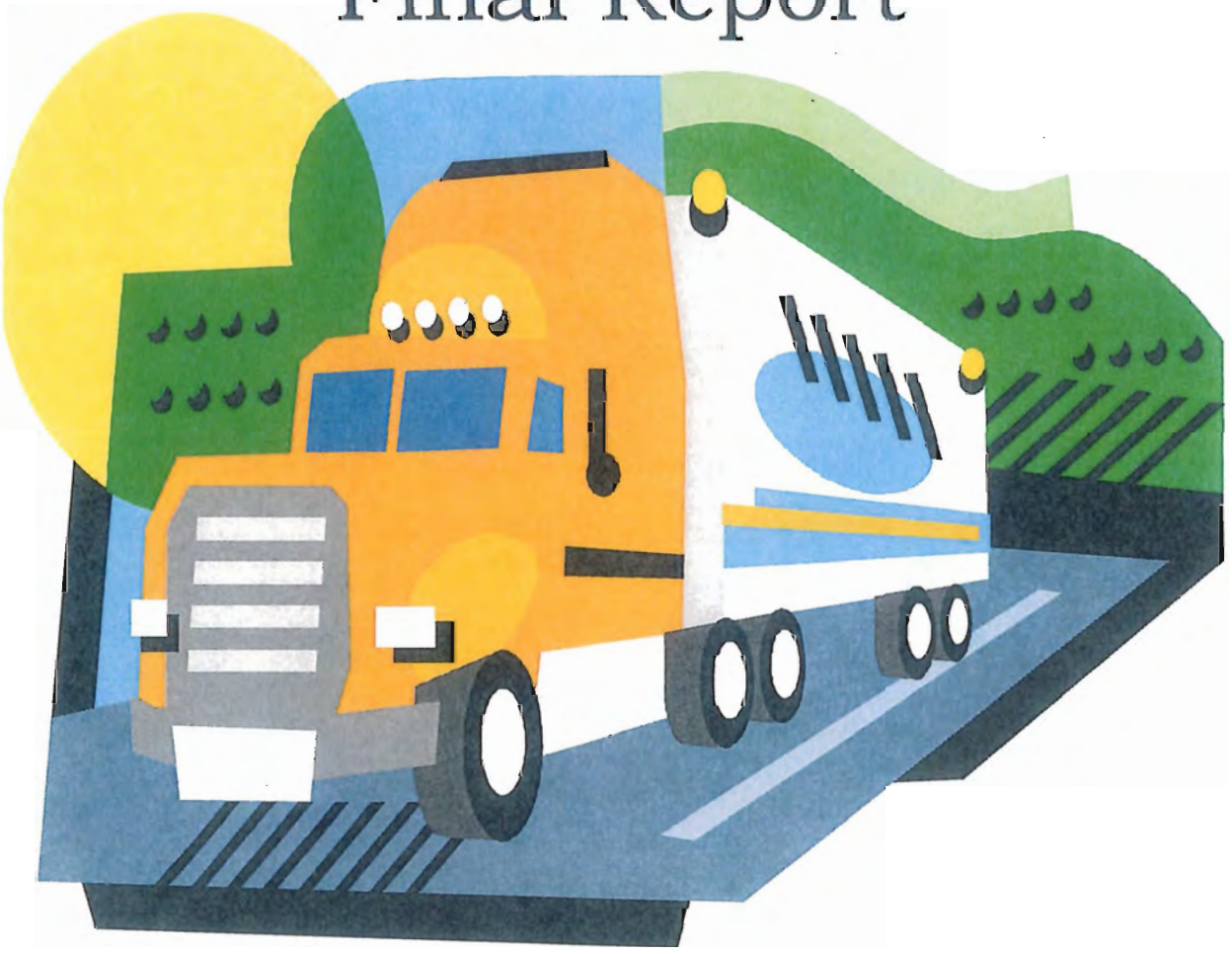
Missouri Commercial Motor Vehicle Safety Belt Survey Final Report



Submitted by:
Missouri Safety Center
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Executive Summary

In August of 2012, the Missouri Safety Center in conjunction with the Traffic and Highway Safety Division of the Missouri Department of Transportation conducted the commercial motor vehicle driver's safety belt use survey. The methodology for this year's survey was identical to the established methodology for the 2004 survey. The survey was conducted at 250 locations in 76 Missouri counties. Survey sites were located throughout the nine Missouri State Highway Patrol (MSHP) Troop areas.

The number of sites per MSHP Troop continues to be assigned proportionally to four roadway types; freeway, expressway, two-lane and other (super 2 lane, 5-lane section, 3-lane section, multi-lane section, and one way) based upon CMV DVMT on each roadway type.

Shoulder belt usage in Class 7 (six to nine tires) and Class 8 (10 or more tires) trucks for the CMV driver was observed at each selected site. Observations were collected over a one week period (August 20-26) and each observation was 40 minutes in length. Nineteen percent of the vehicles observed were Type 7 vehicles and the remaining 81 percent were Type 8. A total of 17,848 observations were collected in the 76 counties at 250 observational sites.

The following is a list of the major findings.

