



Latest INDOT Traffic Adjustment Factors

Effective May 11, 2011

The Indiana Department of Transportation (INDOT), through its Traffic Monitoring Section, collects, summarizes and interprets information on the traffic traveling on the state's highway system. The data is used to assess transportation needs, system performance and to develop highway planning and programming recommendations. Traffic data also plays a very important role in route planning and in the design of highway projects.

To collect this information, the Department operates two traffic monitoring systems: Annual average daily traffic is the total volume for the year divided by 365 days. Only 106 of INDOT's 8000 Traffic Sections are equipped with Continuous Traffic counters. The remaining sections are counted as part of the short term or "Coverage Count" program. The Coverage Count Program consists of 30,000 count locations, one-third of which are counted annually. A minimum of 48 hours of count data is collected at each count location and, the 48 hour counts are then averaged to 24 before utilizing factors developed from Continuous Traffic Counters, an estimated AADT is developed. AADT is necessary for presenting a statewide picture of traffic flow, evaluating traffic trends, computing accident rates, planning and designing highways, and other purposes.

1. A Statewide Traffic Monitoring System consisting of 106 permanent continuous count stations that collect volume, speed and vehicle classification data 24 hours per day, 365 days per year. Some of these sites also utilize weigh-in motion (WIM) technology to collect continuous truck weight data. These sites are located throughout the state to monitor overall traffic trends. Information from these counters is used to determine ANNUAL TRAFFIC GROWTH trends as well as develop AXLE, WEEKDAY and SEASONAL adjustment factors used with the state's coverage count program to determine estimates of annual average daily traffic (AADT).

2. The statewide coverage count program utilizes portable pneumatic road-tubes traffic counters to collect 48 hour traffic counts on all State Highway System traffic sections and in rural and small urban areas and all highway performance monitoring sections (HPMS). The coverage count program operates on a three-year cycle, counting one-third of all sections annually, or approximately 10,000 of the 30,000 count sites. Where possible, portable classifiers are used so that approximately 65% of all coverage counts collected are classification counts. Additional counts are taken within this program to support specific state projects. INDOT is transitioning the coverage count data collection from a central office operation to the 6 INDOT districts. In addition INDOT also contracts with four Metropolitan Planning Organizations (MPOs) and one Regional Planning Organization (RPO) to collect coverage count data within their areas. We are expanding the number of MPO and RPO counting partners in the future.

ADJUSTMENT FACTORS

Adjustment factors are necessary to convert an Average Daily Traffic (ADT) volume into an Annual Average Daily Traffic (AADT) estimate. Depending on the type of counter, the seasonal period of the setting, multiple factors may be necessary. These include axle, weekday and seasonal adjustment factors. For the 2/3's of the system not counted in the current year, the previously derived AADTs can be adjusted to the current year by utilizing the annual growth factors.

AXLE ADJUSTMENT FACTORS

There are times when portable classifiers cannot be set due to number of lanes or the lack of free-flow speeds. In these cases, portable traffic counters utilizing single pneumatic road-tubes stretched across a lane or roadway are used. These types of counters register two axle impacts as one vehicle so when vehicles with three or more axles cross the road-tube they will be counted as multiple vehicles. Whenever possible axle adjustment factors should be developed from vehicle classification counters set on the same route within the vicinity of the axle counter and during the same relative time period. If this is not possible then the use of these factors applied by functional classification and volume groups are deemed acceptable.

WEEKDAY ADJUSTMENT FACTORS

The purpose of these factors is to normalize the variability of traffic counts that exists between counts taken during the weekday, Friday, Saturdays and/or Sundays. In developing the weekday factors we found no significant statistical difference in the Monday through Thursday trends and for this reason combine these into a weekday factor. This is further justified as counts taken for INDOT will usually span a Monday through Wednesday or a Tuesday through Thursday count period.

