

SIGNAL WARRANT DATA SHEET

Pik 32 & Schuster Rd.

Study By: R. Chaffin

Date: 11/12/04

Date of Counts: 10/26/04

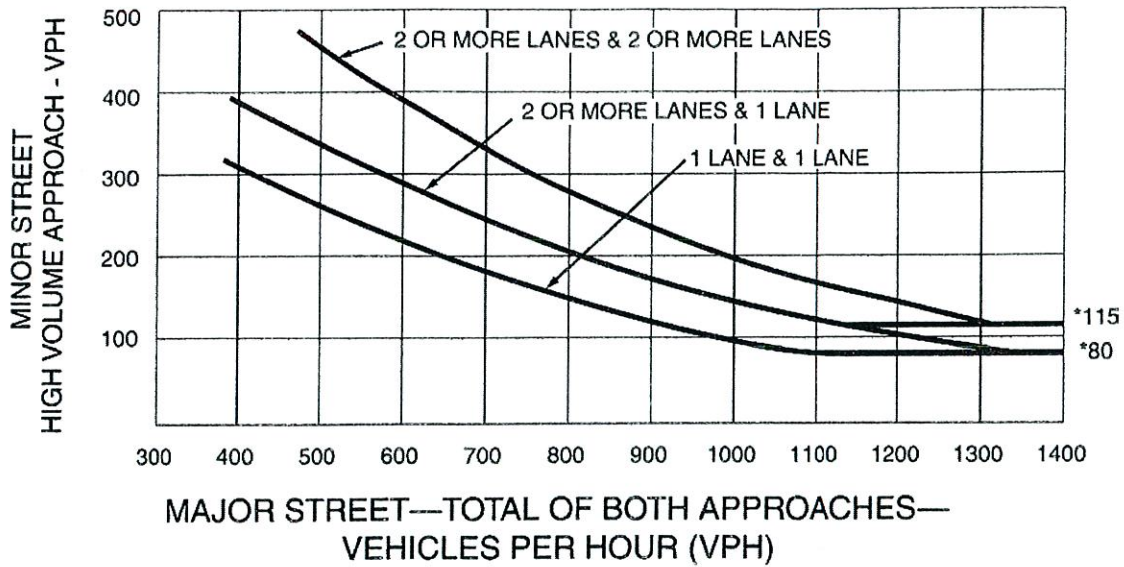
Condition A - Minimum Vehicular Volume		Comments:	
Vehicles per hour on MAJOR street (total of both approaches)	Vehicles per hour on higher-volume MINOR-street approach (one direction only)	For this analysis, the number of lanes used for moving traffic on each approach for the Major street was 2 or more. The number of lanes used for moving traffic on each approach for the Minor street was 1. The volume requirements were reduced 70% since the speed limit on the Major street exceeds 40 mph OR this location is within an isolated community with a population of less than 10,000.	
70% 420	70% 105		
Condition B - Interruption of Continuous Traffic	Condition B	This warrant sheet reflects the traffic volumes with a 3% growth factor and the additional traffic that will be added on the north leg of Schuster Rd if State Route 220 is routed to this intersection. <i>The peak hour warrant is met without the 3% growth factor.</i>	
Vehicles per hour on MAJOR street (total of both approaches)	Vehicles per hour on higher-volume MINOR-street approach (one direction only)		
70% 630	70% 53		

HOUR	MAJOR STREET		MINOR APPROACH		MINOR APPROACH		Condition A	Condition B	Condition A Crash Experience	Condition B Crash Experience	
	S.R. 32 Volume	Schuster, north Volume	Schuster, south Volume	Schuster, south Volume	Condition A	Condition B					
6-7 AM	511	91	32	32	NO	NO	NO	NO	YES	YES	
7-8 AM	660	213	51	51	YES	YES	YES	YES	YES	YES	
8-9 AM	431	95	25	25	NO	NO	NO	NO	YES	NO	
9-10 AM	363	76	27	27	NO	NO	NO	NO	NO	NO	
10-11 AM	367	102	23	23	NO	NO	NO	NO	YES	NO	
11-12 AM	371	92	17	17	NO	NO	NO	NO	YES	NO	
12-1 PM	363	112	17	17	NO	NO	NO	NO	YES	NO	
1-2 PM	430	122	25	25	YES	YES	YES	YES	YES	YES	
2-3 PM	508	226	33	33	YES	YES	YES	YES	YES	YES	
3-4 PM	518	280	29	29	YES	YES	YES	YES	YES	YES	
4-5 PM	583	378	29	29	YES	YES	YES	YES	YES	YES	
5-6 PM	510	320	22	22	YES	YES	YES	YES	YES	YES	
Hours that met warrant:											
					6	1					
					NO	NO	YES*				
					Combination Warrant:						NO

*This indicates that the volumes meet the requirements set for the Crash Experience Warrant. It does not indicate that the warrant is met. Please see OMUTCD Section 4C.08 for other necessary criteria.

