

City of Fife Transportation Plan Update 2008 Traffic Count Report

July 2008



Prepared for



The City of Fife

Prepared by



DAVID EVANS
AND ASSOCIATES INC.

CITY OF FIFE TRANSPORTATION PLAN UPDATE

2008 TRAFFIC COUNT REPORT

- DRAFT -

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SUMMARY

The existing 2008 traffic was counted in March and April 2008. Average Daily Traffic (ADT) volumes at 13 locations varied from 6,035 to 20,963 vehicles per day. Most locations carrying under 10,000 ADT volumes occur south of Interstate 5 (I-5), while locations carrying more than 15,000 ADT volumes occur north of I-5.

The citywide growth between 2002 and 2008 was very close to zero for the majority of intersections and road segments counted. Significant net growth since 2002 was observed only on relatively low-volume North Levee Road and Frank Albert Road, which both serve the same traffic flows.

Traffic in the city of Fife was characterized by a high truck percentage at all times of the day. Daily traffic consisted of 6 to 36 percent of trucks with an average of 16 percent of trucks, depending on the location. The truck percentage gradually decreased from an average of 16 percent in the AM peak hour to 11 percent in the PM peak hour from morning to evening.

The afternoon commuter hour was the highest hour of the day at all locations, with lesser peaks in the morning or at mid-day. There was no discernable "peak" during the mid-day period at many locations. The proportion of ADT occurring in each time period averaged 0.08 in the AM peak hour, 0.09 in the mid-day peak hour, and 0.10 in the PM peak hour. These averages represent a range from 0.06 to 0.13 depending on the location.

The AM peak hour occurred from 7:15 to 8:15 or from 7:30 to 8:30 at 62 percent of the locations counted, and the PM peak hour occurred from 4:15 to 5:15 or from 4:30 to 5:30 at 84 percent of the locations counted.

The traffic directional distributions were highly unbalanced during peak hour periods. The directional split averaged 63 percent in the AM peak hour, 59 percent in the mid-day peak hour, and 61 percent in the PM peak hour. The peak direction in the morning was generally opposite the peak direction in the afternoon.

2008 VOLUMES BY ROAD SEGMENTS

All Traffic Data Service, Inc. collected 24-hour tube counts for 3 days at 13 road segments. The three-day, two-way ADT is shown in **Figure 1**. Full details of the 24-hour tube counts at 13 road segments are shown in **Appendix B**. **Table 1** shows that the maximum two-way ADT (20,963) occurred on Pacific Highway east of 70th Avenue and the minimum two-way ADT (6,035) occurred on Levee Road east of Frank Albert Road. The maximum average ADT per lane (6,645) occurred on 20th Street east of Port of Tacoma Road, a two-lane road. The maximum truck percentage (36 percent) appeared on Port of Tacoma Road south of 12th Street. In general, truck percentages were higher north of I-5 than south of I-5.

The peak hour volumes, the proportion of ADT occurring in the peak hour (K-Factor), and the proportion of peak hour traffic in the peak direction (D-Factor) at road segments in each time period are summarized in **Tables 2** through **4**. The patterns of D-Factor, K-Factor, and truck percentage in the AM peak hour, the mid-day peak hour, and the PM peak hour are similar.

Table 2 shows that the maximum two-way AM peak hour volume of 1,553 vehicles per hour appeared on Pacific Highway east of 70th Avenue, a four-lane road with a median turn lane. The maximum AM peak hour volume per lane (638 vehicles) appeared on 20th Street east of Port of Tacoma Road, with one lane each way.

The highest K-Factor of 0.112 occurred on Levee Road east of 70th Avenue. The highest directional split (82 percent) occurred on Levee Road east of Frank Albert Road. The highest truck percent (32 percent) appeared on Port of Tacoma Road south of 12th Street. At 62 percent of locations, the AM peak hour was from 7:15 to 8:15 or from 7:30 to 8:30, representing a typical commuter peak travel pattern. Roads carrying high levels of truck traffic usually had later morning peak hours.

The maximum two-way mid-day peak hour volume of 1,920 vehicles per hour appeared on Pacific Highway west of 51st Avenue, as shown in **Table 3**. The maximum mid-day peak hour volume per lane (617 vehicles) appeared on 20th Street east of Port of Tacoma Road.

The highest K-Factor of 0.100 occurred on Alexander Avenue south of SR 509. The highest directional split (62 percent) occurred on Levee Road east of Frank Albert Road. The highest truck percent (29 percent) appeared on Port of Tacoma Road south of 12th Street.

The mid-day two-way volume was higher than the morning peak hour volume for all locations, except 20th Street east of 70th Avenue, and Levee Road. This indicated that commercial traffic operates all day on most roads and is more dominant than morning commuter traffic, except for the two roads named.

Table 4 shows that the maximum two-way PM peak hour volume of 2,060 vehicles per hour appeared on Pacific Highway east of 70th Avenue, and the maximum PM peak hour volume per lane (725 vehicles) appeared on 20th Street east of Port of Tacoma Road.

The highest K-Factor of 0.129 occurred on Alexander Avenue south of SR 509. The highest directional split (74 percent) occurred on Levee Road east of 70th Avenue. The highest truck percent (19 percent) appeared on Port of Tacoma Road south of 12th Street. The average PM peak hour volume was 19 percent greater than the average AM peak hour volume.

Figure 1. Existing 2008 Average Daily Traffic

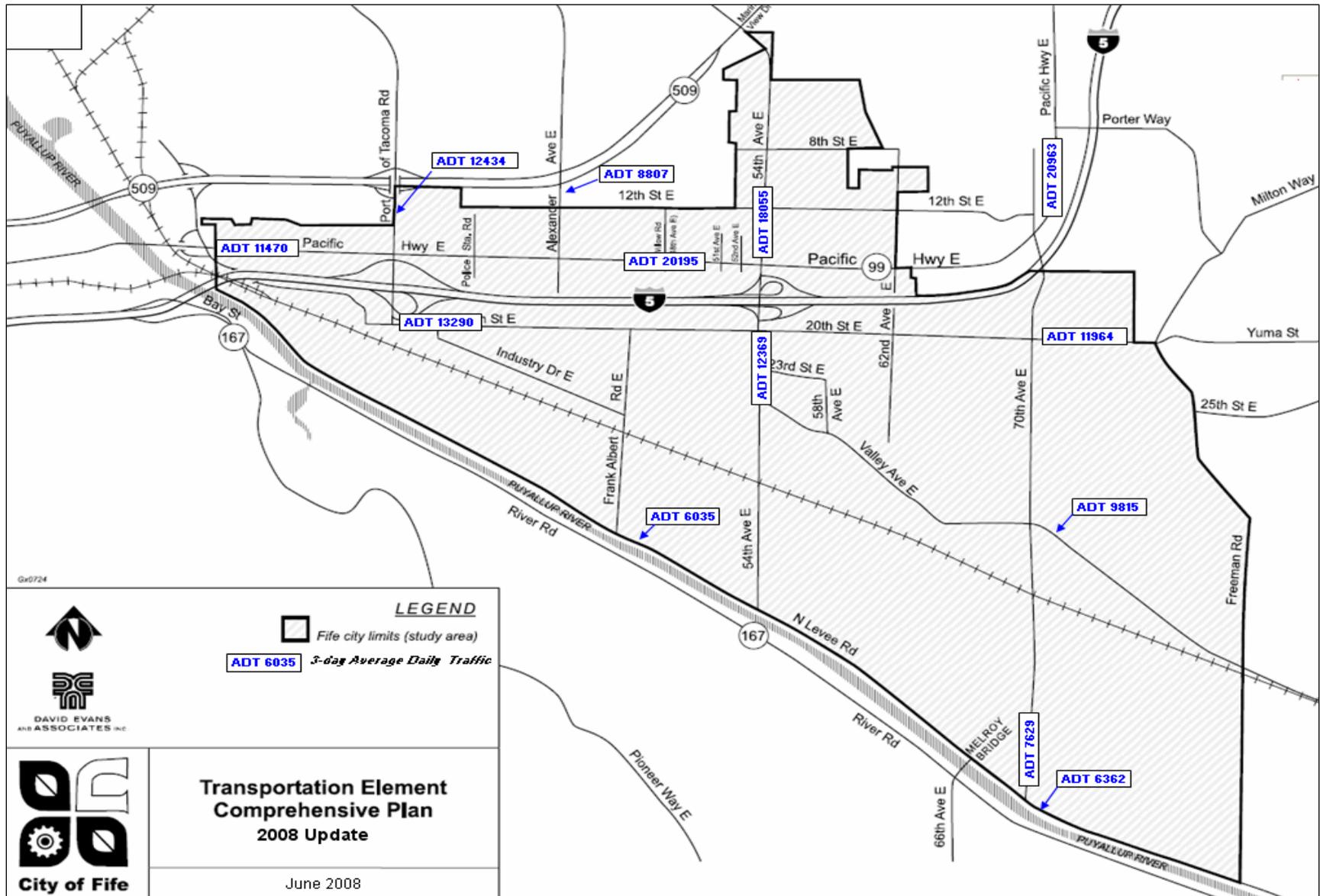


Table 1. Daily Traffic and Truck Percentage on Road Segments

Road Segment	No. of Lanes ¹	ADT ² (Two-Way)	Daily Volumes Per Lane	Truck Percent (Two-Way)
S01 Pacific Highway East e/o Milwaukee Way	4+1	11470	2868	12%
S02 Pacific Highway East w/o 51st Avenue	4+1	20195	5049	15%
S03 Pacific Highway East e/o 70 th Avenue	4	20963	5241	19%
S04 Port of Tacoma Road e/o 12 th Street East	4+1	12434	3109	36%
S05 54 th Avenue n/o Pacific Highway East	4+1	18055	4514	27%
S06 20 th Street e/o Port of Tacoma Road	2+1	13290	6645	14%
S07 20 th Street e/o 70 th Avenue	2	11964	5982	6%
S08 54 th Avenue s/o 20 th Street	4+1	12369	3092	9%
S09 Valley Avenue e/o 70 th Avenue	2	9815	4908	19%
S10 Levee Road e/o 70 th Avenue	2	6362	3181	12%
S11 Levee Road e/o Frank Albert Road	2	6035	3018	9%
S12 70th Avenue n/o Levee Road	2	7629	3815	10%
S13 Alexander Avenue s/o SR 509 South Frontage Road	4	8807	2202	19%
Maximum Values		20963	6645	36%
Minimum Values		6035	2202	6%
Average Values		12261	4125	16%