- The overall safety belt usage rate for commercial motor vehicle drivers observed in the survey was 81.5 percent. This is an increase of 0.9 percent over the 80.6 percent usage rate in 2010.
- The MSHP Troop F region had the highest safety belt usage rate and Troop G region had the lowest with 90.9 and 62.7 percent respectively.
- CMV drivers observed on the "Expressway" roadway type had the highest safety belt usage rate of 83.2 percent and drivers on "Other" roadways had the lowest usage rate of 63.7 percent.
- There were 7 counties that had a safety belt usage rates between 50 and 59 percent. They were Randolph, Butler, Howell, Oregon, Andrew, DeKalb and Gentry.
- Twenty-four counties: Cass, Clay, Ray, Ralls, Schuyler, Franklin, Lincoln, Perry, St. Francis, Ste. Genevieve, Warren, Barton, Greene, Jasper, Lawrence, McDonald, Polk, St. Clair, Vernon, Webster, Callaway, Moniteau, Osage and Clinton had safety belt usage rates between 80 and 89 percent.
- The safety belt usage rate was 90 percent or above in thirteen counties, Bates, Henry, Jackson, Lafayette, Pettis, Saline, Jefferson, Pike, Christian, Boone, Cooper, Miller and Montgomery.
- Commercial motor vehicle drivers of vehicles displaying hazardous material placards had a safety belt usage rate 90.2 percent

Historic
Commercial Vehicle Driver's Safety Belt Usage Rate
By MSHP Troop
(Data for Restrained Driver Only)

MSHP	Freq 2004	% Belted	Freq 2005	% Belted	% of Change 04/05	Freq 2006	% Belted	% of Change 05/06	Freq 2007	% Belted	% of Change 06/07	Freq 2008	% Belted	% of Change 07/08	Freq 2010	% Belted	% of Change 08/10	Freq 2012	% Belted	% of Change 10/12
A	1,707	55.97	1,583	60.35	+ 4.38	1,976	66.82	+ 6.47	2,464	62.9	- 3.9	2,275	72.0	+ 9.1	3,135	79.0	+7.0	3,385	86.7	+7.7
B	132	59.73	132	60.27	+ 0.54	105	68.63	+ 6.36	146	78.1	+ 9.5	147	73.5	- 4.6	199	80.6	+7.1	196	75.4	-5.2
C	2,215	52.08	2,599	67.30	+ 15.22	3,300	63.83	- 3.48	6,066	68.8	+ 5.0	6848	74.8	+6.0	5,332	84.4	+9.6	3,953	80.3	-4.1
D	1,266	71.97	1,309	72.88	+ 0.91	1,437	72.72	- 0.16	1,364	76.8	+ 4.6	1,404	77.0	+0.2	1,473	82.8	+5.8	1,792	83.2	+0.4
E	773	49.17	775	51.43	+ 2.26	854	57.94	+ 6.51	934	59.5	+ 1.6	1,051	68.3	+8.8	1,092	72.0	+3.7	1,145	74.5	+2.5
F	1,459	72.12	1,061	74.56	+ 2.44	961	75.31	+ 0.75	1,276	72.1	- 3.2	1,373	70.3	- 1.8	1,529	77.0	+6.7	1,623	90.9	+13.9
G	78	60.47	123	74.55	+ 14.08	161	62.16	- 12.39	257	71.0	+ 8.8	303	79.5	+ 8.5	145	79.8	+0.3	141	62.7	-17.1
H	656	59.42	613	56.86	- 2.56	804	63.96	+ 7.10	745	62.2	- 1.8	608	61.4	- 0.8	720	63.8	+2.4	849	74.0	+10.2
I	794	59.56	1,035	75.55	+ 15.99	888	61.07	- 14.48	1,350	66.5	+ 5.4	1,656	77.8	+ 11.3	1,589	90.9	+13.1	1,164	74.2	-16.7
Total	**9,080**	**58.79**	**9,230**	**65.73**	**+ 6.94**	**10,486**	**65.64**	**- 0.09**	**14,602**	**67.5**	**+ 1.9**	**16,165**	**73.4**	**+ 5.9**	**15,214**	**80.6**	**+7.2**	**14,548**	**81.5**	**+0.9**