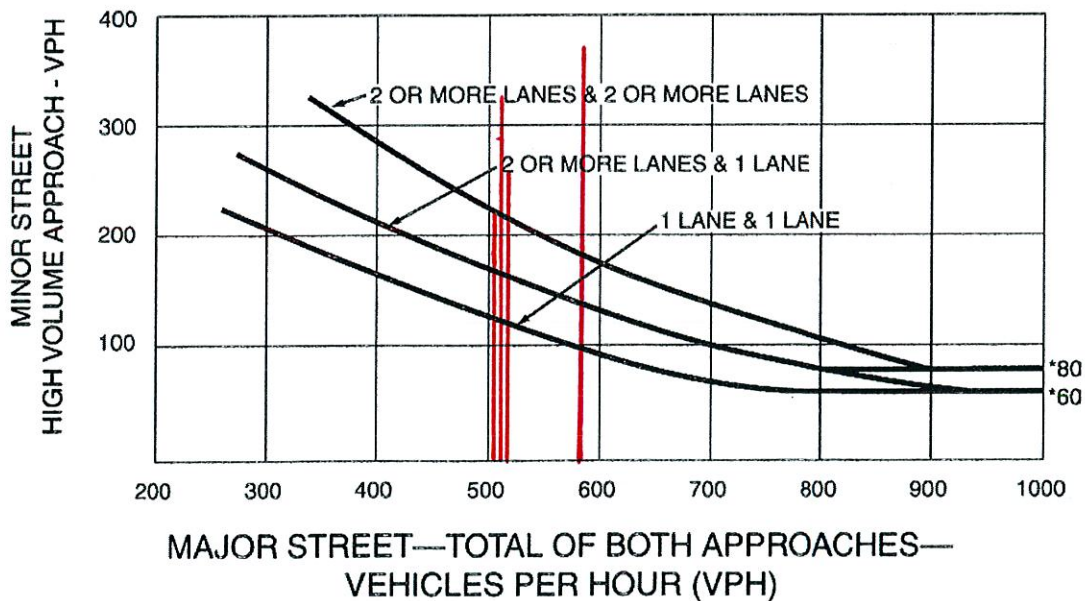
This intersection meets the Peak Hour Warrant and the Four Hour Warrant (See Attached graphs)

Figure 4C-1. Warrant 2, Four-Hour Vehicular Volume



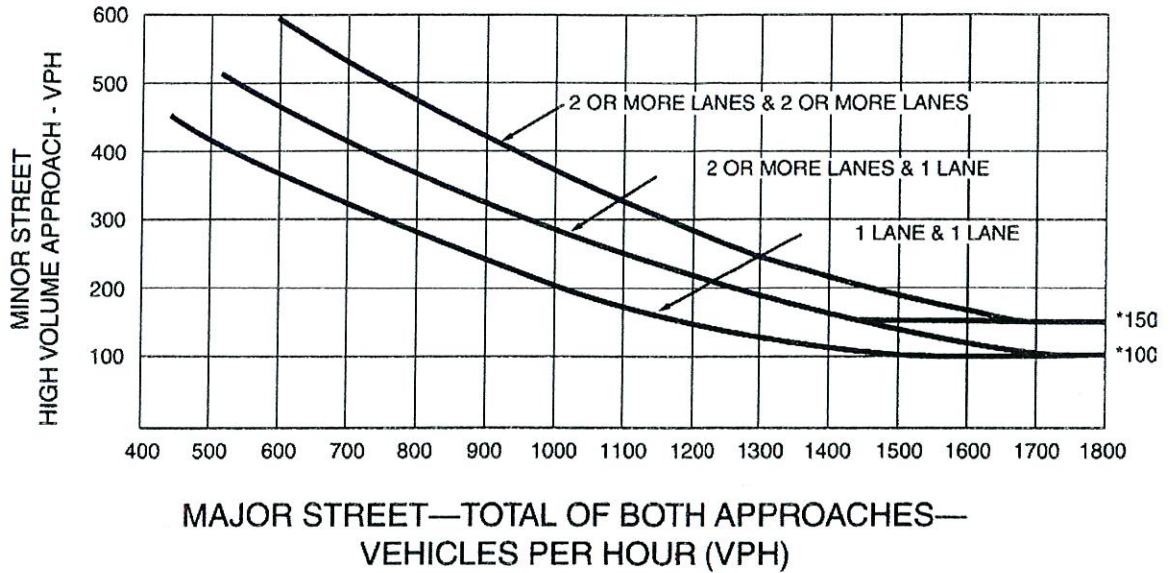
*Note: 115 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 80 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-2. Warrant 2, Four-Hour Vehicular Volume (70% Factor)
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 70 km/h (40 mph) ON MAJOR STREET)