¹No. of Lanes (4+1): the 1st digit represents normal through lanes, and the 2nd digit represents two-way left-turn lanes

²ADT-Average Daily Traffic (Veh/day)

Table 2. K, D, and T Factors – AM Peak Hour

Time Period	No. of Lanes ¹	Volume (Two-Way, Veh/hr)	K ²	Peak Direction (One-Way)				Truck Percent (Two-Way)
				D ³	Appr.	Volume (Veh/hr)	Volume Per Lane (Veh/hr)	
S01 Pacific Highway East e/o Milwaukee Way								
AM Peak (8:30-9:30)	4+1	856	0.075	61%	EB	522	261	15%
S02 Pacific Highway East w/o 51st Avenue								
AM Peak (10:00-11:00)	4+1	1472	0.073	51%	EB	747	374	16%
S03 Pacific Highway East e/o 70th Avenue								
AM Peak (7:15-8:15)	4	1553	0.074	66%	WB	1027	514	19%
S04 Port of Tacoma Road s/o 12th Street East								
AM Peak (9:00-10:00)	4+1	1224	0.098	54%	SB	655	328	32%
S05 54th Avenue n/o Pacific Highway East								
AM Peak (10:00-11:00)	4+1	1514	0.084	54%	NB	811	406	25%
S06 20th Street e/o Port of Tacoma Road								
AM Peak (7:30-8:30)	2+1	1110	0.084	57%	EB	638	638	13%
S07 20th Street e/o 70th Avenue								
AM Peak (7:15-8:15)	2	831	0.069	70%	WB	584	584	8%
S08 54th Avenue s/o 20th Street								
AM Peak (7:15-8:15)	4+1	819	0.066	69%	NB	566	283	12%
S09 Valley Avenue e/o 70th Avenue								
AM Peak (10:00-11:00)	2	695	0.071	53%	EB	370	370	21%
S10 Levee Road e/o 70th Avenue								
AM Peak (7:15-8:15)	2	713	0.112	72%	WB	515	515	10%
S11 Levee Road e/o Frank Albert Road								
AM Peak (7:15-8:15)	2	671	0.111	82%	WB	547	547	9%
S12 70th Avenue n/o Levee Road								
AM Peak (7:15-8:15)	2	549	0.072	68%	NB	372	372	9%
S13 Alexander Avenue s/o SR 509 South Frontage Road								
AM Peak (7:15-8:15)	4	848	0.096	56%	SB	472	472	15%
Maximum Values	-	1553	0.112	82%	-	1027	638	32%
Minimum Values	-	549	0.066	51%	-	370	261	8%
Average Values	-	989	0.083	63%	-	602	436	16%

¹No. of Lanes (4+1): the 1st digit represents normal through lanes, and the 2nd digit represents two-way left-turn lanes

²K-proportion of ADT occurring in the peak hour

³D-proportion of peak hour traffic in the peak direction

Table 3. K, D, and T Factors – Mid-Day Peak Hour

Time Period	No. of Lanes ¹	Volume (Two-Way, Veh/hr)	K ²	Peak Direction (One-Way)				Truck Percent (Two-Way)
				D ³	Appr.	Volume (Veh/hr)	Volume Per Lane (Veh/hr)	
S01 Pacific Highway East e/o Milwaukee Way								
Mid-Day Peak (12:15-1:15)	4+1	970	0.085	53%	WB	512	256	11%
S02 Pacific Highway East w/o 51st Avenue								
Mid-Day Peak (12:00-13:00)	4+1	1920	0.095	50%	WB	961	481	14%
S03 Pacific Highway East e/o 70th Avenue								
Mid-Day Peak (14:00-15:00)	4	1748	0.083	51%	EB	899	450	17%
S04 Port of Tacoma Road s/o 12th Street East								
Mid-Day Peak (11:15-12:15)	4+1	1235	0.099	52%	SB	637	319	29%
S05 54th Avenue n/o Pacific Highway East								
Mid-Day Peak (12:00-13:00)	4+1	1705	0.094	56%	NB	950	475	23%
S06 20th Street e/o Port of Tacoma Road								
Mid-Day Peak (14:00-15:00)	2+1	1208	0.091	51%	WB	617	617	13%
S07 20th Street e/o 70th Avenue								
Mid-Day Peak (12:30-13:30)	2	768	0.064	50%	WB	386	386	6%
S08 54th Avenue s/o 20th Street								
Mid-Day Peak (14:00-15:00)	4+1	880	0.071	53%	SB	464	232	9%
S09 Valley Avenue e/o 70th Avenue								
Mid-Day Peak (14:00-15:00)	2	740	0.075	56%	EB	417	417	19%
S10 Levee Road e/o 70th Avenue								
Mid-Day Peak (14:00-15:00)	2	490	0.077	54%	EB	263	263	12%
S11 Levee Road e/o Frank Albert Road								
Mid-Day Peak (14:00-15:00)	2	408	0.068	62%	EB	253	253	10%
S12 70th Avenue n/o Levee Road								
Mid-Day Peak (14:00-15:00)	2	635	0.083	55%	SB	351	351	11%
S13 Alexander Avenue s/o SR 509 South Frontage Road								
Mid-Day Peak (11:45-12:45)	4	880	0.100	54%	SB	473	237	13%
Maximum Values	-	1920	0.100	62%	-	961	617	29%
Minimum Values	-	408	0.064	50%	-	253	232	6%
Average Values	-	1045	0.083	54%	-	553	364	14%

¹No. of Lanes (4+1): the 1st digit represents normal through lanes, and the 2nd digit represents two-way left-turn lanes

²K-proportion of AD T occurring in the peak hour

³D-proportion of peak hour traffic in the peak direction

Table 4. K, D, and T Factors – PM Peak Hour

Time Period	No. of Lanes ¹	Volume (Two-Way, Veh/hr)	K ²	Peak Direction (One-Way)				Truck Percent (Two-Way)
				D ³	Appr.	Volume (Veh/hr)	Volume Per Lane (Veh/hr)	
S01 Pacific Highway East e/o Milwaukee Way								
PM Peak (16:45-17:45)	4+1	1099	0.096	63%	WB	696	348	8%
S02 Pacific Highway East w/o 51st Avenue								
PM Peak (16:45-17:45)	4+1	1904	0.094	55%	WB	1039	520	11%
S03 Pacific Highway East e/o 70th Avenue								
PM Peak (16:45-17:45)	4	2060	0.098	55%	WB	1138	569	12%
S04 Port of Tacoma Road s/o 12th Street East								
PM Peak (16:30-17:30)	4+1	1118	0.090	57%	SB	634	317	19%
S05 54th Avenue n/o Pacific Highway East								
PM Peak (16:45-17:45)	4+1	1542	0.085	57%	NB	886	443	18%
S06 20th Street e/o Port of Tacoma Road								
PM Peak (16:30-17:30)	2+1	1397	0.105	52%	WB	725	725	11%
S07 20th Street e/o 70th Avenue								
PM Peak (16:45-17:45)	2	1217	0.102	54%	EB	656	656	7%
S08 54th Avenue s/o 20th Street								
PM Peak (16:30-17:30)	4+1	1132	0.092	60%	SB	674	337	10%
S09 Valley Avenue e/o 70th Avenue								
PM Peak (16:45-17:45)	2	831	0.085	64%	EB	533	533	12%
S10 Levee Road e/o 70th Avenue								
PM Peak (16:30-17:30)	2	637	0.100	74%	EB	471	471	7%
S11 Levee Road e/o Frank Albert Road								
PM Peak (16:30-17:30)	2	572	0.095	73%	EB	419	419	5%
S12 70th Avenue n/o Levee Road								
PM Peak (16:30-17:30)	2	709	0.093	69%	SB	486	486	7%
S13 Alexander Avenue s/o SR 509 South Frontage Road								
PM Peak (16:15-17:15)	4	1135	0.129	53%	SB	607	607	15%
Maximum Values	-	2060	0.129	74%	-	1138	725	19%
Minimum Values	-	572	0.085	52%	-	419	317	5%
Average Values	-	1181	0.097	60%	-	690	495	11%

¹No. of Lanes (4+1): the 1st digit represents normal through lanes, and the 2nd digit represents two-way left-turn lanes

²K-proportion of ADT occurring in the peak hour

³D-proportion of peak hour traffic in the peak direction

PM PEAK HOUR INTERSECTION TURNING MOVEMENT COUNTS

Table 5 shows the PM peak hour turning volumes on all approaches to the 57 intersections counted. The most striking factor about the turn relationships in **Table 5** is the magnitude of left turns and right turns at major intersections. This results in below average efficiency of intersection operations and increased need for turn storage lanes. Full details of the turning movement counts are shown in **Appendix A** for AM peak hours, as well as PM peak hours.

