

Traffic Volume Data Collection

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Office of Highway Policy Information

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Why Collect Volume Data?

- SDOT Needs
 - Planning/Environment
 - Project Development
 - Operations/Maintenance
- FHWA Needs
 - Traffic Volume Trends (TVT)
 - HPMS
 - MAP-21





FHWA Needs

- Monthly TVT report
- HPMS
- MAP-21



Monthly TVT Report

- Data Requirements
 - ATR data submitted to TMAS by the 20th of the month after the close of the month
 - TMAS software performs a number of quality checks on data
 - 7 day error
 - 7 zero hour error
 - Adjacent hour error
 - Directional split error





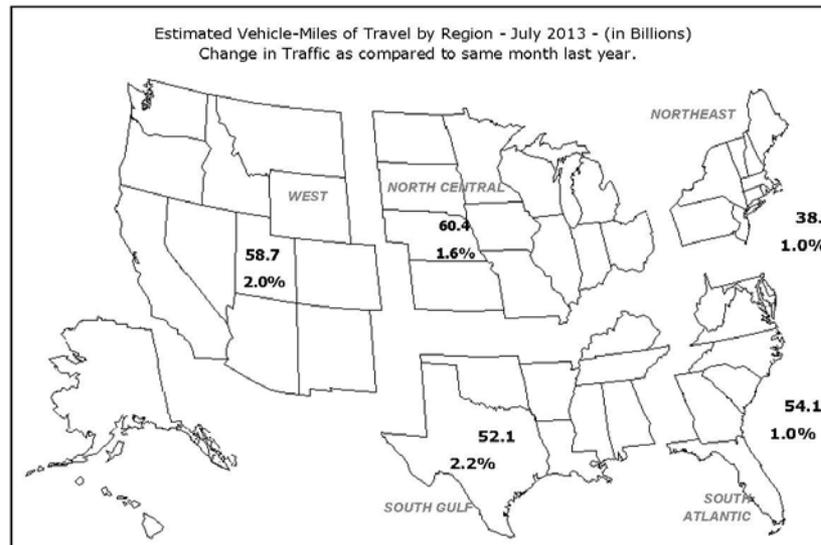
U. S. Department
of Transportation
**Federal Highway
Administration**
Office of Highway
Policy Information

TRAFFIC VOLUME TRENDS

July 2013

Travel on all roads and streets changed by **+1.6%** (4.2 billion vehicle miles) for July 2013 as compared with July 2012. Travel for the month is estimated to be 263.6 billion vehicle miles.

Cumulative Travel for 2013 changed by **+0.2%** (2.7 billion vehicle miles). The Cumulative estimate for the year is 1,725.3 billion vehicle miles of travel.



Note: All data for this month are preliminary. Revised values for the previous month are shown in Tables 1 and 2
All vehicle-miles of travel computed with Highway Statistics 2011 Table VM-2 as a base.
Compiled with data on hand as of September 18, 2013.
Some historical data were revised based on HPMS and amended TVT data as of December 2011.
For information on total licensed drivers in the U.S., visit <http://www.fhwa.dot.gov/policy/ohpi/hss/hsspubs.htm>.
Select the year of interest then Section III (Driver Licensing).
For information on total registered motor vehicles in the U.S., visit <http://www.fhwa.dot.gov/policy/ohpi/hss/hsspubs.htm>.
Select the year of interest and Section II (Motor Vehicles).