*Note: 80 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 60 vph applies as the lower threshold volume for a minor-street approach with one lane.

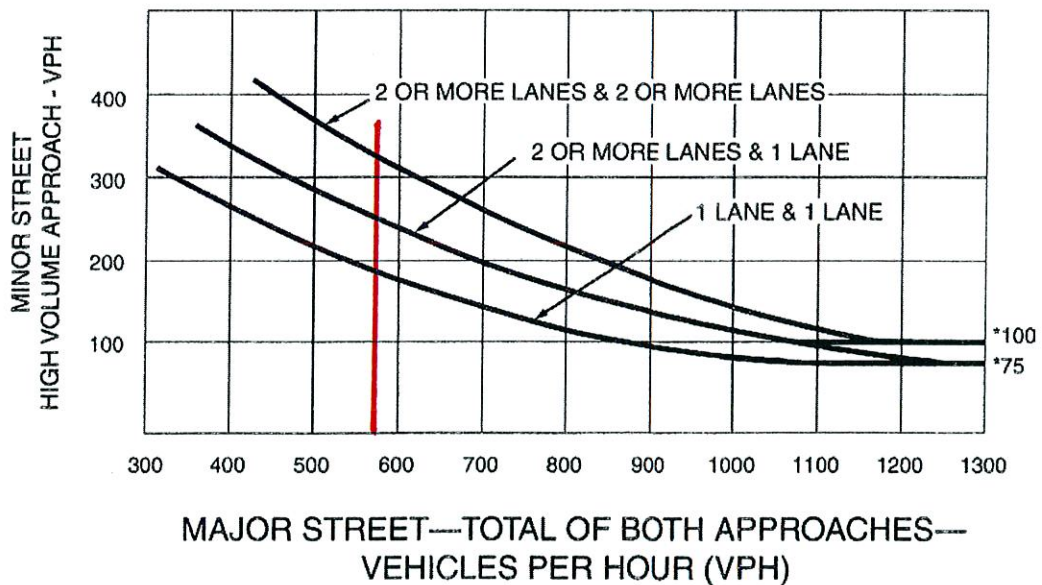
Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 70 km/h (40 mph) ON MAJOR STREET)



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

Pik 32 E Schuster Rd.

