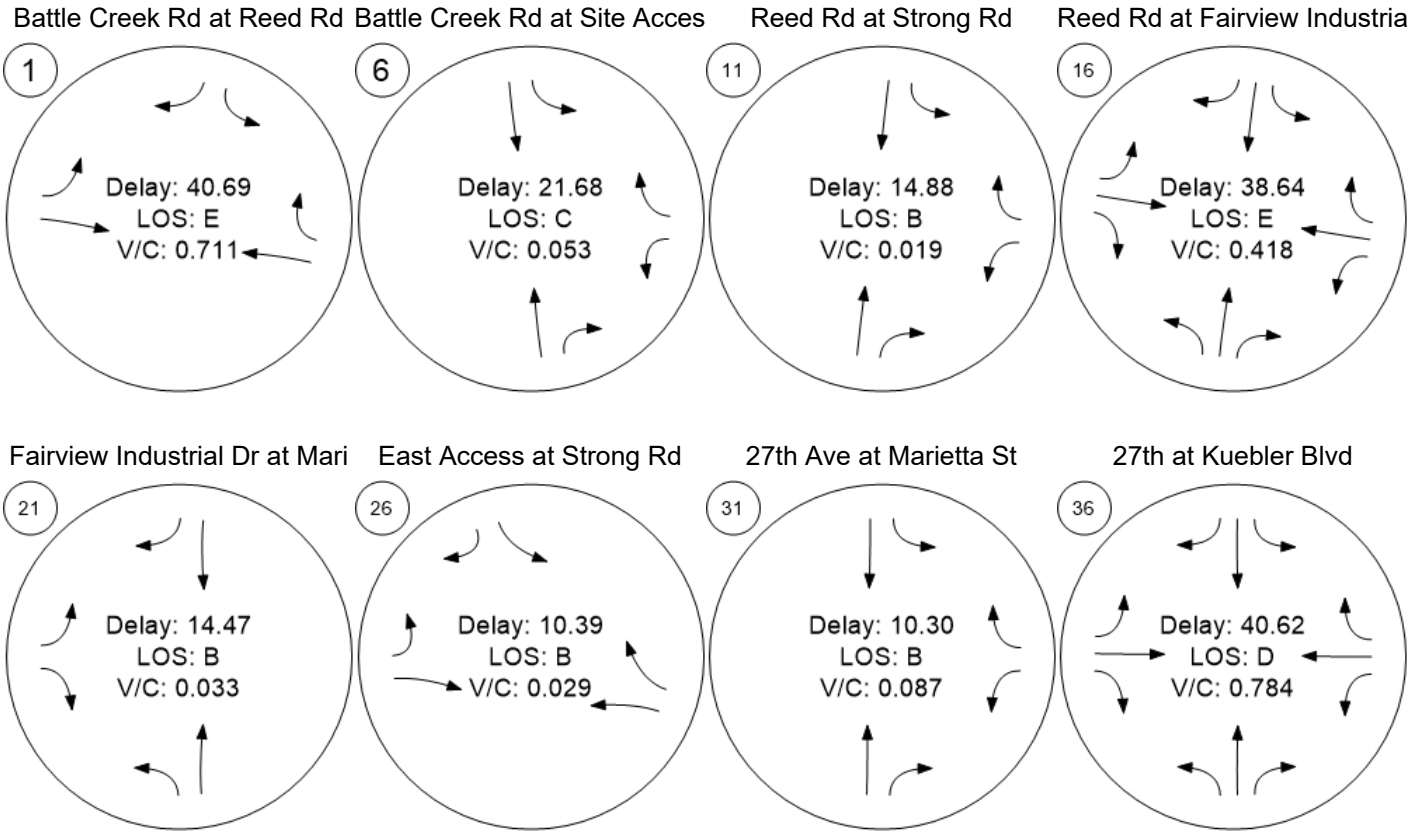


Reed at Site Access



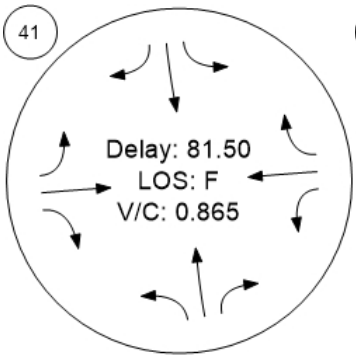
Report Figure 3: Traffic Conditions



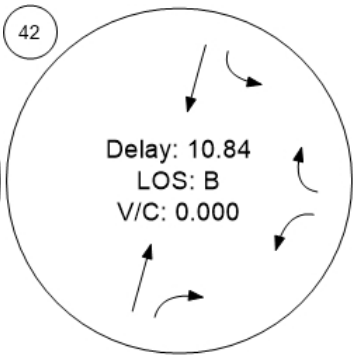


Report Figure 3: Traffic Conditions

Keubler Blvd at Battle Creek



Reed at Site Access



18-392 Strong at 27th Subdivision TIA

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Report File: J:\...\18-392 PM Dev Ph 2.pdf

Scenario 6 PM Dev 2023 Ph 2
6/19/2018

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Battle Creek Rd at Reed Rd	Two-way stop	HCM 6th Edition	SB Left	0.800	53.0	F
6	Battle Creek Rd at Site Access	Two-way stop	HCM 6th Edition	WB Left	0.123	25.9	D
11	Reed Rd at Strong Rd	Two-way stop	HCM 6th Edition	WB Left	0.020	15.6	C
16	Reed Rd at Fairview Industrial Dr	Two-way stop	HCM 6th Edition	NB Left	0.502	47.8	E
21	Fairview Industrial Dr at Marietta St	Two-way stop	HCM 6th Edition	EB Left	0.038	15.1	C
26	East Access at Strong Rd	Two-way stop	HCM 6th Edition	EB Left	0.006	10.7	B
31	27th Ave at Marietta St	Two-way stop	HCM 6th Edition	WB Left	0.098	10.8	B
36	27th at Kuebler Blvd	Signalized	HCM 6th Edition	SB Left	0.829	50.1	D
41	Keubler Blvd at Battle Creek Rd	Signalized	HCM 6th Edition	WB Left	0.916	99.7	F
42	Reed at Site Access	Two-way stop	HCM 6th Edition	WB Left	0.002	11.0	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. for all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Battle Creek Rd at Reed Rd

Control Type:	Two-way stop	Delay (sec / veh):	53.0
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.800

Intersection Setup

Name	Reed Rd		Battle Creek Rd		Battle Creek Rd	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Reed Rd		Battle Creek Rd		Battle Creek Rd	
Base Volume Input [veh/h]	197	46	10	434	306	59
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	1.20	1.20	1.80	1.80	3.00	3.00
Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	1	0	7	3	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	213	51	11	476	333	64
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	58	14	3	129	90	17
Total Analysis Volume [veh/h]	232	55	12	517	362	70
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.80	0.08	0.01	0.01	0.00	0.00
d_M, Delay for Movement [s/veh]	53.00	11.01	8.22	0.00	0.00	0.00
Movement LOS	F	B	A	A	A	A
95th-Percentile Queue Length [veh]	6.38	0.27	2.56	2.56	0.00	0.00
95th-Percentile Queue Length [ft]	159.55	6.86	63.98	63.98	0.00	0.00
d_A, Approach Delay [s/veh]	44.95		0.19		0.00	
Approach LOS	E		A		A	
d_I, Intersection Delay [s/veh]	10.42					
Intersection LOS	F					

Intersection Level Of Service Report
Intersection 6: Battle Creek Rd at Site Access

Control Type:	Two-way stop	Delay (sec / veh):	25.9
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.123

Intersection Setup

Name	Battle Creek Rd		Battle Creek Rd		Site Access	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Battle Creek Rd		Battle Creek Rd		Site Access	
Base Volume Input [veh/h]	407	0	0	631	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	37	7	0	23	3
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	440	37	7	681	23	3
Peak Hour Factor	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	117	10	2	181	6	1
Total Analysis Volume [veh/h]	468	39	7	724	24	3
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.01	0.01	0.12	0.01
d_M, Delay for Movement [s/veh]	0.00	0.00	8.43	0.00	25.94	13.70
Movement LOS	A	A	A	A	D	B
95th-Percentile Queue Length [veh]	0.00	0.00	5.87	5.87	0.43	0.43
95th-Percentile Queue Length [ft]	0.00	0.00	146.68	146.68	10.82	10.82
d_A, Approach Delay [s/veh]	0.00		0.08		24.58	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	0.57					
Intersection LOS	D					

Intersection Level Of Service Report
Intersection 11: Reed Rd at Strong Rd

Control Type:	Two-way stop	Delay (sec / veh):	15.6
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.020

Intersection Setup

Name	Reed Rd		Reed Rd		Strong Rd	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Reed Rd		Reed Rd		Strong Rd	
Base Volume Input [veh/h]	68	1	87	241	5	10
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	5.80	5.80	1.80	1.80	6.70	6.70
Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	4	0	9	0	0	2
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	77	1	103	260	5	13
Peak Hour Factor	0.7600	0.7600	0.7600	0.7600	0.7600	0.7600
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	25	0	34	86	2	4
Total Analysis Volume [veh/h]	101	1	136	342	7	17
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.09	0.00	0.02	0.02
d_M, Delay for Movement [s/veh]	0.00	0.00	7.66	0.00	15.63	9.05
Movement LOS	A	A	A	A	C	A
95th-Percentile Queue Length [veh]	0.00	0.00	1.40	1.40	0.12	0.12
95th-Percentile Queue Length [ft]	0.00	0.00	34.99	34.99	2.98	2.98
d_A, Approach Delay [s/veh]	0.00		2.18		10.97	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	2.16					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 16: Reed Rd at Fairview Industrial Dr

Control Type:	Two-way stop	Delay (sec / veh):	47.8
Analysis Method:	HCM 6th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.502

Intersection Setup

Name	Reed Rd			Reed Rd			Fairview Industrial Dr			Fairview Industrial Dr		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	250.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Reed Rd			Reed Rd			Fairview Industrial Dr			Fairview Industrial Dr		
Base Volume Input [veh/h]	59	5	22	8	9	17	9	238	212	76	268	2
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	4.70	4.70	4.70	0.00	0.00	0.00	4.10	4.10	4.10	4.00	4.00	4.00
Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	6	0	0	0	0	0	0	0	9	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	70	5	24	9	10	18	10	257	238	82	289	2
Peak Hour Factor	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	21	2	7	3	3	5	3	78	73	25	88	1
Total Analysis Volume [veh/h]	85	6	29	11	12	22	12	313	290	100	352	2
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.50	0.03	0.05	0.06	0.07	0.03	0.01	0.00	0.00	0.10	0.00	0.00
d_M, Delay for Movement [s/veh]	47.82	44.28	32.59	28.13	28.73	12.77	8.05	0.00	0.00	9.16	0.00	0.00
Movement LOS	E	E	D	D	D	B	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	3.20	3.20	3.20	0.58	0.58	0.58	0.03	0.00	0.00	0.35	0.00	0.00
95th-Percentile Queue Length [ft]	80.00	80.00	80.00	14.51	14.51	14.51	0.76	0.00	0.00	8.64	0.00	0.00
d_A, Approach Delay [s/veh]	43.97			20.78			0.16			2.02		
Approach LOS	E			C			A			A		
d_I, Intersection Delay [s/veh]	5.85											
Intersection LOS	E											

Intersection Level Of Service Report
Intersection 21: Fairview Industrial Dr at Marietta St

Control Type:	Two-way stop	Delay (sec / veh):	15.1
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.038

Intersection Setup

Name	Fairview Industrial Dr		Fairview Industrial Dr		Marietta St	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Fairview Industrial Dr		Fairview Industrial Dr		Marietta St	
Base Volume Input [veh/h]	5	134	378	41	10	5
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	9.40	9.40	4.50	4.50	0.00	0.00
Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	6	0	0	0	0	3
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	11	145	408	44	11	8
Peak Hour Factor	0.7900	0.7900	0.7900	0.7900	0.7900	0.7900
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	46	129	14	3	3
Total Analysis Volume [veh/h]	14	184	516	56	14	10
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.01	0.00	0.04	0.02
d_M, Delay for Movement [s/veh]	8.79	0.00	0.00	0.00	15.14	12.13
Movement LOS	A	A	A	A	C	B
95th-Percentile Queue Length [veh]	0.04	0.00	0.00	0.00	0.18	0.18
95th-Percentile Queue Length [ft]	1.10	0.00	0.00	0.00	4.43	4.43
d_A, Approach Delay [s/veh]	0.62		0.00		13.88	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.57					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 26: East Access at Strong Rd

Control Type:	Two-way stop	Delay (sec / veh):	10.7
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.006

Intersection Setup

Name	Strong Rd		East Access		Strong Rd	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Strong Rd		East Access		Strong Rd	
Base Volume Input [veh/h]	110	0	0	0	0	14
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	9	2	22	41	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	119	9	2	22	41	15
Peak Hour Factor	0.5600	0.5600	0.5600	0.5600	0.5600	0.5600
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	53	4	1	10	18	7
Total Analysis Volume [veh/h]	212	16	4	39	73	27
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Stop	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance		No	
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.01	0.06	0.05	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	10.72	10.67	7.82	0.00
Movement LOS	A	A	B	B	A	A
95th-Percentile Queue Length [veh]	0.00	0.00	0.20	0.20	0.24	0.24
95th-Percentile Queue Length [ft]	0.00	0.00	5.07	5.07	5.99	5.99
d_A, Approach Delay [s/veh]	0.00		10.67		5.71	
Approach LOS	A		B		A	
d_I, Intersection Delay [s/veh]	2.78					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 31: 27th Ave at Marietta St

Control Type:	Two-way stop	Delay (sec / veh):	10.8
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.098

Intersection Setup

Name	27th Ave		Strong Rd		Marietta St	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	27th Ave		Strong Rd		Marietta St	
Base Volume Input [veh/h]	18	10	1	107	43	1
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	35	0	3	19	0	6
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	54	11	4	135	46	7
Peak Hour Factor	0.6800	0.6800	0.6800	0.6800	0.6800	0.6800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	20	4	1	50	17	3
Total Analysis Volume [veh/h]	79	16	6	199	68	10
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.10	0.01
d_M, Delay for Movement [s/veh]	0.00	0.00	7.39	0.00	10.79	9.29
Movement LOS	A	A	A	A	B	A
95th-Percentile Queue Length [veh]	0.00	0.00	0.47	0.47	0.36	0.36
95th-Percentile Queue Length [ft]	0.00	0.00	11.73	11.73	9.06	9.06
d_A, Approach Delay [s/veh]	0.00		0.22		10.60	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	2.30					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 36: 27th at Kuebler Blvd

Control Type:	Signalized	Delay (sec / veh):	50.1
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.829

Intersection Setup

Name	27th Ave			27th Ave			Kuebler Blvd			Kuebler Blvd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	1	1	0	1
Pocket Length [ft]	125.00	100.00	100.00	100.00	100.00	100.00	250.00	100.00	200.00	350.00	100.00	175.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	27th Ave			27th Ave			Kuebler Blvd			Kuebler Blvd		
Base Volume Input [veh/h]	1	0	63	100	18	40	11	1307	2	103	1923	23
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	4.70	4.70	4.70	0.60	0.60	0.60	3.60	3.60	3.60	1.30	1.30	1.30
Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	2	0	18	1	0	0	0	0	0	0	33
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1	2	68	126	20	43	12	1412	2	111	2077	58
Peak Hour Factor	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	1	18	34	5	11	3	376	1	30	552	15
Total Analysis Volume [veh/h]	1	2	72	134	21	46	13	1502	2	118	2210	62
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	9	19	0	9	19	0	34	83	0	9	58	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	L	C	R	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	0	15	5	20	2	79	79	5	82	82
g / C, Green / Cycle	0.00	0.13	0.04	0.17	0.01	0.66	0.66	0.04	0.68	0.68
(v / s)_i Volume / Saturation Flow Rate	0.00	0.05	0.08	0.04	0.01	0.47	0.00	0.07	0.69	0.04
s, saturation flow rate [veh/h]	1568	1405	1621	1518	1582	3163	1412	1612	3222	1439
c, Capacity [veh/h]	2	178	68	253	23	2078	928	67	2203	984
d1, Uniform Delay [s]	59.86	48.35	57.50	43.60	58.73	13.46	7.08	57.50	18.97	6.27
k, delay calibration	0.11	0.50	0.11	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	92.03	7.06	452.07	2.54	19.03	0.49	0.00	351.73	9.62	0.03
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.43	0.42	1.98	0.26	0.56	0.72	0.00	1.75	1.00	0.06
d, Delay for Lane Group [s/veh]	151.89	55.40	509.56	46.14	77.76	13.94	7.08	409.23	28.59	6.30
Lane Group LOS	F	E	F	D	E	B	A	F	F	A
Critical Lane Group	No	Yes	Yes	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh]	0.09	2.40	10.55	1.93	0.52	12.34	0.02	8.62	29.54	0.50
50th-Percentile Queue Length [ft]	2.25	59.98	263.85	48.13	12.91	308.55	0.43	215.47	738.42	12.54
95th-Percentile Queue Length [veh]	0.16	4.32	18.03	3.47	0.93	18.10	0.03	15.02	38.55	0.90
95th-Percentile Queue Length [ft]	4.05	107.96	450.71	86.64	23.23	452.59	0.78	375.54	963.86	22.58

Movement, Approach, & Intersection Results

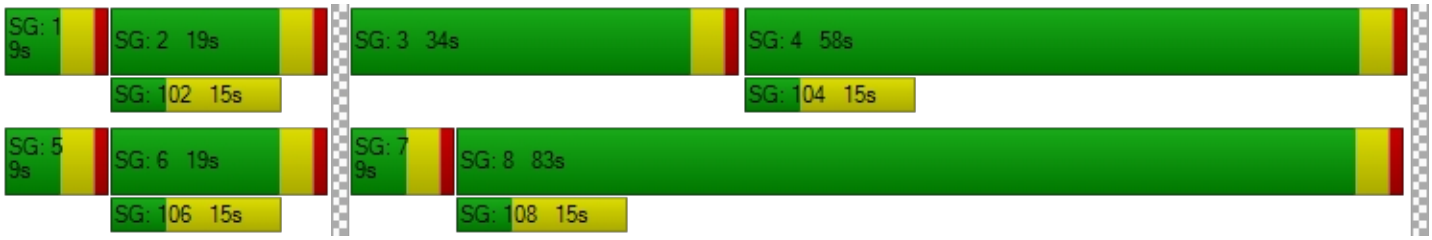
d_M, Delay for Movement [s/veh]	151.89	55.40	55.40	509.56	46.14	46.14	77.76	13.94	7.08	409.23	28.59	6.30
Movement LOS	F	E	E	F	D	D	E	B	A	F	F	A
d_A, Approach Delay [s/veh]	56.69			355.09			14.48			46.81		
Approach LOS	E			F			B			D		
d_I, Intersection Delay [s/veh]	50.07											
Intersection LOS	D											
Intersection V/C	0.829											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	51.34	51.34	51.34	51.34
l_p,int, Pedestrian LOS Score for Intersection	2.026	2.046	3.081	3.134
Crosswalk LOS	B	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	250	250	1317	900
d_b, Bicycle Delay [s]	45.94	45.94	7.00	18.15
l_b,int, Bicycle LOS Score for Intersection	1.683	1.891	2.811	3.531
Bicycle LOS	A	A	C	D

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 41: Keubler Blvd at Battle Creek Rd

Control Type:	Signalized	Delay (sec / veh):	99.7
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.916

Intersection Setup

Name	Battle Creek Rd			Battle Creek Rd			Kuebler Blvd			Kuebler Blvd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	1	0	1	1	0	1	1	0	1
Pocket Length [ft]	100.00	100.00	150.00	275.00	100.00	275.00	350.00	100.00	350.00	250.00	100.00	250.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Battle Creek Rd			Battle Creek Rd			Kuebler Blvd			Kuebler Blvd		
Base Volume Input [veh/h]	93	157	149	127	316	171	88	1056	76	242	1592	162
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	3.00	3.00	3.00	1.10	1.10	1.10	3.90	3.90	3.90	1.50	1.50	1.50
Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	9	0	0	6	17	28	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	100	179	161	137	347	202	123	1140	82	261	1719	175
Peak Hour Factor	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	26	47	42	36	90	53	32	297	21	68	448	46
Total Analysis Volume [veh/h]	104	186	168	143	361	210	128	1188	85	272	1791	182
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	110
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	12	23	0	15	26	0	35	60	0	12	37	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	110	110	110	110	110	110	110	110	110	110	110	110
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	8	19	19	11	22	22	11	56	56	8	53	53
g / C, Green / Cycle	0.07	0.17	0.17	0.10	0.20	0.20	0.10	0.51	0.51	0.07	0.48	0.48
(v / s)_i Volume / Saturation Flow Rate	0.07	0.06	0.12	0.09	0.21	0.15	0.08	0.38	0.06	0.17	0.56	0.13
s, saturation flow rate [veh/h]	1590	3179	1419	1614	1695	1441	1578	3156	1409	1609	3217	1436
c, Capacity [veh/h]	116	553	247	162	341	290	155	1602	715	117	1552	693
d1, Uniform Delay [s]	50.60	39.87	42.58	48.88	43.94	41.09	48.70	21.37	14.18	51.00	28.46	16.87
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.17	0.15	0.11
I, Upstream Filtering 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
d2, Incremental Delay [s]	20.49	1.64	14.16	14.49	65.06	14.61	10.57	0.69	0.07	603.65	71.69	0.20
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression 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

Lane Group Results

X, volume / capacity	0.90	0.34	0.68	0.89	1.06	0.72	0.83	0.74	0.12	2.32	1.15	0.26
d, Delay for Lane Group [s/veh]	71.09	41.51	56.74	63.36	109.00	55.70	59.27	22.07	14.26	654.65	100.16	17.07
Lane Group LOS	E	D	E	E	F	E	E	C	B	F	F	B
Critical Lane Group	Yes	No	No	No	Yes	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh]	3.49	2.34	5.23	4.51	15.36	6.47	3.89	11.72	1.11	22.87	34.82	2.73
50th-Percentile Queue Length [ft]	87.27	58.41	130.86	112.81	383.95	161.80	97.31	292.94	27.81	571.64	870.57	68.22
95th-Percentile Queue Length [veh]	6.28	4.21	8.99	8.00	22.46	10.64	7.01	17.33	2.00	36.75	49.40	4.91
95th-Percentile Queue Length [ft]	157.09	105.14	224.67	199.90	561.53	266.11	175.15	433.29	50.07	918.78	1234.94	122.80

