2019 Pennsylvania Traffic Data

Bureau of Planning and Research
Transportation Planning Division

pennsylvania
DEPARTMENT OF TRANSPORTATION

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Introduction

The "Pennsylvania Traffic Data Book" documents procedures for developing accurate estimates of highway traffic volumes based on sample traffic counts.

Traffic information is critical in transportation decision-making related to highway funding, traffic engineering, highway design, air quality analysis, planning and programming, as well as winter services, highway maintenance and construction.

The "Pennsylvania Traffic Data Book" provides current traffic expansion factors through the use of tables, charts, and graphs. Expansion factors allow the traffic professional to use a sample traffic count and develop reliable and comparable Annual Average Daily Traffic (AADT) estimates. All tables & charts in the "Pennsylvania Traffic Data Book" are derived from the data of permanent sites. Of the 135 sites in Pennsylvania, 109 were used to calculate the factors.

Some of the permanent sites are excluded on a year to year basis. If it is determined a permanent site has less than 50% of the current year's data, it is not used for the factors. Reasons for a permanent site having less than 50% of the current year's data would be construction projects or equipment malfunction.

How to Use this Booklet

This booklet provides current traffic expansion factors through the use of tables, charts, and graphs. All of the tables, charts, and graphs are listed in the Table of Contents. Refer to the description provided with each table, chart, and graph to ensure that the data presented is what you need.

Acronyms are used quite often throughout this publication. A complete list of acronyms and their meanings are located in the back of the booklet. In addition, an index was created for this booklet to help you find a particular topic quickly.

We would appreciate any comments or suggestions you can provide on information presented in this booklet. Questions or comments relating to data presented in this publication can be directed to:

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The 2019 Traffic Data Book and County Traffic Volume Maps are available free on our website! Traffic Volume Maps can also be purchased through our Maps and Publications Sales Store on the website.

www.penndot.gov
Select: Projects & Programs
Select: Planning
Select: Maps for the County Traffic Volume Maps
or select Traffic Information for the Traffic Data Book
or select Maps followed by Sales Store List to purchase a map

New Developments

New Permanent Continuous Automatic Vehicle Classification (CAVC) Site Installations

Eight new CAVC sites were installed in the 2019 calendar year. All eight sites were installed to collect classification data in all lanes of travel. A list of the sites are below, showing their location and when the site began collecting data.

- CAVC 836 – I 80 in Findley Township, Mercer County, began in February.
- CAVC 838 – I 376 in Brighton Township, Beaver County, began in October.
- CAVC 841 – I 83 in Lower Allen Township, Cumberland County, began in August.
- CAVC 849 – SR 618 in Summit Township, Crawford County, began in September.
- CAVC 850 – SR 183 in Penn Township, Berks County, began in September.
- CAVC 851 – SR 33 in Lower Nazareth Township, Northampton County, began in October.
- CAVC 853 – SR 563 in Haycock Township, Bucks County, began in September.
- CAVC 854 – SR 216 in West Manheim Township, York County, began in September.

Nine sites were reinstalled and upgraded from an automatic traffic recorder (ATR) to a CAVC in the 2019 calendar year. All nine sites now collect classification data. A list of the sites are below, showing their location and when the site began collecting data.

- CAVC 2 – SR 77 in Richmond Township, Crawford County, began in July.
- CAVC 27 – SR 66 in Highland Township, Elk County, began in September.
- CAVC 51 – SR 44 in Eulalia Township, Potter County, began in October.
- CAVC 362 – SR 616 in North Codorus Township, York County, began in October.
- CAVC 367 – SR 45 in West Buffalo Township, Union County, began in September.
- CAVC 374 – I 79 in Lancaster Township, Butler County, began in July.
- CAVC 384 – SR 4022 in Lawrence Township, Tioga County, began in September.
- CAVC 391 – SR 23 in Warwick Township, Chester County, began in September.
- CAVC 600 – I 81 in Southampton township, Franklin County, began in August.

Installation of CAVC 853 in Bucks County

Traffic Data Collection

Traffic data is collected on 40,000 miles of PennDOT owned roads and 3,700 miles of local federal aid roads in Pennsylvania. Approximately 10,000 raw traffic counts are collected per year by:

- 3 Bureau of Planning and Research (BPR) Field Staff
- PennDOT Engineering District 2-0, 10-0, and 12-0
- 9 Metropolitan Planning Organizations (MPOs)
- Contractors

Volume: The majority of the counts taken as part of our statewide count program record volume of traffic on a roadway. Volume is usually expressed as Annual Average Daily Traffic (AADT), which represents traffic volume over an average 24-hour period.

Classification: One method of data collection used for our count program is vehicle classification. Vehicles are classified into 13 classes ranging from cars to trucks in accordance with the Federal Highway Administration vehicle classification scheme.

Weight: Truck weight data is collected from WIM stations.

Speed: Speed data is collected from permanent traffic recorders.

Short-Term classification count installed.

Traffic Data Collection Sources

Automatic Traffic Recorders (ATRs)

17 ATRs strategically located throughout the state count volume and speed data on a continuous basis 365 days per year.   A map showing the locations of ATRs throughout the state is provided on page 13.

Short-Term In-Pavement Sites (STIP)

Approximately 16 inductive loop sites, referred to as STIP sites are installed throughout the state of Pennsylvania. Volume data is collected from these permanent sites for a 24-hour period.

Continuous Automatic Vehicle Classifier (CAVC)

96 CAVC sites collect continuous vehicle classification data. A map showing CAVC locations are provided on page 13.

Weigh-In-Motion (WIM)

22 WIM stations provide continuous truck weight and vehicle classification data. 14 of the 22 sites are VWIM. WIM stations are shown on the map on page 14.

Pneumatic Tubes

The majority of the counts are collected using pneumatic tubes. Axle counts are collected using a traffic counting device in association with a single pneumatic tube stretched across the roadway. An axle correction factor is applied to adjust vehicle axle base data for the incidence of vehicles with more than two axles.

Two tubes are used to count and classify vehicles by type based on axle configuration.

Manual Counts

Manual counts are taken on sections of roadways that are not accessible to automated data collection equipment or have safety limitations. Observers classify vehicles by type based on axle configuration.

Toll Receipts

The Delaware River Joint Toll Bridge Commission and the Delaware River Port Authority document traffic between Pennsylvania and New Jersey.

The Pennsylvania Turnpike Commission toll receipt surveys provide data on the Commonwealth's toll roads.

Permanent Traffic Recorders

Pennsylvania maintains permanent traffic recorders at 135 strategically selected locations throughout the state. These permanent sites collect traffic volume data on a continuous basis throughout the year. This data is used to develop daily and seasonal factors, as well as to identify changes in traffic patterns. Based on a research study performed by Pennsylvania State University and West Virginia University, it was determined that PennDOT locations in the traffic pattern groups were acceptable according to the FHWA Traffic Monitoring Guide.

CAVC 804 in Washington County

The permanent sites use magnetic loops embedded in the pavement for vehicle detection. Additionally, CAVC sites utilize piezo sensors to classify and WIM sites utilize Lineas™ quartz sensors to weigh. The data is stored on-site in traffic counters, prior to being automatically polled every night through the use of modems located at each permanent site.

Traffic Pattern Group (TPG)

Highway traffic characteristics can vary by geographical area, roadway type, and population density. Therefore, individual traffic volume counts are categorized into one of ten Traffic Pattern Groups (TPGs). The TPGs are based on highway functional classification, geographic area, and urban/rural characteristics. Each permanent site is associated with one of the ten TPGs listed below.

TRAFFIC PATTERN GROUP	DESCRIPTION
TPG 1	URBAN - INTERSTATE
TPG 2	RURAL - INTERSTATE
TPG 3	URBAN - OTHER PRINCIPAL ARTERIALS
TPG 4	RURAL - OTHER PRINCIPAL ARTERIALS
TPG 5	URBAN - MINOR ARTERIALS, COLLECTORS, LOCAL ROADS
TPG 6	NORTH RURAL - MINOR ARTERIALS
TPG 7	CENTRAL RURAL- MINOR ARTERIALS
TPG 8	NORTH RURAL - COLLECTORS AND LOCAL ROADS
TPG 9	CENTRAL RURAL- COLLECTORS AND LOCAL ROADS
TPG 10	SPECIAL RECREATIONAL

Permanent Site data is used in computing:

- Daily, monthly, and seasonal adjustment factors by highway functional classification and geographic location.

- Yearly growth factors which are used to update older counts in the Department's Roadway Management System (RMS).

- Design hour factors (peak hour, 30th highest, and 50th highest hour) used for the design of highways.

Permanent Site Locations

This chart lists the permanent site stations by number, county, municipality, traffic route number, state route (SR), segment, and also by a physical description of where the permanent site is located in the state.

SITE #	COUNTY	MUNICIPALITY	ROUTE	SR	SEGMENT	LOCATION
1 *	Erie	Springfield Twp.	US 20	20	10	0.4 mi. E of Ohio/Pennsylvania Line (West Springfield)
2 *	Crawford	Richmond Twp.	PA 77	77	270	0.5 mi. W of PA 408 (New Richmond)
3 *	Clearfield	Huston Twp.	PA 255	255	280	1.4 mi. N of PA 153 (Penfield)
4	Tioga	Delmar Twp.	US 6	6	400	0.9 mi. W of PA 287 (Wellsboro)
5 *	Bradford	Wysox Twp.	***	1043	10	0.1 mi. NW of SR 1041 (Towanda)
8	Montgomery	Whitemarsh Twp.	PA 73	73	534	1.4 mi. NW of PA 309-Skippack Pike (Whitemarsh)
15	Fulton	Todd Twp.	US 522	522	540	1.3 mi. N of US 30 (McConnellsburg)
18 *	Butler	Summitt Twp.	PA 38	38	20	0.7 mi. NW of PA 68 (Butler)
19 *	Washington	Union Twp.	PA 88	88	750	0.4 mi. S of SR1006-Washington Ave. (Finleyville)
20 *	Lawrence	Shenango Twp.	PA 65	65	264	0.6 mi. S of US 422 (New Castle)
24 *	Westmoreland	Derry Twp.	US 22	22	340	1.0 mi. E of PA 981 (New Alexandria)
27 *	Elk	Highland Twp.	PA 66/948	66	60	1.1 mi. E of PA 948 (Russell City)
29 *	Susquehanna	Rush Twp.	PA 267	267	190	0.9 mi. S of PA 706 (Lawton)
40 *	Schuylkill	Schuylkill Twp.	US 209	209	860	0.6 mi. S of PA 309 (Tamaqua)
48 *	Susquehanna	New Milford Twp.	US 11	11	420	0.8 mi. S of PA 848 (New Milford)
51 *	Potter	Eulalia Twp.	PA 44	44	700	1.3 mi. SW of PA 49 (Coudersport)
106 **	Berks	Windsor Twp.	I-78	78	330	2.3 mi. W of PA 143 (Hamburg)
126 *	Jefferson	Brookville Boro.	I-80	80	790	0.6 mi. E of PA 36 (Brookville)
158 **	Centre	Boggs Twp.	I-80	80	1580	0.6 mi. E of PA 150 (Milesburg)
203 *	Allegheny	Leetsdale Boro.	PA 65	65	270	1.0 mi. S of SR 4036 (Leetsdale)
205 *	York	Manchester Twp.	I-83	83	220	1.4 mi. S of PA 238 (North York)
206	Cumberland	Wormleysburg Boro.	***	1014	30	Harvey Taylor Bridge on west approach (Harvey Taylor Bridge)
207	Erie	Springfield Twp.	I-90	90	10	1.1 mi. E of Ohio/Pennsylvania Line (West Springfield)
208	Allegheny	Churchill Boro.	I-376	376	794	0.7 mi. W of PA 791 (Monroeville)
216 *	Susquehanna	Great Bend Twp.	I-81	81	2314	1.1 mi. N of PA 171 (Hallstead)
301	Erie	Lawrence Park Twp.	PA 5	5	680	0.5 mi. W of PA 955 (Erie)
304	Lycoming	S. Williamsport Boro.	US 15	15	250	0.3 mi. S of I-180 (Williamsport)
306 *	Pike	Palmyra Twp.	PA 507	507	280	0.9 mi. S of US 6 (Hawley)
317 **	Blair	Freedom Twp.	I-99	99	214	1.0 mi. S of PA 36/PA 164 (East Freedom)
323 *	Bedford	Bedford Twp.	US 220	220	310	0.7 mi. S of Business US 220 (Bedford Springs)
324 **	Elk	Ridgway Boro.	PA 120	120	42	1.1 mi. E of US 219 (Ridgway)
326 *	Clarion	Paint Twp.	US 322	322	280	0.5 mi. E of PA 66 (Clarion)
328 *	Centre	Boggs Twp.	PA 150	150	194	1.1 mi. N of I -80 (Milesburg)

Indicates CAVC site
** Indicates WIM site
*** Indicates road is not a PA, US, or Interstate Route

Permanent Site Locations (Continued)

SITE #	COUNTY	MUNICIPALITY	ROUTE	SR	SEGMENT	LOCATION
330	Bucks	Northampton Twp.	PA 532	532	130	1.4 mi. SW of PA 413 (Newtown)
334 *	York	W. Manchester Twp.	US 30	30	170	0.7 mi. W of PA 116 (Thomasville)
349	Lehigh	Upper Saucon Twp.	PA 309	309	30	0.7 mi. S of PA 378 (Coopersburg)
360	Clearfield	Bloom Twp.	US 219	219	670	3.2 mi. S of US 322 (Luthersburg)
362 *	York	North Codorus Twp.	PA 616	616	240	1.6 mi. N of PA 214 (New Salem)
363	McKean	Lafayette Twp.	US 219	219	290	0.1 mi. N of PA 59 (Lewis Run)
364 *	Lackawanna	Newton Twp.	PA 307	307	360	50 ft. W of SR 4017 (Clarks Summit)
367 *	Union	West Buffalo Twp.	PA 45	45	250	0.6 mi. W of PA 104 (Mifflinburg)
370 *	Westmoreland	Rostraver Twp.	I-70	70	450	0.9 mi. W of PA 51 (Belle Vernon)
371 *	Fulton	Brush Creek Twp.	I-70	70	1522	1.1 mi. S of PA 915 (Crystal Springs)
372 *	Union	White Deer Twp.	I-80	80	2104	0.7 mi. E of US 15 (Milton)
374 *	Butler	Lancaster Twp.	I-79	79	904	2.2 mi. N of PA 68 (Zelienople)
375 *	Allegheny	N. Fayette Twp.	US 22/30	22	80	0.8 mi. E of PA 978 (Imperial)
376 *	Luzerne	Wilkes-Barre Twp.	I-81	81	1664	1.7 mi. N of PA 309-Exit 165A/165B (Wilkes-Barre)
377	Bucks	Bristol Twp.	I-295	295	404	2.5 mi. S of US 1 (PennDel)
378 *	Fayette	Redstone Twp.	US 40	40	160	1.0 mi. W of SR 4010 (Briar Hill)
379 *	Blair	Logan Twp.	***	4013	80	0.5 mi. E of SR 4015 (Altoona)
380 *	Berks	Exeter Twp.	PA 562	562	40	0.2 mi. W of SR 2033 (St. Lawrence)
381 *	Mercer	Hermitage City	***	3019	20	0.9 mi. N of PA 718 (Sharon)
382	Cambria	Lower Yoder Twp.	***	3005	40	0.7 mi. SW of PA 56 (Morrellville)
383 *	Clinton	Pine Creek Twp.	PA 150	150	360	0.5 mi. N of SR 1005 (Chatham Run)
384 *	Tioga	Lawence Twp.	***	4022	50	1.9 mi. E of PA 49 (Nelson)
385 *	Warren	Southwest Twp.	***	3002	30	0.7 mi. W of PA 27 (Enterprise)
386 *	Montour	Limestone Twp.	PA 254	254	10	2.0 mi. E of I-80 (Limestoneville)
387 *	Somerset	Brothers Valley Twp.	***	2031	120	2.0 mi. S of US 219 (Garrett)
388 *	Monroe	Ross Twp.	***	3004	170	0.4 mi. SW of SR 3015 (Saylorsburg)
389 *	Jefferson	Perry Twp.	PA 536	536	210	0.3 mi. W of SR 3011 (Frostburg)
390 *	Lancaster	Mount Joy Twp.	PA 230	230	20	1.7 mi. W of PA 743/PA 241 (Elizabethtown)
391 *	Chester	Warwick Twp.	PA 23	23	110	1.5 mi. E of PA 345 (Warwick Area)
392	Luzerne	Foster Twp.	I-80	80	2684	5.9 mi. E of PA 309 (White Haven)
393 *	Washington	Donegal Twp.	I-70	70	2	0.3 mi. E of W. Virginia/Pennsylvania Line (West Alexander)
394 *	Lehigh	Upper Saucon Twp.	I-78	78	614	1.1 mi. E of PA 309/PA 145/I-78 Interchange (Allentown)
395	Fayette	German Twp.	PA 21	21	230	0.1 mi. E of SR 3023 (Uniontown)
396	Washington	Canton Twp.	US 40	40	320	0.4 mi E of SR 3013 (Washington)
410 **	Tioga	Nelson Twp.	PA 49	49	520	0.5 mi. W of SR 4027 (Nelson)
501 **	Tioga	Liberty Twp.	US 15	15	142	2.7 mi. N of SR 2005 (Blossburg)

Indicates CAVC site
*** Indicates WIM site*
*** Indicates road is not a PA, US, or Interstate Route*

Permanent Site Locations (Continued)

SITE #	COUNTY	MUNICIPALITY	ROUTE	SR	SEGMENT	LOCATION
502 **	Mercer	Wolf Creek Twp.	I-80	80	220	1.4 mi. W of PA 173 (Barkeyville)
503 **	Warren	Youngsville Boro.	US 6	6	420	0.6 mi. E of Railroad St (Youngsville)
504 **	Delaware	Chadds Ford Twp.	US 202	202	114	0.8 mi. N of US 1 (Dilworthtown)
505 **	Perry	Howe Twp.	US 22	22	160	0.7 mi. E of PA 34 (Newport)
506 **	Blair	Allegheny Twp.	***	1001	30	0.2 mi. N of SR 1002 (Altoona)
600 *	Franklin	Southampton Twp.	I-81	81	244	0.7 mi. N of PA 696 (Shippensburg)
700 **	Indiana	Armstrong Twp.	US 422	422	120	0.5 mi. W of SR 4004 (Indiana)
701 **	Dauphin	East Hanover Twp.	I-81	81	774	0.75 mi. N of PA 39 Manada Hill/Hershey Interchange (Grantville)
702 **	Dauphin	East Hanover Twp.	I-81	81	810	0.7 mi. N of SR 2025 (Grantville)
703 **	Lancaster	Brecknock Twp.	US 222	222	1034	0.3 mi. S of Lancaster/Berks County Line (Adamstown)
704 **	Fulton	Bethel Twp.	I-70	70	1702	0.1 mi. N of Maryland/Pennsylvania Line (Warfordsburg)
705 **	Northampton	Williams Twp.	I-78	78	724	1.0 mi. E of SR 33 (Easton)
706 **	Greene	Perry Twp.	I-79	79	14	1.0 mi. N of SR 2002 (Mt. Morris)
707 **	Allegheny	South Fayette Twp.	I-79	79	496	1.4 mi. N of SR 1010 (Bridgeville)
709 **	Columbia	Mifflin Twp.	I-80	80	2444	2.7 mi. E of PA 339 (Columbia)
710 **	Butler	Cranberry Twp.	I-79	79	790	1.2 mi. N of PA 228 (Butler)
712 **	Franklin	Antrim Twp.	I-81	81	64	1.75 Mi. N of PA 16 (Greencastle)
800 *	Centre	Spring Twp.	I-99	99	800	1.2 mi. N of PA 150 (Bellefonte)
801 *	Dauphin	Lower Paxton Twp.	I-81	81	714	0.7 mi. S of SR 3019 (Paxtonia)
802 *	Monroe	Coolbaugh Twp.	PA 423	423	140	0.2 mi. E of I-380 (Tobyhanna)
803 *	Adams	Freedom Twp.	US 15	15	20	0.5 mi. N of Maryland/Pennsylvania Line (Gettysburg)
804 *	Washington	Canton Twp.	I -70	70	154	1.3 mi. E of US 40 (Washington)
805 *	Crawford	N. Shenango Twp.	PA 285	285	20	0.1 mi. E of SR 3007 (Espyville)
806 *	Westmoreland	Hempfield Twp.	US 30	30	170	0.2 mi. E of Strawberry Lane (Jeannette)
807 *	Washington	Twilight Boro.	I-70	70	390	0.6 mi. W of Exit 39 (Speers)
808 *	Indiana	W. Wheatfield Twp.	US 22	22	242	0.1 mi. E of Bethel Cemetery Rd. (Clyde)
809 *	McKean	Foster Twp.	US 219	219	594	0.1 mi. N of Tuna Crossroads Bridge (Foster Brook)
810 *	Bucks	Doylestown Twp.	US 611	611	130	0.3 mi. S of SR 4202 (Doylestown)
811 *	Cumberland	Hampden Twp.	PA 581	581	10	Between the I-81 Junction and Creekview Rd. Exit (Creekview)
812 *	Westmoreland	S. Greenburg Twp.	US 30	30	300	Between Exits for SR 119 and Cedar St. (Cedar Creek)
813 *	Cumberland	Camp Hill Boro.	PA 581	581	120	Between US 11/15 and I-83 (Camp Hill)
815 *	Columbia	Hemlock Twp.	PA 44	44	10	0.25 mi. W of PA 42 (Buckhorn)
816 *	Lebanon	South Annville Twp.	PA 241	241	120	1.1 mi. S of US 322 (Mt. Gretna)
817 *	Jefferson	Winslow Twp.	***	1002	70	0.1 mi. E of SR 2033 (Reynoldsville)
818 *	Pike	Matamoras Boro.	I-84	84	540	0.1 mi. W of New York/Pennsylvania Line (Matamoras)
821 *	Tioga	Lawrence Twp.	US 15	15	774	0.1 mi. S of T-722 Tioga River Rd overpass (Lawrence)