Table - 5. Changes on ALL* Estimated Roads by Region and State**

Region and State	July				June			
	Number of Stations	Vehicle-Miles (Millions)		Percent Change	Number of Stations	Vehicle-Miles (Millions)		Percent Change
		2010 (Preliminary)	2009			2010 (Revised)	2009	
Northeast								
Connecticut	29	2,925	2,869	2.0	31	2,789	2,719	2.6
Maine	92	1,394	1,356	2.8	88	1,316	1,313	0.2
Massachusetts	70	5,124	5,073	1.0	60	4,857	4,741	2.4
New Hampshire	59	1,257	1,239	1.5	48	1,179	1,154	2.1
New Jersey	104	6,267	6,285	-0.3	102	6,525	6,361	2.6
New York	161	12,064	12,030	0.3	163	11,710	11,575	1.2
Pennsylvania	40	9,940	9,843	1.0	40	9,447	9,304	1.5
Rhode Island	41	815	822	-0.8	39	745	733	1.6
Vermont	73	751	740	1.4	74	624	619	0.7
Subtotal		40,537	40,257	0.7		39,192	38,519	1.7
South Atlantic								
Delaware	64	924	923	0.1	64	879	858	2.4
District of Columbia	1	242	235	2.8	1	334	330	1.2
Florida	236	16,671	16,809	-0.8	239	16,528	16,489	0.2
Georgia	224	9,281	9,211	0.8	224	8,967	8,918	0.5
Maryland	64	5,011	4,982	0.6	63	5,082	4,984	2.0
North Carolina	61	9,237	9,056	2.0	63	8,896	8,824	0.8
South Carolina	115	4,569	4,527	0.9	112	4,371	4,339	0.7
Virginia	270	7,576	7,544	0.4	263	7,294	7,140	2.2
West Virginia	1	1,934	1,867	3.6	-	1,923	1,900	1.3
Subtotal		55,445	55,154	0.5		54,274	53,782	0.9
North Central								
Illinois	-	9,619	9,565	0.6	48	10,399	10,434	-0.3
Indiana	80	6,687	6,473	3.3	78	6,472	6,245	3.6
Iowa	110	2,903	2,847	2.0	111	2,861	2,810	1.8
Kansas	93	2,793	2,733	2.2	97	2,639	2,587	2.0
Michigan	107	9,195	8,986	2.3	102	9,080	8,896	2.1
Minnesota	68	5,096	5,033	1.3	70	5,303	5,181	2.4
Missouri	157	6,480	6,475	0.1	151	6,168	6,097	1.2
Nebraska	55	1,904	1,851	2.8	58	1,824	1,749	4.3
North Dakota	41	884	847	4.4	44	799	751	6.5
Ohio	159	9,999	9,806	2.0	154	9,607	9,432	1.9
South Dakota	47	1,016	979	3.7	47	888	892	-0.4
Wisconsin	156	5,525	5,518	0.1	154	5,229	5,218	0.2
Subtotal		62,101	61,113	1.6		61,269	60,292	1.6
South Gulf								
Alabama	-	5,389	5,356	0.6	-	5,254	5,279	-0.5
Arkansas	42	3,226	3,154	2.3	41	3,074	3,018	1.9
Kentucky	-	4,373	4,332	0.9	35	4,249	4,207	1.0
Louisiana	35	3,928	4,099	-4.2	37	3,878	4,039	-4.0
Mississippi	-	4,165	4,140	0.6	-	3,975	3,955	0.5
Oklahoma	-	4,455	4,416	0.9	-	4,109	4,063	1.1
Tennessee	25	6,560	6,464	1.5	23	6,214	6,117	1.6
Texas	174	20,728	20,420	1.5	168	20,240	19,815	2.1
Subtotal		52,824	52,381	0.8		50,993	50,493	1.0
West								
Alaska	79	501	491	1.9	80	471	465	1.2
Arizona	76	5,044	5,046	0.0	89	5,618	5,714	-1.7
California	81	29,041	29,185	-0.5	206	28,974	29,098	-0.4
Colorado	91	4,124	4,050	1.8	96	3,929	3,801	3.4
Hawaii	29	877	866	1.3	29	832	840	-1.0
Idaho	162	1,524	1,520	0.3	170	1,382	1,382	0.0
Montana	71	1,341	1,308	2.5	70	1,105	1,085	1.8
Nevada	-	1,770	1,760	0.6	76	1,661	1,664	-0.2
New Mexico	97	2,447	2,421	1.1	101	2,195	2,150	2.1
Oregon	108	3,356	3,331	0.7	97	3,045	3,058	-0.4
Utah	83	2,391	2,396	-0.2	86	2,182	2,166	0.8
Washington	113	5,676	5,508	3.1	66	5,228	5,139	1.7
Wyoming	-	994	983	1.1	-	892	881	1.2
Subtotal		59,086	58,865	0.4		57,514	57,443	0.1
TOTALS	4,044	269,994	267,770	0.8	4,258	263,242	260,531	1.0

Note: Where Number of Stations are shown as dashes, the values for the Vehicle-Miles and Percent Change are derived from the estimated VMT based on data from surrounding States or the nationwide average VMT. * All Estimated roads include travel from Table 3 and 4 plus remaining roads.