Movement, Approach, & Intersection Results

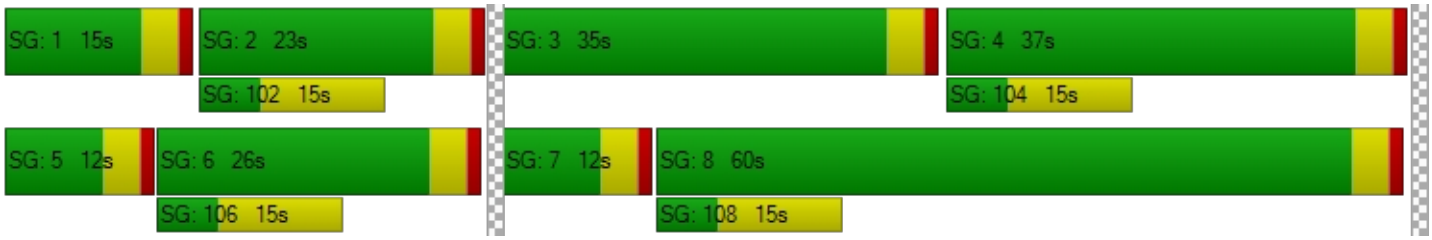
d_M, Delay for Movement [s/veh]	71.09	41.51	56.74	63.36	109.00	55.70	59.27	22.07	14.26	654.65	100.16	17.07
Movement LOS	E	D	E	E	F	E	E	C	B	F	F	B
d_A, Approach Delay [s/veh]	53.81			84.19			24.99			160.60		
Approach LOS	D			F			C			F		
d_I, Intersection Delay [s/veh]	99.69											
Intersection LOS	F											
Intersection V/C	0.916											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	46.37	46.37	46.37	46.37
l_p,int, Pedestrian LOS Score for Intersection	2.540	2.547	3.034	3.072
Crosswalk LOS	B	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	345	400	1018	600
d_b, Bicycle Delay [s]	37.64	35.20	13.25	26.95
l_b,int, Bicycle LOS Score for Intersection	1.937	2.738	2.715	3.412
Bicycle LOS	A	B	B	C

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 42: Reed at Site Access

Control Type:	Two-way stop	Delay (sec / veh):	11.0
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.002

Intersection Setup

Name	Reed Rd		Reed Rd		Site Access	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Reed Rd		Reed Rd		Site Access	
Base Volume Input [veh/h]	69	0	0	246	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	1	4
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	75	0	0	266	1	4
Peak Hour Factor	0.8400	0.8400	0.8400	0.8400	0.8400	0.8400
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	22	0	0	79	0	1
Total Analysis Volume [veh/h]	89	0	0	317	1	5
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.01
d_M, Delay for Movement [s/veh]	0.00	0.00	7.39	0.00	11.02	8.74
Movement LOS	A	A	A	A	B	A
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.00	0.02	0.02
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	0.00	0.52	0.52
d_A, Approach Delay [s/veh]	0.00		0.00		9.12	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.13					
Intersection LOS	B					

18-392 Strong at 27th Subdivision TIA

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Report File: J:\...\18-392 PM Dev Ph 2.pdf

Scenario 6 PM Dev 2023 Ph 2
6/19/2018

Turning Movement Volume: Summary

ID	Intersection Name	Southbound		Eastbound		Westbound		Total Volume
		Left	Right	Left	Thru	Thru	Right	
1	Battle Creek Rd at Reed Rd	213	51	11	476	333	64	1148

ID	Intersection Name	Northbound		Southbound		Westbound		Total Volume
		Thru	Right	Left	Thru	Left	Right	
6	Battle Creek Rd at Site Access	440	37	7	681	23	3	1191

ID	Intersection Name	Northbound		Southbound		Westbound		Total Volume
		Thru	Right	Left	Thru	Left	Right	
11	Reed Rd at Strong Rd	77	1	103	260	5	13	459

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
16	Reed Rd at Fairview Industrial Dr	70	5	24	9	10	18	10	257	238	82	289	2	1014

ID	Intersection Name	Northbound		Southbound		Eastbound		Total Volume
		Left	Thru	Thru	Right	Left	Right	
21	Fairview Industrial Dr at Marietta St	11	145	408	44	11	8	627

ID	Intersection Name	Southbound		Eastbound		Westbound		Total Volume
		Left	Right	Left	Thru	Thru	Right	
26	East Access at Strong Rd	119	9	2	22	41	15	208

ID	Intersection Name	Northbound		Southbound		Westbound		Total Volume
		Thru	Right	Left	Thru	Left	Right	
31	27th Ave at Marietta St	54	11	4	135	46	7	257

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
36	27th at Kuebler Blvd	1	2	68	126	20	43	12	1412	2	111	2077	58	3932

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
41	Keubler Blvd at Battle Creek Rd	100	179	161	137	347	202	123	1140	82	261	1719	175	4626

ID	Intersection Name	Northbound		Southbound		Westbound		Total Volume
		Thru	Right	Left	Thru	Left	Right	
42	Reed at Site Access	75	0	0	266	1	4	346

18-392 Strong at 27th Subdivision TIA

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Report File: J:\...\18-392 PM Dev Ph 2.pdf

Scenario 6 PM Dev 2023 Ph 2
6/19/2018

Turning Movement Volume: Detail

ID	Intersection Name	Volume Type	Southbound		Eastbound		Westbound		Total Volume
			Left	Right	Left	Thru	Thru	Right	
1	Battle Creek Rd at Reed Rd	Final Base	197	46	10	434	306	59	1052
		Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	0	1	0	7	3	0	11
		Other	0	0	0	0	0	0	0
		Future Total	**213**	**51**	**11**	**476**	**333**	**64**	**1148**

ID	Intersection Name	Volume Type	Northbound		Southbound		Westbound		Total Volume
			Thru	Right	Left	Thru	Left	Right	
6	Battle Creek Rd at Site Access	Final Base	407	0	0	631	0	0	1038
		Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	0	37	7	0	23	3	70
		Other	0	0	0	0	0	0	0
		Future Total	**440**	**37**	**7**	**681**	**23**	**3**	**1191**

ID	Intersection Name	Volume Type	Northbound		Southbound		Westbound		Total Volume
			Thru	Right	Left	Thru	Left	Right	
11	Reed Rd at Strong Rd	Final Base	68	1	87	241	5	10	412
		Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	4	0	9	0	0	2	15
		Other	0	0	0	0	0	0	0
		Future Total	**77**	**1**	**103**	**260**	**5**	**13**	**459**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
16	Reed Rd at Fairview Industrial Dr	Final Base	59	5	22	8	9	17	9	238	212	76	268	2	925
		Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	6	0	0	0	0	0	0	0	9	0	0	0	15
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**70**	**5**	**24**	**9**	**10**	**18**	**10**	**257**	**238**	**82**	**289**	**2**	**1014**

ID	Intersection Name	Volume Type	Northbound		Southbound		Eastbound		Total Volume
			Left	Thru	Thru	Right	Left	Right	
21	Fairview Industrial Dr at Marietta St	Final Base	5	134	378	41	10	5	573
		Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	6	0	0	0	0	3	9
		Other	0	0	0	0	0	0	0
		Future Total	**11**	**145**	**408**	**44**	**11**	**8**	**627**

ID	Intersection Name	Volume Type	Southbound		Eastbound		Westbound		Total Volume
			Left	Right	Left	Thru	Thru	Right	
26	East Access at Strong Rd	Final Base	110	0	0	0	0	14	124
		Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	0	9	2	22	41	0	74
		Other	0	0	0	0	0	0	0
		Future Total	**119**	**9**	**2**	**22**	**41**	**15**	**208**

ID	Intersection Name	Volume Type	Northbound		Southbound		Westbound		Total Volume
			Thru	Right	Left	Thru	Left	Right	
31	27th Ave at Marietta St	Final Base	18	10	1	107	43	1	180
		Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	35	0	3	19	0	6	63
		Other	0	0	0	0	0	0	0
		Future Total	**54**	**11**	**4**	**135**	**46**	**7**	**257**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
36	27th at Kuebler Blvd	Final Base	1	0	63	100	18	40	11	1307	2	103	1923	23	3591
		Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	2	0	18	1	0	0	0	0	0	0	33	54
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**1**	**2**	**68**	**126**	**20**	**43**	**12**	**1412**	**2**	**111**	**2077**	**58**	**3932**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
41	Keubler Blvd at Battle Creek Rd	Final Base	93	157	149	127	316	171	88	1056	76	242	1592	162	4229
		Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	9	0	0	6	17	28	0	0	0	0	0	60
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**100**	**179**	**161**	**137**	**347**	**202**	**123**	**1140**	**82**	**261**	**1719**	**175**	**4626**

ID	Intersection Name	Volume Type	Northbound		Southbound		Westbound		Total Volume
			Thru	Right	Left	Thru	Left	Right	
42	Reed at Site Access	Final Base	69	0	0	246	0	0	315
		Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	1	4	5
		Other	0	0	0	0	0	0	0
		Future Total	**75**	**0**	**0**	**266**	**1**	**4**	**346**

Signal Warrants Report For Intersection 1: Battle Creek Rd at Reed Rd

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	E, W
Minor Approaches	N
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	E	W	N
1	397	487	264
2	381	468	253
3	373	458	248
4	318	390	211
5	302	370	201
6	270	331	180
7	250	307	166
8	238	292	158
9	191	234	127
10	179	219	119
11	179	219	119
12	171	209	114
13	155	190	103
14	143	175	95
15	143	175	95
16	139	170	92
17	79	97	53
18	44	54	29
19	40	49	26
20	16	19	11
21	12	15	8
22	12	15	8
23	8	10	5
24	8	10	5

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	884	2	264	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	No
2	2	849	2	253	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	No	No
3	2	831	2	248	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	No	No
4	2	708	2	211	Yes	Yes	Yes	Yes	No	No	Yes	Yes	No	No
5	2	672	2	201	Yes	Yes	Yes	Yes	No	No	Yes	Yes	No	No
6	2	601	2	180	No	Yes	Yes	Yes	No	No	No	Yes	No	No
7	2	557	2	166	No	Yes	Yes	Yes	No	No	No	Yes	No	No
8	2	530	2	158	No	No	Yes	Yes	No	No	No	Yes	No	No
9	2	425	2	127	No	No	No	Yes	No	No	No	No	No	No
10	2	398	2	119	No	No	No	Yes	No	No	No	No	No	No
11	2	398	2	119	No	No	No	Yes	No	No	No	No	No	No
12	2	380	2	114	No	No	No	Yes	No	No	No	No	No	No
13	2	345	2	103	No	No	No	No	No	No	No	No	No	No
14	2	318	2	95	No	No	No	No	No	No	No	No	No	No
15	2	318	2	95	No	No	No	No	No	No	No	No	No	No
16	2	309	2	92	No	No	No	No	No	No	No	No	No	No
17	2	176	2	53	No	No	No	No	No	No	No	No	No	No
18	2	98	2	29	No	No	No	No	No	No	No	No	No	No
19	2	89	2	26	No	No	No	No	No	No	No	No	No	No
20	2	35	2	11	No	No	No	No	No	No	No	No	No	No
21	2	27	2	8	No	No	No	No	No	No	No	No	No	No
22	2	27	2	8	No	No	No	No	No	No	No	No	No	No
23	2	18	2	5	No	No	No	No	No	No	No	No	No	No
24	2	18	2	5	No	No	No	No	No	No	No	No	No	No
Hours Met					5	7	8	12	0	3	5	8	1	0

Warrant 3 Condition A

Orientation	N
Total Stopped Delay Per Vehicle on Minor Approach (s)	45
Number of Lanes on Minor Street Approach	2
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	3:17
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	264
High Minor Volume Condition Met	Yes
Total Entering Volume on All Approaches During Same Hour	1148
Number of Approaches on Intersection	3
Total Volume Condition Met	Yes
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

Signal Warrants Report For Intersection 6: Battle Creek Rd at Site Access

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	S, N
Minor Approaches	E
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	S	N	E
1	477	688	26
2	458	660	25
3	448	647	24
4	382	550	21
5	363	523	20
6	324	468	18
7	301	433	16
8	286	413	16
9	229	330	12
10	215	310	12
11	215	310	12
12	205	296	11
13	186	268	10
14	172	248	9
15	172	248	9
16	167	241	9
17	95	138	5
18	52	76	3
19	48	69	3
20	19	28	1
21	14	21	1
22	14	21	1
23	10	14	1
24	10	14	1

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	1165	1	26	No	No	No	No	No	No	No	No	No	No
2	2	1118	1	25	No	No	No	No	No	No	No	No	No	No
3	2	1095	1	24	No	No	No	No	No	No	No	No	No	No
4	2	932	1	21	No	No	No	No	No	No	No	No	No	No
5	2	886	1	20	No	No	No	No	No	No	No	No	No	No
6	2	792	1	18	No	No	No	No	No	No	No	No	No	No
7	2	734	1	16	No	No	No	No	No	No	No	No	No	No
8	2	699	1	16	No	No	No	No	No	No	No	No	No	No
9	2	559	1	12	No	No	No	No	No	No	No	No	No	No
10	2	525	1	12	No	No	No	No	No	No	No	No	No	No
11	2	525	1	12	No	No	No	No	No	No	No	No	No	No
12	2	501	1	11	No	No	No	No	No	No	No	No	No	No
13	2	454	1	10	No	No	No	No	No	No	No	No	No	No
14	2	420	1	9	No	No	No	No	No	No	No	No	No	No
15	2	420	1	9	No	No	No	No	No	No	No	No	No	No
16	2	408	1	9	No	No	No	No	No	No	No	No	No	No
17	2	233	1	5	No	No	No	No	No	No	No	No	No	No
18	2	128	1	3	No	No	No	No	No	No	No	No	No	No
19	2	117	1	3	No	No	No	No	No	No	No	No	No	No
20	2	47	1	1	No	No	No	No	No	No	No	No	No	No
21	2	35	1	1	No	No	No	No	No	No	No	No	No	No
22	2	35	1	1	No	No	No	No	No	No	No	No	No	No
23	2	24	1	1	No	No	No	No	No	No	No	No	No	No
24	2	24	1	1	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	E
Total Stopped Delay Per Vehicle on Minor Approach (s)	24.6
Number of Lanes on Minor Street Approach	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:10
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	26
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	1191
Number of Approaches on Intersection	3
Total Volume Condition Met	Yes
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

Signal Warrants Report For Intersection 11: Reed Rd at Strong Rd

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	N, S
Minor Approaches	E
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	N	S	E
1	363	78	18
2	348	75	17
3	341	73	17
4	290	62	14
5	276	59	14
6	247	53	12
7	229	49	11
8	218	47	11
9	174	37	9
10	163	35	8
11	163	35	8
12	156	34	8
13	142	30	7
14	131	28	6
15	131	28	6
16	127	27	6
17	73	16	4
18	40	9	2
19	36	8	2
20	15	3	1
21	11	2	1
22	11	2	1
23	7	2	0
24	7	2	0

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	441	1	18	No	No	No	No	No	No	No	No	No	No
2	2	423	1	17	No	No	No	No	No	No	No	No	No	No
3	2	414	1	17	No	No	No	No	No	No	No	No	No	No
4	2	352	1	14	No	No	No	No	No	No	No	No	No	No
5	2	335	1	14	No	No	No	No	No	No	No	No	No	No
6	2	300	1	12	No	No	No	No	No	No	No	No	No	No
7	2	278	1	11	No	No	No	No	No	No	No	No	No	No
8	2	265	1	11	No	No	No	No	No	No	No	No	No	No
9	2	211	1	9	No	No	No	No	No	No	No	No	No	No
10	2	198	1	8	No	No	No	No	No	No	No	No	No	No
11	2	198	1	8	No	No	No	No	No	No	No	No	No	No
12	2	190	1	8	No	No	No	No	No	No	No	No	No	No
13	2	172	1	7	No	No	No	No	No	No	No	No	No	No
14	2	159	1	6	No	No	No	No	No	No	No	No	No	No
15	2	159	1	6	No	No	No	No	No	No	No	No	No	No
16	2	154	1	6	No	No	No	No	No	No	No	No	No	No
17	2	89	1	4	No	No	No	No	No	No	No	No	No	No
18	2	49	1	2	No	No	No	No	No	No	No	No	No	No
19	2	44	1	2	No	No	No	No	No	No	No	No	No	No
20	2	18	1	1	No	No	No	No	No	No	No	No	No	No
21	2	13	1	1	No	No	No	No	No	No	No	No	No	No
22	2	13	1	1	No	No	No	No	No	No	No	No	No	No
23	2	9	1	0	No	No	No	No	No	No	No	No	No	No
24	2	9	1	0	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	E
Total Stopped Delay Per Vehicle on Minor Approach (s)	11
Number of Lanes on Minor Street Approach	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:03
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	18
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	459
Number of Approaches on Intersection	3
Total Volume Condition Met	No
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

Signal Warrants Report For Intersection 16: Reed Rd at Fairview Industrial Dr

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	E, W
Minor Approaches	N, S
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets	
	E	W	N	S
1	373	505	37	99
2	358	485	36	95
3	351	475	35	93
4	298	404	30	79
5	283	384	28	75
6	254	343	25	67
7	235	318	23	62
8	224	303	22	59
9	179	242	18	48
10	168	227	17	45
11	168	227	17	45
12	160	217	16	43
13	145	197	14	39
14	134	182	13	36
15	134	182	13	36
16	131	177	13	35
17	75	101	7	20
18	41	56	4	11
19	37	51	4	10
20	15	20	1	4
21	11	15	1	3
22	11	15	1	3
23	7	10	1	2
24	7	10	1	2

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	4	878	2	136	No	No	No	Yes	No	Yes	Yes	Yes	No	No
2	4	843	2	131	No	No	No	Yes	No	Yes	Yes	Yes	No	No
3	4	826	2	128	No	No	No	Yes	No	Yes	Yes	Yes	No	No
4	4	702	2	109	No	No	No	No	No	No	Yes	Yes	No	No
5	4	667	2	103	No	No	No	No	No	No	Yes	Yes	No	No
6	4	597	2	92	No	No	No	No	No	No	No	Yes	No	No
7	4	553	2	85	No	No	No	No	No	No	No	Yes	No	No
8	4	527	2	81	No	No	No	No	No	No	No	Yes	No	No
9	4	421	2	66	No	No	No	No	No	No	No	No	No	No
10	4	395	2	62	No	No	No	No	No	No	No	No	No	No
11	4	395	2	62	No	No	No	No	No	No	No	No	No	No
12	4	377	2	59	No	No	No	No	No	No	No	No	No	No
13	4	342	2	53	No	No	No	No	No	No	No	No	No	No
14	4	316	2	49	No	No	No	No	No	No	No	No	No	No
15	4	316	2	49	No	No	No	No	No	No	No	No	No	No
16	4	308	2	48	No	No	No	No	No	No	No	No	No	No
17	4	176	2	27	No	No	No	No	No	No	No	No	No	No
18	4	97	2	15	No	No	No	No	No	No	No	No	No	No
19	4	88	2	14	No	No	No	No	No	No	No	No	No	No
20	4	35	2	5	No	No	No	No	No	No	No	No	No	No
21	4	26	2	4	No	No	No	No	No	No	No	No	No	No
22	4	26	2	4	No	No	No	No	No	No	No	No	No	No
23	4	17	2	3	No	No	No	No	No	No	No	No	No	No
24	4	17	2	3	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	3	0	3	5	8	0	0

Warrant 3 Condition A

Orientation	N	S
Total Stopped Delay Per Vehicle on Minor Approach (s)	20.8	44
Number of Lanes on Minor Street Approach	1	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:12	1:12
Delay Condition Met	No	No
Volume on Minor Street Approach During Same Hour	37	99
High Minor Volume Condition Met	No	No
Total Entering Volume on All Approaches During Same Hour	1014	1014
Number of Approaches on Intersection	4	4
Total Volume Condition Met	Yes	Yes
Warrant Met for Approach	No	No
Warrant Met for Intersection	**No**	

Signal Warrants Report For Intersection 21: Fairview Industrial Dr at Marietta St

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	S, N
Minor Approaches	W
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	S	N	W
1	156	452	19
2	150	434	18
3	147	425	18
4	125	362	15
5	119	344	14
6	106	307	13
7	98	285	12
8	94	271	11
9	75	217	9
10	70	203	9
11	70	203	9
12	67	194	8
13	61	176	7
14	56	163	7
15	56	163	7
16	55	158	7
17	31	90	4
18	17	50	2
19	16	45	2
20	6	18	1
21	5	14	1
22	5	14	1
23	3	9	0
24	3	9	0

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	3	608	1	19	No	No	No	No	No	No	No	No	No	No
2	3	584	1	18	No	No	No	No	No	No	No	No	No	No
3	3	572	1	18	No	No	No	No	No	No	No	No	No	No
4	3	487	1	15	No	No	No	No	No	No	No	No	No	No
5	3	463	1	14	No	No	No	No	No	No	No	No	No	No
6	3	413	1	13	No	No	No	No	No	No	No	No	No	No
7	3	383	1	12	No	No	No	No	No	No	No	No	No	No
8	3	365	1	11	No	No	No	No	No	No	No	No	No	No
9	3	292	1	9	No	No	No	No	No	No	No	No	No	No
10	3	273	1	9	No	No	No	No	No	No	No	No	No	No
11	3	273	1	9	No	No	No	No	No	No	No	No	No	No
12	3	261	1	8	No	No	No	No	No	No	No	No	No	No
13	3	237	1	7	No	No	No	No	No	No	No	No	No	No
14	3	219	1	7	No	No	No	No	No	No	No	No	No	No
15	3	219	1	7	No	No	No	No	No	No	No	No	No	No
16	3	213	1	7	No	No	No	No	No	No	No	No	No	No
17	3	121	1	4	No	No	No	No	No	No	No	No	No	No
18	3	67	1	2	No	No	No	No	No	No	No	No	No	No
19	3	61	1	2	No	No	No	No	No	No	No	No	No	No
20	3	24	1	1	No	No	No	No	No	No	No	No	No	No
21	3	19	1	1	No	No	No	No	No	No	No	No	No	No
22	3	19	1	1	No	No	No	No	No	No	No	No	No	No
23	3	12	1	0	No	No	No	No	No	No	No	No	No	No
24	3	12	1	0	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	W
Total Stopped Delay Per Vehicle on Minor Approach (s)	13.9
Number of Lanes on Minor Street Approach	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:04
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	19
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	627
Number of Approaches on Intersection	3
Total Volume Condition Met	No
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

Signal Warrants Report For Intersection 26: East Access at Strong Rd

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	E, N
Minor Approaches	W
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	E	N	W
1	56	128	24
2	54	123	23
3	53	120	23
4	45	102	19
5	43	97	18
6	38	87	16
7	35	81	15
8	34	77	14
9	27	61	12
10	25	58	11
11	25	58	11
12	24	55	10
13	22	50	9
14	20	46	9
15	20	46	9
16	20	45	8
17	11	26	5
18	6	14	3
19	6	13	2
20	2	5	1
21	2	4	1
22	2	4	1
23	1	3	0
24	1	3	0

