

US 22 and SR 13 Safety Study
ODOT

Appendix A
Raw Traffic Counts

US 22 & SR 13 - TMC

Thu Aug 26, 2021

Full Length (6 AM-6 PM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 867830, Location: 39.807183, -82.299307



Provided by: Burgess & Niple
5085 Reed Rd, Columbus, OH, 43220, US

Leg Direction	SR 13 Southbound					US 22 Westbound					SR 13 Northbound					US 22 Eastbound					
Time	R	T	L	U	App	R	T	L	U	App	R	T	L	U	App	R	T	L	U	App	Int
2021-08-26 6:00AM	3	15	1	0	19	12	23	4	0	39	4	96	5	0	105	1	15	13	0	29	192
6:15AM	5	23	2	0	30	6	25	7	1	39	0	98	10	0	108	5	10	14	0	29	206
6:30AM	8	25	3	0	36	15	21	8	0	44	4	71	6	0	81	4	11	16	0	31	192
6:45AM	4	35	12	0	51	18	25	11	0	54	9	68	7	0	84	2	14	12	0	28	217
Hourly Total	20	98	18	0	136	51	94	30	1	176	17	333	28	0	378	12	50	55	0	117	807
7:00AM	13	26	4	0	43	38	19	6	0	63	8	94	12	0	114	8	9	21	0	38	258
7:15AM	8	38	7	1	54	12	20	4	0	36	7	64	11	0	82	8	19	11	0	38	210
7:30AM	6	36	16	0	58	10	22	6	0	38	4	47	7	0	58	8	21	10	0	39	193
7:45AM	8	40	12	0	60	7	8	7	0	22	2	43	9	0	54	8	24	10	0	42	178
Hourly Total	35	140	39	1	215	67	69	23	0	159	21	248	39	0	308	32	73	52	0	157	839
8:00AM	9	45	5	0	59	8	19	5	0	32	10	44	12	0	66	8	9	6	0	23	180
8:15AM	7	33	5	1	46	19	15	6	0	40	13	37	6	0	56	6	19	10	1	36	178
8:30AM	9	39	15	2	65	10	19	13	0	42	15	42	11	2	70	17	23	11	0	51	228
8:45AM	10	48	11	1	70	18	28	17	0	63	13	49	8	1	71	17	33	12	0	62	266
Hourly Total	35	165	36	4	240	55	81	41	0	177	51	172	37	3	263	48	84	39	1	172	852
9:00AM	9	51	12	0	72	15	21	20	0	56	7	32	4	3	46	9	20	10	0	39	213
9:15AM	13	40	9	0	62	7	14	8	0	29	6	31	11	0	48	13	19	8	1	41	180
9:30AM	5	32	10	0	47	15	18	8	0	41	7	28	9	1	45	10	17	6	2	35	168
9:45AM	10	38	8	0	56	17	14	10	0	41	14	26	8	0	48	6	17	8	0	31	176
Hourly Total	37	161	39	0	237	54	67	46	0	167	34	117	32	4	187	38	73	32	3	146	737
10:00AM	8	16	9	0	33	9	15	9	0	33	5	34	8	0	47	9	14	6	1	30	143
10:15AM	13	24	10	0	47	17	11	8	0	36	3	34	7	0	44	16	25	7	0	48	175
10:30AM	6	31	9	1	47	13	20	8	0	41	6	34	4	1	45	15	19	5	1	40	173
10:45AM	9	28	11	0	48	11	12	10	1	34	9	34	12	1	56	22	11	4	0	37	175
Hourly Total	36	99	39	1	175	50	58	35	1	144	23	136	31	2	192	62	69	22	2	155	666
11:00AM	12	22	8	0	42	7	13	12	0	32	7	36	3	0	46	8	19	10	1	38	158
11:15AM	9	32	10	0	51	14	16	10	0	40	9	43	11	1	64	8	16	6	0	30	185
11:30AM	6	34	7	1	48	17	19	7	1	44	12	32	11	2	57	8	20	4	2	34	183
11:45AM	9	28	10	1	48	15	16	8	0	39	7	32	13	2	54	6	14	9	1	30	171
Hourly Total	36	116	35	2	189	53	64	37	1	155	35	143	38	5	221	30	69	29	4	132	697
12:00PM	14	29	10	0	53	15	13	14	0	42	8	25	11	0	44	8	13	4	0	25	164
12:15PM	8	27	5	0	40	13	14	12	0	39	4	49	9	1	63	11	17	11	1	40	182
12:30PM	8	37	12	0	57	14	15	7	0	36	8	39	14	0	61	3	17	11	2	33	187
12:45PM	6	29	5	0	40	17	17	8	1	43	5	30	9	1	45	5	25	10	2	42	170
Hourly Total	36	122	32	0	190	59	59	41	1	160	25	143	43	2	213	27	72	36	5	140	703
1:00PM	8	36	9	0	53	12	21	8	0	41	9	47	16	1	73	14	12	8	3	37	204
1:15PM	7	28	8	1	44	16	18	6	0	40	6	42	6	0	54	13	19	7	0	39	177
1:30PM	6	28	9	0	43	9	20	10	0	39	5	42	5	3	55	21	12	9	1	43	180
1:45PM	11	42	10	0	63	11	19	7	0	37	7	39	9	0	55	8	17	5	1	31	186
Hourly Total	32	134	36	1	203	48	78	31	0	157	27	170	36	4	237	56	60	29	5	150	747
2:00PM	11	46	4	1	62	17	19	9	0	45	14	39	10	3	66	18	19	11	0	48	221
2:15PM	12	43	12	0	67	17	13	12	0	42	7	53	15	1	76	14	21	11	2	48	233
2:30PM	14	52	7	0	73	14	22	6	0	42	6	49	13	1	69	17	16	12	0	45	229
2:45PM	9	40	22	0	71	18	19	11	0	48	7	47	10	0	64	16	30	5	0	51	234
Hourly Total	46	181	45	1	273	66	73	38	0	177	34	188	48	5	275	65	86	39	2	192	917
3:00PM	7	68	11	0	86	13	24	10	0	47	15	49	5	0	69	22	36	8	0	66	268
3:15PM	8	70	15	1	94	14	12	10	0	36	15	45	14	1	75	23	33	8	1	65	270
3:30PM	12	71	20	1	104	15	35	28	0	78	16	44	6	0	66	13	28	7	0	48	296
3:45PM	11	67	23	1	102	20	39	12	1	72	12	55	13	0	80	23	34	13	0	70	324
Hourly Total	38	276	69	3	386	62	110	60	1	233	58	193	38	1	290	81	131	36	1	249	1158
4:00PM	12	101	13	0	126	12	20	15	0	47	9	34	8	2	53	21	30	13	0	64	290
4:15PM	18	91	19	0	128	19	27	10	0	56	12	42	7	0	61	19	32	9	0	60	305
4:30PM	22	95	15	0	132	23	16	18	0	57	16	52	10	0	78	23	32	10	2	67	334
4:45PM	14	74	20	1	109	11	24	10	0	45	7	40	5	1	53	26	37	13	2	78	285

Leg Direction	SR 13 Southbound					US 22 Westbound					SR 13 Northbound					US 22 Eastbound					
Time	R	T	L	U	App	R	T	L	U	App	R	T	L	U	App	R	T	L	U	App	Int
Hourly Total	66	361	67	1	495	65	87	53	0	205	44	168	30	3	245	89	131	45	4	269	1214
5:00PM	17	104	16	1	138	16	27	7	0	50	7	34	10	2	53	21	34	16	3	74	315
5:15PM	19	78	23	0	120	18	20	13	0	51	9	57	16	0	82	23	24	14	0	61	314
5:30PM	16	82	9	0	107	21	33	8	0	62	4	51	10	1	66	20	25	19	0	64	299
5:45PM	13	88	6	0	107	12	22	12	2	48	4	34	6	0	44	8	26	17	1	52	251
Hourly Total	65	352	54	1	472	67	102	40	2	211	24	176	42	3	245	72	109	66	4	251	1179
Total	482	2205	509	15	3211	697	942	475	7	2121	393	2187	442	32	3054	612	1007	480	31	2130	10516
% Approach	15.0%	68.7%	15.9%	0.5%	-	32.9%	44.4%	22.4%	0.3%	-	12.9%	71.6%	14.5%	1.0%	-	28.7%	47.3%	22.5%	1.5%	-	-
% Total	4.6%	21.0%	4.8%	0.1%	30.5%	6.6%	9.0%	4.5%	0.1%	20.2%	3.7%	20.8%	4.2%	0.3%	29.0%	5.8%	9.6%	4.6%	0.3%	20.3%	-
Lights	456	2096	451	12	3015	639	872	444	7	1962	364	2089	428	30	2911	585	931	454	30	2000	9888
% Lights	94.6%	95.1%	88.6%	80.0%	93.9%	91.7%	92.6%	93.5%	100%	92.5%	92.6%	95.5%	96.8%	93.8%	95.3%	95.6%	92.5%	94.6%	96.8%	93.9%	94.0%
Articulated Trucks	6	36	13	0	55	16	21	2	0	39	5	33	6	0	44	4	30	6	0	40	178
% Articulated Trucks	1.2%	1.6%	2.6%	0%	1.7%	2.3%	2.2%	0.4%	0%	1.8%	1.3%	1.5%	1.4%	0%	1.4%	0.7%	3.0%	1.3%	0%	1.9%	1.7%
Buses and Single-Unit Trucks	20	73	45	3	141	42	49	29	0	120	24	65	8	2	99	23	46	20	1	90	450
% Buses and Single-Unit Trucks	4.1%	3.3%	8.8%	20.0%	4.4%	6.0%	5.2%	6.1%	0%	5.7%	6.1%	3.0%	1.8%	6.3%	3.2%	3.8%	4.6%	4.2%	3.2%	4.2%	4.3%

* L: Left, R: Right, T: Thru, U: U-Turn

US 22 & SR 13 - TMC

Thu Aug 26, 2021

Full Length (6 AM-6 PM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 867830, Location: 39.807183, -82.299307



Provided by: Burgess & Niple
5085 Reed Rd, Columbus, OH, 43220, US

[N] SR 13

Total: 6590

In: 3211

Out: 3379

482

2205

509

15

[W] US 22

Total: 4027

Out: 1897

In: 2130

31
480
1007
612

697

942

475

7

In: 2121

Total: 4037

Out: 1916

[E] US 22

Out: 3324

In: 3054

Total: 6378

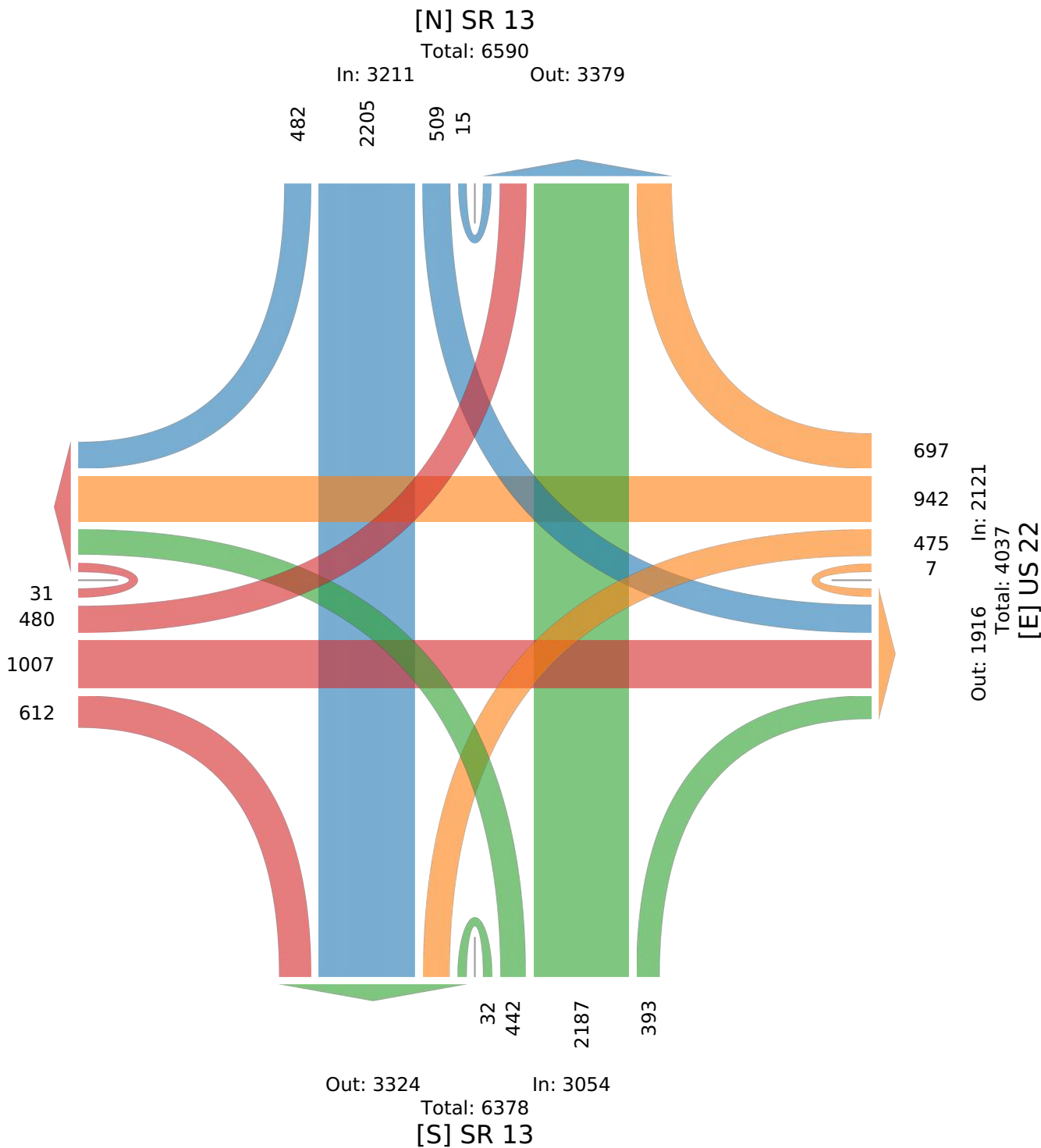
[S] SR 13

32

442

2187

393



US 22 & SR 13 - TMC

Thu Aug 26, 2021

AM Peak (8:30 AM - 9:30 AM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 867830, Location: 39.807183, -82.299307



Provided by: Burgess & Niple
5085 Reed Rd, Columbus, OH, 43220, US

Leg Direction	SR 13 Southbound					US 22 Westbound					SR 13 Northbound					US 22 Eastbound					
Time	R	T	L	U	App	R	T	L	U	App	R	T	L	U	App	R	T	L	U	App	Int
2021-08-26 8:30AM	9	39	15	2	65	10	19	13	0	42	15	42	11	2	70	17	23	11	0	51	228
8:45AM	10	48	11	1	70	18	28	17	0	63	13	49	8	1	71	17	33	12	0	62	266
9:00AM	9	51	12	0	72	15	21	20	0	56	7	32	4	3	46	9	20	10	0	39	213
9:15AM	13	40	9	0	62	7	14	8	0	29	6	31	11	0	48	13	19	8	1	41	180
Total	41	178	47	3	269	50	82	58	0	190	41	154	34	6	235	56	95	41	1	193	887
% Approach	15.2%	66.2%	17.5%	1.1%	-	26.3%	43.2%	30.5%	0%	-	17.4%	65.5%	14.5%	2.6%	-	29.0%	49.2%	21.2%	0.5%	-	-
% Total	4.6%	20.1%	5.3%	0.3%	30.3%	5.6%	9.2%	6.5%	0%	21.4%	4.6%	17.4%	3.8%	0.7%	26.5%	6.3%	10.7%	4.6%	0.1%	21.8%	-
PHF	0.788	0.873	0.783	0.375	0.934	0.694	0.732	0.725	-	0.754	0.683	0.786	0.773	0.500	0.827	0.824	0.720	0.854	0.250	0.778	0.834
Lights	39	165	42	2	248	45	74	50	0	169	39	147	32	5	223	53	83	37	0	173	813
% Lights	95.1%	92.7%	89.4%	66.7%	92.2%	90.0%	90.2%	86.2%	0%	88.9%	95.1%	95.5%	94.1%	83.3%	94.9%	94.6%	87.4%	90.2%	0%	89.6%	91.7%
Articulated Trucks	1	4	0	0	5	4	1	0	0	5	0	2	1	0	3	1	1	0	0	2	15
% Articulated Trucks	2.4%	2.2%	0%	0%	1.9%	8.0%	1.2%	0%	0%	2.6%	0%	1.3%	2.9%	0%	1.3%	1.8%	1.1%	0%	0%	1.0%	1.7%
Buses and Single-Unit Trucks	1	9	5	1	16	1	7	8	0	16	2	5	1	1	9	2	11	4	1	18	59
% Buses and Single-Unit Trucks	2.4%	5.1%	10.6%	33.3%	5.9%	2.0%	8.5%	13.8%	0%	8.4%	4.9%	3.2%	2.9%	16.7%	3.8%	3.6%	11.6%	9.8%	100%	9.3%	6.7%

*L: Left, R: Right, T: Thru, U: U-Turn

US 22 & SR 13 - TMC

Thu Aug 26, 2021

AM Peak (8:30 AM - 9:30 AM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 867830, Location: 39.807183, -82.299307



Provided by: Burgess & Niple
5085 Reed Rd, Columbus, OH, 43220, US

[N] SR 13

Total: 517

In: 269

Out: 248

41 178 47 3

[W] US 22

Total: 351

In: 193

Out: 158

1 41 95 56

50 82 58

Out: 183 In: 190

Total: 373

[E] US 22

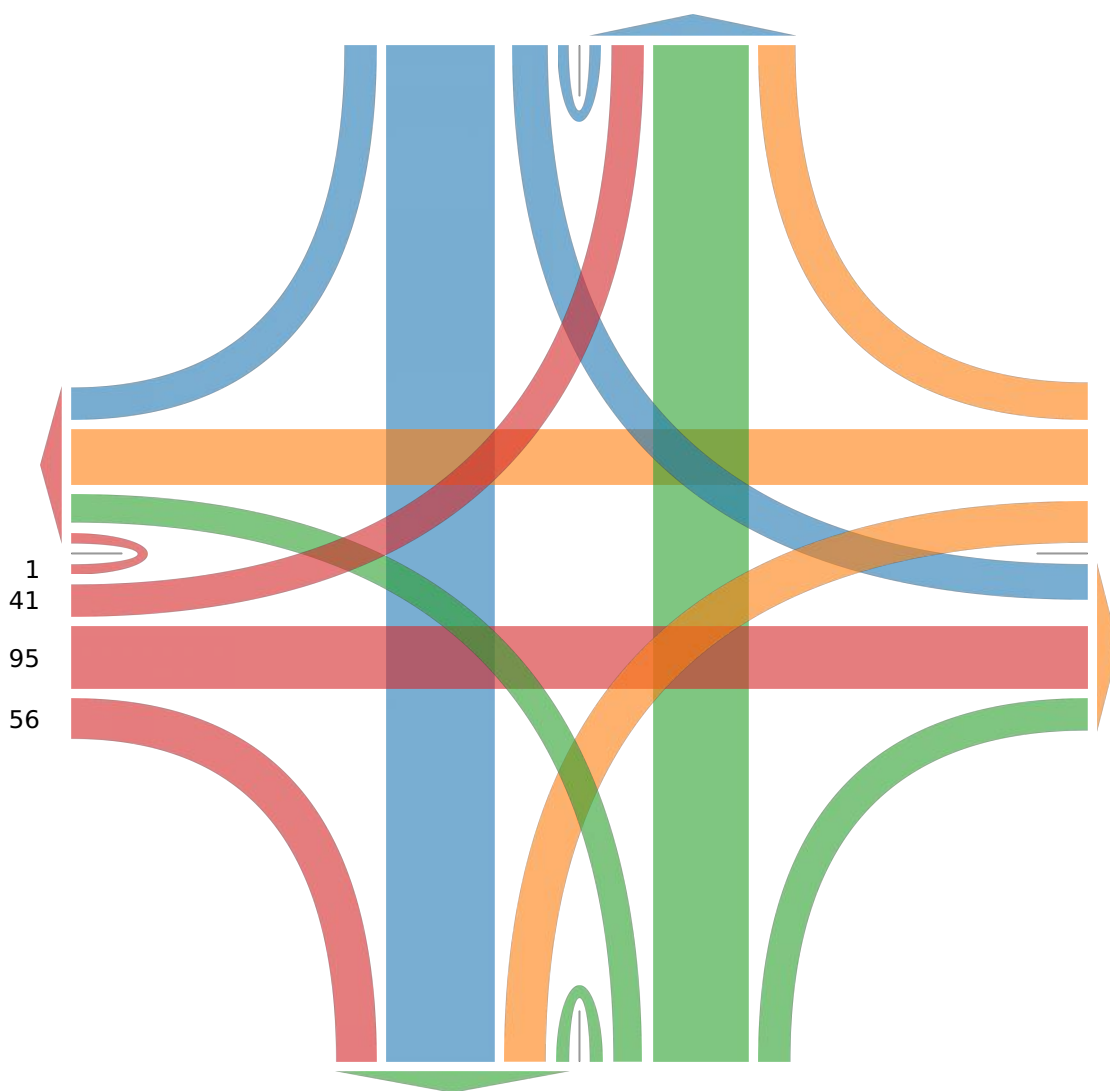
Out: 298

In: 235

Total: 533

[S] SR 13

6 34 154 41



US 22 & SR 13 - TMC

Thu Aug 26, 2021

Midday Peak (11:45 AM - 12:45 PM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 867830, Location: 39.807183, -82.299307



Provided by: Burgess & Niple

5085 Reed Rd, Columbus, OH, 43220, US

Leg Direction	SR 13 Southbound					US 22 Westbound					SR 13 Northbound					US 22 Eastbound					
Time	R	T	L	U	App	R	T	L	U	App	R	T	L	U	App	R	T	L	U	App	Int
2021-08-26 11:45AM	9	28	10	1	48	15	16	8	0	39	7	32	13	2	54	6	14	9	1	30	171
12:00PM	14	29	10	0	53	15	13	14	0	42	8	25	11	0	44	8	13	4	0	25	164
12:15PM	8	27	5	0	40	13	14	12	0	39	4	49	9	1	63	11	17	11	1	40	182
12:30PM	8	37	12	0	57	14	15	7	0	36	8	39	14	0	61	3	17	11	2	33	187
Total	39	121	37	1	198	57	58	41	0	156	27	145	47	3	222	28	61	35	4	128	704
% Approach	19.7%	61.1%	18.7%	0.5%	-	36.5%	37.2%	26.3%	0%	-	12.2%	65.3%	21.2%	1.4%	-	21.9%	47.7%	27.3%	3.1%	-	-
% Total	5.5%	17.2%	5.3%	0.1%	28.1%	8.1%	8.2%	5.8%	0%	22.2%	3.8%	20.6%	6.7%	0.4%	31.5%	4.0%	8.7%	5.0%	0.6%	18.2%	-
PHF	0.696	0.818	0.771	0.250	0.868	0.950	0.906	0.732	-	0.929	0.844	0.740	0.839	0.375	0.881	0.636	0.897	0.795	0.500	0.800	0.941
Lights	34	110	29	0	173	50	50	39	0	139	23	140	46	2	211	27	56	30	4	117	640
% Lights	87.2%	90.9%	78.4%	0%	87.4%	87.7%	86.2%	95.1%	0%	89.1%	85.2%	96.6%	97.9%	66.7%	95.0%	96.4%	91.8%	85.7%	100%	91.4%	90.9%
Articulated Trucks	1	5	2	0	8	2	2	0	0	4	0	2	0	0	2	0	2	1	0	3	17
% Articulated Trucks	2.6%	4.1%	5.4%	0%	4.0%	3.5%	3.4%	0%	0%	2.6%	0%	1.4%	0%	0%	0.9%	0%	3.3%	2.9%	0%	2.3%	2.4%
Buses and Single-Unit Trucks	4	6	6	1	17	5	6	2	0	13	4	3	1	1	9	1	3	4	0	8	47
% Buses and Single-Unit Trucks	10.3%	5.0%	16.2%	100%	8.6%	8.8%	10.3%	4.9%	0%	8.3%	14.8%	2.1%	2.1%	33.3%	4.1%	3.6%	4.9%	11.4%	0%	6.3%	6.7%

*L: Left, R: Right, T: Thru, U: U-Turn

US 22 & SR 13 - TMC

Thu Aug 26, 2021

Midday Peak (11:45 AM - 12:45 PM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 867830, Location: 39.807183, -82.299307



Provided by: Burgess & Niple
5085 Reed Rd, Columbus, OH, 43220, US

[N] SR 13

Total: 436

In: 198

Out: 238

39

121

37

1

[W] US 22

Total: 276

Out: 148

In: 128

4

35

61

28

57

58

41

In: 156

Out: 125

Total: 281

[E] US 22

3

47

145

27

Out: 193

In: 222

Total: 415

[S] SR 13

US 22 & SR 13 - TMC

Thu Aug 26, 2021

PM Peak (3:45 PM - 4:45 PM) - Overall Peak Hour

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 867830, Location: 39.807183, -82.299307