Who wants TVT?

- Automotive industry companies
- Insurance companies
- Financial services
- Retail



HPMS needs

- Average Annual Daily Traffic (AADT)
- Average Annual Daily Truck Traffic (AADTT)
- K factor
- D factor



MAP-21

- National freight policy
 - Designate National freight network (AADTT)
- HSIP
 - Traffic data defined as safety data (crash rates based on VMT)
- Performance measures
 - Congestion reduction
 - System reliability

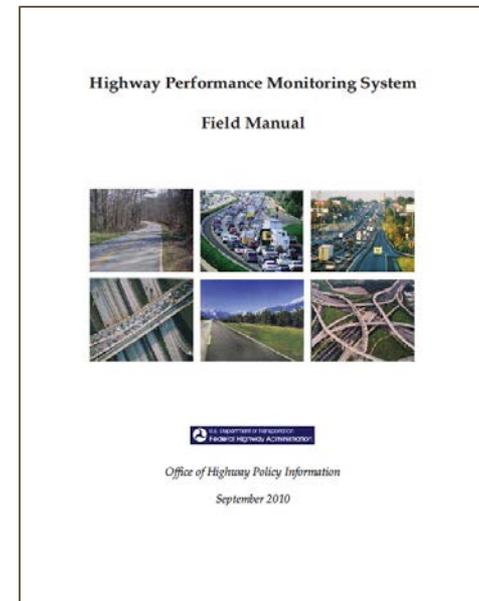
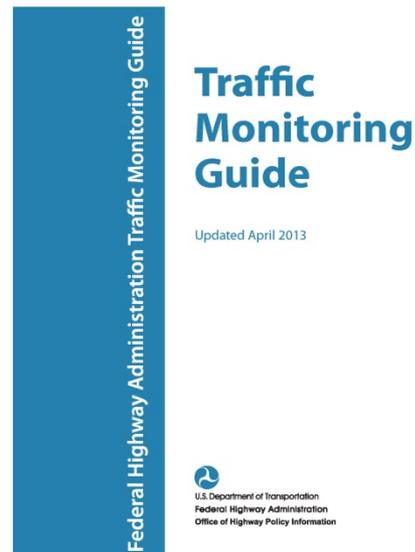
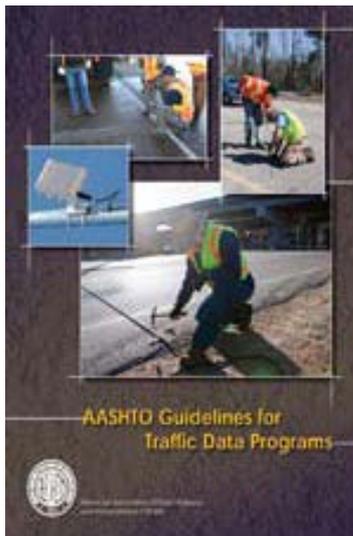


QUALITY DATA



Guidance

- AASHTO Guidelines for traffic data programs
- Traffic Monitoring Guide (TMG)
- HPMS field Manual



Types of Sensors

- In road/on road
 - Loops
 - Piezos
 - Tubes



Types of Sensors- cont.

- Off road
 - Infrared
 - Magnetic
 - Radar
 - Microwave
 - Acoustic
 - Video



Types of Counts

- Continuous
 - Permanent locations counting 24/7/365
 - Typically on higher functional classification roadways
 - Provides factors for short duration counts
- Short duration
 - Counts 48 hours-7 days in length
 - Provides spatial coverage of networks