Table 5. Intersection Turning Movement Counts – PM Peak Hour

Int'n ID	North-South Road	East-West Road	Start Time	Southbound				Westbound				Northbound				Eastbound				
				Left	Thru	Right	HV	Left	Thru	Right	HV	Left	Thru	Right	HV	Left	Thru	Right	HV	
568	38th Ave E	Pacific Hwy E	16:45	11		10		16	1024	14	38	18		20		9	532	2	28	
674	51st Ave E	Pacific Hwy E	16:45	200	7	63	1	46	987	139	41	29	2	50	1	25	739	33	41	
575	54th Ave E	12th St E	16:30	102	614	21	62	84	128	49	16	61	544	67	62	30	167	54	1	
764	54th Ave E	20th St E	16:30	265	409	304	35	40	150	548	16	93	337	46	4	325	195	154	24	
762	54th Ave E	23rd St E	16:30	95	537		9	11		77			376	4	8					
464	54th Ave E	4th St E	16:15	5	591	6	61	33	1	2	1	6	608	28	53	10		26		
504	54th Ave E	8th St E	16:30	14	659		57	45		23	4		614	13	51	2		1		
763	54th Ave E	I-5 Ramps EB	16:15	303	659		65			311	27		978	284	33			415	4	
678	54th Ave E	I-5 Ramps WB	16:00		728	425	84	238		285	41		793	456	44					
924	54th Ave E	N Levee Rd E	16:15	8		22			122	17	2					54	303		4	
677	54th Ave E	Pacific Hwy E	16:00	215	477	84	87	329	513	199	112	418	343	339	83	137	427	355	71	
892	54th Ave E	Radiance Blvd E	17:00	2	3			28		1			6	84						
839	54th Ave E	Valley Ave E	16:45	1	3			58	253	3	2	134	3	64	1	1	442	137	4	
766	58th Ave E	20th St E	16:45	4		3		32	679	1	12	19	3	39		2	535	24	12	
840	58th Ave E	Valley Ave E	16:30	27	2	8		8	306	34	9	13	1	3		5	471	14	7	
579	62nd Ave E	12th St E	16:30	16	6		1	4	189	6	2	22	9	12	1	4	291	6		
768	62nd Ave E	20th St E	16:30	16	2	31		70	640	2	15	41	1	53		6	500	64	15	
686	62nd Ave E	Pacific Hwy E	16:45	5		5	1	2	1106	33	70	2		5	1	8	853	7	62	
878	62nd Ave E	Valley Ave E	16:45	21	1	27	1	1	327	34	8		1	1		18	463	6	9	
944	63rd Ave E	N Levee Rd E	16:30	8		14			126	13	10					50	263		6	
979	66th Ave E	N Levee Rd E	16:15					251	13		10	107		263	12		55	200	8	
580	68th Ave E	12th St E	16:30	1		168	7		27							199	114		1	
512	70th Ave E	10th Ave E	16:45		27	237	4						41	54		2	161		29	1
771	70th Ave E	20th St E	16:30	120	420	79	84	84	501	50	22	171	280	75	48	52	459	84	16	
965	70th Ave E	43rd St E	16:45	7	351	36	9	4		5		8	194	1	14	27		44	1	
982	70th Ave E	48th St E	16:30	9	425		6	5		7	1		182	4	13					
981	70th Ave E	N Levee Rd E	16:30	215		204	9		57	60	14					132	196		12	
583	70th Ave E	Pacific Hwy E	16:30	12	85	22		301	962	3	81	137	50	148	41	15	595	224	68	
926	70th Ave E	Radiance Blvd E	16:45		391	145	13					38	181		20	63		35	1	
896	70th Ave E	Valley Ave E	16:30	203	344	63	53	16	231	106	25	91	183	16	14	23	313	151	23	
569	Alexander Ave E	Pacific Hwy E	16:45	192	4	141	10	5	947	159	39	18	11	11		49	520	8	30	
570	Alexander Ave E	12th St E	16:30	172	339		13	21		153			292	26	4					
498	Alexander Ave E	N Frontage Rd	16:30		52	45	62	37	1211		48	340	17		8					
499	Alexander Ave E	S Frontage Rd	16:30	10	69								357	66		20	1091	268		
1416	E Ells St	20th St Dr E	16:15		59	111	21					43		14	7	2	35	88	9	
759	Frank Albert Rd E	20th St E	16:30					153	368		18	53		157	7		482	86	34	
838	Frank Albert Rd E	Industry Dr E	16:30	46	209	8	31	16	17	44	5	45	96	14	9	50	24	136	20	
890	Frank Albert Rd E	N Levee Rd E	16:30	360		1	21		3	126	6					4				
777	Freeman Rd E	20th St E	16:30	8	229	500	24	2	82	10	2	49	61	4	2	367	176	115	19	
984	Freeman Rd E	48th St E	16:45		177	8	1					7	40		2	6		8		
1029	Freeman Rd E	N Levee Rd E	16:30	156		22	4		92	25	15					27	383		12	
946	Freeman Rd E	Valley Ave E	16:30	196	129	7	5	26	326	84	32	1	22	23	2	5	491	27	34	
754	Industry Dr E	20th St E	16:30					6	571		13	135		11	10		477	152	67	
1417	Milwaukee Way	Milwaukee Eells	16:00		137	86	20					13	34		13	123		60	26	
486	Milwaukee Way	N Frontage Rd	16:00		223		37	103		44	53		54		16					

487	Milwaukee Way	S Frontage Rd	16:00	119	218		61					53	112	28					
341	Norpoint Way	Marine View Dr	16:45	18	269		12	601		21	5	449	764	9					
492	Port Of Tacoma Rd	12th St E	16:30		370	155	13	90	7	28	4	51	284	5	5	54	3	143	4
753	Port Of Tacoma Rd	20th St E	16:30	454	11	19	58	1	74	607	26	1	19	1	1	69	136	2	22
659	Port Of Tacoma Rd	I-5 Ramps EB	16:15	217	200		67			136	17		529	80	24			310	26
660	Port Of Tacoma Rd	I-5 Ramps WB	16:30		379	627	88	14		94	36	391	299	1	31				
493	Port Of Tacoma Rd	N Frontage Rd	16:15		467	172		88	101	65		189	149						
565	Port Of Tacoma Rd	Pacific Hwy E	16:00	120	432	30	131	421	424	81	56	81	191	135	55	40	282	113	31
467	Porter Way	Pacific Hwy E	16:45	228	1029	18	66	135	97	98	12	9	538	197	39	57	121	16	
423	Taylor Way	SR 509	16:30	23	249	20	45	185	784	8	25	332	102	192	58	141	927	160	45
573	Willow Rd E	12th St E	16:15					32	186		3	18		34	2		197	20	6
669	Willow Rd E	Pacific Hwy E	16:45	32	11	27	1	54	1012	14	41	28	3	66	4	10	674	18	37

AM PEAK HOUR INTERSECTION TURNING MOVEMENT COUNTS

The AM peak hour turning volumes on all approaches to the 58 intersections counted, as shown in **Table 6**. The magnitude of left turns and right turns at major intersections is the most striking aspect of the turn relationships, and is shown in **Table 6**. This results in below average efficiency of intersection operations and an increased need for turn storage lanes. Full details of the turning movement counts for AM and PM peak hours are shown in **Appendix A**.

Table 6. Intersection Turning Movement Counts – AM Peak Hour

Int'n ID	North-South Road	East-West Road	Start Time	Southbound				Westbound				Northbound				Eastbound			
				Left	Thru	Right	HV	Left	Thru	Right	HV	Left	Thru	Right	HV	Left	Thru	Right	HV
674	51st Ave E	Pacific Hwy E	7:30	47	1	22	5	46	518	169	87	33	7	46	4	58	455	43	85
764	54th Ave E	20th St E	7:15	337	224	246	36	45	91	477	42	85	453	29	19	251	105	47	35
763	54th Ave E	I-5 Ramps EB	7:15	185	515		97			289	42		889	339	77			348	12
678	54th Ave E	I-5 Ramps WB	7:15		461	456	146	241		254	63		629	544	84				
677	54th Ave E	Pacific Hwy E	7:30	24	401	52	84	268	318	127	131	340	370	209	105	90	214	202	80
766	58th Ave E	20th St E	7:00	4		11	5	19	588	1	26	17		22	15	14	486	53	25
768	62nd Ave E	20th St E	7:00	1		7	3	27	622	13	25	84	4	65	2	37	427	23	26
979	66th Ave E	N Levee Rd E	7:00					256	173		40	256		241	19		34	70	16
771	70th Ave E	20th St E	7:00	31	239	78	78	57	518	88	30	107	338	52	134	56	259	118	25
896	70th Ave E	Valley Ave E	7:00	104	115	31	64	9	239	191	77	228	289	25	49	28	135	67	25
926	70th Ave E	Radiance Blvd E	7:00		145	21	18					6	365		35	116		28	6
981	70th Ave E	N Levee Rd E	7:00	74		88	43		348	206	45					194	85		13
583	70th Ave E	Pacific Hwy E	7:00	4	48	11	4	141	536	1	81	205	38	217	118	1	285	114	94
569	Alexander Ave E	Pacific Hwy E	7:30	155	15	91	25	12	390	97	73	7	2	6	1	66	430	8	84
499	Alexander Ave E	S Frontage Rd	7:00	8	33		11						356	64	28	90	664	378	129
759	Frank Albert Rd E	20th St E	7:45					76	287		39	77		230	24		318	48	40
890	Frank Albert Rd E	N Levee Rd E	7:15	83		1	13		2	543	43					1	1		
777	Freeman Rd E	20th St E	7:00	1	47	402	23	5	160	16	6	108	203	6	6	259	55	28	25
946	Freeman Rd E	Valley Ave E	7:00	62	12	12	3	7	401	211	79	14	55	21	3	6	236	5	47
1029	Freeman Rd E	N Levee Rd E	7:00	39		18	9		526	63	38					33	126		31
9543	High School Driveway	20th St E	7:00			3		97	615	2	25	9		46		15	461	44	39
754	Industry Dr E	20th St E	7:45					11	289		86	183		11	50		465	151	75
565	Port Of Tacoma Rd	Pacific Hwy E	7:30	80	254	18	96	159	196	60	74	63	275	239	109	52	264	69	56
660	Port Of Tacoma Rd	I-5 Ramps WB	7:45		256	196	140	39		209	82	228	347		112				
659	Port Of Tacoma Rd	I-5 Ramps EB	7:30	120	168		77			207	30		360	49	92			421	19
493	Port Of Tacoma Rd	N Frontage Rd	7:15		168	32	79	65	131	195	55	69	403		86				
492	Port Of Tacoma Rd	12th St E	7:30		186	80	116	49	3	10	55	43	303	11	102	151	38	151	27
423	Taylor Way	SR 509	7:15	9	66	88	90	228	987	35	63	89	187	143	114	214	367	149	87

HISTORICAL TRENDS

The PM peak hour traffic counts for the selected intersections were grouped and analyzed by north-south corridor and east-west corridor. **Table 7** shows the average growth rate for the selected intersections grouped by north-south corridor between 2002 and 2008. There is a spread from negative 1.7 to 13.4 percent. Increasing intersection volumes occurred on Port of Tacoma Road (1.2 percent), Frank Albert Road (13.4 percent), and 70th Avenue (3.4 percent), while decreasing intersection volumes occurred on Alexander Avenue (-1.7 percent) and 54th Avenue (-1.1 percent). When omitting Frank Albert Road, a low-volume route, the average rate for the remaining corridors is close to zero.