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	184	1	24	No	No	No	No	No	No	No	No	No	No
2	2	177	1	23	No	No	No	No	No	No	No	No	No	No
3	2	173	1	23	No	No	No	No	No	No	No	No	No	No
4	2	147	1	19	No	No	No	No	No	No	No	No	No	No
5	2	140	1	18	No	No	No	No	No	No	No	No	No	No
6	2	125	1	16	No	No	No	No	No	No	No	No	No	No
7	2	116	1	15	No	No	No	No	No	No	No	No	No	No
8	2	111	1	14	No	No	No	No	No	No	No	No	No	No
9	2	88	1	12	No	No	No	No	No	No	No	No	No	No
10	2	83	1	11	No	No	No	No	No	No	No	No	No	No
11	2	83	1	11	No	No	No	No	No	No	No	No	No	No
12	2	79	1	10	No	No	No	No	No	No	No	No	No	No
13	2	72	1	9	No	No	No	No	No	No	No	No	No	No
14	2	66	1	9	No	No	No	No	No	No	No	No	No	No
15	2	66	1	9	No	No	No	No	No	No	No	No	No	No
16	2	65	1	8	No	No	No	No	No	No	No	No	No	No
17	2	37	1	5	No	No	No	No	No	No	No	No	No	No
18	2	20	1	3	No	No	No	No	No	No	No	No	No	No
19	2	19	1	2	No	No	No	No	No	No	No	No	No	No
20	2	7	1	1	No	No	No	No	No	No	No	No	No	No
21	2	6	1	1	No	No	No	No	No	No	No	No	No	No
22	2	6	1	1	No	No	No	No	No	No	No	No	No	No
23	2	4	1	0	No	No	No	No	No	No	No	No	No	No
24	2	4	1	0	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	W
Total Stopped Delay Per Vehicle on Minor Approach (s)	10.7
Number of Lanes on Minor Street Approach	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:04
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	24
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	208
Number of Approaches on Intersection	3
Total Volume Condition Met	No
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

Signal Warrants Report For Intersection 31: 27th Ave at Marietta St

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	N, S
Minor Approaches	E
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	N	S	E
1	139	65	53
2	133	62	51
3	131	61	50
4	111	52	42
5	106	49	40
6	95	44	36
7	88	41	33
8	83	39	32
9	67	31	25
10	63	29	24
11	63	29	24
12	60	28	23
13	54	25	21
14	50	23	19
15	50	23	19
16	49	23	19
17	28	13	11
18	15	7	6
19	14	7	5
20	6	3	2
21	4	2	2
22	4	2	2
23	3	1	1
24	3	1	1

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	204	1	53	No	No	No	No	No	No	No	No	No	No
2	2	195	1	51	No	No	No	No	No	No	No	No	No	No
3	2	192	1	50	No	No	No	No	No	No	No	No	No	No
4	2	163	1	42	No	No	No	No	No	No	No	No	No	No
5	2	155	1	40	No	No	No	No	No	No	No	No	No	No
6	2	139	1	36	No	No	No	No	No	No	No	No	No	No
7	2	129	1	33	No	No	No	No	No	No	No	No	No	No
8	2	122	1	32	No	No	No	No	No	No	No	No	No	No
9	2	98	1	25	No	No	No	No	No	No	No	No	No	No
10	2	92	1	24	No	No	No	No	No	No	No	No	No	No
11	2	92	1	24	No	No	No	No	No	No	No	No	No	No
12	2	88	1	23	No	No	No	No	No	No	No	No	No	No
13	2	79	1	21	No	No	No	No	No	No	No	No	No	No
14	2	73	1	19	No	No	No	No	No	No	No	No	No	No
15	2	73	1	19	No	No	No	No	No	No	No	No	No	No
16	2	72	1	19	No	No	No	No	No	No	No	No	No	No
17	2	41	1	11	No	No	No	No	No	No	No	No	No	No
18	2	22	1	6	No	No	No	No	No	No	No	No	No	No
19	2	21	1	5	No	No	No	No	No	No	No	No	No	No
20	2	9	1	2	No	No	No	No	No	No	No	No	No	No
21	2	6	1	2	No	No	No	No	No	No	No	No	No	No
22	2	6	1	2	No	No	No	No	No	No	No	No	No	No
23	2	4	1	1	No	No	No	No	No	No	No	No	No	No
24	2	4	1	1	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	E
Total Stopped Delay Per Vehicle on Minor Approach (s)	10.6
Number of Lanes on Minor Street Approach	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:09
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	53
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	257
Number of Approaches on Intersection	3
Total Volume Condition Met	No
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

Signal Warrants Report For Intersection 42: Reed at Site Access

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	N, S
Minor Approaches	E
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	N	S	E
1	266	75	5
2	255	72	5
3	250	71	5
4	213	60	4
5	202	57	4
6	181	51	3
7	168	47	3
8	160	45	3
9	128	36	2
10	120	34	2
11	120	34	2
12	114	32	2
13	104	29	2
14	96	27	2
15	96	27	2
16	93	26	2
17	53	15	1
18	29	8	1
19	27	8	1
20	11	3	0
21	8	2	0
22	8	2	0
23	5	2	0
24	5	2	0

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	341	1	5	No	No	No	No	No	No	No	No	No	No
2	2	327	1	5	No	No	No	No	No	No	No	No	No	No
3	2	321	1	5	No	No	No	No	No	No	No	No	No	No
4	2	273	1	4	No	No	No	No	No	No	No	No	No	No
5	2	259	1	4	No	No	No	No	No	No	No	No	No	No
6	2	232	1	3	No	No	No	No	No	No	No	No	No	No
7	2	215	1	3	No	No	No	No	No	No	No	No	No	No
8	2	205	1	3	No	No	No	No	No	No	No	No	No	No
9	2	164	1	2	No	No	No	No	No	No	No	No	No	No
10	2	154	1	2	No	No	No	No	No	No	No	No	No	No
11	2	154	1	2	No	No	No	No	No	No	No	No	No	No
12	2	146	1	2	No	No	No	No	No	No	No	No	No	No
13	2	133	1	2	No	No	No	No	No	No	No	No	No	No
14	2	123	1	2	No	No	No	No	No	No	No	No	No	No
15	2	123	1	2	No	No	No	No	No	No	No	No	No	No
16	2	119	1	2	No	No	No	No	No	No	No	No	No	No
17	2	68	1	1	No	No	No	No	No	No	No	No	No	No
18	2	37	1	1	No	No	No	No	No	No	No	No	No	No
19	2	35	1	1	No	No	No	No	No	No	No	No	No	No
20	2	14	1	0	No	No	No	No	No	No	No	No	No	No
21	2	10	1	0	No	No	No	No	No	No	No	No	No	No
22	2	10	1	0	No	No	No	No	No	No	No	No	No	No
23	2	7	1	0	No	No	No	No	No	No	No	No	No	No
24	2	7	1	0	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	E
Total Stopped Delay Per Vehicle on Minor Approach (s)	9.1
Number of Lanes on Minor Street Approach	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:00
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	5
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	346
Number of Approaches on Intersection	3
Total Volume Condition Met	No
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

18-392 Strong at 27th Subdivision TIA

Vistro File: J:\...\18-392 Reed Rd Subdivision - TIA.vistro
Report File: J:\...\18-392 PM Dev Ph 2.pdf

Scenario 6 PM Dev 2023 Ph 2
6/19/2018

Trip Generation summary

Added Trips

Zone ID: Name	Land Use variables	Code	Ind. Var.	Rate	Quantity	% In	% Out	Trips In	Trips Out	Total Trips	% of Total Trips
1: 18-392 Reed Rd Sub	Homes	ITE 210	Home	0.990	150.000	63.00	37.00	93	55	148	100.00
					Added Trips Total			**93**	**55**	**148**	**100.00**

18-392 Strong at 27th Subdivision TIA

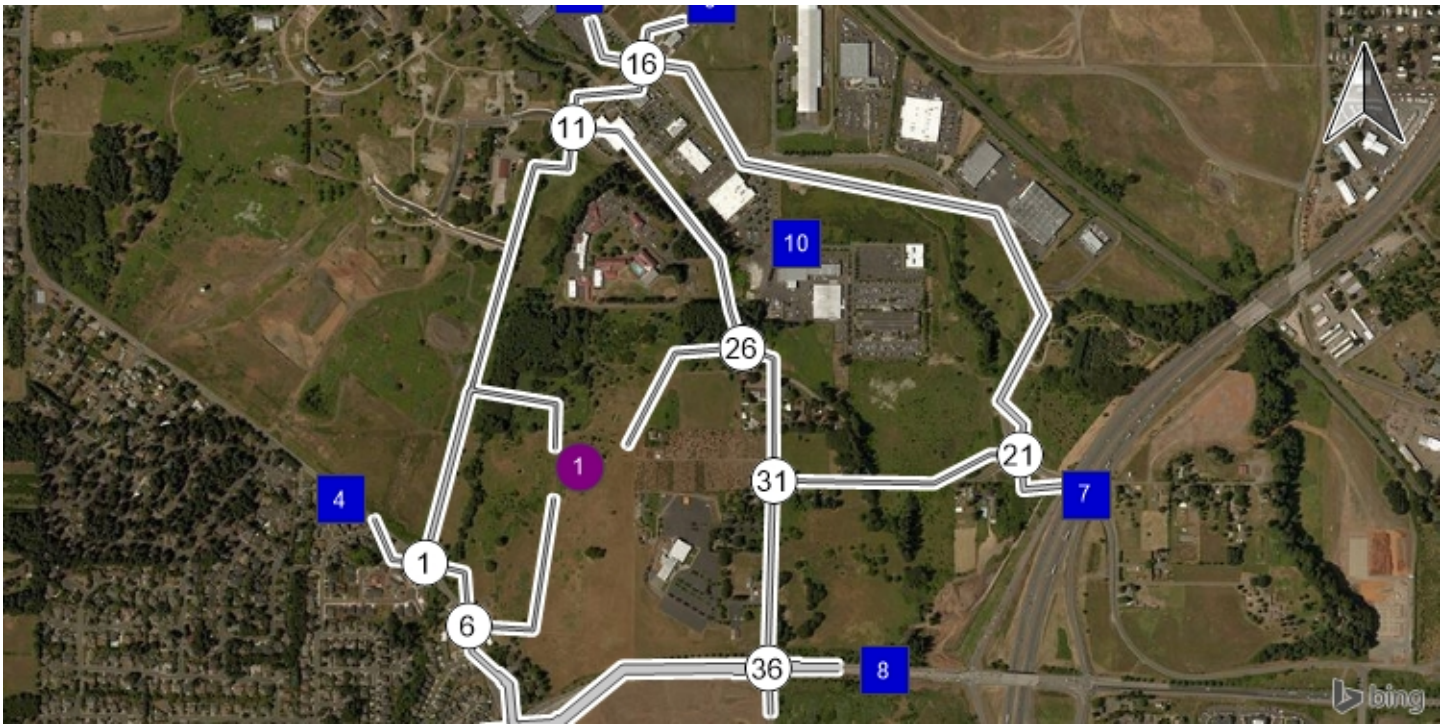
Vistro File: J:\...\18-392 Reed Rd Subdivision - TIA.vistro
Report File: J:\...\18-392 PM Dev Ph 2.pdf

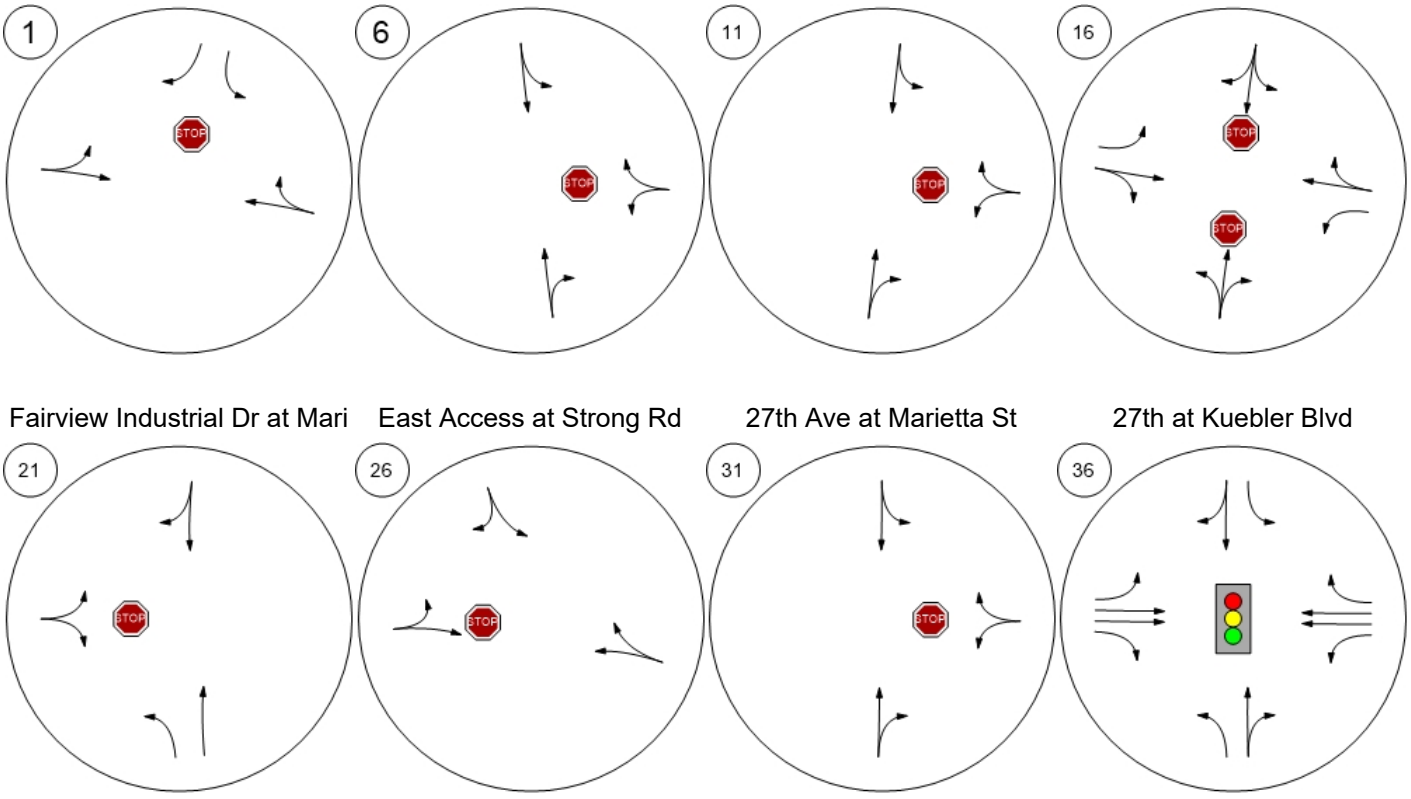
Scenario 6 PM Dev 2023 Ph 2
6/19/2018

Trip Distribution summary

Zone / Gate	Zone 1: 18-392 Reed Rd Sub			
	To 18-392 Reed Rd Sub:		From 18-392 Reed Rd Sub:	
	Share %	Trips	Share %	Trips
2: Gate	10.00	9	10.00	6
3: Gate	30.00	28	30.00	17
4: Gate	7.00	7	7.00	4
5: Gate	10.00	9	10.00	6
6: Gate	0.00	0	0.00	0
7: Gate	6.00	6	6.00	3
8: Gate	35.00	33	35.00	18
9: Gate	2.00	2	2.00	1
10: Gate	0.00	0	0.00	0
Total	**100.00**	**94**	**100.00**	**55**

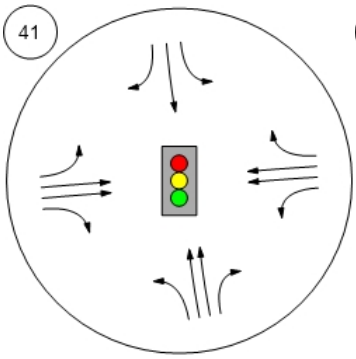
Report Figure 1: Lane Configuration and Traffic Control



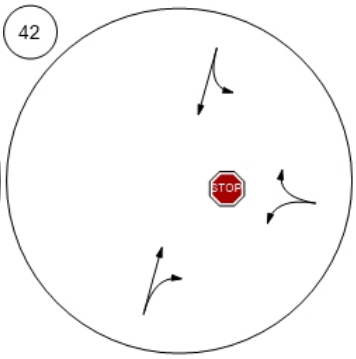


Report Figure 1: Lane Configuration and Traffic Control

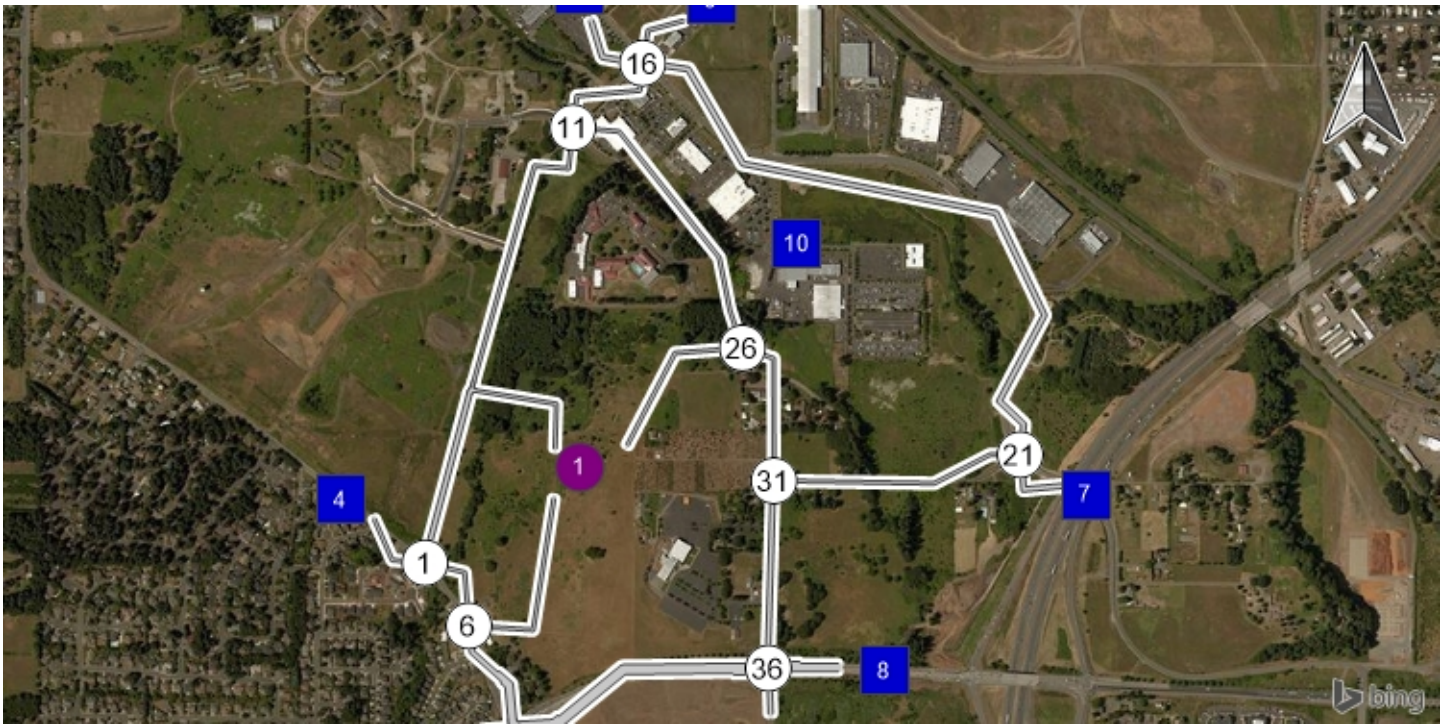
Keubler Blvd at Battle Creek



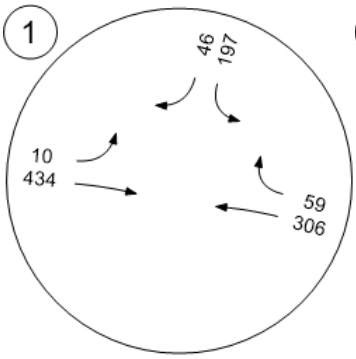
Reed at Site Access



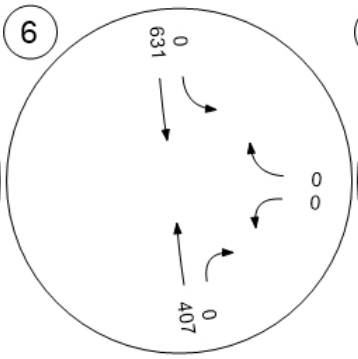
Report Figure 2a: Traffic Volume - Base Volume