Introduction

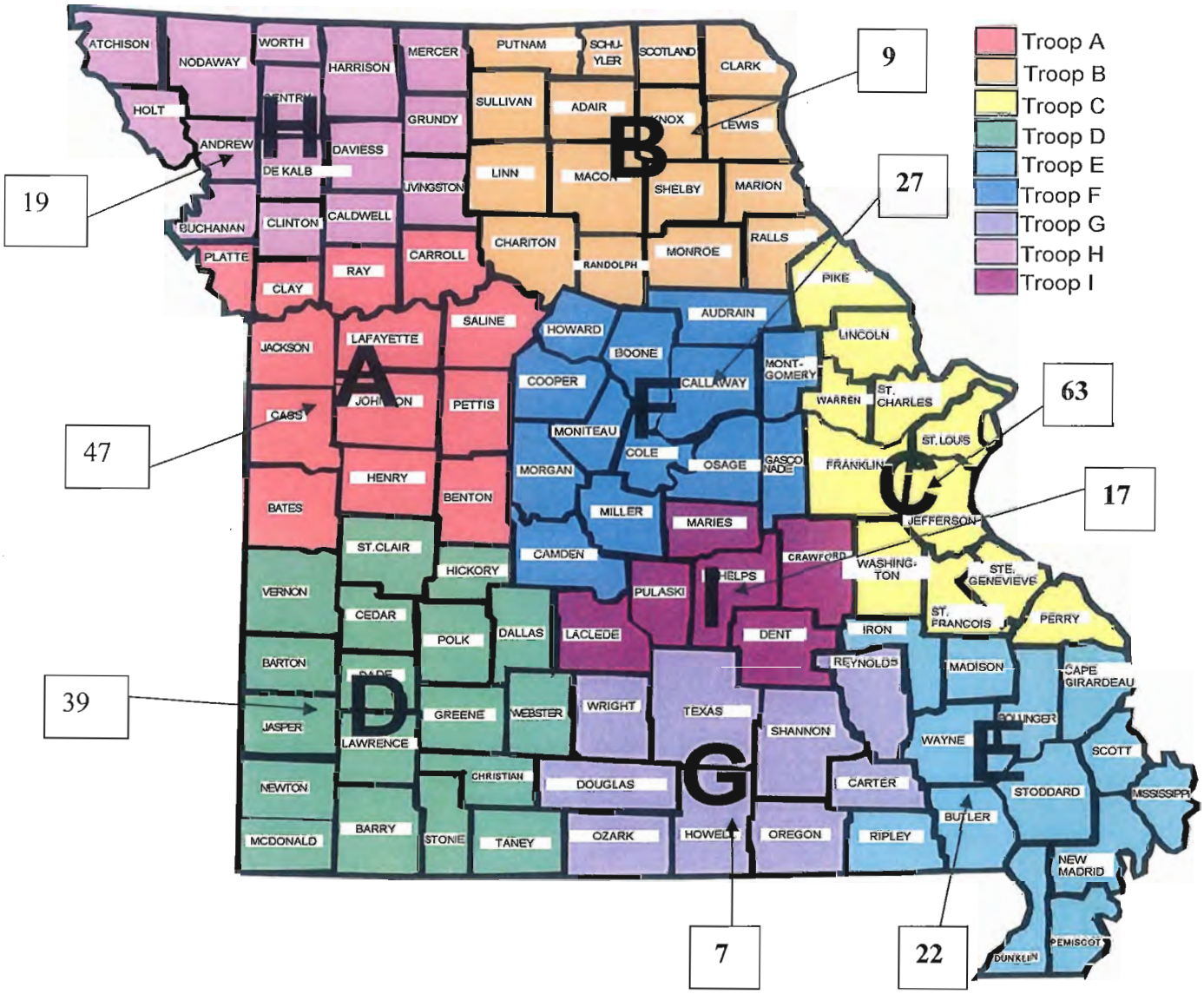
In November of 2003, the Federal Motor Carrier Safety Administration released a national study, "Safety Belt Usage by Commercial Motor Vehicle Drivers." A total of 3,909 observations were conducted in 12 states which resulted in an overall commercial vehicle safety belt use of 48 percent. Missouri was selected as one of the sample states for this survey. Surveys were conducted at seven locations in Missouri (Boone, Callaway, Cole, Cooper, Lafayette, and Saline counties) which resulted in 329 truck observations. Based upon this limited sample, Missouri's commercial vehicle safety belt usage rate was 50.0 percent.

In 2004, the Missouri Safety Center was requested by the Highway Safety Division of the Missouri Department of Transportation to conduct a Commercial Vehicle Safety Belt Observational Survey. In preparation for the survey, meetings were held to outline the survey parameters, guiding principles and sampling procedures.

Five guiding principles identified through these collaborative meetings, served as the underlying basis for the sampling plan used in this study.

- The individual observation site would be the basic sample unit at which safety belt usage observations would be made.
- The safety belt usage rates of commercial vehicle drivers would be computed for each of the nine Missouri State Highway Patrol (MSHP) Troops.
- The number of sites selected from each of the Missouri State Highway Patrol troops would be in proportion to the commercial motor vehicle (CMV) daily vehicle miles of travel (DVMT) that troop has in comparison to the state total of 18,100,711 CMV DVMT.
- The location for each site in the nine MSHP Troops would be selected in proportion to the number of CMV DVMT for each of four roadway types; Freeway, Expressway, Two-lane and Other (Super 2 Lane, 5-Lane Section, 3-Lane Section, Multi-Lane, and One Way) that each troop has in comparison to the state total CMV DVMT of Freeway (10,216,308), Expressway (2,795,514), Two-lane (3,493,485) and Other (159,703).
- The sites within each troop would be selected in their descending order of CMV DVMT by roadway type to maximize the number of commercial vehicle drivers from each MSHP Troop.

The sampling procedure involved the development of a list of CMV DVMT by MSHP troop. Table 1 shows the total CMV DVMT by troop in descending order and the proportion that each troop has in comparison to the state-total of 18,100,711 CMV DVMT. The proportion of CMV DVMT that each troop has was then divided into 250 which is the total number of sites selected for the survey. Troop C had the highest number of sites, 67 and Troop G had the lowest, 7. The state of Missouri map shows the number of observation sites in the nine MSHP Troops.
For the 2012 survey, all the 2004 methodology was carried forward and used as the base line for future data collections.