Table 8 shows the average growth rates for selected intersections grouped by east-west corridor, between 2002 and 2008. A similar wide spread exists. Significantly increasing intersection volumes appeared on Levee Road (19.9 percent) while slightly increasing intersection volumes occurred on Pacific Highway (0.6 percent) and on Valley Avenue (0.6 percent). Slightly decreasing intersection volumes occurred on SR 509 North Frontage Road (-0.5 percent) and zero intersection volume change occurred on 20th Street. The average rate for the remaining corridors is close to zero when North Levee Road, a low-volume route, is omitted.

Figure 2 shows five screen lines that were drawn around the city of Fife, to group roads serving parallel movement volumes on all roads. The screen line PM peak hour count analysis in **Table 9** shows that the annual growth rate was 6.7 percent on the screen line north of Levee Road, 1.1 percent on the screen line south of 20th Street, negative 1.2 percent on the screen line north of Pacific Highway, and zero percent changed on the screen line east of 70th Avenue and the screen line east of Port of Tacoma. By omitting the screen line associated with Levee Road, the average annual growth rate for remaining screen lines citywide was close to zero.

The large percentage changes on Frank Albert Road and on North Levee Road were removed from the citywide averages because both roads are relatively low in volume, should not receive high weight, and are not characteristic of most roads in the city of Fife. This is evident from **Figure 3**.

Table 7. Intersections Counts Summary by North-South Corridor

Intersection	PM Peak Hour Counts		Volumes Difference	Growth Rate (per year)
	2002	2008		
Port of Tacoma Road & North Frontage Road	855	1249	394	7.7%
Port of Tacoma Road & Pacific Hwy East	2487	2350	-137	-0.9%
Port of Tacoma Road East & 20 th Street East	1305	1394	89	1.1%
Sum of Intersections along Port of Tacoma Road	4647	4993	346	1.2%
Alexander Avenue East & North Frontage Road	2166	1690	-476	-3.7%
Alexander Avenue East & South Frontage Road	2180	1850	-330	-2.5%
Alexander Avenue East & 12 th Street East	883	778	-105	-2.0%
Alexander Avenue East & Pacific Hwy East	1893	2085	192	1.7%
Sum of Intersections along Alexander Avenue	7122	6403	-719	-1.7%
Frank Albert Road East & 20 th Street East	913	1299	386	7.0%
Frank Albert Road East & Industry Drive	303	705	402	22.1%
Frank Albert Road East & North Levee Road	168	494	326	32.3%
Sum of Intersections along Frank Albert Road East	1384	2498	1114	13.4%
54 th Avenue East & Pacific Hwy East	3926	4041	115	0.5%
54 th Avenue East & 20 th Street East	3667	2866	-801	-3.6%
54 th Avenue East & Valley Avenue East	1087	1099	12	0.2%
54 th Avenue East & North Levee Road	475	526	51	1.8%
Sum of Intersections along 54th Avenue East	9155	8532	-623	-1.1%
70 th Avenue East & Pacific Hwy East	2342	2554	212	1.5%
70 th Avenue East & 20 th Street East	2001	2319	318	2.6%
70 th Avenue East & Valley Avenue East	1660	1740	80	0.8%
70 th Avenue East & North Levee Road	216	864	0.5	3.7%
Sum of Intersections along 70th Avenue East	6219	7477	1258	3.4%
Intersections Citywide	28527	29903	1376	0.8%

Table 8. Intersections Counts Summary by East-West Corridor

Intersection	PM Peak Hour Counts		Volumes Difference	Growth Rate (per year)
	2002	2008		
Port of Tacoma Road & Pacific Hwy East	2487	2350	-137	-0.9%
Alexander Avenue East & Pacific Hwy East	1893	2085	192	1.7%
54 th Avenue East & Pacific Hwy East	3926	4041	115	0.5%
70 th Avenue East & Pacific Hwy East	2342	2554	212	1.5%
Sum of Intersections along Pacific Highway East	10648	11030	382	0.6%
Port of Tacoma Road & North Frontage Road	855	1249	394	7.7%
Alexander Avenue East & North Frontage Road	2166	1690	-476	-3.7%
Sum of Intersections along SR 509 North Frontage Road	3021	2939	-82	-0.5%
Port of Tacoma Road East & 20 th Street East	1305	1394	89	1.1%
Frank Albert Road East & 20 th Street East	913	1299	386	7.0%
54 th Avenue East & 20 th Street East	3667	2866	-801	-3.6%
70 th Avenue East & 20 th Street East	2001	2319	318	2.6%
Sum of Intersections along 20th Street East	7886	7878	-8	0.0%
54 th Avenue East & Valley Avenue East	1087	1099	12	0.2%
70 th Avenue East & Valley Avenue East	1660	1740	80	0.8%
Sum of Intersections along Valley Avenue East	2747	2839	92	0.6%
Frank Albert Road East & North Levee Road	168	494	326	32.3%
54 th Avenue East & North Levee Road	475	526	51	1.8%
70 th Avenue East & North Levee Road	216	864	648	27.7%
Sum of Intersections along North Levee Road	859	1884	1025	19.9%
Intersections Citywide	25161	26570	1409	0.9%

Figure 2. Screen Lines around the City

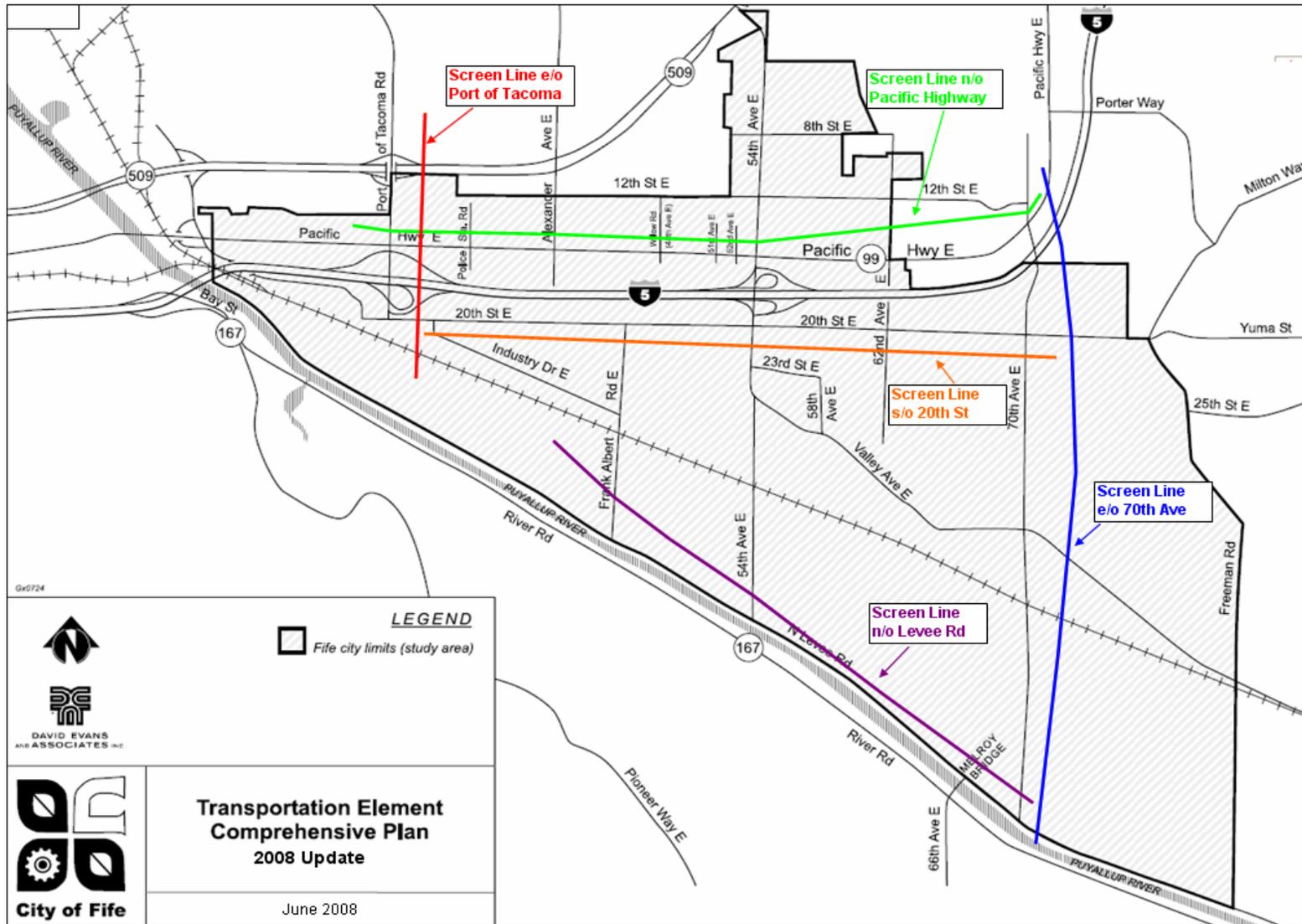
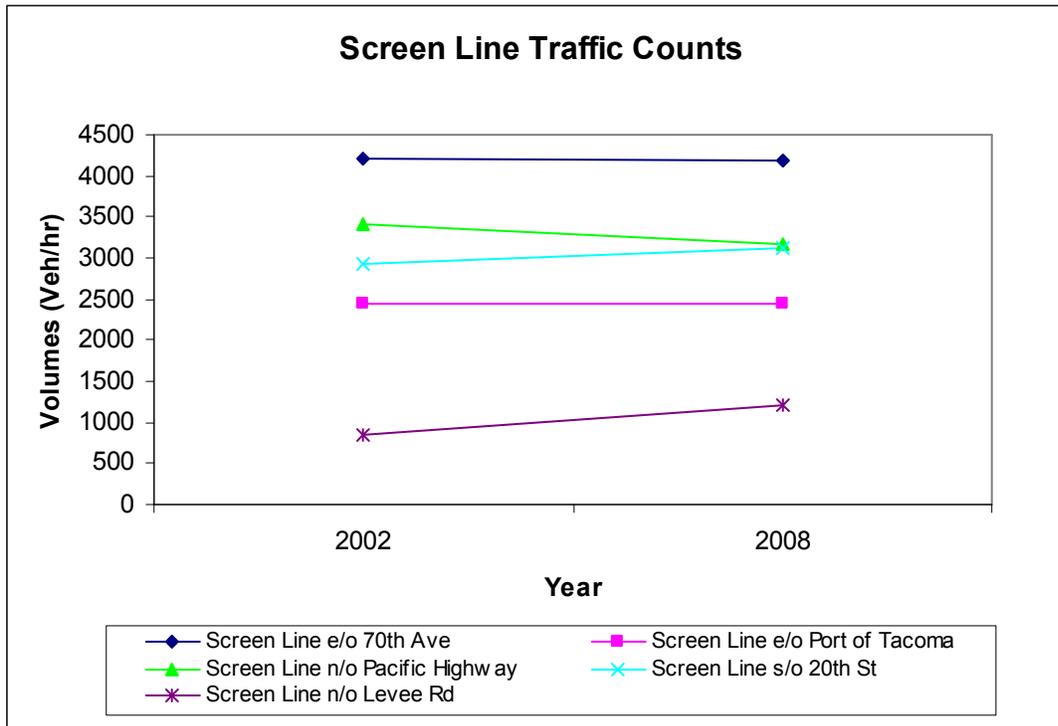


