

SHEET 1 LTPP TRAFFIC DATA SUMMARY TRANSMITTAL FORM	*STATE ASSIGNED ID [-----] *STATE CODE [42] *SHRP SECTION ID [1614]
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STATE OR PROVINCE PENNSYLVANIA COUNTY CENTRE
 HIGHWAY ROUTE NO. SR 220 MILEPOST# SEG 170
 NEAREST CITY/TOWN .8 MI. W MARTHA FURNACE
 NEAREST INTERSECTION .1 MI W PA 322
 FUNCTIONAL CLASS 2 NO. LANES EACH DIRECTION 1 TOTAL NO. LANE 2
 DIRECTION OF TRAVEL GPS LANE E DATE OPENED TO TRAF. - -89
 FIPS COUNTY CODE 027 FHWA STATION IDENTIFICATION NO. _____
 HPMS SAMPLE NO. 140220007802 HPMS SUBDIVISION NO. 0
 TYPE OF PAVEMENT: AC X PCC _____ OTHER _____
 CONTROL OF ACCESS: YES _____ NO X MEDIAN: YES _____ NO X
 CURRENT SURROUNDING DEVELOPMENT:
 URBAN _____ SUBURBAN _____ RURAL X
 HAS INTENSITY OF ROADSIDE DEVELOPMENT INCREASED OVER PAST 10
 YEARS? YES _____ NO X
 IF YES, DESCRIBE CHANGES _____

NAME OF PREPARER <u>EDWIN R. MARSHALL, JR.</u>	PHONE # <u>(717) 787-3082</u>
DATE PREPARED <u>9/26/90</u>	

SHEET 2 LTPP TRAFFIC DATA TRAFFIC VOLUMES AND LOAD ESTIMATES	*STATE ASSIGNED ID [_ _ _ _] *STATE CODE [<u>42</u>] *SHRP SECTION ID [<u>1614</u>]
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*Overwrote
old data.*

ENTERED AUG 12 1999

YEAR	1. ESTIMATED TOTAL VEHICLES AADT (TWO-WAY)	2. ESTIMATED TOTAL TRUCK AADT (TWO-WAY)	3. ESTIMATED TOTAL VEHICLES AADT GPS LANE	4. ESTIMATED TOTAL TRUCKS AADT GPS LANE	5. ESTIMATED ESAL'S / YR GPS LANE (1000's)
1989	13500	1456	6750	728	266
1988	12392	1412	6446	706	258
1987	13000	1369	6500	685	250
1986	12080	1328	6040	664	242
1985	11160	1288	5580	644	235
1984	10240	1249	5120	624	228
1983	9320	1211	4660	605	221
1982	8400	1000	4200	500	183
1981	8232	741	4116	370	135
1980	8169	735	4085	368	134
1979	8252	743	4126	371	136
1978	7785	701	3892	350	128
1977	7485	674	3743	337	123
1976	7062	636	3531	318	116
1975	6790	611	3395	306	112
1974	7000	620	3500	315	115
1973	8568	771	4284	386	141
1972	8400	756	4200	378	138
1971	8232	659	4116	329	120
1970	8067	645	4024	323	118
1969	7906	632	3953	316	115
1968	7748	620	3874	310	113
1967	7593	607	3796	304	111
1966	7441	595	3721	298	109
1965	7292	583	3646	292	106

NAME OF PREPARER <u>DENNY WILLIAMS</u>	PHONE # <u>(717) 787-1840</u>
DATE PREPARED <u>6-11-99</u>	

0.12178

SHEET 2 LTPP TRAFFIC DATA TRAFFIC VOLUMES AND LOAD ESTIMATES	*STATE ASSIGNED ID [_ _ _ _] *STATE CODE [42] *SHRP SECTION ID [1614]
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ENTERED FEB 26 1999

Has been
over written.