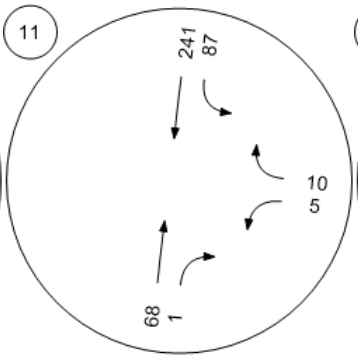
Battle Creek Rd at Reed Rd



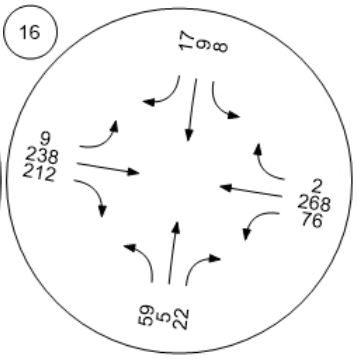
Battle Creek Rd at Site Acces



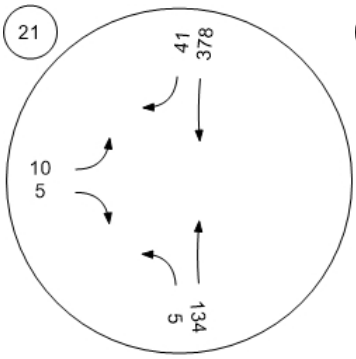
Reed Rd at Strong Rd



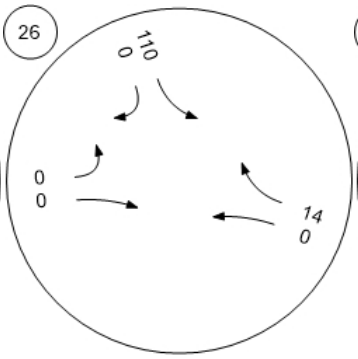
Reed Rd at Fairview Industria



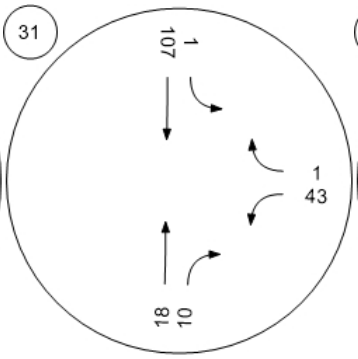
Fairview Industrial Dr at Mari



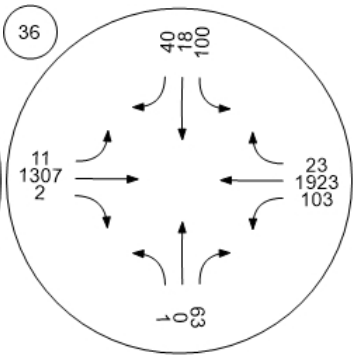
East Access at Strong Rd



27th Ave at Marietta St

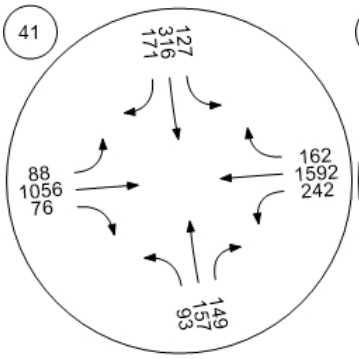


27th at Kuebler Blvd

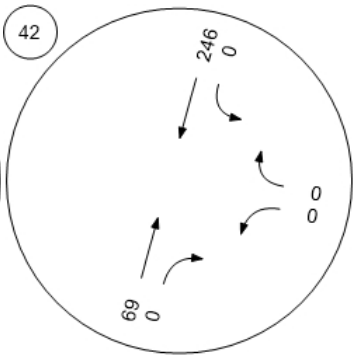


Report Figure 2a: Traffic Volume - Base Volume

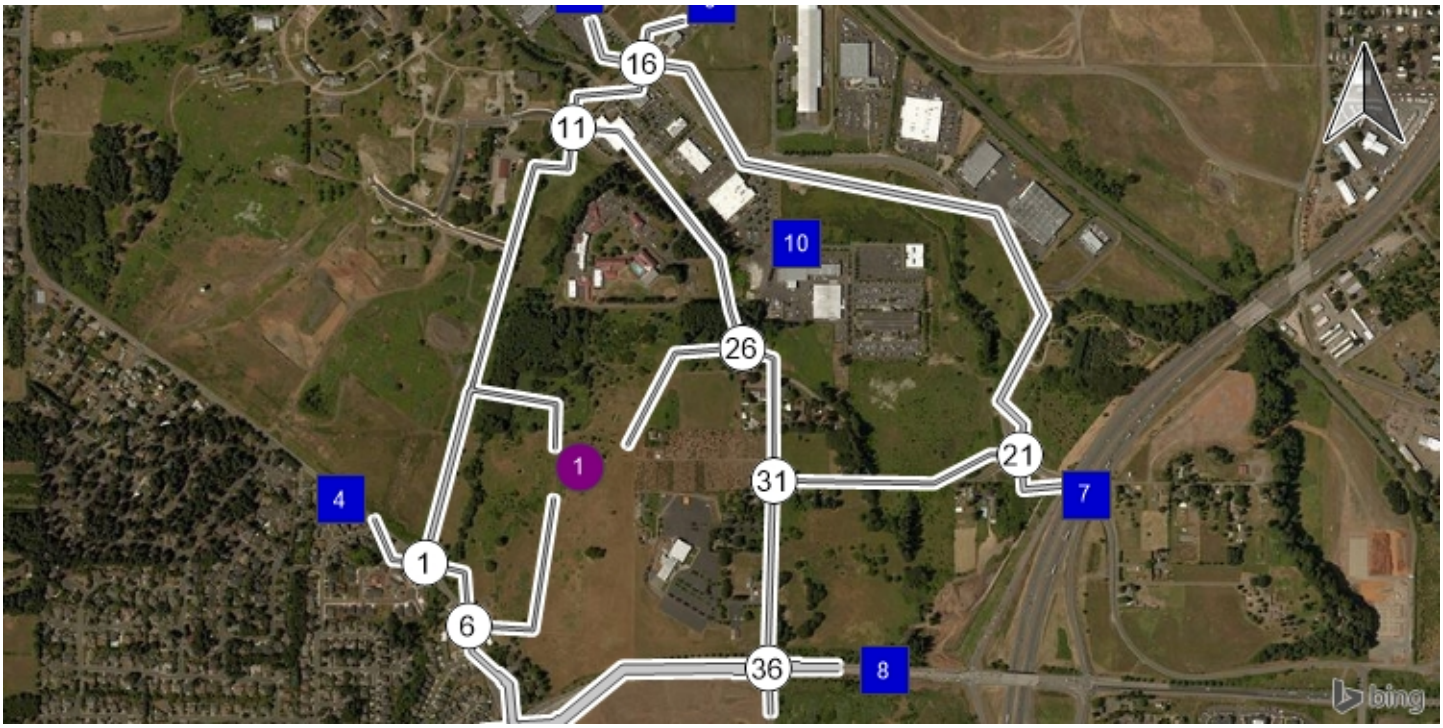
Keubler Blvd at Battle Creek



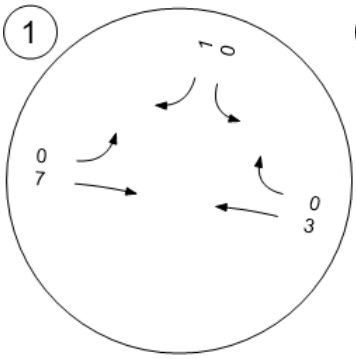
Reed at Site Access



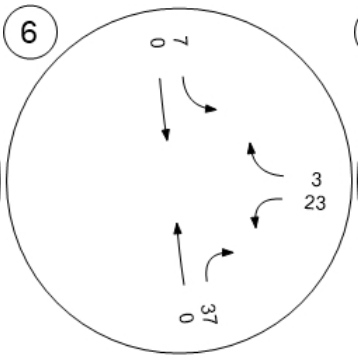
Report Figure 2d: Traffic Volume - Net New Site Trips



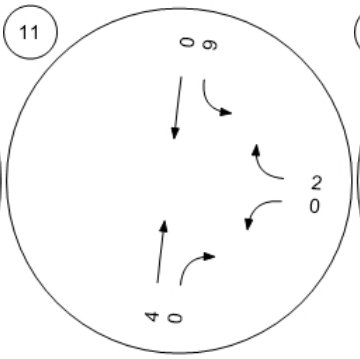
Battle Creek Rd at Reed Rd



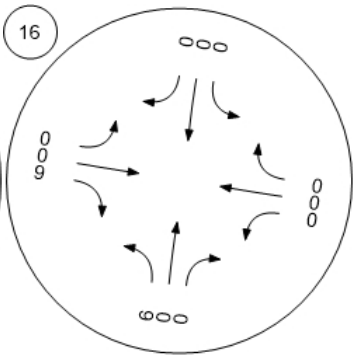
Battle Creek Rd at Site Acces



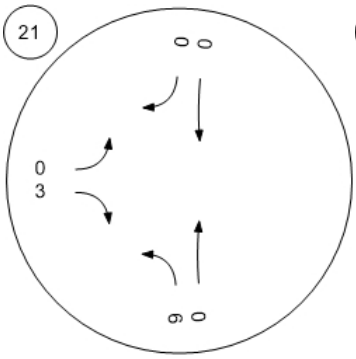
Reed Rd at Strong Rd



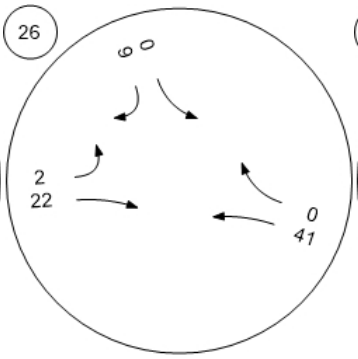
Reed Rd at Fairview Industria



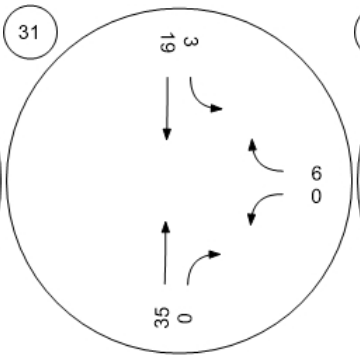
Fairview Industrial Dr at Mari



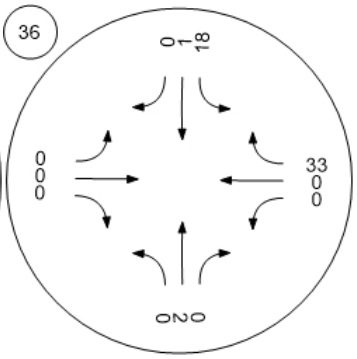
East Access at Strong Rd



27th Ave at Marietta St

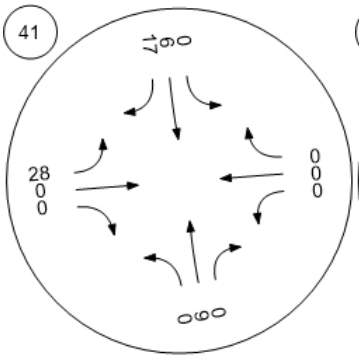


27th at Kuebler Blvd

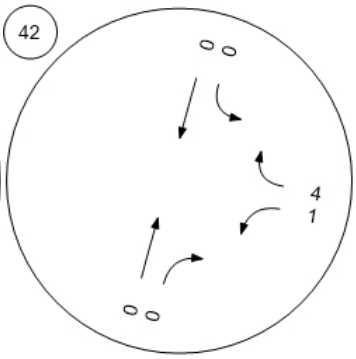


Report Figure 2d: Traffic Volume - Net New Site Trips

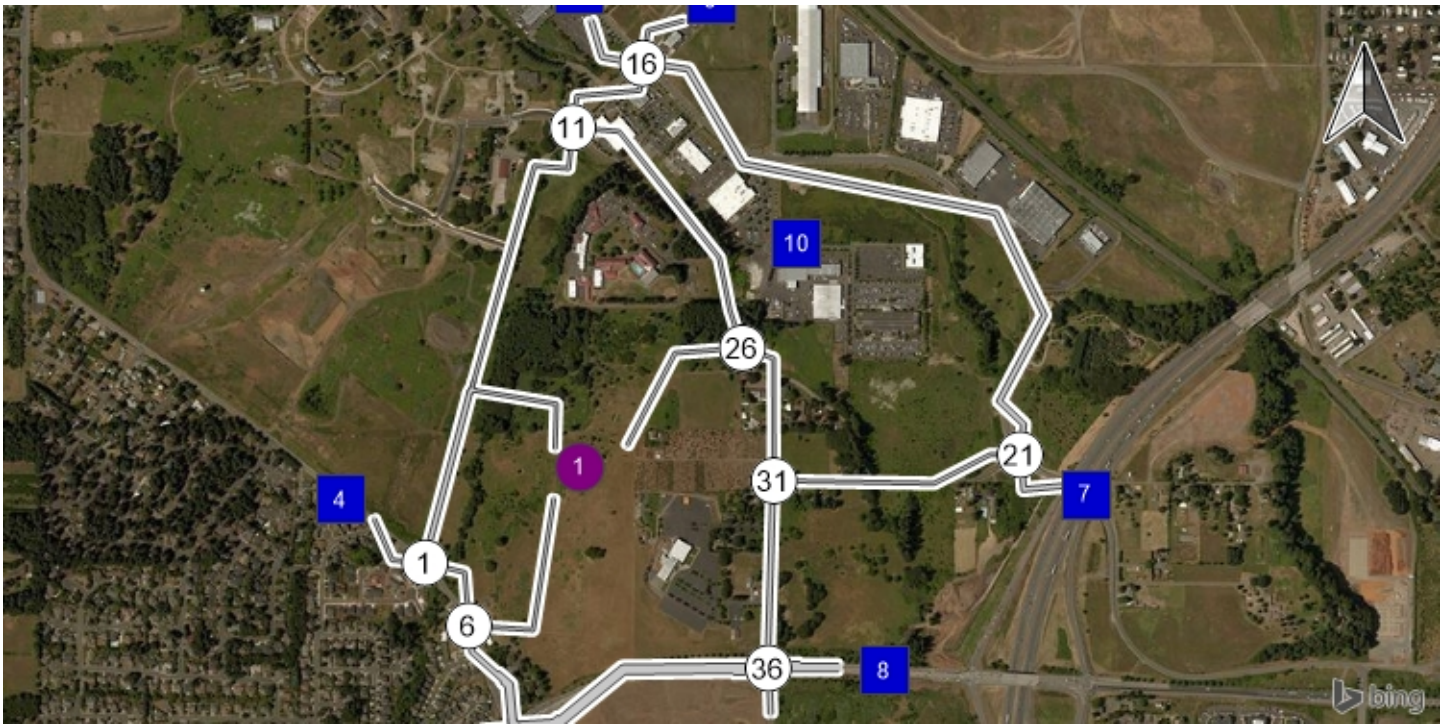
Keubler Blvd at Battle Creek



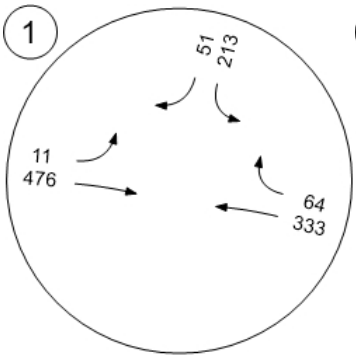
Reed at Site Access



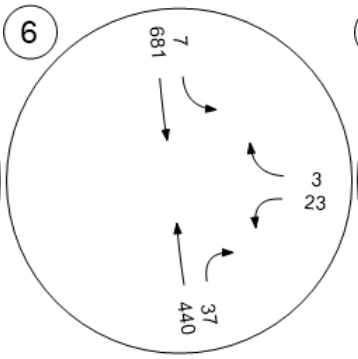
Report Figure 2f: Traffic Volume - Future Total Volume



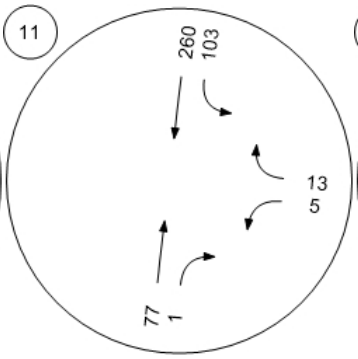
Battle Creek Rd at Reed Rd



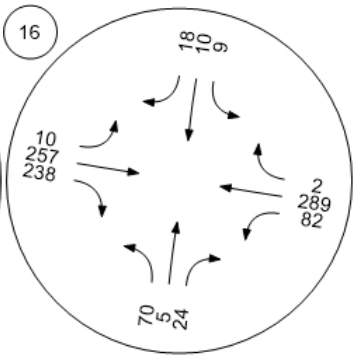
Battle Creek Rd at Site Acces



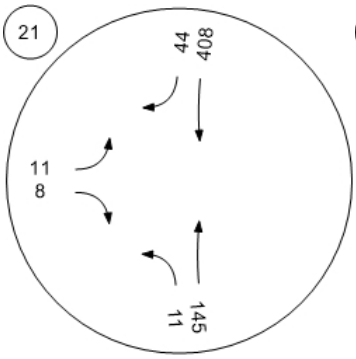
Reed Rd at Strong Rd



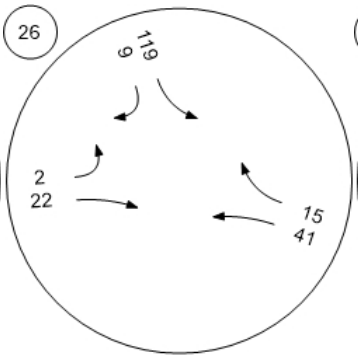
Reed Rd at Fairview Industria



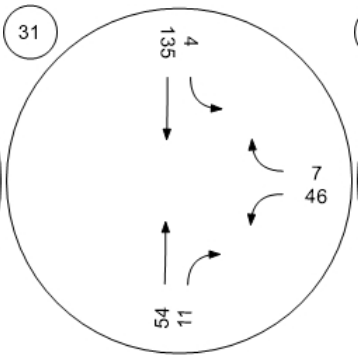
Fairview Industrial Dr at Mari



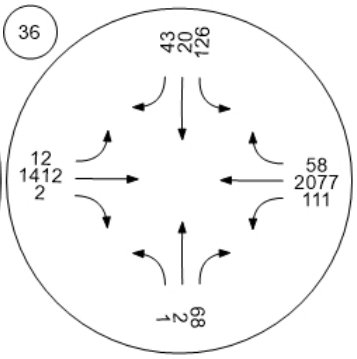
East Access at Strong Rd



27th Ave at Marietta St

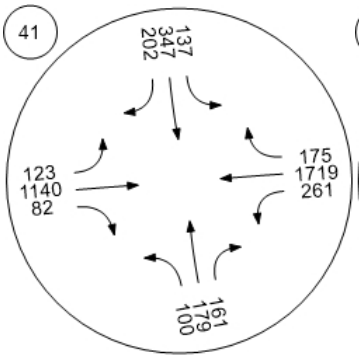


27th at Kuebler Blvd

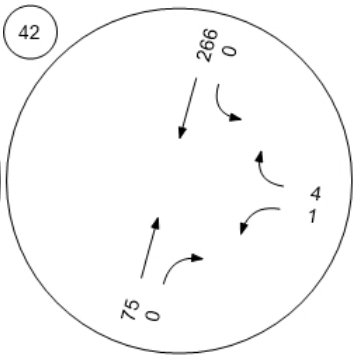


Report Figure 2f: Traffic Volume - Future Total Volume

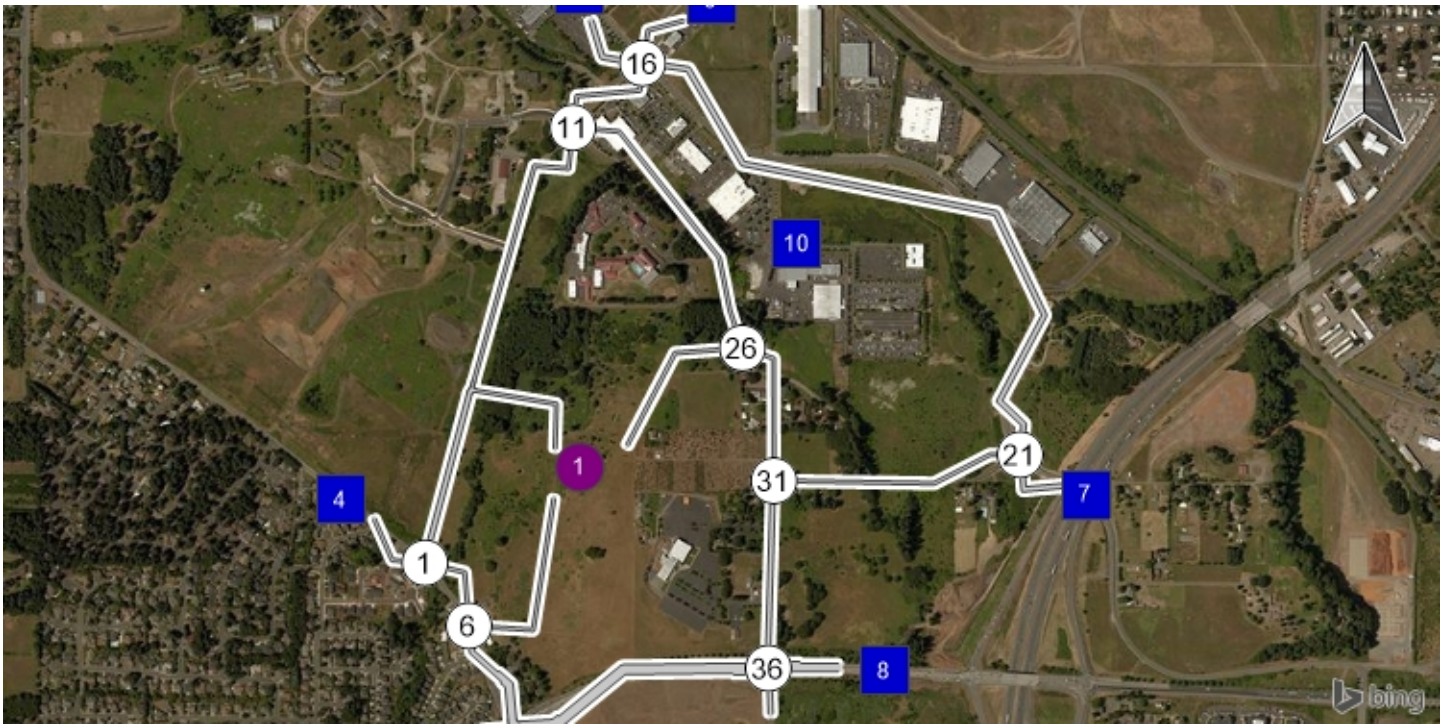
Keubler Blvd at Battle Creek

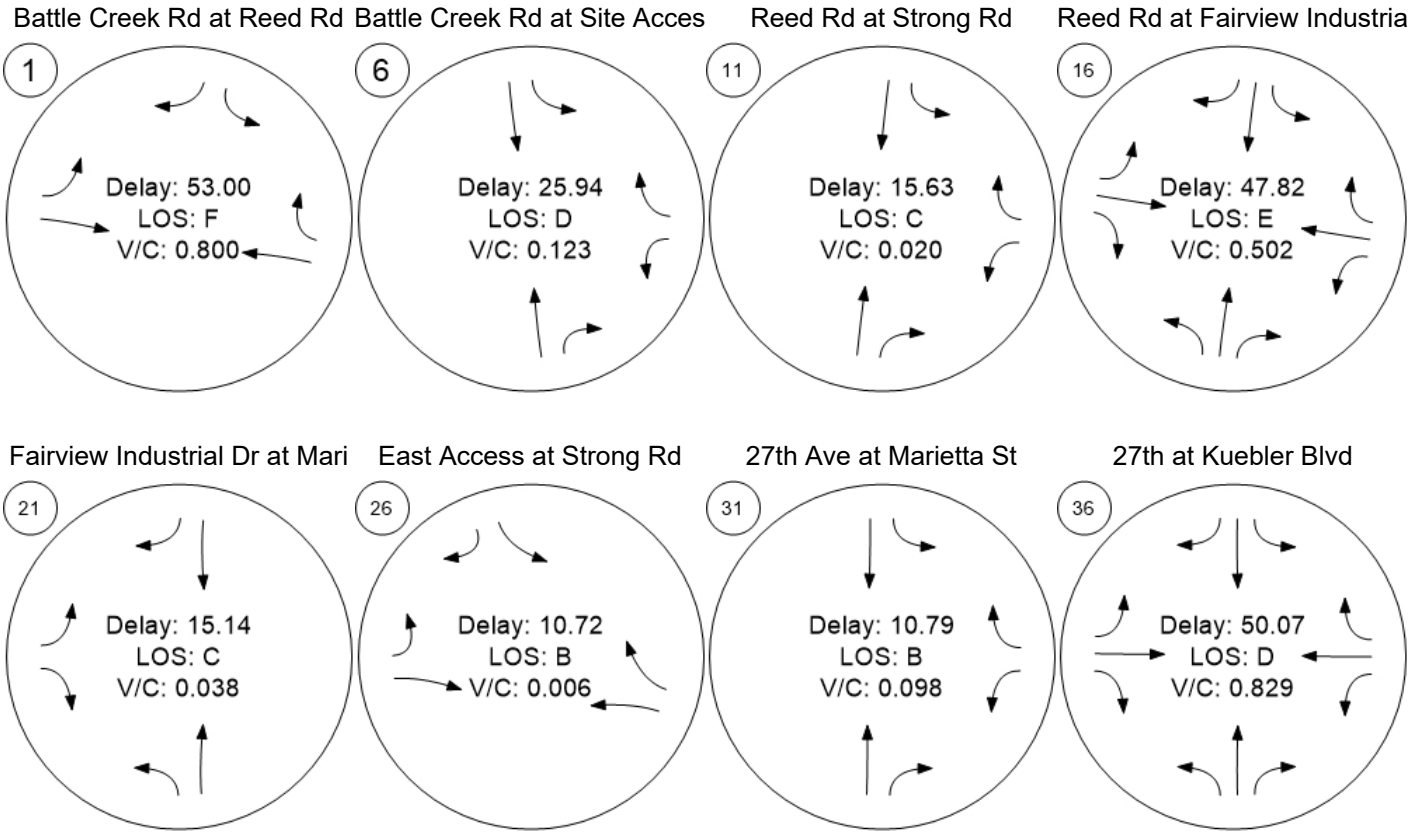


Reed at Site Access



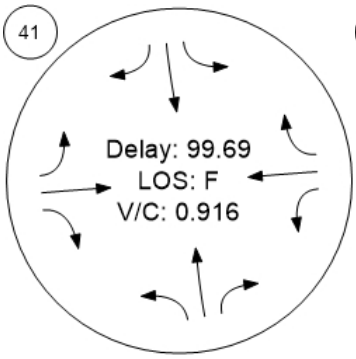
Report Figure 3: Traffic Conditions



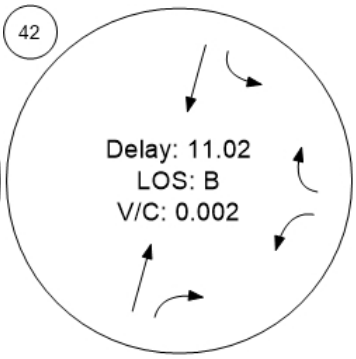


Report Figure 3: Traffic Conditions

Keubler Blvd at Battle Creek



Reed at Site Access



18-392 Strong at 27th Subdivision TIA

Vistro File: J:\...\18-392 Reed Rd Subdivision - TIA.vistro
Report File: J:\...\18-392 PM Dev Ph 3.pdf