Provided by: Burgess & Niple
5085 Reed Rd, Columbus, OH, 43220, US

Leg Direction	SR 13 Southbound					US 22 Westbound					SR 13 Northbound					US 22 Eastbound					
Time	R	T	L	U	App	R	T	L	U	App	R	T	L	U	App	R	T	L	U	App	Int
2021-08-26 3:45PM	11	67	23	1	102	20	39	12	1	72	12	55	13	0	80	23	34	13	0	70	324
4:00PM	12	101	13	0	126	12	20	15	0	47	9	34	8	2	53	21	30	13	0	64	290
4:15PM	18	91	19	0	128	19	27	10	0	56	12	42	7	0	61	19	32	9	0	60	305
4:30PM	22	95	15	0	132	23	16	18	0	57	16	52	10	0	78	23	32	10	2	67	334
Total	63	354	70	1	488	74	102	55	1	232	49	183	38	2	272	86	128	45	2	261	1253
% Approach	12.9%	72.5%	14.3%	0.2%	-	31.9%	44.0%	23.7%	0.4%	-	18.0%	67.3%	14.0%	0.7%	-	33.0%	49.0%	17.2%	0.8%	-	-
% Total	5.0%	28.3%	5.6%	0.1%	38.9%	5.9%	8.1%	4.4%	0.1%	18.5%	3.9%	14.6%	3.0%	0.2%	21.7%	6.9%	10.2%	3.6%	0.2%	20.8%	-
PHF	0.716	0.876	0.761	0.250	0.924	0.804	0.654	0.764	0.250	0.806	0.766	0.832	0.731	0.250	0.850	0.935	0.941	0.865	0.250	0.932	0.938
Lights	60	339	66	1	466	72	97	51	1	221	47	175	37	2	261	82	123	44	2	251	1199
% Lights	95.2%	95.8%	94.3%	100%	95.5%	97.3%	95.1%	92.7%	100%	95.3%	95.9%	95.6%	97.4%	100%	96.0%	95.3%	96.1%	97.8%	100%	96.2%	95.7%
Articulated Trucks	0	1	1	0	2	0	2	0	0	2	0	5	0	0	5	0	4	0	0	4	13
% Articulated Trucks	0%	0.3%	1.4%	0%	0.4%	0%	2.0%	0%	0%	0.9%	0%	2.7%	0%	0%	1.8%	0%	3.1%	0%	0%	1.5%	1.0%
Buses and Single-Unit Trucks	3	14	3	0	20	2	3	4	0	9	2	3	1	0	6	4	1	1	0	6	41
% Buses and Single-Unit Trucks	4.8%	4.0%	4.3%	0%	4.1%	2.7%	2.9%	7.3%	0%	3.9%	4.1%	1.6%	2.6%	0%	2.2%	4.7%	0.8%	2.2%	0%	2.3%	3.3%

*L: Left, R: Right, T: Thru, U: U-Turn

US 22 & SR 13 - TMC

Thu Aug 26, 2021

PM Peak (3:45 PM - 4:45 PM) - Overall Peak Hour

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 867830, Location: 39.807183, -82.299307



Provided by: Burgess & Niple
5085 Reed Rd, Columbus, OH, 43220, US

[N] SR 13

Total: 791

In: 488

Out: 303

63 354 70 1

[W] US 22

Total: 466

Out: 205

In: 261

2 45 128 86

74 102 55 1

In: 232

Out: 248

Total: 480

[E] US 22

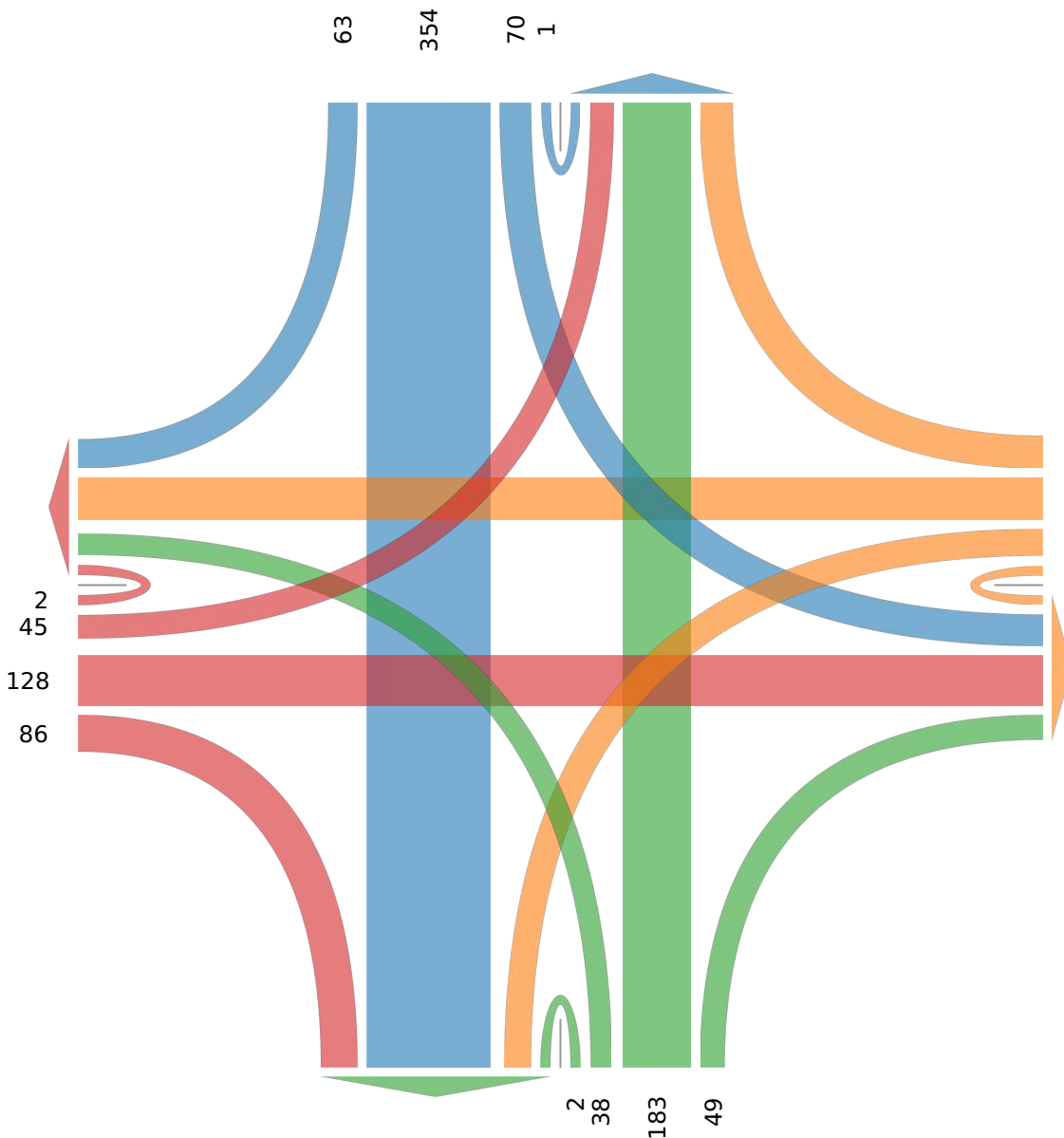
Out: 497

In: 272

Total: 769

[S] SR 13

2 38 183 49



US 22 & SR 13 - TMC

Sat Aug 28, 2021

Full Length (7 AM-7 PM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 867831, Location: 39.807183, -82.299307



Provided by: Burgess & Niple
5085 Reed Rd, Columbus, OH, 43220, US

Leg Direction	SR 13 Southbound					US 22 Westbound					SR 13 Northbound					US 22 Eastbound					
Time	R	T	L	U	App	R	T	L	U	App	R	T	L	U	App	R	T	L	U	App	Int
2021-08-28 7:00AM	1	12	4	0	17	7	3	0	0	10	7	21	2	0	30	5	12	6	0	23	80
7:15AM	6	13	7	0	26	9	9	5	0	23	4	20	6	0	30	4	5	6	0	15	94
7:30AM	5	18	4	0	27	6	8	4	0	18	1	26	0	0	27	2	12	10	1	25	97
7:45AM	4	16	8	0	28	7	10	4	0	21	3	24	5	0	32	7	8	6	1	22	103
Hourly Total	16	59	23	0	98	29	30	13	0	72	15	91	13	0	119	18	37	28	2	85	374
8:00AM	3	15	6	0	24	8	7	5	0	20	1	22	11	0	34	6	15	8	1	30	108
8:15AM	4	30	6	0	40	8	11	3	0	22	4	34	5	0	43	10	5	10	1	26	131
8:30AM	5	20	8	0	33	19	15	6	0	40	6	47	5	2	60	8	15	7	0	30	163
8:45AM	9	26	6	0	41	6	20	9	0	35	5	47	7	1	60	10	8	9	1	28	164
Hourly Total	21	91	26	0	138	41	53	23	0	117	16	150	28	3	197	34	43	34	3	114	566
9:00AM	7	30	2	0	39	19	19	4	0	42	4	50	7	0	61	12	16	6	0	34	176
9:15AM	10	19	4	0	33	18	25	5	0	48	11	35	12	1	59	9	22	7	1	39	179
9:30AM	4	36	8	0	48	14	22	7	0	43	6	60	10	3	79	9	24	8	0	41	211
9:45AM	10	32	6	0	48	17	29	13	0	59	10	33	15	1	59	9	14	8	1	32	198
Hourly Total	31	117	20	0	168	68	95	29	0	192	31	178	44	5	258	39	76	29	2	146	764
10:00AM	8	36	13	1	58	14	24	15	0	53	5	39	15	1	60	4	20	8	2	34	205
10:15AM	11	37	9	0	57	10	25	11	1	47	6	37	13	2	58	18	20	10	2	50	212
10:30AM	10	47	11	2	70	16	28	17	0	61	14	49	10	2	75	16	27	7	4	54	260
10:45AM	12	51	7	0	70	8	26	13	0	47	6	42	14	0	62	11	25	11	0	47	226
Hourly Total	41	171	40	3	255	48	103	56	1	208	31	167	52	5	255	49	92	36	8	185	903
11:00AM	11	43	13	0	67	15	19	9	1	44	9	40	7	1	57	11	20	9	0	40	208
11:15AM	19	45	7	0	71	16	26	9	0	51	16	50	15	1	82	17	23	15	1	56	260
11:30AM	14	50	11	0	75	28	40	4	0	72	9	41	15	1	66	18	37	13	0	68	281
11:45AM	9	56	16	1	82	26	30	5	0	61	6	46	15	2	69	17	30	10	2	59	271
Hourly Total	53	194	47	1	295	85	115	27	1	228	40	177	52	5	274	63	110	47	3	223	1020
12:00PM	8	62	16	1	87	18	19	9	0	46	6	43	14	0	63	16	33	15	0	64	260
12:15PM	13	42	22	0	77	15	28	12	2	57	12	35	9	0	56	23	36	13	0	72	262
12:30PM	15	34	10	0	59	8	21	15	0	44	6	39	9	1	55	14	27	5	2	48	206
12:45PM	12	42	12	2	68	12	25	7	0	44	6	45	6	1	58	16	30	13	0	59	229
Hourly Total	48	180	60	3	291	53	93	43	2	191	30	162	38	2	232	69	126	46	2	243	957
1:00PM	13	44	11	1	69	11	26	11	1	49	5	41	7	0	53	17	30	13	0	60	231
1:15PM	10	58	10	0	78	6	23	8	0	37	5	46	6	0	57	13	31	5	0	49	221
1:30PM	19	49	11	1	80	20	19	6	0	45	14	32	8	1	55	8	34	15	1	58	238
1:45PM	6	56	10	0	72	10	29	8	1	48	14	34	8	2	58	19	18	6	2	45	223
Hourly Total	48	207	42	2	299	47	97	33	2	179	38	153	29	3	223	57	113	39	3	212	913
2:00PM	10	46	9	0	65	19	26	6	0	51	7	54	12	0	73	14	11	14	2	41	230
2:15PM	9	60	13	0	82	13	26	12	0	51	5	30	11	0	46	14	29	13	0	56	235
2:30PM	7	41	12	1	61	13	26	12	0	51	14	43	14	2	73	10	21	11	0	42	227
2:45PM	9	40	10	0	59	7	24	8	0	39	10	51	9	0	70	17	20	9	2	48	216
Hourly Total	35	187	44	1	267	52	102	38	0	192	36	178	46	2	262	55	81	47	4	187	908
3:00PM	10	37	9	2	58	19	30	15	0	64	8	49	7	1	65	18	33	10	1	62	249
3:15PM	20	44	10	2	76	8	23	11	0	42	8	44	7	0	59	17	28	9	0	54	231
3:30PM	7	51	6	1	65	22	24	9	0	55	5	35	10	1	51	19	17	11	2	49	220
3:45PM	11	59	12	0	82	22	25	13	0	60	12	41	3	1	57	11	15	15	1	42	241
Hourly Total	48	191	37	5	281	71	102	48	0	221	33	169	27	3	232	65	93	45	4	207	941
4:00PM	5	40	9	0	54	11	32	12	0	55	6	38	10	2	56	13	26	14	0	53	218
4:15PM	11	37	14	1	63	22	27	12	0	61	10	33	6	1	50	15	26	12	1	54	228
4:30PM	16	44	10	1	71	19	17	13	1	50	12	41	8	0	61	11	32	9	0	52	234
4:45PM	8	58	11	0	77	6	27	19	0	52	5	23	5	3	36	22	21	15	0	58	223
Hourly Total	40	179	44	2	265	58	103	56	1	218	33	135	29	6	203	61	105	50	1	217	903
5:00PM	6	42	8	0	56	13	25	11	0	49	4	22	10	1	37	12	20	7	0	39	181
5:15PM	9	46	11	1	67	8	21	7	1	37	7	23	6	1	37	18	31	6	3	58	199
5:30PM	12	46	8	1	67	16	25	12	0	53	11	30	7	0	48	10	23	13	1	47	215
5:45PM	13	39	5	0	57	13	21	20	1	55	11	35	5	2	53	15	16	9	2	42	207

Leg Direction	SR 13 Southbound					US 22 Westbound					SR 13 Northbound					US 22 Eastbound					
Time	R	T	L	U	App	R	T	L	U	App	R	T	L	U	App	R	T	L	U	App	Int
Hourly Total	40	173	32	2	247	50	92	50	2	194	33	110	28	4	175	55	90	35	6	186	802
6:00PM	9	36	16	0	61	11	25	6	1	43	11	46	13	2	72	14	25	19	0	58	234
6:15PM	12	35	6	0	53	20	26	13	0	59	9	36	9	0	54	12	15	20	0	47	213
6:30PM	18	43	17	0	78	17	10	9	0	36	7	44	8	0	59	14	17	13	0	44	217
6:45PM	5	32	8	0	45	15	18	12	0	45	5	27	7	0	39	13	18	6	0	37	166
Hourly Total	44	146	47	0	237	63	79	40	1	183	32	153	37	2	224	53	75	58	0	186	830
Total	465	1895	462	19	2841	665	1064	456	10	2195	368	1823	423	40	2654	618	1041	494	38	2191	9881
% Approach	16.4%	66.7%	16.3%	0.7%	-	30.3%	48.5%	20.8%	0.5%	-	13.9%	68.7%	15.9%	1.5%	-	28.2%	47.5%	22.5%	1.7%	-	-
% Total	4.7%	19.2%	4.7%	0.2%	28.8%	6.7%	10.8%	4.6%	0.1%	22.2%	3.7%	18.4%	4.3%	0.4%	26.9%	6.3%	10.5%	5.0%	0.4%	22.2%	-
Lights	457	1866	450	19	2792	659	1048	449	9	2165	358	1798	420	40	2616	615	1023	488	38	2164	9737
% Lights	98.3%	98.5%	97.4%	100%	98.3%	99.1%	98.5%	98.5%	90.0%	98.6%	97.3%	98.6%	99.3%	100%	98.6%	99.5%	98.3%	98.8%	100%	98.8%	98.5%
Articulated Trucks	0	9	3	0	12	0	3	1	0	4	1	8	0	0	9	0	3	0	0	3	28
% Articulated Trucks	0%	0.5%	0.6%	0%	0.4%	0%	0.3%	0.2%	0%	0.2%	0.3%	0.4%	0%	0%	0.3%	0%	0.3%	0%	0%	0.1%	0.3%
Buses and Single-Unit Trucks	8	20	9	0	37	6	13	6	1	26	9	17	3	0	29	3	15	6	0	24	116
% Buses and Single-Unit Trucks	1.7%	1.1%	1.9%	0%	1.3%	0.9%	1.2%	1.3%	10.0%	1.2%	2.4%	0.9%	0.7%	0%	1.1%	0.5%	1.4%	1.2%	0%	1.1%	1.2%

* L: Left, R: Right, T: Thru, U: U-Turn

US 22 & SR 13 - TMC

Sat Aug 28, 2021

Full Length (7 AM-7 PM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 867831, Location: 39.807183, -82.299307



Provided by: Burgess & Niple
5085 Reed Rd, Columbus, OH, 43220, US

[N] SR 13

Total: 5842

In: 2841

Out: 3001

465
1895
462
19

[W] US 22

Total: 4181

In: 2191

Out: 1990

38
494
1041
618

665
1064
456
10

Out: 1881

In: 2195

Total: 4076

[E] US 22

[S] SR 13

Total: 5663

Out: 3009

In: 2654

40
423
1823
368



US 22 & SR 13 - TMC

Sat Aug 28, 2021

AM Peak (WKND) (10 AM - 11 AM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 867831, Location: 39.807183, -82.299307



Provided by: Burgess & Niple
5085 Reed Rd, Columbus, OH, 43220, US

Leg Direction	SR 13 Southbound					US 22 Westbound					SR 13 Northbound					US 22 Eastbound					
Time	R	T	L	U	App	R	T	L	U	App	R	T	L	U	App	R	T	L	U	App	Int
2021-08-28 10:00AM	8	36	13	1	58	14	24	15	0	53	5	39	15	1	60	4	20	8	2	34	205
10:15AM	11	37	9	0	57	10	25	11	1	47	6	37	13	2	58	18	20	10	2	50	212
10:30AM	10	47	11	2	70	16	28	17	0	61	14	49	10	2	75	16	27	7	4	54	260
10:45AM	12	51	7	0	70	8	26	13	0	47	6	42	14	0	62	11	25	11	0	47	226
Total	41	171	40	3	255	48	103	56	1	208	31	167	52	5	255	49	92	36	8	185	903
% Approach	16.1%	67.1%	15.7%	1.2%	-	23.1%	49.5%	26.9%	0.5%	-	12.2%	65.5%	20.4%	2.0%	-	26.5%	49.7%	19.5%	4.3%	-	-
% Total	4.5%	18.9%	4.4%	0.3%	28.2%	5.3%	11.4%	6.2%	0.1%	23.0%	3.4%	18.5%	5.8%	0.6%	28.2%	5.4%	10.2%	4.0%	0.9%	20.5%	-
PHF	0.854	0.838	0.769	0.375	0.911	0.750	0.920	0.824	0.250	0.852	0.554	0.852	0.867	0.625	0.850	0.681	0.852	0.818	0.500	0.856	0.868
Lights	39	168	40	3	250	47	102	56	1	206	31	166	51	5	253	49	91	36	8	184	893
% Lights	95.1%	98.2%	100%	100%	98.0%	97.9%	99.0%	100%	100%	99.0%	100%	99.4%	98.1%	100%	99.2%	100%	98.9%	100%	100%	99.5%	98.9%
Articulated Trucks	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2
% Articulated Trucks	0%	0.6%	0%	0%	0.4%	0%	0%	0%	0%	0%	0%	0.6%	0%	0%	0.4%	0%	0%	0%	0%	0%	0.2%
Buses and Single-Unit Trucks	2	2	0	0	4	1	1	0	0	2	0	0	1	0	1	0	1	0	0	1	8
% Buses and Single-Unit Trucks	4.9%	1.2%	0%	0%	1.6%	2.1%	1.0%	0%	0%	1.0%	0%	0%	1.9%	0%	0.4%	0%	1.1%	0%	0%	0.5%	0.9%

*L: Left, R: Right, T: Thru, U: U-Turn

US 22 & SR 13 - TMC

Sat Aug 28, 2021

AM Peak (WKND) (10 AM - 11 AM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 867831, Location: 39.807183, -82.299307



Provided by: Burgess & Niple
5085 Reed Rd, Columbus, OH, 43220, US

[N] SR 13

Total: 509

In: 255

Out: 254

41

171

40

3

[W] US 22

Total: 389

Out: 204

In: 185

8

36

92

49

48

103

56

1

Out: 164 In: 208

Total: 372

[E] US 22

Out: 281

In: 255

Total: 536

[S] SR 13

5

52

167

31

US 22 & SR 13 - TMC

Sat Aug 28, 2021

Midday Peak (WKND) (11:30 AM - 12:30 PM) - Overall Peak Hour

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 867831, Location: 39.807183, -82.299307



Provided by: Burgess & Niple

5085 Reed Rd, Columbus, OH, 43220, US

Leg Direction	SR 13 Southbound					US 22 Westbound					SR 13 Northbound					US 22 Eastbound					
Time	R	T	L	U	App	R	T	L	U	App	R	T	L	U	App	R	T	L	U	App	Int
2021-08-28 11:30AM	14	50	11	0	75	28	40	4	0	72	9	41	15	1	66	18	37	13	0	68	281
11:45AM	9	56	16	1	82	26	30	5	0	61	6	46	15	2	69	17	30	10	2	59	271
12:00PM	8	62	16	1	87	18	19	9	0	46	6	43	14	0	63	16	33	15	0	64	260
12:15PM	13	42	22	0	77	15	28	12	2	57	12	35	9	0	56	23	36	13	0	72	262
Total	44	210	65	2	321	87	117	30	2	236	33	165	53	3	254	74	136	51	2	263	1074
% Approach	13.7%	65.4%	20.2%	0.6%	-	36.9%	49.6%	12.7%	0.8%	-	13.0%	65.0%	20.9%	1.2%	-	28.1%	51.7%	19.4%	0.8%	-	-
% Total	4.1%	19.6%	6.1%	0.2%	29.9%	8.1%	10.9%	2.8%	0.2%	22.0%	3.1%	15.4%	4.9%	0.3%	23.6%	6.9%	12.7%	4.7%	0.2%	24.5%	-
PHF	0.786	0.847	0.739	0.500	0.922	0.777	0.731	0.625	0.250	0.819	0.688	0.897	0.883	0.375	0.920	0.804	0.919	0.850	0.250	0.913	0.956
Lights	43	205	63	2	313	87	116	30	1	234	32	162	53	3	250	73	134	49	2	258	1055
% Lights	97.7%	97.6%	96.9%	100%	97.5%	100%	99.1%	100%	50.0%	99.2%	97.0%	98.2%	100%	100%	98.4%	98.6%	98.5%	96.1%	100%	98.1%	98.2%
Articulated Trucks	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	0	1	0	0	1	3
% Articulated Trucks	0%	0.5%	0%	0%	0.3%	0%	0%	0%	0%	0%	0%	0.6%	0%	0%	0.4%	0%	0.7%	0%	0%	0.4%	0.3%
Buses and Single-Unit Trucks	1	4	2	0	7	0	1	0	1	2	1	2	0	0	3	1	1	2	0	4	16
% Buses and Single-Unit Trucks	2.3%	1.9%	3.1%	0%	2.2%	0%	0.9%	0%	50.0%	0.8%	3.0%	1.2%	0%	0%	1.2%	1.4%	0.7%	3.9%	0%	1.5%	1.5%

*L: Left, R: Right, T: Thru, U: U-Turn

US 22 & SR 13 - TMC

Sat Aug 28, 2021

Midday Peak (WKND) (11:30 AM - 12:30 PM) - Overall Peak Hour

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 867831, Location: 39.807183, -82.299307



Provided by: Burgess & Niple

5085 Reed Rd, Columbus, OH, 43220, US

[N] SR 13

Total: 626

In: 321

Out: 305

44

210

65

2

[W] US 22

Total: 479

Out: 216

In: 263

2
51
136
74

87
117
30
2

In: 236

Out: 236

Total: 472

[E] US 22

Out: 317

In: 254

Total: 571

[S] SR 13

3

53

165

33

US 22 & SR 13 - TMC

Sat Aug 28, 2021

PM Peak (WKND) (3 PM - 4 PM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 867831, Location: 39.807183, -82.299307