SEASONAL (MONTHLY) ADJUSTMENT FACTORS

Seasonal or monthly adjustment factors convert average daily traffic (ADT) to annual average daily traffic (AADT). Observed traffic volumes at a location often vary from month to month with higher summer traffic volumes and lower winter traffic volumes. To compare traffic volume data collected in different months, seasonal adjustment factors must be applied. The ADT is multiplied by the seasonal factor to obtain the AADT value. The continuous counter sites are grouped into five major factor groups (FG). Currently there are two urban factor groups and three rural factor groups which are based on grouped functional classifications.

ANNUAL GROWTH FACTORS

As not all road sections are counted each year, there are times when previous years AADTs will need to be factored in order to estimate current year values. Annual Growth Factors are used in these situations and are developed by comparisons of previous years AADTs at INDOT's 106 continuous counting telemetry sites and averaged for the five factor groups (FG).

FACTOR APPLICATION

The new factors published herein were developed from data collected during the 2011 calendar year and will be applied to all counts processed into the INDOT Traffic Count Database beginning on May 11, 2012. These factors will continue to be applied as the current factors until new factors are developed from all of the counts collected during the 2012 calendar year.

The INDOT practice is to apply the most current factors available at the time of processing of data. For the sake of consistency in reporting, no attempt is made to go back and reprocess and republish data after new factors are developed. For this reason, it is not unusual to see a count collected in one calendar year with factors applied that from a different calendar year.

SEASONAL ADJUSTMENT FACTORS BY FUNCTIONAL CLASSIFICATION 2006-2011*

Urban - Interstate (11), Freeways and Expressways (12)												
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2011	1.158	1.080	1.001	0.988	0.970	0.940	0.923	0.927	0.975	0.978	1.030	1.054
2010	1.161	1.128	1.012	0.975	0.971	0.940	0.944	0.934	0.972	0.961	0.993	1.077
2009	1.193	1.075	1.013	1.003	0.981	0.945	0.943	0.938	0.966	0.973	0.986	1.047
2008	1.092	1.071	1.006	0.980	0.971	0.964	0.960	0.934	1.001	0.988	1.036	1.059
2007	1.088	1.114	1.008	0.985	0.972	0.946	0.944	0.939	0.984	0.977	1.014	1.088
5 YR AVG	1.138	1.094	1.008	0.986	0.973	0.947	0.943	0.934	0.980	0.976	1.012	1.065

Urban - Principal Arterials (14), Minor Arterials (16), Collectors (17), Locals (19)												
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2011	1.104	1.031	0.999	1.002	0.980	0.962	0.976	0.956	0.991	0.979	1.020	1.029
2010	1.142	1.087	1.027	0.971	0.957	0.952	0.963	0.939	0.976	0.985	1.034	1.085
2009	1.137	1.014	1.000	0.978	0.953	0.954	0.971	0.961	1.009	1.010	1.016	1.044
2008	1.056	1.023	1.008	0.957	1.018	1.020	1.039	0.972	0.959	0.955	1.007	1.062
2007	1.063	1.074	0.970	0.967	0.952	0.968	0.993	0.967	0.991	0.987	1.037	1.088
5 YR AVG	1.100	1.046	1.001	0.975	0.972	0.971	0.988	0.959	0.985	0.983	1.023	1.062

Rural - Interstate (01)												
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2011	1.262	1.143	1.045	1.020	0.967	0.905	0.864	0.892	0.987	0.981	0.997	1.077
2010	1.288	1.225	1.053	0.997	0.953	0.887	0.858	0.881	0.957	0.962	0.974	1.129
2009	1.254	1.132	1.037	1.007	0.968	0.900	0.870	0.904	0.968	0.987	0.997	1.097
2008	1.179	1.157	1.025	1.015	0.960	0.910	0.883	0.889	0.999	0.982	1.005	1.120
2007	1.164	1.183	1.048	1.004	0.961	0.908	0.897	0.898	0.971	0.957	0.978	1.100
5 YR AVG	1.229	1.168	1.042	1.009	0.962	0.902	0.874	0.893	0.977	0.974	0.990	1.105