YEAR	1. ESTIMATED TOTAL VEHICLES AADT (TWO-WAY)	2. ESTIMATED TOTAL TRUCK AADT (TWO-WAY)	3. ESTIMATED TOTAL VEHICLES AADT GPS LANE	4. ESTIMATED TOTAL TRUCKS AADT GPS LANE	5. ESTIMATED ESAL'S / YR GPS LANE (1000's)
1989	12727	1394	6363	701	193
1988	12563	1376	6282	692	191
1987	12402	1358	6201	683	189
1986	12243	1341	6121	674	186
1985	12086	1324	6043	666	184
1984	11931	1307	5965	657	181
1983	11778	1290	5889	649	179
1982	11626	1273	5813	640	177
1981	11477	1257	5739	632	174
1980	11330	1241	5665	624	172
1979	11184	1225	5592	616	170
1978	11041	1209	5520	608	168
1977	10899	1194	5450	600	166
1976	10759	1178	5380	593	164
1975	10621	1163	5311	585	161
1974	10485	1148	5243	577	159
1973	10350	1134	5175	570	157
1972	10218	1119	5109	563	155
1971	10087	1105	5043	555	153
1970	9957	1091	4979	548	151
1969	9829	1077	4915	541	149
1968	9703	1063	4852	534	148
1967	9579	1049	4789	528	146
1966	9456	1036	4728	521	144

NAME OF PREPARER S. MacDonald
DATE PREPARED 24 FEB 1999

PHONE # 716-632-0804

<p>SHEET 2</p> <p>LTPP TRAFFIC DATA</p> <p>TRAFFIC VOLUMES AND LOAD ESTIMATES</p>	<p>*STATE ASSIGNED ID [-----]</p> <p>*STATE CODE [42]</p> <p>*SHRP SECTION ID [1614]</p>
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YEAR	1. ESTIMATED TOTAL VEHICLES AADT (TWO-WAY)	2 ESTIMATED TOTAL TRUCK AADT (TWO-WAY)	3 ESTIMATED TOTAL VEHICLES AADT GPS LANE	4 ESTIMATED TOTAL TRUCK AADT GPS LANE	5 ESTIMATED ESAL'S/YR GPS LANE (1000's)
1989	12892	1412	6446	710	196
1988					
1987					
1986					
1985					
1984					
1983					
1982					
1981					
1980					
1979					
1978					
1977					
1976					
1975					
1974					
1973					
1972					
1971					
1970					
1969					
1968					
1967					
1966					
1965					

NAME OF PREPARER <u>PALMER E. WERT, JR</u>	PHONE # <u>(717) 787-4574</u>
DATE PREPARED <u>9/25/90</u>	

SHEET 3

LTPP TRAFFIC DATA PROCEDURES FOR ESTIMATING ANNUAL AVERAGE VOLUMES AND TOTAL ANNUAL ESALS

*STATE ASSIGNED ID [_ _ _ _]

*STATE CODE [42]

*SHRP SECTION ID [1614]

1. Year Applicable 1989

2. METHOD FOR ESTIMATING AADT

- ☒ Factored a single count taken this year at the GPS site.
- ☐ Averaged multiple counts taken this year at the GPS site.
- ☐ Averaged and factored multiple counts taken this year at the GPS site.
- ☐ Growth factored last year's estimate.
- ☐ Estimated based on volume counts at nearby locations.
- ☐ Used flow maps.
- ☐ Used computerized network analyses.
- ☐ Other: _____

3. METHOD FOR ESTIMATING TRUCK VOLUMES OR PERCENTAGES

- ☒ Used a single count taken this year at the GPS site.
- ☐ Factored a single count taken this year at the GPS site.
- ☐ Averaged multiple counts taken this year at the GPS site.
- ☐ Used system averages from counts taken this year.
- ☐ Used count data from nearby sites.
- ☐ Used count data taken in earlier years at the GPS site.
- ☐ Used system averages taken in earlier years at the GPS site.
- ☐ Used computerized network analyses.
- ☐ Other: _____