Scenario 8 PM Dev 2026 Ph 3
6/19/2018

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Battle Creek Rd at Reed Rd	Two-way stop	HCM 6th Edition	SB Left	0.891	70.7	F
6	Battle Creek Rd at Site Access	Two-way stop	HCM 6th Edition	WB Left	0.200	30.5	D
11	Reed Rd at Strong Rd	Two-way stop	HCM 6th Edition	WB Left	0.025	16.5	C
16	Reed Rd at Fairview Industrial Dr	All-way stop	HCM 6th Edition	WB Thru	0.612	14.1	B
21	Fairview Industrial Dr at Marietta St	Two-way stop	HCM 6th Edition	EB Left	0.040	15.8	C
26	East Access at Strong Rd	Two-way stop	HCM 6th Edition	EB Left	0.006	11.3	B
31	27th Ave at Marietta St	Two-way stop	HCM 6th Edition	WB Left	0.112	11.4	B
36	27th at Kuebler Blvd	Signalized	HCM 6th Edition	SB Left	0.875	64.5	E
41	Keubler Blvd at Battle Creek Rd	Signalized	HCM 6th Edition	WB Left	0.968	118.6	F
42	Reed at Site Access	Two-way stop	HCM 6th Edition	WB Left	0.002	11.2	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. for all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Battle Creek Rd at Reed Rd

Control Type:	Two-way stop	Delay (sec / veh):	70.7
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.891

Intersection Setup

Name	Reed Rd		Battle Creek Rd		Battle Creek Rd	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Reed Rd		Battle Creek Rd		Battle Creek Rd	
Base Volume Input [veh/h]	197	46	10	434	306	59
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	1.20	1.20	1.80	1.80	3.00	3.00
Growth Rate	1.13	1.13	1.13	1.13	1.13	1.13
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	1	0	10	5	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	223	53	11	500	351	67
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	61	14	3	136	95	18
Total Analysis Volume [veh/h]	242	58	12	543	382	73
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.89	0.09	0.01	0.01	0.00	0.00
d_M, Delay for Movement [s/veh]	70.66	11.22	8.29	0.00	0.00	0.00
Movement LOS	F	B	A	A	A	A
95th-Percentile Queue Length [veh]	7.86	0.30	2.90	2.90	0.00	0.00
95th-Percentile Queue Length [ft]	196.38	7.49	72.40	72.40	0.00	0.00
d_A, Approach Delay [s/veh]	59.17		0.18		0.00	
Approach LOS	F		A		A	
d_I, Intersection Delay [s/veh]	13.63					
Intersection LOS	F					

Intersection Level Of Service Report
Intersection 6: Battle Creek Rd at Site Access

Control Type:	Two-way stop	Delay (sec / veh):	30.5
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.200

Intersection Setup

Name	Battle Creek Rd		Battle Creek Rd		Site Access	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Battle Creek Rd		Battle Creek Rd		Site Access	
Base Volume Input [veh/h]	407	0	0	631	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.13	1.13	1.13	1.13	1.13	1.13
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	56	10	0	33	5
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	460	56	10	713	33	5
Peak Hour Factor	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	122	15	3	190	9	1
Total Analysis Volume [veh/h]	489	60	11	759	35	5
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.01	0.01	0.20	0.01
d_M, Delay for Movement [s/veh]	0.00	0.00	8.57	0.00	30.54	16.39
Movement LOS	A	A	A	A	D	C
95th-Percentile Queue Length [veh]	0.00	0.00	7.45	7.45	0.76	0.76
95th-Percentile Queue Length [ft]	0.00	0.00	186.18	186.18	19.10	19.10
d_A, Approach Delay [s/veh]	0.00		0.12		28.78	
Approach LOS	A		A		D	
d_I, Intersection Delay [s/veh]	0.92					
Intersection LOS	D					

Intersection Level Of Service Report
Intersection 11: Reed Rd at Strong Rd

Control Type:	Two-way stop	Delay (sec / veh):	16.5
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.025

Intersection Setup

Name	Reed Rd		Reed Rd		Strong Rd	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Reed Rd		Reed Rd		Strong Rd	
Base Volume Input [veh/h]	68	1	87	241	5	10
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	5.80	5.80	1.80	1.80	6.70	6.70
Growth Rate	1.13	1.13	1.13	1.13	1.13	1.13
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	6	0	14	0	0	2
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	83	1	112	272	6	13
Peak Hour Factor	0.7600	0.7600	0.7600	0.7600	0.7600	0.7600
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	27	0	37	89	2	4
Total Analysis Volume [veh/h]	109	1	147	358	8	17
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.10	0.00	0.02	0.02
d_M, Delay for Movement [s/veh]	0.00	0.00	7.70	0.00	16.49	9.15
Movement LOS	A	A	A	A	C	A
95th-Percentile Queue Length [veh]	0.00	0.00	1.53	1.53	0.14	0.14
95th-Percentile Queue Length [ft]	0.00	0.00	38.31	38.31	3.38	3.38
d_A, Approach Delay [s/veh]	0.00		2.24		11.50	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	2.22					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 16: Reed Rd at Fairview Industrial Dr

Control Type:	All-way stop	Delay (sec / veh):	14.1
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.612

Intersection Setup

Name	Reed Rd			Reed Rd			Fairview Industrial Dr			Fairview Industrial Dr		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	250.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Reed Rd			Reed Rd			Fairview Industrial Dr			Fairview Industrial Dr		
Base Volume Input [veh/h]	59	5	22	8	9	17	9	238	212	76	268	2
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	4.70	4.70	4.70	0.00	0.00	0.00	4.10	4.10	4.10	4.00	4.00	4.00
Growth Rate	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	8	0	0	0	0	0	0	0	14	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	75	6	25	9	10	19	10	269	254	86	303	2
Peak Hour Factor	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	23	2	8	3	3	6	3	82	77	26	92	1
Total Analysis Volume [veh/h]	91	7	30	11	12	23	12	328	310	105	370	2
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	559	564	622	711	560	609
Degree of Utilization, x	0.23	0.08	0.55	0.44	0.19	0.61

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.88	0.27	3.31	2.22	0.68	4.14
95th-Percentile Queue Length [ft]	21.92	6.64	82.66	55.51	17.10	103.58
Approach Delay [s/veh]	11.34	9.95	13.51		15.98	
Approach LOS	B	A	B		C	
Intersection Delay [s/veh]	14.08					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 21: Fairview Industrial Dr at Marietta St

Control Type:	Two-way stop	Delay (sec / veh):	15.8
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.040

Intersection Setup

Name	Fairview Industrial Dr		Fairview Industrial Dr		Marietta St	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Fairview Industrial Dr		Fairview Industrial Dr		Marietta St	
Base Volume Input [veh/h]	5	134	378	41	10	5
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	9.40	9.40	4.50	4.50	0.00	0.00
Growth Rate	1.13	1.13	1.13	1.13	1.13	1.13
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	8	0	0	0	0	5
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	14	151	427	46	11	11
Peak Hour Factor	0.7900	0.7900	0.7900	0.7900	0.7900	0.7900
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	48	135	15	3	3
Total Analysis Volume [veh/h]	18	191	541	58	14	14
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.00	0.01	0.00	0.04	0.03
d_M, Delay for Movement [s/veh]	8.89	0.00	0.00	0.00	15.85	12.47
Movement LOS	A	A	A	A	C	B
95th-Percentile Queue Length [veh]	0.06	0.00	0.00	0.00	0.21	0.21
95th-Percentile Queue Length [ft]	1.46	0.00	0.00	0.00	5.32	5.32
d_A, Approach Delay [s/veh]	0.77		0.00		14.16	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.67					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 26: East Access at Strong Rd

Control Type:	Two-way stop	Delay (sec / veh):	11.3
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.006

Intersection Setup

Name	Strong Rd		East Access		Strong Rd	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Strong Rd		East Access		Strong Rd	
Base Volume Input [veh/h]	110	0	0	0	0	14
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.13	1.13	1.13	1.13	1.13	1.13
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	14	2	36	60	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	124	14	2	36	60	16
Peak Hour Factor	0.5600	0.5600	0.5600	0.5600	0.5600	0.5600
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	55	6	1	16	27	7
Total Analysis Volume [veh/h]	221	25	4	64	107	29
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Stop	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance		No	
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.01	0.10	0.08	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	11.34	11.02	7.93	0.00
Movement LOS	A	A	B	B	A	A
95th-Percentile Queue Length [veh]	0.00	0.00	0.34	0.34	0.34	0.34
95th-Percentile Queue Length [ft]	0.00	0.00	8.51	8.51	8.50	8.50
d_A, Approach Delay [s/veh]	0.00		11.03		6.24	
Approach LOS	A		B		A	
d_I, Intersection Delay [s/veh]	3.55					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 31: 27th Ave at Marietta St

Control Type:	Two-way stop	Delay (sec / veh):	11.4
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.112

Intersection Setup

Name	27th Ave		Strong Rd		Marietta St	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	27th Ave		Strong Rd		Marietta St	
Base Volume Input [veh/h]	18	10	1	107	43	1
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.13	1.13	1.13	1.13	1.13	1.13
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	52	0	5	31	0	8
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	72	11	6	152	49	9
Peak Hour Factor	0.6800	0.6800	0.6800	0.6800	0.6800	0.6800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	26	4	2	56	18	3
Total Analysis Volume [veh/h]	106	16	9	224	72	13
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.01	0.00	0.11	0.01
d_M, Delay for Movement [s/veh]	0.00	0.00	7.45	0.00	11.38	9.58
Movement LOS	A	A	A	A	B	A
95th-Percentile Queue Length [veh]	0.00	0.00	0.56	0.56	0.43	0.43
95th-Percentile Queue Length [ft]	0.00	0.00	13.99	13.99	10.75	10.75
d_A, Approach Delay [s/veh]	0.00		0.29		11.10	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	2.30					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 36: 27th at Kuebler Blvd

Control Type:	Signalized	Delay (sec / veh):	64.5
Analysis Method:	HCM 6th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.875

Intersection Setup

Name	27th Ave			27th Ave			Kuebler Blvd			Kuebler Blvd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	1	1	0	1
Pocket Length [ft]	125.00	100.00	100.00	100.00	100.00	100.00	250.00	100.00	200.00	350.00	100.00	175.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	27th Ave			27th Ave			Kuebler Blvd			Kuebler Blvd		
Base Volume Input [veh/h]	1	0	63	100	18	40	11	1307	2	103	1923	23
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	4.70	4.70	4.70	0.60	0.60	0.60	3.60	3.60	3.60	1.30	1.30	1.30
Growth Rate	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	3	0	29	2	0	0	0	0	0	0	49
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1	3	71	142	22	45	12	1477	2	116	2173	75
Peak Hour Factor	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	1	19	38	6	12	3	393	1	31	578	20
Total Analysis Volume [veh/h]	1	3	76	151	23	48	13	1571	2	123	2312	80
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	9	19	0	9	19	0	34	83	0	9	58	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	L	C	R	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	0	15	5	20	2	79	79	5	82	82
g / C, Green / Cycle	0.00	0.13	0.04	0.17	0.01	0.66	0.66	0.04	0.68	0.68
(v / s)_i Volume / Saturation Flow Rate	0.00	0.06	0.09	0.05	0.01	0.50	0.00	0.08	0.72	0.06
s, saturation flow rate [veh/h]	1568	1408	1621	1520	1582	3163	1412	1612	3222	1439
c, Capacity [veh/h]	2	178	68	253	23	2078	928	67	2203	984
d1, Uniform Delay [s]	59.86	48.52	57.50	43.72	58.73	14.04	7.08	57.50	18.97	6.35
k, delay calibration	0.11	0.50	0.11	0.50	0.11	0.11	0.11	0.11	0.12	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	92.03	7.84	563.98	2.74	19.03	0.58	0.00	384.55	25.68	0.03
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.43	0.44	2.23	0.28	0.56	0.76	0.00	1.83	1.05	0.08
d, Delay for Lane Group [s/veh]	151.89	56.37	621.47	46.46	77.76	14.62	7.08	442.04	44.65	6.39
Lane Group LOS	F	E	F	D	E	B	A	F	F	A
Critical Lane Group	No	Yes	Yes	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh]	0.09	2.59	12.66	2.05	0.52	13.48	0.02	9.23	34.45	0.66
50th-Percentile Queue Length [ft]	2.25	64.63	316.46	51.22	12.91	337.05	0.43	230.81	861.29	16.40
95th-Percentile Queue Length [veh]	0.16	4.65	21.23	3.69	0.93	19.50	0.03	15.98	46.00	1.18
95th-Percentile Queue Length [ft]	4.05	116.34	530.87	92.19	23.23	487.59	0.78	399.60	1150.11	29.53

Movement, Approach, & Intersection Results

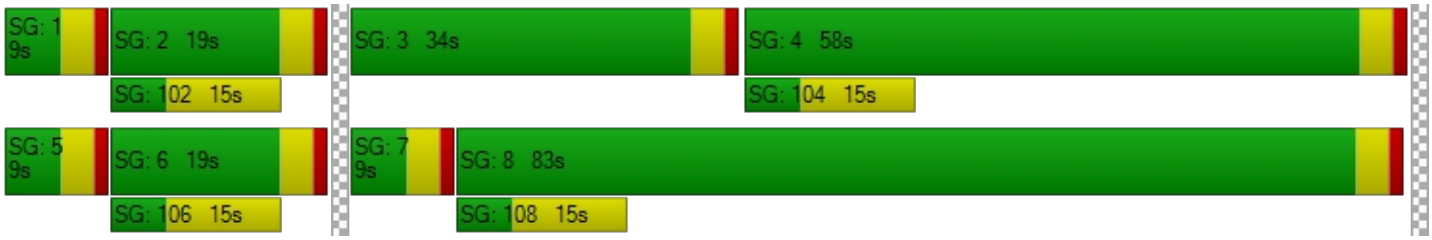
d_M, Delay for Movement [s/veh]	151.89	56.37	56.37	621.47	46.46	46.46	77.76	14.62	7.08	442.04	44.65	6.39
Movement LOS	F	E	E	F	D	D	E	B	A	F	F	A
d_A, Approach Delay [s/veh]	57.56			437.57			15.13			62.87		
Approach LOS	E			F			B			E		
d_I, Intersection Delay [s/veh]	64.47											
Intersection LOS	E											
Intersection V/C	0.875											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	51.34	51.34	51.34	51.34
l_p,int, Pedestrian LOS Score for Intersection	2.030	2.059	3.109	3.169
Crosswalk LOS	B	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	250	250	1317	900
d_b, Bicycle Delay [s]	45.94	45.94	7.00	18.15
l_b,int, Bicycle LOS Score for Intersection	1.692	1.926	2.868	3.634
Bicycle LOS	A	A	C	D

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 41: Keubler Blvd at Battle Creek Rd

Control Type:	Signalized	Delay (sec / veh):	118.6
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.968

Intersection Setup

Name	Battle Creek Rd			Battle Creek Rd			Kuebler Blvd			Kuebler Blvd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	1	0	1	1	0	1	1	0	1
Pocket Length [ft]	100.00	100.00	150.00	275.00	100.00	275.00	350.00	100.00	350.00	250.00	100.00	250.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Battle Creek Rd			Battle Creek Rd			Kuebler Blvd			Kuebler Blvd		
Base Volume Input [veh/h]	93	157	149	127	316	171	88	1056	76	242	1592	162
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	3.00	3.00	3.00	1.10	1.10	1.10	3.90	3.90	3.90	1.50	1.50	1.50
Growth Rate	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	14	0	0	8	25	42	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	105	191	168	144	365	218	141	1193	86	273	1799	183
Peak Hour Factor	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	27	50	44	38	95	57	37	311	22	71	468	48
Total Analysis Volume [veh/h]	109	199	175	150	380	227	147	1243	90	284	1874	191
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	110
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	12	23	0	15	26	0	35	60	0	12	37	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	110	110	110	110	110	110	110	110	110	110	110	110
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	8	19	19	11	22	22	12	56	56	8	52	52
g / C, Green / Cycle	0.07	0.17	0.17	0.10	0.20	0.20	0.11	0.51	0.51	0.07	0.47	0.47
(v / s)_i Volume / Saturation Flow Rate	0.07	0.06	0.12	0.09	0.22	0.16	0.09	0.39	0.06	0.18	0.58	0.13
s, saturation flow rate [veh/h]	1590	3179	1419	1614	1695	1441	1578	3156	1409	1609	3217	1436
c, Capacity [veh/h]	116	552	247	162	341	290	175	1603	715	117	1512	675
d1, Uniform Delay [s]	50.77	40.06	42.83	49.11	43.95	41.68	47.95	21.98	14.23	51.00	29.16	17.83
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.19	0.18	0.11
I, Upstream Filtering 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
d2, Incremental Delay [s]	26.79	1.82	15.91	19.47	83.55	18.86	10.22	0.83	0.08	650.49	110.08	0.23
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression 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

Lane Group Results

X, volume / capacity	0.94	0.36	0.71	0.93	1.12	0.78	0.84	0.78	0.13	2.42	1.24	0.28
d, Delay for Lane Group [s/veh]	77.56	41.88	58.74	68.58	127.50	60.54	58.17	22.81	14.31	701.49	139.24	18.06
Lane Group LOS	E	D	E	E	F	E	E	C	B	F	F	B
Critical Lane Group	Yes	No	No	No	Yes	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh]	3.84	2.52	5.56	4.94	17.10	7.32	4.43	12.63	1.18	24.39	42.07	2.97
50th-Percentile Queue Length [ft]	95.99	62.88	138.92	123.61	427.42	183.07	110.84	315.75	29.56	609.75	1051.77	74.31
95th-Percentile Queue Length [veh]	6.91	4.53	9.42	8.59	25.28	11.76	7.89	18.46	2.13	39.03	61.15	5.35
95th-Percentile Queue Length [ft]	172.78	113.18	235.56	214.77	631.91	294.02	197.17	461.46	53.21	975.68	1528.72	133.76

Movement, Approach, & Intersection Results

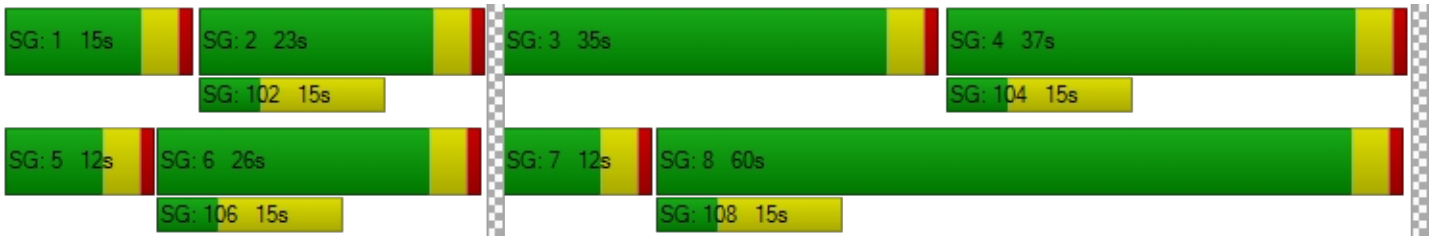
d_M, Delay for Movement [s/veh]	77.56	41.88	58.74	68.58	127.50	60.54	58.17	22.81	14.31	701.49	139.24	18.06
Movement LOS	E	D	E	E	F	E	E	C	B	F	F	B
d_A, Approach Delay [s/veh]	56.04			95.74			25.80			197.36		
Approach LOS	E			F			C			F		
d_I, Intersection Delay [s/veh]	118.63											
Intersection LOS	F											
Intersection V/C	0.968											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	46.37	46.37	46.37	46.37
l_p,int, Pedestrian LOS Score for Intersection	2.552	2.563	3.064	3.101
Crosswalk LOS	B	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	345	400	1018	600
d_b, Bicycle Delay [s]	37.64	35.20	13.25	26.95
l_b,int, Bicycle LOS Score for Intersection	1.958	2.809	2.781	3.498
Bicycle LOS	A	C	C	C

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 42: Reed at Site Access

Control Type:	Two-way stop	Delay (sec / veh):	11.2
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.002

Intersection Setup

Name	Reed Rd		Reed Rd		Site Access	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Reed Rd		Reed Rd		Site Access	
Base Volume Input [veh/h]	69	0	0	246	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.13	1.13	1.13	1.13	1.13	1.13
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	1	6
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	78	0	0	278	1	6
Peak Hour Factor	0.8400	0.8400	0.8400	0.8400	0.8400	0.8400
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	23	0	0	83	0	2
Total Analysis Volume [veh/h]	93	0	0	331	1	7
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.01
d_M, Delay for Movement [s/veh]	0.00	0.00	7.40	0.00	11.17	8.77
Movement LOS	A	A	A	A	B	A
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.00	0.03	0.03
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	0.00	0.68	0.68
d_A, Approach Delay [s/veh]	0.00		0.00		9.07	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.17					
Intersection LOS	B					