Number of Observation Sites By MSHP Troops

Methodology

Table 1
Percent of Daily CMV VMT by MSHP Troop
by Number of Observation Sites

MSHP TROOP	*CMV VMT Total*	*Percentage of Total CMV VMT*	*Total Number of Observation Sites*
C	4,666,704	25.55%	63
A	3,510,976	19.28%	47
D	2,735,803	15.66%	39
F	1,848,753	10.27%	27
E	1,605,545	8.80%	22
H	1,391,631	7.63%	19
I	1,216,495	6.65%	17
B	623,664	3.41%	9
G	501,141	2.75%	7
Total	**18,100,711**	**100%**	**250**

The specific number of observation sites from each MSHP troop was computed by multiplying the troops' percentages of the state's CMV DVMT by the total number of observation sites.

To identify the specific number of observation sites by roadway type for each troop, the number of observations for each troop was multiplied by the percentage of each roadway type's CMV DVMT in that troop. Tables 2-5 depicts the number of observation sites by troop for freeway, expressway, two-lane and other (Super 2 Lane, 5-Lane Section, 3-Lane Section, Multi-Lane, and One Way) roadway types.

Table 2
Percent of Observation Sites by MSHP Troop
by Freeway Roadway Type

MSHP TROOP	Total Number of Observation Sites	Total Number of Freeway CMV DVMT	Percent of Freeway CMV DVMT	Total Number of Freeway Sites
A	47	1,938,788	55%	26
B	9	3,171	0.005%	0
C	63	3,207,418	69%	43
D	39	1,288,821	47%	18
E	22	919,341	57%	12
F	27	956,412	52%	15
G	7	0	0%	0
H	19	945,203	68%	13
I	17	957,154	79%	14
Total	**250**	**10,216,308**	**100.00%**	**141**

Table 3
Percent of Observation Sites by Troop
by Expressway Roadway Type

MSHP TROOP	Total Number of Observation Sites	Total Number of Expressway CMV DVMT	Percent of Expressway CMV DVMT	Total Number of Expressway Sites
A	47	845,887	24%	11
B	9	193,188	31%	3
C	63	491,889	11%	7
D	39	472,208	17%	7
E	22	137,776	9%	2
F	27	366,351	20%	5
G	7	127,503	25%	2
H	19	150,946	11%	2
I	17	9,466	1%	0
Total	**250**	**2,795,214**	**100.00%**	**39**

Table 4
Percent of Observation Sites by Troop
by Two-Lane Roadway Type

MSHP TROOP	Total Number of Observation Sites	Total Number of Two-Lane CMV DVMT	Percent of Two-Lane CMV DVMT	Total Number of Two-Lane Sites
A	47	556,958	16%	8
B	9	410,297	66%	6
C	63	546,597	12%	8
D	39	588,871	22%	9
E	22	405,617	25%	6
F	27	388,411	21%	6
G	7	185,281	37%	2
H	19	249,582	18%	3
I	17	161,871	13%	2
Total	**250**	**3,493,485**	**100.00%**	**50**

Table 5
Percent of Observation Sites by Troop
by Other Roadway Type

MSHP TROOP	Total Number of Observation Sites	Total Number of Other CMV DVMT	Percent of Other CMV DVMT	Total Number of Other Sites
A	47	169,344	5%	2
B	9	17,007	3%	0
C	63	420,800	9%	5
D	39	385,902	14%	5
E	22	142,809	8%	1
F	27	137,580	7%	2
G	7	188,357	38%	3
H	19	45,900	3%	1
I	17	88,004	7%	1
Total	**250**	**1,595,703**	**100.00%**	**20**

The specific observational sites selected from each MSHP troop were determined by reviewing a state map that showed the total number of CMV DVMT on each state system roadway. In addition, MSHP Troop maps color-coded by roadway type; i.e. freeway, expressway, two-lane, and other, were also used in the selection process. See Attachment B. Observation sites for each troop were selected based upon the highest descending order of CMV DVMT on each roadway for each roadway type. The number of observation sites by troop, county, and roadway type is shown in Table 6.

Table 6
Observation Sites
by Troop, County and Roadway Type

County	Total # of Sites	Roadway Type			
		Freeway	Expressway	2 Lane	Other
MSHP Troop A					
Bates	2	0	2	0	0
Cass	3	0	3	0	0
Clay	7	7	0	0	0
Henry	2	0	1	1	0
Jackson	10	9	1	0	0
Johnson	2	0	1	1	0
Lafayette	7	3	3	0	1
Pettis	2	0	2	0	0
Platte	5	5	0	0	0
Ray	2	0	0	2	0
Saline	5	2	0	3	0
Total 11 Counties	**47**	**26**	**13**	**7**	**1**
MSHP Troop B					
Linn	3	0	1	2	0
Ralls	2	0	1	1	0
Randolph	3	0	1	2	0
Schuyler	1	0	1	0	0
Total 4 Counties	**9**	**0**	**4**	**5**	**0**