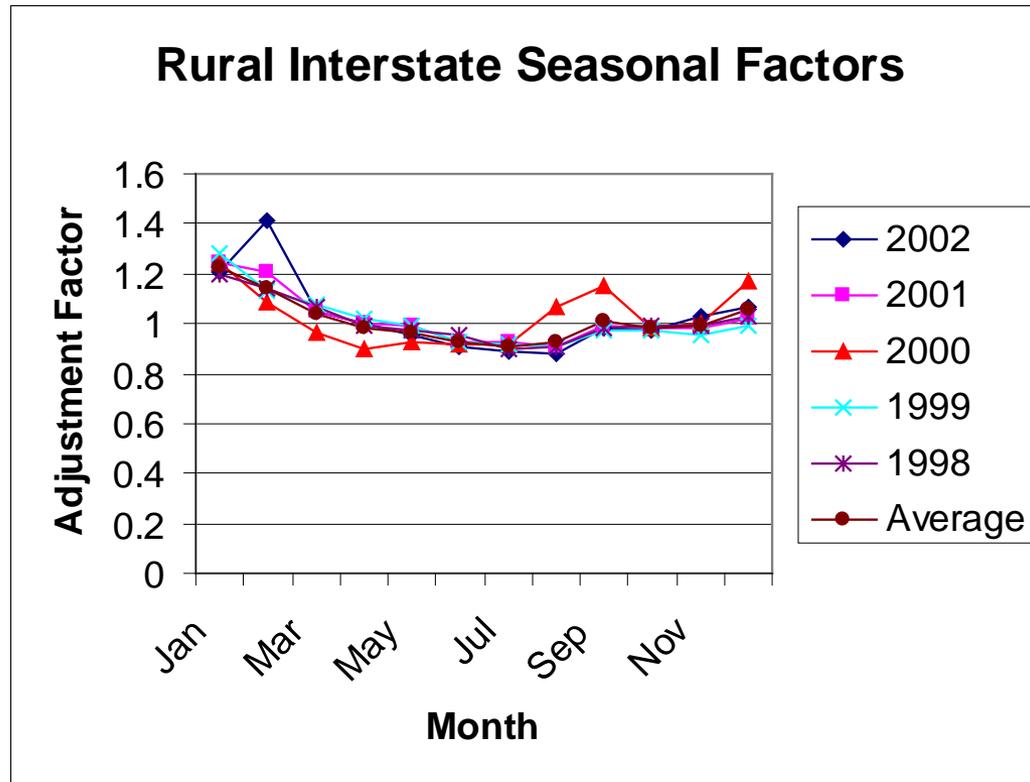
Factors

- Seasonal Factors
- Day of Week Factors
- Axle Correction Factors
- Yearly Growth/Reduction Factors

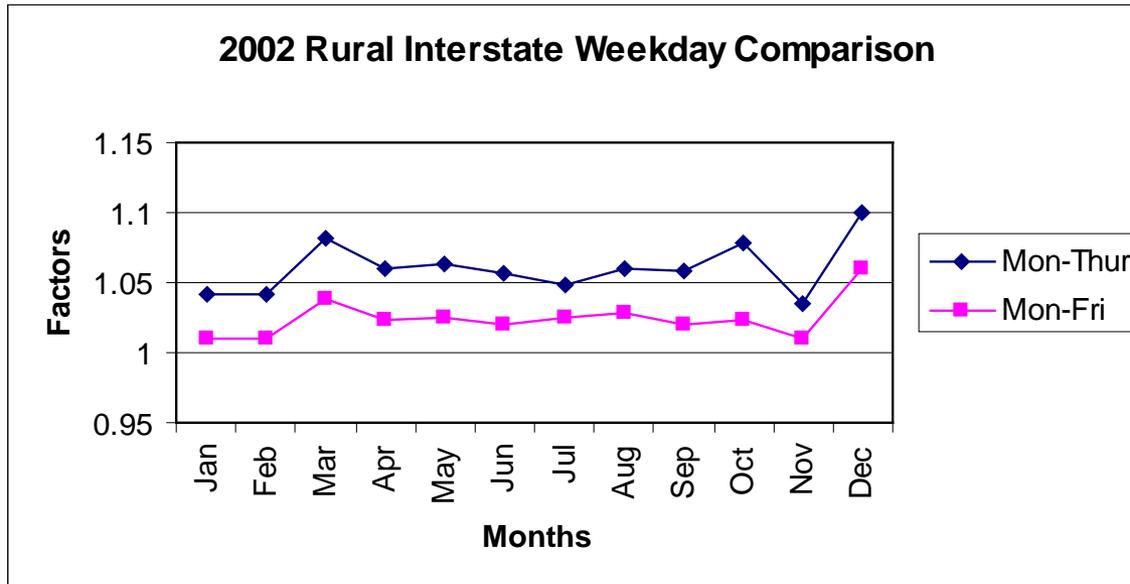
Determining an accurate AADT is very important to a successful program!