4. METHOD FOR ESTIMATING AADT BY GPS LANE

- ☒ Based on actual lane count data.
- ☐ System distribution factors.
- ☐ Other: ASSUMED 50/50 SPLIT

5. METHOD FOR ESTIMATING TRUCK AADT IN GPS LANES

- ☒ Based on actual lane count data.
- ☐ System distribution factors.
- ☒ Other: ASSUMED 50/50 SPLIT

6. METHOD FOR ESTIMATING ESAL/VEHICLE

- ☐ ESAL/Truck.
- ☒ ESAL/Vehicle class. (no. of classes) 11
- ☐ Other: _____

7. ESAL ESTIMATES

(A) Source of Data

- ☐ Weight data collected at GPS site this year.
- ☐ Weight data collected at GPS site prior years.
- ☒ Weight data from system averages this year.
- ☐ Weight data from system averages prior years.
- ☐ Weight data from historic W-4 Tables used.
- ☐ Other: _____

(B) Weight Scale Type

- ☐ WIM scale.
- ☐ Static scale used for enforcement.
- ☐ Static scale not used for enforcement.
- ☐ Other: _____

NAME OF PREPARER PALMER E. WERT, JR PHONE # (712) 787-4574

DATE PREPARED 9/25/90

SHEET 4 LTPP TRAFFIC DATA TRAFFIC VOLUME COUNTS	•STATE ASSIGNED ID [_____]
	•STATE CODE [42]
	•SHRP SECTION ID [1614]

HIGHWAY ROUTE NO. (THIS COUNT) 220

MILEPOST# OR LOCATION (THIS COUNT) 170

BEGINNING DATE 8/29/89 ENDING DATE 8/29/89

BEGINNING TIME 01 ENDING TIME 2400

COUNT DURATION 24 (X) HOURS () DAYS () MONTHS

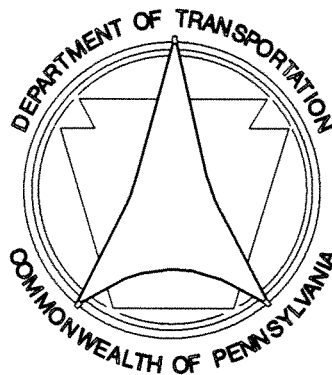
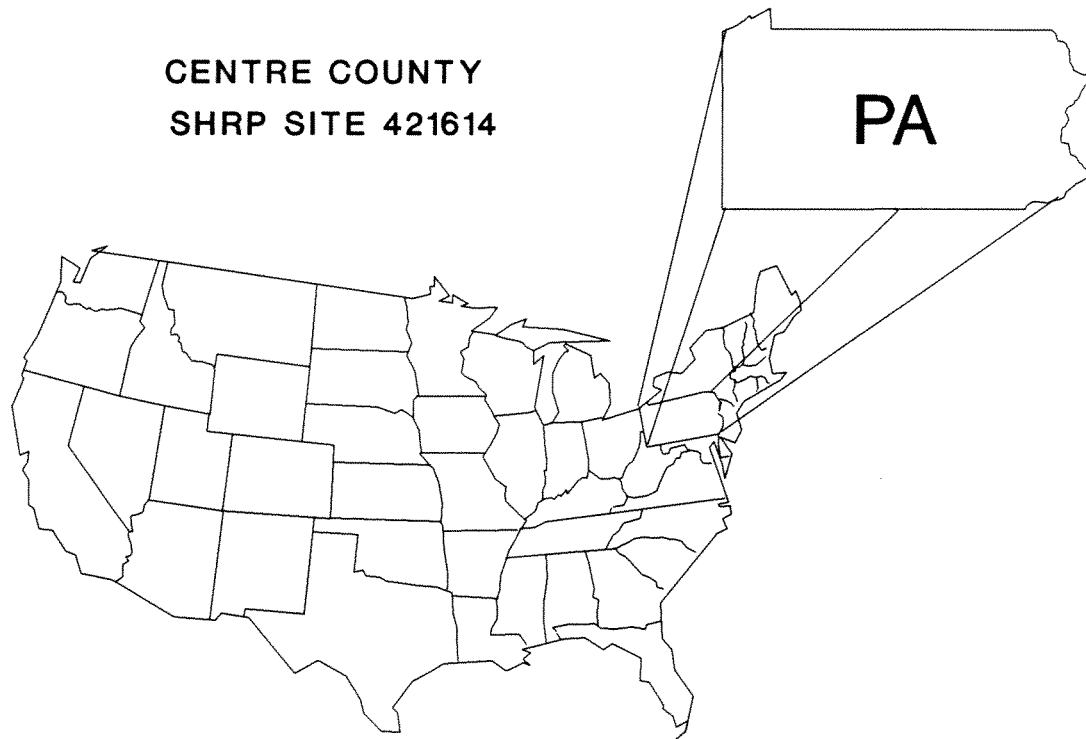
TYPE OF COUNTER STREETER NAME/MODEL# 241