Table 6
Continued

County	Total # of Sites	Roadway Type			
		Freeway	Expressway	2 Lane	Other
MSHP Troop C					
Franklin	11	9	0	2	0
Jefferson	8	3	1	2	2
Lincoln	3	0	2	1	0
Perry	4	3	0	1	0
Pike	3	0	0	3	0
St. Charles	4	4	0	0	0
St. Francis	1	0	1	0	0
St. Louis	21	17	1	0	3
Ste. Genevieve	4	3	0	1	0
Warren	4	4	0	0	0
Total 10 Counties	**63**	**43**	**5**	**10**	**5**
MSHP Troop D					
Barry	1	0	0	1	0
Barton	1	0	1	0	0
Christian	3	1	1	0	1
Dallas	2	0	2	0	0
Greene	7	2	3	1	1
Jasper	4	2	2	0	0
Lawrence	6	2	1	2	1
McDonald	1	0	1	0	0
Newton	4	2	2	0	0
Polk	3	0	0	3	0
St. Clair	1	0	1	0	0
Taney	1	1	0	0	0
Vernon	1	1	0	0	0
Webster	4	2	1	1	0
Total 14 Counties	**39**	**13**	**15**	**8**	**3**

Table 6
Continued

County	Total # of Sites	Roadway Type			
		Freeway	Expressway	2 Lane	Other
MSHP Troop E					
Bollinger	1	0	0	1	0
Butler	1	0	1	0	0
Cape Girardeau	4	2	0	2	0
Dunklin	1	0	0	1	0
Mississippi	2	2	0	0	0
New Madrid	3	3	0	0	0
Pemiscot	3	3	0	0	0
Scott	4	2	0	1	1
Stoddard	2	0	1	1	0
Total 9 Counties	**21**	**12**	**2**	**6**	**1**
MSHP Troop F					
Audrain	2	0	1	1	0
Boone	7	4	1	1	1
Callaway	5	4	1	0	0
Camden	1	0	1	0	0
Cole	4	3	0	1	0
Cooper	2	2	0	0	0
Gasconade	1	0	0	1	0
Miller	1	0	1	0	0
Moniteau	1	0	0	1	0
Montgomery	2	2	0	0	0
Osage	1	0	0	0	1
Total 11 Counties	**27**	**15**	**5**	**5**	**2**
MSHP Troop G					
Howell	3	0	1	1	1
Oregon	2	0	0	1	1
Texas	2	0	1	0	1
Total 3 Counties	**7**	**0**	**2**	**2**	**3**

Table 6
Continued

County	Total # of Sites	Roadway Type			
		Freeway	Expressway	2 Lane	Other
MSHP Troop H					
Andrew	1	0	1	0	0
Atchison	2	2	0	0	0
Buchanan	5	3	1	0	1
Clinton	2	2	0	0	0
Daviess	2	2	0	0	0
DeKalb	1	0	0	1	0
Gentry	1	0	0	1	0
Harrison	2	2	0	0	0
Holt	2	2	0	0	0
Nodaway	1	0	0	1	0
Total 10 Counties	**19**	**13**	**2**	**3**	**1**
MSHP Troop I					
Crawford	4	3	0	1	0
Laclede	6	4	0	1	1
Phelps	4	3	0	1	0
Pulaski	3	3	0	0	0
Total 4 Counties	**17**	**13**	**0**	**3**	**1**

Two instruments were used to collect these data; Site Summary Form and a Vehicle/Driver Form (See Attachment C). The Site Summary Form identified the MSHP troop, county, site number, roadway type, day of week, direction of traffic flow, road condition and time of day. Data elements on the Vehicle/Driver Form included Vehicle Type 7 – Straight Frame (Van, Tanker, Dump truck, flat bed, bus and other, i.e. fire truck), Vehicle Type 8- Combination Vehicle (box trailer, single tanker, double trailer, flat trailer, car hauler, bobtail, dump and other i.e. large cement truck), driver's restraint status, and if the vehicle was carrying hazardous materials.

The observations were held Monday, August 20 through Sunday, August 26, 2012. The observation period was 40 minutes in length and began at one of the following times: 8:00 am, 9:00 am, 10:00 am, 11:00 am, 12 noon, 1:00 pm, 2:00 pm, or 3:00 pm. Observational surveyors were identified and received written training instructions by mail (See Attachment D). Ninety-five percent of the surveyors were experienced and had previously participated in safety belt observational surveys.

All of the observations, 96.7% were conducted in dry weather. Twenty-six percent of the observations were from the east direction of traffic flow, 24.8% from the west, with 25.8% and 23.0% from the north and south respectively. The percentage of observations by the time of day are: 8:00 am (11.2%), 9:00 am (15.9%), 10:00 am (18.4%), 11:00 am (13.2%), 12:00 noon (7.3%), 1:00 pm (15.4%), 2:00 pm (12.8%) and 3:00 pm (5.7%).

Key Findings

There were a total of 17,848 commercial vehicles observed. The frequency and percent of observations by Troop are located in Table 7.