18-392 Strong at 27th Subdivision TIA

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Report File: J:\...\18-392 PM Dev Ph 3.pdf

Scenario 8 PM Dev 2026 Ph 3
6/19/2018

Turning Movement Volume: Summary

ID	Intersection Name	Southbound		Eastbound		Westbound		Total Volume
		Left	Right	Left	Thru	Thru	Right	
1	Battle Creek Rd at Reed Rd	223	53	11	500	351	67	1205

ID	Intersection Name	Northbound		Southbound		Westbound		Total Volume
		Thru	Right	Left	Thru	Left	Right	
6	Battle Creek Rd at Site Access	460	56	10	713	33	5	1277

ID	Intersection Name	Northbound		Southbound		Westbound		Total Volume
		Thru	Right	Left	Thru	Left	Right	
11	Reed Rd at Strong Rd	83	1	112	272	6	13	487

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
16	Reed Rd at Fairview Industrial Dr	75	6	25	9	10	19	10	269	254	86	303	2	1068

ID	Intersection Name	Northbound		Southbound		Eastbound		Total Volume
		Left	Thru	Thru	Right	Left	Right	
21	Fairview Industrial Dr at Marietta St	14	151	427	46	11	11	660

ID	Intersection Name	Southbound		Eastbound		Westbound		Total Volume
		Left	Right	Left	Thru	Thru	Right	
26	East Access at Strong Rd	124	14	2	36	60	16	252

ID	Intersection Name	Northbound		Southbound		Westbound		Total Volume
		Thru	Right	Left	Thru	Left	Right	
31	27th Ave at Marietta St	72	11	6	152	49	9	299

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
36	27th at Kuebler Blvd	1	3	71	142	22	45	12	1477	2	116	2173	75	4139

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
41	Keubler Blvd at Battle Creek Rd	105	191	168	144	365	218	141	1193	86	273	1799	183	4866

ID	Intersection Name	Northbound		Southbound		Westbound		Total Volume
		Thru	Right	Left	Thru	Left	Right	
42	Reed at Site Access	78	0	0	278	1	6	363

18-392 Strong at 27th Subdivision TIA

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Report File: J:\...\18-392 PM Dev Ph 3.pdf

Scenario 8 PM Dev 2026 Ph 3
6/19/2018

Turning Movement Volume: Detail

ID	Intersection Name	Volume Type	Southbound		Eastbound		Westbound		Total Volume
			Left	Right	Left	Thru	Thru	Right	
1	Battle Creek Rd at Reed Rd	Final Base	197	46	10	434	306	59	1052
		Growth Rate	1.13	1.13	1.13	1.13	1.13	1.13	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	0	1	0	10	5	0	16
		Other	0	0	0	0	0	0	0
		Future Total	**223**	**53**	**11**	**500**	**351**	**67**	**1205**

ID	Intersection Name	Volume Type	Northbound		Southbound		Westbound		Total Volume
			Thru	Right	Left	Thru	Left	Right	
6	Battle Creek Rd at Site Access	Final Base	407	0	0	631	0	0	1038
		Growth Rate	1.13	1.13	1.13	1.13	1.13	1.13	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	0	56	10	0	33	5	104
		Other	0	0	0	0	0	0	0
		Future Total	**460**	**56**	**10**	**713**	**33**	**5**	**1277**

ID	Intersection Name	Volume Type	Northbound		Southbound		Westbound		Total Volume
			Thru	Right	Left	Thru	Left	Right	
11	Reed Rd at Strong Rd	Final Base	68	1	87	241	5	10	412
		Growth Rate	1.13	1.13	1.13	1.13	1.13	1.13	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	6	0	14	0	0	2	22
		Other	0	0	0	0	0	0	0
		Future Total	**83**	**1**	**112**	**272**	**6**	**13**	**487**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
16	Reed Rd at Fairview Industrial Dr	Final Base	59	5	22	8	9	17	9	238	212	76	268	2	925
		Growth Rate	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	8	0	0	0	0	0	0	0	14	0	0	0	22
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**75**	**6**	**25**	**9**	**10**	**19**	**10**	**269**	**254**	**86**	**303**	**2**	**1068**

ID	Intersection Name	Volume Type	Northbound		Southbound		Eastbound		Total Volume
			Left	Thru	Thru	Right	Left	Right	
21	Fairview Industrial Dr at Marietta St	Final Base	5	134	378	41	10	5	573
		Growth Rate	1.13	1.13	1.13	1.13	1.13	1.13	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	8	0	0	0	0	5	13
		Other	0	0	0	0	0	0	0
		Future Total	**14**	**151**	**427**	**46**	**11**	**11**	**660**

ID	Intersection Name	Volume Type	Southbound		Eastbound		Westbound		Total Volume
			Left	Right	Left	Thru	Thru	Right	
26	East Access at Strong Rd	Final Base	110	0	0	0	0	14	124
		Growth Rate	1.13	1.13	1.13	1.13	1.13	1.13	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	0	14	2	36	60	0	112
		Other	0	0	0	0	0	0	0
		Future Total	**124**	**14**	**2**	**36**	**60**	**16**	**252**

ID	Intersection Name	Volume Type	Northbound		Southbound		Westbound		Total Volume
			Thru	Right	Left	Thru	Left	Right	
31	27th Ave at Marietta St	Final Base	18	10	1	107	43	1	180
		Growth Rate	1.13	1.13	1.13	1.13	1.13	1.13	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	52	0	5	31	0	8	96
		Other	0	0	0	0	0	0	0
		Future Total	**72**	**11**	**6**	**152**	**49**	**9**	**299**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
36	27th at Kuebler Blvd	Final Base	1	0	63	100	18	40	11	1307	2	103	1923	23	3591
		Growth Rate	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	3	0	29	2	0	0	0	0	0	0	49	83
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**1**	**3**	**71**	**142**	**22**	**45**	**12**	**1477**	**2**	**116**	**2173**	**75**	**4139**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
41	Keubler Blvd at Battle Creek Rd	Final Base	93	157	149	127	316	171	88	1056	76	242	1592	162	4229
		Growth Rate	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	14	0	0	8	25	42	0	0	0	0	0	89
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**105**	**191**	**168**	**144**	**365**	**218**	**141**	**1193**	**86**	**273**	**1799**	**183**	**4866**

ID	Intersection Name	Volume Type	Northbound		Southbound		Westbound		Total Volume
			Thru	Right	Left	Thru	Left	Right	
42	Reed at Site Access	Final Base	69	0	0	246	0	0	315
		Growth Rate	1.13	1.13	1.13	1.13	1.13	1.13	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	1	6	7
		Other	0	0	0	0	0	0	0
		Future Total	**78**	**0**	**0**	**278**	**1**	**6**	**363**

Signal Warrants Report For Intersection 1: Battle Creek Rd at Reed Rd

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	E, W
Minor Approaches	N
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	E	W	N
1	418	511	276
2	401	491	265
3	393	480	259
4	334	409	221
5	318	388	210
6	284	347	188
7	263	322	174
8	251	307	166
9	201	245	132
10	188	230	124
11	188	230	124
12	180	220	119
13	163	199	108
14	150	184	99
15	150	184	99
16	146	179	97
17	84	102	55
18	46	56	30
19	42	51	28
20	17	20	11
21	13	15	8
22	13	15	8
23	8	10	6
24	8	10	6

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	929	2	276	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
2	2	892	2	265	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	No
3	2	873	2	259	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	No
4	2	743	2	221	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	No	No
5	2	706	2	210	Yes	Yes	Yes	Yes	No	No	Yes	Yes	No	No
6	2	631	2	188	No	Yes	Yes	Yes	No	No	Yes	Yes	No	No
7	2	585	2	174	No	Yes	Yes	Yes	No	No	No	Yes	No	No
8	2	558	2	166	No	Yes	Yes	Yes	No	No	No	Yes	No	No
9	2	446	2	132	No	No	No	Yes	No	No	No	No	No	No
10	2	418	2	124	No	No	No	Yes	No	No	No	No	No	No
11	2	418	2	124	No	No	No	Yes	No	No	No	No	No	No
12	2	400	2	119	No	No	No	Yes	No	No	No	No	No	No
13	2	362	2	108	No	No	No	No	No	No	No	No	No	No
14	2	334	2	99	No	No	No	No	No	No	No	No	No	No
15	2	334	2	99	No	No	No	No	No	No	No	No	No	No
16	2	325	2	97	No	No	No	No	No	No	No	No	No	No
17	2	186	2	55	No	No	No	No	No	No	No	No	No	No
18	2	102	2	30	No	No	No	No	No	No	No	No	No	No
19	2	93	2	28	No	No	No	No	No	No	No	No	No	No
20	2	37	2	11	No	No	No	No	No	No	No	No	No	No
21	2	28	2	8	No	No	No	No	No	No	No	No	No	No
22	2	28	2	8	No	No	No	No	No	No	No	No	No	No
23	2	18	2	6	No	No	No	No	No	No	No	No	No	No
24	2	18	2	6	No	No	No	No	No	No	No	No	No	No
Hours Met					5	8	8	12	1	4	6	8	3	0

Warrant 3 Condition A

Orientation	N
Total Stopped Delay Per Vehicle on Minor Approach (s)	59.2
Number of Lanes on Minor Street Approach	2
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	4:32
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	276
High Minor Volume Condition Met	Yes
Total Entering Volume on All Approaches During Same Hour	1205
Number of Approaches on Intersection	3
Total Volume Condition Met	Yes
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

Signal Warrants Report For Intersection 6: Battle Creek Rd at Site Access

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	S, N
Minor Approaches	E
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	S	N	E
1	516	723	38
2	495	694	36
3	485	680	36
4	413	578	30
5	392	549	29
6	351	492	26
7	325	455	24
8	310	434	23
9	248	347	18
10	232	325	17
11	232	325	17
12	222	311	16
13	201	282	15
14	186	260	14
15	186	260	14
16	181	253	13
17	103	145	8
18	57	80	4
19	52	72	4
20	21	29	2
21	15	22	1
22	15	22	1
23	10	14	1
24	10	14	1

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	1239	1	38	No	No	No	No	No	No	No	No	No	No
2	2	1189	1	36	No	No	No	No	No	No	No	No	No	No
3	2	1165	1	36	No	No	No	No	No	No	No	No	No	No
4	2	991	1	30	No	No	No	No	No	No	No	No	No	No
5	2	941	1	29	No	No	No	No	No	No	No	No	No	No
6	2	843	1	26	No	No	No	No	No	No	No	No	No	No
7	2	780	1	24	No	No	No	No	No	No	No	No	No	No
8	2	744	1	23	No	No	No	No	No	No	No	No	No	No
9	2	595	1	18	No	No	No	No	No	No	No	No	No	No
10	2	557	1	17	No	No	No	No	No	No	No	No	No	No
11	2	557	1	17	No	No	No	No	No	No	No	No	No	No
12	2	533	1	16	No	No	No	No	No	No	No	No	No	No
13	2	483	1	15	No	No	No	No	No	No	No	No	No	No
14	2	446	1	14	No	No	No	No	No	No	No	No	No	No
15	2	446	1	14	No	No	No	No	No	No	No	No	No	No
16	2	434	1	13	No	No	No	No	No	No	No	No	No	No
17	2	248	1	8	No	No	No	No	No	No	No	No	No	No
18	2	137	1	4	No	No	No	No	No	No	No	No	No	No
19	2	124	1	4	No	No	No	No	No	No	No	No	No	No
20	2	50	1	2	No	No	No	No	No	No	No	No	No	No
21	2	37	1	1	No	No	No	No	No	No	No	No	No	No
22	2	37	1	1	No	No	No	No	No	No	No	No	No	No
23	2	24	1	1	No	No	No	No	No	No	No	No	No	No
24	2	24	1	1	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	E
Total Stopped Delay Per Vehicle on Minor Approach (s)	28.8
Number of Lanes on Minor Street Approach	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:18
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	38
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	1277
Number of Approaches on Intersection	3
Total Volume Condition Met	Yes
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

Signal Warrants Report For Intersection 11: Reed Rd at Strong Rd

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	N, S
Minor Approaches	E
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	N	S	E
1	384	84	19
2	369	81	18
3	361	79	18
4	307	67	15
5	292	64	14
6	261	57	13
7	242	53	12
8	230	50	11
9	184	40	9
10	173	38	9
11	173	38	9
12	165	36	8
13	150	33	7
14	138	30	7
15	138	30	7
16	134	29	7
17	77	17	4
18	42	9	2
19	38	8	2
20	15	3	1
21	12	3	1
22	12	3	1
23	8	2	0
24	8	2	0

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	468	1	19	No	No	No	No	No	No	No	No	No	No
2	2	450	1	18	No	No	No	No	No	No	No	No	No	No
3	2	440	1	18	No	No	No	No	No	No	No	No	No	No
4	2	374	1	15	No	No	No	No	No	No	No	No	No	No
5	2	356	1	14	No	No	No	No	No	No	No	No	No	No
6	2	318	1	13	No	No	No	No	No	No	No	No	No	No
7	2	295	1	12	No	No	No	No	No	No	No	No	No	No
8	2	280	1	11	No	No	No	No	No	No	No	No	No	No
9	2	224	1	9	No	No	No	No	No	No	No	No	No	No
10	2	211	1	9	No	No	No	No	No	No	No	No	No	No
11	2	211	1	9	No	No	No	No	No	No	No	No	No	No
12	2	201	1	8	No	No	No	No	No	No	No	No	No	No
13	2	183	1	7	No	No	No	No	No	No	No	No	No	No
14	2	168	1	7	No	No	No	No	No	No	No	No	No	No
15	2	168	1	7	No	No	No	No	No	No	No	No	No	No
16	2	163	1	7	No	No	No	No	No	No	No	No	No	No
17	2	94	1	4	No	No	No	No	No	No	No	No	No	No
18	2	51	1	2	No	No	No	No	No	No	No	No	No	No
19	2	46	1	2	No	No	No	No	No	No	No	No	No	No
20	2	18	1	1	No	No	No	No	No	No	No	No	No	No
21	2	15	1	1	No	No	No	No	No	No	No	No	No	No
22	2	15	1	1	No	No	No	No	No	No	No	No	No	No
23	2	10	1	0	No	No	No	No	No	No	No	No	No	No
24	2	10	1	0	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	E
Total Stopped Delay Per Vehicle on Minor Approach (s)	11.5
Number of Lanes on Minor Street Approach	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:03
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	19
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	487
Number of Approaches on Intersection	3
Total Volume Condition Met	No
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

Signal Warrants Report For Intersection 16: Reed Rd at Fairview Industrial Dr

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	E, W
Minor Approaches	N, S
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets	
	E	W	N	S
1	391	533	38	106
2	375	512	36	102
3	368	501	36	100
4	313	426	30	85
5	297	405	29	81
6	266	362	26	72
7	246	336	24	67
8	235	320	23	64
9	188	256	18	51
10	176	240	17	48
11	176	240	17	48
12	168	229	16	46
13	152	208	15	41
14	141	192	14	38
15	141	192	14	38
16	137	187	13	37
17	78	107	8	21
18	43	59	4	12
19	39	53	4	11
20	16	21	2	4
21	12	16	1	3
22	12	16	1	3
23	8	11	1	2
24	8	11	1	2

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	4	924	2	144	No	No	Yes	Yes	Yes	Yes	Yes	Yes	No	No
2	4	887	2	138	No	No	No	Yes	No	Yes	Yes	Yes	No	No
3	4	869	2	136	No	No	No	Yes	No	Yes	Yes	Yes	No	No
4	4	739	2	115	No	No	No	Yes	No	Yes	Yes	Yes	No	No
5	4	702	2	110	No	No	No	No	No	No	Yes	Yes	No	No
6	4	628	2	98	No	No	No	No	No	No	No	Yes	No	No
7	4	582	2	91	No	No	No	No	No	No	No	Yes	No	No
8	4	555	2	87	No	No	No	No	No	No	No	Yes	No	No
9	4	444	2	69	No	No	No	No	No	No	No	No	No	No
10	4	416	2	65	No	No	No	No	No	No	No	No	No	No
11	4	416	2	65	No	No	No	No	No	No	No	No	No	No
12	4	397	2	62	No	No	No	No	No	No	No	No	No	No
13	4	360	2	56	No	No	No	No	No	No	No	No	No	No
14	4	333	2	52	No	No	No	No	No	No	No	No	No	No
15	4	333	2	52	No	No	No	No	No	No	No	No	No	No
16	4	324	2	50	No	No	No	No	No	No	No	No	No	No
17	4	185	2	29	No	No	No	No	No	No	No	No	No	No
18	4	102	2	16	No	No	No	No	No	No	No	No	No	No
19	4	92	2	15	No	No	No	No	No	No	No	No	No	No
20	4	37	2	6	No	No	No	No	No	No	No	No	No	No
21	4	28	2	4	No	No	No	No	No	No	No	No	No	No
22	4	28	2	4	No	No	No	No	No	No	No	No	No	No
23	4	19	2	3	No	No	No	No	No	No	No	No	No	No
24	4	19	2	3	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	1	4	1	4	5	8	0	0

Warrant 3 Condition A

Orientation	N	S
Total Stopped Delay Per Vehicle on Minor Approach (s)	10	11.3
Number of Lanes on Minor Street Approach	1	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:06	0:20
Delay Condition Met	No	No
Volume on Minor Street Approach During Same Hour	38	106
High Minor Volume Condition Met	No	Yes
Total Entering Volume on All Approaches During Same Hour	1068	1068
Number of Approaches on Intersection	4	4
Total Volume Condition Met	Yes	Yes
Warrant Met for Approach	No	No
Warrant Met for Intersection	**No**	

Signal Warrants Report For Intersection 21: Fairview Industrial Dr at Marietta St

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	S, N
Minor Approaches	W
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	S	N	W
1	165	473	22
2	158	454	21
3	155	445	21
4	132	378	18
5	125	359	17
6	112	322	15
7	104	298	14
8	99	284	13
9	79	227	11
10	74	213	10
11	74	213	10
12	71	203	9
13	64	184	9
14	59	170	8
15	59	170	8
16	58	166	8
17	33	95	4
18	18	52	2
19	17	47	2
20	7	19	1
21	5	14	1
22	5	14	1
23	3	9	0
24	3	9	0

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	3	638	1	22	No	No	No	No	No	No	No	No	No	No
2	3	612	1	21	No	No	No	No	No	No	No	No	No	No
3	3	600	1	21	No	No	No	No	No	No	No	No	No	No
4	3	510	1	18	No	No	No	No	No	No	No	No	No	No
5	3	484	1	17	No	No	No	No	No	No	No	No	No	No
6	3	434	1	15	No	No	No	No	No	No	No	No	No	No
7	3	402	1	14	No	No	No	No	No	No	No	No	No	No
8	3	383	1	13	No	No	No	No	No	No	No	No	No	No
9	3	306	1	11	No	No	No	No	No	No	No	No	No	No
10	3	287	1	10	No	No	No	No	No	No	No	No	No	No
11	3	287	1	10	No	No	No	No	No	No	No	No	No	No
12	3	274	1	9	No	No	No	No	No	No	No	No	No	No
13	3	248	1	9	No	No	No	No	No	No	No	No	No	No
14	3	229	1	8	No	No	No	No	No	No	No	No	No	No
15	3	229	1	8	No	No	No	No	No	No	No	No	No	No
16	3	224	1	8	No	No	No	No	No	No	No	No	No	No
17	3	128	1	4	No	No	No	No	No	No	No	No	No	No
18	3	70	1	2	No	No	No	No	No	No	No	No	No	No
19	3	64	1	2	No	No	No	No	No	No	No	No	No	No
20	3	26	1	1	No	No	No	No	No	No	No	No	No	No
21	3	19	1	1	No	No	No	No	No	No	No	No	No	No
22	3	19	1	1	No	No	No	No	No	No	No	No	No	No
23	3	12	1	0	No	No	No	No	No	No	No	No	No	No
24	3	12	1	0	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	W
Total Stopped Delay Per Vehicle on Minor Approach (s)	14.2
Number of Lanes on Minor Street Approach	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:05
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	22
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	660
Number of Approaches on Intersection	3
Total Volume Condition Met	Yes
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

Signal Warrants Report For Intersection 26: East Access at Strong Rd

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	E, N
Minor Approaches	W
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	E	N	W
1	76	138	38
2	73	132	36
3	71	130	36
4	61	110	30
5	58	105	29
6	52	94	26
7	48	87	24
8	46	83	23
9	36	66	18
10	34	62	17
11	34	62	17
12	33	59	16
13	30	54	15
14	27	50	14
15	27	50	14
16	27	48	13
17	15	28	8
18	8	15	4
19	8	14	4
20	3	6	2
21	2	4	1
22	2	4	1
23	2	3	1
24	2	3	1

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	214	1	38	No	No	No	No	No	No	No	No	No	No
2	2	205	1	36	No	No	No	No	No	No	No	No	No	No
3	2	201	1	36	No	No	No	No	No	No	No	No	No	No
4	2	171	1	30	No	No	No	No	No	No	No	No	No	No
5	2	163	1	29	No	No	No	No	No	No	No	No	No	No
6	2	146	1	26	No	No	No	No	No	No	No	No	No	No
7	2	135	1	24	No	No	No	No	No	No	No	No	No	No
8	2	129	1	23	No	No	No	No	No	No	No	No	No	No
9	2	102	1	18	No	No	No	No	No	No	No	No	No	No
10	2	96	1	17	No	No	No	No	No	No	No	No	No	No
11	2	96	1	17	No	No	No	No	No	No	No	No	No	No
12	2	92	1	16	No	No	No	No	No	No	No	No	No	No
13	2	84	1	15	No	No	No	No	No	No	No	No	No	No
14	2	77	1	14	No	No	No	No	No	No	No	No	No	No
15	2	77	1	14	No	No	No	No	No	No	No	No	No	No
16	2	75	1	13	No	No	No	No	No	No	No	No	No	No
17	2	43	1	8	No	No	No	No	No	No	No	No	No	No
18	2	23	1	4	No	No	No	No	No	No	No	No	No	No
19	2	22	1	4	No	No	No	No	No	No	No	No	No	No
20	2	9	1	2	No	No	No	No	No	No	No	No	No	No
21	2	6	1	1	No	No	No	No	No	No	No	No	No	No
22	2	6	1	1	No	No	No	No	No	No	No	No	No	No
23	2	5	1	1	No	No	No	No	No	No	No	No	No	No
24	2	5	1	1	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	W
Total Stopped Delay Per Vehicle on Minor Approach (s)	11
Number of Lanes on Minor Street Approach	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:06
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	38
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	252
Number of Approaches on Intersection	3
Total Volume Condition Met	No
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