Indicates CAVC site
**Indicates WIM site*
****Indicates road is not a PA, US, or Interstate Route*

Permanent Site Locations (Continued)

SITE #	COUNTY	MUNICIPALITY	ROUTE	SR	SEGMENT	LOCATION
823 *	Dauphin	Swatara Twp.	PA 283	283	4	1.1 mi. S of SR 441 (Swatara)
824 *	Chester	Uwchlan Twp.	PA 100	100	260	Between SR 1001 and PA 113 (Exton)
825 *	York	Shrewsberry Twp.	I-83	83	2	0.2 mi. N of Maryland/Pennsylvania Line (New Freedom)
826 *	Berks	Exeter Twp.	US 422	422	450	0.7 mi. E of I-176 (Exeter)
827 *	Union	White Deer Twp.	US 15	15	320	1.1 mi. N of SR 1004 (New Columbia)
828 *	Crawford	Vernon Twp.	I-79	79	1500	3.3 mi. N 0f US 6 (Meadville)
829 *	Mercer	Shenango Twp.	I-80	80	24	1.3 mi. W of I-376 (West Middlesex)
830 *	Cumberland	Middlesex Twp.	I-81	81	490	1.0 mi. N of PA 641 (Carlisle)
831 *	Cumberland	Silver Spring Twp.	I-81	81	550	1.4 mi. S of PA 114 (Silver Spring)
832 *	Berks	Robeson Twp.	I-176	176	74	At Morgantown Rd Overpass (Green Hills)
833 *	Cumberland	E. Pennsboro Twp.	I-81	81	634	0.8 mi. North of PA 944 (Enola)
834 *	Erie	North East Twp.	I-90	90	450	0.5 mi. E of US 20 (North East)
835 *	Erie	Greenfield Twp.	I-86	86	60	2.4 mi. E of PA 89 (Erie South Tier)
836 *	Mercer	Findley Twp.	I-80	80	164	2.4 mi. W. of I-79 (Mercer)
837 *	Schuylkill	Kline Twp.	I-81	81	1364	2.5 mi. N of SR 1017 (Delano)
838 *	Beaver	Brighton Twp.	I-376	376	344	1.2 mi. W of PA 4035 (Brighton)
839 *	Monroe	Coolbaugh Twp.	I-380	380	70	Between Exits for SR 940 and SR 423 (Pocono Summit)
840 *	Allegheny	Ross Twp.	I-279	279	86	0.4 mi. N of SR 4021 (Franklin Park)
841 *	Cumberland	Lower Allen Twp.	I-83	83	400	0.5 mi. S of Exit 40B (New Cumberland)
842 *	Northumberland	Delaware Twp.	I-180	180	580	At PA 44 overpass (Warrior Run)
843 *	Union	White Deer Twp.	I-80	80	2060	3.83 mi. W of US 15 (White Deer)
844 *	Lackawanna	South Abington Twp.	I-81	81	1930	0.6 mi. N of US 11 (Dickson City)
845 *	Blair	Allegheny Twp.	I-99	99	290	0.7 mi. N of SR 8004 (Hollidaysburg)
846 *	Cumberland	Upper Allen Twp.	***	2013	40	0.7 mi. E of Winding Hill Rd (Winding Hill)
849 *	Crawford	Summit Twp.	PA 618	618	72	0.3 mi. S of PA 18 (Conneaut Lake)
850 *	Berks	Penn Twp.	PA 183	183	210	0.3 mi. N of SR 3006 (Bernville)
851 *	Northampton	Lower Nazareth Twp.	PA 33	33	50	0.7 mi. S of PA 248 (Nazareth)
853 *	Bucks	Haycock Twp.	PA 563	563	563	3.0 mi. W of PA 412 (Lake Nockamixon)
854 *	York	West Manheim Twp.	PA 216	216	60	0.3 mi. E of SR 3045 (Lake Marburg)
985 *	Cambria	Richland Twp.	US 219	219	120	1.6 mi. N of PA 56 (St. Michael)

* Indicates CAVC site
** Indicates WIM site
*** Indicates road is not a PA, US, or Interstate Route

Long-Term Pavement Performance Program (LTPP)

The Long Term Pavement Performance (LTPP) program was established under the Strategic Highway Research Program (SHRP). The first five years of the LTPP program were funded and managed under SHRP. Beginning in 1991, the Federal Highway Administration (FHWA) has sustained the management and funding of the program.

The Federal Highway Administration assumed coordination of a national program to move the products evaluated or developed under SHRP to the state and local agencies upon completion of the research phase.

LTPP, which is a study of in-service pavements, provides the basis for pavement design, maintenance, rehabilitation, and construction methodologies. The LTPP program monitors and collects pavement performance data on all active LTPP sites. The Bureau supports this program by collecting weight and vehicle classification data and reporting the data to LTPP.

ATR, CAVC and WIM Locations Map (Opposite)

The ATR, CAVC, and WIM location maps of Pennsylvania, which are shown on the following two pages, give an overview of where all of the 135 ATR, CAVC and WIM sites are located. Symbols are used in addition to the site number to identify the location of the site.

WIM 706 Sensor Array on I-79 in Greene County

CONTINUOUS MONITORING SITES

■ *ATR*   ★ *CAVC*

CONTINUOUS MONITORING SITES
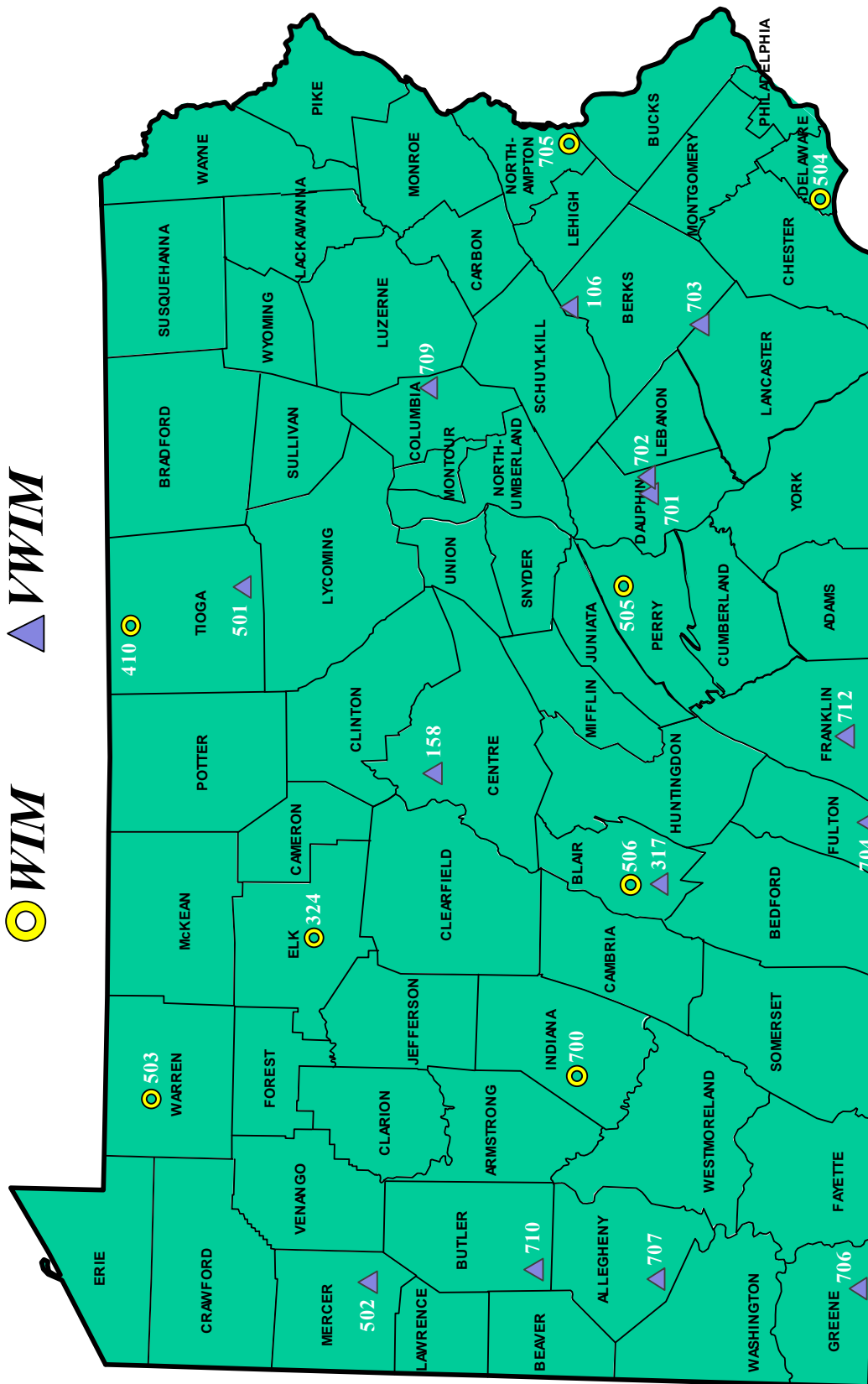
◎ *WIM*   ▲ *VWIM*

Permanent Site Locations by Traffic Pattern Group (TPG)

This chart groups the permanent site locations by Traffic Pattern Group. It gives the permanent site number, route, and the urban area or county depending on the TPG into which the permanent site falls. The Annual Average Daily Traffic (AADT) for each permanent site is also listed on this chart. Of the 135 sites in Pennsylvania, 109 were used to calculate the AADT.

PERMANENT SITE LOCATIONS BY TPG							
TPG 1: URBAN INTERSTATE				**TPG 2: RURAL INTERSTATE**			
SITE #	**ROUTE**	**URBAN AREA**	**AADT**	**SITE #**	**ROUTE**	**COUNTY**	**AADT**
205	I-83	YORK	58,874	106	I-78	BERKS	46,436
208	I-376	PITTSBURGH	96,610	126	I-80	JEFFERSON	24,731
216	I-81	BINGHAMTON	26,777	371	I-70	FULTON	17,618
317	I-99	ALTOONA	14,685	502	I-80	MERCER	27,817
370	I-70	MONESSEN	31,856	600	I-81	FRANKLIN	42,091
372	I-80	UNION	32,643	704	I-70	FULTON	21,844
376	I-81	WILKES-BARRE	61,955	705	I-78	NORTHAMPTON	74,850
377	I-295	PHILADELPHIA	60,341	706	I-79	GREENE	27,142
394	I-78	ALLENTOWN	68,947	709	I-80	COLUMBIA	33,112
710	I-79	PITTSBURGH	50,833	712	I-81	FRANKLIN	49,661
801	I-81	HARRISBURG	82,240	800	I-99	CENTRE	24,500
804	I-70	PITTSBURGH	52,336	807	I-70	WASHINGTON	30,559
818	I-84	PORT JERVIS	30,527	825	I-83	YORK	46,301
823	I-283	HARRISBURG	55,002	828	I-79	CRAWFORD	20,319
830	I-81	HARRISBURG	63,401	829	I-80	MERCER	29,318
831	I-81	HARRISBURG	64,932	834	I-90	ERIE	20,998
832	I-176	READING	21,822	836	I-80	MERCER	28,622
833	I-81	HARRISBURG	67,245	839	I-380	MONROE	27,239
840	I-279	PITTSBURGH	52,715	842	I-180	NORTHUMBERLAND	15,241
845	I-99	ALTOONA	34,785	843	I-80	UNION	22,860

Permanent Site Locations by TPG (Continued)

PERMANENT SITE LOCATIONS BY TPG								
TPG 3: URBAN PRINCIPAL ARTERIAL					**TPG 4: RURAL PRINCIPAL ARTERIAL**			
SITE #	**ROUTE**	**URBAN AREA**	**AADT**		**SITE #**	**ROUTE**	**COUNTY**	**AADT**
8	PA 73	PHILADELPHIA	20,849		4	US 6	TIOGA	2,736
203	PA 65	PITTSBURGH	21,290		19	PA 88	WASHINGTON	5,770
206	H. Taylor Br.	HARRISBURG	27,534		24	US 22	WESTMORELAND	21,779
301	PA 5	ERIE	13,168		323	US 220	BEDFORD	4,728
304	US 15	WILLIAMSPORT	29,300		360	US 219	CLEARFIELD	2,721
326	US 322	CLARION	8,334		363	US 219	MCKEAN	5,058
330	PA 532	PHILADELPHIA	11,012		378	US 40	FAYETTE	7,849
334	US 30	YORK	16,247		700	US 422	INDIANA	12,557
349	PA 309	ALLENTOWN	37,646		809	US 219	MCKEAN	7,783
375	US 22	PITTSBURGH	27,101		821	US 15	TIOGA	11,050
395	PA 21	UNIONTOWN	10,522		985	US 219	CAMBRIA	18,124
396	US 40	PITTSBURGH	12,017					
803	US 15	EMMITSBURG	23,726					
806	US 30	GREENSBURG	30,394					
810	PA 611	DOYLESTOWN	35,695					
811	PA 581	HARRISBURG	50,556					
812	US 30	GREENSBURG	46,453					
813	PA 581	HARRISBURG	91,164					
824	PA 100	PHILADELPHIA	39,092					
826	US 422	READING	49,469					
827	US 15	MILTON	23,758					

PERMANENT SITE LOCATIONS BY TPG								
TPG 5: URBAN MINOR ARTERIAL/COLLECTOR					**TPG 6: NORTH RURAL MINOR ARTERIAL**			
SITE #	**ROUTE**	**URBAN AREA**	**AADT**		**SITE #**	**ROUTE**	**COUNTY**	**AADT**
18	PA 38	BUTLER	5,760		2	PA 77	CRAWFORD	1,916
20	PA 65	NEW CASTLE	7,166		3	PA 255	CLEARFIELD	5,226
381	SR 3019	YOUNGSTOWN	374		27	PA 66	ELK	2,778
390	PA 230	LANCASTER	7,840		48	US 11	SUSQUEHANNA	5,581
506	SR 1001	ALTOONA	16,071		51	PA 44	POTTER	3,025
815	PA 44	BLOOMSBURG	3,830		324	PA 120	ELK	4,422
846	SR 2013	HARRISBURG	5,197		328	PA 150	CENTRE	4,974

Permanent Site Locations by TPG (Continued)

PERMANENT SITE LOCATIONS BY TPG							
TPG 7: CENTRAL RURAL MINOR ARTERIAL				**TPG 8: NORTH RURAL COLLECTOR**			
SITE #	**ROUTE**	**COUNTY**	**AADT**	**SITE #**	**ROUTE**	**COUNTY**	**AADT**
1	US 20	ERIE	3,799	5	SR 1043	BRADFORD	1,737
15	US 522	FULTON	5,429	29	PA 267	SUSQUEHANNA	1,275
40	US 209	SCHUYLKILL	4,304	383	PA 150	CLINTON	3,306
367	PA 45	UNION	6,059	384	SR 4022	TIOGA	429
391	PA 23	CHESTER	8,131	385	SR 3002	WARREN	1,698
				802	PA 423	MONROE	5,157
				817	SR 1002	JEFFERSON	1,730

PERMANENT SITE LOCATIONS BY TPG							
TPG 9: CENTRAL RURAL COLLECTOR				**TPG 10: SPECIAL RECREATIONAL**			
SITE #	**ROUTE**	**COUNTY**	**AADT**	**SITE #**	**ROUTE**	**COUNTY**	**AADT**
362	PA 616	YORK	6,355	306	PA 507	PIKE	5,830
364	PA 307	LACKAWANNA	4,912	805	PA 285	CRAWFORD	2,865
379	SR 4013	BLAIR	1,339				
382	SR 3005	CAMBRIA	1,688				
386	PA 254	MONTOUR	2,243				
387	SR 2031	SOMERSET	542				
388	SR 3004	MONROE	2,721				
389	PA 536	JEFFERSON	1,824				
816	PA 241	LEBANON	3,388				

2019 Peak Hour by Traffic Pattern Group (TPG)

2019 Peak Hour by Traffic Pattern Group (TPG)

Site #	Date	Hour (start)	DOW	Volume	% AADT	AADT	Site #	Date	Hour (start)	DOW	Volume	% AADT	AADT
TPG 1: Urban Interstate							**TPG 2: Rural Interstate**						
205	9/27	4:00 PM	Fri	5,792	9.84%	58,874	106	11/30	12:00 PM	Sat	4,674	10.07%	46,436
208	4/5	5:00 PM	Fri	8,381	8.68%	96,610	126	11/27	1:00 PM	Wed	2,939	11.88%	24,731
216	7/7	3:00 PM	Sun	4,244	15.85%	26,777	371	11/30	12:00 PM	Sat	3,188	18.10%	17,618
317	10/18	4:00 PM	Fri	1,953	13.30%	14,685	502	7/7	12:00 PM	Sun	3,440	12.37%	27,817
370	10/11	4:00 PM	Fri	3,366	10.57%	31,856	600	11/30	2:00 PM	Sat	4,429	10.52%	42,091
372	7/7	2:00 PM	Sun	3,866	11.84%	32,643	704	7/7	12:00 PM	Sun	3,574	16.36%	21,844
376	7/12	4:00 PM	Fri	6,275	10.13%	61,955	705	11/30	2:00 PM	Sat	6,398	8.55%	74,850
377	4/24	5:00 PM	Wed	5,982	9.91%	60,341	706	12/1	1:00 PM	Sun	3,178	11.71%	27,142
394	5/9	4:00 PM	Thu	6,316	9.16%	68,947	709	9/27	4:00 PM	Fri	4,435	13.39%	33,112
710	6/21	3:00 PM	Fri	5,346	10.52%	50,833	712	5/16	4:00 PM	Thu	4,905	9.88%	49,661
801	8/14	4:00 PM	Wed	7,837	9.53%	82,240	800	10/4	4:00 PM	Fri	3,255	13.29%	24,500
804	12/1	1:00 PM	Sun	5,157	9.85%	52,336	807	9/27	4:00 PM	Fri	3,454	11.30%	30,559
818	11/30	1:00 PM	Sat	3,748	12.28%	30,527	825	4/21	6:00 PM	Sun	4,348	9.39%	46,301
823	5/3	3:00 PM	Fri	4,745	8.63%	55,002	828	7/7	11:00 AM	Sun	2,697	13.27%	20,319
830	5/17	3:00 PM	Fri	5,974	9.42%	63,401	829	7/7	4:00 PM	Sun	3,165	10.80%	29,318
831	5/17	3:00 PM	Fri	6,253	9.63%	64,932	834	7/7	3:00 PM	Sun	3,242	15.44%	20,998
832	9/10	7:00 AM	Tue	2,453	11.24%	21,822	836	7/7	1:00 PM	Sun	3,078	10.75%	28,622
833	4/25	4:00 PM	Thu	8,126	12.08%	67,245	839	8/16	3:00 PM	Fri	3,137	11.52%	27,239
840	8/6	5:00 PM	Tue	5,609	10.64%	52,715	842	8/16	3:00 PM	Fri	1,936	12.70%	15,241
845	11/22	4:00 PM	Fri	4,308	12.38%	34,785	843	10/20	12:00 PM	Sun	3,171	13.87%	22,860