Table 9. Screen Line PM Peak Hour Counts Summary

Screen line	PM Peak Hour Counts		Volumes Difference	Growth Rate (per year)
	2002	2008		
Screen Line east of 70 th Avenue	4199	4195	-4	0.0%
Screen Line east of Port of Tacoma Road	2441	2440	-1	0.0%
Screen Line North of Pacific Highway	3403	3168	-235	-1.2%
Screen Line south of 20 th Street	2926	3121	195	1.1%
Screen Line north of Levee Road	857	1203	346	6.7%
Citywide	13826	14127	301	0.4%

Figure 3. Screen Line PM Peak Hour Counts between 2002 and 2008



TIME OF DAY PATTERNS

The three-day tube counts at selected road locations were analyzed to prepare the time-of-day volume plots shown in **Figures 4 to 16**. The relationship between AM, mid-day, and PM peak hours is seen in these figures.

Figure 4 shows a steady rise of volumes from morning to afternoon, with only a small increase in the AM peak hour compared to adjacent hours. This pattern, on Pacific Highway east of Milwaukee Way, represents a predominance of commercial traffic throughout the workday and relatively little commuter traffic. The mid-day peak hour is also relatively undistinguished from adjacent hours. **Figures 5 and 6** show other locations on Pacific Highway with similar lack of pronounced AM peak. **Figure 5**, however, portrays a distinct mid-day peak hour near 51st Avenue. This is an area with numerous restaurants, where increased activity at the noon hour is expected. **Figure 6**, by contrast, represents the area of Pacific Highway near 70th Avenue, where no restaurants or other significant commercial activity is found.

Figures 7 and 8 show a pattern that is highly affected by the trucking activities of the Port of Tacoma. These counts are on Port of Tacoma Road and 54th Avenue West, between Pacific Highway and 12th Street East. At both locations, all hours of the working day are very similar with little hourly variation from 7:00 a.m. to 5:00 p.m. The PM peak hour does not indicate a high level of commuter traffic at these locations.

Figures 9, 10, and 11 show patterns on 20th Street East and nearby on 54th Avenue. These locations exhibit a pronounced AM peak hour period, as well as a PM peak hour, but no significant noon hour increase. This indicates prevalent commuter activity during the morning and evening with moderate commercial travel throughout the day.

Figure 12 illustrates a pattern for Valley Avenue east of 70th Avenue that is similar to **Figure 6** representing Pacific Highway east of 70th Avenue. Both routes serve a mixture of commuter flow and commercial travel relating to communities east of Fife. There is a detectable AM peak hour as well as the PM peak hour, but no mid-day peak.

Figures 13 to 15 show highly peaked commuter flows on Levee Road and Frank Albert Road, with very little other activity at mid-day.

Figure 16 shows a similar highly peaked pattern on Alexander Avenue south of SR 509, but this location also has a strong mid-day peak. This location provides the connection between SR 509 and the restaurants and other strip retail businesses nearby on Pacific Highway.