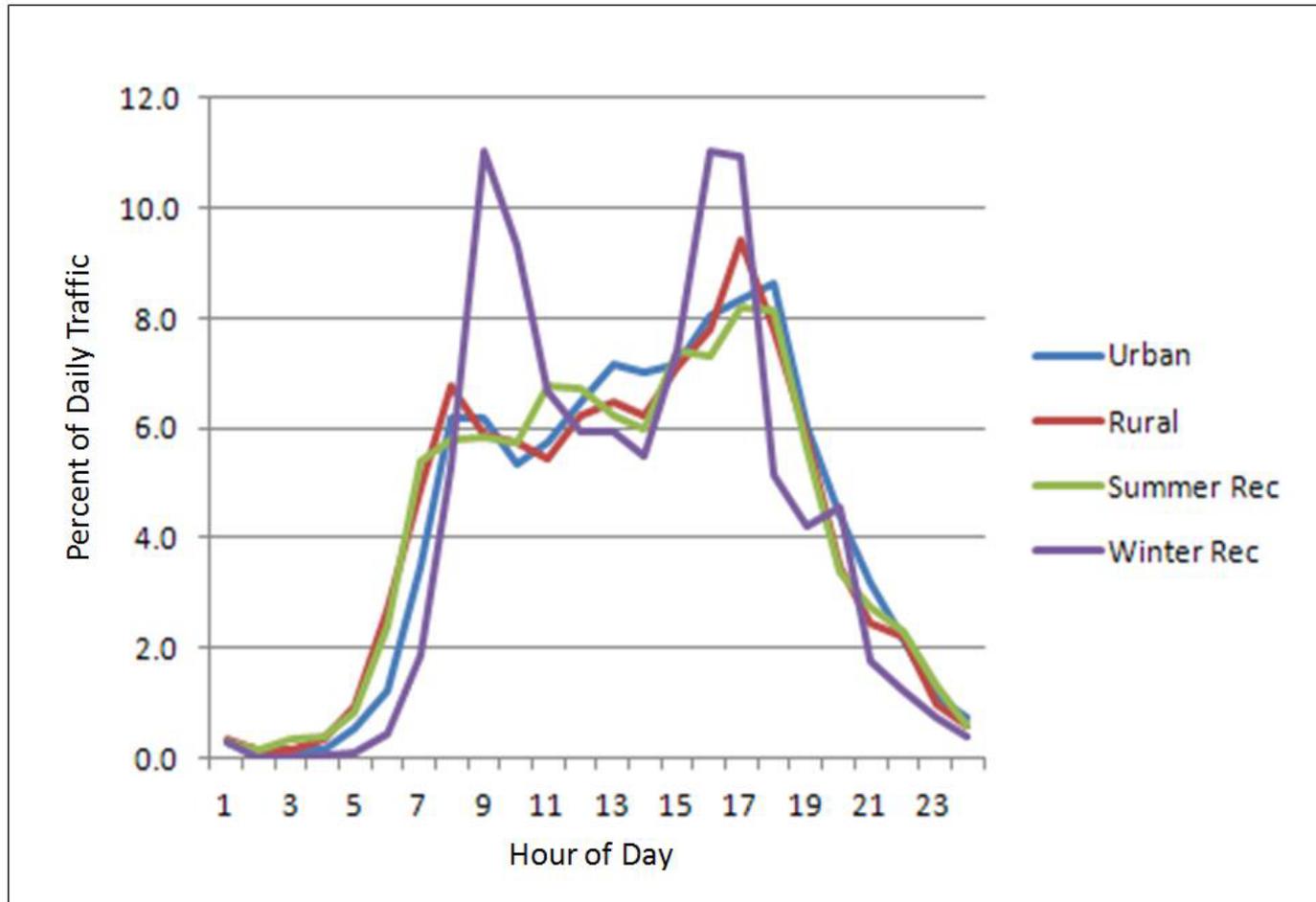
Factors Example - Seasonal



Factors Example – Day of Week



Factor Example- Hour of Day



Factors

- Misusing the DOW factor can lead to a 5% underestimate
- Misusing the Seasonal factor can lead to a 15% overestimate
- Do you factor and are you following the TMG or some other method?