Table 7
Frequency and Percent of Observations
By Troop

MSHP TROOP	Frequency of Observations	Percent of Observations
Troop A	4,251	23.8
Troop B	260	1.5
Troop C	4,921	27.5
Troop D	2,153	12.1
Troop E	1,537	8.6
Troop F	1,785	10.0
Troop G	225	1.3
Troop H	1,147	6.4
Troop I	1,569	8.8
TOTAL	**17,848**	**100.0**

Figure 1 shows the safety belt use by Driver for CMV and non-commercial vehicles. The commercial vehicle driver's usage rate, 81.5 percent, is 2.1 percent higher than the 2012 passenger vehicle safety belt usage rate of 79.4 percent on Missouri roadways.

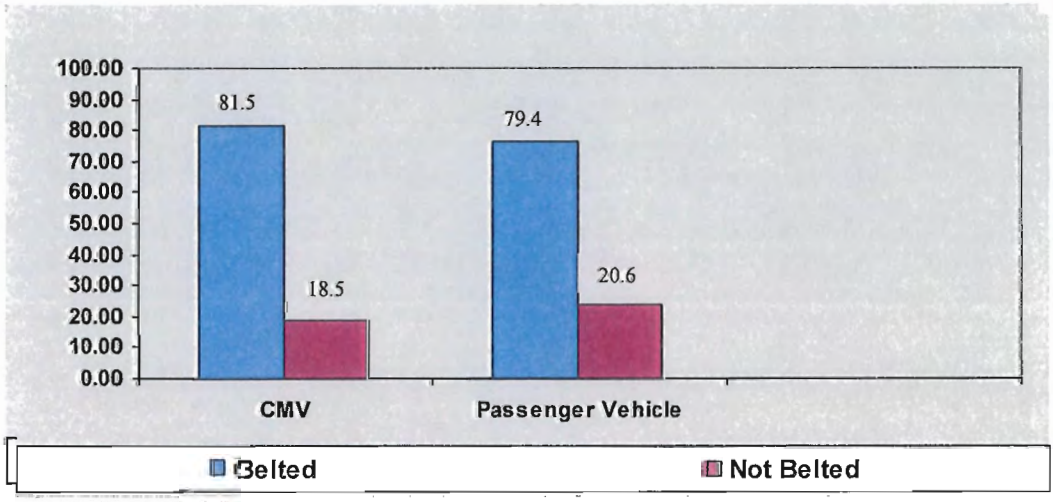


Figure 1 Safety Belt Use Rate for CMV Drivers and Passenger Vehicle Occupants

The commercial vehicle driver's safety belt use by MSHP Troop is depicted in Table 8. MSHP Troops F and A had the highest safety belt usage rates of 90.9 and 86.7 respectively. The lowest safety belt usage rates were in Troops G and H with 62.7 and 74.0 percent respectively.

There were 250 observation sites located in 76 counties in the nine MSHP Troops. In Troop A the safety belt usage rate ranged from 93.6 to 70.0 percent, Troop B from 83.5 to 60.0 percent, Troop C from 92.7 to 68.7 percent, Troop D from 92.8 to 62.5 percent, Troop E from 78.5 to 58.3 percent, Troop F from 96.8 to 60.0 percent, Troop G from 67.6 to 56.3 percent, Troop H from 84.1 to 50.0 percent and Troop I from 77.7 to 71.4 percent. The commercial vehicle driver's safety belt use by Troop by county is located in Table 9.

Table 8
Commercial Vehicle Driver's Safety Belt Use
By MSHP Troop

Drivers Safety Belt Use by MSHP Troop				
MSHP TROOP	**Restrained**		**Not Restrained**	
	Frequency	**Percent**	**Frequency**	**Percent**
A	3,685	86.7	566	13.3
B	196	75.4	64	24.6
C	3,953	80.3	968	19.7
D	1,792	83.2	361	16.8
E	1,145	74.5	392	25.5
F	1,623	90.9	162	9.1
G	141	62.7	84	37.3
H	849	74.0	298	26.0
I	1,164	74.2	405	25.8
TOTAL: Total Observations: 17,848	**14,548**	**81.5**	**3,300**	**18.5**

Table 9
Commercial Vehicle Driver's Safety Belt Use
by MSHP Troop by County

County	Restrained		Not Restrained	
	Frequency	Percent	Frequency	Percent
Troop A				
Bates	188	93.1	14	6.9
Cass	293	88.0	40	12.0
Clay	626	80.2	155	19.8
Henry	34	91.9	3	8.1
Jackson	1,149	93.6	78	6.4
Johnson	16	72.7	6	27.3
Lafayette	564	92.0	49	8.0
Pettis	19	90.5	2	9.5
Platte	409	70.0	175	30.0
Ray	30	83.3	6	16.7
Saline	357	90.4	38	9.6
Troop B				
Linn	21	60.0	14	40.0
Ralls	111	83.5	22	16.5
Randolph	51	67.1	25	32.9
Schuyler	13	81.3	3	18.7
Troop C				
Franklin	825	80.3	202	19.7
Jefferson	380	92.7	30	7.3
Lincoln	124	87.3	18	12.7
Perry	328	80.8	78	19.2
Pike	106	91.4	10	8.6
St. Charles	342	68.7	156	31.3
St. Francis	63	84.0	12	16.0
St. Louis	1,044	74.2	363	25.8
Ste. Genevieve	331	86.2	53	13.8
Warren	410	89.9	46	10.1
Troop D				
Barry	10	66.7	5	33.3
Barton	33	89.2	4	10.8
Christian	128	92.8	10	7.2
Dallas	58	68.2	27	31.8
Greene	439	88.3	58	11.7
Jasper	201	81.4	46	18.6
Lawrence	248	80.8	59	19.2
McDonald	26	81.3	6	18.7
Newton	257	79.1	68	20.9