Signal Warrants Report For Intersection 31: 27th Ave at Marietta St

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	N, S
Minor Approaches	E
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	N	S	E
1	158	83	58
2	152	80	56
3	149	78	55
4	126	66	46
5	120	63	44
6	107	56	39
7	100	52	37
8	95	50	35
9	76	40	28
10	71	37	26
11	71	37	26
12	68	36	25
13	62	32	23
14	57	30	21
15	57	30	21
16	55	29	20
17	32	17	12
18	17	9	6
19	16	8	6
20	6	3	2
21	5	2	2
22	5	2	2
23	3	2	1
24	3	2	1

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	241	1	58	No	No	No	No	No	No	No	No	No	No
2	2	232	1	56	No	No	No	No	No	No	No	No	No	No
3	2	227	1	55	No	No	No	No	No	No	No	No	No	No
4	2	192	1	46	No	No	No	No	No	No	No	No	No	No
5	2	183	1	44	No	No	No	No	No	No	No	No	No	No
6	2	163	1	39	No	No	No	No	No	No	No	No	No	No
7	2	152	1	37	No	No	No	No	No	No	No	No	No	No
8	2	145	1	35	No	No	No	No	No	No	No	No	No	No
9	2	116	1	28	No	No	No	No	No	No	No	No	No	No
10	2	108	1	26	No	No	No	No	No	No	No	No	No	No
11	2	108	1	26	No	No	No	No	No	No	No	No	No	No
12	2	104	1	25	No	No	No	No	No	No	No	No	No	No
13	2	94	1	23	No	No	No	No	No	No	No	No	No	No
14	2	87	1	21	No	No	No	No	No	No	No	No	No	No
15	2	87	1	21	No	No	No	No	No	No	No	No	No	No
16	2	84	1	20	No	No	No	No	No	No	No	No	No	No
17	2	49	1	12	No	No	No	No	No	No	No	No	No	No
18	2	26	1	6	No	No	No	No	No	No	No	No	No	No
19	2	24	1	6	No	No	No	No	No	No	No	No	No	No
20	2	9	1	2	No	No	No	No	No	No	No	No	No	No
21	2	7	1	2	No	No	No	No	No	No	No	No	No	No
22	2	7	1	2	No	No	No	No	No	No	No	No	No	No
23	2	5	1	1	No	No	No	No	No	No	No	No	No	No
24	2	5	1	1	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	E
Total Stopped Delay Per Vehicle on Minor Approach (s)	11.1
Number of Lanes on Minor Street Approach	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:10
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	58
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	299
Number of Approaches on Intersection	3
Total Volume Condition Met	No
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

Signal Warrants Report For Intersection 42: Reed at Site Access

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	N, S
Minor Approaches	E
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	N	S	E
1	278	78	7
2	267	75	7
3	261	73	7
4	222	62	6
5	211	59	5
6	189	53	5
7	175	49	4
8	167	47	4
9	133	37	3
10	125	35	3
11	125	35	3
12	120	34	3
13	108	30	3
14	100	28	3
15	100	28	3
16	97	27	2
17	56	16	1
18	31	9	1
19	28	8	1
20	11	3	0
21	8	2	0
22	8	2	0
23	6	2	0
24	6	2	0

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	356	1	7	No	No	No	No	No	No	No	No	No	No
2	2	342	1	7	No	No	No	No	No	No	No	No	No	No
3	2	334	1	7	No	No	No	No	No	No	No	No	No	No
4	2	284	1	6	No	No	No	No	No	No	No	No	No	No
5	2	270	1	5	No	No	No	No	No	No	No	No	No	No
6	2	242	1	5	No	No	No	No	No	No	No	No	No	No
7	2	224	1	4	No	No	No	No	No	No	No	No	No	No
8	2	214	1	4	No	No	No	No	No	No	No	No	No	No
9	2	170	1	3	No	No	No	No	No	No	No	No	No	No
10	2	160	1	3	No	No	No	No	No	No	No	No	No	No
11	2	160	1	3	No	No	No	No	No	No	No	No	No	No
12	2	154	1	3	No	No	No	No	No	No	No	No	No	No
13	2	138	1	3	No	No	No	No	No	No	No	No	No	No
14	2	128	1	3	No	No	No	No	No	No	No	No	No	No
15	2	128	1	3	No	No	No	No	No	No	No	No	No	No
16	2	124	1	2	No	No	No	No	No	No	No	No	No	No
17	2	72	1	1	No	No	No	No	No	No	No	No	No	No
18	2	40	1	1	No	No	No	No	No	No	No	No	No	No
19	2	36	1	1	No	No	No	No	No	No	No	No	No	No
20	2	14	1	0	No	No	No	No	No	No	No	No	No	No
21	2	10	1	0	No	No	No	No	No	No	No	No	No	No
22	2	10	1	0	No	No	No	No	No	No	No	No	No	No
23	2	8	1	0	No	No	No	No	No	No	No	No	No	No
24	2	8	1	0	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	E
Total Stopped Delay Per Vehicle on Minor Approach (s)	9.1
Number of Lanes on Minor Street Approach	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:01
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	7
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	363
Number of Approaches on Intersection	3
Total Volume Condition Met	No
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

18-392 Strong at 27th Subdivision TIA

Vistro File: J:\...\18-392 Reed Rd Subdivision - TIA.vistro
Report File: J:\...\18-392 PM Dev Ph 3.pdf

Scenario 8 PM Dev 2026 Ph 3
6/19/2018

Trip Generation summary

Added Trips

Zone ID: Name	Land Use variables	Code	Ind. Var.	Rate	Quantity	% In	% Out	Trips In	Trips Out	Total Trips	% of Total Trips
1: 18-392 Reed Rd Sub	Homes	ITE 210	Home	0.990	225.000	63.00	37.00	140	83	223	100.00
					Added Trips Total			**140**	**83**	**223**	**100.00**

18-392 Strong at 27th Subdivision TIA

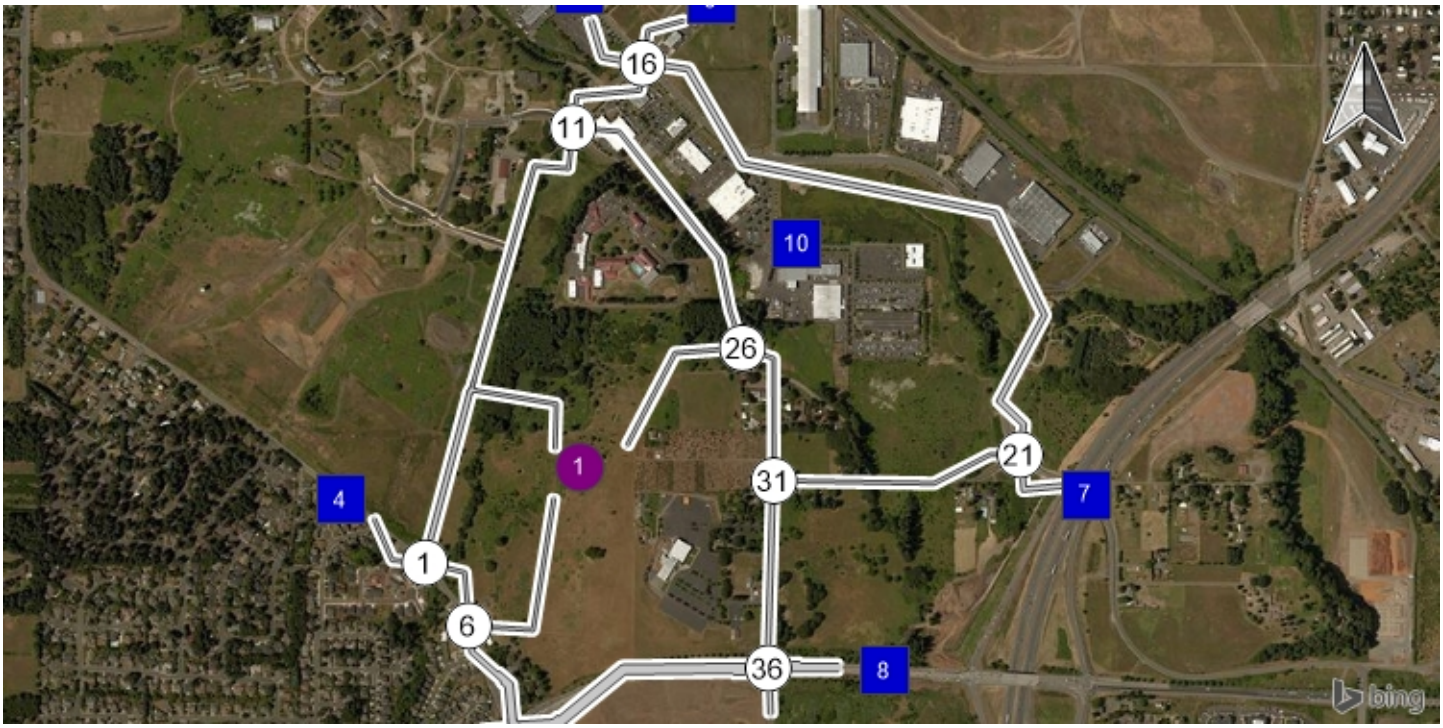
Vistro File: J:\...\18-392 Reed Rd Subdivision - TIA.vistro
Report File: J:\...\18-392 PM Dev Ph 3.pdf

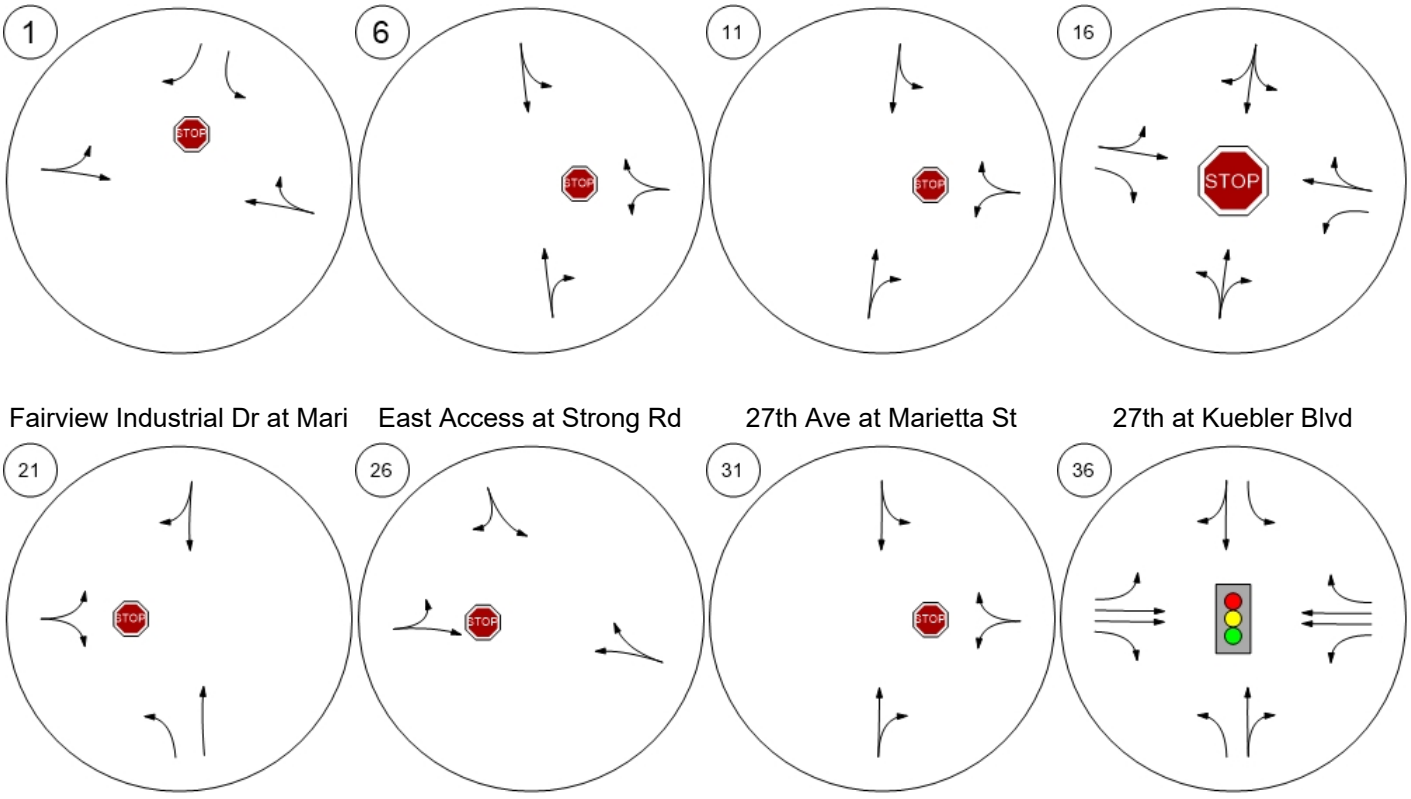
Scenario 8 PM Dev 2026 Ph 3
6/19/2018

Trip Distribution summary

Zone / Gate	Zone 1: 18-392 Reed Rd Sub			
	To 18-392 Reed Rd Sub:		From 18-392 Reed Rd Sub:	
	Share %	Trips	Share %	Trips
2: Gate	10.00	14	10.00	8
3: Gate	30.00	42	30.00	25
4: Gate	7.00	10	7.00	6
5: Gate	10.00	14	10.00	8
6: Gate	0.00	0	0.00	0
7: Gate	6.00	8	6.00	5
8: Gate	35.00	49	35.00	29
9: Gate	2.00	3	2.00	2
10: Gate	0.00	0	0.00	0
Total	**100.00**	**140**	**100.00**	**83**

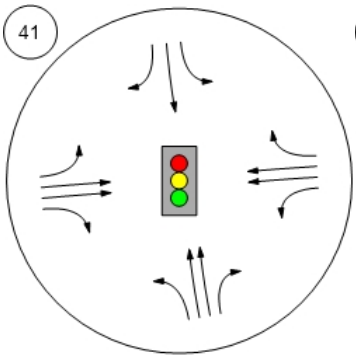
Report Figure 1: Lane Configuration and Traffic Control





Report Figure 1: Lane Configuration and Traffic Control

Keubler Blvd at Battle Creek



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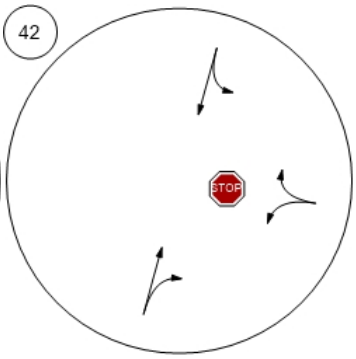
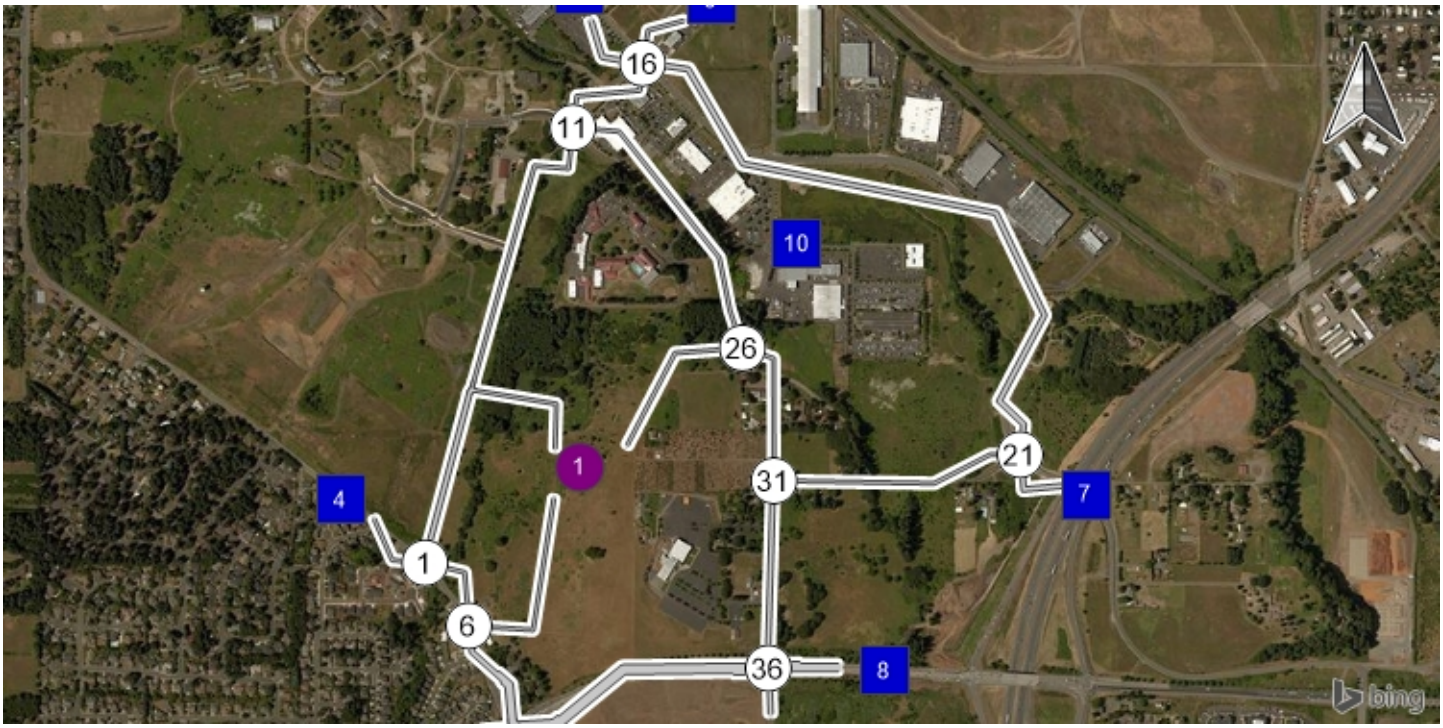
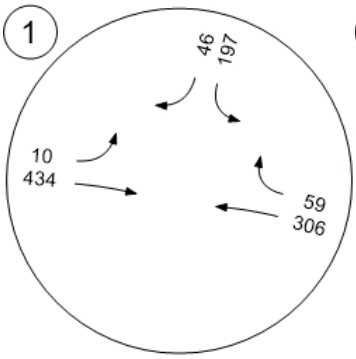


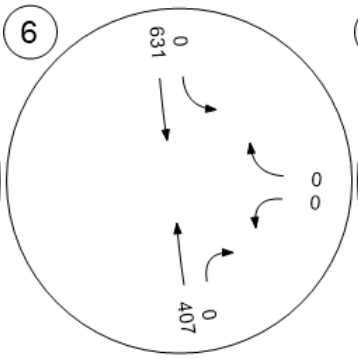
Report Figure 2a: Traffic Volume - Base Volume