Problem

- **For the HPMS submittal, the DOT needs to provide an AADT for a section of Rt. 436 (classified as a minor rural collector) in Young County. How should we proceed?**



Step 1: Short Duration Count

- **Do a short duration count. The DOT did a traffic count on Rt. 436 between January 26-28 (Tuesday-Thursday). The total count for three days was 3,600 vehicles.**



Step 2: Find a monthly factor

- Locate a continuous count station (CCS) on a similar class facility



Step 2: Find a monthly factor

- Locate an CCS on a similar class facility
 - Found a CCS on a rural minor collector in the adjacent Short County with the following characteristics:
 - 290,800 veh./yr.
 - January traffic- 19,800 veh.



Step 2: Find a monthly factor

- Locate an CCS on a similar class facility
 - Found a CCS on a rural minor collector in the adjacent Short County with the following characteristics:
 - 290,800 veh./yr.
 - January traffic- 19,800 veh.
 - Calculate AADT and MDAT for the CCS site
 - $AADT = 290,800 / 365 = 797$, say 800 vpd
 - $MDAT = 19,800 / 31 = 640$ vpd



Step 2: Find a monthly factor

- Locate an ATR on a similar class facility
 - Found a ATR on a rural minor collector in the adjacent county with the following characteristics:
 - 290,800 veh./yr.
 - January traffic- 19,800 veh.
 - Calculate AADT and MDAT for the ATR site
 - $AADT = 290,800 / 365 = 797$, say 800 vpd
 - $MDAT = 19,800 / 31 = 640$ vpd
 - Compute monthly correction factor
 - $AADT / MADT = 800 / 640 = 1.25$



Step 3: Use monthly factor

- Determine AADT for Rt. 436 in Young County



Step 3: Use monthly factor

- Determine AADT for Rt. 436 in Young County
 - $AADT = \text{short duration count ADT} \times \text{monthly factor}$

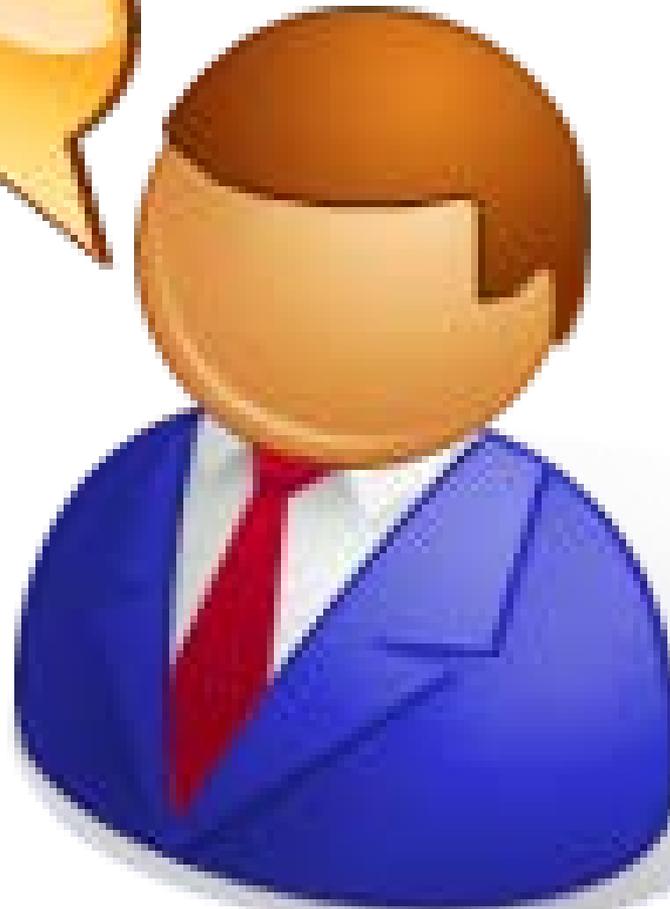


Step 3: Use monthly factor

- Determine AADT for Rt. 436 in Young County
 - $AADT = \text{short duration ADT} \times \text{monthly factor}$
 - Short duration ADT = total volume/days
 - Short duration ADT = $3,600/3 = 1,200$ vpd
 - Calculate AADT
 - $AADT = \text{short duration ADT} \times \text{monthly factor}$
 - $AADT = 1,200 \times 1.25 = 1,500$ vpd



**Data- Collect once,
use many times**



QUESTIONS??????????

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