2019 Peak Hour by Traffic Pattern Group (TPG)

Site #	Date	Hour (start)	DOW	Volume	% AADT	AADT	Site #	Date	Hour (start)	DOW	Volume	% AADT	AADT
TPG 3: Urban Principal Arterial							**TPG 4: Rural Principal Arterial**						
8	11/5	7:00 AM	Tue	2,419	11.60%	20,849	4	7/7	11:00 AM	Sun	428	15.64%	2,736
203	5/29	5:00 PM	Wed	2,371	11.14%	21,290	19	9/27	4:00 PM	Fri	725	12.56%	5,770
206	7/22	4:00 PM	Mon	3,834	13.92%	27,534	24	11/22	4:00 PM	Fri	2,472	11.35%	21,779
301	8/22	3:00 PM	Thu	1,607	12.20%	13,168	323	8/16	3:00 PM	Fri	600	12.69%	4,728
304	11/8	3:00 PM	Fri	2,972	10.14%	29,300	360	9/6	4:00 PM	Fri	337	12.39%	2,721
326	8/26	4:00 PM	Mon	1,079	12.95%	8,334	363	5/24	2:00 PM	Fri	629	12.44%	5,058
330	9/19	5:00 PM	Thu	1,130	10.26%	11,012	378	5/10	4:00 PM	Fri	871	11.10%	7,849
334	4/25	4:00 PM	Thu	1,480	9.11%	16,247	700	8/30	4:00 PM	Fri	1,542	12.28%	12,557
349	5/2	4:00 PM	Thu	3,260	8.66%	37,646	809	10/11	4:00 PM	Fri	973	12.50%	7,783
375	6/7	4:00 PM	Fri	3,054	11.27%	27,101	821	7/7	2:00 PM	Sun	1,712	15.49%	11,050
395	5/31	5:00 PM	Fri	1,183	11.24%	10,522	985	5/8	4:00 PM	Wed	2,199	12.13%	18,124
396	12/23	1:00 PM	Mon	1,323	11.01%	12,017							
803	11/30	3:00 PM	Sat	3,083	12.99%	23,726							
806	8/23	4:00 PM	Fri	3,007	9.89%	30,394							
810	4/23	5:00 PM	Tue	3,781	10.59%	35,695							
811	11/20	4:00 PM	Wed	5,447	10.77%	50,556							
812	12/20	4:00 PM	Fri	4,602	9.91%	46,453							
813	4/4	3:00 PM	Thu	7,949	8.72%	91,164							
824	10/24	5:00 PM	Thu	4,032	10.31%	39,092							
826	3/26	7:00 AM	Tue	4,894	9.89%	49,469							
827	10/11	4:00 PM	Fri	2,555	10.75%	23,758							

2019 Peak Hour by TPG (Continued)

2019 Peak Hour by Traffic Pattern Group (TPG)														
TPG 5: Urban Minor Arterial/Collector								**TPG 6: North Rural Minor Arterial**						
Site #	Date	Hour (start)	DOW	Volume	% AADT	AADT		Site #	Date	Hour (start)	DOW	Volume	% AADT	AADT
18	10/4	4:00 PM	Fri	745	12.93%	5,760		2	8/23	5:00 PM	Fri	296	15.45%	1,916
20	9/20	4:00 PM	Fri	820	11.44%	7,166		3	10/11	4:00 PM	Fri	697	13.34%	5,226
381	6/7	3:00 PM	Fri	56	14.97%	374		27	7/7	1:00 PM	Sun	461	16.59%	2,778
390	11/6	4:00 PM	Wed	882	11.25%	7,840		48	6/21	4:00 PM	Fri	677	12.13%	5,581
506	12/23	2:00 PM	Mon	1,854	11.54%	16,071		51	5/17	3:00 PM	Fri	377	12.46%	3,025
815	8/22	4:00 PM	Thu	589	15.38%	3,830		324	6/3	3:00 PM	Mon	590	13.34%	4,422
846	8/1	4:00 PM	Thu	803	15.45%	5,197		328	10/12	12:00 PM	Sat	614	12.34%	4,974

2019 Peak Hour by Traffic Pattern Group (TPG)														
TPG 7: Central Rural Minor Arterial								**TPG 8: North Rural Collector**						
Site #	Date	Hour (start)	DOW	Volume	% AADT	AADT		Site #	Date	Hour (start)	DOW	Volume	% AADT	AADT
1	8/17	1:00 PM	Sat	541	14.24%	3,799		5	9/28	4:00 PM	Sat	420	24.18%	1,737
15	10/18	2:00 PM	Fri	772	14.22%	5,429		29	11/29	12:00 PM	Fri	185	14.51%	1,275
40	5/8	3:00 PM	Wed	506	11.76%	4,304		383	8/31	9:00 PM	Sat	418	12.64%	3,306
367	8/9	5:00 PM	Fri	880	14.52%	6,059		384	8/30	8:00 PM	Fri	78	18.18%	429
391	10/18	4:00 PM	Fri	956	11.76%	8,131		385	12/9	4:00 PM	Mon	274	16.14%	1,698
								802	8/16	3:00 PM	Fri	933	18.09%	5,157
								817	4/29	4:00 PM	Mon	348	20.12%	1,730

2019 Peak Hour by Traffic Pattern Group (TPG)														
TPG 9: Central Rural Collector								**TPG 10: Special Recreational**						
Site #	Date	Hour (start)	DOW	Volume	% AADT	AADT		Site #	Date	Hour (start)	DOW	Volume	% AADT	AADT
362	5/24	4:00 PM	Fri	732	11.52%	6,355		306	7/5	12:00 PM	Fri	998	17.12%	5,830
364	5/31	4:00 PM	Fri	564	11.48%	4,912		805	5/25	11:00 AM	Sat	781	27.26%	2,865
379	1/9	3:00 PM	Wed	196	14.64%	1,339								
382	7/2	11:00 AM	Tue	484	28.67%	1,688								
386	8/19	4:00 PM	Mon	358	15.96%	2,243								
387	2/15	2:00 PM	Fri	79	14.58%	542								
388	11/1	4:00 PM	Fri	368	13.52%	2,721								
389	3/29	3:00 PM	Fri	250	13.71%	1,824								
816	7/24	7:00 AM	Wed	713	21.04%	3,388								

2019 30th Highest Hour by Traffic Pattern Group (TPG)

2019 30th Highest Hour by Traffic Pattern Group

TPG 1: Urban Interstate							TPG 2: Rural Interstate					
Site #	Date	Hour (start)	DOW	Volume	% AADT	AADT	Site #	Date	Hour (start)	DOW	Volume	% AADT	AADT
205	10/2	4:00 PM	Wed	5,432	9.23%	58,874	106	8/18	1:00 PM	Sun	4,047	8.72%	46,436
208	12/20	5:00 PM	Fri	7,974	8.25%	96,610	126	12/1	4:00 PM	Sun	2,455	9.93%	24,731
216	11/27	1:00 PM	Wed	3,346	12.50%	26,777	371	11/27	4:00 PM	Wed	2,713	15.40%	17,618
317	11/1	4:00 PM	Fri	1,649	11.23%	14,685	502	10/20	3:00 PM	Sun	2,855	10.26%	27,817
370	10/11	5:00 PM	Fri	3,179	9.98%	31,856	600	6/14	3:00 PM	Fri	3,863	9.18%	42,091
372	10/11	2:00 PM	Fri	3,316	10.16%	32,643	704	7/28	12:00 PM	Sun	2,973	13.61%	21,844
376	4/5	4:00 PM	Fri	5,825	9.40%	61,955	705	12/26	11:00 AM	Thu	5,915	7.90%	74,850
377	6/11	5:00 PM	Tue	5,712	9.47%	60,341	706	7/12	5:00 PM	Fri	2,711	9.99%	27,142
394	9/6	4:00 PM	Fri	6,119	8.87%	68,947	709	10/18	3:00 PM	Fri	3,501	10.57%	33,112
710	7/12	5:00 PM	Fri	4,955	9.75%	50,833	712	6/14	4:00 PM	Fri	4,484	9.03%	49,661
801	11/30	12:00 PM	Sat	7,512	9.13%	82,240	800	5/3	3:00 PM	Fri	2,800	11.43%	24,500
804	4/12	4:00 PM	Fri	4,670	8.92%	52,336	807	10/25	4:00 PM	Fri	3,084	10.09%	30,559
818	10/11	5:00 PM	Fri	3,186	10.44%	30,527	825	6/14	5:00 PM	Fri	3,953	8.54%	46,301
823	2/15	3:00 PM	Fri	4,438	8.07%	55,002	828	8/9	3:00 PM	Fri	2,436	11.99%	20,319
830	10/17	3:00 PM	Thu	5,708	9.00%	63,401	829	11/27	11:00 AM	Wed	2,742	9.35%	29,318
831	12/30	3:00 PM	Mon	5,830	8.98%	64,932	834	9/2	2:00 PM	Mon	2,694	12.83%	20,998
832	10/25	5:00 PM	Fri	2,370	10.86%	21,822	836	8/18	4:00 PM	Sun	2,644	9.24%	28,622
833	6/13	4:00 PM	Thu	7,651	11.38%	67,245	839	8/18	12:00 PM	Sun	2,740	10.06%	27,239
840	5/3	4:00 PM	Fri	5,340	10.13%	52,715	842	9/20	3:00 PM	Fri	1,685	11.06%	15,241
845	4/12	4:00 PM	Fri	3,763	10.82%	34,785	843	7/14	3:00 PM	Sun	2,529	11.06%	22,860

2019 30th Highest Hour by Traffic Pattern Group

TPG 3: Urban Principal Arterial							TPG 4: Rural Principal Arterial					
Site #	Date	Hour (start)	DOW	Volume	% AADT	AADT	Site #	Date	Hour (start)	DOW	Volume	% AADT	AADT
8	11/7	7:00 AM	Thu	2,303	11.05%	20,849	4	6/15	3:00 PM	Sat	312	11.40%	2,736
203	10/3	5:00 PM	Thu	2,047	9.61%	21,290	19	9/10	4:00 PM	Tue	634	10.99%	5,770
206	10/16	4:00 PM	Wed	3,503	12.72%	27,534	24	10/25	4:00 PM	Fri	2,135	9.80%	21,779
301	8/14	4:00 PM	Wed	1,439	10.93%	13,168	323	10/18	4:00 PM	Fri	510	10.79%	4,728
304	10/10	4:00 PM	Thu	2,856	9.75%	29,300	360	2/22	4:00 PM	Fri	300	11.03%	2,721
326	3/11	4:00 PM	Mon	940	11.28%	8,334	363	8/23	1:00 PM	Fri	570	11.27%	5,058
330	4/11	4:00 PM	Thu	1,073	9.74%	11,012	378	4/5	3:00 PM	Fri	795	10.13%	7,849
334	5/16	4:00 PM	Thu	1,399	8.61%	16,247	700	12/6	4:00 PM	Fri	1,359	10.82%	12,557
349	3/12	4:00 PM	Tue	3,141	8.34%	37,646	809	8/23	4:00 PM	Fri	870	11.18%	7,783
375	2/14	5:00 PM	Thu	2,556	9.43%	27,101	821	8/30	3:00 PM	Fri	1,372	12.42%	11,050
395	8/29	4:00 PM	Thu	1,032	9.81%	10,522	985	2/27	4:00 PM	Wed	2,072	11.43%	18,124
396	8/30	3:00 PM	Fri	1,201	9.99%	12,017							
803	8/18	4:00 PM	Sun	2,625	11.06%	23,726							
806	4/16	4:00 PM	Tue	2,869	9.44%	30,394							
810	4/29	5:00 PM	Mon	3,589	10.05%	35,695							
811	4/10	4:00 PM	Wed	5,167	10.22%	50,556							
812	12/6	4:00 PM	Fri	4,371	9.41%	46,453							
813	4/17	7:00 AM	Wed	7,717	8.46%	91,164							
824	12/18	4:00 PM	Wed	3,867	9.89%	39,092							
826	2/22	4:00 PM	Fri	4,717	9.54%	49,469							
827	5/17	5:00 PM	Fri	2,343	9.86%	23,758							

2019 30th Highest Hour by TPG (Continued)

2019 30th Highest Hour by Traffic Pattern Group													
TPG 5: Urban Minor Arterial/Collector							TPG 6: North Rural Minor Arterial						
Site #	Date	Hour (start)	DOW	Volume	% AADT	AADT	Site #	Date	Hour (start)	DOW	Volume	% AADT	AADT
18	9/26	4:00 PM	Thu	679	11.79%	5,760	2	8/28	3:00 PM	Wed	221	11.53%	1,916
20	10/3	4:00 PM	Thu	723	10.09%	7,166	3	10/13	1:00 PM	Sun	595	11.39%	5,226
381	6/14	3:00 PM	Fri	47	12.57%	374	27	7/28	2:00 PM	Sun	363	13.07%	2,778
390	11/27	2:00 PM	Wed	801	10.22%	7,840	48	6/26	1:00 PM	Wed	567	10.16%	5,581
506	12/6	3:00 PM	Fri	1,661	10.34%	16,071	51	4/9	3:00 PM	Tue	346	11.44%	3,025
815	1/14	4:00 PM	Mon	428	11.17%	3,830	324	10/1	3:00 PM	Tue	535	12.10%	4,422
846	5/14	3:00 PM	Tue	657	12.64%	5,197	328	10/4	4:00 PM	Fri	570	11.46%	4,974

2019 30th Highest Hour by Traffic Pattern Group													
TPG 7: Central Rural Minor Arterial							TPG 8: North Rural Collector						
Site #	Date	Hour (start)	DOW	Volume	% AADT	AADT	Site #	Date	Hour (start)	DOW	Volume	% AADT	AADT
1	8/15	4:00 PM	Thu	475	12.50%	3,799	5	8/15	3:00 PM	Thu	218	12.55%	1,737
15	10/11	3:00 PM	Fri	578	10.65%	5,429	29	8/23	4:00 PM	Fri	141	11.06%	1,275
40	10/9	3:00 PM	Wed	443	10.29%	4,304	383	8/6	4:00 PM	Tue	373	11.28%	3,306
367	8/31	10:00 AM	Sat	647	10.68%	6,059	384	6/21	4:00 PM	Fri	59	13.75%	429
391	8/23	5:00 PM	Fri	866	10.65%	8,131	385	11/29	11:00 AM	Fri	197	11.60%	1,698
							802	10/10	4:00 PM	Thu	772	14.97%	5,157
							817	4/30	4:00 PM	Tue	219	12.66%	1,730

2019 30th Highest Hour by Traffic Pattern Group													
TPG 9: Central Rural Collector							TPG 10: Special Recreational						
Site #	Date	Hour (start)	DOW	Volume	% AADT	AADT	Site #	Date	Hour (start)	DOW	Volume	% AADT	AADT
362	11/14	4:00 PM	Thu	658	10.35%	6,355	306	7/20	10:00 AM	Sat	775	13.29%	5,830
364	9/20	3:00 PM	Fri	525	10.69%	4,912	805	8/31	1:00 PM	Sat	576	20.10%	2,865
379	1/3	4:00 PM	Thu	151	11.28%	1,339							
382	5/28	7:00 AM	Tue	202	11.97%	1,688							
386	12/4	4:00 PM	Wed	249	11.10%	2,243							
387	5/17	3:00 PM	Fri	67	12.36%	542							
388	9/17	4:00 PM	Tue	315	11.58%	2,721							
389	11/22	4:00 PM	Fri	205	11.24%	1,824							
816	3/13	4:00 PM	Wed	426	12.57%	3,388							

2019 50th Highest Hour by Traffic Pattern Group (TPG)

2019 50th Highest Hour by Traffic Pattern Group													
TPG 1: Urban Interstate							TPG 2: Rural Interstate						
Site #	Date	Hour (start)	DOW	Volume	% AADT	AADT	Site #	Date	Hour (start)	DOW	Volume	% AADT	AADT
205	7/12	4:00 PM	Fri	5,393	9.16%	58,874	106	8/25	3:00 PM	Sun	3,914	8.43%	46,436
208	3/8	4:00 PM	Fri	7,891	8.17%	96,610	126	6/30	1:00 PM	Sun	2,364	9.56%	24,731
216	4/19	2:00 PM	Fri	3,227	12.05%	26,777	371	12/1	6:00 PM	Sun	2,623	14.89%	17,618
317	12/20	3:00 PM	Fri	1,592	10.84%	14,685	502	9/20	4:00 PM	Fri	2,773	9.97%	27,817
370	6/28	3:00 PM	Fri	3,115	9.78%	31,856	600	4/12	3:00 PM	Fri	3,802	9.03%	42,091
372	5/24	4:00 PM	Fri	3,215	9.85%	32,643	704	12/29	2:00 PM	Sun	2,876	13.17%	21,844
376	4/30	4:00 PM	Tue	5,755	9.29%	61,955	705	12/29	12:00 PM	Sun	5,825	7.78%	74,850
377	11/22	5:00 PM	Fri	5,665	9.39%	60,341	706	10/4	4:00 PM	Fri	2,630	9.69%	27,142
394	4/16	4:00 PM	Tue	6,047	8.77%	68,947	709	9/20	4:00 PM	Fri	3,357	10.14%	33,112
710	6/27	4:00 PM	Thu	4,783	9.41%	50,833	712	5/24	4:00 PM	Fri	4,387	8.83%	49,661
801	7/26	4:00 PM	Fri	7,403	9.00%	82,240	800	11/6	7:00 AM	Wed	2,750	11.22%	24,500
804	5/10	3:00 PM	Fri	4,589	8.77%	52,336	807	6/21	5:00 PM	Fri	3,018	9.88%	30,559
818	7/21	12:00 PM	Sun	3,091	10.13%	30,527	825	9/20	4:00 PM	Fri	3,888	8.40%	46,301
823	11/6	4:00 PM	Wed	4,409	8.02%	55,002	828	8/31	11:00 AM	Sat	2,355	11.59%	20,319
830	8/22	3:00 PM	Thu	5,649	8.91%	63,401	829	8/30	2:00 PM	Fri	2,675	9.12%	29,318
831	11/8	2:00 PM	Fri	5,751	8.86%	64,932	834	7/19	3:00 PM	Fri	2,588	12.32%	20,998
832	8/22	4:00 PM	Thu	2,349	10.76%	21,822	836	8/2	3:00 PM	Fri	2,597	9.07%	28,622
833	6/24	4:00 PM	Mon	7,517	11.18%	67,245	839	7/7	12:00 PM	Sun	2,679	9.84%	27,239
840	3/1	4:00 PM	Fri	5,269	10.00%	52,715	842	4/12	4:00 PM	Fri	1,603	10.52%	15,241
845	9/20	4:00 PM	Fri	3,635	10.45%	34,785	843	9/27	3:00 PM	Fri	2,391	10.46%	22,860