Figure 4. Rolling 1-Hour Volumes on Pacific Highway east of Milwaukee Way

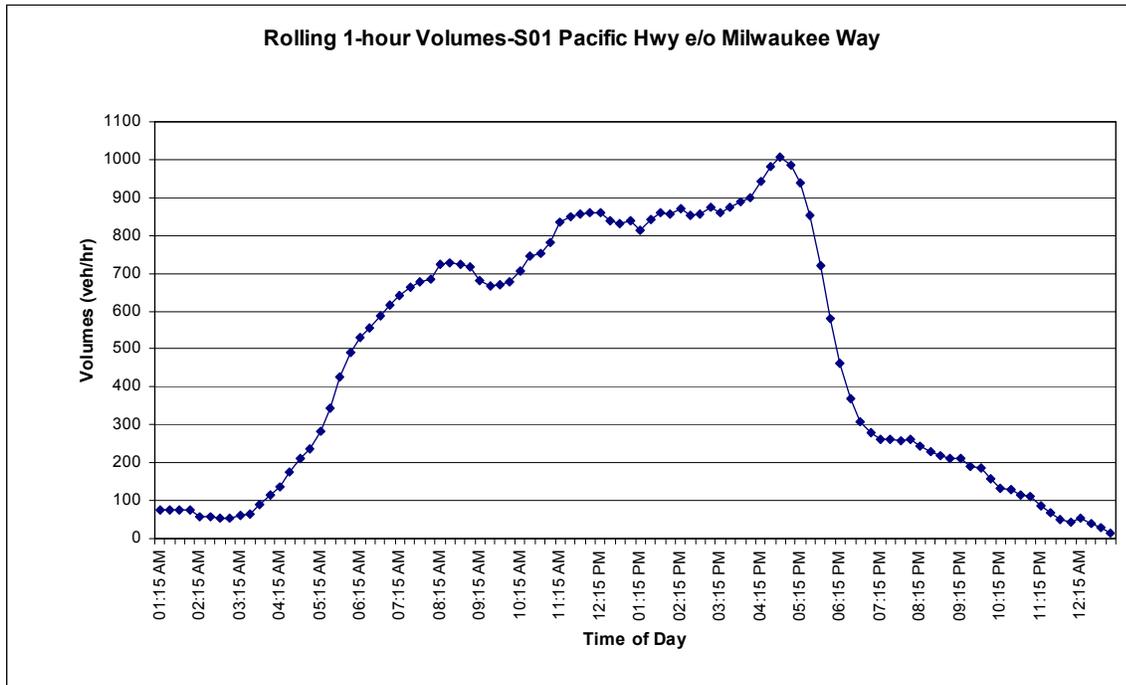


Figure 5. Rolling 1-Hour Volumes on Pacific Highway west of 51st Avenue

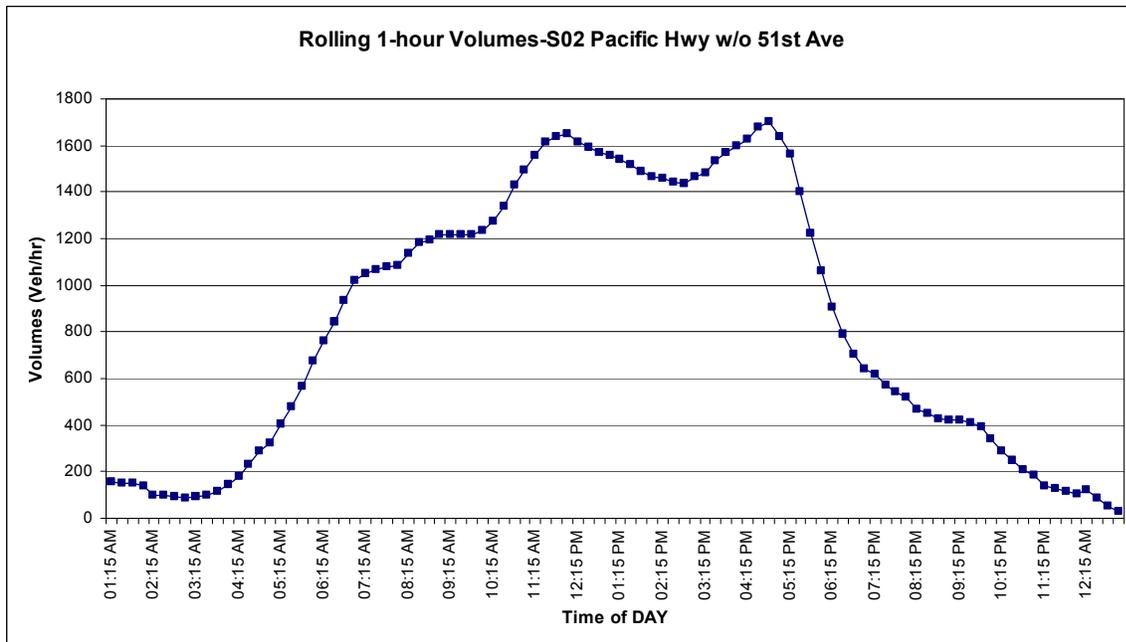


Figure 6. Rolling 1-Hour Volumes on Pacific Highway east of 70th Avenue

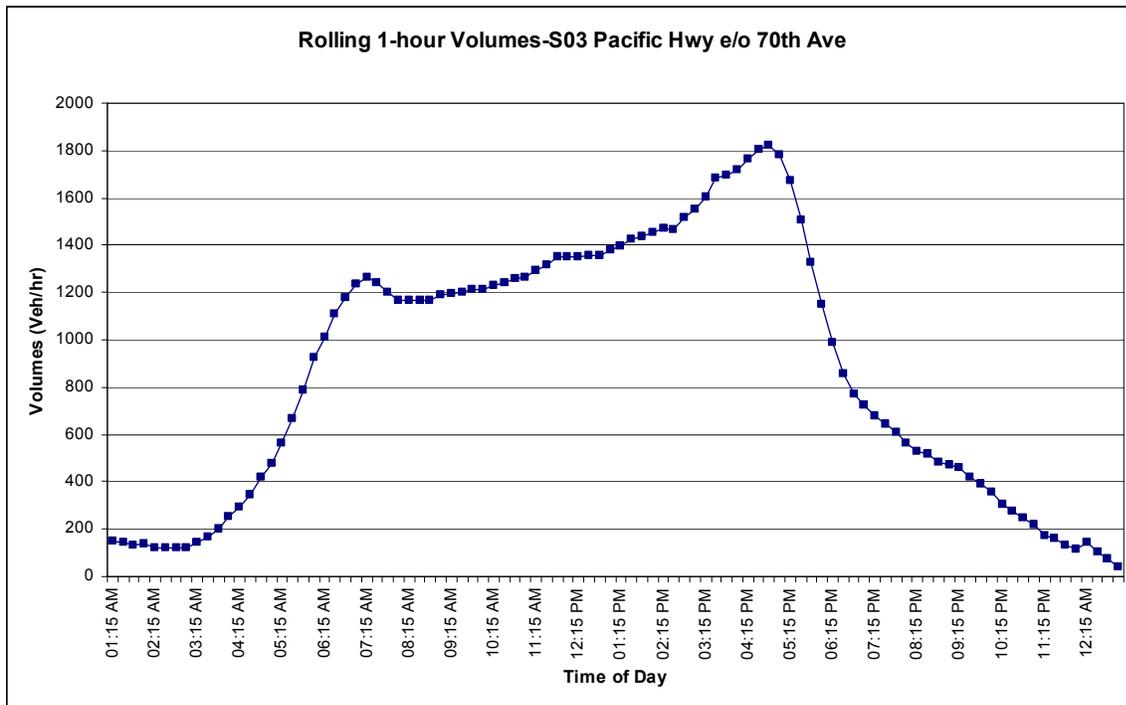


Figure 7. Rolling 1-Hour Volumes on Port of Tacoma Road south of 12th Street

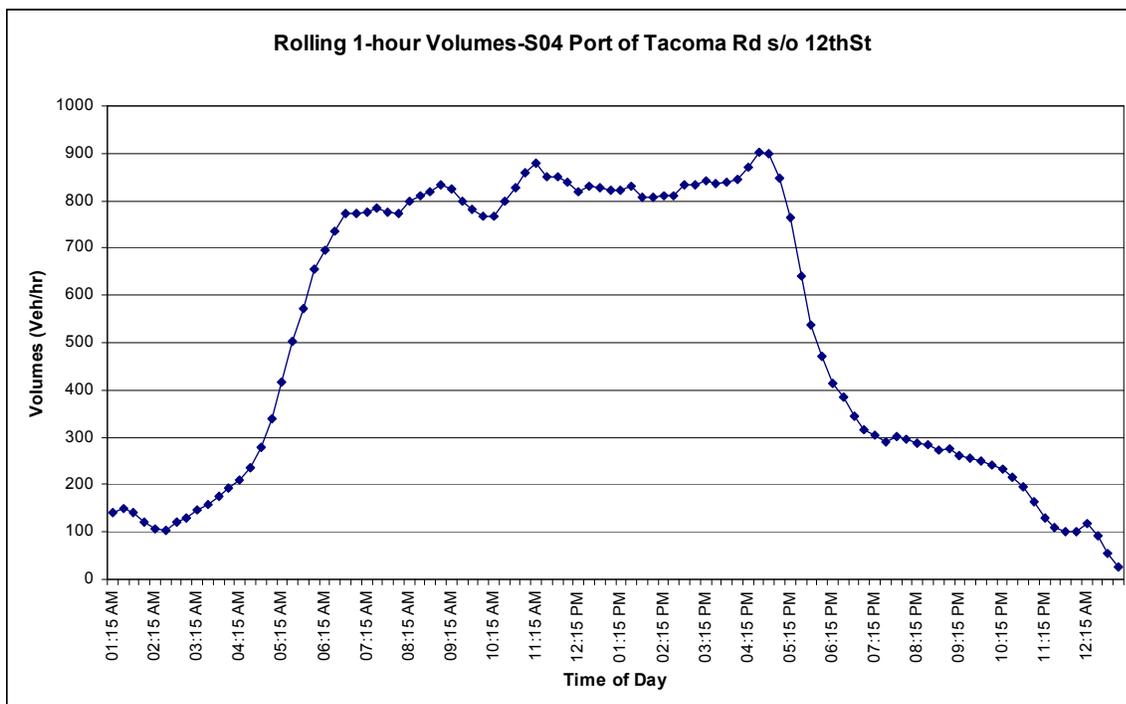


Figure 8. Rolling 1-Hour Volumes on 54th Avenue north of Pacific Highway