Provided by: Burgess & Niple
5085 Reed Rd, Columbus, OH, 43220, US

Leg Direction	SR 13 Southbound					US 22 Westbound					SR 13 Northbound					US 22 Eastbound					
Time	R	T	L	U	App	R	T	L	U	App	R	T	L	U	App	R	T	L	U	App	Int
2021-08-28 3:00PM	10	37	9	2	58	19	30	15	0	64	8	49	7	1	65	18	33	10	1	62	249
3:15PM	20	44	10	2	76	8	23	11	0	42	8	44	7	0	59	17	28	9	0	54	231
3:30PM	7	51	6	1	65	22	24	9	0	55	5	35	10	1	51	19	17	11	2	49	220
3:45PM	11	59	12	0	82	22	25	13	0	60	12	41	3	1	57	11	15	15	1	42	241
Total	48	191	37	5	281	71	102	48	0	221	33	169	27	3	232	65	93	45	4	207	941
% Approach	17.1%	68.0%	13.2%	1.8%	-	32.1%	46.2%	21.7%	0%	-	14.2%	72.8%	11.6%	1.3%	-	31.4%	44.9%	21.7%	1.9%	-	-
% Total	5.1%	20.3%	3.9%	0.5%	29.9%	7.5%	10.8%	5.1%	0%	23.5%	3.5%	18.0%	2.9%	0.3%	24.7%	6.9%	9.9%	4.8%	0.4%	22.0%	-
PHF	0.600	0.809	0.771	0.625	0.857	0.807	0.850	0.800	-	0.863	0.688	0.862	0.675	0.750	0.892	0.855	0.705	0.750	0.500	0.835	0.945
Lights	46	190	36	5	277	71	102	46	0	219	33	168	27	3	231	65	93	44	4	206	933
% Lights	95.8%	99.5%	97.3%	100%	98.6%	100%	100%	95.8%	0%	99.1%	100%	99.4%	100%	100%	99.6%	100%	100%	97.8%	100%	99.5%	99.1%
Articulated Trucks	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1
% Articulated Trucks	0%	0%	0%	0%	0%	0%	0%	2.1%	0%	0.5%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0.1%
Buses and Single-Unit Trucks	2	1	1	0	4	0	0	1	0	1	0	1	0	0	1	0	0	1	0	1	7
% Buses and Single-Unit Trucks	4.2%	0.5%	2.7%	0%	1.4%	0%	0%	2.1%	0%	0.5%	0%	0.6%	0%	0%	0.4%	0%	0%	2.2%	0%	0.5%	0.7%

*L: Left, R: Right, T: Thru, U: U-Turn

US 22 & SR 13 - TMC

Sat Aug 28, 2021

PM Peak (WKND) (3 PM - 4 PM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 867831, Location: 39.807183, -82.299307



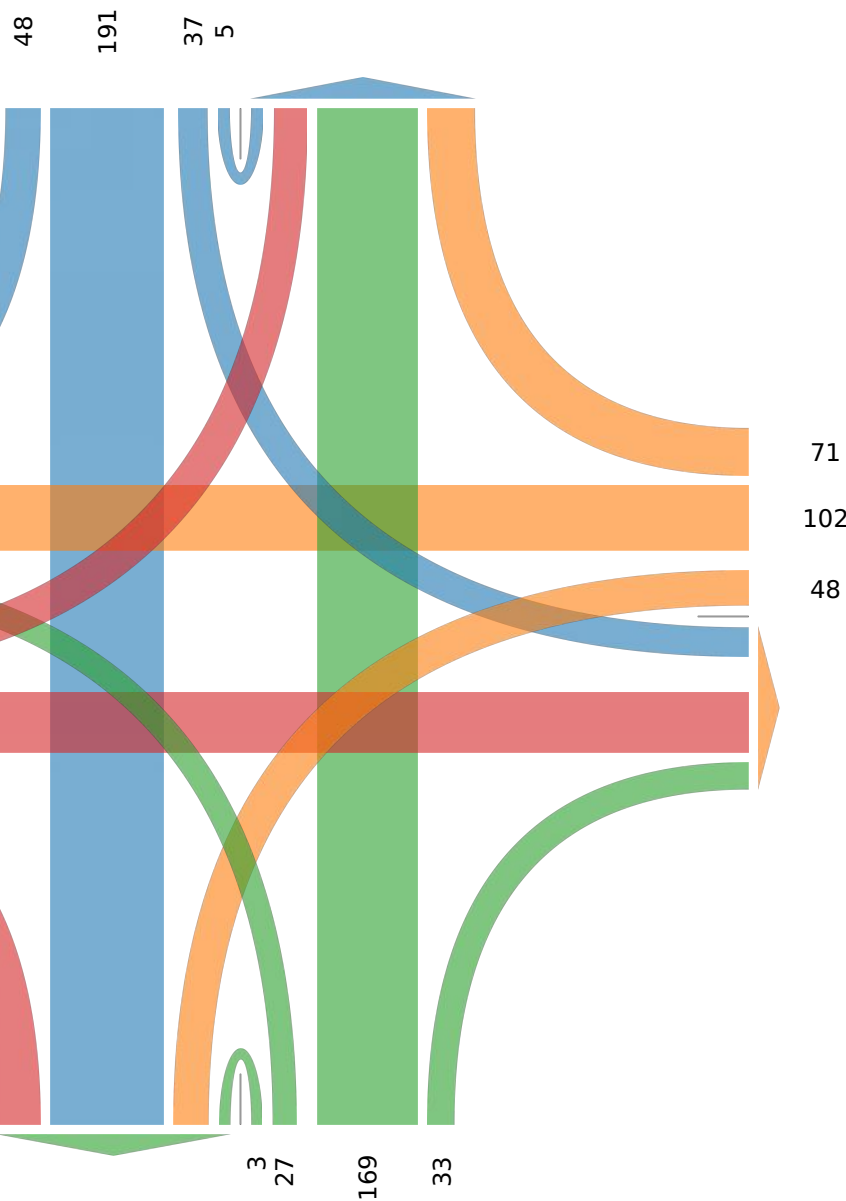
Provided by: Burgess & Niple
5085 Reed Rd, Columbus, OH, 43220, US

[N] SR 13

Total: 571

In: 281

Out: 290



[S] SR 13

Total: 539

Out: 307

In: 232

Out: 163 In: 221

Total: 384

[E] US 22

US 22 and SR 13 Safety Study
ODOT

Appendix B
TFMS Forecast Report



TFMS - Segment Forecast Report

Username	Email
Randy.Kill	mary.lee@burgessniple.com

Forecast Summary

Project ID

Project Name

Somerset

Project Description

Opening Year

Design Year

2021

2040

*Users of this data need to be aware that there are limitations to the forecasts generated by this product that make it suitable only for roadway design projects which are low risk.

Segment Information

Segment ID	LRS ID	BMP	EMP	Length	Latitude	Longitude
1476976	SPERSR00013**C	27.550	27.630	0.080	-82.2989172179735	39.8066802269525
1476978	SPERSR00013**C	27.630	28.010	0.380	-82.3014075942737	39.809354795519
1477229	SPERUS00022**C	6.010	6.180	0.170	-82.3006410157272	39.8064239443918
1477231	SPERUS00022**C	6.180	6.400	0.220	-82.2976609433991	39.8080593595293

Segment ID	2021 AADT	2040 AADT	DHV-30	K%	D%	T24%	TD%
1476976	6,800	8,000	800	10.0	51.6	6	2
1476978	6,600	6,900	600	9.0	50.0	6	2
1477229	4,200	4,300	450	10.0	51.6	5	2
1477231	3,900	3,900	350	9.0	50.0	6	2



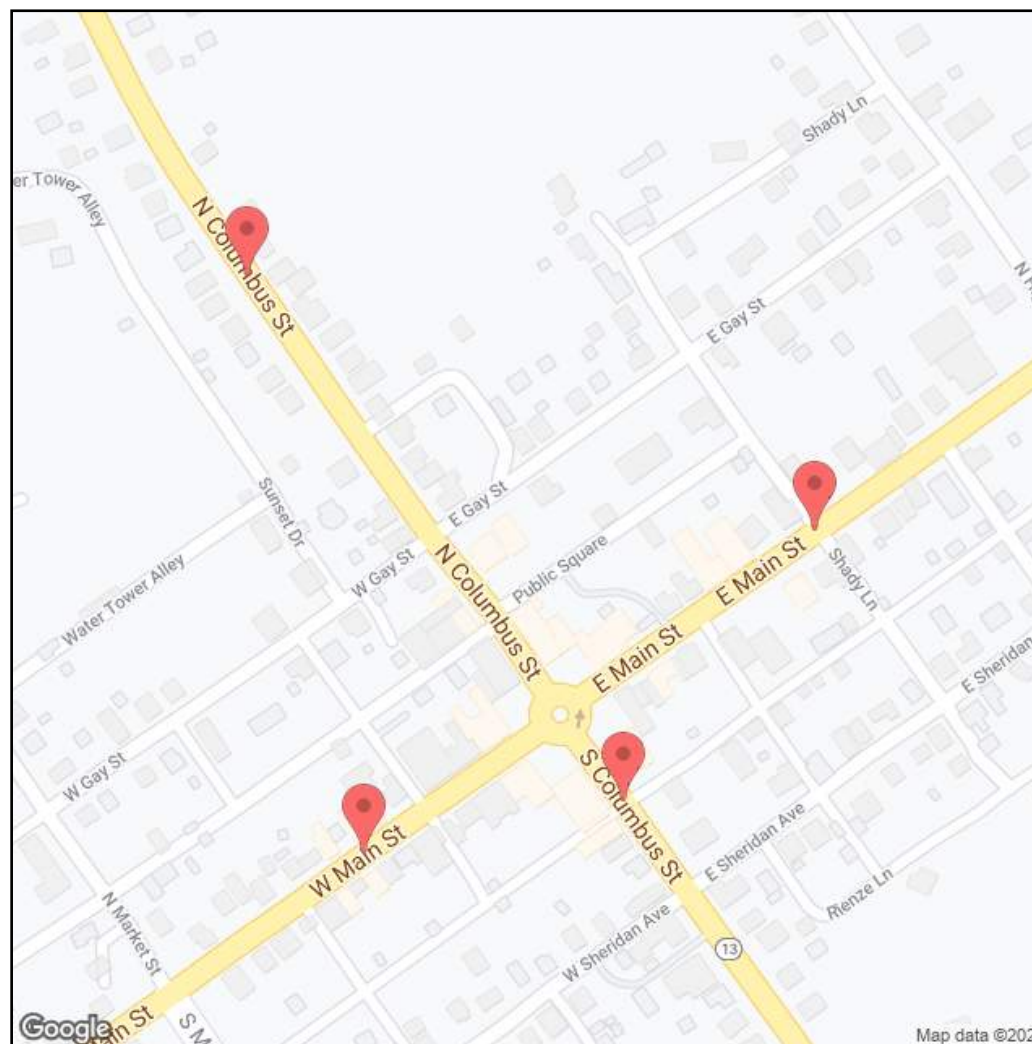
TFMS - Segment Forecast Report



TFMS - Segment Forecast Report



TFMS - Segment Forecast Report





TFMS - Segment Forecast Report

Forecast Segment ID	Route	BMP	EMP
1476976	SPERSR00013**C	27.550	27.630

User Name:
Randy.Kill

9/21/2021
2:01:48 PM

Script Import Date	Script Version	Model Version
4/14/2020 5:30:19 PM	2020.001	2021.1900

Forecast

Year	K %	T24 %	PA AADT	PA Method	PA Growth Rate %	PA Calculated Rate %
2050	10.0	6	8,100	Model	1.000	1.000
AADT	D %	TD %	BC AADT	BC Method	BC Growth Rate %	BC Calculated Rate %
8,570	51.6	2	470	Model	● -0.300	0.000

● Warning: The growth rate was negative and was capped.



TFMS - Segment Forecast Report

Forecast Segment ID	Route	BMP	EMP
1476976	SPERSR00013**C	27.550	27.630

User Name:
Randy.Kill

9/21/2021
2:01:48 PM

Script Import Date	Script Version	Model Version
4/14/2020 5:30:19 PM	2020.001	2021.1900

Regression

Method Number	PA AADT	BC AADT	AADT
1	3,893	81	3,974

95% Confidence Min/Max

PA Min	PA Max	BC Min	BC Max	Year
-4326	15272	-522	1055	2050

Method Number	PA Growth %	BC Growth %	PA Drop Count	BC Drop Count	PA AADT	BC AADT	PA Adjustment	PA Adjustment
1	-1.25	-2.76	0	0	3,953	26	3,893	81
2	-1.14	-0.01	4	1	4,376	463	4,094	469
3	-0.37	-0.01	0	0	5,811	463	5,543	469
4	-0.50	-0.13	4	4	5,710	456	5,297	452
5	-0.47	0.32	0	0	5,598	513	5,348	515
6	-1.81	-0.79	4	4	3,076	356	2,847	359



TFMS - Segment Forecast Report

Forecast Segment ID	Route	BMP	EMP
1476976	SPERSR00013**C	27.550	27.630

User Name:
Randy.Kill

9/21/2021
2:01:48 PM

Script Import Date	Script Version	Model Version
4/14/2020 5:30:19 PM	2020.001	2021.1900

Adjustment Info

ID	Adjustment Methods Name	Model vs Count AADT	Adjusted AADT	Model vs Count BC	Adjusted BC	PA Growth Rate %	BC Growth Rate %
1	DIF	-1,032	8,674	4	430	1.08	-0.28
2	RAT	0.87	8,410	1.01	429	0.94	-0.29
3	MRAT	1.26	8,463	0.91	429	0.97	-0.29
4	RAF		8,568		429	1.02	-0.29

Adjust Method AADT	Adjust Method BC	Selected PA Growth Rate %	Selected BC Growth Rate %
Average	Average	1.000	-0.300

Method 1 - 4 Volume

PA Min Volume	PA Max Volume	BC Min Volume	BC Max Volume	Total Min Volume	Total MaxVolume
7981	8244	429	430	8410	8674

Process Flag: Adjusted model to counts with process per ODOT 255 spreadsheet

Comment:

No Comment



TFMS - Segment Forecast Report

Forecast Segment ID	Route	BMP	EMP
1476976	SPERSR00013**C	27.550	27.630

User Name:
Randy.Kill

9/21/2021
2:01:48 PM

Script Import Date	Script Version	Model Version
4/14/2020 5:30:19 PM	2020.001	2021.1900

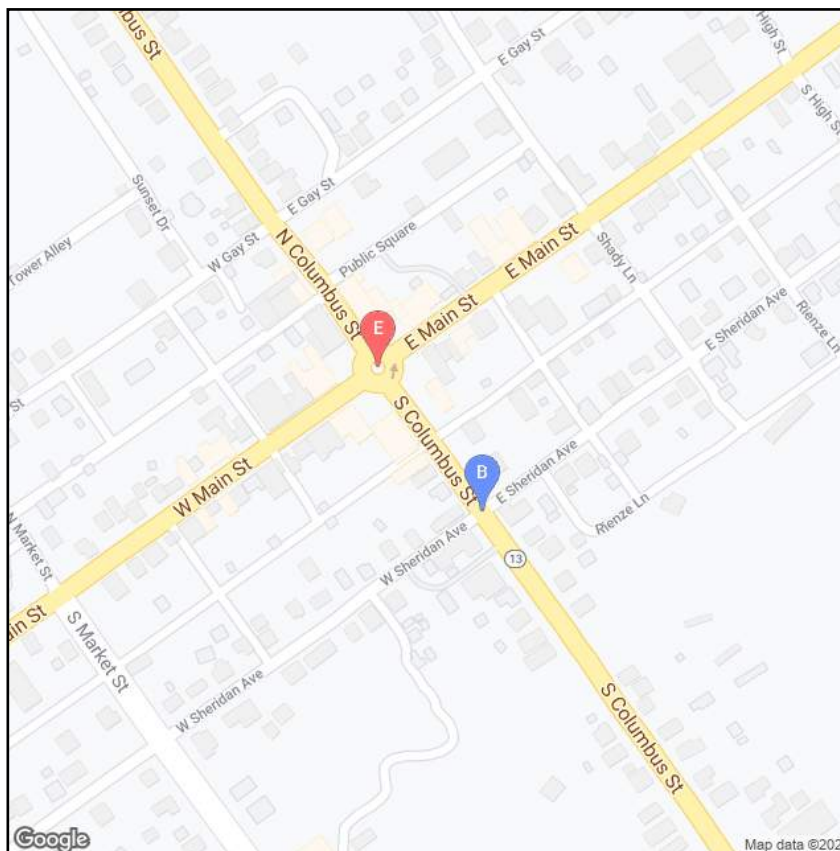
Historical Count

Year	All	Cars	Trucks
2006	8,520	7,820	700
2009	7,190	6,720	470
2013	7,569	7,074	495
2014	6,293	5,882	411
2017	7,667	7,195	472
* 2020	6,698	6,228	470

* Pivot Point



TFMS - Segment Forecast Report



Segment ID	LRS ID	BMP	EMP	Length	Yr 2021 AADT	Yr 2040 AADT	DHV30	K %	D %	T24 %	TD %
1476976	SPERSR00013**C	27.550	27.630	0.080	6,800	8,000	800	10.0	51.6	6	2



TFMS - Segment Forecast Report

Forecast Segment ID	Route	BMP	EMP
1476978	SPERSR00013**C	27.630	28.010

User Name:
Randy.Kill

9/21/2021
2:01:48 PM

Script Import Date	Script Version	Model Version
4/14/2020 5:30:19 PM	2020.001	2021.1900

Forecast

Year	K %	T24 %	PA AADT	PA Method	PA Growth Rate %	PA Calculated Rate %
2050	9.0	5	6,700	Average	0.300	0.300
AADT	D %	TD %	BC AADT	BC Method	BC Growth Rate %	BC Calculated Rate %
7,080	50.0	2	380	Average	● -3.100	0.000

● Warning: The growth rate was negative and was capped.



TFMS - Segment Forecast Report

Forecast Segment ID	Route	BMP	EMP
1476978	SPERSR00013**C	27.630	28.010

User Name:
Randy.Kill

9/21/2021
2:01:48 PM

Script Import Date	Script Version	Model Version
4/14/2020 5:30:19 PM	2020.001	2021.1900

Regression

Method Number	PA AADT	BC AADT	AADT
1	5,323	-267	5,056

95% Confidence Min/Max

PA Min	PA Max	BC Min	BC Max	Year
-3734	9620	-1059	915	2050

Method Number	PA Growth %	BC Growth %	PA Drop Count	BC Drop Count	PA AADT	BC AADT	PA Adjustment	PA Adjustment
1	-0.47	-5.66	0	0	5,906	-285	5,323	-267
2	-0.86	-7.71	5	2	4,890	-532	4,607	-502
3	-0.78	-1.34	0	0	5,248	273	4,739	228
4	-1.26	-1.04	5	4	4,045	287	3,862	263
5	-1.91	-4.57	0	0	2,942	-134	2,638	-142
6	-2.36	-2.56	5	4	1,787	99	1,804	89



TFMS - Segment Forecast Report

Forecast Segment ID	Route	BMP	EMP
1476978	SPERSR00013**C	27.630	28.010

User Name:
Randy.Kill

9/21/2021
2:01:48 PM

Script Import Date	Script Version	Model Version
4/14/2020 5:30:19 PM	2020.001	2021.1900

Adjustment Info

ID	Adjustment Methods Name	Model vs Count AADT	Adjusted AADT	Model vs Count BC	Adjusted BC	PA Growth Rate %	BC Growth Rate %
1	DIF	1,137	8,339	-96	322	0.98	-0.52
2	RAT	1.21	8,707	0.80	334	1.17	-0.42
3	MRAT	1.32	8,617	0.87	334	1.12	-0.42
4	RAF		8,478		328	1.05	-0.47

Adjust Method AADT	Adjust Method BC	Selected PA Growth Rate %	Selected BC Growth Rate %
Average	Ratio	1.100	-0.400

Method 1 - 4 Volume

PA Min Volume	PA Max Volume	BC Min Volume	BC Max Volume	Total Min Volume	Total MaxVolume
8017	8373	322	334	8339	8707

Process Flag: Adjusted model to counts with process per ODOT 255 spreadsheet

Comment:

No Comment



TFMS - Segment Forecast Report

Forecast Segment ID	Route	BMP	EMP
1476978	SPERSR00013**C	27.630	28.010

User Name:
Randy.Kill

9/21/2021
2:01:48 PM

Script Import Date	Script Version	Model Version
4/14/2020 5:30:19 PM	2020.001	2021.1900

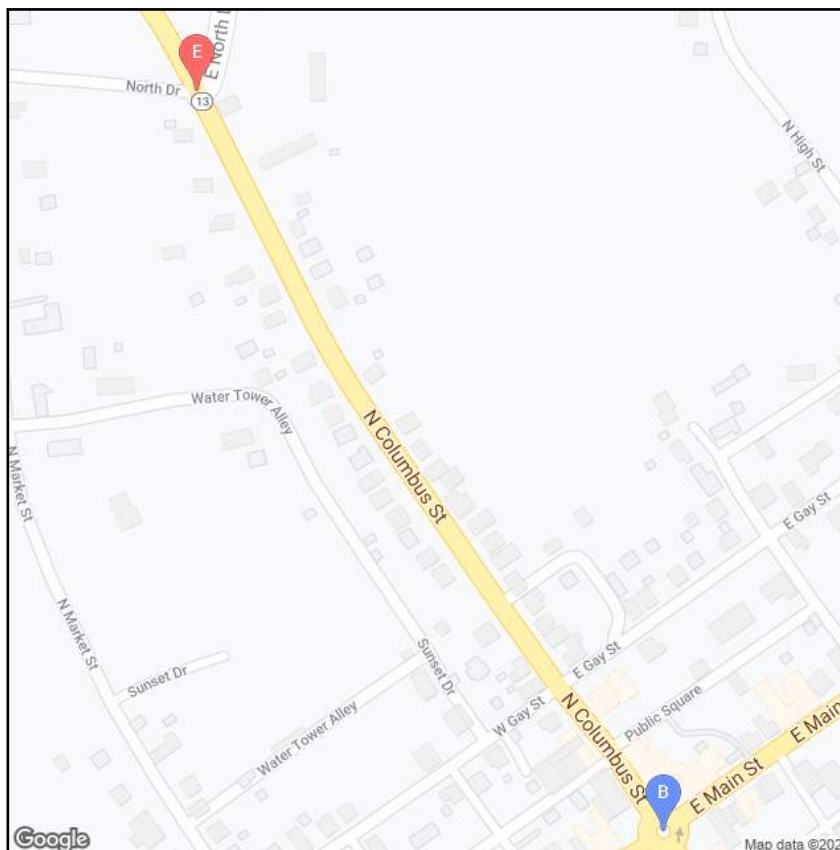
Historical Count

Year	All	Cars	Trucks
2006	7,830	7,030	800
2009	7,370	6,940	430
2013	7,758	7,305	453
2014	7,511	6,943	567
2017	7,895	7,455	440
* 2020	6,579	6,197	382

* Pivot Point



TFMS - Segment Forecast Report



Segment ID	LRS ID	BMP	EMP	Length	Yr 2021 AADT	Yr 2040 AADT	DHV30	K %	D %	T24 %	TD %
1476978	SPERSR00013**C	27.630	28.010	0.380	6,600	6,900	600	9.0	50.0	6	2



TFMS - Segment Forecast Report

Forecast Segment ID	Route	BMP	EMP
1477229	SPERUS00022**C	6.010	6.180

User Name:
Randy.Kill

9/21/2021
2:01:48 PM

Script Import Date	Script Version	Model Version
4/14/2020 5:30:19 PM	2020.001	2021.1900

Forecast

Year	K %	T24 %	PA AADT	PA Method	PA Growth Rate %	PA Calculated Rate %
2050	10.0	5	4,100	Average	0.100	0.100
AADT	D %	TD %	BC AADT	BC Method	BC Growth Rate %	BC Calculated Rate %
4,320	51.6	2	220	Average	● -2.800	0.000

● Warning: The growth rate was negative and was capped.