TYPE OF COUNT: TWO-WAY ☒ ONE WAY ☐ GPS TEST LANE ONLY ☐

<u>ACTUAL COUNTS</u>	
<u>ITEM</u>	<u>UNITS</u>
1. TOTAL NO. OF VEHICLES(RAW COUNT)	14388
2. ADJUSTMENT FACTORS(AS APPLICABLE):	
A. ADJUSTMENT TO 24-HOUR COUNT	N/A
B. AXLE CORRECTION FACTOR	N/A
C. DAY OF THE WEEK	N/A
D. MONTH FACTOR	N/A
E. OTHER FACTOR(<u>24 HRS TO ADT</u>)	.896
3. ANNUAL AVERAGE DAILY TRAFFIC(AADT) (TWO-WAY)	12892
4. DIRECTIONAL DISTRIBUTION FACTOR	.50
5. GPS LANE DISTRIBUTION FACTOR	.50
6. AADT GPS LANE	6446

NAME OF PREPARER <u>PALMER E. WERT, JR</u>	PHONE # <u>(717) 787-4574</u>
DATE PREPARED <u>9/25/90</u>	

STRATEGIC HIGHWAY RESEARCH PROGRAM GPS TRAFFIC DATA COLLECTION

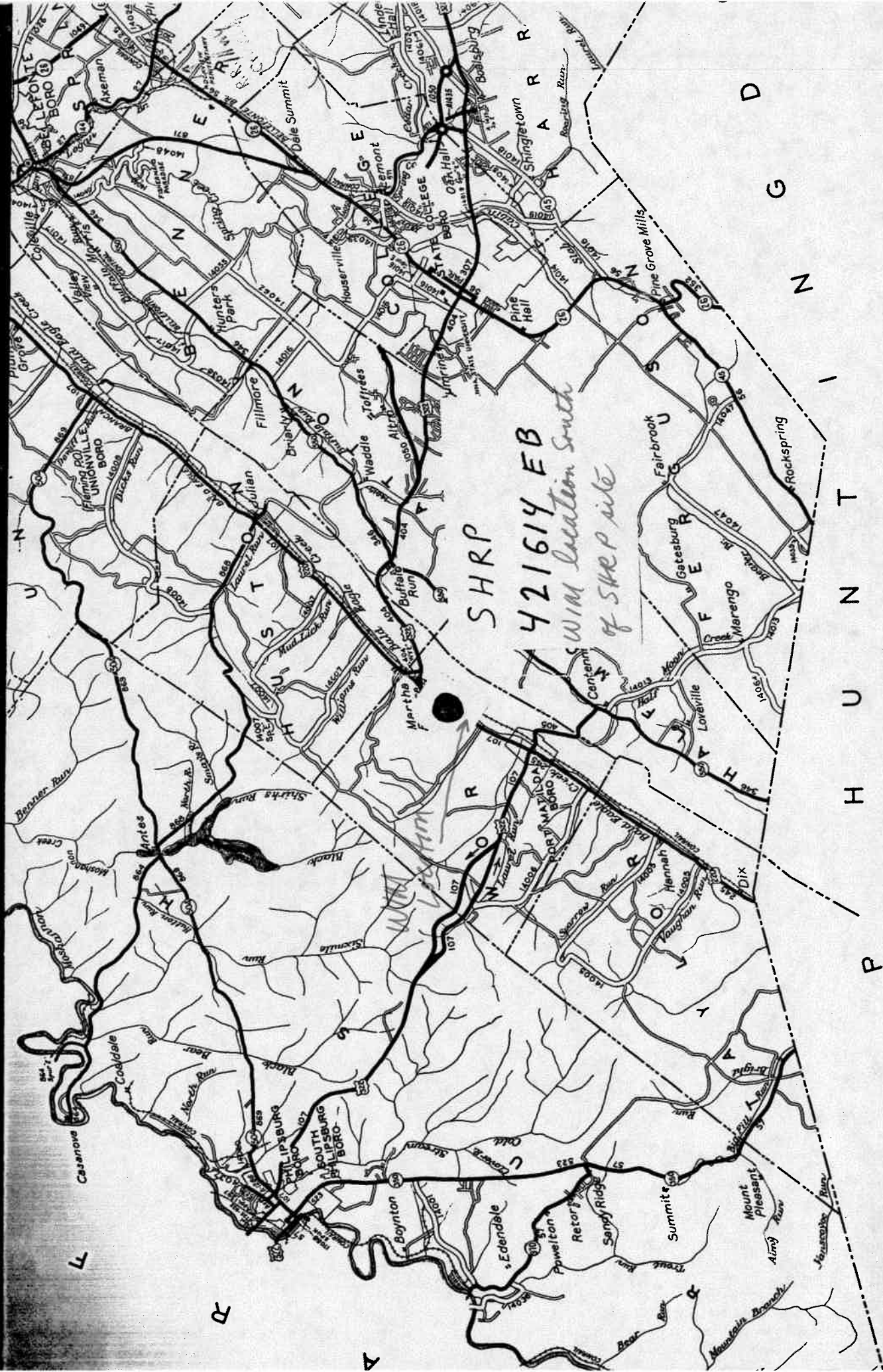


HISTORICAL REPORT

TRAFFIC DATA COLLECTION PLAN
FOR SHRP-LTPP GPS SITES

STATE: PA 12.14
STATE CONTACT/TRAFFIC: George Wass
TELEPHONE NO: (717)783-1194

TYPE	SHRP ID	HWY /	LOCATION OF TEST SITE	SHRP FUNDS NEEDED (Y/N)	AVC (365 DAYS/YEAR)		WIM (7 DAYS/YEAR)		
					TYPE OF DETECTOR	LOCATION 1	TYPE OF WEIGHT SENSOR	MODE OF OPERATION	LOCATION 2
AC GB	421599	ST 120 WB	Begins on US 20 and 219 over pass. Approx. 200' from Arther St	N	-	-	Cap. Mat	MIN	*
AC/JCP	427037	I-80 WB	2 mi. from exit 13	Y	Piezo	ND	Cap. Mat	MIN	*
AC/JCP	421614	US 220 NB	1000' from US 322. State College Rd	N	-	-	Cap. Mat	MIN	*
JR CP	421606	SR 220 NB	24 mi. S. Altoona, 1 mi. N. of Hwy SR 4034 @ segment marker 710	N	-	-	Cap. Mat	MIN	*