Rural - Principal Arterials (02), Minor Arterials (06)												
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2011	1.153	1.071	1.032	1.008	0.977	0.939	0.958	0.940	0.948	0.947	1.011	1.060
2010	1.180	1.142	1.031	0.977	0.960	0.926	0.938	0.925	0.934	0.959	1.008	1.106
2009	1.205	1.081	1.025	1.002	0.961	0.936	0.940	0.939	0.948	0.981	1.002	1.072
2008	1.160	1.084	1.029	0.966	0.950	0.938	0.932	0.941	0.996	0.989	1.041	1.142
2007	1.121	1.137	1.017	0.993	0.960	0.925	0.946	0.941	0.961	0.964	1.028	1.092
5 YR AVG	1.164	1.103	1.027	0.989	0.962	0.933	0.943	0.937	0.957	0.968	1.018	1.094

Rural - Major Collectors (07), Minor Collectors (08), Locals (09)												
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2011	1.174	1.085	1.043	0.997	0.966	0.918	0.937	0.954	0.993	0.959	1.033	1.098
2010	1.193	1.147	1.037	0.959	0.947	0.918	0.939	0.934	0.932	0.953	1.027	1.145
2009	1.207	1.099	1.039	0.994	0.936	0.910	0.936	0.951	0.962	0.980	1.017	1.074
2008	1.083	1.093	1.040	0.977	0.956	0.923	0.957	0.957	0.979	0.976	1.038	1.133
2007	1.108	1.119	1.013	0.977	0.927	0.927	0.962	0.948	0.957	0.973	1.043	1.109
5 YR AVG	1.153	1.109	1.035	0.981	0.946	0.919	0.946	0.949	0.965	0.968	1.032	1.112

*The seasonal adjustment factors are used to expand average 24-hour volumes to estimated Annual Average Daily Traffic (AADT).

2011-2012 WEEKDAY FACTORS*

Urban - Interstate (11), Freeways and Expressways (12)													
	Average	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Weekdays	0.965	0.945	0.955	0.965	0.962	0.973	0.975	0.981	0.971	0.974	0.975	0.961	0.942
Friday	0.863	0.868	0.863	0.851	0.866	0.843	0.867	0.862	0.862	0.841	0.853	0.911	0.873
Saturday	1.132	1.197	1.134	1.118	1.150	1.123	1.113	1.103	1.131	1.119	1.121	1.112	1.157
Sunday	1.283	1.330	1.342	1.322	1.273	1.282	1.227	1.221	1.242	1.290	1.251	1.240	1.381

Urban - Principal Arterials (14), Minor Arterials (16), Collectors (17), Locals (19)													
	Average	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Weekdays	0.949	0.933	0.951	0.946	0.946	0.959	0.947	0.961	0.950	0.957	0.953	0.944	0.944
Friday	0.867	0.852	0.865	0.869	0.878	0.857	0.877	0.867	0.874	0.852	0.860	0.887	0.860
Saturday	1.109	1.186	1.089	1.109	1.110	1.094	1.114	1.104	1.107	1.093	1.089	1.103	1.113
Sunday	1.414	1.467	1.433	1.424	1.405	1.383	1.384	1.353	1.386	1.441	1.423	1.412	1.458

Rural - Interstate (01)													
	Average	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Weekdays	1.028	1.002	1.012	1.033	1.026	1.036	1.035	1.046	1.050	1.042	1.057	1.030	0.965
Friday	0.837	0.846	0.839	0.825	0.843	0.808	0.845	0.830	0.841	0.813	0.808	0.894	0.853
Saturday	1.079	1.129	1.091	1.059	1.110	1.083	1.079	1.037	1.048	1.036	1.051	1.066	1.158
Sunday	1.049	1.086	1.088	1.055	1.015	1.052	1.003	1.018	0.981	1.058	1.006	0.976	1.245