TFMS - Segment Forecast Report

Forecast Segment ID	Route	BMP	EMP
1477229	SPERUS00022**C	6.010	6.180

User Name:
Randy.Kill

9/21/2021
2:01:48 PM

Script Import Date	Script Version	Model Version
4/14/2020 5:30:19 PM	2020.001	2021.1900

Regression

Method Number	PA AADT	BC AADT	AADT
2	3,071	-173	2,898

95% Confidence Min/Max

PA Min	PA Max	BC Min	BC Max	Year
-1190	6099	-1404	830	2050

Method Number	PA Growth %	BC Growth %	PA Drop Count	BC Drop Count	PA AADT	BC AADT	PA Adjustment	PA Adjustment
1	-0.40	-4.04	0	0	3,760	36	3,475	-47
2	-0.74	-5.93	5	5	3,187	-143	3,071	-173
3	-0.44	-3.47	0	0	3,715	79	3,435	-9
4	-0.84	-5.71	5	5	3,053	-126	2,953	-158
5	-1.40	-8.08	0	0	2,465	-258	2,296	-316
6	-1.78	-10.23	5	5	1,829	-456	1,837	-459



TFMS - Segment Forecast Report

Forecast Segment ID	Route	BMP	EMP
1477229	SPERUS00022**C	6.010	6.180

User Name:
Randy.Kill

9/21/2021
2:01:48 PM

Script Import Date	Script Version	Model Version
4/14/2020 5:30:19 PM	2020.001	2021.1900

Adjustment Info

ID	Adjustment Methods Name	Model vs Count AADT	Adjusted AADT	Model vs Count BC	Adjusted BC	PA Growth Rate %	BC Growth Rate %
1	DIF	-4,560	6,174	-386	280	1.64	0.87
2	RAT	0.48	5,130	0.36	243	0.79	0.32
3	MRAT	1.23	5,325	1.10	247	0.95	0.38
4	RAF		5,749		264	1.29	0.63

Adjust Method AADT	Adjust Method BC	Selected PA Growth Rate %	Selected BC Growth Rate %
Model Ratio	Model Ratio	1.000	0.400

Method 1 - 4 Volume

PA Min Volume	PA Max Volume	BC Min Volume	BC Max Volume	Total Min Volume	Total MaxVolume
4887	5894	243	280	5130	6174

Process Flag: Adjusted model to counts with process per ODOT 255 spreadsheet

Comment:

No Comment



TFMS - Segment Forecast Report

Forecast Segment ID	Route	BMP	EMP
1477229	SPERUS00022**C	6.010	6.180

User Name:
Randy.Kill

9/21/2021
2:01:48 PM

Script Import Date	Script Version	Model Version
4/14/2020 5:30:19 PM	2020.001	2021.1900

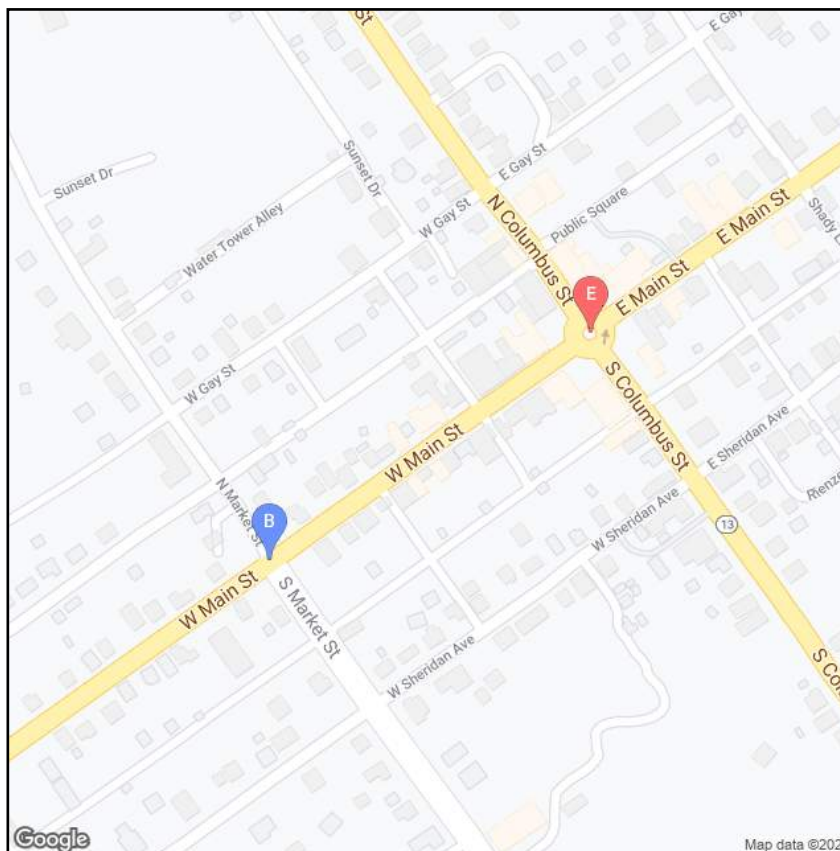
Historical Count

Year	All	Cars	Trucks
2006	4,890	4,450	440
2009	4,610	4,260	350
2013	4,853	4,485	368
2014	4,695	4,315	379
2017	5,053	4,617	436
* 2020	4,175	3,953	222

* Pivot Point



TFMS - Segment Forecast Report



Segment ID	LRS ID	BMP	EMP	Length	Yr 2021 AADT	Yr 2040 AADT	DHV30	K %	D %	T24 %	TD %
1477229	SPERUS00022**C	6.010	6.180	0.170	4,200	4,300	450	10.0	51.6	5	2



TFMS - Segment Forecast Report

Forecast Segment ID	Route	BMP	EMP
1477231	SPERUS00022**C	6.180	6.400

User Name:
Randy.Kill

9/21/2021
2:01:48 PM

Script Import Date	Script Version	Model Version
4/14/2020 5:30:19 PM	2020.001	2021.1900

Forecast

Year	K %	T24 %	PA AADT	PA Method	PA Growth Rate %	PA Calculated Rate %
2050	9.0	6	3,700	Average	● -1.000	0.000
AADT	D %	TD %	BC AADT	BC Method	BC Growth Rate %	BC Calculated Rate %
3,950	50.0	2	250	Model	0.800	0.800

● Warning: The growth rate was negative and was capped.



TFMS - Segment Forecast Report

Forecast Segment ID	Route	BMP	EMP	User Name:	9/21/2021
1477231	SPERUS00022**C	6.180	6.400	Randy.Kill	2:01:48 PM
Script Import Date		Script Version		Model Version	
4/14/2020 5:30:19 PM		2020.001		2021.1900	

Regression

Method Number	PA AADT	BC AADT	AADT
1	262	-409	-147

95% Confidence Min/Max

PA Min	PA Max	BC Min	BC Max	Year
-8740	8226	-2270	383	2050

Method Number	PA Growth %	BC Growth %	PA Drop Count	BC Drop Count	PA AADT	BC AADT	PA Adjustment	PA Adjustment
1	-3.09	-10.12	0	0	155	-295	262	-409
2	-3.07	-10.02	3	3	56	-314	294	-403
3	-3.21	-15.66	0	0	12	-671	135	-743
4	-2.65	-14.21	3	3	560	-594	750	-656
5	-3.50	-22.49	0	0	-334	-1,124	-180	-1,155
6	-5.54	-27.05	4	4	-2,593	-1,401	-2,420	-1,430



TFMS - Segment Forecast Report

Forecast Segment ID	Route	BMP	EMP
1477231	SPERUS00022**C	6.180	6.400

User Name:
Randy.Kill

9/21/2021
2:01:48 PM

Script Import Date	Script Version	Model Version
4/14/2020 5:30:19 PM	2020.001	2021.1900

Adjustment Info

ID	Adjustment Methods Name	Model vs Count AADT	Adjusted AADT	Model vs Count BC	Adjusted BC	PA Growth Rate %	BC Growth Rate %
1	DIF	-476	5,222	-271	292	1.16	1.51
2	RAT	0.89	5,072	0.43	240	1.07	0.65
3	MRAT	1.31	5,108	1.19	248	1.10	0.78
4	RAF		5,165		270	1.13	1.14

Adjust Method AADT	Adjust Method BC	Selected PA Growth Rate %	Selected BC Growth Rate %
Average	Model Ratio	1.200	0.800

Method 1 - 4 Volume

PA Min Volume	PA Max Volume	BC Min Volume	BC Max Volume	Total Min Volume	Total MaxVolume
4832	4930	240	292	5072	5222

Process Flag: Adjusted model to counts with process per ODOT 255 spreadsheet

Comment:

No Comment



TFMS - Segment Forecast Report

Forecast Segment ID	Route	BMP	EMP
1477231	SPERUS00022**C	6.180	6.400

User Name:
Randy.Kill

9/21/2021
2:01:48 PM

Script Import Date	Script Version	Model Version
4/14/2020 5:30:19 PM	2020.001	2021.1900

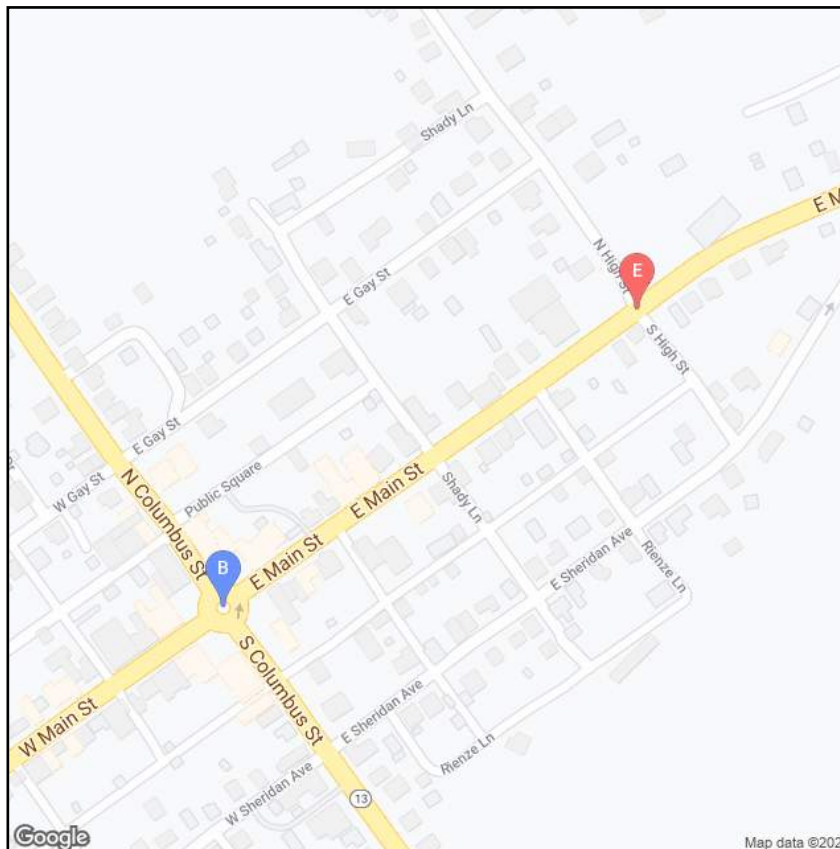
Historical Count

Year	All	Cars	Trucks
2006	5,610	5,100	510
2009	5,340	4,780	560
2013	5,621	5,032	589
2014	3,999	3,580	419
2017	4,234	3,790	444
* 2020	3,858	3,657	201

* Pivot Point



TFMS - Segment Forecast Report



Segment ID	LRS ID	BMP	EMP	Length	Yr 2021 AADT	Yr 2040 AADT	DHV30	K %	D %	T24 %	TD %
1477231	SPERUS00022**C	6.180	6.400	0.220	3,900	3,900	350	9.0	50.0	6	2

US 22 and SR 13 Safety Study
ODOT

Appendix C
ODOT Peak Hour to Design Hour Table

PEAK HOUR to DESIGN HOUR FACTORS
FUNCTIONAL CLASSIFICATION = 01r
(Rural Interstate)

Day Month	Monthly Average by Day-of-Week							
	WEEKDAY MON- THUR	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
January	1.65	1.68	1.75	1.72	1.62	1.52	1.34	1.75
February	1.59	1.58	1.69	1.63	1.57	1.49	1.20	1.66
March	1.48	1.33	1.54	1.54	1.47	1.36	1.13	1.50
April	1.42	1.27	1.50	1.48	1.40	1.31	1.11	1.46
May	1.37	1.27	1.44	1.41	1.37	1.26	1.06	1.35
June	1.32	1.18	1.38	1.37	1.30	1.22	1.05	1.29
July	1.29	1.13	1.36	1.33	1.27	1.21	1.04	1.22
August	1.33	1.15	1.40	1.37	1.32	1.23	1.05	1.24
September	1.41	1.25	1.49	1.45	1.40	1.29	1.05	1.32
October	1.38	1.18	1.47	1.42	1.36	1.26	1.04	1.33
November	1.44	1.35	1.49	1.45	1.45	1.36	1.10	1.46
December	1.47	1.57	1.57	1.53	1.42	1.37	1.19	1.54

peak hour volume * factor = design hour volume

source: year 2016, 2017, & 2018 Automatic Traffic Recorders (ATR) Data

ATR Stations:

2018: 135, 596, 608, 616, 617, 715, 745, 775, 787

2017: 135, 159, 596, 616, 617, 715, 745, 775

2016: 50, 135, 155, 159, 507, 596, 608, 610, 616, 617, 715, 775

Ohio Department of Transportation

Modeling & Forecasting Section

June 2019

NOTE: These are NOT seasonal adjustment factors!!!

See Appendix A1 thru A4 for ATR sample statistics

PEAK HOUR to DESIGN HOUR FACTORS
FUNCTIONAL CLASSIFICATION = 01u
(Urban Interstate)

Day Month	Monthly Average by Day-of-Week							
	WEEKDAY MON- THUR	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
January	1.21	1.89	1.24	1.23	1.19	1.17	1.15	1.72
February	1.18	1.79	1.20	1.18	1.18	1.15	1.10	1.64
March	1.14	1.65	1.17	1.15	1.14	1.12	1.08	1.58
April	1.11	1.59	1.14	1.12	1.09	1.09	1.05	1.55
May	1.09	1.56	1.11	1.10	1.08	1.06	1.04	1.49
June	1.09	1.53	1.11	1.09	1.08	1.07	1.05	1.50
July	1.11	1.53	1.14	1.11	1.10	1.09	1.06	1.49
August	1.10	1.50	1.13	1.11	1.09	1.07	1.04	1.47
September	1.11	1.56	1.15	1.12	1.11	1.08	1.03	1.50
October	1.10	1.53	1.14	1.11	1.10	1.07	1.03	1.50
November	1.12	1.62	1.15	1.11	1.12	1.11	1.05	1.57
December	1.14	1.71	1.16	1.15	1.12	1.11	1.09	1.58

peak hour volume * factor = design hour volume

source: year 2016, 2017, & 2018 Automatic Traffic Recorders (ATR) Data

ATR Stations:

2018: 121, 124, 141, 147, 531, 535, 551, 553, 560, 563, 566,
568, 572, 576, 577, 581, 582, 587, 588, 601, 614, 619, 623, 626,
627, 630, 707, 711, 728, 732, 739, 746, 749, 753, 755, 766, 770,
785, N79, N83, N84, N85, N86, N87, N88, N90, N95, N97, N98,

Ohio Department of Transportation

Modeling & Forecasting Section

June 2019

NOTE: These are NOT seasonal adjustment factors!!!

PEAK HOUR to DESIGN HOUR FACTORS
FUNCTIONAL CLASSIFICATION = 02u
(Urban Freeways / Expressways)

Day Month	Monthly Average by Day-of-Week							
	WEEKDAY MON- THUR	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
January	1.15	2.00	1.18	1.17	1.14	1.13	1.12	1.73
February	1.13	1.89	1.14	1.12	1.13	1.12	1.08	1.64
March	1.11	1.80	1.13	1.11	1.11	1.10	1.10	1.63
April	1.08	1.75	1.11	1.09	1.06	1.07	1.06	1.59
May	1.07	1.69	1.09	1.07	1.07	1.06	1.06	1.56
June	1.08	1.68	1.10	1.08	1.08	1.07	1.07	1.55
July	1.10	1.70	1.13	1.09	1.08	1.09	1.09	1.57
August	1.08	1.67	1.10	1.08	1.07	1.06	1.05	1.54
September	1.07	1.69	1.10	1.07	1.06	1.05	1.03	1.54
October	1.06	1.69	1.09	1.06	1.06	1.04	1.03	1.54
November	1.08	1.76	1.10	1.07	1.07	1.07	1.03	1.60
December	1.09	1.83	1.10	1.10	1.08	1.09	1.08	1.58

peak hour volume * factor = design hour volume

source: year 2016, 2017, & 2018 Automatic Traffic Recorders (ATR) Data

ATR Stations:

2018: 105, 136, 502, 504, 546, 547, 554, 555, 556, 557, 564,
586, 590, 591, 622, 628, 709, 727, 756, 761, N81, N82, N99
2017: 105, 502, 546, 547, 555, 557, 564, 586, 590, 591, 593,
618, 628, 709, 727, 761

Ohio Department of Transportation
Modeling & Forecasting Section
June 2019

NOTE: These are NOT seasonal adjustment factors!!!

PEAK HOUR to DESIGN HOUR FACTORS

FUNCTIONAL CLASSIFICATION = 02, 03r

(Rural Freeways & Rural Principal Arterial)

Day Month	Monthly Average by Day-of-Week							
	WEEKDAY MON- THUR	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
January	1.38	1.71	1.44	1.39	1.37	1.31	1.21	1.67
February	1.34	1.65	1.40	1.35	1.34	1.28	1.14	1.58
March	1.29	1.47	1.34	1.31	1.29	1.22	1.10	1.49
April	1.25	1.42	1.30	1.27	1.24	1.18	1.07	1.45
May	1.23	1.43	1.28	1.25	1.23	1.17	1.06	1.40
June	1.21	1.37	1.26	1.23	1.21	1.15	1.08	1.39
July	1.21	1.37	1.27	1.22	1.20	1.16	1.08	1.37
August	1.20	1.35	1.24	1.22	1.20	1.13	1.03	1.33
September	1.22	1.39	1.27	1.24	1.22	1.15	1.02	1.36
October	1.20	1.36	1.26	1.22	1.20	1.12	1.01	1.38
November	1.24	1.49	1.29	1.25	1.24	1.19	1.04	1.47
December	1.24	1.62	1.29	1.27	1.23	1.19	1.10	1.49

peak hour volume * factor = design hour volume

source: year 2016, 2017, & 2018 Automatic Traffic Recorders (ATR) Data

ATR Stations:

2018: 54, 162, 501, 509, 518, 541, 603, 606, 621, 703, 721, 741,
748, 760, 783
2017: 703, 778, 54, 162, 501, 509, 518, 541, 604, 606, 621, 721,
741, 748, 760, 783

Ohio Department of Transportation
Modeling & Forecasting Section
June 2019

NOTE: These are NOT seasonal adjustment factors!!!

PEAK HOUR to DESIGN HOUR FACTORS
FUNCTIONAL CLASSIFICATION = 03, 04, 05u
 (Urban Principal Arterial, Urban Minor Arterial, & Urban Minor Collector)

Day Month	Monthly Average by Day-of-Week							
	WEEKDAY MON- THUR	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
January	1.20	1.72	1.22	1.21	1.20	1.17	1.15	1.56
February	1.17	1.63	1.19	1.16	1.17	1.16	1.11	1.48
March	1.15	1.57	1.16	1.16	1.16	1.13	1.11	1.45
April	1.11	1.52	1.13	1.12	1.09	1.09	1.06	1.41
May	1.08	1.44	1.10	1.09	1.08	1.06	1.04	1.35
June	1.14	1.51	1.16	1.15	1.14	1.11	1.09	1.39
July	1.16	1.54	1.19	1.17	1.15	1.15	1.13	1.44
August	1.13	1.51	1.15	1.14	1.13	1.11	1.08	1.40
September	1.12	1.53	1.15	1.11	1.12	1.09	1.04	1.40
October	1.10	1.53	1.13	1.10	1.10	1.08	1.05	1.40
November	1.13	1.56	1.16	1.12	1.13	1.11	1.06	1.48
December	1.13	1.58	1.14	1.13	1.12	1.12	1.09	1.44

peak hour volume * factor = design hour volume

source: year 2016, 2017, & 2018 Automatic Traffic Recorders (ATR) Data

ATR Stations:

2018: 21, 28, 123, 131, 134, 166, 169, 517, 523, 543, 544, 550,
565, 605, 765

2017: 21, 123, 523, 538, 543, 544, 550, 565, 605, 725, 765, 28,
134, 169, 517, 131, 166

Ohio Department of Transportation
Modeling & Forecasting Section
June 2019

NOTE: These are NOT seasonal adjustment factors!!!

Note: Insufficient data exists to produce factors for functional classes 06 and 07 Urban.

PEAK HOUR to DESIGN HOUR FACTORS
FUNCTIONAL CLASSIFICATION = 04r
 (Rural Minor Arterial)

Day Month	Monthly Average by Day-of-Week							
	WEEKDAY MON- THUR	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
January	1.32	1.84	1.35	1.34	1.30	1.29	1.23	1.63
February	1.27	1.76	1.31	1.26	1.26	1.25	1.17	1.54
March	1.23	1.65	1.25	1.24	1.23	1.20	1.14	1.49
April	1.18	1.55	1.21	1.20	1.16	1.15	1.07	1.42
May	1.14	1.47	1.17	1.14	1.14	1.12	1.05	1.32
June	1.16	1.43	1.20	1.18	1.15	1.12	1.07	1.29
July	1.17	1.45	1.22	1.18	1.16	1.14	1.09	1.31
August	1.15	1.44	1.19	1.15	1.15	1.12	1.04	1.27
September	1.16	1.48	1.23	1.16	1.15	1.12	1.04	1.35
October	1.17	1.50	1.20	1.17	1.17	1.13	1.05	1.34
November	1.23	1.65	1.28	1.22	1.22	1.21	1.11	1.51
December	1.23	1.70	1.26	1.23	1.22	1.20	1.15	1.52

peak hour volume * factor = design hour volume

source: year 2016, 2017, & 2018 Automatic Traffic Recorders (ATR) Data

ATR Stations:

2018: 26, 69, 163, 165, 515, 607, 710, 738, 771, 780

2017: 26, 53, 69, 163, 165, 515, 607, 710, 738, 771

2016: 26, 53, 69, 163, 165, 607, 710, 771

Ohio Department of Transportation
Modeling & Forecasting Section
June 2019

NOTE: These are NOT seasonal adjustment factors!!!

PEAK HOUR to DESIGN HOUR FACTORS

FUNCTIONAL CLASSIFICATION = 05, 06r
(Rural Major Collector & Rural Minor Collector)

Day Month	Monthly Average by Day-of-Week							
	WEEKDAY MON- THUR	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
January	1.31	2.00	1.35	1.32	1.29	1.28	1.23	1.80
February	1.26	1.91	1.27	1.25	1.27	1.28	1.18	1.67
March	1.24	1.80	1.25	1.24	1.24	1.23	1.17	1.64
April	1.16	1.60	1.20	1.18	1.13	1.14	1.08	1.55
May	1.13	1.56	1.15	1.12	1.12	1.11	1.06	1.46
June	1.18	1.57	1.20	1.20	1.15	1.15	1.13	1.44
July	1.22	1.60	1.25	1.22	1.20	1.22	1.17	1.50
August	1.17	1.53	1.18	1.17	1.16	1.14	1.09	1.40
September	1.13	1.54	1.16	1.13	1.12	1.10	1.04	1.39
October	1.13	1.59	1.17	1.11	1.12	1.11	1.04	1.39
November	1.18	1.77	1.21	1.17	1.17	1.19	1.08	1.59
December	1.22	1.86	1.22	1.22	1.22	1.24	1.16	1.64

peak hour volume * factor = design hour volume

source: year 2016, 2017, & 2018 Automatic Traffic Recorders (ATR) Data

ATR Stations:

2018: 7, 67, 171, 516, 520, 548, 773, 774

2017: 7, 67, 171, 516, 520, 773, 774, 548, 549

2016: 7, 67, 516, 520, 773, 774, 548, 549

Ohio Department of Transportation

Modeling & Forecasting Section

June 2019

NOTE: These are NOT seasonal adjustment factors!!!

Note: Insufficient data exists to produce factors for functional class 07 Rural.

PEAK HOUR to DESIGN HOUR FACTORS

Recreational Traffic*

Day Month	Monthly Average by Day-of-Week							
	WEEKDAY MON- THUR	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
January	1.96	2.38	2.02	1.98	1.92	1.90	1.80	2.18
February	1.89	2.27	1.90	1.90	1.89	1.86	1.71	2.07
March	1.81	2.07	1.82	1.81	1.81	1.79	1.62	1.89
April	1.60	1.72	1.61	1.64	1.59	1.56	1.37	1.56
May	1.40	1.26	1.43	1.42	1.39	1.37	1.15	1.23
June	1.28	1.15	1.29	1.33	1.29	1.22	1.06	1.15
July	1.23	1.06	1.26	1.26	1.23	1.17	1.03	1.05
August	1.32	1.06	1.31	1.37	1.33	1.28	1.07	1.10
September	1.55	1.30	1.58	1.58	1.57	1.48	1.20	1.23
October	1.54	1.39	1.56	1.55	1.58	1.49	1.21	1.30
November	1.72	2.06	1.76	1.72	1.70	1.70	1.50	1.95
December	1.74	2.23	1.77	1.75	1.72	1.72	1.60	2.03

peak hour volume * factor = design hour volume

source: year 2016, 2017, & 2018 Automatic Traffic Recorders (ATR) Data

ATR Stations:

2018: 200, 202, 731, 734

2017: 200, 202, 731, 734

2016: 200, 202, 731, 734

Ohio Department of Transportation

Modeling & Forecasting Section

June 2019

NOTE: These are NOT seasonal adjustment factors!!!