County	Restrained		Not Restrained	
	Frequency	Percent	Frequency	Percent
Troop D (con't)				
Polk	91	81.3	21	18.7
St. Clair	12	80.0	3	20.0
Taney	5	62.5	3	37.5
Vernon	27	87.1	4	12.9
Webster	257	84.5	47	15.5
Troop E				
Bollinger	12	63.2	7	36.8
Butler	26	59.1	18	40.9
Cape Girardeau	180	74.7	61	25.3
Dunklin	7	58.3	5	41.7
Mississippi	150	77.3	44	22.7
New Madrid	265	73.4	96	26.6
Pemiscot	287	75.3	94	24.7
Scott	194	78.5	53	21.5
Stoddard	24	63.2	14	36.8
Troop F				
Audrain	27	69.2	12	30.8
Boone	541	94.9	29	5.1
Callaway	487	88.2	65	11.8
Camden	23	74.2	8	25.8
Cole	81	77.1	24	22.9
Cooper	204	96.2	8	3.8
Gasconade	6	60.0	4	40.0
Miller	27	93.1	2	6.9
Moniteau	4	80.0	1	20.0
Montgomery	212	96.8	7	3.2
Osage	11	84.6	2	15.4
Troop G				
Howell	57	58.2	41	41.8
Oregon	9	56.3	7	43.7
Texas	75	67.6	36	32.4

County	Restrained		Not Restrained	
	Frequency	Percent	Frequency	Percent
Troop H				
Andrew	13	59.1	9	40.9
Atchison	92	68.2	43	31.8
Buchanan	248	72.5	94	27.5
Clinton	164	84.1	31	15.9
Daviess	101	78.9	27	21.1
DeKalb	1	50.0	1	50.0
Gentry	7	50.0	7	50.0
Harrison	87	75.0	29	25.0
Holt	122	70.1	52	29.9
Nodaway	14	73.7	5	26.3
Troop I				
Crawford	299	77.7	86	22.3
Laclede	361	75.1	120	24.9
Phelps	200	71.4	80	28.6
Pulaski	304	71.9	119	28.1
Total 76 Counties	**14,548**	**81.5**	**3,300**	**18.5**

Figure 2 shows the commercial vehicle driver's safety belt use by roadway type. Commercial motor vehicle drivers' on "Expressway" roadway type had the highest usage at 83.2 percent and CMV drivers' on "Other" roads was the lowest at 63.7 percent.