2019 50th Highest Hour by Traffic Pattern Group													
TPG 3: Urban Principal Arterial							TPG 4: Rural Principal Arterial						
Site #	Date	Hour (start)	DOW	Volume	% AADT	AADT	Site #	Date	Hour (start)	DOW	Volume	% AADT	AADT
8	9/10	8:00 AM	Tue	2,274	10.91%	20,849	4	5/27	11:00 AM	Mon	303	11.07%	2,736
203	11/8	4:00 PM	Fri	2,019	9.48%	21,290	19	5/21	4:00 PM	Tue	621	10.76%	5,770
206	6/4	4:00 PM	Tue	3,471	12.61%	27,534	24	11/15	4:00 PM	Fri	2,084	9.57%	21,779
301	7/2	4:00 PM	Tue	1,427	10.84%	13,168	323	9/13	3:00 PM	Fri	492	10.41%	4,728
304	10/15	4:00 PM	Tue	2,825	9.64%	29,300	360	7/12	4:00 PM	Fri	294	10.80%	2,721
326	10/25	3:00 PM	Fri	924	11.09%	8,334	363	7/28	12:00 PM	Sun	544	10.76%	5,058
330	4/30	5:00 PM	Tue	1,059	9.62%	11,012	378	10/10	3:00 PM	Thu	781	9.95%	7,849
334	5/9	4:00 PM	Thu	1,379	8.49%	16,247	700	11/1	3:00 PM	Fri	1,318	10.50%	12,557
349	8/29	4:00 PM	Thu	3,106	8.25%	37,646	809	5/24	1:00 PM	Fri	840	10.79%	7,783
375	9/18	4:00 PM	Wed	2,485	9.17%	27,101	821	5/27	12:00 PM	Mon	1,328	12.02%	11,050
395	4/18	3:00 PM	Thur	1,019	9.68%	10,522	985	5/2	4:00 PM	Thu	2,041	11.26%	18,124
396	5/1	5:00 PM	Wed	1,175	9.78%	12,017							
803	5/27	12:00 PM	Mon	2,548	10.74%	23,726							
806	9/17	4:00 PM	Tue	2,847	9.37%	30,394							
810	5/16	5:00 PM	Thu	3,553	9.95%	35,695							
811	8/6	4:00 PM	Tue	5,109	10.11%	50,556							
812	4/17	4:00 PM	Wed	4,331	9.32%	46,453							
813	8/7	4:00 PM	Wed	7,661	8.40%	91,164							
824	4/30	5:00 PM	Tue	3,824	9.78%	39,092							
826	10/18	4:00 PM	Fri	4,679	9.46%	49,469							
827	6/7	3:00 PM	Fri	2,268	9.55%	23,758							

2019 50th Highest Hour by TPG (Continued)

2019 50th Highest Hour by Traffic Pattern Group

TPG 5: Urban Minor Arterial/Collector							TPG 6: North Rural Minor Arterial						
Site #	Date	Hour (start)	DOW	Volume	% AADT	AADT	Site #	Date	Hour (start)	DOW	Volume	% AADT	AADT
18	5/20	4:00 PM	Mon	663	11.51%	5,760	2	8/24	4:00 PM	Sat	214	11.17%	1,916
20	8/23	4:00 PM	Fri	707	9.87%	7,166	3	9/21	1:00 PM	Sat	570	10.91%	5,226
381	3/1	4:00 PM	Fri	45	12.03%	374	27	7/28	10:00 AM	Sun	345	12.42%	2,778
390	11/13	3:00 PM	Wed	786	10.03%	7,840	48	7/24	4:00 PM	Wed	558	10.00%	5,581
506	11/8	4:00 PM	Fri	1,630	10.14%	16,071	51	10/10	4:00 PM	Thu	339	11.21%	3,025
815	4/15	4:00 PM	Mon	412	10.76%	3,830	324	9/6	3:00 PM	Fri	525	11.87%	4,422
846	5/9	8:00 AM	Thu	634	12.20%	5,197	328	4/11	4:00 PM	Thu	560	11.26%	4,974

2019 50th Highest Hour by Traffic Pattern Group

TPG 7: Central Rural Minor Arterial							TPG 8: North Rural Collector						
Site #	Date	Hour (start)	DOW	Volume	% AADT	AADT	Site #	Date	Hour (start)	DOW	Volume	% AADT	AADT
1	7/28	1:00 PM	Sun	460	12.11%	3,799	5	8/29	4:00 PM	Thu	213	12.26%	1,737
15	9/6	3:00 PM	Fri	566	10.43%	5,429	29	6/14	3:00 PM	Fri	136	10.67%	1,275
40	3/27	3:00 PM	Wed	432	10.04%	4,304	383	11/6	4:00 PM	Wed	366	11.07%	3,306
367	6/15	10:00 AM	Sat	632	10.43%	6,059	384	6/9	12:00 PM	Sun	56	13.05%	429
391	6/7	3:00 PM	Fri	850	10.45%	8,131	385	7/7	12:00 PM	Sun	190	11.19%	1,698
							802	11/26	4:00 PM	Tue	747	14.49%	5,157
							817	10/25	3:00 PM	Fri	210	12.14%	1,730

2019 50th Highest Hour by Traffic Pattern Group

TPG 9: Central Rural Collector							TPG 10: Special Recreational						
Site #	Date	Hour (start)	DOW	Volume	% AADT	AADT	Site #	Date	Hour (start)	DOW	Volume	% AADT	AADT
362	6/20	4:00 PM	Thu	644	10.13%	6,355	306	7/3	4:00 PM	Wed	738	12.66%	5,830
364	7/3	5:00 PM	Wed	515	10.48%	4,912	805	8/31	2:00 PM	Sat	534	18.64%	2,865
379	5/22	3:00 PM	Wed	148	11.05%	1,339							
382	5/1	4:00 PM	Wed	192	11.37%	1,688							
386	6/12	4:00 PM	Wed	239	10.66%	2,243							
387	3/22	2:00 PM	Fri	64	11.81%	542							
388	4/12	4:00 PM	Fri	308	11.32%	2,721							
389	12/13	4:00 PM	Fri	199	10.91%	1,824							
816	8/8	4:00 PM	Thu	418	12.34%	3,388							

2019 Design Hour Summaries: Peak, 30th and 50th Highest Hour

Design Hour Volume (DHV) is the hourly traffic volume used in the design of highways. The DHV is usually represented by the 30th highest hourly volume of the future year chosen for design. The following three graphs show the peak, 30th and 50th highest hour summary by hour, day, and month.

2019 Design Hour Summary by Hour

Legend:
- Percent of stations (Peak hour)
- Percent of stations (30th highest)
- Percent of stations (50th highest)

2019 Design Hour Summaries: Peak, 30th and 50th Highest Hour

2019 Design Hour Summary by Day

- Percent of stations (Peak hour)
- Percent of stations (30th highest)
- Percent of stations (50th highest)

2019 Design Hour Summary by Month

- Percent of stations (Peak hour)
- Percent of stations (30th highest)
- Percent of stations (50th highest)
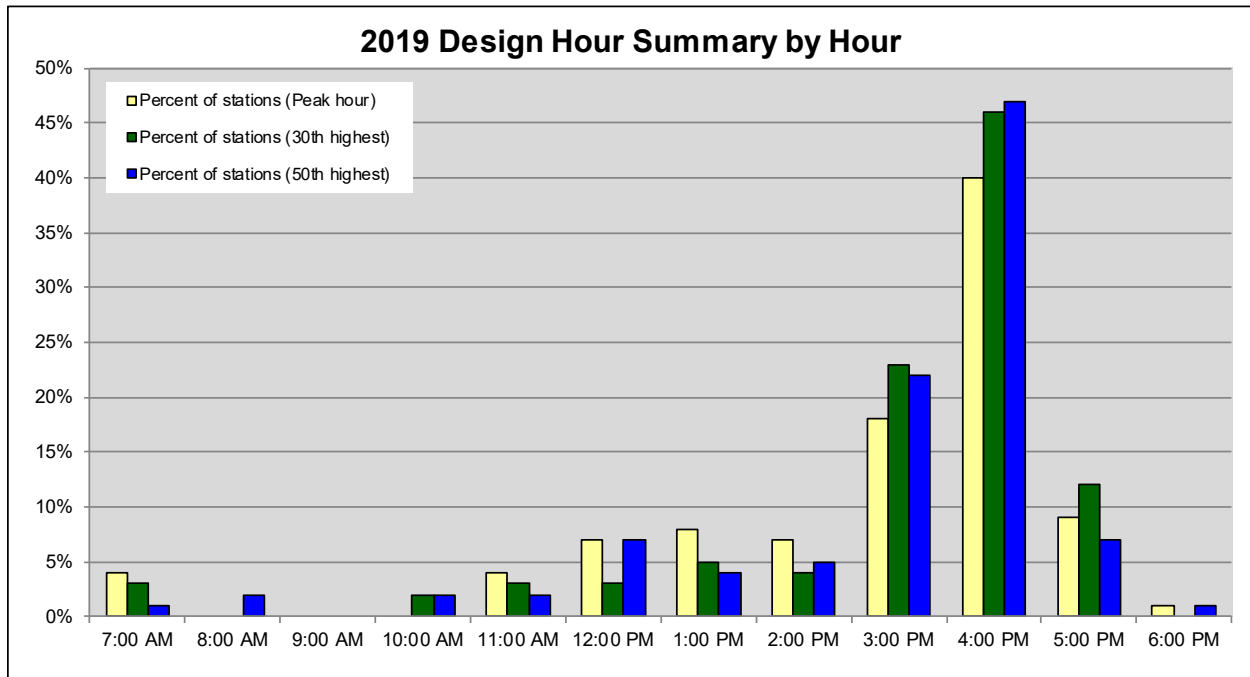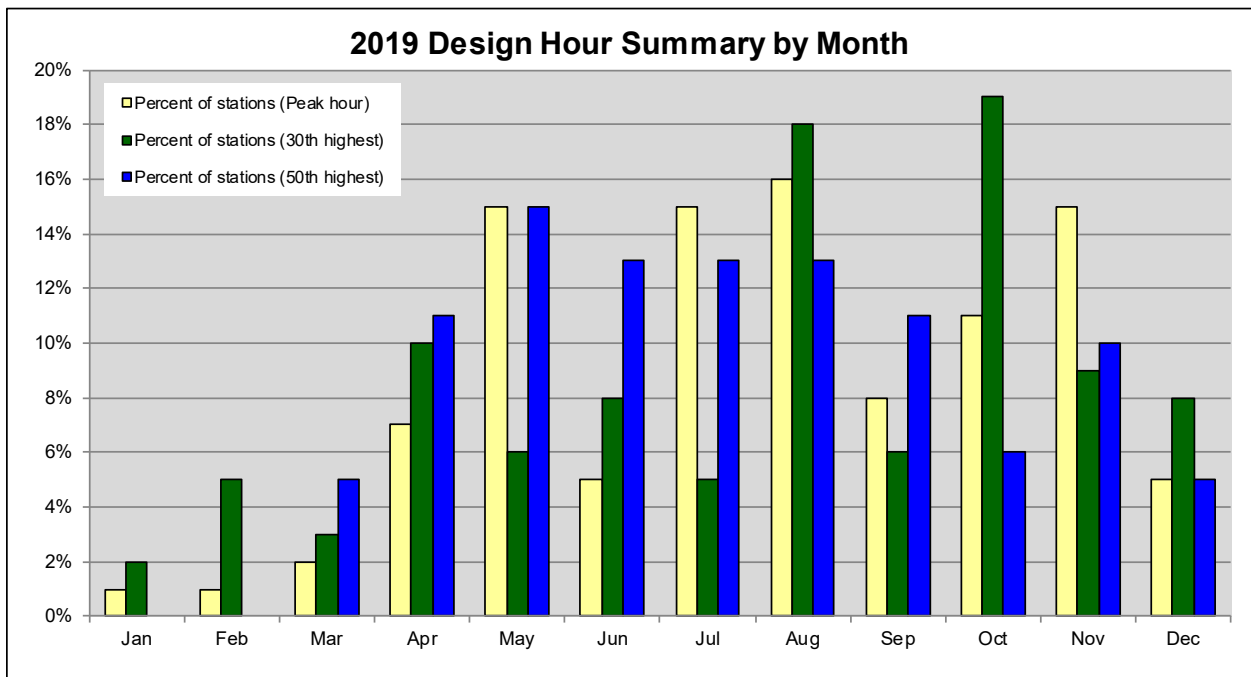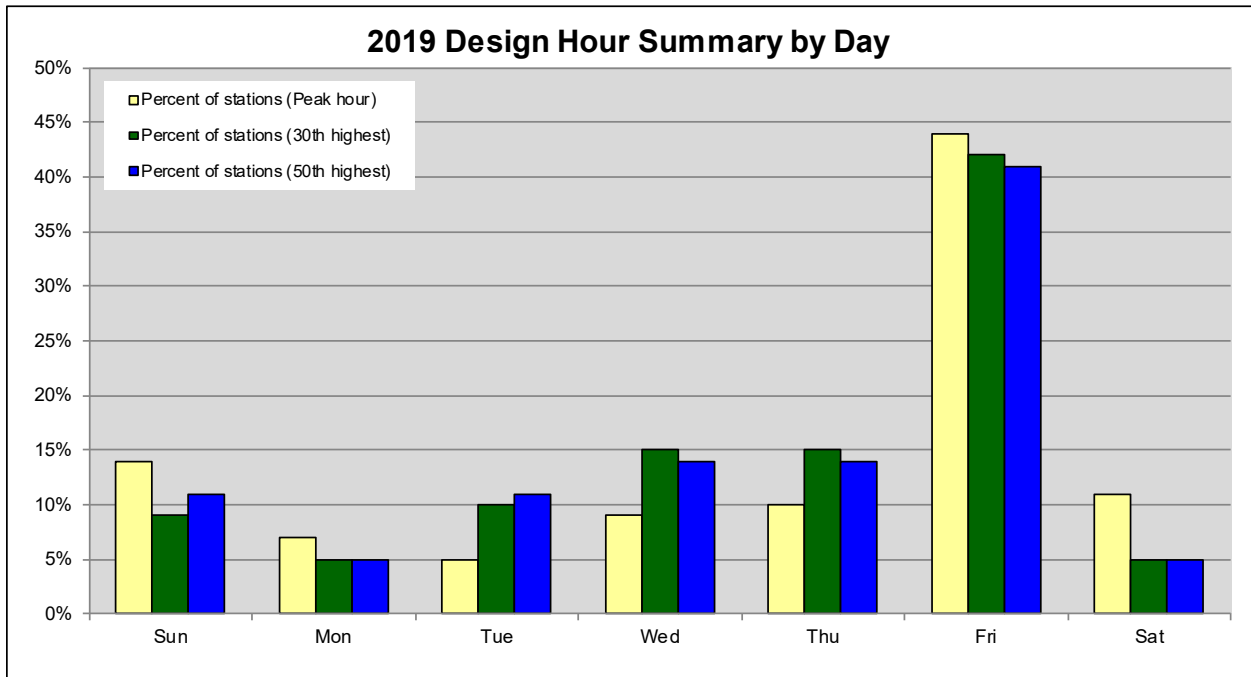
Five Year Summary of Annual Average Daily Traffic (AADT) from Permanent Sites

This chart shows the permanent site station numbers and their Annual Average Daily Traffic (AADT) for the past five years, 2015 through 2019. The percent change is also given for 2018 to 2019 and 2015 to 2019, showing where traffic has increased or decreased.

*Indicates there is no data available.

Site #	Annual Average Daily Traffic (AADT)					Percent Change	
	2015	2016	2017	2018	2019	2018-2019	2015-2019
1	3,093	3,552	3,688	3,698	3,799	2.7%	22.8%
2	1,944	2,138	1,947	1,911	1,916	0.3%	-1.4%
3	5,585	5,317	5,208	5,191	5,226	0.7%	-6.4%
4	2,602	2,654	2,687	2,665	2,736	2.7%	5.1%
5	1,505	1,595	1,745	1,764	1,737	-1.5%	15.4%
8	17,477	18,150	18,738	19,672	20,849	6.0%	19.3%
15	5,208	5,142	5,276	5,394	5,429	0.6%	4.2%
18	6,628	6,291	6,502	6,172	5,760	-6.7%	-13.1%
19	5,739	5,824	5,698	5,656	5,770	2.0%	0.5%
20	7,179	7,287	7,083	**	7,166	0.0%	-0.2%
24	20,004	20,391	21,289	21,787	21,779	0.0%	8.9%
27	2,748	2,749	2,766	2,801	2,778	-0.8%	1.1%
29	1,235	1,112	1,055	**	1,275	0.0%	3.2%
40	4,374	4,387	4,402	4,199	4,304	2.5%	-1.6%
48	**	**	5,358	5,364	5,581	4.0%	4.2%
51	3,105	3,121	3,203	3,115	3,025	-2.9%	-2.6%
106	43,133	43,827	**	44,255	46,436	4.9%	7.7%
126	26,181	25,554	24,029	25,662	24,731	-3.6%	-5.5%
158	26,238	23,969	24,629	23,233	**	0.0%	-11.5%
203	19,459	20,674	**	20,299	21,290	4.9%	9.4%
205	**	**	**	57,157	58,874	3.0%	3.0%
206	26,749	26,370	26,530	26,892	27,534	2.4%	2.9%
207	21,452	21,830	22,301	**	**	N/A	4.0%
208	92,030	94,118	95,526	94,814	96,610	1.9%	5.0%
216	**	**	**	26,940	26,777	-0.6%	-0.6%
301	13,620	13,364	13,247	13,068	13,168	0.8%	-3.3%
304	28,218	29,482	29,760	29,192	29,300	0.4%	3.8%
306	5,435	5,728	5,779	5,850	5,830	-0.3%	7.3%
317	13,152	12,908	**	14,301	14,685	2.7%	11.7%
323	4,347	4,503	4,651	4,692	4,728	0.8%	8.8%
324	4,208	4,275	4,403	4,429	4,422	-0.2%	5.1%
326	8,935	8,659	8,594	8,567	8,334	-2.7%	-6.7%
328	4,768	4,865	4,874	4,937	4,974	0.7%	4.3%
330	10,988	10,913	10,824	10,973	11,012	0.4%	0.2%
334	17,213	16,839	16,566	16,348	16,247	-0.6%	-5.6%

Five Year Summary of AADT from Permanent Sites (Continued)

Indicates there is no data available.

| Site # | \multicolumn{5}{c}{Annual Average Daily Traffic (AADT)} | | | \multicolumn{2}{c}{Percent Change} | |
	2015	2016	2017	2018	2019	2018-2019	2015-2019
349	37,781	38,638	37,924	38,071	37,646	-1.1%	-0.4%
360	2,636	2,670	2,713	2,691	2,721	1.1%	3.2%
362	6,043	6,222	6,108	6,041	6,355	5.2%	5.2%
363	4,905	5,018	5,070	5,114	5,058	-1.1%	3.1%
364	4,952	**	**	4,949	4,912	-0.7%	-0.8%
367	6,035	6,179	6,206	6,093	6,059	-0.6%	0.4%
370	30,969	29,848	30,781	31,294	31,856	1.8%	2.9%
371	19,391	18,733	18,968	19,558	17,618	-9.9%	-9.1%
372	26,767	28,350	28,809	31,735	32,643	2.9%	22.0%
374	**	**	**	**	**	N/A	N/A
375	23,191	**	25,133	26,285	27,101	3.1%	16.9%
376	59,023	60,176	61,228	62,938	61,955	-1.6%	5.0%
377	60,154	61,638	62,354	63,041	60,341	-4.3%	0.3%
378	7,561	7,317	7,593	7,661	7,849	2.5%	3.8%
379	**	1,353	1,317	1,394	1,339	-3.9%	-1.0%
380	**	**	**	**	**	N/A	N/A
381	437	423	421	374	374	0.0%	-14.4%
382	1,722	1,742	1,770	1,702	1,688	-0.8%	-2.0%
383	4,179	3,665	3,474	3,493	3,306	-5.4%	-20.9%
384	371	384	401	418	429	2.6%	15.6%
385	**	1,783	1,782	1,715	1,698	-1.0%	-4.8%
386	2,157	2,182	2,260	2,253	2,243	-0.4%	4.0%
387	3,351	3,396	3,416	2,967	542	-81.7%	-83.8%
388	**	**	2,794	2,650	2,721	2.7%	-2.6%
389	1,905	1,914	1,896	1,830	1,824	-0.3%	-4.3%
390	6,216	6,245	6,366	7,217	7,840	8.6%	26.1%
391	8,054	8,325	8,506	8,323	8,131	-2.3%	1.0%
392	24,347	24,880	**	**	**	N/A	2.2%
393	34,213	34,337	36,633	35,219	**	0.0%	2.9%
394	65,047	66,323	69,335	67,759	68,947	1.8%	6.0%
395	9,490	9,114	9,575	10,088	10,522	4.3%	10.9%
396	12,995	12,874	12,344	12,248	12,017	-1.9%	-7.5%
410	**	**	4,580	**	**	N/A	N/A
501	10,343	10,203	10,675	10,853	**	0.0%	4.9%
502	26,521	26,860	28,361	26,422	27,817	5.3%	4.9%
503	**	**	**	**	**	N/A	N/A
504	**	**	**	**	**	N/A	N/A
505	21,902	22,623	23,042	**	**	N/A	5.2%

Five Year Summary of AADT from Permanent Sites (Continued)

Indicates there is no data available.