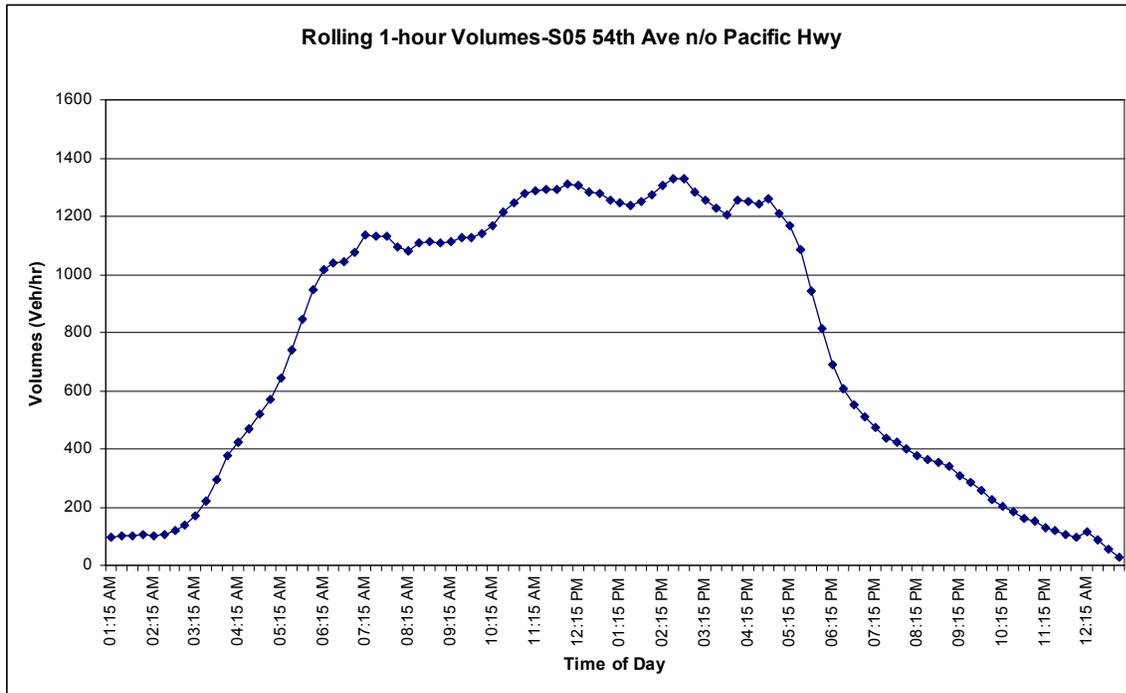


Figure 9. Rolling 1-Hour Volumes on 20th Street east of Port of Tacoma Road

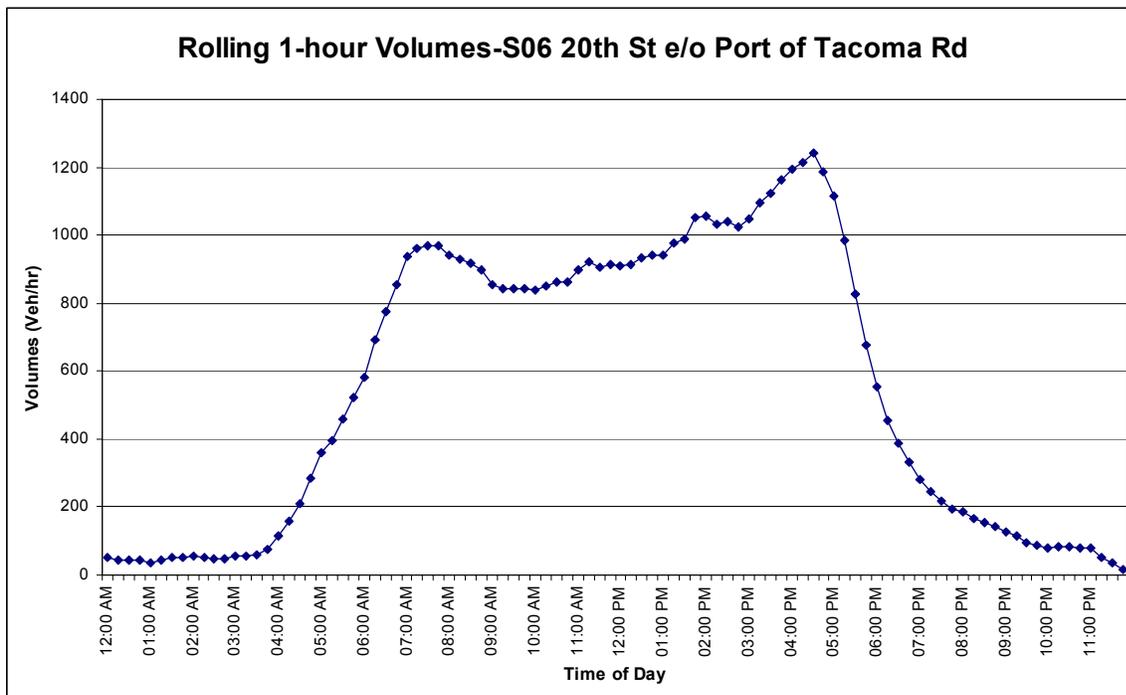


Figure 10. Rolling 1-Hour Volumes on 20th Street east of 70th Avenue

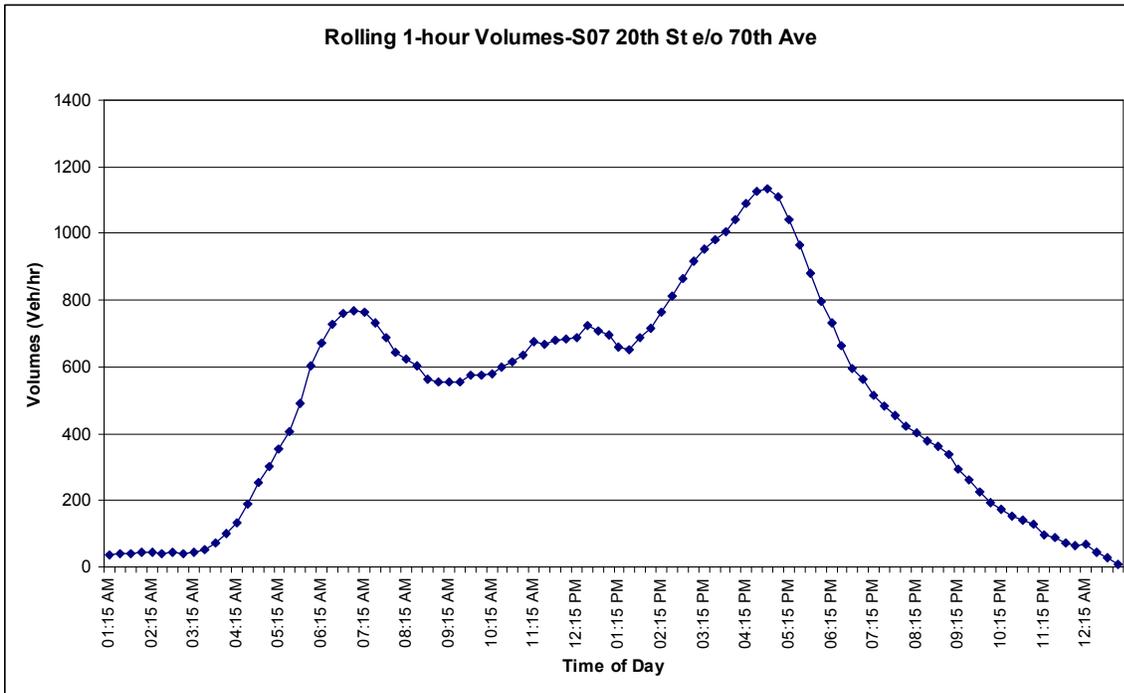


Figure 11. Rolling 1-Hour Volumes on 54th Avenue south of 20th Street

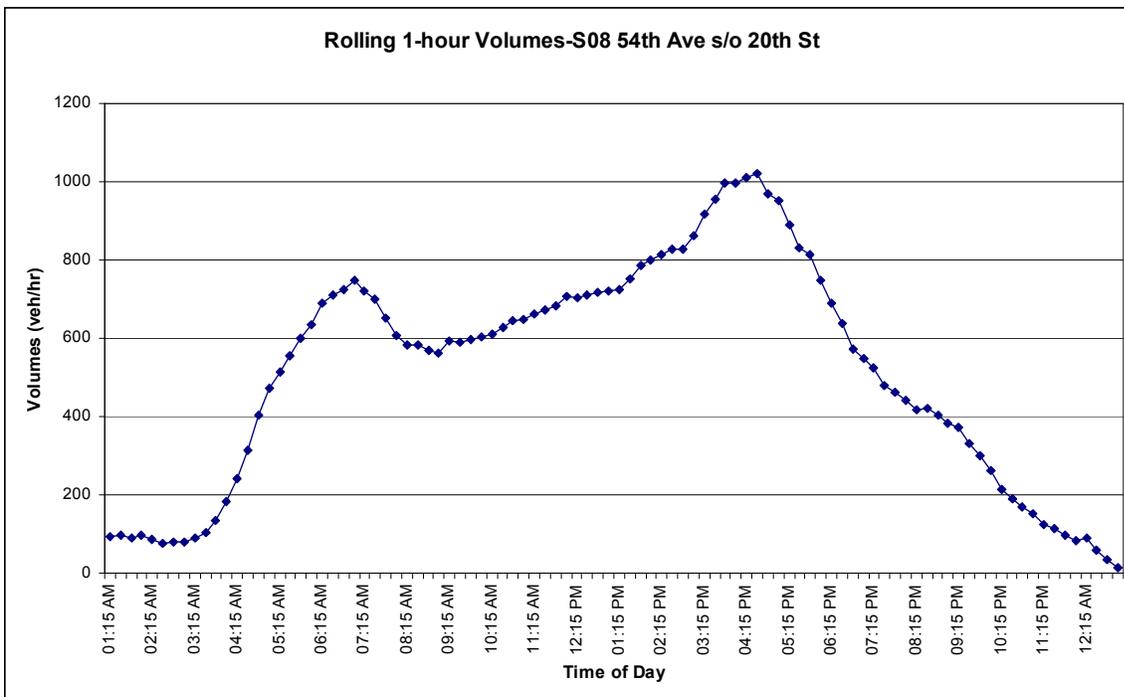


Figure 12. Rolling 1-Hour Volumes on Valley Avenue east of 70th Avenue

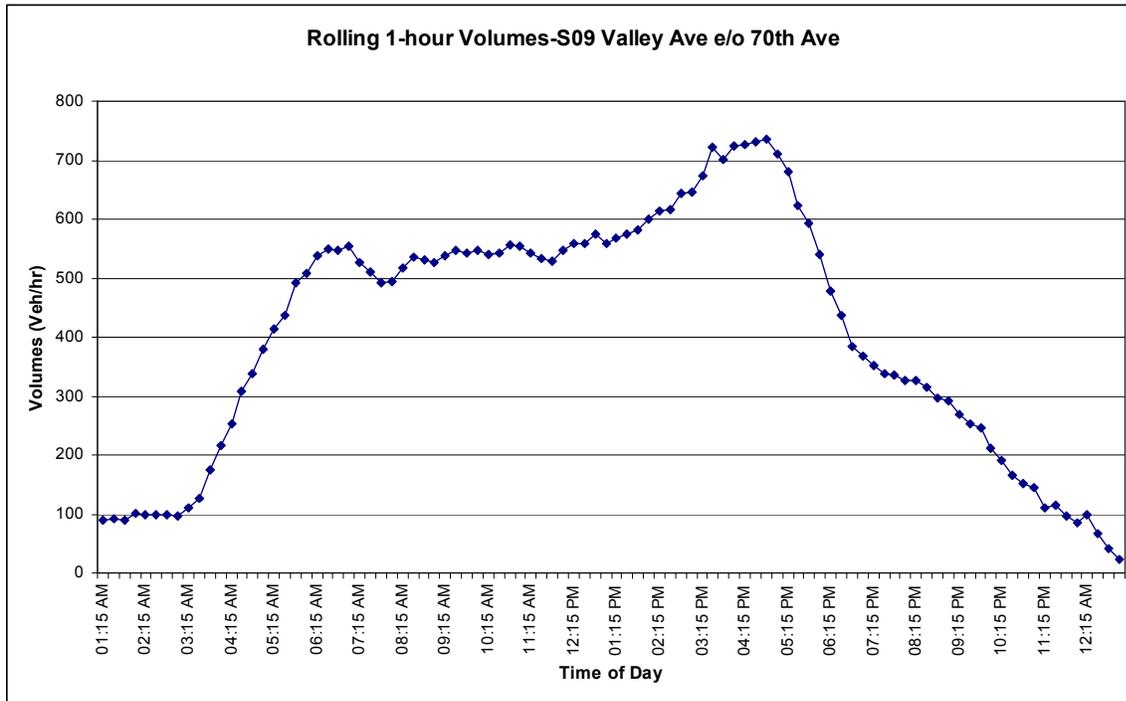