Rural - Principal Arterials (02), Minor Arterials (06)													
	Average	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Weekdays	0.973	0.942	0.966	0.959	0.968	0.985	0.985	0.994	0.981	1.001	0.990	0.958	0.949
Friday	0.854	0.853	0.847	0.850	0.865	0.836	0.863	0.850	0.856	0.835	0.844	0.883	0.862
Saturday	1.086	1.187	1.093	1.101	1.105	1.070	1.060	1.056	1.067	1.020	1.044	1.093	1.135
Sunday	1.304	1.395	1.354	1.376	1.282	1.282	1.237	1.221	1.258	1.256	1.267	1.328	1.389

Rural - Major Collectors (07), Minor Collectors (08), Locals (09)													
	Average	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Weekdays	0.965	0.937	0.960	0.956	0.968	0.977	0.980	0.975	0.968	0.981	0.972	0.958	0.955
Friday	0.880	0.863	0.888	0.878	0.895	0.863	0.895	0.877	0.879	0.859	0.887	0.896	0.881
Saturday	1.071	1.181	1.076	1.092	1.067	1.071	1.027	1.055	1.071	1.026	1.032	1.052	1.096
Sunday	1.315	1.436	1.321	1.352	1.275	1.275	1.244	1.268	1.284	1.321	1.297	1.356	1.350

**Weekday factors are used to normalize the variability of traffic counts that exists between counts taken on the Weekdays, Friday, Saturday and/or Sunday.*

2008-2011 AVERAGE AXLE ADJUSTMENT FACTORS *

Urban - Interstate (11)												
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2011	0.830	0.854	0.862	0.864	0.862	0.864	0.874	0.844	0.840	0.840	0.858	0.848
2010	0.816	0.808	0.816	0.818	0.814	0.816	0.804	0.832	0.860	0.848	0.882	0.870
2009	0.786	0.818	0.826	0.826	0.830	0.826	0.838	0.810	0.796	0.810	0.818	0.822
2008	0.764	0.756	0.770	0.758	0.764	0.784	0.776	0.768	0.772	0.800	0.830	0.806

Urban - Freeways and Expressways (12) Principal Arterials (14)												
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2011	0.944	0.946	0.946	0.940	0.946	0.944	0.948	0.940	0.940	0.936	0.946	0.950
2010	0.938	0.888	0.878	0.946	0.936	0.966	0.954	0.952	0.944	0.946	0.948	0.942
2009	0.946	0.946	0.952	0.952	0.948	0.944	0.938	0.932	0.930	0.944	0.944	0.942
2008	0.932	0.930	0.932	0.924	0.920	0.918	0.918	0.928	0.926	0.932	0.938	0.950

Urban - Minor Arterials (16), Collectors (17), Locals (19)												
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2011	0.966	0.968	0.942	0.944	0.946	0.944	0.948	0.944	0.964	0.962	0.966	0.970
2010	0.936	0.936	0.934	0.872	0.900	0.910	0.912	0.930	0.940	0.942	0.944	0.936
2009	0.948	0.938	0.952	0.962	0.958	0.946	0.944	0.944	0.954	0.952	0.952	0.960
2008	0.914	0.890	0.922	0.892	0.828	0.826	0.820	0.802	0.808	0.828	0.878	0.944

Rural - Interstate (01)												
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2011	0.676	0.678	0.700	0.708	0.712	0.712	0.718	0.708	0.710	0.702	0.722	0.694
2010	0.676	0.678	0.700	0.708	0.712	0.712	0.718	0.708	0.710	0.702	0.722	0.694
2009	0.688	0.732	0.744	0.756	0.754	0.770	0.772	0.740	0.736	0.720	0.718	0.716
2008	0.700	0.706	0.722	0.706	0.724	0.730	0.752	0.742	0.724	0.718	0.732	0.742