Site #	Annual Average Daily Traffic (AADT)					Percent Change	
	2015	2016	2017	2018	2019	2018-2019	2015-2019
506	16,148	15,767	16,551	16,433	16,071	-2.2%	-0.5%
600	42,039	39,840	44,041	42,309	42,091	-0.5%	0.1%
700	12,952	12,471	**	**	12,557	0.0%	-3.0%
701	*	*	66,339	63,224	**	0.0%	-4.7%
702	*	*	*	59,423	**	0.0%	N/A
703	*	*	37,949	38,029	**	0.0%	0.2%
704	*	*	22,056	21,958	21,844	-0.5%	-1.0%
705	*	*	*	70,315	74,850	6.4%	6.4%
706	*	*	*	*	27,142	0.0%	0.0%
707	*	*	*	72,661	**	0.0%	N/A
709	*	*	*	*	33,112	0.0%	0.0%
710	*	*	*	50,166	50,833	1.3%	1.3%
712	*	*	*	*	49,661	0.0%	0.0%
800	22,615	22,119	23,910	23,678	24,500	3.5%	8.3%
801	77,422	77,240	**	**	82,240	0.0%	6.2%
802	3,819	4,252	4,489	4,648	5,157	11.0%	35.0%
803	**	21,756	22,533	23,265	23,726	2.0%	9.1%
804	49,356	48,135	51,941	53,699	52,336	-2.5%	6.0%
805	2,867	2,827	2,912	2,937	2,865	-2.5%	-0.1%
806	29,237	29,299	29,348	28,968	30,394	4.9%	4.0%
807	32,619	30,167	29,738	31,677	30,559	-3.5%	-6.3%
808	13,485	14,028	13,735	14,531	**	0.0%	7.8%
809	**	**	**	8,282	7,783	-6.0%	-6.0%
810	36,157	36,587	35,845	35,930	35,695	-0.7%	-1.3%
811	45,707	47,418	46,748	48,462	50,556	4.3%	10.6%
812	47,967	47,800	45,426	46,721	46,453	-0.6%	-3.2%
813	86,195	90,265	93,568	90,593	91,164	0.6%	5.8%
815	*	*	3,904	3,895	3,830	-1.7%	-1.9%
816	*	*	3,375	3,343	3,388	1.3%	0.4%
817	*	*	*	1,649	1,730	4.9%	4.9%
818	*	25,654	29,005	30,683	30,527	-0.5%	19.0%
821	*	11,222	10,094	10,610	11,050	4.1%	-1.5%
823	54,840	55,584	56,041	53,523	55,002	2.8%	0.3%
824	*	40,182	38,996	38,472	39,092	1.6%	-2.7%
825	*	44,965	46,479	46,494	46,301	-0.4%	3.0%
826	*	49,585	48,205	50,878	49,469	-2.8%	-0.2%
827	*	20,151	20,751	23,067	23,758	3.0%	17.9%
828	*	*	18,932	20,023	20,319	1.5%	7.3%

Five Year Summary of AADT from Permanent Sites (Continued)

*Indicates there is no data available.

Site #	Annual Average Daily Traffic (AADT)					Percent Change	
	2015	2016	2017	2018	2019	2018-2019	2015-2019
829	*	*	28,236	29,181	29,318	0.5%	3.8%
830	*	60,968	64,563	64,713	63,401	-2.0%	4.0%
831	*	64,652	65,693	66,088	64,932	-1.7%	0.4%
832	*	*	20,108	21,004	21,822	3.9%	8.5%
833	*	*	70,787	73,044	67,245	-7.9%	-5.0%
834	*	*	*	21,140	20,998	-0.7%	-0.7%
835	*	*	*	9,527	**	0.0%	N/A
836	*	*	*	*	28,622	0.0%	0.0%
837	*	*	*	26,576	**	0.0%	N/A
838	**	**	**	**	**	N/A	N/A
839	*	*	*	26,875	27,239	1.4%	1.4%
840	*	*	*	51,884	52,715	1.6%	1.6%
841	**	**	**	**	**	N/A	N/A
842	*	*	*	*	15,241	0.0%	0.0%
843	*	*	*	*	22,860	0.0%	0.0%
844	**	**	**	**	**	N/A	N/A
845	*	*	*	*	34,785	0.0%	0.0%
846	*	*	*	*	5,197	0.0%	0.0%
849	**	**	**	**	**	N/A	N/A
850	**	**	**	**	**	N/A	N/A
851	**	**	**	**	**	N/A	N/A
853	**	**	**	**	**	N/A	N/A
854	**	**	**	**	**	N/A	N/A
985	18,537	18,416	18,308	18,723	18,124	-3.2%	-2.2%

* 818, 821, 824, 825, 826, 827, 830, & 831 2016 was first full year of data.

* 701, 703, 704, 815, 816, 828, 829, 832, & 833 2017 was first full year of data.

* 702, 705, 707, 710, 817, 834, 835, 837, 839, & 840 2018 was first full year of data.

* 706, 709, 712, 836, 842, 843, 845, & 846 2019 was first full year of data.

** Site inactive or full year of data unavailable.

Statewide Traffic Trends: Annual and Multi-Year Change By Traffic Pattern Group

This table shows percent change for the traffic pattern groups at one-year intervals starting with 2014/2015 up to 2018/2019. An overall change in growth over the 5 year period for the traffic pattern groups is also shown on this table.

Percent Change Per Year, 2014 - 2019						
TRAFFIC PATTERN GROUPS	**2014-15**	**2015-16**	**2016-17**	**2017-18**	**2018-19**	**2014-19**
TPG 1 Urban Interstate	0.5%	0.8%	0.9%	1.1%	0.8%	4.1%
TPG 2 Rural Interstate	1.3%	1.0%	1.1%	1.1%	1.2%	5.7%
TPG 3 Urban Principal Arterial	-0.8%	-0.7%	-0.7%	-0.8%	-0.7%	-3.7%
TPG 4 Rural Principal Arterial	-0.5%	-0.5%	-0.5%	-0.6%	-0.5%	-2.6%
TPG 5 Urban Minor Arterials or Collectors	-0.8%	-0.7%	-0.7%	-0.8%	-0.7%	-3.7%
TPG 6 North Rural Minor Arterials	-0.5%	-0.5%	-0.5%	-0.6%	-0.5%	-2.6%
TPG 7 Central Rural Minor Arterials	-0.5%	-0.5%	-0.5%	-0.6%	-0.5%	-2.6%
TPG 8 North Rural Collectors	-0.5%	-0.5%	-0.5%	-0.6%	-0.5%	-2.6%
TPG 9 Central Rural Collectors	-0.5%	-0.5%	-0.5%	-0.6%	-0.5%	-2.6%
TPG 10 Special Recreational	-0.5%	-0.5%	-0.5%	-0.6%	-0.5%	-2.6%
Statewide	-0.3%	-0.3%	-0.2%	-0.3%	-0.2%	-1.3%

Statewide Traffic Trends

This chart shows yearly changes from 2000 to 2019 and a 20-year cumulative trend for the same period.
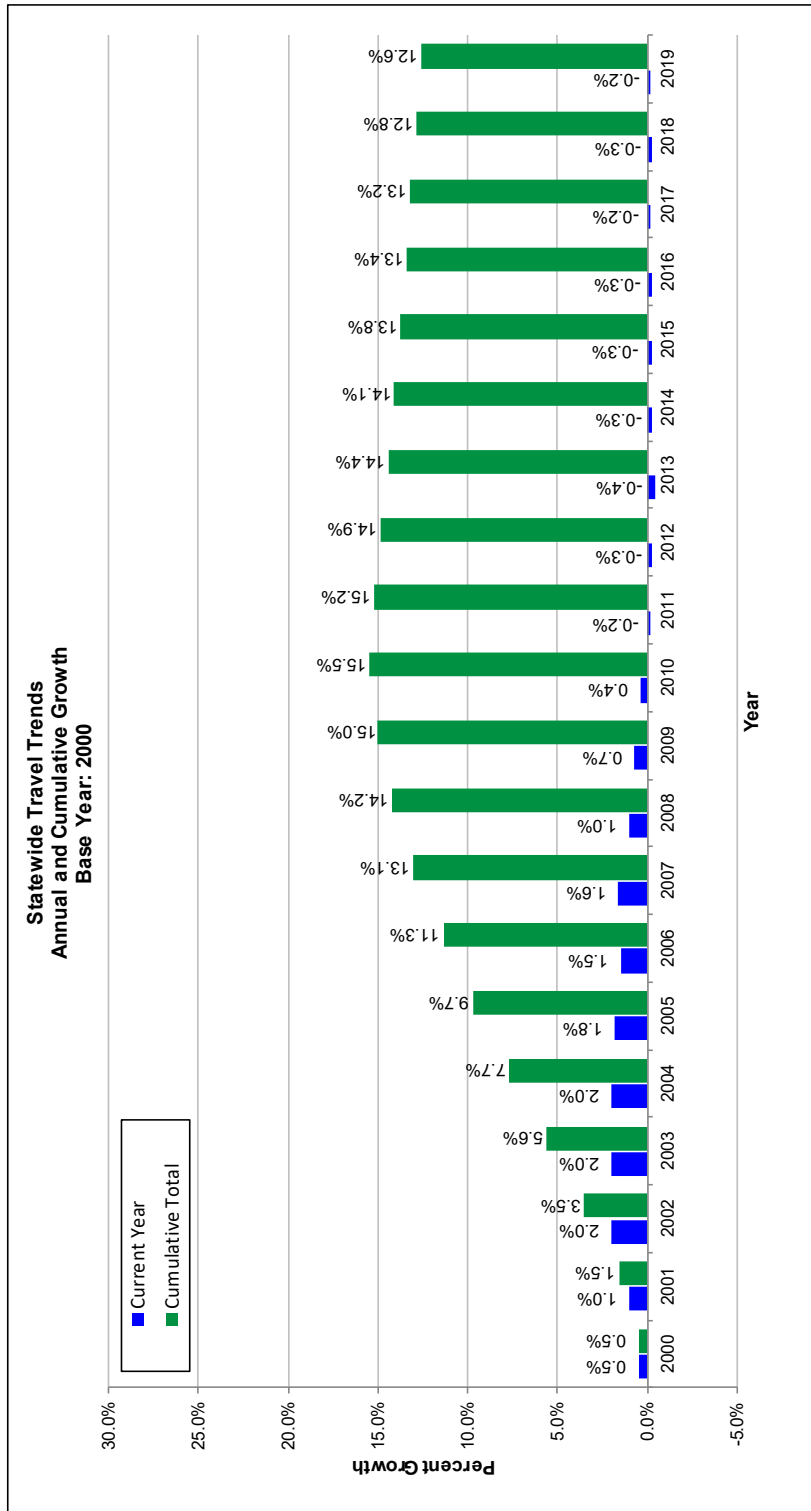
Heaviest Holiday Travel Periods: 2019

The 109 permanent sites, which are the total number of sites with a minimum of six months of data, were used to calculate the holidays having the highest seven-day periods of traffic. The highest seven-day holiday periods and the highest day within the seven-day holiday period (total traffic at all permanent site stations) are shown on the chart below:

Highest Holiday Periods

	Independence Day	Memorial Day	Thanksgiving	Christmas	Labor Day	New Year's Day
Highest Holiday Period (7-Day)	18,220,930	17,935,960	16,587,732	16,551,790	16,439,118	14,674,638
Highest Holiday (Day)	3,082,292	3,195,600	3,022,811	2,802,526	2,870,354	2,520,071

☐ Highest Holiday (Day)   ■ Highest Holiday Period (7-Day)
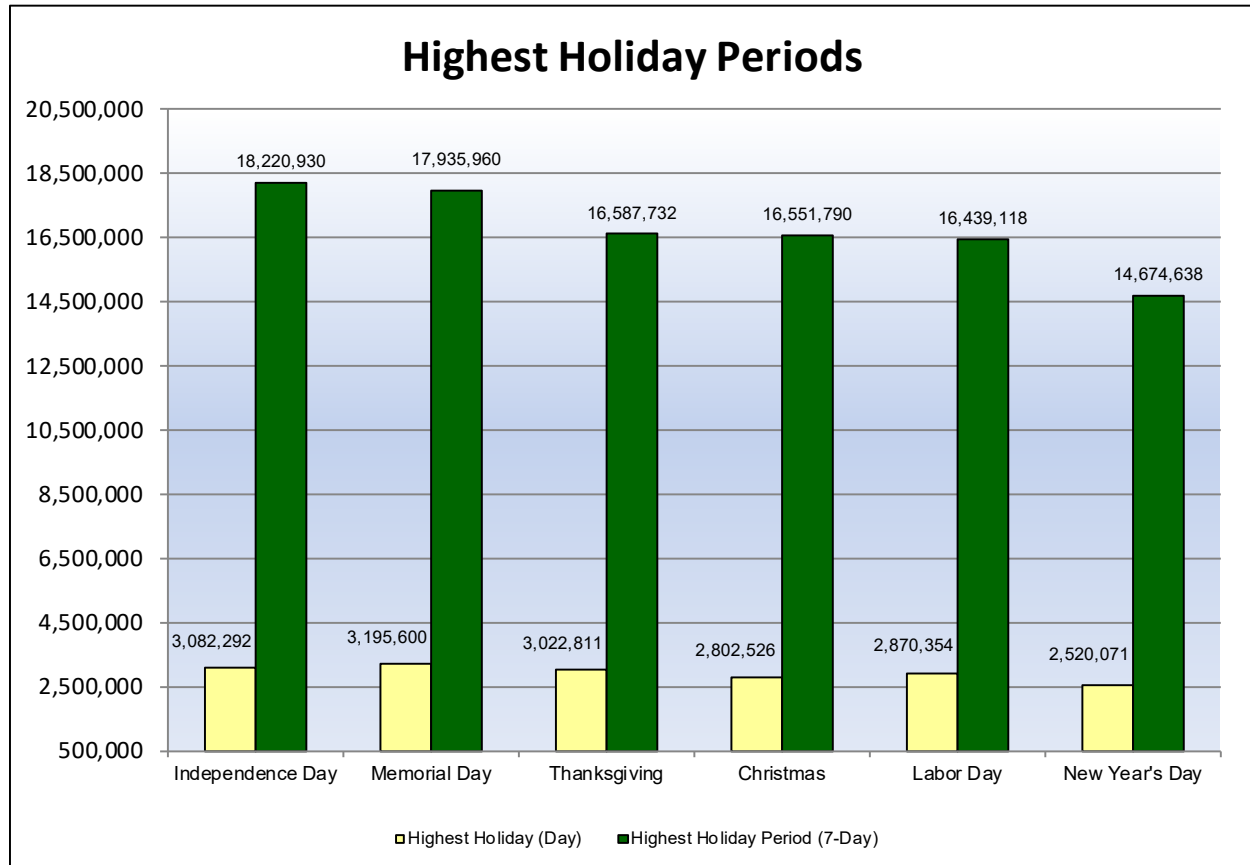
The chart indicates that Independence Day had the highest seven-day holiday period in 2019 with a total volume of 18,220,930. Memorial Day ranked second (17,935,960) followed by Thanksgiving Day (16,587,732) and Christmas (16,551,790). Labor Day and New Year's Day ranked fifth (16,439,118) and sixth (14,674,638) respectively.

The highest day during a seven-day holiday period in 2019 was the Friday before Memorial (May 24, 2019), which had a volume of 3,195,600. The second highest day was the Friday before Independence Day (June 28, 2019), which had a volume of 3,082,292. The Wednesday before Thanksgiving Day (November 27, 2019), ranked third with 3,022,811, while the Friday before Labor Day (August 30, 2019), ranked fourth with 2,870,354. The Friday before Christmas (December 20, 2019) ranked fifth with 2,802,526, while the Thursday before New Year's Day (December 27, 2018) ranked sixth with 2,520,071.

Heaviest Holiday Travel Period Comparisons: 2018-2019

Highest Holiday (Day)

2018			2019	
Holiday	**Total Volume**		**Holiday**	**Total Volume**
1. Memorial Day	3,075,492		1. Memorial Day	3,195,600
2. Labor Day	2,967,235		2. Independence Day	3,082,292
3. Independence Day	2,897,288		3. Thanksgiving	3,022,811
4. Thanksgiving	2,742,816		4. Labor Day	2,870,354
5. New Years Day	2,616,388		5. Christmas	2,802,526
6. Christmas	2,585,396		6. New Years Day	2,520,071

Highest Holiday Period (7-Day)

2018			2019	
Holiday	**Total Volume**		**Holiday**	**Total Volume**
1. Independence Day	17,402,945		1. Independence Day	18,220,930
2. Memorial Day	17,187,879		2. Memorial Day	17,935,960
3. Labor Day	16,861,924		3. Thanksgiving	16,587,732
4. Thanksgiving	15,230,972		4. Christmas	16,551,790
5. New Year's Day	14,509,138		5. Labor Day	16,439,118
6. Christmas	14,455,475		6. New Year's Day	14,674,638

Factoring Process: Traffic Adjustment Factors

Traffic Adjustment Factors
Traffic Adjustment Factors are numbers that are used to create traffic statistics representing an average day. Factors are generated by applying statistical methods and programs to raw traffic counts. The different procedures used to factor counts depend on the following outcomes:

24-Hour Total Traffic and Truck Traffic Estimation
Count data less than 24-hours (short term counts) must first be expanded to a 24-hour total, which is accomplished through the use of hourly percentage tables. Separate tables are utilized for total vehicles and truck data application.

AADT and ADTT Estimation
A 24-hour count is processed to an Annual Average Daily Traffic (AADT) and Average Daily Truck Traffic (ADTT) through the application of a "day of week by month" factor. Separate tables are utilized for total vehicle and truck data application.

Axle Correction
Axle volume count data is collected by counting the number of axles striking a single pneumatic tube stretched across a section of highway and dividing by two. This type of data must be corrected to compensate for vehicles containing more than two axles (specifically truck data) to obtain a representative number of vehicles actually traveling that road section. This representation is obtained through the application of an axle correction factor.

Equivalent Single Axle Load Adjustment (ESAL)
ESAL adjustment factors are applied to the ADTT for each type of truck classification, to determine the loading effect these truck classes have on the pavement. Two separate calculations are performed: one for rigid type pavement (concrete) and one for flexible type pavement (bituminous). The AASHTO Mechanistic Empirical Pavement Design Guide has incorporated improved methods of determining loading effects of traffic termed axle-load spectra. In the future, these new methods will supersede the use of ESAL factors.

Growth Factor
If the count to be analyzed was taken earlier than the current year, a county growth trend is applied to project the older count data to a representative current year estimate. County growth trends are established based on Functional Class Group (FCG).

Design Hour Volume Factor, DHV (K)
The K-factor represents the percentage of AADT during the design hour. It is calculated by dividing the peak hour volume by the AADT. A 24-hour count is required to calculate the K-factor. If this condition is not met (in the case of manual counts), a default value is applied. The default value is calculated from the 109 permanent site stations using the 30th highest hour and is established based on Traffic Pattern Group (TPG).

Table 350
Hourly Percentages Compiled for Total Vehicles

The following table shows hourly percentages of total vehicles sorted by Traffic Pattern Group (TPG) for the year 2019. Factors from this table are applied to raw traffic counts of less than 24 hours, which may include volume counts (axle and loop), automatic vehicle classification (AVC), or manual classification counts. Hourly percentages from this table are applied to the known hour periods of the raw count, converting it to a 24-hour total.