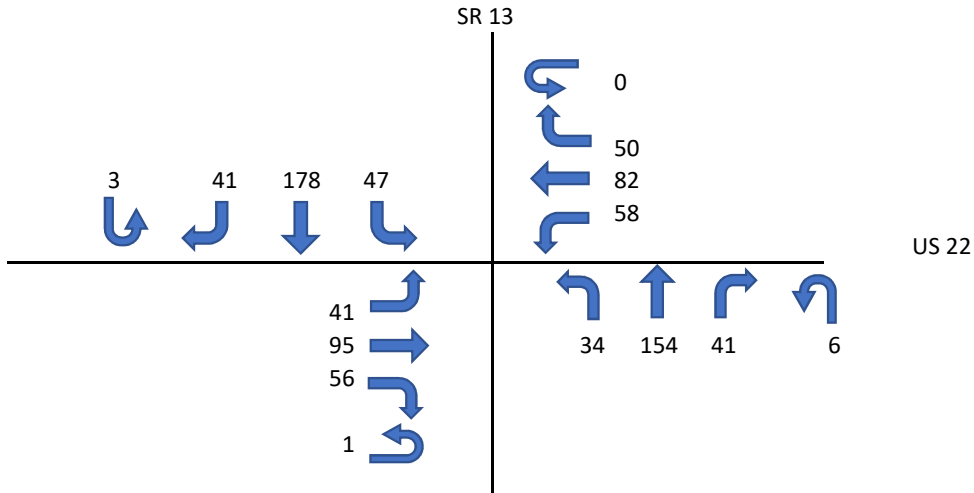
* **Important Note:** These factors are based on permanent count stations located on Route 2 and other routes in the vicinity of Lake Erie. Therefore, they may not be suitable for use on other recreational routes within the state of Ohio. Use at your own risk.

US 22 and SR 13 Safety Study
ODOT

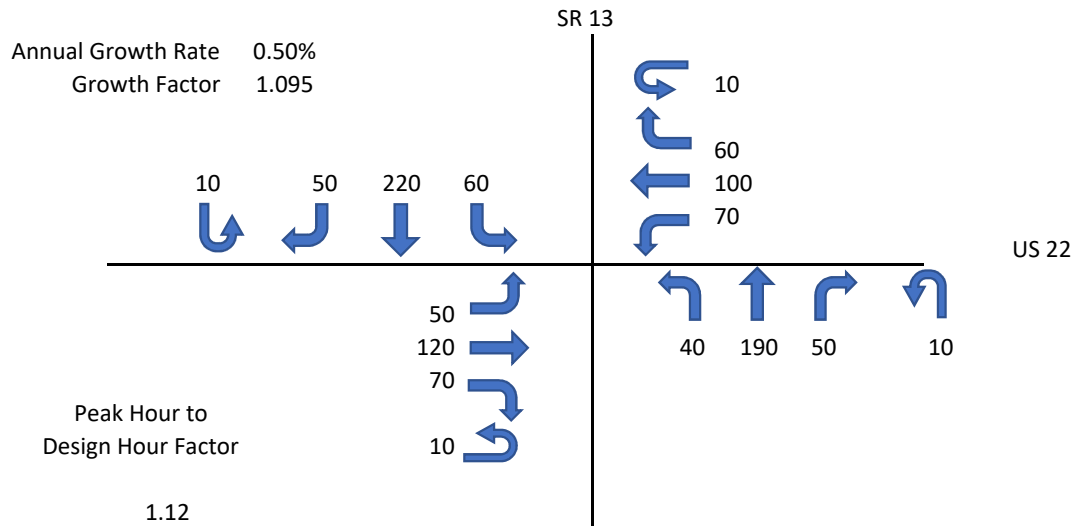
Appendix D
Future Volume Calculations

**Somerset Intersection Study
Traffic Volume Calculations**

Year	Intersection	Period	Scenario
2021	SR 13 and US 22	AM Peak Hour	Existing Count



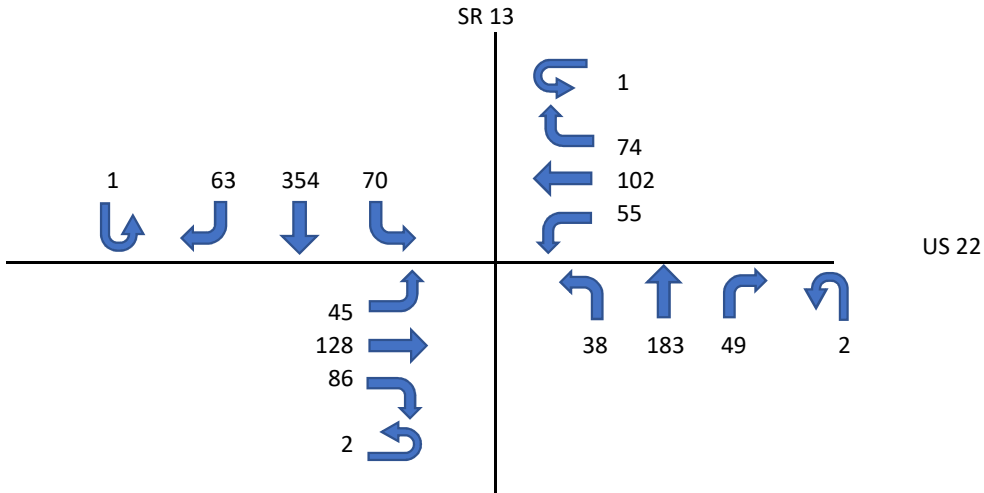
Year	Intersection	Period	Scenario
2040	SR 13 and US 22	AM Peak Hour	No Build



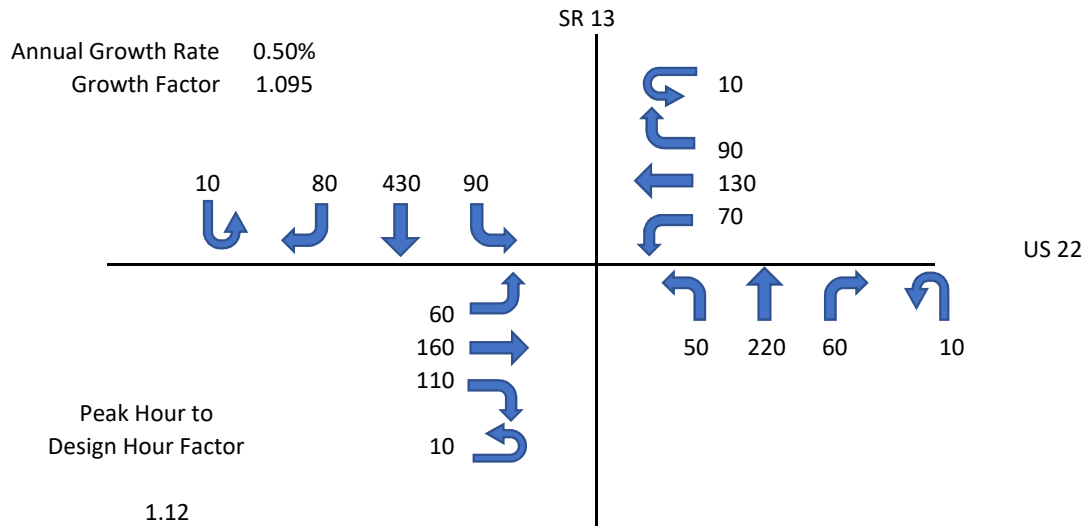
Based On Rural Minor Arterial

**Somerset Intersection Study
Traffic Volume Calculations**

Year	Intersection	Period	Scenario
2021	SR 13 and US 22	PM Peak Hour	Existing Count

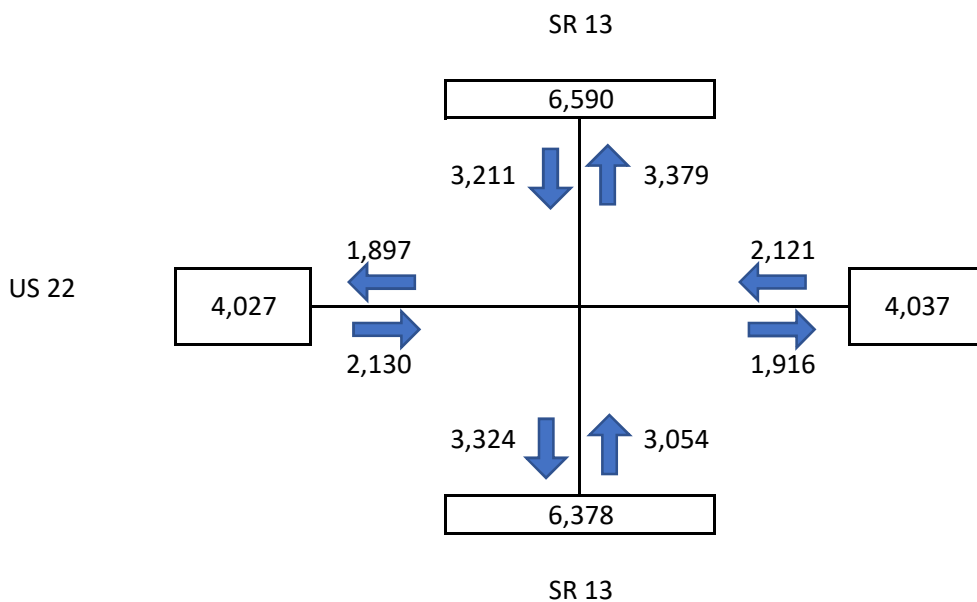


Year	Intersection	Period	Scenario
2040	SR 13 and US 22	PM Peak Hour	No Build

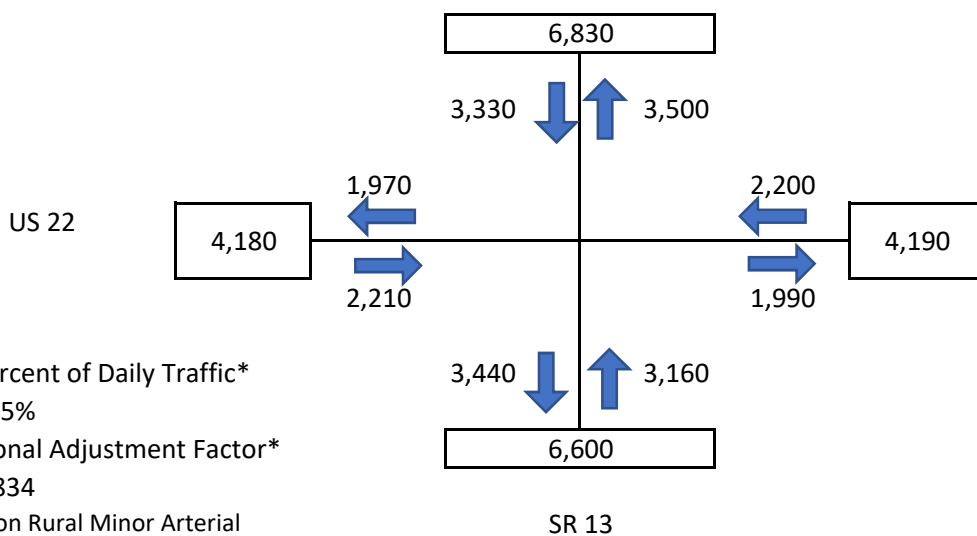


Somerset Intersection Study
24 Hour Traffic Volume Calculations

Year	Intersection	Period	Scenario
2021	SR 13 and SR 22	6AM to 6PM	Existing Count

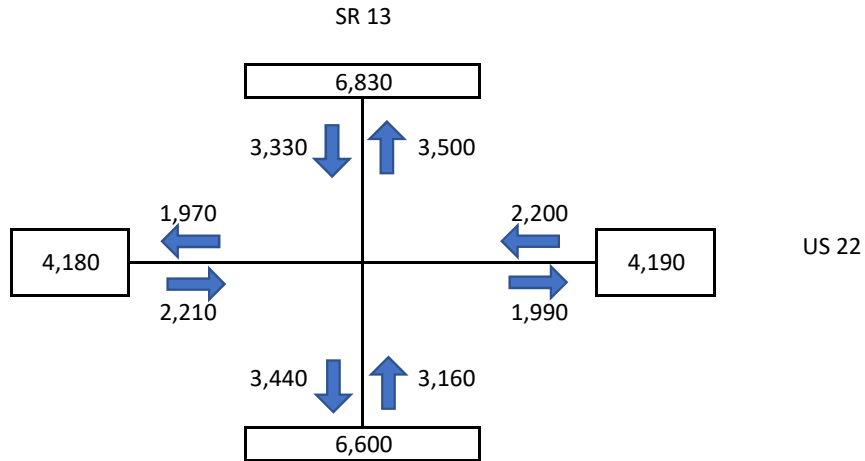


Year	Intersection	Period	Scenario
2020	SR 13 and SR 22	24-Hour	Existing



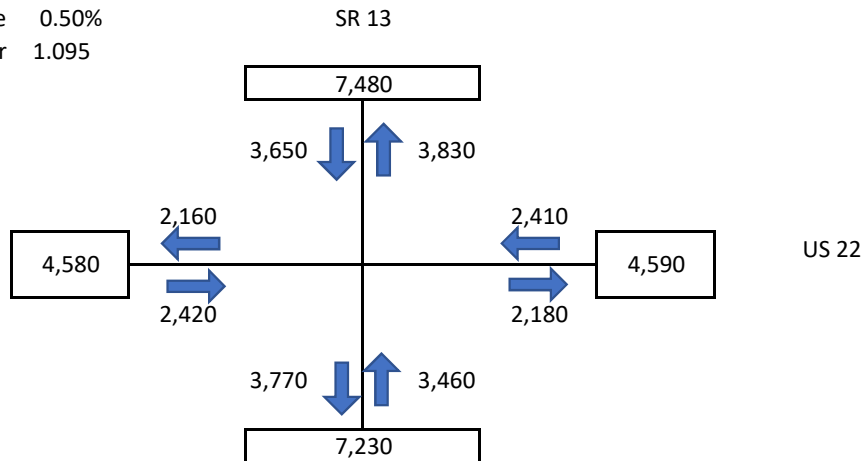
**Somerset Intersection Study
Traffic Volume Calculations**

Year	Intersection	Period	Scenario
2021	SR 13 and US 22	24-Hour	Existing Count



Year	Intersection	Period	Scenario
2040	SR 13 and US 22	24-Hour	No Build

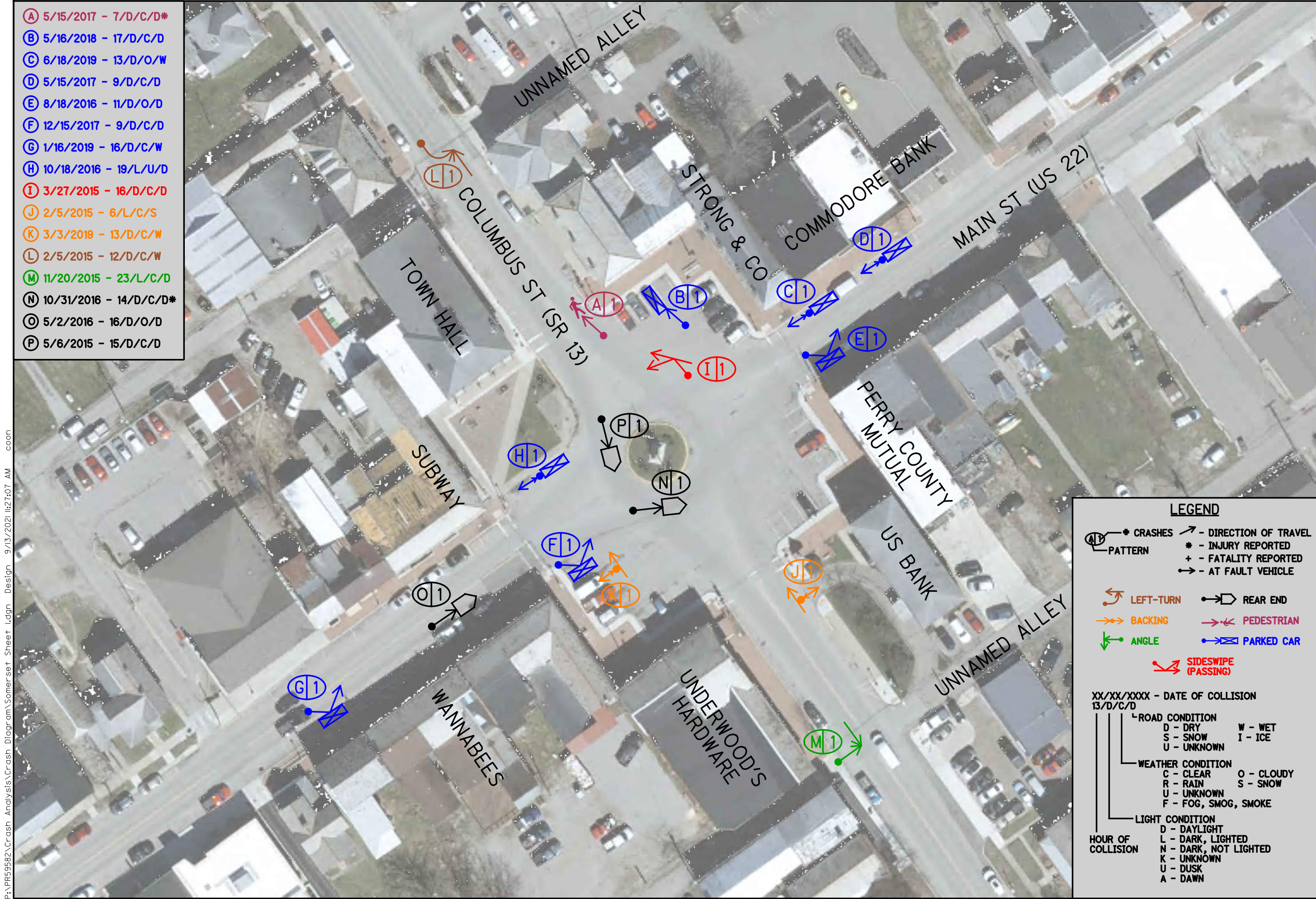
Annual Growth Rate 0.50%
Growth Factor 1.095



US 22 and SR 13 Safety Study
ODOT

Appendix E
Crash Diagram

- (A) 5/15/2017 - 7/D/C/D*
- (B) 5/16/2018 - 17/D/C/D
- (C) 6/18/2019 - 13/D/O/W
- (D) 5/15/2017 - 9/D/C/D
- (E) 8/18/2016 - 11/D/O/D
- (F) 12/15/2017 - 9/D/C/D
- (G) 1/16/2019 - 16/D/C/W
- (H) 10/18/2016 - 19/L/U/D
- (I) 3/27/2015 - 16/D/C/D
- (J) 2/5/2015 - 6/L/C/S
- (K) 3/3/2019 - 13/D/C/W
- (L) 2/5/2015 - 12/D/C/W
- (M) 11/20/2015 - 23/L/C/D
- (N) 10/31/2016 - 14/D/C/D*
- (O) 5/2/2016 - 16/D/O/D
- (P) 5/6/2015 - 15/D/C/D

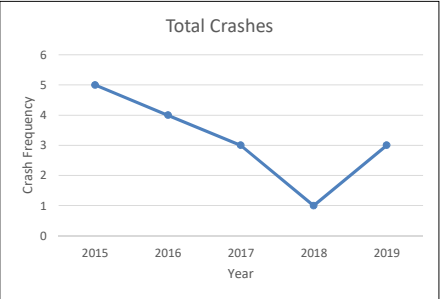
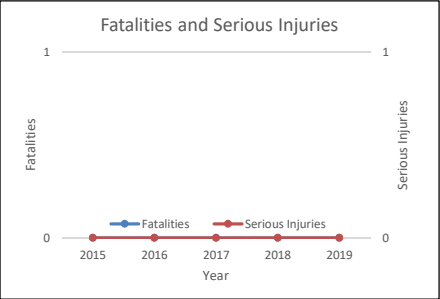


US 22 and SR 13 Safety Study ODOT

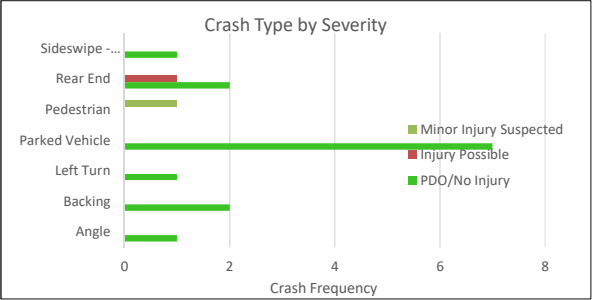
Appendix F CAM Tool

US 22 and SR 13 Crash Analysis
Crash Summary Sheet

Year	Total Crashes	Fatalities	Serious Injuries
2015	5	0	0
2016	4	0	0
2017	3	0	0
2018	1	0	0
2019	3	0	0
Grand Total	16	0	0



Total Crashes	Injury Level			
Crash Type	PDO/No Injury	Injury Possible	Minor Injury Sus	Grand Total
Parked Vehicle	7	0	0	7
Rear End	2	1	0	3
Backing	2	0	0	2
Sideswipe - Passing	1	0	0	1
Left Turn	1	0	0	1
Pedestrian	0	0	1	1
Angle	1	0	0	1
Grand Total	14	1	1	16



US 22 and SR 13 Crash Analysis
Crash Summary Sheet

Road Condition	Total Crashes	Fatalities	Serious Injuries
Dry	11	0	0
Snow	1	0	0
Wet	4	0	0
Grand Total	16	0	0

Weather	Total Crashes	Fatalities	Serious Injuries
Clear	12	0	0
Cloudy	3	0	0
Unknown	1	0	0
Grand Total	16	0	0

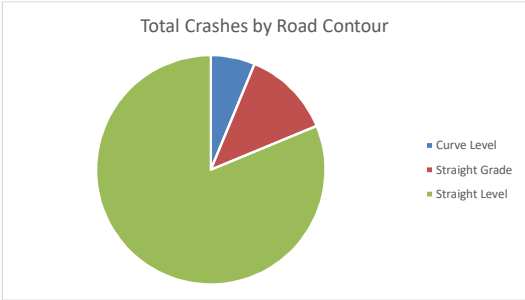
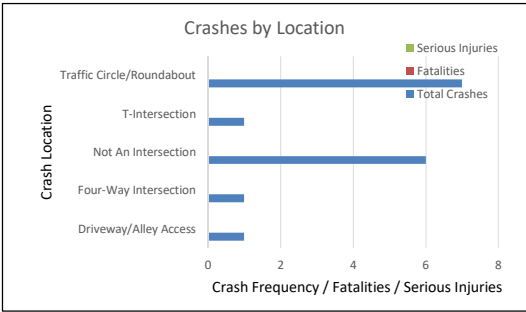
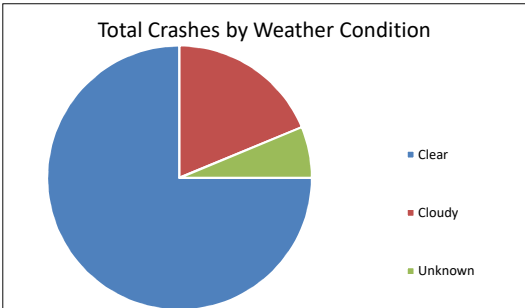
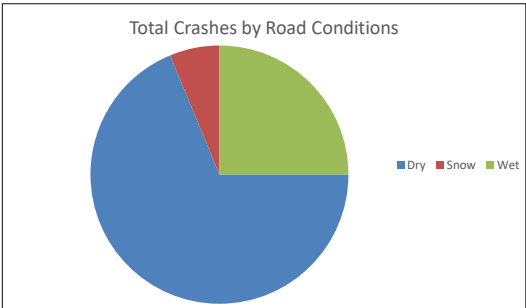
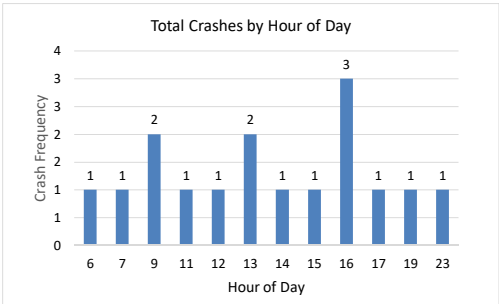
Crash Location	Total Crashes	Fatalities	Serious Injuries
Driveway/Alley Access	1	0	0
Four-Way Intersection	1	0	0
Not An Intersection	6	0	0
T-Intersection	1	0	0
Traffic Circle/Roundabout	7	0	0
Grand Total	16	0	0

Roadway Contour	Total Crashes	Fatalities	Serious Injuries
Curve Level	1	0	0
Straight Grade	2	0	0
Straight Level	13	0	0
Grand Total	16	0	0

Hour of Day	Total Crashes
6	1
7	1
9	2
11	1
12	1
13	2
14	1
15	1
16	3
17	1
19	1
23	1
Grand Total	16

Month	Total Crashes
January	1
February	2
March	2
May	5
June	1
August	1
October	2
November	1
December	1
Grand Total	16