OHIO DEPARTMENT OF TRANSPORTATION

District 9 Planning

650 Eastern Ave., Chillicothe, OH 45601

1-888-819-8501

File Name : AM

Site Code : 00006466

Start Date : 10/26/2004

Page No : 1

Groups Printed- Unshifted - Bank 1

Start Time	SchusterRd From North					S.R. 32 From East					SchusterRd From South					S.R. 32 From West					Int. Total
	Rig ht	Thru	Left	Ped s	App. Total	Rig ht	Thru	Left	Ped s	App. Total	Rig ht	Thru	Left	Ped s	App. Total	Rig ht	Thru	Left	Ped s	App. Total	
Factor	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		
06:00 AM	3	1	6	0	10	5	52	0	0	57	1	9	1	0	11	0	25	6	0	31	109
06:15 AM	3	1	8	0	12	10	72	0	0	82	1	0	2	0	3	0	35	11	0	46	143
06:30 AM	6	1	17	0	24	12	80	0	1	93	0	7	5	0	12	1	28	22	0	51	180
06:45 AM	6	3	4	0	13	4	71	0	0	75	0	3	3	0	6	1	40	20	0	61	155
Total	18	6	35	0	59	31	275	0	1	307	2	19	11	0	32	2	128	59	0	189	587
07:00 AM	9	3	11	0	23	5	65	0	0	70	1	7	3	0	11	4	38	6	0	48	152
07:15 AM	15	0	14	1	30	9	77	1	0	87	0	9	3	0	12	4	56	32	0	92	221
07:30 AM	58	3	4	0	65	8	84	0	0	92	0	10	2	0	12	2	55	33	0	90	259
07:45 AM	19	4	7	0	30	8	85	1	0	94	1	7	8	0	16	1	49	18	0	68	208
Total	101	10	36	1	148	30	311	2	0	343	2	33	16	0	51	11	198	89	0	298	840
08:00 AM	6	0	4	0	10	2	65	0	0	67	0	3	6	0	9	3	53	10	0	66	152
08:15 AM	3	0	6	0	9	3	53	0	0	56	1	5	0	0	6	1	35	11	0	47	118
08:30 AM	10	2	10	0	22	3	45	0	0	48	1	3	1	0	5	1	40	1	0	42	117
08:45 AM	3	4	4	0	11	0	39	0	0	39	0	2	3	0	5	1	46	6	0	53	108
Total	22	6	24	0	52	8	202	0	0	210	2	13	10	0	25	6	174	28	0	208	495
09:00 AM	3	0	8	2	13	3	36	1	0	40	0	6	0	0	6	0	44	7	0	51	110
09:15 AM	6	3	5	0	14	1	28	1	0	30	0	3	3	0	6	2	44	2	0	48	98
09:30 AM	1	0	3	0	4	1	45	0	0	46	1	7	1	0	9	1	43	2	0	46	105
09:45 AM	4	3	4	0	11	2	41	1	0	44	1	4	1	0	6	1	43	3	0	47	108
Total	14	6	20	2	42	7	150	3	0	160	2	20	5	0	27	4	174	14	0	192	421
10:00 AM	5	2	4	0	11	1	38	1	0	40	0	5	1	0	6	0	27	5	0	32	89
10:15 AM	0	3	11	0	14	1	27	0	0	28	0	3	2	0	5	1	36	4	0	41	88
10:30 AM	3	3	6	0	12	2	44	0	0	46	1	5	0	0	6	3	53	6	0	62	126
10:45 AM	9	1	7	0	17	1	46	0	0	47	1	2	3	0	6	0	55	5	0	60	130
Total	17	9	28	0	54	5	155	1	0	161	2	15	6	0	23	4	171	20	0	195	433
11:00 AM	2	1	5	0	8	0	36	0	0	36	0	3	0	0	3	1	47	4	0	52	99
11:15 AM	6	2	4	0	12	3	44	0	0	47	0	4	1	0	5	1	44	6	0	51	115
11:30 AM	5	1	2	0	8	4	33	1	0	38	0	0	0	0	0	1	50	4	0	55	101
11:45 AM	5	4	1	0	10	2	36	0	0	38	0	8	1	0	9	2	36	5	0	43	100
Total	18	8	12	0	38	9	149	1	0	159	0	15	2	0	17	5	177	19	0	201	415
Grand Total	190	45	155	3	393	90	1242	7	1	1340	10	115	50	0	175	32	1022	229	0	1283	3191
Apprch %	48.3	11.5	39.4	0.8		6.7	92.7	0.5	0.1		5.7	65.7	28.6	0.0		2.5	79.7	17.8	0.0		
Total %	6.0	1.4	4.9	0.1	12.3	2.8	38.9	0.2	0.0	42.0	0.3	3.6	1.6	0.0	5.5	1.0	32.0	7.2	0.0	40.2	

Pk 32 E Schuster Rd.