The factors were developed using the Department's Traffic Data System (TDS) Statistical Analysis tool. Raw count data from 20,000 AVC counts, collected statewide and averaged over the last five years, was assigned to the respective TPG and a summary was produced showing the hourly percentage tables by direction (applied to divided roadways).

Hourly Percentages: Total Vehicles							
TPG 1				TPG 2			
HOUR	DIR 1	DIR 2	TOTAL	HOUR	DIR 1	DIR 2	TOTAL
1	0.93%	1.08%	1.02%	1	1.18%	1.31%	1.40%
2	0.72%	0.78%	0.76%	2	0.97%	1.07%	1.14%
3	0.68%	0.70%	0.69%	3	0.93%	1.00%	1.08%
4	0.82%	0.79%	0.81%	4	1.06%	1.09%	1.17%
5	1.29%	1.17%	1.23%	5	1.54%	1.41%	1.54%
6	2.92%	2.27%	2.63%	6	2.89%	2.31%	2.57%
7	6.08%	4.23%	5.16%	7	5.44%	3.84%	4.22%
8	8.38%	5.62%	6.82%	8	7.24%	5.07%	5.42%
9	7.14%	5.34%	6.14%	9	6.13%	4.96%	5.24%
10	5.60%	4.90%	5.25%	10	5.41%	4.88%	5.19%
11	5.17%	4.85%	5.06%	11	5.47%	5.07%	5.42%
12	5.21%	5.08%	5.21%	12	5.56%	5.27%	5.62%
13	5.35%	5.34%	5.40%	13	5.65%	5.57%	5.77%
14	5.45%	5.57%	5.56%	14	5.76%	5.89%	5.97%
15	5.93%	6.35%	6.14%	15	6.16%	6.56%	6.45%
16	6.59%	7.78%	7.06%	16	6.62%	7.69%	7.04%
17	6.92%	8.79%	7.64%	17	6.78%	8.46%	7.29%
18	6.71%	8.43%	7.40%	18	6.44%	7.85%	6.82%
19	5.16%	5.94%	5.60%	19	4.99%	5.50%	5.27%
20	3.80%	4.34%	4.20%	20	3.87%	4.26%	4.23%
21	3.10%	3.59%	3.46%	21	3.25%	3.66%	3.62%
22	2.59%	3.01%	2.89%	22	2.80%	3.04%	3.09%
23	2.02%	2.32%	2.24%	23	2.20%	2.38%	2.50%
24	1.44%	1.73%	1.63%	24	1.66%	1.86%	1.94%
TOTAL	100.00%	100.00%	100.00%	TOTAL	100.00%	100.00%	100.00%

Table 350
Hourly Percentages Compiled for Total Vehicles (Continued)

Hourly Percentages: Total Vehicles							
TPG 3				**TPG 4**			
HOUR	DIR 1	DIR 2	TOTAL	HOUR	DIR 1	DIR 2	TOTAL
1	0.65%	0.84%	0.70%	1	0.68%	0.86%	0.69%
2	0.42%	0.51%	0.43%	2	0.51%	0.57%	0.48%
3	0.38%	0.42%	0.37%	3	0.49%	0.52%	0.46%
4	0.50%	0.45%	0.44%	4	0.70%	0.63%	0.60%
5	1.03%	0.75%	0.84%	5	1.40%	0.99%	1.18%
6	2.87%	1.78%	2.22%	6	3.42%	2.14%	2.79%
7	6.10%	3.77%	4.71%	7	6.21%	3.95%	5.05%
8	8.41%	5.47%	6.68%	8	7.82%	5.44%	6.49%
9	7.43%	5.31%	6.27%	9	6.55%	5.03%	5.82%
10	5.79%	4.81%	5.37%	10	5.58%	4.77%	5.33%
11	5.24%	4.77%	5.18%	11	5.50%	4.86%	5.42%
12	5.36%	5.19%	5.49%	12	5.60%	5.19%	5.63%
13	5.59%	5.59%	5.82%	13	5.68%	5.51%	5.83%
14	5.58%	5.72%	5.84%	14	5.84%	5.87%	6.01%
15	5.99%	6.55%	6.38%	15	6.29%	6.73%	6.62%
16	6.61%	8.05%	7.27%	16	7.00%	8.38%	7.63%
17	6.89%	9.01%	7.79%	17	7.16%	9.37%	8.05%
18	6.82%	8.82%	7.67%	18	6.76%	8.62%	7.50%
19	5.43%	6.54%	6.04%	19	4.97%	5.92%	5.42%
20	4.05%	4.83%	4.57%	20	3.66%	4.40%	4.06%
21	3.22%	3.92%	3.70%	21	2.91%	3.68%	3.31%
22	2.55%	3.14%	2.88%	22	2.36%	3.00%	2.59%
23	1.86%	2.20%	2.00%	23	1.75%	2.05%	1.81%
24	1.23%	1.56%	1.34%	24	1.16%	1.52%	1.23%
TOTAL	**100.00%**	**100.00%**	**100.00%**	**TOTAL**	**100.00%**	**100.00%**	**100.00%**

Table 350
Hourly Percentages Compiled for Total Vehicles (Continued)

Hourly Percentages: Total Vehicles							
TPG 5				**TPG 6**			
HOUR	**DIR 1**	**DIR 2**	**TOTAL**	**HOUR**	**DIR 1**	**DIR 2**	**TOTAL**
1	0.61%	0.77%	0.60%	1	0.58%	0.70%	0.59%
2	0.40%	0.47%	0.36%	2	0.35%	0.40%	0.37%
3	0.37%	0.40%	0.31%	3	0.39%	0.37%	0.35%
4	0.48%	0.44%	0.37%	4	0.48%	0.47%	0.45%
5	0.94%	0.71%	0.74%	5	0.96%	1.05%	0.95%
6	2.54%	1.67%	2.03%	6	2.54%	2.27%	2.44%
7	5.60%	3.67%	4.46%	7	5.26%	4.37%	4.73%
8	8.05%	5.41%	6.66%	8	7.44%	5.78%	6.27%
9	7.16%	5.19%	6.17%	9	6.38%	5.88%	5.68%
10	5.58%	4.64%	5.19%	10	5.52%	5.04%	5.43%
11	5.12%	4.59%	5.05%	11	5.49%	4.85%	5.61%
12	5.38%	5.08%	5.48%	12	5.84%	5.18%	5.89%
13	5.73%	5.57%	5.87%	13	6.08%	5.46%	6.15%
14	5.69%	5.60%	5.81%	14	5.98%	5.52%	6.24%
15	6.16%	6.54%	6.43%	15	6.71%	6.68%	6.93%
16	6.96%	8.31%	7.54%	16	7.32%	7.90%	7.96%
17	7.40%	9.61%	8.23%	17	7.70%	8.47%	8.20%
18	7.30%	9.35%	8.16%	18	7.36%	8.56%	7.43%
19	5.62%	6.63%	6.22%	19	5.55%	6.46%	5.53%
20	4.16%	4.85%	4.70%	20	4.01%	4.74%	4.22%
21	3.29%	3.87%	3.78%	21	3.03%	3.63%	3.34%
22	2.52%	3.03%	2.80%	22	2.31%	2.85%	2.45%
23	1.78%	2.11%	1.86%	23	1.68%	1.98%	1.69%
24	1.16%	1.49%	1.18%	24	1.04%	1.39%	1.10%
TOTAL	**100.00%**	**100.00%**	**100.00%**	**TOTAL**	**100.00%**	**100.00%**	**100.00%**

Table 350
Hourly Percentages Compiled for Total Vehicles (Continued)

Hourly Percentages: Total Vehicles							
TPG 7				**TPG 8**			
HOUR	**DIR 1**	**DIR 2**	**TOTAL**	**HOUR**	**DIR 1**	**DIR 2**	**TOTAL**
1	0.75%	0.92%	0.61%	1	0.80%	1.00%	0.65%
2	0.54%	0.59%	0.40%	2	0.54%	0.62%	0.42%
3	0.50%	0.54%	0.37%	3	0.48%	0.49%	0.37%
4	0.69%	0.61%	0.50%	4	0.60%	0.46%	0.44%
5	1.24%	0.94%	1.08%	5	1.01%	0.73%	0.87%
6	3.07%	2.00%	2.81%	6	2.57%	1.60%	2.20%
7	6.16%	3.99%	5.20%	7	5.50%	3.43%	4.52%
8	8.09%	5.41%	6.63%	8	7.54%	5.31%	6.31%
9	6.79%	5.05%	5.75%	9	6.70%	5.19%	5.80%
10	5.55%	4.64%	5.14%	10	5.51%	5.13%	5.22%
11	5.32%	4.77%	5.15%	11	5.26%	5.13%	5.27%
12	5.30%	5.09%	5.38%	12	5.47%	5.38%	5.60%
13	5.49%	5.50%	5.63%	13	5.87%	5.74%	5.98%
14	5.54%	5.67%	5.78%	14	5.75%	5.69%	5.96%
15	6.10%	6.48%	6.50%	15	6.22%	6.50%	6.61%
16	6.97%	8.15%	7.72%	16	6.71%	8.08%	7.76%
17	7.37%	9.11%	8.29%	17	6.96%	8.80%	8.27%
18	7.00%	8.91%	7.95%	18	6.73%	8.61%	7.88%
19	5.35%	6.40%	5.77%	19	5.59%	6.46%	5.91%
20	3.83%	4.62%	4.27%	20	4.38%	4.72%	4.55%
21	2.97%	3.85%	3.50%	21	3.58%	3.81%	3.69%
22	2.37%	3.05%	2.63%	22	2.86%	3.10%	2.71%
23	1.79%	2.19%	1.79%	23	2.06%	2.31%	1.82%
24	1.22%	1.52%	1.15%	24	1.31%	1.71%	1.19%
TOTAL	**100.00%**	**100.00%**	**100.00%**	**TOTAL**	**100.00%**	**100.00%**	**100.00%**

Table 350
Hourly Percentages Compiled for Total Vehicles (Continued)

Hourly Percentages: Total Vehicles							
TPG 9				**TPG 10**			
HOUR	**DIR 1**	**DIR 2**	**TOTAL**	**HOUR**	**DIR 1**	**DIR 2**	**TOTAL**
1	0.72%	0.96%	0.62%	1	0.53%	0.79%	0.55%
2	0.50%	0.62%	0.39%	2	0.33%	0.31%	0.32%
3	0.46%	0.55%	0.34%	3	0.36%	0.31%	0.30%
4	0.55%	0.57%	0.43%	4	0.51%	0.36%	0.39%
5	1.08%	0.83%	0.91%	5	0.93%	0.60%	0.67%
6	2.81%	1.75%	2.42%	6	3.03%	1.43%	1.73%
7	6.05%	3.53%	4.83%	7	8.72%	3.27%	4.02%
8	7.98%	5.23%	6.66%	8	7.93%	5.12%	6.07%
9	6.91%	5.37%	5.86%	9	7.24%	4.88%	5.66%
10	5.79%	4.77%	5.05%	10	6.39%	3.82%	5.54%
11	5.29%	4.62%	5.00%	11	5.47%	4.10%	5.66%
12	5.36%	4.96%	5.30%	12	5.16%	4.55%	6.14%
13	5.67%	5.47%	5.64%	13	5.21%	5.02%	6.33%
14	5.66%	5.62%	5.71%	14	5.42%	5.40%	6.49%
15	6.03%	6.47%	6.45%	15	5.08%	6.56%	6.88%
16	6.62%	8.06%	7.76%	16	5.62%	8.63%	7.67%
17	7.03%	9.32%	8.38%	17	6.40%	10.14%	8.12%
18	6.96%	8.97%	8.12%	18	7.47%	10.35%	7.93%
19	5.50%	6.66%	6.09%	19	5.66%	7.39%	5.89%
20	4.04%	4.83%	4.57%	20	4.20%	5.37%	4.65%
21	3.25%	3.86%	3.71%	21	3.23%	4.96%	3.67%
22	2.57%	3.15%	2.75%	22	2.45%	3.47%	2.63%
23	1.91%	2.21%	1.84%	23	1.62%	1.95%	1.67%
24	1.26%	1.62%	1.17%	24	1.04%	1.22%	1.02%
TOTAL	**100.00%**	**100.00%**	**100.00%**	**TOTAL**	**100.00%**	**100.00%**	**100.00%**

Table 360
Hourly Percentages Compiled for Truck Traffic

The following four tables and two charts show hourly percentages of truck traffic sorted by Maintenance Functional Class (MFC). These tables are applied separately to raw truck data of less than 24-hours, including both automatic vehicle classification (AVC) and manual counts. Manual classification counts are the primary source of data using these tables. The hourly percentages are calculated from these tables and applied to the sum of the known hour periods and in turn converted to a 24-hour truck total.

The factors were developed using 20,000 AVC counts, collected and verified over the last five years. The raw count data was assigned to the respective Traffic Pattern Group (TPG), the truck data was extracted by vehicle type, and the TDS Statistical Analysis tool generated a summary showing the hourly percentage table by direction (applied to divided roadways). Truck data is tabulated according to MFC. Hourly weekday truck distribution provides evidence that the hourly percentage changes by MFC provide a valid breakdown of groups. Therefore, a summary was produced converting the TPGs to comparable MFC groups to be consistent with the characteristics of the 2019 Hourly Percentages (Truck Traffic) tables.

TPG 1 & 2				TPG 3 & 4			
MAINTENANCE FUNCTIONAL CLASS A (INTERSTATES)				MAINTENANCE FUNCTIONAL CLASS B (PRINCIPAL ARTERIALS)			
HOUR	DIR 1	DIR 2	TOTAL	HOUR	DIR 1	DIR 2	TOTAL
1	2.01%	2.27%	2.18%	1	1.01%	1.12%	0.98%
2	1.77%	2.12%	2.00%	2	0.95%	1.06%	0.93%
3	1.82%	2.13%	2.02%	3	1.03%	1.14%	1.03%
4	2.02%	2.40%	2.27%	4	1.30%	1.49%	1.34%
5	2.48%	2.83%	2.71%	5	1.98%	2.10%	2.01%
6	3.31%	3.59%	3.48%	6	3.63%	3.37%	3.50%
7	4.42%	4.50%	4.41%	7	5.86%	5.30%	5.61%
8	4.81%	4.84%	4.77%	8	6.61%	6.18%	6.60%
9	5.11%	5.06%	5.10%	9	6.98%	6.49%	6.94%
10	5.55%	5.33%	5.43%	10	6.83%	6.54%	6.86%
11	5.88%	5.31%	5.58%	11	6.68%	6.49%	6.80%
12	6.00%	5.34%	5.67%	12	6.74%	6.54%	6.83%
13	5.92%	5.46%	5.69%	13	6.61%	6.56%	6.71%
14	5.90%	5.57%	5.74%	14	6.59%	6.64%	6.75%
15	5.97%	5.74%	5.83%	15	6.76%	6.86%	6.91%
16	6.01%	5.65%	5.77%	16	6.49%	6.77%	6.65%
17	5.63%	5.45%	5.46%	17	5.70%	6.10%	5.79%
18	5.15%	5.07%	5.05%	18	4.76%	4.91%	4.73%
19	4.63%	4.60%	4.58%	19	3.73%	3.90%	3.66%
20	4.01%	4.09%	4.03%	20	2.82%	3.04%	2.76%
21	3.51%	3.65%	3.58%	21	2.28%	2.37%	2.19%
22	3.11%	3.34%	3.24%	22	1.89%	2.02%	1.79%
23	2.69%	3.00%	2.89%	23	1.53%	1.64%	1.45%
24	2.29%	2.66%	2.52%	24	1.24%	1.37%	1.18%
TOTAL	100.00%	100.00%	100.00%	TOTAL	100.00%	100.00%	100.00%

Table 360
Hourly Percentages Compiled for Truck Traffic (Continued)

TPG 5, 6 & 7				TPG 8 & 9			
MAINTENANCE FUNCTIONAL CLASS C				MAINTENANCE FUNCTIONAL CLASS D, E & F			
(MINOR ARTERIALS)				(RURAL COLLECTORS)			
HOUR	DIR 1	DIR 2	TOTAL	HOUR	DIR 1	DIR 2	TOTAL
1	0.93%	1.10%	0.74%	1	1.28%	1.77%	0.82%
2	0.90%	1.06%	0.70%	2	1.13%	1.69%	0.76%
3	1.00%	1.15%	0.77%	3	1.25%	1.77%	0.82%
4	1.26%	1.46%	1.02%	4	1.39%	2.13%	1.06%
5	1.87%	2.06%	1.63%	5	2.00%	2.65%	1.66%
6	3.32%	3.24%	3.07%	6	3.04%	3.82%	3.08%
7	5.72%	5.06%	5.51%	7	4.94%	4.87%	5.48%
8	6.96%	6.12%	7.07%	8	6.30%	5.55%	6.93%
9	7.32%	6.66%	7.30%	9	6.45%	5.98%	7.10%
10	7.01%	6.60%	6.91%	10	6.58%	6.22%	6.73%
11	6.93%	6.52%	6.82%	11	6.78%	5.99%	6.74%
12	6.77%	6.64%	6.90%	12	6.89%	6.10%	6.79%
13	6.83%	6.59%	6.84%	13	6.58%	6.27%	6.76%
14	6.71%	6.72%	6.90%	14	6.76%	6.01%	6.83%
15	6.83%	7.00%	7.24%	15	6.73%	6.16%	7.19%
16	6.77%	6.97%	7.27%	16	6.49%	6.10%	7.36%
17	5.75%	6.22%	6.25%	17	5.75%	5.74%	6.32%
18	4.60%	5.04%	4.99%	18	4.65%	4.69%	5.07%
19	3.64%	3.85%	3.65%	19	3.91%	3.98%	3.69%
20	2.70%	2.95%	2.66%	20	3.09%	3.11%	2.74%
21	2.09%	2.32%	2.05%	21	2.54%	2.80%	2.14%
22	1.66%	1.82%	1.57%	22	2.16%	2.47%	1.67%
23	1.32%	1.58%	1.19%	23	1.80%	2.10%	1.25%
24	1.11%	1.27%	0.95%	24	1.51%	2.03%	1.01%
TOTAL	100.00%	100.00%	100.00%	TOTAL	100.00%	100.00%	100.00%