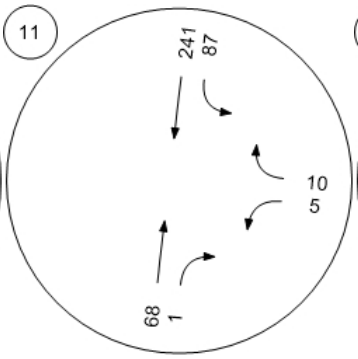
Battle Creek Rd at Reed Rd



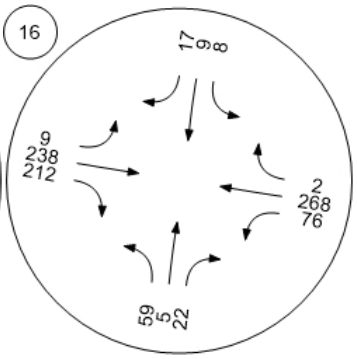
Battle Creek Rd at Site Acces



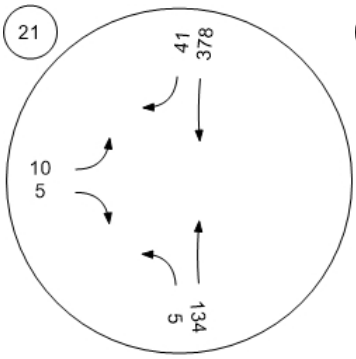
Reed Rd at Strong Rd



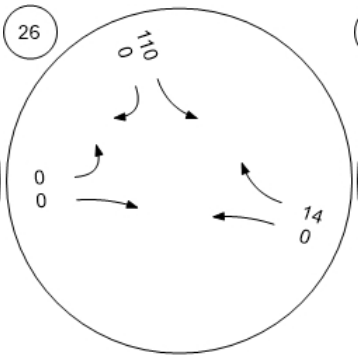
Reed Rd at Fairview Industria



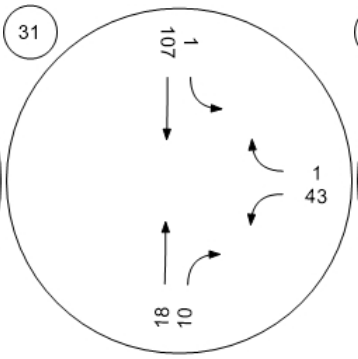
Fairview Industrial Dr at Mari



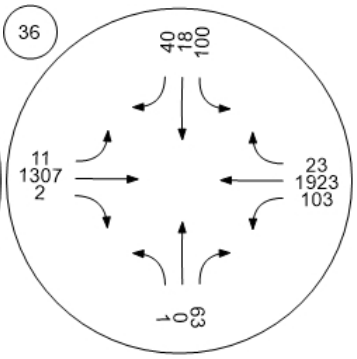
East Access at Strong Rd



27th Ave at Marietta St

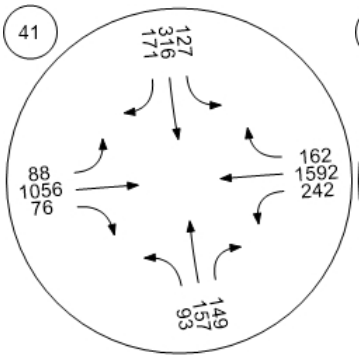


27th at Kuebler Blvd



Report Figure 2a: Traffic Volume - Base Volume

Keubler Blvd at Battle Creek



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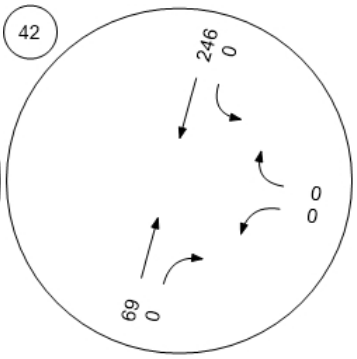
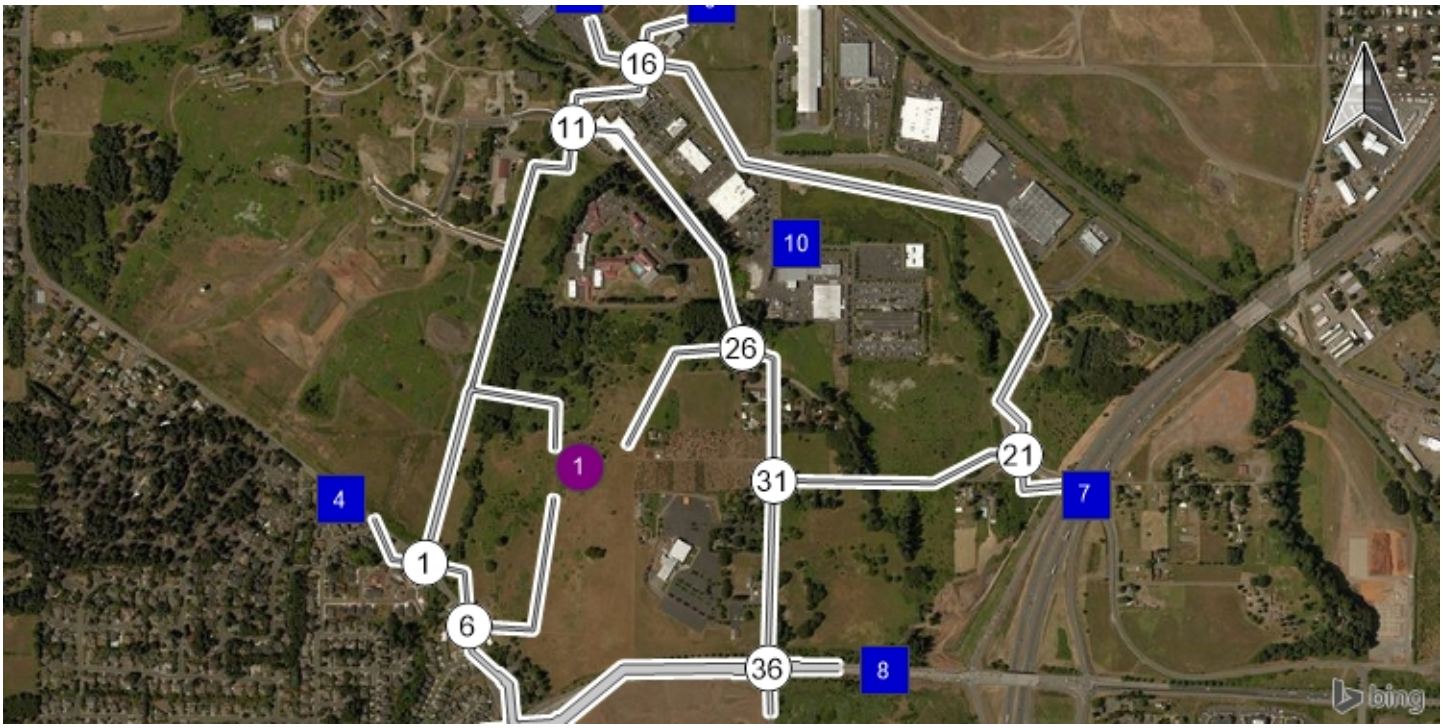
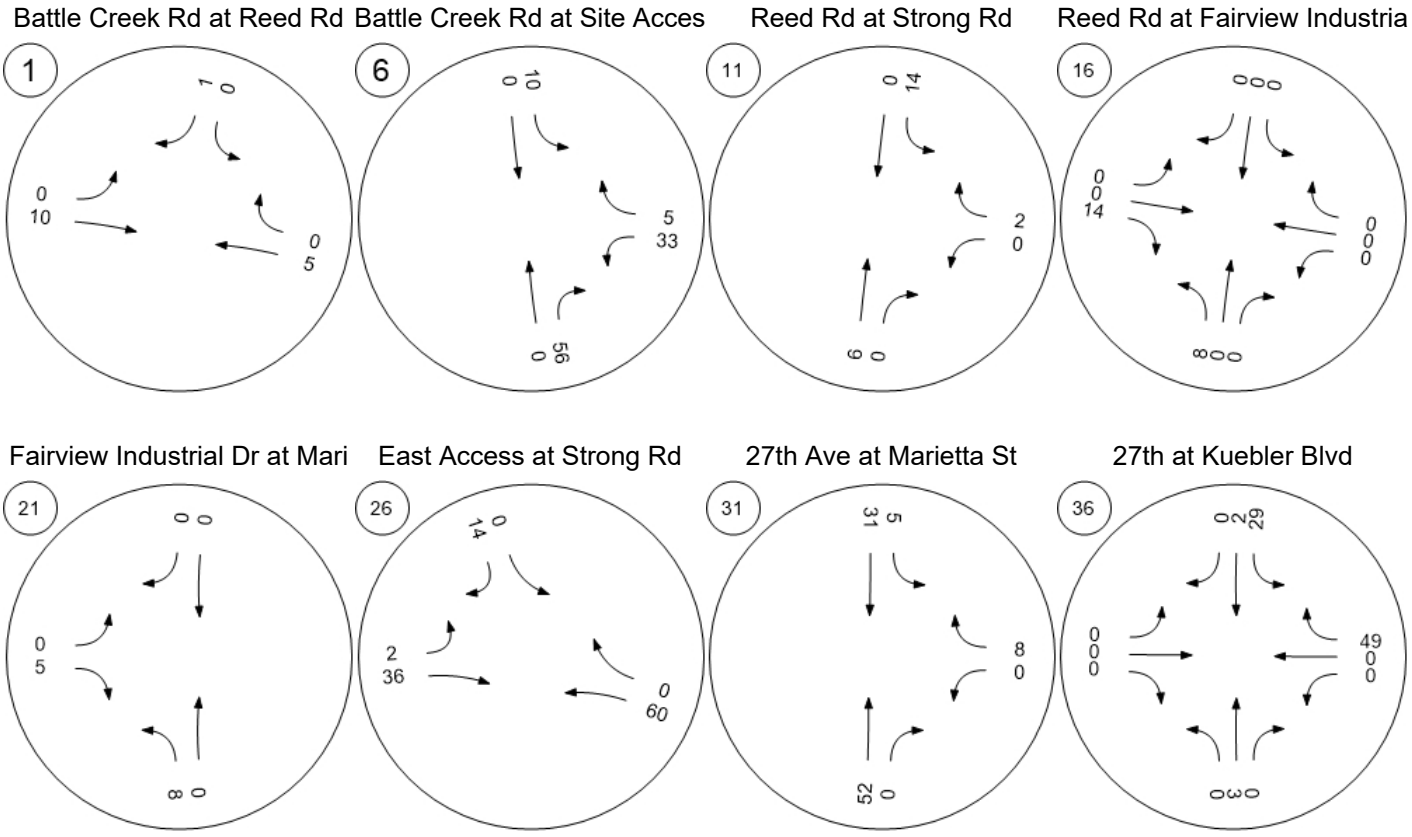


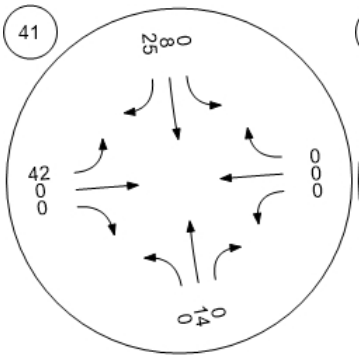
Report Figure 2d: Traffic Volume - Net New Site Trips





Report Figure 2d: Traffic Volume - Net New Site Trips

Keubler Blvd at Battle Creek



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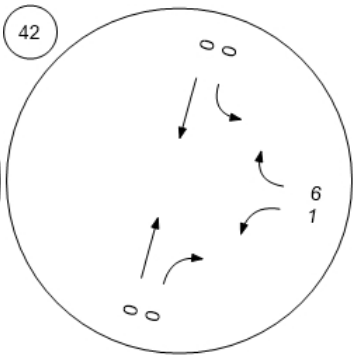
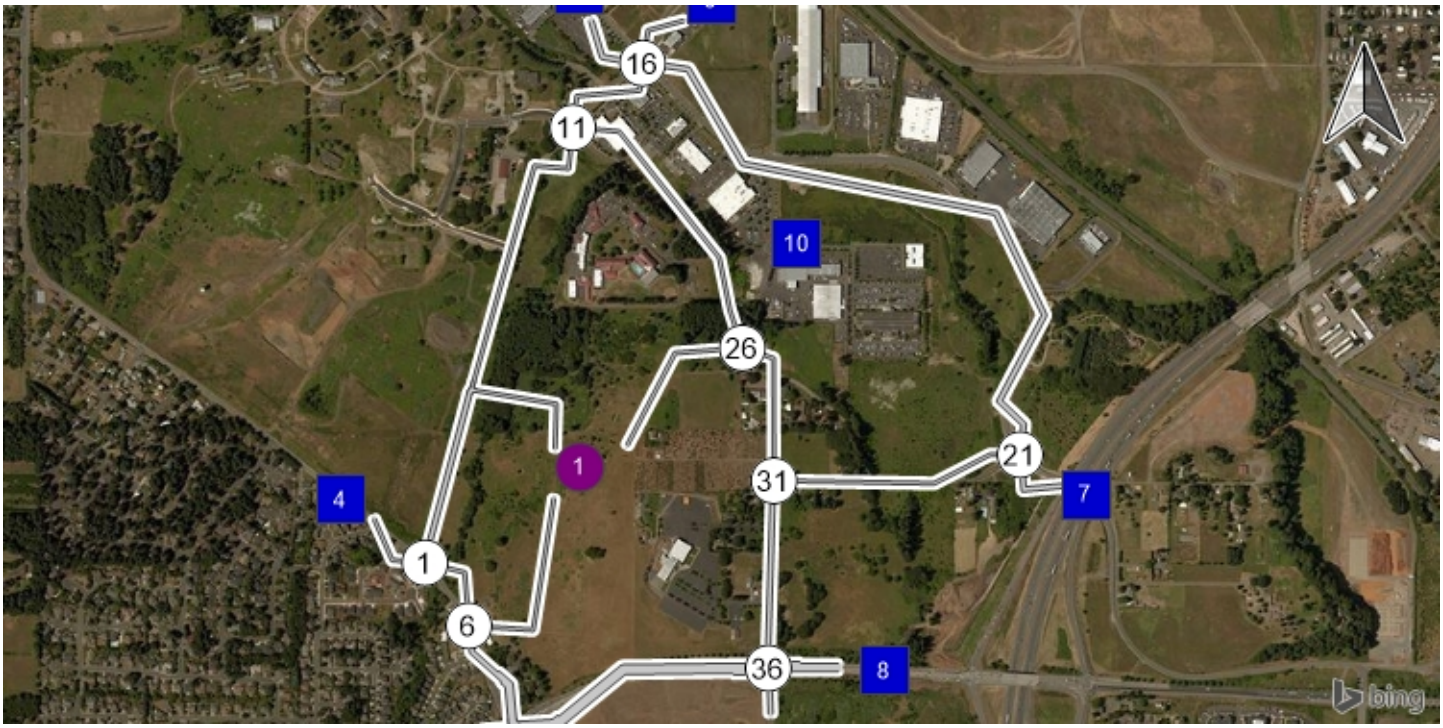
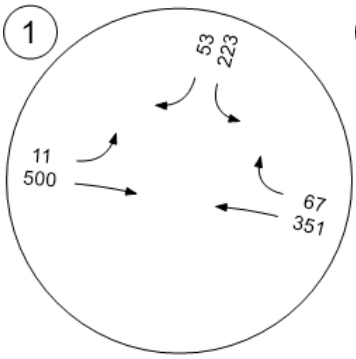


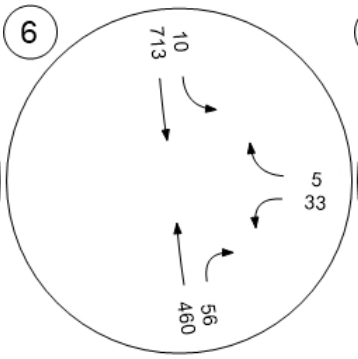
Report Figure 2f: Traffic Volume - Future Total Volume



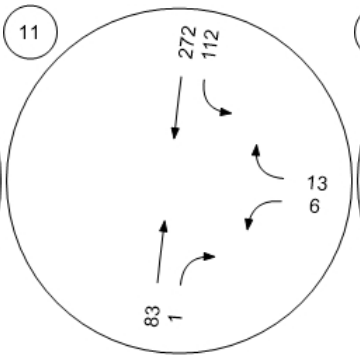
Battle Creek Rd at Reed Rd



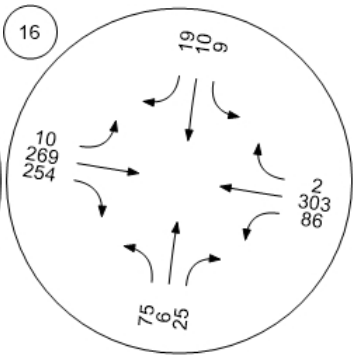
Battle Creek Rd at Site Acces



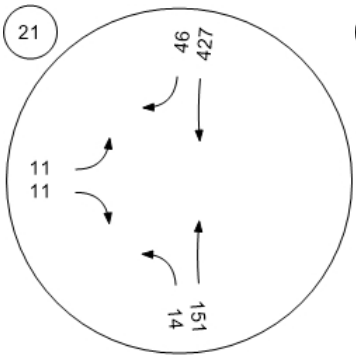
Reed Rd at Strong Rd



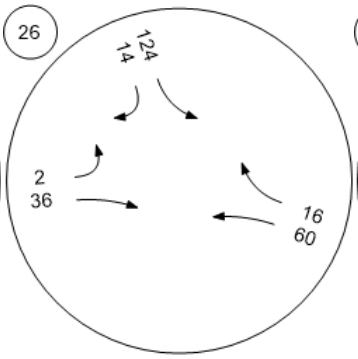
Reed Rd at Fairview Industria



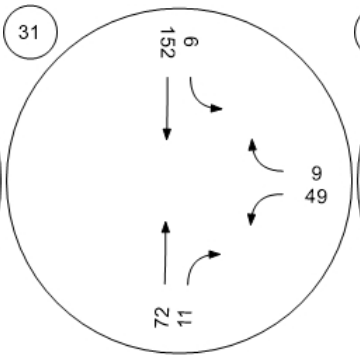
Fairview Industrial Dr at Mari



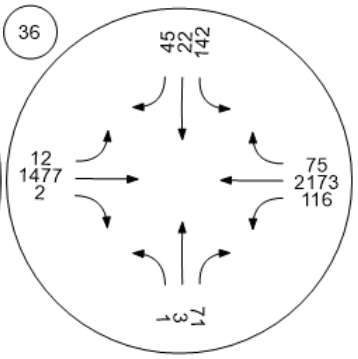
East Access at Strong Rd



27th Ave at Marietta St

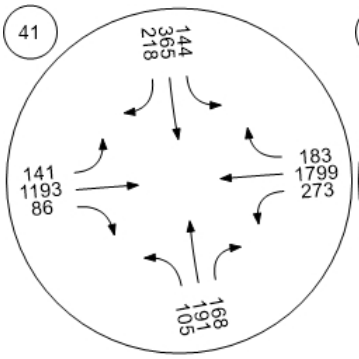


27th at Kuebler Blvd



Report Figure 2f: Traffic Volume - Future Total Volume

Keubler Blvd at Battle Creek



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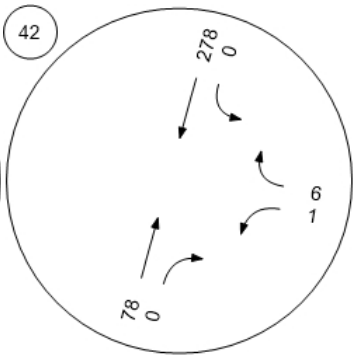
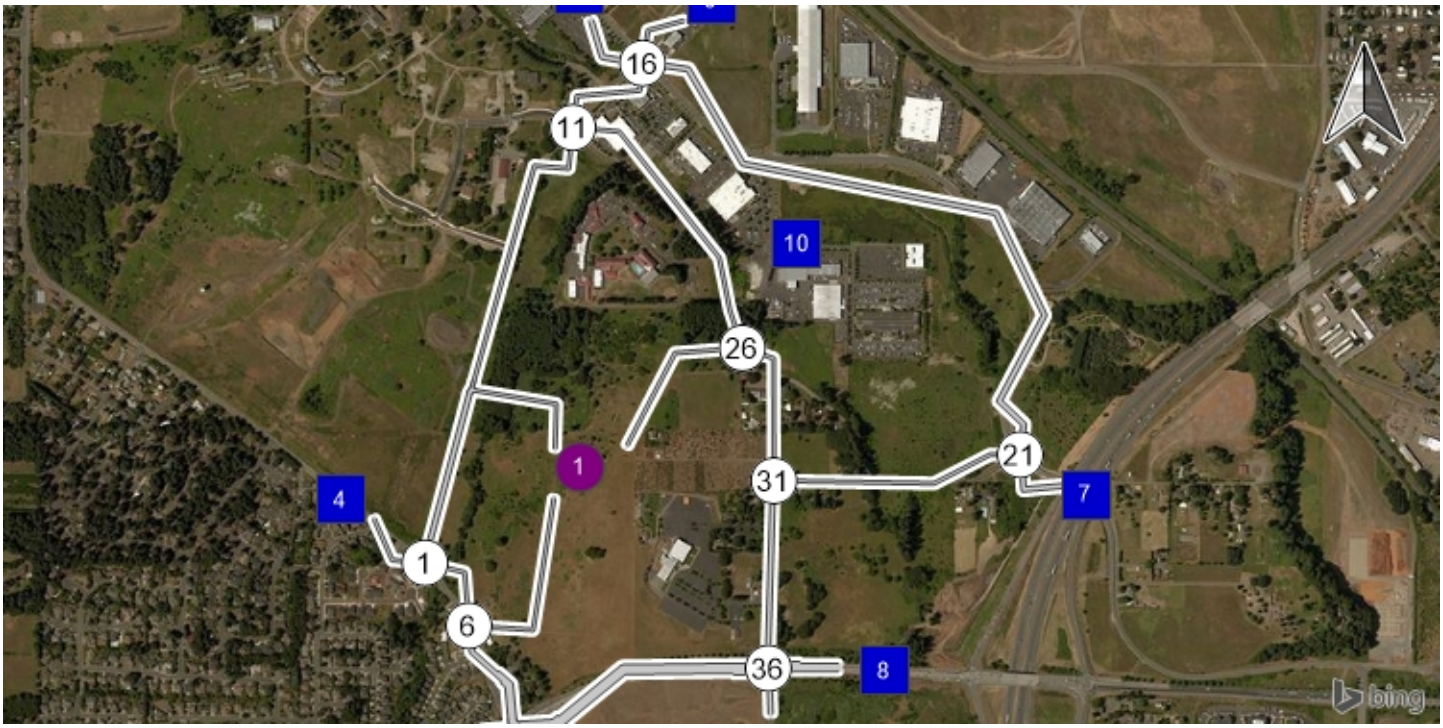
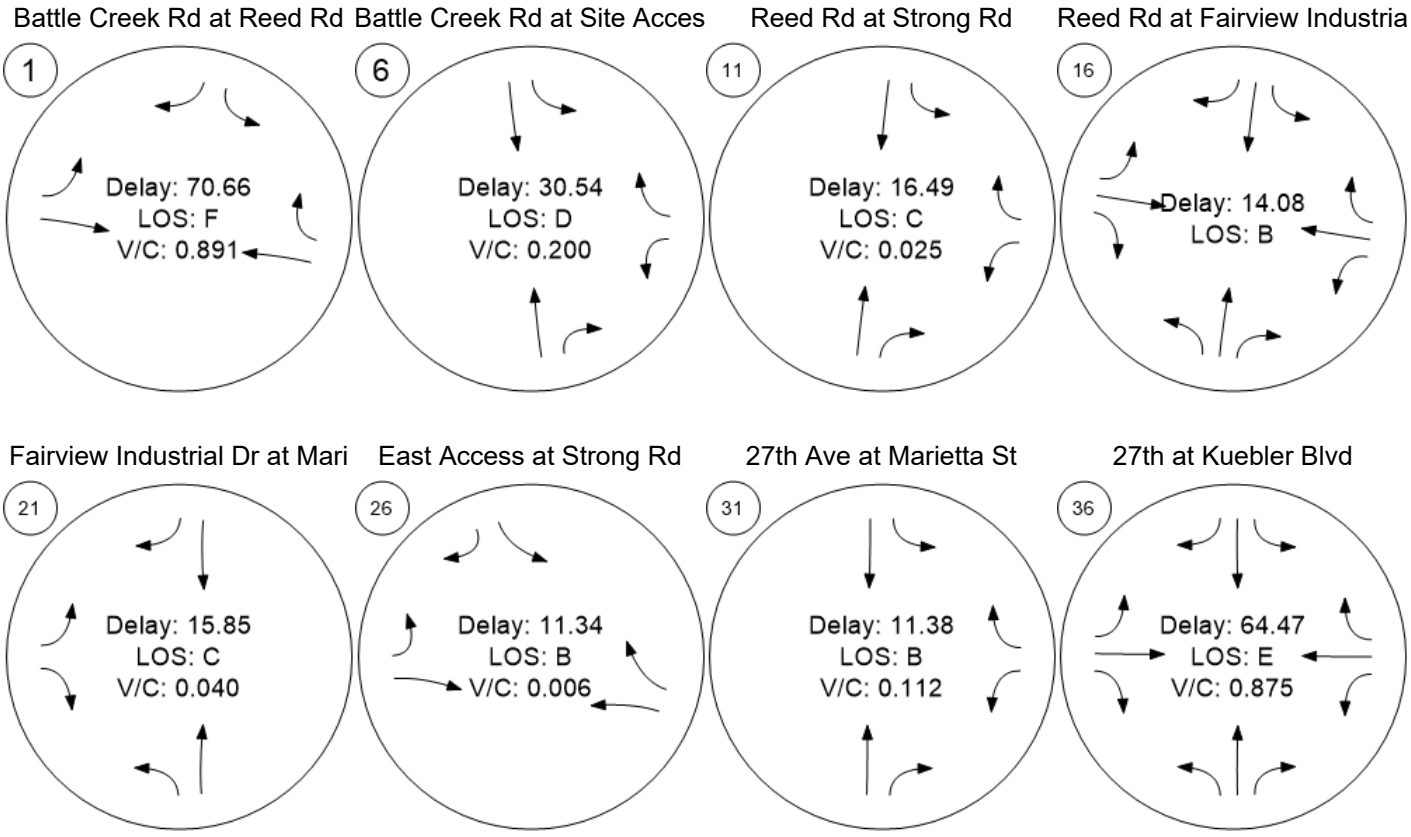


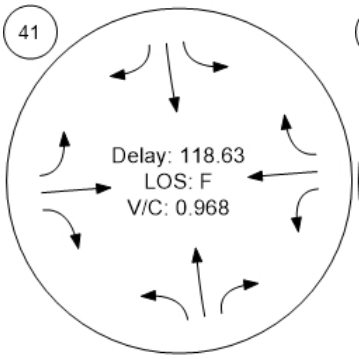
Report Figure 3: Traffic Conditions





Report Figure 3: Traffic Conditions

Keubler Blvd at Battle Creek



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