OHIO DEPARTMENT OF TRANSPORTATION

District 9 Planning

650 Eastern Ave., Chillicothe, OH 45601

1-888-819-8501

File Name : PM

Site Code : 00006466

Start Date : 10/27/2004

Page No : 1

Groups Printed- Unshifted - Bank 1

Start Time	Schuster Rd From North					S.R. 32 From East					Schuster Rd From South					S.R. 32 From West					Int. Total
	Rig ht	Thru	Left	Ped s	App. Total	Rig ht	Thru	Left	Ped s	App. Total	Rig ht	Thru	Left	Ped s	App. Total	Rig ht	Thru	Left	Ped s	App. Total	
Factor	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		
12:00 PM	7	4	6	0	17	1	43	0	0	44	0	2	2	0	4	1	51	4	0	56	121
12:15 PM	3	2	4	0	9	1	39	1	0	41	0	3	0	0	3	6	41	5	0	52	105
12:30 PM	4	6	6	0	16	3	39	1	0	43	0	3	3	0	6	2	23	2	0	27	92
12:45 PM	3	3	5	0	11	2	33	0	0	35	0	2	2	0	4	4	26	4	0	34	84
Total	17	15	21	0	53	7	154	2	0	163	0	10	7	0	17	13	141	15	0	169	402
01:00 PM	4	3	8	0	15	4	40	0	0	44	3	1	3	0	7	4	39	7	0	50	116
01:15 PM	2	3	5	0	10	2	35	0	0	37	0	4	1	0	5	3	45	5	0	53	105
01:30 PM	2	1	8	0	11	3	51	2	0	56	0	4	2	0	6	3	43	13	0	59	132
01:45 PM	6	4	7	0	17	8	51	0	0	59	0	4	3	0	7	1	41	17	0	59	142
Total	14	11	28	0	53	17	177	2	0	196	3	13	9	0	25	11	168	42	0	221	495
02:00 PM	22	3	16	0	41	3	49	1	0	53	1	2	6	0	9	5	39	9	0	53	156
02:15 PM	10	1	16	0	27	2	60	0	0	62	0	4	3	0	7	4	64	2	0	70	166
02:30 PM	12	3	17	0	32	5	56	1	0	62	0	6	3	0	9	4	71	5	0	80	183
02:45 PM	8	5	20	0	33	2	54	1	0	57	1	4	3	0	8	3	44	9	0	56	154
Total	52	12	69	0	133	12	219	3	0	234	2	16	15	0	33	16	218	25	0	259	659
03:00 PM	11	9	24	0	44	2	36	0	0	38	0	2	2	0	4	6	49	9	0	64	150
03:15 PM	8	5	32	0	45	2	52	3	0	57	1	6	1	0	8	2	56	3	0	61	171
03:30 PM	11	4	22	0	37	2	47	1	0	50	3	5	4	0	12	5	65	13	0	83	182
03:45 PM	3	6	11	0	20	2	61	1	0	64	0	4	1	0	5	3	71	12	0	86	175
Total	33	24	89	0	146	8	196	5	0	209	4	17	8	0	29	16	241	37	0	294	678
04:00 PM	6	14	28	0	48	2	50	1	0	53	0	2	2	0	4	2	93	6	0	101	206
04:15 PM	9	13	39	0	61	3	45	0	0	48	2	7	2	0	11	0	81	6	0	87	207
04:30 PM	17	5	37	0	59	1	51	0	0	52	0	3	3	0	6	2	73	7	0	82	199
04:45 PM	5	6	32	0	43	1	39	0	0	40	0	7	1	0	8	4	94	5	0	103	194
Total	37	38	136	0	211	7	185	1	0	193	2	19	8	0	29	8	341	24	0	373	806
05:00 PM	4	3	34	0	41	2	52	2	0	56	2	5	1	0	8	4	61	9	0	74	179
05:15 PM	6	9	28	0	43	2	52	0	0	54	0	2	1	0	3	4	66	7	0	77	177
05:30 PM	26	3	33	0	62	1	53	0	1	55	0	3	3	0	6	7	53	3	0	63	186
05:45 PM	6	4	18	0	28	0	65	0	0	65	1	3	1	0	5	6	45	0	0	51	149
Total	42	19	113	0	174	5	222	2	1	230	3	13	6	0	22	21	225	19	0	265	691
Grand Total	195	119	456	0	770	56	1153	15	1	1225	14	88	53	0	155	85	1334	162	0	1581	3731
Apprch %	25.3	15.5	59.2	0.0		4.6	94.1	1.2	0.1		9.0	56.8	34.2	0.0		5.4	84.4	10.2	0.0		
Total %	5.2	3.2	12.2	0.0	20.6	1.5	30.9	0.4	0.0	32.8	0.4	2.4	1.4	0.0	4.2	2.3	35.8	4.3	0.0	42.4	

PK 32 & 220

OHIO DEPARTMENT OF TRANSPORTATION
 District 9 Planning
 650 Eastern Ave., Chillicothe, OH 45601
 1-888-819-8501

File Name : PIK-32~1
 Site Code : 00005566
 Start Date : 09/15/2004
 Page No : 1

Add to north leg of
 Schuster Rd.