Hourly Percentages Charts

Hourly Percentages: Total Vehicles

Hourly Percentages: Truck Traffic
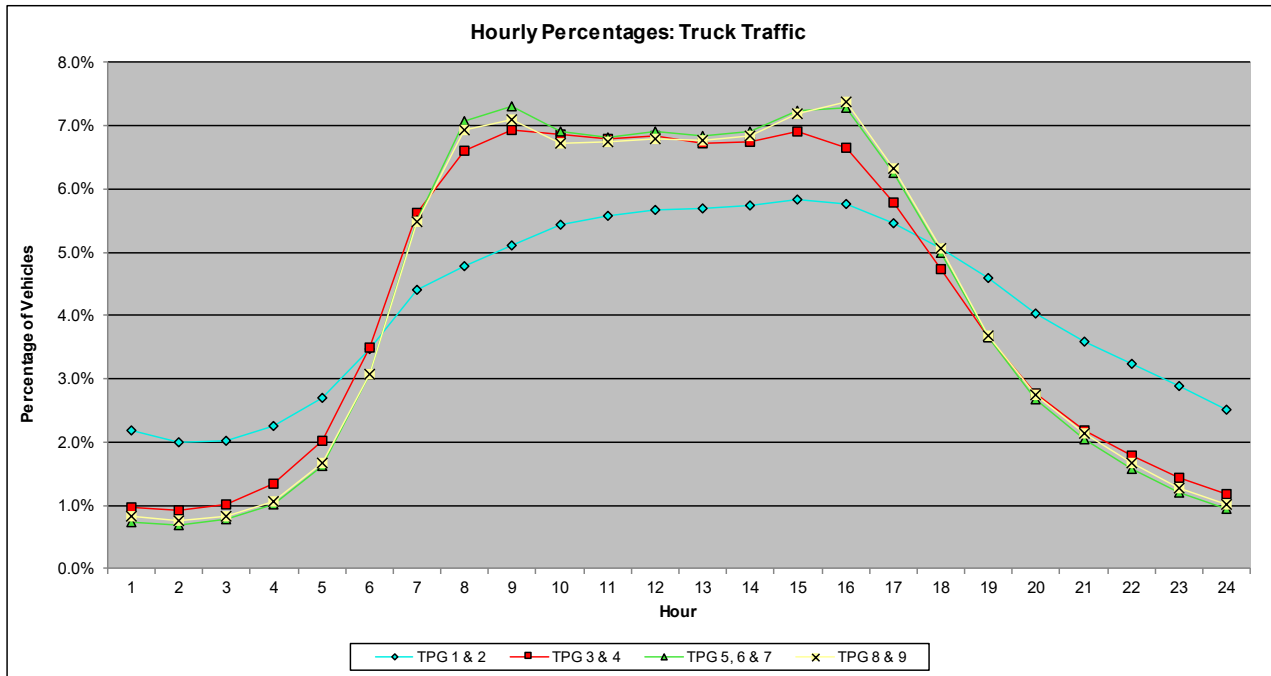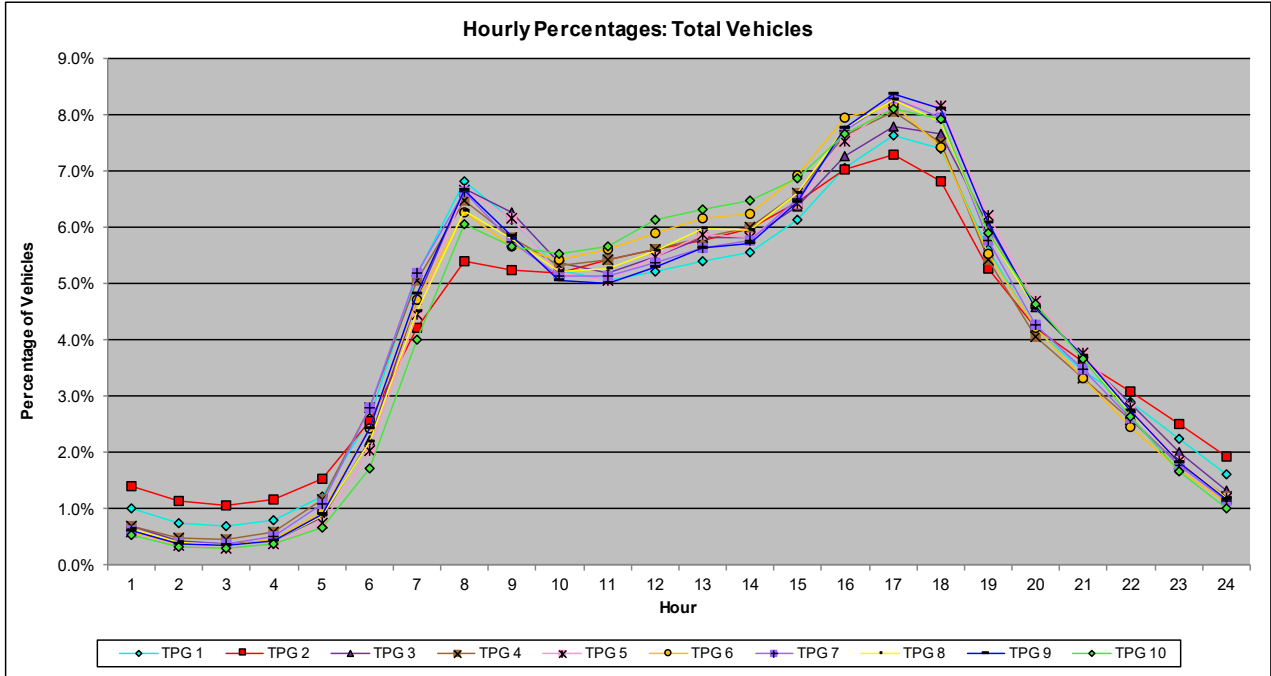
Table 355
Average Day of Week by Month Factors Compiled for Total Vehicles

The following 12 tables show average day of week factors by month compiled for total vehicles for the year 2019. Current year permanent site traffic data is assembled and the data is placed in the respective TPG. Annual Average Daily Traffic (AADT) is tabulated individually for each of the 109 permanent site stations. A factor is calculated for each day from each station and a list is tabulated by month and day of the week. This data is assembled by day and TPG for each station. The result is a group factor, which can be applied to a 24-hour raw traffic count taken during any day of the year to develop an AADT volume.

January 2019										
DAY	**TPG 1**	**TPG 2**	**TPG 3**	**TPG 4**	**TPG 5**	**TPG 6**	**TPG 7**	**TPG 8**	**TPG 9**	**TPG 10**
Monday	1.096	1.209	1.100	1.165	1.141	1.160	1.179	1.218	1.106	1.479
Tuesday	1.119	1.238	1.087	1.112	1.029	1.071	1.104	1.214	1.048	1.548
Wednesday	1.007	1.106	1.007	1.140	1.001	1.091	1.072	1.142	1.045	1.408
Thursday	0.983	1.078	0.961	1.069	1.005	1.053	1.051	1.123	1.008	1.424
Friday	0.926	1.001	0.912	1.002	0.972	0.975	0.955	0.986	0.963	1.169
Saturday	1.264	1.174	1.189	1.278	1.105	1.305	1.334	1.245	1.321	1.291
Sunday	1.303	1.273	1.376	1.439	1.280	1.547	1.352	1.470	1.341	1.600
DAY OF MONTH	1.100	1.154	1.090	1.172	1.076	1.172	1.149	1.200	1.119	1.417

February 2019										
DAY	**TPG 1**	**TPG 2**	**TPG 3**	**TPG 4**	**TPG 5**	**TPG 6**	**TPG 7**	**TPG 8**	**TPG 9**	**TPG 10**
Monday	1.027	1.152	1.035	1.076	1.109	1.105	1.100	1.181	1.003	1.470
Tuesday	0.944	1.074	0.959	1.009	0.967	1.092	1.024	1.044	0.985	1.433
Wednesday	0.973	1.067	0.934	1.058	0.925	1.078	1.033	1.084	0.968	1.605
Thursday	0.947	1.086	0.928	1.010	0.932	1.012	0.985	1.040	0.959	1.302
Friday	0.925	1.002	0.936	0.984	0.953	0.963	1.000	1.028	1.002	1.227
Saturday	1.114	1.204	1.115	1.156	1.078	1.264	1.124	1.266	1.206	1.231
Sunday	1.280	1.253	1.334	1.356	1.253	1.495	1.408	1.409	1.340	1.615
DAY OF MONTH	1.030	1.120	1.035	1.093	1.031	1.144	1.096	1.150	1.066	1.412

Table 355
Average Day of Week by Month Factors Compiled for Total Vehicles (Continued)

March 2019									
DAY	TPG 1	TPG 2	TPG 3	TPG 4	TPG 5	TPG 6	TPG 7	TPG 8	TPG 9	TPG 10
Monday	1.322	1.028	1.026	1.429	1.001	1.057	1.076	1.117	1.080	1.412
Tuesday	1.098	1.009	0.931	1.629	0.920	1.003	0.988	1.003	1.004	1.324
Wednesday	0.925	1.201	0.910	1.391	1.501	0.966	0.959	0.978	0.974	1.351
Thursday	0.885	0.923	0.890	0.982	1.918	0.961	0.954	0.975	0.961	1.239
Friday	0.843	0.838	0.874	0.919	0.887	0.925	0.922	0.945	0.955	1.147
Saturday	1.137	1.112	1.091	1.127	1.255	1.241	1.063	1.182	1.176	1.136
Sunday	2.435	1.364	1.273	1.584	1.957	1.454	1.269	1.314	1.315	1.502
DAY OF MONTH	1.235	1.068	0.999	1.294	1.348	1.087	1.033	1.073	1.066	1.302

April 2019									
DAY	TPG 1	TPG 2	TPG 3	TPG 4	TPG 5	TPG 6	TPG 7	TPG 8	TPG 9	TPG 10
Monday	0.872	0.932	0.910	0.956	0.866	0.927	0.974	0.929	0.999	1.125
Tuesday	0.876	0.939	0.884	0.950	0.836	0.908	0.953	0.915	0.934	1.049
Wednesday	0.864	0.928	0.864	0.938	0.818	0.888	0.911	0.897	0.915	1.014
Thursday	0.822	0.865	0.851	0.882	0.833	0.857	0.889	0.878	0.909	1.043
Friday	0.792	0.798	0.853	0.850	0.824	0.869	0.885	0.906	0.923	0.949
Saturday	0.987	0.944	1.044	1.020	0.931	1.089	1.006	1.056	1.109	0.930
Sunday	1.061	0.948	1.191	1.092	0.981	1.258	1.172	1.219	1.235	1.053
DAY OF MONTH	0.896	0.908	0.942	0.955	0.870	0.971	0.970	0.971	1.003	1.023

May 2019									
DAY	TPG 1	TPG 2	TPG 3	TPG 4	TPG 5	TPG 6	TPG 7	TPG 8	TPG 9	TPG 10
Monday	0.925	1.691	0.994	0.951	0.935	0.959	0.980	0.905	1.022	0.938
Tuesday	0.855	0.907	0.875	0.916	0.854	0.880	0.923	0.873	0.940	0.966
Wednesday	0.846	0.902	0.861	0.906	0.816	0.874	0.888	0.852	0.894	0.991
Thursday	0.819	0.852	0.844	0.869	0.825	0.859	0.879	0.824	0.883	0.911
Friday	0.776	0.762	0.816	0.795	0.800	0.794	0.810	0.779	0.853	0.748
Saturday	0.942	0.899	1.005	0.970	0.931	0.984	0.937	0.943	1.060	0.678
Sunday	1.059	0.958	1.177	1.072	0.945	1.180	1.158	1.016	1.278	0.727
DAY OF MONTH	0.889	0.996	0.939	0.926	0.872	0.933	0.939	0.885	0.990	0.851

Table 355
Average Day of Week by Month Factors Compiled for Total Vehicles
(Continued)

June 2019										
DAY	TPG 1	TPG 2	TPG 3	TPG 4	TPG 5	TPG 6	TPG 7	TPG 8	TPG 9	TPG 10
Monday	0.864	0.885	0.894	0.903	1.237	0.867	0.919	0.893	0.952	0.866
Tuesday	0.858	0.901	0.872	0.917	0.849	0.867	0.879	0.880	0.901	0.880
Wednesday	0.847	0.861	0.861	0.893	1.854	0.840	0.848	0.853	0.879	0.907
Thursday	0.816	0.822	0.848	0.859	0.864	0.830	0.867	0.835	0.896	0.889
Friday	0.776	0.730	0.813	0.827	0.848	0.795	0.788	0.783	0.852	0.709
Saturday	0.950	0.846	1.018	0.986	1.073	0.989	0.899	0.925	1.010	0.657
Sunday	1.019	0.869	1.161	0.992	1.308	1.142	0.968	0.973	1.165	0.805
DAY OF MONTH	0.876	0.845	0.924	0.911	1.147	0.904	0.881	0.877	0.951	0.816

July 2019										
DAY	TPG 1	TPG 2	TPG 3	TPG 4	TPG 5	TPG 6	TPG 7	TPG 8	TPG 9	TPG 10
Monday	0.853	0.795	0.891	0.895	0.939	0.859	0.904	0.862	0.949	0.817
Tuesday	0.838	0.840	0.868	0.888	0.870	0.847	0.894	0.857	0.898	0.843
Wednesday	0.820	0.803	0.858	0.862	0.859	0.829	0.836	0.848	0.861	0.829
Thursday	0.886	0.791	0.944	0.874	0.932	0.903	0.845	0.830	1.035	0.762
Friday	0.814	0.712	0.871	0.825	0.870	0.800	0.804	0.819	0.890	0.663
Saturday	0.940	0.798	1.065	0.968	0.938	0.985	0.911	0.947	1.090	0.573
Sunday	0.978	0.784	1.178	0.961	1.028	1.046	0.911	0.968	1.262	0.634
DAY OF MONTH	0.876	0.789	0.954	0.896	0.919	0.895	0.872	0.876	0.998	0.732

August 2019										
DAY	TPG 1	TPG 2	TPG 3	TPG 4	TPG 5	TPG 6	TPG 7	TPG 8	TPG 9	TPG 10
Monday	0.863	0.766	0.907	0.902	0.913	0.879	0.898	0.859	0.934	0.855
Tuesday	0.911	0.920	0.889	0.904	0.859	0.883	0.925	0.882	0.914	0.932
Wednesday	0.840	0.841	0.867	0.886	0.851	0.874	0.885	0.873	0.903	0.911
Thursday	0.819	0.775	0.849	0.833	0.835	0.846	0.836	0.819	0.907	0.837
Friday	0.883	0.695	0.827	0.765	0.814	0.809	0.822	0.797	0.862	0.677
Saturday	0.926	0.754	1.025	0.879	0.918	1.023	0.918	0.938	1.045	0.564
Sunday	0.967	0.761	1.133	0.940	1.016	1.114	1.001	0.980	1.178	0.655
DAY OF MONTH	0.887	0.787	0.928	0.873	0.887	0.918	0.898	0.878	0.963	0.776

Table 355
Average Day of Week by Month Factors Compiled for Total Vehicles
(Continued)

September 2019										
DAY	**TPG 1**	**TPG 2**	**TPG 3**	**TPG 4**	**TPG 5**	**TPG 6**	**TPG 7**	**TPG 8**	**TPG 9**	**TPG 10**
Monday	0.958	0.902	0.939	0.941	0.992	0.932	0.943	0.935	0.949	0.980
Tuesday	1.035	1.109	0.881	0.920	1.331	0.857	0.926	0.895	0.915	1.037
Wednesday	1.008	0.940	0.860	0.928	1.206	0.867	0.914	0.883	0.895	1.022
Thursday	0.855	1.105	0.849	0.882	1.173	0.844	0.910	0.870	0.895	0.996
Friday	0.822	0.797	0.821	0.816	1.097	0.783	0.821	0.816	0.865	0.836
Saturday	0.940	0.904	1.002	0.979	1.245	0.993	0.983	0.994	1.099	0.704
Sunday	1.026	0.907	1.139	1.041	1.038	1.113	1.098	1.084	1.150	0.850
DAY OF MONTH	0.949	0.952	0.927	0.930	1.155	0.913	0.942	0.925	0.967	0.918

October 2019										
DAY	**TPG 1**	**TPG 2**	**TPG 3**	**TPG 4**	**TPG 5**	**TPG 6**	**TPG 7**	**TPG 8**	**TPG 9**	**TPG 10**
Monday	0.934	0.859	0.929	0.902	0.884	0.916	0.981	0.949	0.987	1.139
Tuesday	0.882	0.893	0.881	0.936	0.847	0.897	0.949	0.906	0.944	1.124
Wednesday	0.882	0.920	0.876	0.925	0.829	0.896	0.922	0.906	0.930	1.137
Thursday	0.861	0.859	0.864	0.893	0.831	0.885	0.926	0.904	0.927	1.104
Friday	0.793	0.749	0.823	0.786	0.798	0.821	0.830	0.833	0.870	0.891
Saturday	0.917	0.906	1.019	0.967	0.945	1.067	0.938	1.039	1.089	0.833
Sunday	1.011	0.883	1.202	1.033	1.116	1.199	1.152	1.135	1.253	1.107
DAY OF MONTH	0.897	0.867	0.942	0.920	0.893	0.954	0.957	0.953	1.000	1.048

Table 355
Average Day of Week by Month Factors Compiled for Total Vehicles
(Continued)

November 2019										
DAY	**TPG 1**	**TPG 2**	**TPG 3**	**TPG 4**	**TPG 5**	**TPG 6**	**TPG 7**	**TPG 8**	**TPG 9**	**TPG 10**
Monday	0.980	0.962	1.038	0.995	0.964	0.989	1.051	1.023	1.048	1.248
Tuesday	0.917	0.965	0.909	0.994	0.889	0.966	1.008	0.992	0.988	1.229
Wednesday	0.887	0.944	0.892	0.960	0.864	0.957	0.980	0.942	0.979	1.195
Thursday	0.948	0.969	1.022	1.066	0.961	1.049	1.076	1.056	1.093	1.519
Friday	0.866	0.870	0.898	0.877	0.866	0.924	0.928	0.909	0.976	1.095
Saturday	0.992	0.967	1.083	1.105	1.015	1.200	1.077	1.119	1.199	1.114
Sunday	1.139	1.027	2.858	1.222	1.174	1.425	1.371	1.321	1.468	1.489
DAY OF MONTH	0.961	0.958	1.243	1.031	0.962	1.073	1.070	1.052	1.107	1.270

December 2019										
DAY	**TPG 1**	**TPG 2**	**TPG 3**	**TPG 4**	**TPG 5**	**TPG 6**	**TPG 7**	**TPG 8**	**TPG 9**	**TPG 10**
Monday	1.033	0.951	1.013	1.067	0.927	1.061	1.117	1.073	1.120	1.377
Tuesday	1.002	1.054	0.979	1.093	0.927	1.105	1.103	1.091	1.105	1.426
Wednesday	1.060	1.085	1.050	1.266	1.009	1.162	1.106	1.196	1.125	1.402
Thursday	0.876	0.938	0.928	1.010	0.891	1.022	1.026	1.029	1.046	1.338
Friday	0.844	0.850	0.882	0.948	0.859	0.960	0.948	0.950	0.981	1.173
Saturday	0.970	0.998	1.059	1.171	1.007	1.198	1.120	1.212	1.260	1.268
Sunday	1.087	1.030	1.263	1.320	1.167	1.392	1.376	1.314	1.431	1.601
DAY OF MONTH	0.982	0.987	1.025	1.125	0.969	1.128	1.114	1.124	1.153	1.369

Monthly Variation Charts by Traffic Pattern Group (TPG)

The chart below shows the different variations between months and traffic pattern groups (TPG). The seasonal factors, which are the data this chart is derived from, show the percentage difference between the raw data count and the annual average daily traffic (AADT). The seasonal factors data can be found in Table 355.