SHRP

421614 EB

WIM location South
of SHRP side

SHR
P
H
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N
G
D
N
Z
A
L
B

**PENNSYLVANIA DEPARTMENT OF TRANSPORTATION
ESTIMATED HISTORICAL DATA FOR SHRP SITE 421616 ?
ANALYSIS WORKSHEET**

421614

6/11/99

Estimated total truck (two-way) x 365 / 2 * .001

Shaded areas are data supplied by SHRP
Unshaded areas are PennDOT data

Year	ESTIMATED TOTAL VEHICLES AADT (TWO-WAY)	ESTIMATED TOTAL TRUCK AADT (TWO-WAY)	ESTIMATED TOTAL VEHICLES AADT GPS LANE	ESTIMATED TOTAL TRUCKS AADT GPS LANE	ESTIMATED ESAL'S / YR GPS LANE (1000's)	Calculated from SHRP data	RMS ESAL'S * 365 / 2 * .001	ESALS FROM RMS COUNTS
1997	17500	1800	8750	900	329		331	1811
1996	17500	1700	8750	850	310		296	1624
1995	16400	1700	8200	850	310		304	1665
1994	16200	1700	8100	850	310		313	1716
1993	16300	1700	8150	850	310		312	1710
1992	16054	1658	8027	829	307	303		
1991	13900	1500	6950	750	274		204	1118
1990	15564	1608	7782	804	299	293		
1990	13500	1600	6750	800	292			
1989	12892	1412	6446	706	196	258		
1988	13000	1600	6500	800	292			
1987	13200	1400	6600	700	256			
1986								
1985								
1984								
1983								
1982	8400	1000	4200	500	183			
1981								
1980								
1979								
1978								
1977								
1976								
1975								
1974	7000							
1973								
1972	8400							
1971								
1970								
1969								
1968								
1967								
1966								
1965								

Growth trend computed using actual count data as reference points (denoted by shading).

Linear growth trend for 1983 - 86 computed in Microsoft Excel

FHWA Traffic Trend growth percentages for 1975 - 1981

Standard 2% growth trend backcasted from 1973 - 65

1997	0%	17500	1800	8750	900	329
1996	7%	17500	1805	8750	902	329
1995	1%	16400	1750	8200	875	319
1994	22%	16200	1697	8100	849	310
1993	-17%	13300	1646	6650	823	300
1992	15%	16054	1596	8027	798	291
1991	-11%	13900	1548	6950	774	283
1990	15%	15564	1501	7782	751	274
1989	5%	13500	1456	6750	728	266
1988	-1%	12892	1412	6446	706	258
1987	8%	13000	1369	6500	685	250
1986	8%	12080	1328	6040	664	242
1985	9%	11160	1288	5580	644	235
1984	10%	10240	1249	5120	624	228
1983	11%	9320	1211	4660	605	221
1982	2%	8400	1000	4200	500	183
1981	1%	8232	741	4116	370	135
1980	-1%	8169	735	4085	368	134
1979	6%	8252	743	4126	371	136
1978	4%	7785	701	3892	350	128
1977	6%	7485	674	3743	337	123
1976	4%	7062	636	3531	318	116
1975	-3%	6790	611	3395	306	112
1974	-18%	7000	630	3500	315	115
1973	2%	8568	771	4284	386	141
1972	2%	8400	756	4200	378	138
1971	2%	8232	659	4116	329	120
1970	2%	8067	645	4034	323	118
1969	2%	7906	632	3953	316	115
1968	2%	7748	620	3874	310	113
1967	2%	7593	607	3796	304	111
1966	2%	7441	595	3721	298	109
1965		7292	583	3646	292	106

FHWA TRAFFIC TRENDS BOOK (VMT BILLIONS)

1996	2%	2400
1995	3%	2350
1994	2%	2290
1993	4%	2240
1992	1%	2160
1991	2%	2145
1990	3%	2110
1989	7%	2052
1988	5%	1925
1987	4%	1840
1986	3%	1775
1985	4%	1720
1984	3%	1650
1983	3%	1600
1982	2%	1550
1981	0%	1525
1980	-1%	1530
1979	6%	1550
1978	4%	1460
1977	6%	1410
1976	4%	1325
1975	-3%	1275
Oil embargo		
1974	4%	1310
1973		1260

Estimated volume 8% - 10% trucks 0.5 x total traffic 0.5 x total trucks ESAL formula