Rural - Principal Arterials (02), Minor Arterials (06)												
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2011	0.878	0.886	0.886	0.886	0.884	0.888	0.894	0.892	0.892	0.886	0.880	0.886
2010	0.830	0.826	0.828	0.826	0.856	0.864	0.862	0.858	0.872	0.874	0.876	0.884
2009	0.846	0.852	0.840	0.846	0.868	0.874	0.864	0.864	0.868	0.866	0.862	0.858
2008	0.824	0.860	0.854	0.832	0.842	0.858	0.846	0.842	0.834	0.836	0.848	0.854

Rural - Major Collectors (07), Minor Collectors (08), Locals (09)												
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2011	0.932	0.930	0.942	0.938	0.930	0.936	0.930	0.928	0.928	0.906	0.924	0.928
2010	0.890	0.858	0.852	0.884	0.866	0.876	0.880	0.906	0.918	0.924	0.928	0.934
2009	0.834	0.848	0.874	0.878	0.882	0.870	0.870	0.878	0.900	0.866	0.896	0.878
2008	0.836	0.798	0.800	0.782	0.842	0.862	0.874	0.876	0.864	0.894	0.894	0.878

*Axle Adjustment Factors are applied to counts taken with portable counters utilizing a single pneumatic road tube. This type of counter registers two axle impacts as one vehicle. The axle factor is used to account for vehicle types having more than two axles, typically trucks with three or more axles.

ANNUAL GROWTH FACTORS BY FUNCTIONAL CLASSIFICATION 2001 - 2011*

YEAR TO	YEAR FROM									
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Urban - Interstate (11), Freeways and Expressways (12)										
2001	-	0.966	0.937	0.926	0.903	0.887	0.853	0.872	0.855	0.852
2002	1.035	-	0.970	0.958	0.934	0.919	0.883	0.902	0.885	0.882
2003	1.067	1.031	-	0.988	0.963	0.947	0.911	0.930	0.913	0.909
2004	1.080	1.043	1.012	-	0.975	0.958	0.922	0.941	0.924	0.920
2005	1.108	1.070	1.038	1.026	-	0.983	0.945	0.966	0.948	0.944
2006	1.127	1.089	1.056	1.043	1.017	-	0.962	0.982	0.964	0.960
2007	1.172	1.132	1.098	1.085	1.058	1.040	-	1.021	1.002	0.998
2008	1.147	1.108	1.075	1.062	1.035	1.018	0.979	-	0.981	0.977
2009	1.169	1.130	1.096	1.083	1.055	1.038	0.998	1.019	-	0.996
2010	1.174	1.134	1.100	1.087	1.059	1.042	1.002	1.023	1.004	-
2011	1.191	1.151	1.116	1.103	1.075	1.057	1.017	1.038	1.019	1.015

Urban - Principal Arterials (14), Minor Arterials (16), Collectors (17), Local (19)										
2001	-	0.943	0.956	0.967	0.966	0.960	0.972	1.003	1.008	1.001
2002	1.060	-	1.013	1.025	1.024	1.017	1.031	1.064	1.068	1.061
2003	1.046	0.987	-	1.012	1.011	1.004	1.017	1.050	1.054	1.047
2004	1.034	0.975	0.988	-	0.999	0.992	1.005	1.037	1.041	1.034
2005	1.035	0.976	0.989	1.001	-	0.993	1.006	1.038	1.042	1.035
2006	1.042	0.983	0.996	1.008	1.007	-	1.013	1.046	1.050	1.042
2007	1.028	0.970	0.983	0.995	0.994	0.987	-	1.032	1.036	1.029
2008	0.997	0.940	0.952	0.964	0.963	0.956	0.969	-	1.004	0.997
2009	0.993	0.936	0.949	0.960	0.959	0.953	0.965	0.996	-	0.993
2010	0.999	0.943	0.955	0.967	0.966	0.959	0.972	1.003	1.007	-
2011	1.017	0.960	0.973	0.984	0.983	0.977	0.989	1.021	1.025	1.018