Monthly Variation

TPG 1: Urban Interstate
TPG 2: Rural Interstate
TPG 3: Urban Principal Arterial
TPG 4: Rural Principal Arterial
TPG 5: Urban Minor Arterials and Collectors
TPG 6: North Rural Minor Arterial
TPG 7: Central Rural Minor Arterial
TPG 8: North Rural Collector
TPG 9: Central Rural Collector
TPG 10: Special Recreational
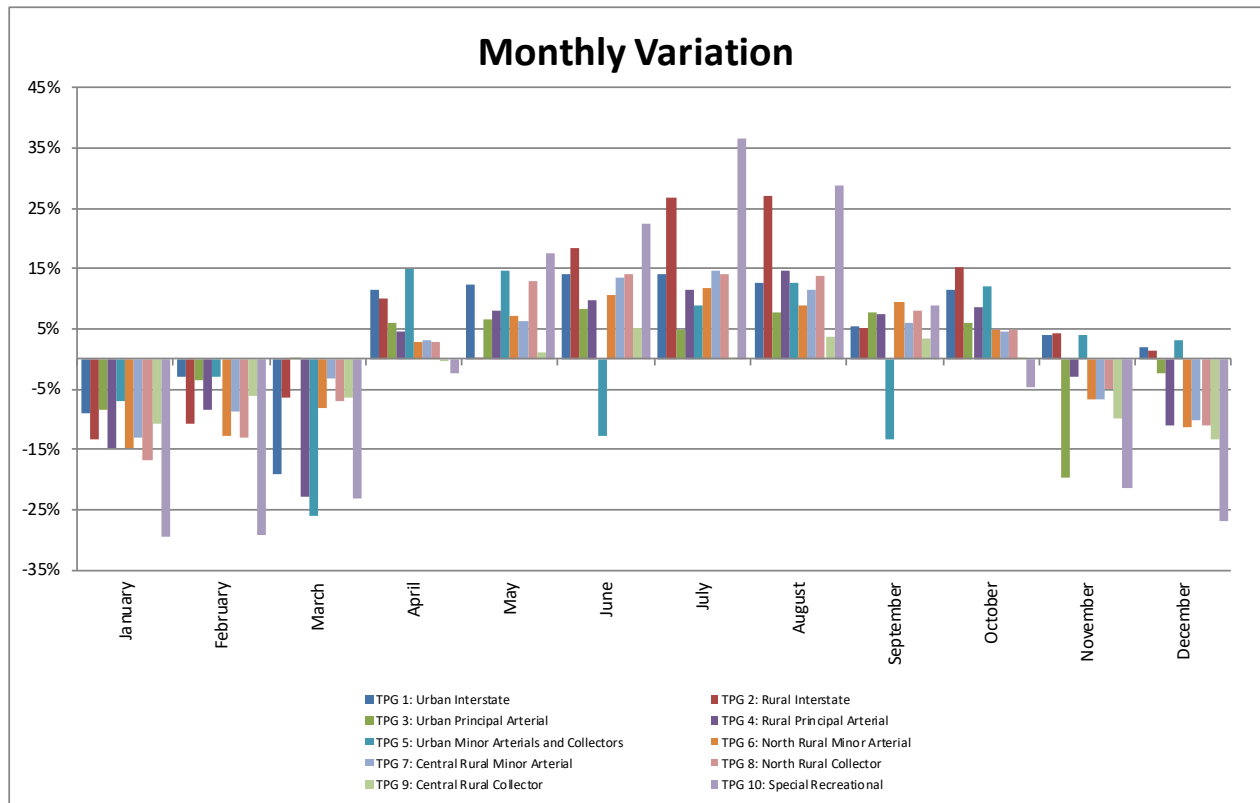
Table 365
Average Day of Week by Month Factors Compiled for Truck Traffic

The following table shows average day of week factors by month compiled for truck traffic. This data is used to convert 24-hour truck data to Average Daily Truck Traffic (ADTT). The ADTT is determined by applying the appropriate factor for the day of week and month to the truck traffic. Truck seasonal variation charts, which are based on truck traffic studies, indicate that truck traffic varies little for both the Interstate and Non-Interstate systems.   On the other hand, day of week distribution does indicate a variation between weekdays (Monday through Friday) versus weekend (Saturday through Sunday) truck flow.

AVERAGE DAY OF WEEK BY MONTH FOR TRUCK TRAFFIC						
	MONDAY	**TUESDAY**	**WEDNESDAY**	**THURSDAY**	**FRIDAY**	**SATURDAY**	**SUNDAY**
JANUARY	1.38	1.23	0.94	0.91	0.92	1.77	2.38
FEBRUARY	1.45	0.90	0.92	0.88	0.91	1.89	2.79
MARCH	1.38	0.85	0.86	0.86	0.91	1.86	2.63
APRIL	0.97	0.78	0.76	0.75	0.85	1.68	2.55
MAY	1.28	0.80	0.74	0.72	0.75	1.47	2.26
JUNE	0.92	0.76	0.76	0.76	0.77	1.35	1.91
JULY	0.98	0.77	0.76	1.04	0.82	1.41	1.83
AUGUST	0.98	0.78	0.76	0.74	0.76	1.37	1.79
SEPTEMBER	1.09	0.77	0.73	0.70	0.72	1.38	1.87
OCTOBER	0.91	0.71	0.70	0.70	0.70	1.42	1.98
NOVEMBER	0.95	0.76	0.74	1.18	0.85	1.57	2.11
DECEMBER	1.14	1.01	1.68	0.82	0.81	1.65	2.48

Table 370
Yearly Growth Factors

The yearly growth factors (shown in the following tables) are used to compute the current estimated average daily traffic for count data that is older than the current year. The factor application is applied by Traffic Pattern Group (TPG) and is used to calculate total vehicles and truck estimates. A limited amount of count data is processed through the Yearly Growth Factor table, since most traffic counts are for the current year.

To use this table, select the base year of the count from the "YEAR" column and multiply it by the percentage under the corresponding "TPG" row.

For example, to determine the current year estimate (2019) of a 2010 base year count having a TPG 5, multiply 0.934 (-6.6%) by the AADT of the 2010 count.

Yearly Growth Factors: 2010-2019									
TPG	**09-10 (2010)**	**10-11 (2011)**	**11-12 (2012)**	**12-13 (2013)**	**13-14 (2014)**	**14-15 (2015)**	**15-16 (2016)**	**16-17 (2017)**	**17-18 (2018)**	**18-19 (2019)**
TPG 1	0.0%	-0.7%	-0.9%	-1.1%	0.1%	0.5%	0.8%	0.9%	1.1%	0.8%
TPG 2	1.6%	1.7%	2.2%	2.2%	1.2%	1.3%	1.0%	1.1%	1.1%	1.2%
TPG 3	0.2%	-0.6%	-1.0%	-1.0%	-0.7%	-0.8%	-0.7%	-0.7%	-0.8%	-0.7%
TPG 4	0.3%	-0.3%	-0.4%	-0.5%	-0.5%	-0.5%	-0.5%	-0.5%	-0.6%	-0.5%
TPG 5	0.2%	-0.6%	-1.0%	-1.0%	-0.7%	-0.8%	-0.7%	-0.7%	-0.8%	-0.7%
TPG 6	0.3%	-0.3%	-0.4%	-0.5%	-0.5%	-0.5%	-0.5%	-0.5%	-0.6%	-0.5%
TPG 7	0.3%	-0.3%	-0.4%	-0.5%	-0.5%	-0.5%	-0.5%	-0.5%	-0.6%	-0.5%
TPG 8	0.3%	-0.3%	-0.4%	-0.5%	-0.5%	-0.5%	-0.5%	-0.5%	-0.6%	-0.5%
TPG 9	0.3%	-0.3%	-0.4%	-0.5%	-0.5%	-0.5%	-0.5%	-0.5%	-0.6%	-0.5%
TPG 10	0.3%	-0.3%	-0.4%	-0.5%	-0.5%	-0.5%	-0.5%	-0.5%	-0.6%	-0.5%

The table below shows yearly growth percentages by TPG for 2010 through 2019.

Percent Growth: 2010-2019									
TPG	**09-19 (2010)**	**10-19 (2011)**	**11-19 (2012)**	**12-19 (2013)**	**13-19 (2014)**	**14-19 (2015)**	**15-19 (2016)**	**16-19 (2017)**	**17-19 (2018)**	**18-19 (2019)**
TPG 1	1.5%	1.5%	2.2%	3.1%	4.3%	4.2%	3.6%	2.8%	1.9%	0.8%
TPG 2	15.6%	13.8%	11.9%	9.5%	7.1%	5.8%	4.5%	3.4%	2.3%	1.2%
TPG 3	-6.6%	-6.8%	-6.2%	-5.3%	-4.3%	-3.6%	-2.9%	-2.2%	-1.5%	-0.7%
TPG 4	-3.9%	-4.2%	-3.9%	-3.5%	-3.1%	-2.6%	-2.1%	-1.6%	-1.1%	-0.5%
TPG 5	-6.6%	-6.8%	-6.2%	-5.3%	-4.3%	-3.6%	-2.9%	-2.2%	-1.5%	-0.7%
TPG 6	-3.9%	-4.2%	-3.9%	-3.5%	-3.1%	-2.6%	-2.1%	-1.6%	-1.1%	-0.5%
TPG 7	-3.9%	-4.2%	-3.9%	-3.5%	-3.1%	-2.6%	-2.1%	-1.6%	-1.1%	-0.5%
TPG 8	-3.9%	-4.2%	-3.9%	-3.5%	-3.1%	-2.6%	-2.1%	-1.6%	-1.1%	-0.5%
TPG 9	-3.9%	-4.2%	-3.9%	-3.5%	-3.1%	-2.6%	-2.1%	-1.6%	-1.1%	-0.5%
TPG 10	-3.9%	-4.2%	-3.9%	-3.5%	-3.1%	-2.6%	-2.1%	-1.6%	-1.1%	-0.5%

Functional Class Groups

Traffic volume data displayed in PennDOT's Roadway Management System (RMS) is projected to a current estimate year (2019) based on County/Functional Class Group (FCG). This provides the user with trends relative to a specific county. The factors are applied annually to the Department's Roadway Management System (RMS) to produce the current year traffic volume estimate values.

The first table shows the PennDOT FCG's with a description and corresponding Functional Class Codes (FCCs). The second table shows the FHWA revision of highway functional classifications. FHWA finalized the functional class guidelines in 2013. RMS was updated to reflect these changes in late summer 2016.

FCG	DESCRIPTIVE NAME	FCC
FCG 1	URBAN INTERSTATE	FCC 11
FCG 2	RURAL INTERSTATE	FCC 01
FCG 3	URBAN - OTHER FREEWAYS/EXPRESSWAYS	FCC 12
	URBAN - OTHER PRINCIPAL ARTERIALS	FCC 14
	URBAN - MINOR ARTERIALS	FCC 16
	RAMPS	FCC 99
FCG 4	RURAL - OTHER PRINCIPAL ARTERIALS	FCC 02
	RURAL - MINOR ARTERIAL	FCC 06
FCG 5	URBAN COLLECTORS	FCC 17
	URBAN - LOCAL	FCC 19
FCG 6	RURAL - MAJOR COLLECTOR	FCC 07
	RURAL - MINOR COLLECTOR	FCC 08
	RURAL - LOCAL	FCC 09

FCC	DESCRIPTIVE NAME	OLD FCC
1	INTERSTATE	01-11
2	OTHER FREEWAY / EXPRESSWAY	03-12
3	OTHER PRINCIPAL ARTERIAL	02-14
4	MINOR ARTERIAL	06-16
5	MAJOR COLLECTOR	07-17
6	MINOR COLLECTOR	08-18
7	LOCAL	09-19

** The Federal Functional Classification of a ramp reflects the highest order of Federal Functional Classification of the roadways to which the ramp connects. As an example, Adams County, SR 8001 is the interchange at US 15, a principal arterial, and SR 3001, a minor arterial; therefore, the segments associated with SR 8001 are assigned a Federal Functional Classification of principal arterial.

Table 380
Axle Correction Factors

Axle volume count data is collected by counting vehicle axles (two axle strikes equals one vehicle).

Since these counts may include a number of trucks with more than two axles, they must be corrected to represent the actual volume of total vehicles. The axle correction factors are applied to raw axle volume count data, adjusting it to a correct representative volume.

2019 Axle Correction Factors are shown in the table below.

TPG	Axle Correction Factor
1	84.02%
2	71.12%
3	95.97%
4	88.49%
5	97.59%
6	92.71%
7	94.86%
8	95.11%
9	96.21%
10	95.95%

Table 385
Design Hour Factor Default Values

The design hour factor (K-factor) represents the percent of Annual Average Daily Traffic (AADT) occurring in the peak hour. This value is important in the design of roadways and capacity analysis studies.

Count data less than 24-hours and/or data not having directional volumes will not have the necessary raw data required to compute actual K-factor values. The K-factor default values were produced to complete unknown values not generated through the raw count factoring process, and to satisfy Highway Performance Monitoring System (HPMS) reporting requirements. They were developed by processing the actual hourly data from the 109 permanent site stations to identify the 30th highest hour; this hourly volume was divided by the AADT for each station, producing a K-factor. The factors were then averaged by Traffic Pattern Group (TPG).

During the raw count factoring process, the K-factor value is programmatically inserted into the Roadway Management System (RMS) database if the raw count data is insufficient to calculate an actual K-factor.

2019 K-Factors and corresponding TPGs are shown in the table below.

TPG	K factor default value
1	10%
2	10%
3	10%
4	11%
5	11%
6	11%
7	11%
8	13%
9	11%
10	16%

Tables 390 and 395
Equivalent Single Axle Load Factors

Equivalent Single Axle Load (ESAL) tables are used to calculate pavement loadings (rigid and flexible types) to produce a common parameter for design and planning purposes.

ESAL factors used in RMS were derived through a composite of data obtained from AASHTO guidelines and test data collected from historical Loadometer Surveys. Data obtained through WIM equipment is under review at this time and will be considered in development of future ESAL factors. The AASHTO Mechanistic Empirical Design Guide (MEPDG) has incorporated improved methods of determining loading effects of traffic termed axle-load spectra. In the future, these new methods will supersede the use of ESAL factors.

2019 ESAL factors for rigid pavements are shown by Traffic Pattern Group (TPG) and vehicle classification in **Table 390**, below.

RIGID ESAL FACTORS										
CLASS	TPG 1	TPG 2	TPG 3	TPG 4	TPG 5	TPG 6	TPG 7	TPG 8	TPG 9	TPG 10
BUS	0.240	0.240	0.240	0.240	0.240	0.240	0.240	0.240	0.240	0.240
2 AXLE SIX TIRE	0.240	0.240	0.240	0.240	0.240	0.240	0.240	0.240	0.240	0.240
3 AXLE SINGLE UNIT	1.150	1.150	1.150	1.150	1.150	1.150	1.150	1.150	1.150	1.150
4 AXLE SINGLE UNIT	7.000	7.000	7.000	7.000	7.000	7.000	7.000	7.000	7.000	7.000
3 AXLE WITH TRAILER	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
3 AXLE MULTI-AXLE TRAILER	1.590	1.590	1.590	1.590	1.590	1.590	1.590	1.590	1.590	1.590
6 AXLE SINGLE TRAILER	1.421	1.421	1.421	1.421	1.421	1.421	1.421	1.421	1.421	1.421
5 AXLE MULTI TRAILER	2.400	2.400	2.400	2.400	2.400	2.400	2.400	2.400	2.400	2.400
6 AXLE MULTI TRAILER	1.421	1.421	1.421	1.421	1.421	1.421	1.421	1.421	1.421	1.421
7 AXLE MULTI TRAILER	1.421	1.421	1.421	1.421	1.421	1.421	1.421	1.421	1.421	1.421

2019 ESAL factors for flexible pavements are shown by Traffic Pattern Group (TPG) and vehicle classification in **Table 395**, below.

FLEXIBLE ESAL FACTORS										
CLASS	TPG 1	TPG 2	TPG 3	TPG 4	TPG 5	TPG 6	TPG 7	TPG 8	TPG 9	TPG 10
BUS	0.240	0.240	0.240	0.240	0.240	0.240	0.240	0.240	0.240	0.240
2 AXLE SIX TIRE	0.240	0.240	0.240	0.240	0.240	0.240	0.240	0.240	0.240	0.240
3 AXLE SINGLE UNIT	0.820	0.820	0.820	0.820	0.820	0.820	0.820	0.820	0.820	0.820
4 AXLE SINGLE UNIT	4.500	4.500	4.500	4.500	4.500	4.500	4.500	4.500	4.500	4.500
3 AXLE WITH TRAILER	0.440	0.440	0.440	0.440	0.440	0.440	0.440	0.440	0.440	0.440
3 AXLE MULTI-AXLE TRAILER	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
6 AXLE SINGLE TRAILER	0.750	0.750	0.750	0.750	0.750	0.750	0.750	0.750	0.750	0.750
5 AXLE MULTI TRAILER	2.330	2.330	2.330	2.330	2.330	2.330	2.330	2.330	2.330	2.330
6 AXLE MULTI TRAILER	1.276	1.276	1.276	1.276	1.276	1.276	1.276	1.276	1.276	1.276
7 AXLE MULTI TRAILER	1.276	1.276	1.276	1.276	1.276	1.276	1.276	1.276	1.276	1.276

Roadway Management System
Factor Table Application Flow Chart

I. MANUAL COUNT (LESS THAN 24 HOURS)
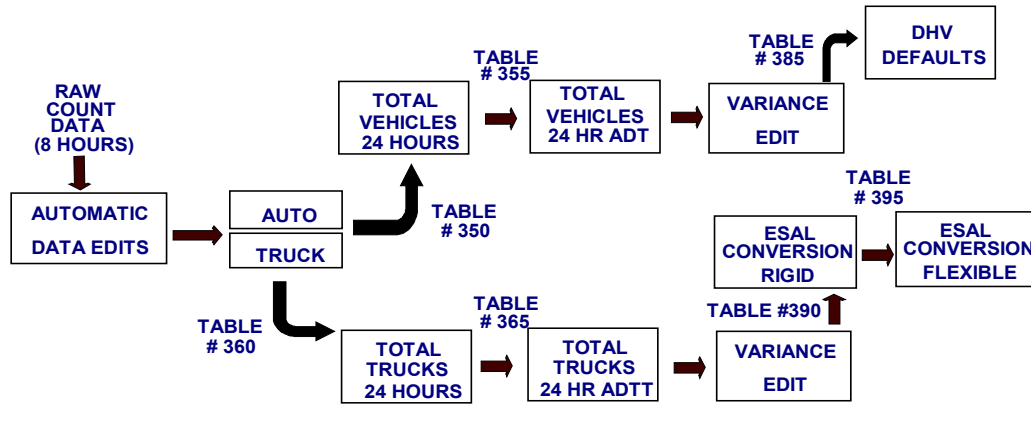
II. AUTOMATIC VEHICLE CLASSIFICATION COUNT
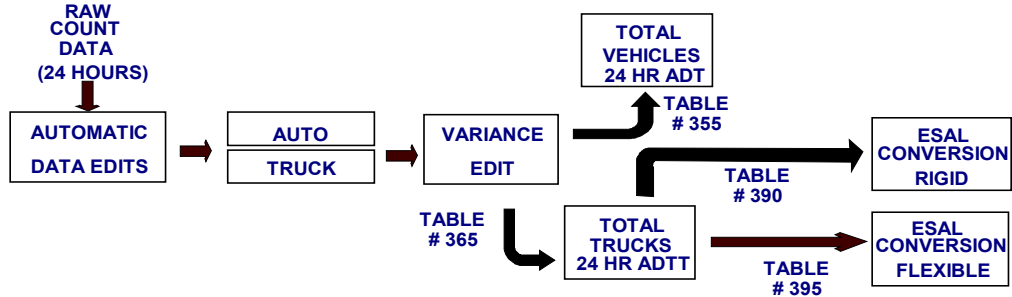
Note: DHV is computed from the raw count data.

III. AXLE AND LOOP VOLUME COUNTS
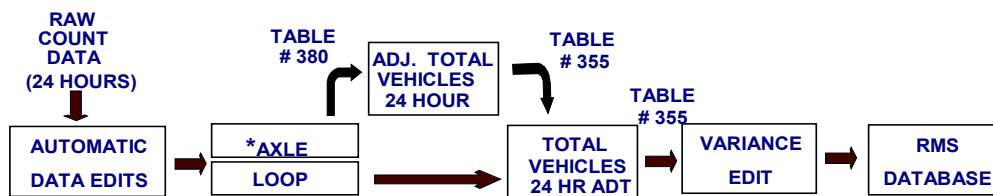
* Total Vehicles are computed by counting axles (2 axles equals 1 Vehicle)

Acronyms

AADT	Annual Average Daily Traffic
AASHTO	American Association of State Highway & Transportation Officials
ADT	Average Daily Traffic
ADTT	Average Daily Truck Traffic
ATR	Automatic Traffic Recorder
AVC	Automatic Vehicle Classification
BPR	Bureau of Planning and Research
CAVC	Continuous Automatic Vehicle Classification
DHV	Design Hour Volume
DOW	Day of Week
DRJTBC	Delaware River Joint Toll Bridge Commission
DVMT	Daily Vehicle Miles of Travel
ESAL	Equivalent Single Axle Load
FCC	Functional Classification Code
FCG	Functional Classification Group
FHWA	Federal Highway Administration
GIS	Geographic Information System
HPMS	Highway Performance Monitoring System
LTPP	Long Term Pavement Performance
MEPDG	Mechanistic Empirical Design Guide
MFC	Maintenance Functional Classification
MPO	Metropolitan Planning Organization
RPO	Rural Planning Organization
RMS	Roadway Management System
SHRP	Strategic Highway Research Program
SR	State Route
STIP	Short-Term In-Pavement
TDS	Traffic Data System
TMAS	Traffic Monitoring Analysis System
TMG	Traffic Monitoring Guide
TPG	Traffic Pattern Group
WIM	Weigh-in-Motion
VWIM	Virtual Weigh-in-Motion

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