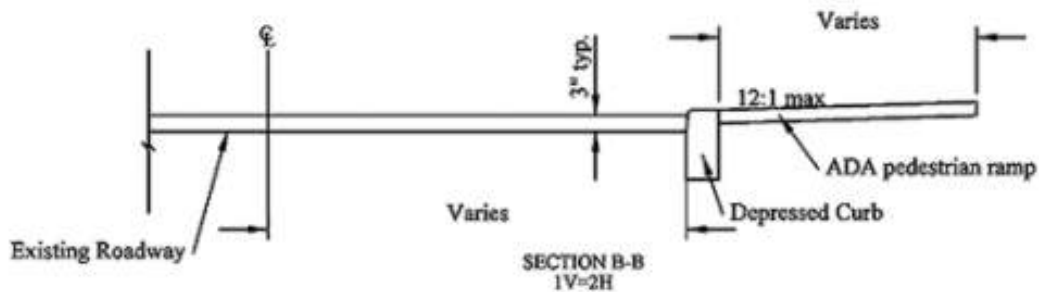
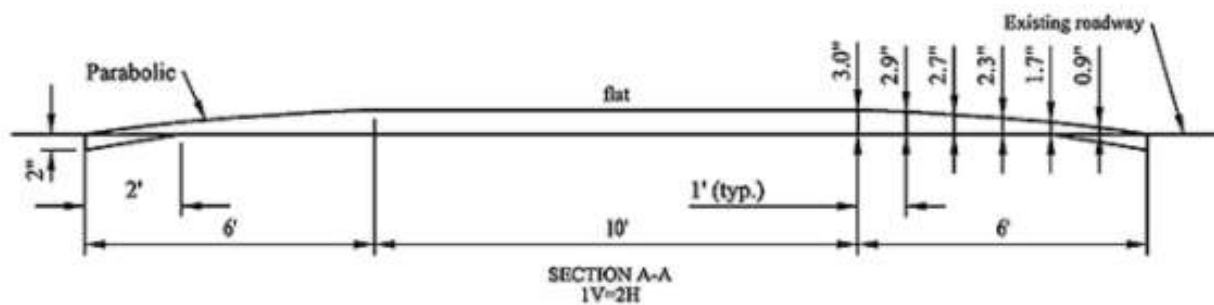
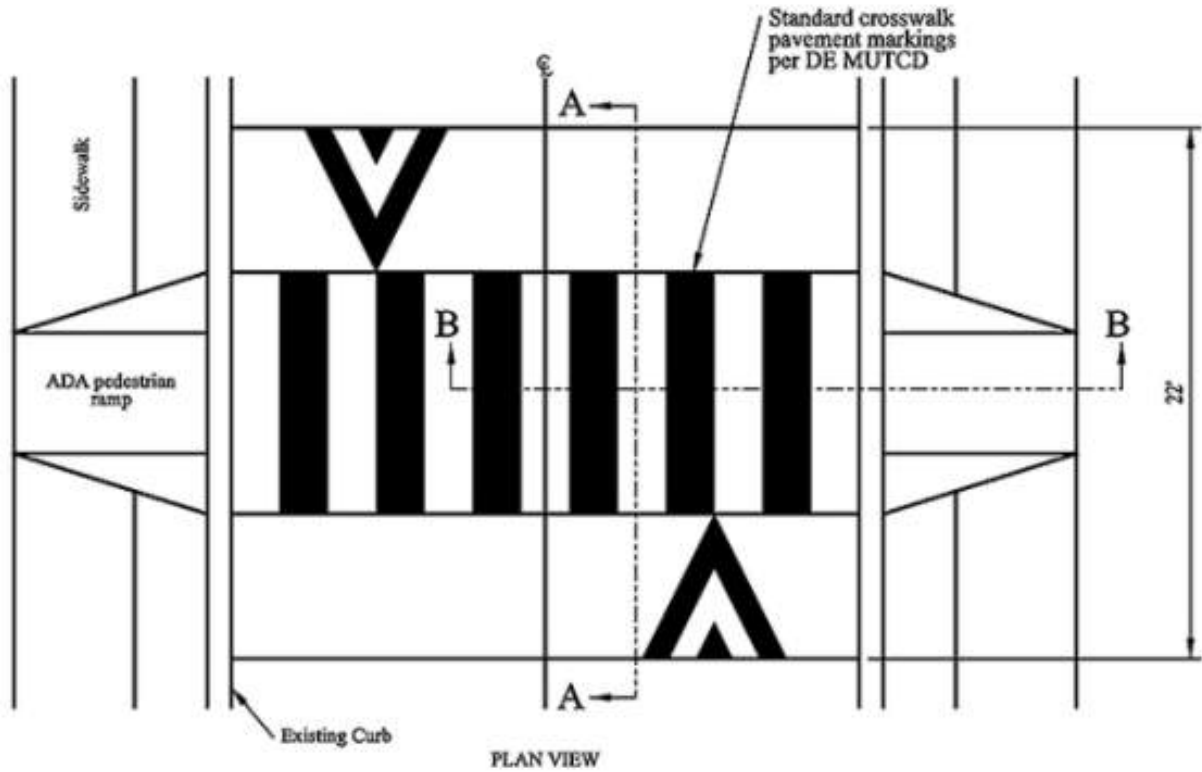
Day in Week	Total Crashes
Sunday	1
Monday	4
Tuesday	2
Wednesday	3
Thursday	3
Friday	3
Grand Total	16



US 22 and SR 13 Safety Study
ODOT

Appendix G
Example Raised Crosswalk Design Details

DELAWARE DEPARTMENT OF TRANSPORTATION
TYPICAL RAISED CROSSWALK



NOTES:

1. INLETS ARE REQUIRED ON THE UPHILL SIDE OF A RAISED CROSSWALK.
2. ALL SIGNING AND STRIPING SHALL CONFORM TO THE LATEST EDITION OF THE DE MUTCD.

US 22 and SR 13 Safety Study
ODOT

Appendix H
Signal Warrant Analysis

STUDY AND ANALYSIS INFORMATION

Municipality:	Village of Somerset	Traffic Volumes Obtained By:	Burgess & Niple
County:	Perry	Analysis Date:	12/10/2021
ODOT Engineering District:	5	Agency/ Company Name Performing Warrant Analysis:	Burgess & Niple

Analysis Information

Data Collection Date: 8/26/2021
Day of the Week: Thursday

Is the intersection in a built-up area of an isolated community of <10,000 population? No

Existing Traffic Signal at intersection: No

Total Number of Approaches at Intersection: 4

Major Street Information

Major Street Name and Route Number: N Columbus St (SR 13)

Major Street Approach Direction: N-Bound
S-Bound

Number of Thru Lanes on Each Major Street Approach: 1 LANE(S)

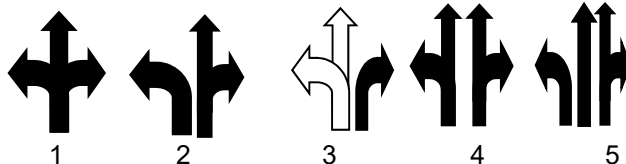
Speed Limit or 85th Percentile Speed on the Major Street*: 35 MPH

*Unknown assumes below 45 mph

Minor Street Information

Minor Street Name and Route Number: Main Street (US 22)

Minor Street Approach Configuration: 1 E-Bound
1 W-Bound



Number of Thru Lanes on Each Minor Street Approach: 1 LANE(S)

Apply Right Turn Lane Reduction*: Yes

*Right Turn Lane Reduction Shall be used for Warrants 1, 2, & 3 for New ODOT Signals. Please refer to TEM 402-3.2 for clarification and criteria under which Right Turn Reduction is not required.

TRAFFIC SIGNAL WARRANT ANALYSIS FINDINGS

	Warrant		Notes and Comments:
	Applicable?	Satisfied?	
Warrant 1, Eight-Hour Vehicular Volume	Yes	No	
Warrant 2, Four-Hour Vehicular Volume	Yes	No	
Warrant 3, Peak Hour	Yes	Yes	Signals installed under Warrant 3 should be traffic actuated. Peak Hour 4:30 PM 5:30 PM
For Warrants 1-3, new ODOT signals must be based off of 100% volume thresholds (TEM 402-3.2)			
Warrant 4, Pedestrian Volume	No		If this warrant is met, and a traffic control signal is justified by an engineering study, the traffic control signal shall be equipped with pedestrian signal heads complying with the provisions set forth in Chapter 4E of the OMUTCD. Peak Hour 4:30 PM 5:30 PM
Warrant 5, School Crossing	No		N/A
Warrant 6, Coordinated Signal System	No		(Shall not be used as the sole warrant in the analysis)
Warrant 7, Crash Experience	No		If this is the sole warrant, signal must be semi-actuated with control devices which provide proper coordination if installed at an intersection within a coordinated system and normally should be fully traffic actuated if installed at an isolated intersection.
Warrant 8, Roadway Network	No		(Shall not be used as the sole warrant in the analysis)
Warrant 9, Intersection Near a Grade Crossing	No		Figure 4C-9
Multi-Way Stop Warrant	No		May be used as an interim measure if traffic signal warrants are satisfied.

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

If no warrants are satisfied, additional options may be considered:

1. An engineering study, performed by a firm prequalified by ODOT for signal design, if approved by the ODOT district, may be used to justify a new signal installation or retention of an existing signal that otherwise does not meet the published warrants. An example of such an instance is a traffic signal in proximity to a railroad crossing that serves to reduce queuing across the tracks.
2. According to TEM 402-2, If the actual turning movement counts fail to satisfy a signal warrant, it may be acceptable to use traffic volumes projected to the second year after project completion. The **Modeling and Forecasting Section** should provide the projected traffic volumes.
3. A pedestrian hybrid beacon may be considered for installation to facilitate pedestrian crossings at a location that does not meet traffic signal warrants (see Chapter 4C of TEM) or at a location that meets traffic signal warrants under Sections 4C.05 and/or 4C.06 but a decision is made to not install a traffic control signal. **Please fill inputs on PHB Score Sheet and submit to ODOT.**

Considerations such as geometrics and lack of sight distance generally have not been accepted in lieu of satisfying signal warrants. These considerations may allow an otherwise unwarranted traffic signal to be retained at **100 percent** local cost. Please review TEM 402-4 for details.

Conclusion: **Do Not Install New Traffic Signal**

Notes:

OMUTCD WARRANT 1, EIGHT-HOUR VEHICULAR VOLUME

Number of Lanes for Moving Traffic on Each Approach	
Major Street:	1 Lane
Minor Street:	1 Lane

Built up Isolated Community with Less Than 10,000 Population or Above 40 MPH on Major Street? **No**

**Only applicable after an adequate trial of other alternatives (See section 4C.02.06 of the 2012 OMUTCD)*

Lanes Major/ Minor	Adjusted Volumes		Condition A				Condition B				Combination A/B*							
											Cond. A		Cond. B		Cond. A		Cond. B	
	Major	Minor	100%		70%		100%		70%		80%		80%		56%		56%	
Maj.			Min.	Maj.	Min.	Maj.	Min.	Maj.	Min.	Maj.	Min.	Maj.	Min.	Maj.	Min.	Maj.	Min.	
1 / 1	X		500	150	350	105	750	75	525	53	400	120	600	60	280	84	420	42
2+ / 1			600	150	420	105	900	75	630	53	480	120	720	60	336	84	504	42
2+ / 2+			600	200	420	140	900	100	630	70	480	160	720	80	336	112	504	56
1 / 2+			500	200	350	140	750	100	525	70	400	160	600	80	280	112	420	56
12:00 AM	0	0																
12:15 AM	0	0																
12:30 AM	0	0																
12:45 AM	0	0																
1:00 AM	0	0																
1:15 AM	0	0																
1:30 AM	0	0																
1:45 AM	0	0																
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4:30 AM	0	0																
4:45 AM	0	0																
5:00 AM	0	0																
5:15 AM	124	37																
5:30 AM	262	75																
5:45 AM	379	116			1	1									1	1		
6:00 AM	514	166	1	1							1	1					1	1
6:15 AM	547	170							1	1								
6:30 AM	545	164																
6:45 AM	544	160			1	1									1	1		
7:00 AM	523	151	1	1							1	1					1	1
7:15 AM	491	136																
7:30 AM	457	134																
7:45 AM	476	145			1	1									1	1		
8:00 AM	503	166	1	1							1	1					1	1
8:15 AM	496	189																
8:30 AM	504	182																
8:45 AM	461	178			1	1									1	1		

ODOT+Traffic+Signal+Warrant+Spreadsheet- SR 13 and US 22

9:00 AM	424	157									1	1					1	1
9:15 AM	386	135																
9:30 AM	367	136																
9:45 AM	367	140			1	1								1	1			
10:00 AM	367	134																
10:15 AM	375	139																
10:30 AM	399	138																
10:45 AM	412	141			1	1					1	1			1	1		
11:00 AM	410	145																
11:15 AM	419	141																
11:30 AM	407	140																
11:45 AM	420	134			1	1					1	1			1	1	1	1
12:00 PM	403	137																
12:15 PM	432	146																
12:30 PM	427	144																
12:45 PM	407	153			1	1					1	1			1	1		
1:00 PM	440	148															1	1
1:15 PM	442	151																
1:30 PM	487	153																
1:45 PM	531	161	1	1	1	1			1	1	1	1			1	1		
2:00 PM	548	179															1	1
2:15 PM	575	197																
2:30 PM	601	212											1	1				
2:45 PM	629	216	1	1	1	1			1	1	1	1			1	1		
3:00 PM	676	233															1	1
3:15 PM	700	231																
3:30 PM	720	240											1	1				
3:45 PM	760	249	1	1	1	1	1	1	1	1	1	1			1	1		
4:00 PM	740	256															1	1
4:15 PM	752	266																
4:30 PM	765	267											1	1				
4:45 PM	728	264	1	1	1	1			1	1	1	1			1	1		
5:00 PM	717	241															1	1
5:15 PM	526	167																
5:30 PM	324	111																
5:45 PM	151	51																
6:00 PM	0	0																
6:15 PM	0	0																
6:30 PM	0	0																
6:45 PM	0	0																
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8:30 PM	0	0																
8:45 PM	0	0																
9:00 PM	0	0																
9:15 PM	0	0																
9:30 PM	0	0																
9:45 PM	0	0																
HOURS MET			7	7	12	12	1	1	5	5	11	11	3	3	12	12	10	10
WARRANT SATISFIED?			NO		N/A		NO		N/A		NO		NO		YES		YES	

Warrant Met: **No**

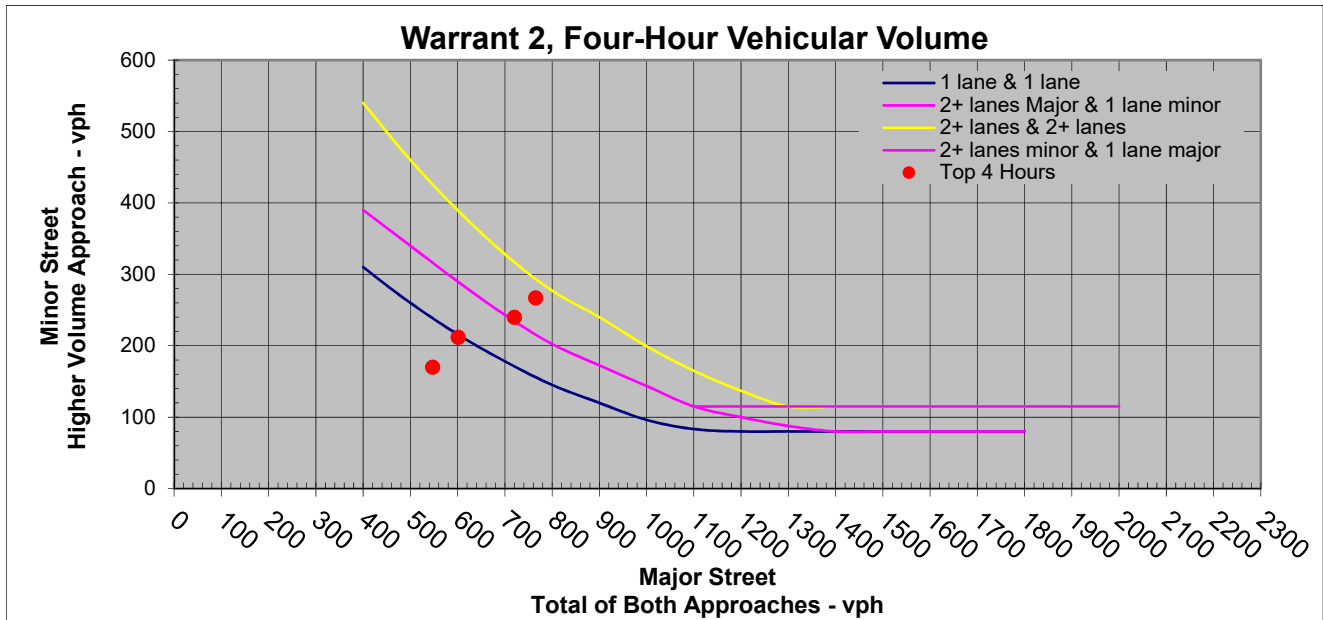
Notes:

OMUTCD WARRANT 2, FOUR-HOUR VEHICULAR VOLUME

Number of Lanes for Moving Traffic on Each Approach	Total Number of Unique Hours Met on Figure 4C-1	1
Major street: 1 Lane	Total Number of Unique Hours Met on Figure 4C-2 (70% Factor)	10
Minor Street: 1 Lane		

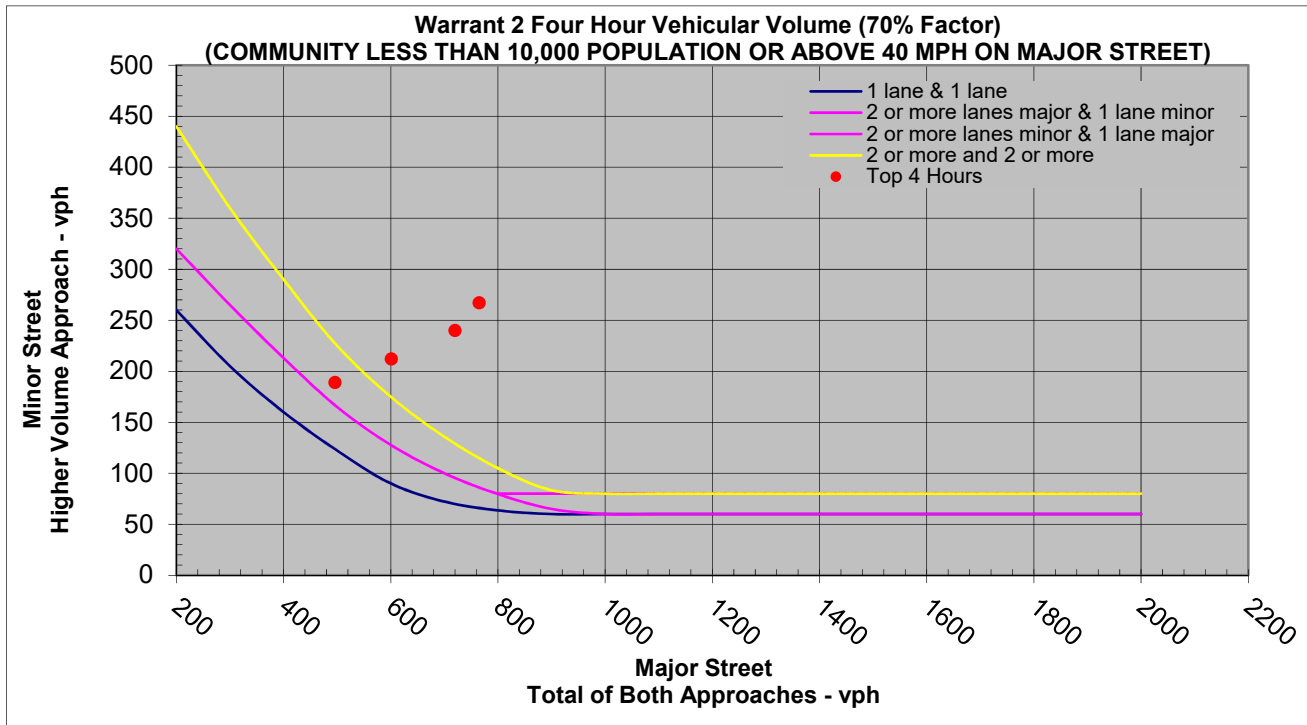
Built up Isolated Community with Less Than 10,000 Population or Above 40 MPH on Major Street?	No
---	----

Hour Interval Beginning At	Raw Traffic Counts				Total Major Approach Volumes	Highest Actual Minor Street Approach Volumes	Hour Met?	Hour Met? (70% Factor)
	Major - N Columbus St (SR 13)		Minor - Main Street (US 22)					
	N-Bound	S-Bound	W-Bound	E-Bound				
6:00 AM	378	136	166	115	514	166		Met
6:15 AM	387	160	170	123	547	170		
6:30 AM	361	184	164	131	545	164		
6:45 AM	338	206	160	138	544	160		
7:00 AM	308	215	133	151	523	151		Met
7:15 AM	260	231	121	136	491	136		
7:30 AM	234	223	124	134	457	134		
7:45 AM	246	230	128	145	476	145		
8:00 AM	263	240	166	163	503	166		Met
8:15 AM	243	253	189	179	496	189		
8:30 AM	235	269	180	182	504	182		
8:45 AM	210	251	178	168	461	178		
9:00 AM	187	237	157	139	424	157		Met
9:15 AM	188	198	135	130	386	135		
9:30 AM	184	183	128	136	367	136		
9:45 AM	184	183	129	140	367	140		
10:00 AM	192	175	134	131	367	134		
10:15 AM	191	184	134	139	375	139		
10:30 AM	211	188	138	124	399	138		
10:45 AM	223	189	141	130	412	141		
11:00 AM	221	189	145	126	410	145		
11:15 AM	219	200	141	113	419	141		
11:30 AM	218	189	140	123	407	140		
11:45 AM	222	198	134	123	420	134		
12:00 PM	213	190	137	135	403	137		
12:15 PM	242	190	137	146	432	146		Met
12:30 PM	233	194	137	144	427	144		
12:45 PM	227	180	153	151	407	153		
1:00 PM	237	203	148	128	440	148		
1:15 PM	230	212	151	137	442	151		Met
1:30 PM	252	235	153	146	487	153		
1:45 PM	266	265	143	161	531	161		
2:00 PM	275	273	151	179	548	179		
2:15 PM	278	297	167	197	575	197		Met
2:30 PM	277	324	162	212	601	212		
2:45 PM	274	355	197	216	629	216		
3:00 PM	290	386	221	233	676	233		
3:15 PM	274	426	221	231	700	231		Met
3:30 PM	260	460	240	231	720	240		
3:45 PM	272	488	218	249	760	249		
4:00 PM	245	495	192	256	740	256		
4:15 PM	245	507	195	266	752	266		Met
4:30 PM	266	499	190	267	765	267	Met	
4:45 PM	254	474	195	264	728	264		
5:00 PM	245	472	198	241	717	241		
5:15 PM	192	334	151	167	526	167		Met
5:30 PM	110	214	104	111	324	111		
5:45 PM	44	107	46	51	151	51		
6:00 PM	0	0	0	0	0	0		
6:15 PM	0	0	0	0	0	0		
6:30 PM	0	0	0	0	0	0		
6:45 PM	0	0	0	0	0	0		
7:00 PM	0	0	0	0	0	0		
7:15 PM	0	0	0	0	0	0		
7:30 PM	0	0	0	0	0	0		
7:45 PM	0	0	0	0	0	0		
8:00 PM	0	0	0	0	0	0		



Top Hours for Figure 4C-1	Start Time	End Time	Major Street	Minor Street
Top Hour	4:30 PM	5:30 PM	765	267
2nd Highest Hour	3:30 PM	4:30 PM	720	240
3rd Highest Hour	2:30 PM	3:30 PM	601	212
4th Highest Hour	6:15 AM	7:15 AM	547	170

Top Hours for Figure 4C-2	Start Time	End Time	Major Street	Minor Street
Top Hour	4:30 PM	5:30 PM	765	267
2nd Highest Hour	3:30 PM	4:30 PM	720	240
3rd Highest Hour	2:30 PM	3:30 PM	601	212
4th Highest Hour	8:15 AM	9:15 AM	496	189



Are the requirements for Warrant 2 met?: No

OMUTCD WARRANT 3, PEAK HOUR			
Number of Lanes for Moving Traffic on Each Approach		Peak Hour Start time	4:30 PM
Major Street:	1 Lane	Peak Hour End Time	5:30 PM
Minor Street:	1 Lane		

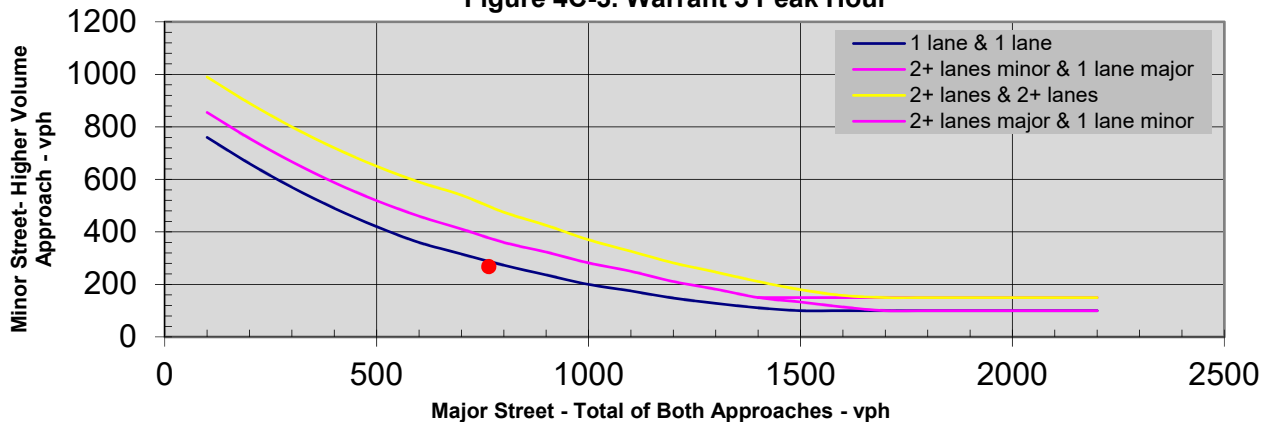
Built up Isolated Community with Less Than 10,000 Population or Above 40 MPH on Major Street?	No
---	----

Is this signal warrant being applied for an unusual case, such as office complexes, manufacturing plants, industrial complexes, or high-occupancy vehicle facilities that attract or discharge large numbers of vehicles over a short time?	No
---	----

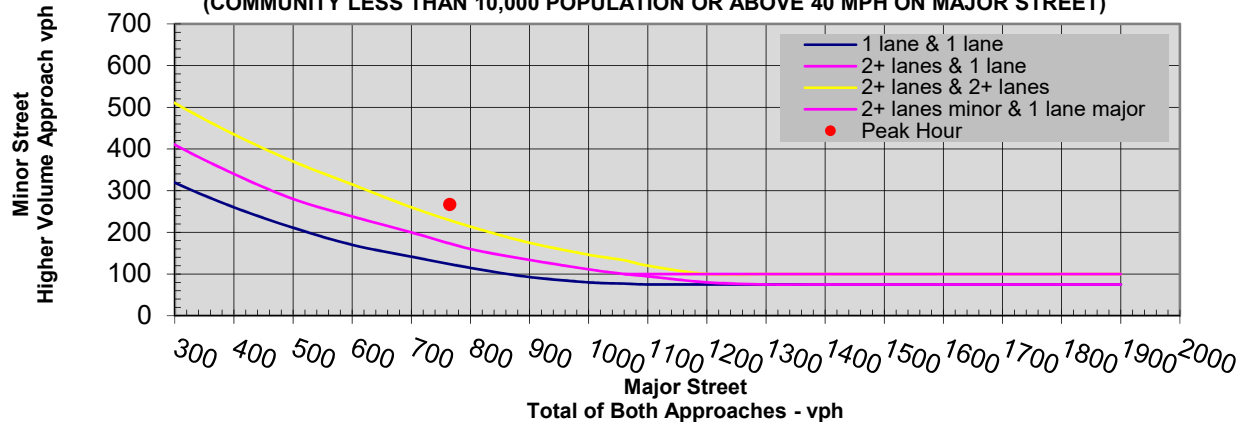
Indicate whether all three of the following conditions for the same 1 hour (any four consecutive 15-minute periods) of an average day are present*	
Does the total stopped time delay experienced by the traffic on one minor-street approach (one direction only) controlled by a STOP sign equal or exceed 4 vehicle-hours for a one-lane approach or 5 vehicle-hours for a two-lane approach?	No
Does the volume on the same minor-street approach (one direction only) equal or exceed 100 vehicles per hour for one moving lane of traffic or 150 vehicles per hour for two moving lanes?	Yes
Does the total entering volume serviced during the hour equal or exceed 650 vehicles per hour for intersection with three approaches or 800 vehicles per hour for intersections with four or more approaches?	Yes
*If applicable, attach all supporting calculations and documentation.	