Rural - Interstate (01)										
2001	-	0.953	0.949	0.936	0.932	0.924	0.917	0.933	0.941	0.945
2002	1.049	-	0.995	0.982	0.977	0.970	0.962	0.979	0.987	0.996
2003	1.054	1.005	-	0.987	0.982	0.974	0.967	0.983	0.992	0.996
2004	1.068	1.018	1.013	-	0.995	0.987	0.979	0.996	1.005	1.009
2005	1.073	1.023	1.018	1.005	-	0.992	0.984	1.001	1.010	1.014
2006	1.082	1.031	1.026	1.013	1.008	-	0.992	1.009	1.018	1.022
2007	1.091	1.040	1.034	1.021	1.016	1.008	-	1.017	1.027	1.031
2008	1.072	1.022	1.017	1.004	0.999	0.991	0.983	-	1.009	1.013
2009	1.062	1.013	1.008	0.995	0.990	0.982	0.974	0.991	-	1.004
2010	1.058	1.009	1.004	0.991	0.986	0.978	0.970	0.987	0.996	-
2011	1.060	1.011	1.006	0.993	0.988	0.980	0.972	0.989	0.998	1.002

Rural - Principal Arterials (02), Minor Arterials (06)										
2001	-	0.987	1.009	0.982	0.983	0.974	0.974	1.024	1.029	1.033
2002	1.013	-	1.022	0.995	0.996	0.987	0.987	1.038	1.043	1.046
2003	0.991	0.978	-	0.973	0.974	0.965	0.965	1.015	1.020	1.023
2004	1.018	1.005	1.028	-	1.001	0.992	0.992	1.043	1.048	1.052
2005	1.017	1.004	1.027	0.999	-	0.991	0.991	1.042	1.047	1.051
2006	1.027	1.013	1.036	1.008	1.009	-	1.000	1.052	1.057	1.060
2007	1.027	1.013	1.036	1.008	1.009	1.000	-	1.052	1.057	1.060
2008	0.976	0.964	0.985	0.959	0.960	0.951	0.951	-	1.005	1.008
2009	0.971	0.959	0.981	0.954	0.955	0.946	0.946	0.995	-	1.003
2010	0.968	0.956	0.978	0.951	0.952	0.943	0.943	0.992	0.997	-
2011	0.969	0.957	0.979	0.952	0.953	0.944	0.944	0.993	0.998	1.001

Rural - Major Collectors (07), Minor Collectors (08), Locals (09)										
2001	-	0.978	0.976	0.972	0.984	0.989	0.983	1.051	1.042	1.047
2002	1.022	-	0.997	0.993	1.006	1.011	1.004	1.074	1.065	1.070
2003	1.025	1.003	-	0.996	1.009	1.014	1.007	1.077	1.069	1.073
2004	1.029	1.007	1.004	-	1.013	1.018	1.011	1.081	1.073	1.077
2005	1.016	0.994	0.991	0.987	-	1.005	0.998	1.067	1.059	1.063
2006	1.011	0.989	0.986	0.982	0.995	-	0.993	1.062	1.054	1.058
2007	1.018	0.996	0.993	0.989	1.002	1.007	-	1.070	1.061	1.065
2008	0.952	0.931	0.928	0.925	0.937	0.942	0.935	-	0.992	0.996
2009	0.959	0.939	0.936	0.932	0.944	0.949	0.942	1.008	-	1.004
2010	0.955	0.935	0.932	0.928	0.941	0.945	0.939	1.004	0.996	-
2011	0.959	0.939	0.936	0.932	0.944	0.949	0.942	1.008	1.000	1.004

*Factors in this table are used to adjust previous year AADTs to a more current year for similarly classed roads (e.g. to adjust a 2006 urban interstate AADT to a 2010 equivalent, you would multiply the 2006 AADT by 1.042).