Start Time	S.R. 32 From East										S.R. 32 From West											
	Germany Rd From South					S.R. 32 From East					S.R. 32 From West					S.R. 32 From North						
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total	
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		
06:00 AM	0	0	2	0	2	33	48	0	0	81	0	12	8	0	20	1	26	0	0	27	130	
06:15 AM	0	2	11	0	13	42	76	0	0	118	0	20	6	0	26	3	39	0	0	42	199	
06:30 AM	0	0	6	0	6	78	81	0	0	159	0	27	7	0	34	0	36	1	0	37	236	
06:45 AM	1	3	8	0	12	37	70	0	0	107	0	9	5	0	14	3	36	0	0	39	172	
Total	1	5	27	0	33	190	275	0	0	465	0	68	26	0	94	7	137	1	0	145	737	
07:00 AM	0	5	10	0	15	24	72	1	0	97	0	9	13	0	22	5	43	0	0	48	182	
07:15 AM	0	3	13	0	16	31	53	0	0	84	0	8	12	0	20	5	55	0	0	60	180	
07:30 AM	0	2	17	0	19	36	89	0	0	125	0	11	9	0	20	3	33	0	0	36	200	
07:45 AM	0	2	13	0	15	30	72	0	0	102	0	4	10	0	14	3	44	0	0	47	178	
Total	0	12	53	0	65	121	286	1	0	408	0	32	44	0	76	16	175	0	0	191	740	
08:00 AM	1	5	6	0	12	31	67	0	0	98	0	5	4	0	9	5	55	1	0	61	180	
08:15 AM	0	4	4	0	8	23	47	0	0	70	0	8	3	0	11	2	43	0	0	45	134	
08:30 AM	0	4	5	0	9	21	43	1	0	65	0	12	7	0	19	6	39	0	0	45	138	
08:45 AM	1	6	9	0	16	24	44	1	0	69	2	9	6	0	17	0	32	0	0	32	134	
Total	2	19	24	0	45	99	201	2	0	302	2	34	20	0	56	13	169	1	0	183	586	
09:00 AM	0	2	6	0	8	16	36	1	0	53	0	2	4	0	6	7	47	0	0	54	121	
09:15 AM	0	3	6	0	9	14	37	0	0	51	2	8	4	0	14	4	42	0	0	46	120	
09:30 AM	0	1	11	0	12	13	39	0	0	52	1	2	3	0	6	2	42	0	0	44	114	
09:45 AM	0	1	4	0	5	16	50	0	0	66	0	3	3	0	6	3	32	0	1	36	113	
Total	0	7	27	0	34	59	162	1	0	222	3	15	14	0	32	16	163	0	1	180	468	
10:00 AM	0	3	9	0	12	21	38	1	0	60	1	3	3	0	7	1	41	0	0	42	121	
10:15 AM	0	2	16	0	18	15	30	0	0	45	0	6	4	0	10	6	52	2	0	60	133	
10:30 AM	1	2	7	0	10	18	31	0	0	49	0	9	3	0	12	5	36	0	0	41	112	
10:45 AM	1	1	8	0	10	13	35	2	0	50	1	6	1	0	8	3	50	0	0	53	121	
Total	2	8	40	0	50	67	134	3	0	204	2	24	11	0	37	15	179	2	0	196	487	
11:00 AM	0	5	9	0	14	8	40	1	0	49	1	2	3	0	6	1	56	1	0	58	127	
11:15 AM	1	4	11	0	16	10	39	0	0	49	0	6	4	0	10	8	38	0	0	46	121	
11:30 AM	1	3	9	0	13	11	40	0	0	51	2	9	3	0	14	6	38	0	0	44	122	
11:45 AM	1	2	11	0	14	14	48	0	0	62	0	5	4	0	9	2	44	1	0	47	132	
Total	3	14	40	0	57	43	167	1	0	211	3	22	14	0	39	17	176	2	0	195	502	
12:00 PM	0	6	14	0	20	21	36	0	0	57	0	4	4	0	8	2	54	1	0	57	142	
12:15 PM	0	3	8	0	11	13	33	2	0	48	0	3	4	0	7	7	40	0	0	47	113	
12:30 PM	0	2	13	0	15	15	41	1	0	57	1	5	6	0	12	4	50	0	0	54	138	
12:45 PM	0	5	8	0	13	19	40	0	0	59	1	7	6	0	14	8	47	0	0	55	141	
Total	0	16	43	0	59	68	150	3	0	221	2	19	20	0	41	21	191	1	0	213	554	