Are the requirements for Warrant 3 met?: **Yes**

Figure 4C-3. Warrant 3 Peak Hour



Warrant 3 Peak Hour (70% Factor)
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



Hour Vehicular Volume				
Hour Interval Beginning At	Major Street Combined Vehicles Per Hour (VPH)	Highest Minor Street Approach Vehicles Per Hour (VPH)	Sum of Major Street and Highest Minor Street	Sum of Major Street and Combined Minor Street
6:00 AM	514	166	680	795
6:15 AM	547	170	717	840
6:30 AM	545	164	709	840
6:45 AM	544	160	704	842
7:00 AM	523	151	674	807
7:15 AM	491	136	627	748
7:30 AM	457	134	591	715
7:45 AM	476	145	621	749
8:00 AM	503	166	669	832
8:15 AM	496	189	685	864
8:30 AM	504	182	686	866
8:45 AM	461	178	639	807
9:00 AM	424	157	581	720
9:15 AM	386	135	521	651
9:30 AM	367	136	503	631
9:45 AM	367	140	507	636
10:00 AM	367	134	501	632
10:15 AM	375	139	514	648
10:30 AM	399	138	537	661
10:45 AM	412	141	553	683
11:00 AM	410	145	555	681
11:15 AM	419	141	560	673
11:30 AM	407	140	547	670
11:45 AM	420	134	554	677
12:00 PM	403	137	540	675
12:15 PM	432	146	578	715
12:30 PM	427	144	571	708
12:45 PM	407	153	560	711
1:00 PM	440	148	588	716
1:15 PM	442	151	593	730
1:30 PM	487	153	640	786
1:45 PM	531	161	692	835
2:00 PM	548	179	727	878
2:15 PM	575	197	772	939
2:30 PM	601	212	813	975
2:45 PM	629	216	845	1042
3:00 PM	676	233	909	1130
3:15 PM	700	231	931	1152
3:30 PM	720	240	960	1191
3:45 PM	760	249	1009	1227
4:00 PM	740	256	996	1188
4:15 PM	752	266	1018	1213
4:30 PM	765	267	1032	1222
4:45 PM	728	264	992	1187
5:00 PM	717	241	958	1156
5:15 PM	526	167	693	844
5:30 PM	324	111	435	539
5:45 PM	151	51	202	248
6:00 PM	0	0	0	0
6:15 PM	0	0	0	0
6:30 PM	0	0	0	0
6:45 PM	0	0	0	0
7:00 PM	0	0	0	0
7:15 PM	0	0	0	0
7:30 PM	0	0	0	0
7:45 PM	0	0	0	0
8:00 PM	0	0	0	0

Actual Peak Hour Major Traffic Volume	Actual Peak Hour Minor Traffic Volume	Required Peak Hour Minor Traffic Volume for Fig. 4C-3	Required Peak Hour Minor Traffic Volume for Fig. 4C-4
765	267	266.63529	121.24879

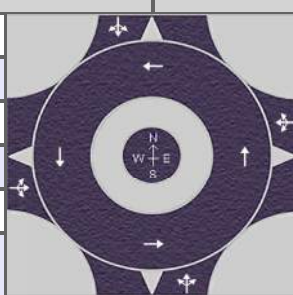
US 22 and SR 13 Safety Study
ODOT

Appendix I
Build Capacity Analysis

HCS7 Roundabouts Report

General Information

Analyst	KHC
Agency or Co.	Burgess & Niple
Date Performed	9/21/2021
Analysis Year	2021
Time Analyzed	AM Peak
Project Description	Existing Volumes



Site Information

Intersection	US 22 & SR 13
E/W Street Name	US 22
N/S Street Name	SR 13
Analysis Time Period (hrs)	0.25
Peak Hour Factor	0.83
Jurisdiction	Village of Somerset

Volume Adjustments and Site Characteristics

Approach	EB				WB				NB				SB			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Number of Lanes (N)	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0
Lane Assignment	LTR				LTR				LTR				LTR			
Volume (V), veh/h	10	40	100	60	10	60	80	50	10	30	150	40	10	50	180	40
Percent Heavy Vehicles, %	10	10	10	10	11	11	11	11	5	5	5	5	8	8	8	8
Flow Rate (V_{PCE}), pc/h	13	53	133	80	13	80	107	67	13	38	190	51	13	65	234	52
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes	1				1				1				1			
Pedestrians Crossing, p/h	0				0				0				0			

Critical and Follow-Up Headway Adjustment

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway (s)		4.9763			4.9763			4.9763			4.9763	
Follow-Up Headway (s)		2.6087			2.6087			2.6087			2.6087	

Flow Computations, Capacity and v/c Ratios

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Entry Flow (v_e), pc/h		279			267			292			364	
Entry Volume, veh/h		254			241			278			337	
Circulating Flow (v_c), pc/h	418			320			290			264		
Exiting Flow (v_{ex}), pc/h	262			210			323			407		
Capacity (C_{PCE}), pc/h		901			996			1027			1054	
Capacity (c), veh/h		819			897			978			976	
v/c Ratio (x)		0.31			0.27			0.28			0.35	

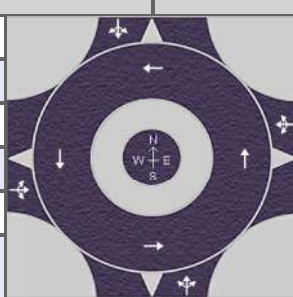
Delay and Level of Service

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh		7.9			6.8			6.6			7.3	
Lane LOS		A			A			A			A	
95% Queue, veh		1.3			1.1			1.2			1.6	
Approach Delay, s/veh	7.9			6.8			6.6			7.3		
Approach LOS	A			A			A			A		
Intersection Delay, s/veh LOS	7.2						A					

HCS7 Roundabouts Report

General Information

Analyst	KHC
Agency or Co.	Burgess & Niple
Date Performed	9/21/2021
Analysis Year	2021
Time Analyzed	PM Peak
Project Description	Existing Volumes



Site Information

Intersection	US 22 & SR 13
E/W Street Name	SR 13
N/S Street Name	US 22
Analysis Time Period (hrs)	0.25
Peak Hour Factor	0.94
Jurisdiction	Village of Somerset

Volume Adjustments and Site Characteristics

Approach	EB				WB				NB				SB			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Number of Lanes (N)	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0
Lane Assignment	LTR				LTR				LTR				LTR			
Volume (V), veh/h	10	50	130	90	10	60	100	70	10	40	180	50	10	70	350	60
Percent Heavy Vehicles, %	4	4	4	4	5	5	5	5	4	4	4	4	5	5	5	5
Flow Rate (V_{PCE}), pc/h	11	55	144	100	11	67	112	78	11	44	199	55	11	78	391	67
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes	1				1				1				1			
Pedestrians Crossing, p/h	0				0				0				0			

Critical and Follow-Up Headway Adjustment

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway (s)		4.9763			4.9763			4.9763			4.9763	
Follow-Up Headway (s)		2.6087			2.6087			2.6087			2.6087	

Flow Computations, Capacity and v/c Ratios

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Entry Flow (v_e), pc/h		310			268			309			547	
Entry Volume, veh/h		298			255			297			521	
Circulating Flow (v_c), pc/h		569			331			310			256	
Exiting Flow (v_{ex}), pc/h		288			234			343			569	
Capacity (C_{PCE}), pc/h		772			985			1006			1063	
Capacity (c), veh/h		743			938			967			1012	
v/c Ratio (x)		0.40			0.27			0.31			0.51	

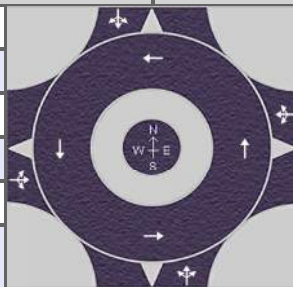
Delay and Level of Service

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh		10.1			6.6			6.9			9.8	
Lane LOS		B			A			A			A	
95% Queue, veh		1.9			1.1			1.3			3.0	
Approach Delay, s/veh		10.1			6.6			6.9			9.8	
Approach LOS		B			A			A			A	
Intersection Delay, s/veh LOS	8.7						A					

HCS7 Roundabouts Report

General Information

Analyst	KHC
Agency or Co.	Burgess & Niple
Date Performed	9/21/2021
Analysis Year	2040
Time Analyzed	AM Peak
Project Description	Build Volumes



Site Information

Intersection	US 22 & SR 13
E/W Street Name	US 22
N/S Street Name	SR 13
Analysis Time Period (hrs)	0.25
Peak Hour Factor	0.83
Jurisdiction	Village of Somerset

Volume Adjustments and Site Characteristics

Approach	EB				WB				NB				SB			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Number of Lanes (N)	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0
Lane Assignment	LTR				LTR				LTR				LTR			
Volume (V), veh/h	10	50	120	70	10	70	100	60	10	40	190	50	10	60	220	50
Percent Heavy Vehicles, %	10	10	10	10	11	11	11	11	5	5	5	5	8	8	8	8
Flow Rate (V_{PCE}), pc/h	13	66	159	93	13	94	134	80	13	51	240	63	13	78	286	65
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes	1				1				1				1			
Pedestrians Crossing, p/h	0				0				0				0			

Critical and Follow-Up Headway Adjustment

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway (s)		4.9763			4.9763			4.9763			4.9763	
Follow-Up Headway (s)		2.6087			2.6087			2.6087			2.6087	

Flow Computations, Capacity and v/c Ratios

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Entry Flow (v_e), pc/h		331			321			367			442	
Entry Volume, veh/h		301			289			350			409	
Circulating Flow (v_c), pc/h	497			396			342			318		
Exiting Flow (v_{ex}), pc/h	313			263			399			486		
Capacity (C_{PCE}), pc/h		831			921			974			998	
Capacity (c), veh/h		756			830			927			924	
v/c Ratio (x)		0.40			0.35			0.38			0.44	

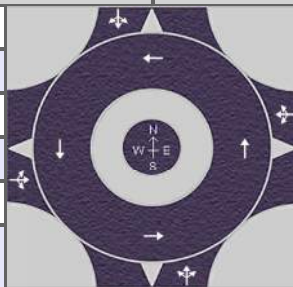
Delay and Level of Service

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh		9.9			8.4			8.1			9.2	
Lane LOS		A			A			A			A	
95% Queue, veh		1.9			1.6			1.8			2.3	
Approach Delay, s/veh	9.9			8.4			8.1			9.2		
Approach LOS	A			A			A			A		
Intersection Delay, s/veh LOS	8.9						A					

HCS7 Roundabouts Report

General Information

Analyst	KHC
Agency or Co.	Burgess & Niple
Date Performed	9/21/2021
Analysis Year	2040
Time Analyzed	PM Peak
Project Description	Build Volumes



Site Information

Intersection	US 22 & SR 13
E/W Street Name	US 22
N/S Street Name	SR 13
Analysis Time Period (hrs)	0.25
Peak Hour Factor	0.94
Jurisdiction	Village of Somerset

Volume Adjustments and Site Characteristics

Approach	EB				WB				NB				SB			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Number of Lanes (N)	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0
Lane Assignment	LTR				LTR				LTR				LTR			
Volume (V), veh/h	10	60	160	110	10	70	130	90	10	50	220	60	10	90	430	80
Percent Heavy Vehicles, %	4	4	4	4	5	5	5	5	4	4	4	4	5	5	5	5
Flow Rate (V_{PCE}), pc/h	11	66	177	122	11	78	145	101	11	55	243	66	11	101	480	89
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes	1				1				1				1			
Pedestrians Crossing, p/h	0				0				0				0			

Critical and Follow-Up Headway Adjustment

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway (s)		4.9763			4.9763			4.9763			4.9763	
Follow-Up Headway (s)		2.6087			2.6087			2.6087			2.6087	

Flow Computations, Capacity and v/c Ratios

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Entry Flow (v_e), pc/h		376			335			375			681	
Entry Volume, veh/h		362			319			361			649	
Circulating Flow (v_c), pc/h	692			397			377			311		
Exiting Flow (v_{ex}), pc/h	355			300			421			691		
Capacity (C_{PCE}), pc/h		681			920			939			1005	
Capacity (c), veh/h		655			877			903			957	
v/c Ratio (x)		0.55			0.36			0.40			0.68	

Delay and Level of Service

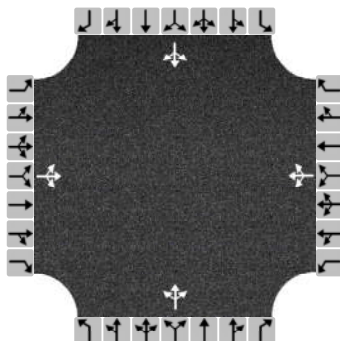
Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh		14.8			8.3			8.6			14.7	
Lane LOS		B			A			A			B	
95% Queue, veh		3.4			1.7			1.9			5.5	
Approach Delay, s/veh	14.8			8.3			8.6			14.7		
Approach LOS	B			A			A			B		
Intersection Delay, s/veh LOS	12.2						B					

HCS7 All-Way Stop Control Report

General Information

Analyst	KHC	Intersection	
Agency/Co.	Burgess & Niple	Jurisdiction	Village of Somerset
Date Performed	10/29/2021	East/West Street	Main St (US 22)
Analysis Year	2041	North/South Street	N Columbus St (SR 13)
Analysis Time Period (hrs)	0.25	Peak Hour Factor	0.83
Time Analyzed	AM Peak		
Project Description	Stop-Controlled Intersection		

Lanes



Vehicle Volume and Adjustments

Approach	Eastbound			Westbound			Northbound			Southbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Volume	50	120	70	70	100	60	40	190	50	60	220	50
% Thrus in Shared Lane												
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration	LTR			LTR			LTR			LTR		
Flow Rate, v (veh/h)	289			277			337			398		
Percent Heavy Vehicles	10			11			5			8		

Departure Headway and Service Time

Initial Departure Headway, hd (s)	3.20			3.20			3.20			3.20		
Initial Degree of Utilization, x	0.257			0.246			0.300			0.353		
Final Departure Headway, hd (s)	7.60			7.69			7.32			7.21		
Final Degree of Utilization, x	0.610			0.592			0.686			0.796		
Move-Up Time, m (s)	2.0			2.0			2.0			2.0		
Service Time, ts (s)	5.60			5.69			5.32			5.21		

Capacity, Delay and Level of Service

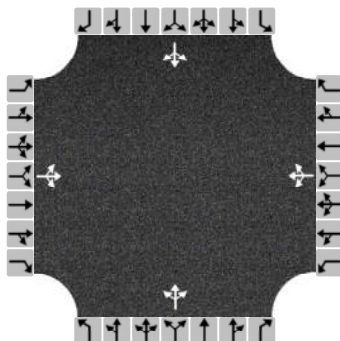
Flow Rate, v (veh/h)	289			277			337			398		
Capacity	474			468			492			499		
95% Queue Length, Q ₉₅ (veh)	4.0			3.8			5.2			7.4		
Control Delay (s/veh)	21.8			21.2			24.8			32.8		
Level of Service, LOS	C			C			C			D		
Approach Delay (s/veh)	21.8			21.2			24.8			32.8		
Approach LOS	C			C			C			D		
Intersection Delay, s/veh LOS	25.8						D					

HCS7 All-Way Stop Control Report

General Information

Analyst	KHC	Intersection	
Agency/Co.	Burgess & Niple	Jurisdiction	Village of Somerset
Date Performed	10/29/2021	East/West Street	Main St (US 22)
Analysis Year	2041	North/South Street	N Columbus St (SR 13)
Analysis Time Period (hrs)	0.25	Peak Hour Factor	0.94
Time Analyzed	PM Peak		
Project Description	Stop-Controlled Intersection		

Lanes



Vehicle Volume and Adjustments

Approach	Eastbound			Westbound			Northbound			Southbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Volume	60	160	110	70	130	90	50	220	60	90	430	80
% Thrus in Shared Lane												
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration	LTR			LTR			LTR			LTR		
Flow Rate, v (veh/h)	351			309			351			638		
Percent Heavy Vehicles	4			5			4			5		

Departure Headway and Service Time

Initial Departure Headway, hd (s)	3.20			3.20			3.20			3.20		
Initial Degree of Utilization, x	0.312			0.274			0.312			0.567		
Final Departure Headway, hd (s)	8.39			8.62			8.44			8.26		
Final Degree of Utilization, x	0.818			0.739			0.823			1.465		
Move-Up Time, m (s)	2.0			2.0			2.0			2.0		
Service Time, ts (s)	6.39			6.62			6.44			6.26		

Capacity, Delay and Level of Service

Flow Rate, v (veh/h)	351			309			351			638		
Capacity	429			418			427			436		
95% Queue Length, Q ₉₅ (veh)	7.6			5.9			7.7			32.6		
Control Delay (s/veh)	39.5			32.3			40.2			243.8		
Level of Service, LOS	E			D			E			F		
Approach Delay (s/veh)	39.5			32.3			40.2			243.8		
Approach LOS	E			D			E			F		
Intersection Delay, s/veh LOS	117.4						F					

US 22 and SR 13 Safety Study
ODOT

Appendix J
Detailed Cost Estimates

Cost Estimate Somerset Roundabout Quick Curb and Striping				
Item Description	Unit Cost	Quantity	Units	Total Cost
Quick Curbing	\$ 30.00	760	FT	\$ 22,800.00
Striping	\$ 6.00	1660	FT	\$ 9,960.00
Signing	\$ 10,000.00	1	LUMP	\$ 10,000.00
Maintenance of Traffic	\$ 20,000.00	1	LUMP	\$ 20,000.00
Construction Subtotal				\$ 62,760.00
Mobilization	\$ 2,000.00	1	LUMP	\$ 2,000.00
Construction Stake Layout	\$ 5,000.00	1	LUMP	\$ 5,000.00
Contingency		30%	PCT	\$ 18,828.00
Construction Total				\$ 88,588.00
Engineering		15%	PCT	\$ 13,288.20
Inflation (Construction FY25)		11%	PCT	\$ 9,833.27
Project Total				\$ 111,709.47

Cost Estimate Somerset Roundabout Single Lane - Maintain Parking				
Item Description	Unit Cost	Quantity	Units	Total Cost
Pavement Removed	\$ 10.00	956	SY	\$ 9,555.56
Walk Removed	\$ 5.00	725	SF	\$ 3,625.00
Concrete Walk	\$ 10.00	4262	SF	\$ 42,620.00
Concrete Median	\$ 70.00	348	SY	\$ 24,383.33
Concrete Truck Apron	\$ 95.00	244	SY	\$ 23,222.22
Pavement Resurfacing - Variable Depth	\$ 15.00	3761	SY	\$ 56,416.67
Surface Course	\$ 180.00	261	CY	\$ 47,013.89
Full Depth Pavement	\$ 100.00	889	SY	\$ 88,888.89
Concrete Curb	\$ 20.00	1400	FT	\$ 28,000.00
Curb Ramps	\$ 8.00	1200	EA	\$ 9,600.00
Drainage	\$ 10,000.00	1	LUMP	\$ 10,000.00
Cistern Backfill	\$ 10,000.00	1	LUMP	\$ 10,000.00
Striping	\$ 10.00	1765	FT	\$ 17,650.00
Signing	\$ 1,000.00	1	LUMP	\$ 1,000.00
Lighting	\$ 35,000.00	1	LUMP	\$ 35,000.00
Maintenance of Traffic	\$ 75,000.00	1	LUMP	\$ 75,000.00
Construction Subtotal				\$ 481,975.56
Mobilization	\$ 20,000.00	1	LUMP	\$ 20,000.00
Construction Stake Layout	\$ 15,000.00	1	LUMP	\$ 15,000.00
Field Office	\$ 5,000.00	1	LUMP	\$ 5,000.00
Contingency		30%	PCT	\$ 144,592.67
Construction Total				\$ 666,568.22
Engineering		15%	PCT	\$ 99,985.23
Inflation (Construction FY25)		11%	PCT	\$ 73,989.07
Project Total				\$ 840,542.53

Cost Estimate Somerset Roundabout Single Lane - Parking Removed				
Item Description	Unit Cost	Quantity	Units	Total Cost
Pavement Removed	\$ 10.00	722	SY	\$ 7,222.22
Curb Removed	\$ 5.00	115	FT	\$ 575.00
Walk Removed	\$ 8.00	1395	SF	\$ 11,160.00
Concrete Walk	\$ 12.00	8195	SF	\$ 98,340.00
Concrete Median	\$ 70.00	306	SY	\$ 21,388.89
Concrete Truck Apron	\$ 95.00	517	SY	\$ 49,083.33
Pavement Resurfacing - Variable Depth	\$ 15.00	3211	SY	\$ 48,166.67
Surface Course	\$ 180.00	223	CY	\$ 40,138.89
Full Depth Pavement	\$ 100.00	667	SY	\$ 66,666.67
Curb Ramps	\$ 8.00	1200	EA	\$ 9,600.00
Concrete Curb	\$ 20.00	1570	FT	\$ 31,400.00
Seeding and Mulching	\$ 1.50	142	SY	\$ 212.50
Drainage	\$ 10,000.00	1	LUMP	\$ 10,000.00
Cistern Backfill	\$ 10,000.00	1	LUMP	\$ 10,000.00
Striping	\$ 10.00	1350	FT	\$ 13,500.00
Signing	\$ 10,000.00	1	LUMP	\$ 10,000.00
Lighting	\$ 35,000.00	1	LUMP	\$ 35,000.00
Maintenance of Traffic	\$ 60,000.00	1	LUMP	\$ 60,000.00
Construction Subtotal				\$ 522,454.17
Mobilization	\$ 20,000.00	1	LUMP	\$ 20,000.00
Construction Stake Layout	\$ 12,000.00	1	LUMP	\$ 12,000.00
Field Office (3 months)	\$ 5,000.00	1	LUMP	\$ 5,000.00
Contingency		30%	PCT	\$ 156,736.25
Construction Total				\$ 716,190.42
Engineering		25%	PCT	\$ 179,047.60
Inflation (Construction FY25)		11%	PCT	\$ 79,497.14
Project Total				\$ 974,735.16