Figure 13. Rolling 1-Hour Volumes on Levee Road east of 70th Avenue

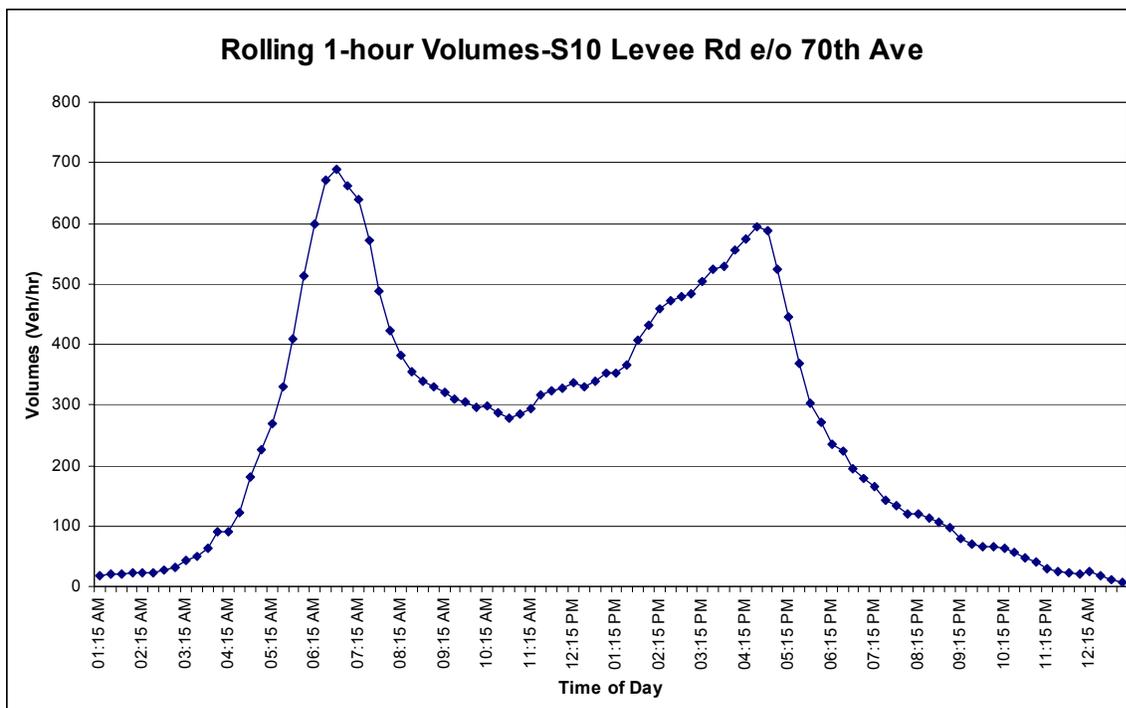


Figure 14. Rolling 1-Hour Volumes on Levee Road east of Frank Albert Road

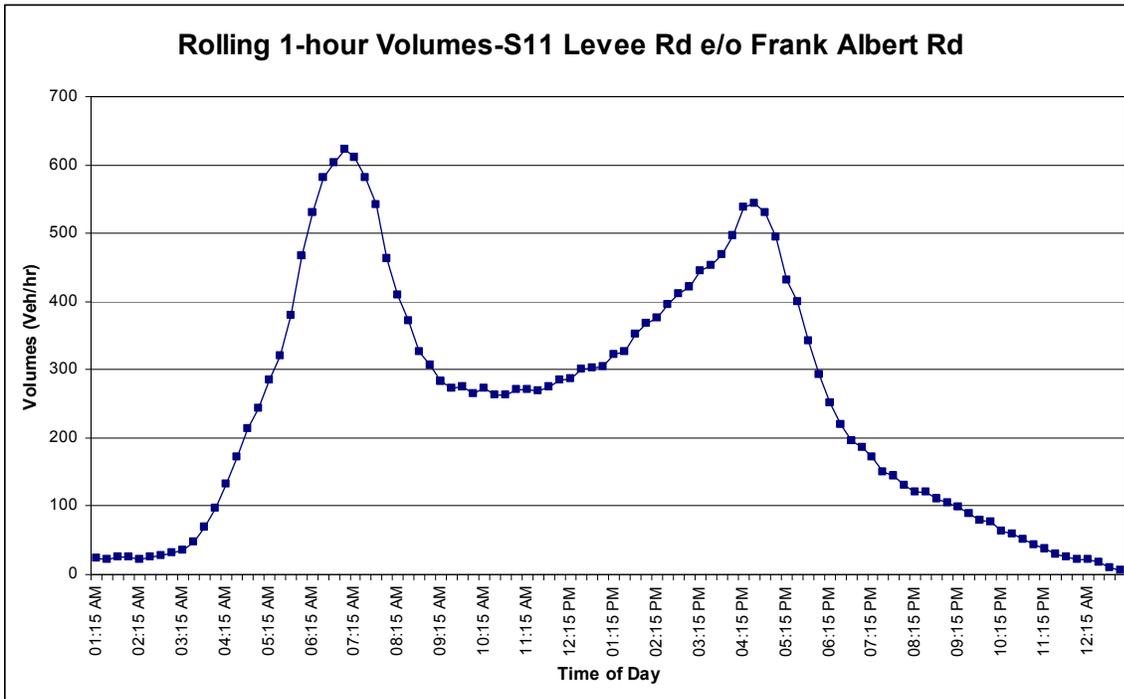


Figure 15. Rolling 1-Hour Volumes on 70th Avenue north of Levee Road

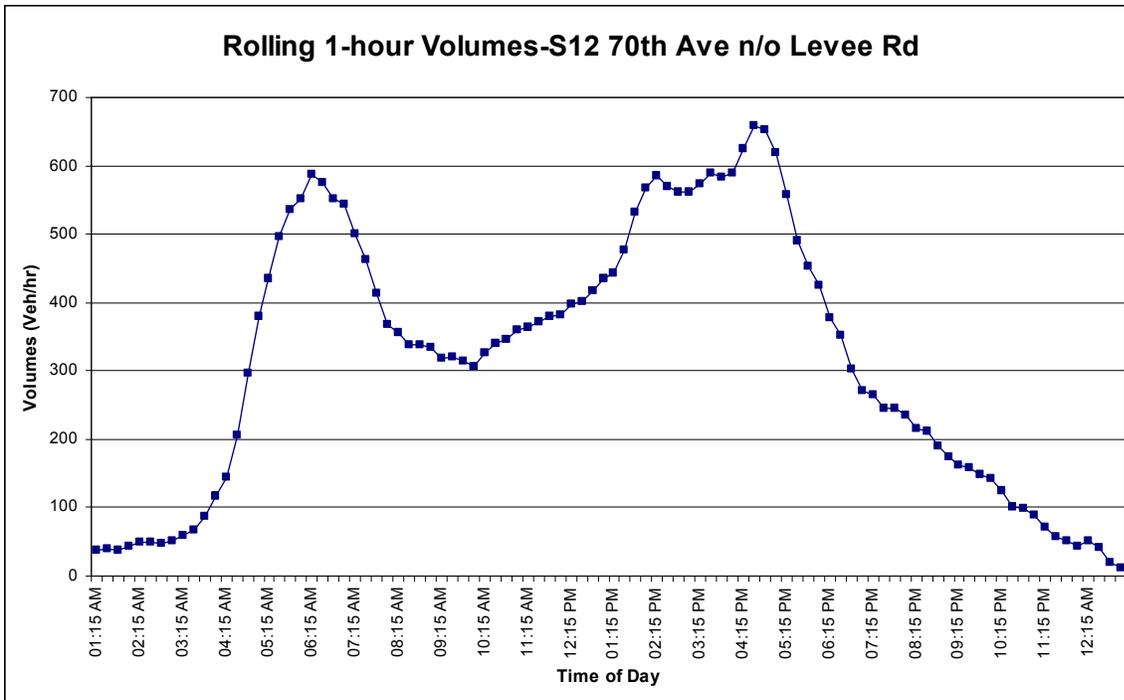
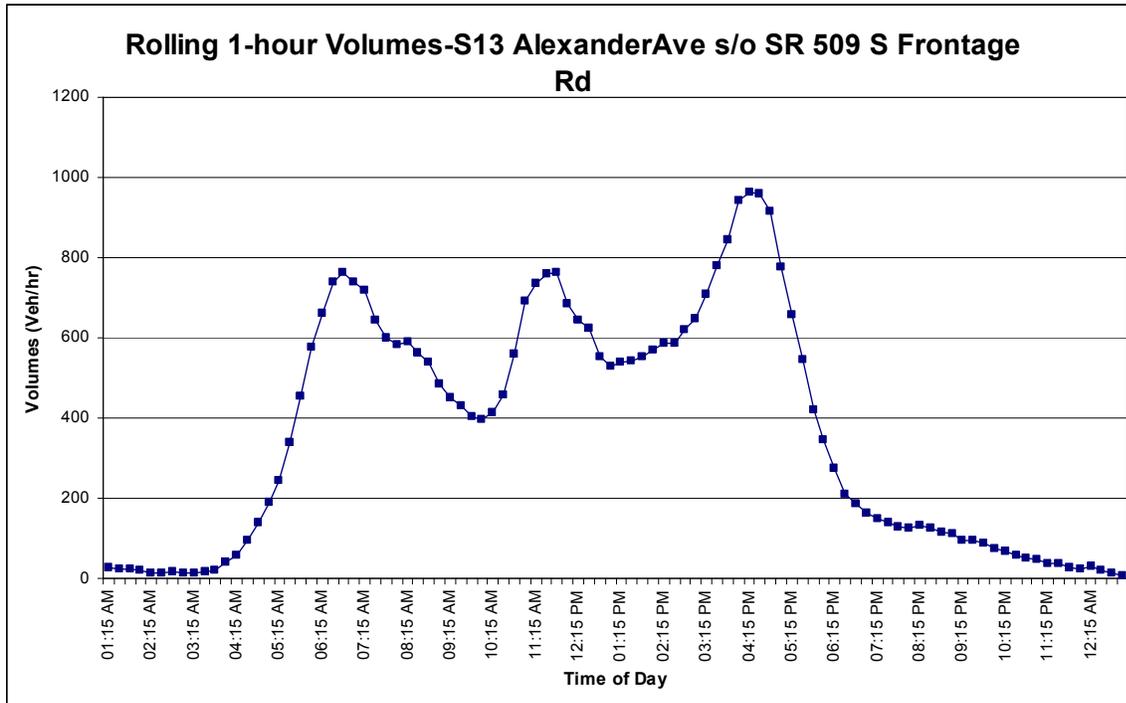


Figure 16. Rolling 1-Hour Volumes on Alexander Avenue south of SR 509



**APPENDIX A –
2008 AM AND PM PEAK HOUR COUNTS**

**APPENDIX B –
TUBE COUNTS**