Cost Estimate Somerset Roundabout Raised Crosswalks - Catch Basin Drainage				
Item Description	Unit Cost	Quantity	Units	Total Cost
Raised Crosswalk	\$ 200.00	60	CY	\$ 12,000.00
Brick Crosswalk	\$ 60.00	178	SY	\$ 10,666.67
Drainage (Catch Basins)	\$ 200,000.00	1	LUMP	\$ 200,000.00
Signing	\$ 5,000.00	1	LUMP	\$ 5,000.00
Construction Subtotal				\$ 227,666.67
Contingency		30%	PCT	\$ 68,300.00
Construction Total				\$ 295,966.67
Engineering		15%	PCT	\$ 44,395.00
Inflation (Construction FY25)		11%	PCT	\$ 32,852.30
Project Total				\$ 373,213.97

Cost Estimate Somerset Roundabout Raised Crosswalks - Trench Drainage				
Item Description	Unit Cost	Quantity	Units	Total Cost
Surface Course	\$ 180.00	60	CY	\$ 10,800.00
Brick Crosswalk	\$ 60.00	178	SY	\$ 10,666.67
Drainage (Trench Drain)	\$ 150.00	200	FT	\$ 30,000.00
Signing	\$ 4,000.00	1	LUMP	\$ 4,000.00
Construction Subtotal				\$ 55,466.67
Contingency		30%	PCT	\$ 16,640.00
Construction Total				\$ 72,106.67
Engineering		20%	PCT	\$ 14,421.33
Inflation (Construction FY25)		11%	PCT	\$ 8,003.84
Project Total				\$ 94,531.84

Cost Estimate Somerset Roundabout Curb Bumpouts - Next Block				
Item Description	Unit Cost	Quantity	Units	Total Cost
Pavement Removed	\$ 15.00	256	SY	\$ 3,836.67
Curb Removed	\$ 10.00	424	FT	\$ 4,240.00
Brick Walk Removed	\$ 20.00	1581	SF	\$ 31,620.00
Walk Removed	\$ 12.00	1115	SF	\$ 13,380.00
Brick Walk	\$ 40.00	1950	SF	\$ 78,000.00
Concrete Walk	\$ 12.00	3390	SF	\$ 40,680.00
Surface Course	\$ 200.00	15	CY	\$ 3,000.00
Pavement Resurfacing - Variable Depth	\$ 25.00	360	SY	\$ 9,000.00
Full Depth Pavement	\$ 100.00	111	SY	\$ 11,111.11
Curb Ramps	\$ 1,200.00	8	EA	\$ 9,600.00
Concrete Curb	\$ 20.00	500	FT	\$ 10,000.00
Drainage	\$ 40,000.00	1	LUMP	\$ 40,000.00
Signing and Striping	\$ 10,000.00	1	LUMP	\$ 10,000.00
Maintenance of Traffic	\$ 30,000.00	1	LUMP	\$ 30,000.00
Construction Subtotal				\$ 294,467.78
Mobilization	\$ 10,000.00	1	LUMP	\$ 10,000.00
Construction Stake Layout	\$ 5,000.00	1	LUMP	\$ 5,000.00
Contingency		30%	PCT	\$ 88,340.33
Construction Total				\$ 397,808.11
Engineering		20%	PCT	\$ 79,561.62
Inflation (Construction FY25)		11%	PCT	\$ 44,156.70
Project Total				\$ 521,526.43

Cost Estimate Somerset Roundabout Curb Bumpouts - Square				
Item Description	Unit Cost	Quantity	Units	Total Cost
Pavement Removed	\$ 15.00	159	SY	\$ 2,388.33
Curb Removed	\$ 10.00	350	FT	\$ 3,500.00
Brick Walk Removed	\$ 20.00	1880	SF	\$ 37,600.00
Walk Removed	\$ 12.00	1003	SF	\$ 12,036.00
Brick Walk	\$ 40.00	2485	SF	\$ 99,400.00
Concrete Walk	\$ 12.00	1094	SF	\$ 13,128.00
Surface Course	\$ 200.00	15	CY	\$ 3,000.00
Pavement Resurfacing - Variable Depth	\$ 25.00	360	SY	\$ 9,000.00
Full Depth Pavement	\$ 100.00	78	SY	\$ 7,777.78
Curb Ramps	\$ 1,200.00	9	EA	\$ 10,800.00
Concrete Curb	\$ 20.00	426	FT	\$ 8,520.00
Drainage	\$ 40,000.00	1	LUMP	\$ 40,000.00
Signing and Striping	\$ 10,000.00	1	LUMP	\$ 10,000.00
Maintenance of Traffic	\$ 30,000.00	1	LUMP	\$ 30,000.00
Construction Subtotal				\$ 287,150.11
Mobilization	\$ 10,000.00	1	LUMP	\$ 10,000.00
Construction Stake Layout	\$ 5,000.00	1	LUMP	\$ 5,000.00
Contingency		30%	PCT	\$ 86,145.03
Construction Total				\$ 388,295.14
Engineering		20%	PCT	\$ 77,659.03
Inflation (Construction FY25)		11%	PCT	\$ 43,100.76
Project Total				\$ 509,054.93

Cost Estimate Somerset Roundabout Brick Pavement Rehabilitation				
Item Description	Unit Cost	Quantity	Units	Total Cost
Pavement Planing - Variable Depth	\$ 15.00	6900	SY	\$ 103,505.98
Brick Pavement Removed and Stored	\$ 20.00	6900	SY	\$ 138,007.98
Aggregate Base	\$ 66.00	1150	CY	\$ 75,904.39
Portland Cement Concrete Paver Base Course, 4"	\$ 36.00	6900	SY	\$ 248,414.36
Reinstall Brick Pavers and New Brick Paver Installation	\$ 25.00	62104	SF	\$ 1,552,589.73
Striping	\$ 10,000.00	1	LUMP	\$ 10,000.00
Maintenance of Traffic	\$ 100,000.00	1	LUMP	\$ 100,000.00
Construction Subtotal				\$ 2,228,422.42
Mobilization	\$ 100,000.00	1	LUMP	\$ 100,000.00
Construction Stake Layout	\$ 12,000.00	1	LUMP	\$ 12,000.00
Field Office (3 months)	\$ 5,000.00	1	LUMP	\$ 5,000.00
Contingency		30%	PCT	\$ 668,526.73
Construction Total				\$ 3,013,949.15
Engineering		15%	PCT	\$ 452,092.37
Inflation (Construction FY25)		11%	PCT	\$ 334,548.36
Project Total				\$ 3,800,589.88

US 22 and SR 13 Safety Study
ODOT

Appendix K
Village Council Meeting Presentation

US 22 and SR 13 Safety Study

Village of Somerset
Somerset Village Council Meeting

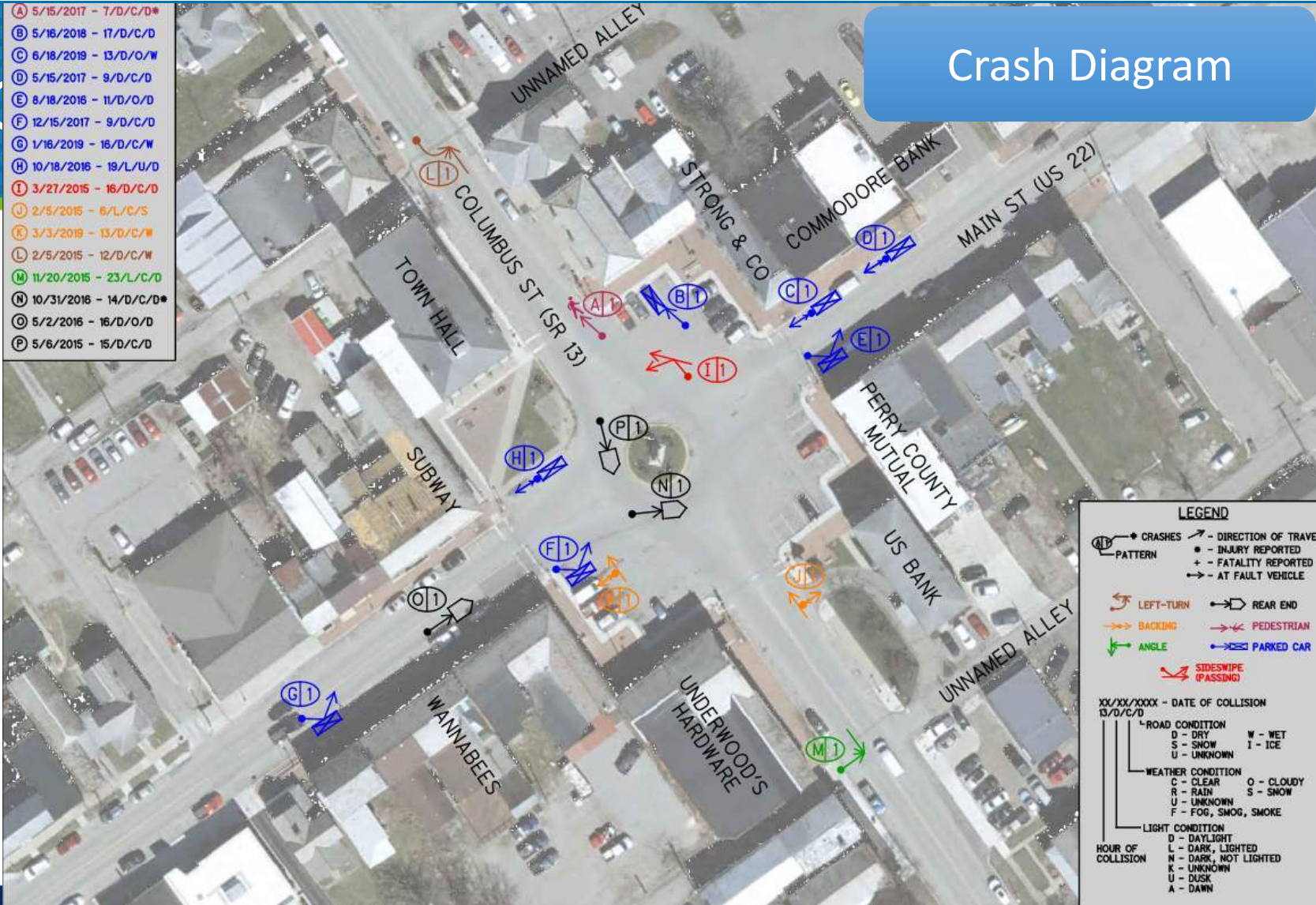
November 9, 2021

Study Area



Crash Diagram

- (A) 5/15/2017 - 7/D/C/D*
- (B) 5/16/2018 - 17/D/C/D
- (C) 6/18/2019 - 13/D/O/W
- (D) 5/15/2017 - 9/D/C/D
- (E) 8/18/2016 - 11/D/O/D
- (F) 12/15/2017 - 9/D/C/D
- (G) 1/18/2019 - 16/D/C/W
- (H) 10/18/2016 - 19/L/U/D
- (I) 3/27/2015 - 16/D/C/D
- (J) 2/5/2015 - 6/L/C/S
- (K) 3/3/2019 - 13/D/C/W
- (L) 2/5/2015 - 12/D/C/W
- (M) 11/20/2015 - 23/L/C/D
- (N) 10/31/2016 - 14/D/C/D*
- (O) 5/2/2016 - 16/D/O/D
- (P) 5/6/2015 - 15/D/C/D

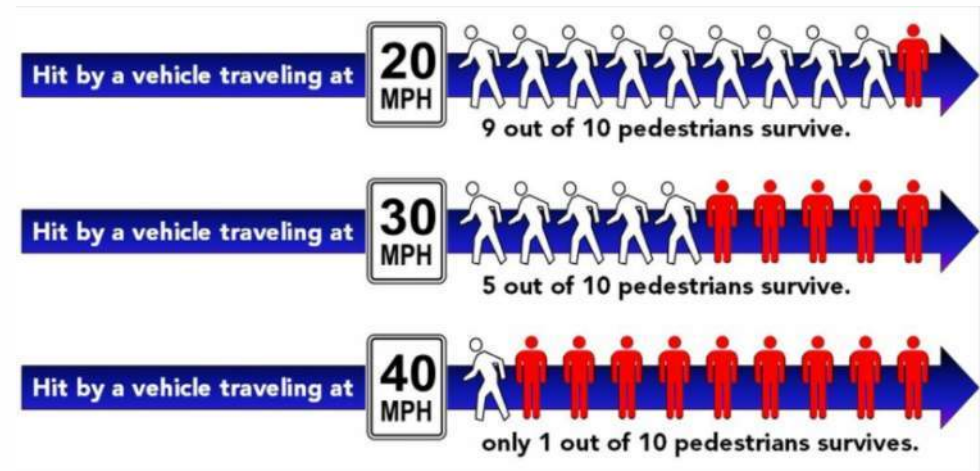


Field Observations



What's the Problem?

- Confusion in traffic control
 - Resulting in longer delays and occasional gridlock
 - Near misses
- Vehicles not slowing down before the intersection
 - Issues with pedestrian safety



What's the Problem?



What's the Problem?



What's the Problem?

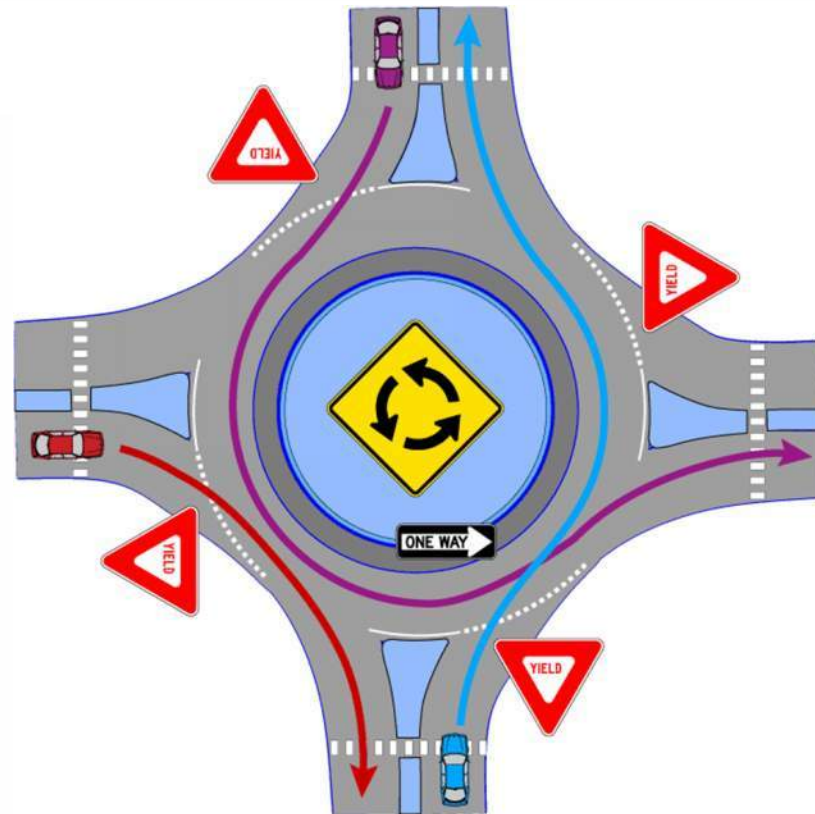


What's the Problem?



One-Lane Roundabout Analysis

- Works operationally now and into the future



Short Term

- Change roundabout traffic operation
 - Vehicles yield upon entry to the roundabout



Pedestrian Improvements

- Improved pedestrian signage
- Raised Crosswalks

\$70,000 – \$300,000



A raised crosswalk can reduce vehicle speeds and enhance the pedestrian crossing environment.

Raised crosswalks can reduce pedestrian crashes by

45%



FEATURES:

- Elevated crossing makes the pedestrian more prominent in the driver's field of vision, and allows pedestrians to cross at grade with the sidewalk
- Approach ramps may reduce vehicle speeds and improve motorist yielding

Curb Bumpouts at Alleyways



\$400,000 – \$500,000

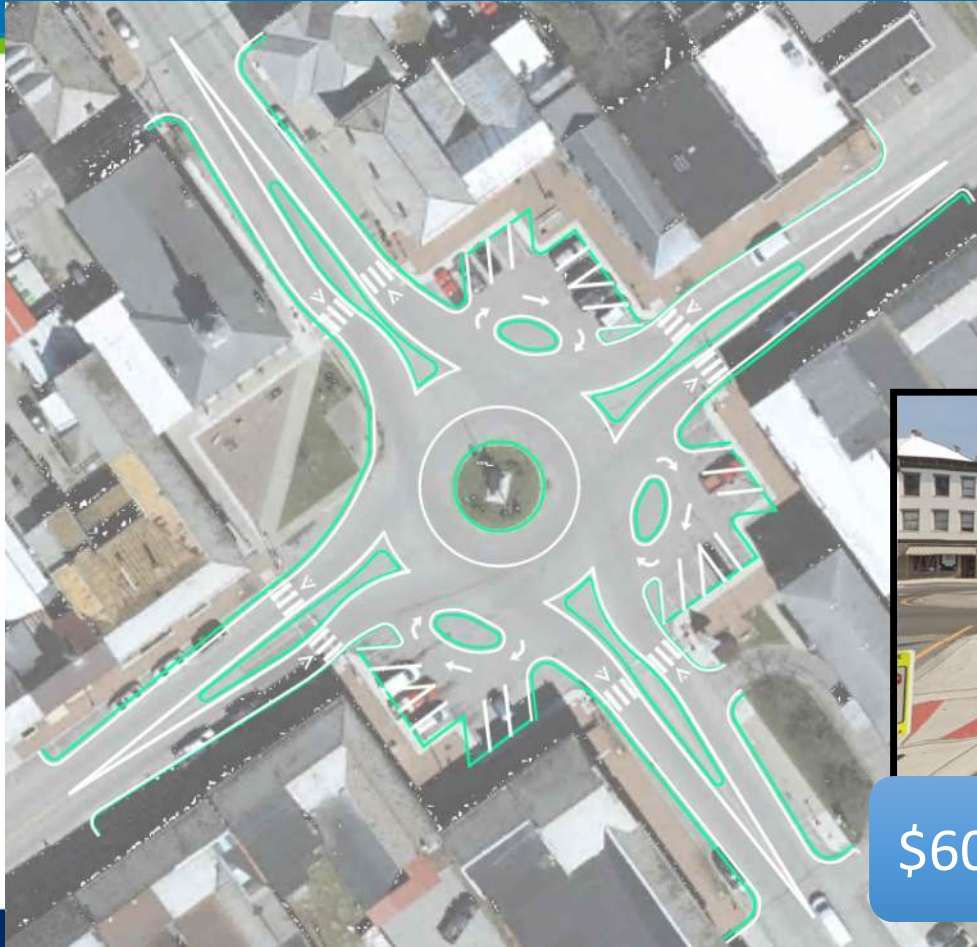


Roundabout with Pavement Markings



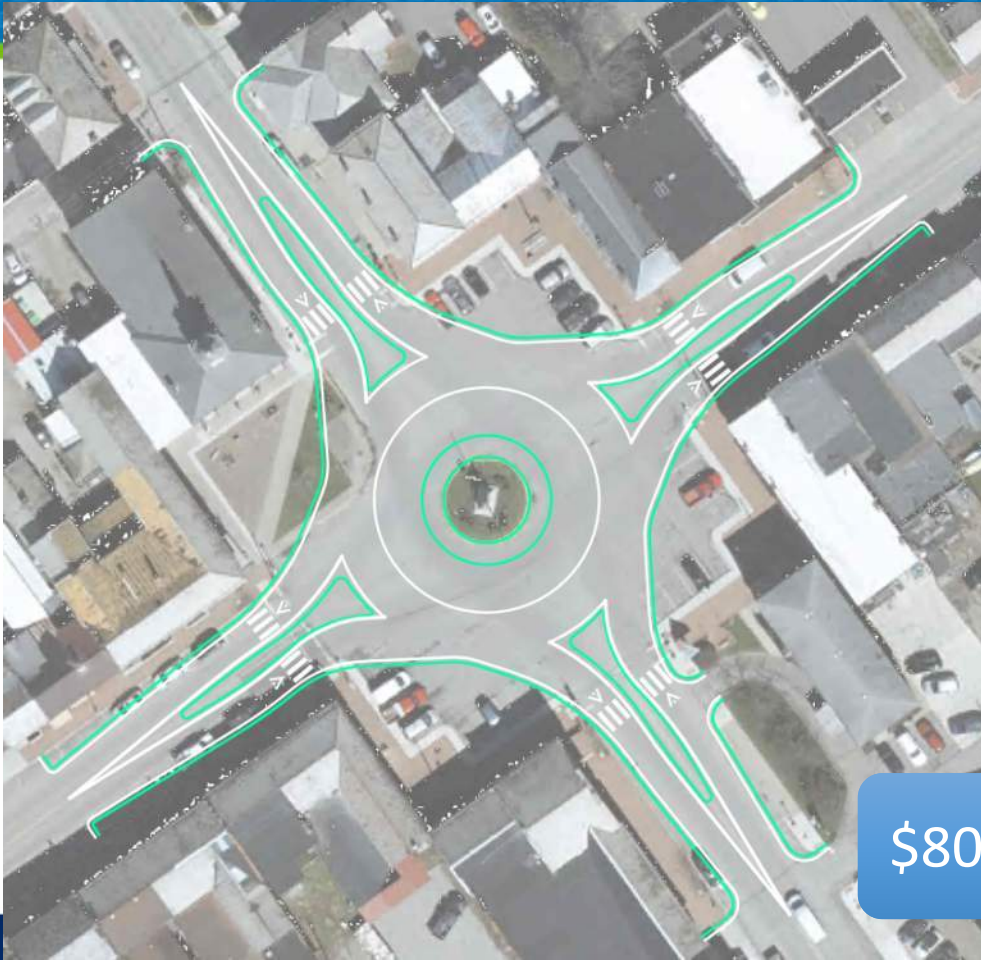
\$90,000 - \$100,000

Roundabout with Parking



\$600,000 - \$700,000

Roundabout with Enhanced Public Spaces



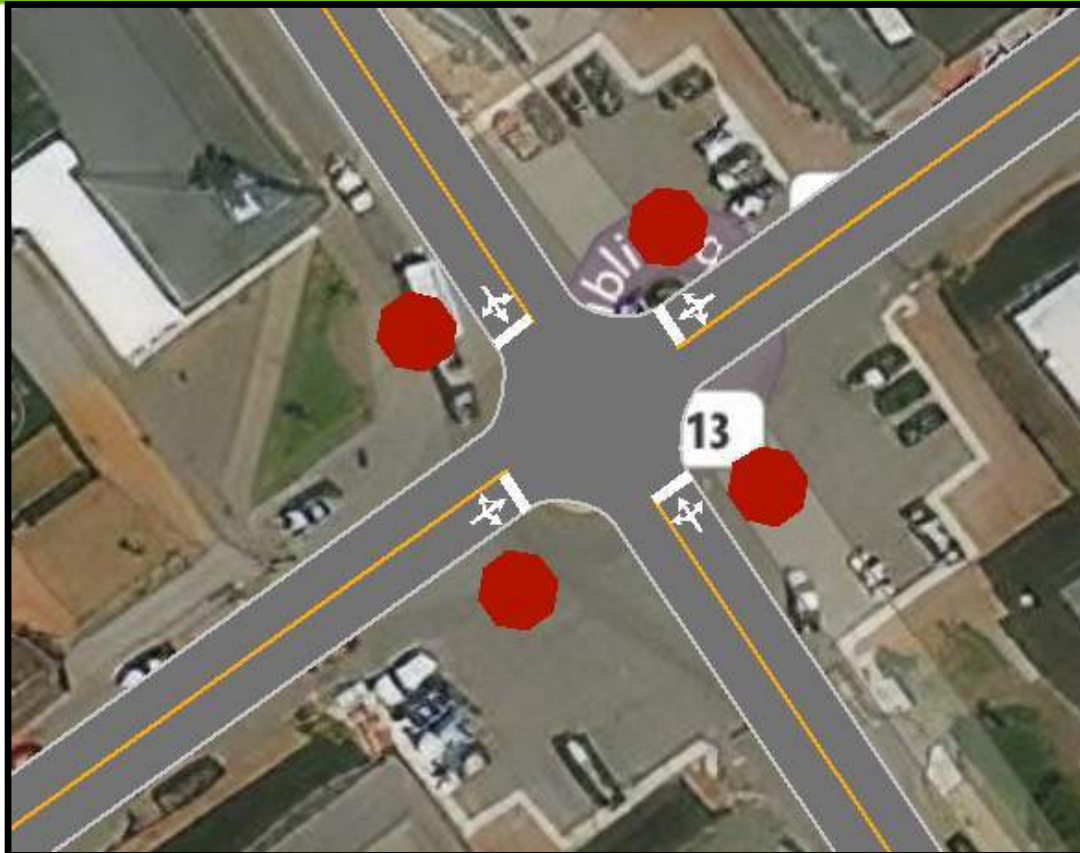
\$800,000 – \$1,000,000

Roundabout with Enhanced Public Spaces



Four-Way Stop

Signalized



Questions?