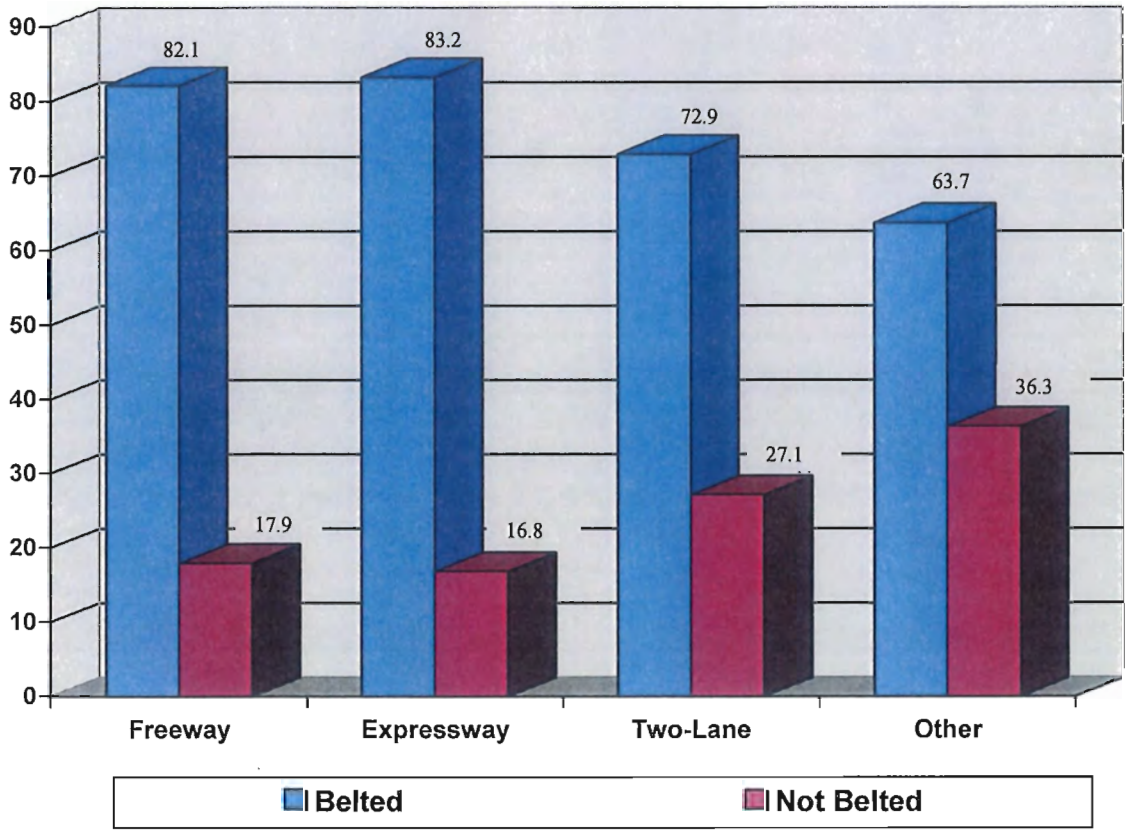


Figure 2 Percent of Commercial Vehicle Driver's Safety Belt Use by Roadway Type

Table 10 shows the frequency of restrained and not restrained commercial motor vehicle drivers' and their corresponding safety belt usage rate by MSHP Troop by county by roadway type. Of the 250 observational sites, 81.5 percent were on "Freeways", 12.1 percent were on "Expressways", 4.7 percent were on "Two-lane" roadways and 1.7 percent was on "Other" roadways.

Table 10
Commercial Vehicle Driver's Safety Belt Use
by MSHP Troop by County by Roadway Type

County	Freeway				Expressway				Two-Lane				Other			
	Restrained		Not Restrained		Restrained		Not Restrained		Restrained		Not Restrained		Restrained		Not Restrained	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Troop A																
Bates	0	0	0	0	188	93.1	14	6.9	0	0	0	0	0	0	0	0
Cass	0	0	0	0	293	88.0	40	12.0	0	0	0	0	0	0	0	0
Clay	626	80.2	155	19.8	0	0	0	0	0	0	0	0	0	0	0	0
Henry	0	0	0	0	31	91.2	3	8.8	3	100.0	0	0	0	0	0	0
Jackson	1,081	93.3	78	6.7	68	100.0	0	0	0	0	0	0	0	0	0	0
Johnson	0	0	0	0	9	69.2	4	30.8	7	77.8	2	22.2	0	0	0	0
Lafayette	487	94.0	31	6.0	54	80.6	13	19.4	0	0	0	0	23	82.1	5	17.9
Pettis	19	90.5	2	9.5	0	0	3	0	0	0	0	0	0	0	0	0
Platte	409	70.0	175	30.0	0	0	0	0	0	0	0	0	0	0	0	0
Ray	0	0	0	0	0	0	0	0	30	83.3	6	16.7	0	0	0	0
Saline	293	94.5	17	5.5	0	0	0	0	64	75.3	21	24.7	0	0	0	0
Troop B																
Linn	0	0	0	0	15	57.7	11	42.3	6	66.7	3	33.3	0	0	0	0
Ralls	0	0	0	0	65	82.3	14	17.7	46	85.2	8	14.8	0	0	0	0
Randolph	0	0	0	0	21	75.0	7	25.0	30	62.5	18	37.5	0	0	0	0
Schuyler	0	0	0	0	13	81.3	3	18.7	0	0	0	0	0	0	0	0

County	Freeway				Expressway				Two-Lane				Other			
	Restrained		Not Restrained		Restrained		Not Restrained		Restrained		Not Restrained		Restrained		Not Restrained	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Troop C																
Franklin	824	80.6	199	19.4	0	0	0	0	1	25.0	3	75.0	0	0	0	0
Jefferson	343	94.5	20	5.5	13	68.4	6	31.6	11	91.7	1	8.3	13	81.3	3	18.7
Lincoln	0	0	0	0	118	88.7	15	11.3	6	66.7	3	33.3	0	0	0	0
Perry	314	82.0	69	18.0	0	0	0	0	14	60.9	9	39.1	0	0	0	0
Pike	0	0	0	0	0	0	0	0	106	91.4	10	8.6	0	0	0	0
St. Charles	342	68.7	156	31.3	0	0	0	0	0	0	0	0	0	0	0	0
St. Francis	0	0	0	0	63	84.0	12	16.0	0	0	0	0	0	0	0	0
St. Louis	997	75.1	331	24.9	13	81.3	3	18.7	0	0	0	0	34	54.0	29	46.0
Ste. Genevieve	321	87.0	48	13.0	0	0	0	0	10	66.7	5	33.3	0	0	0	0
Warren	410	89.9	46	10.1	0	0	0	0	0	0	0	0	0	0	0	0
Troop D																
Barry	0	0	0	0	0	0	0	0	10	66.7	5	33.3	0	0	0	0
Barton	0	0	0	0	33	89.2	4	10.8	0	0	0	0	0	0	0	0
Christian	49	96.1	2	3.9	67	93.1	5	6.9	0	0	0	0	12	80.0	3	20.0
Dallas	0	0	0	0	58	68.2	27	31.8	0	0	0	0	0	0	0	0
Greene	249	97.7	6	2.3	156	81.3	36	18.7	31	66.0	16	34.0	3	100.0	0	0
Jasper	137	77.8	39	22.2	64	90.1	7	9.9	0	0	0	0	0	0	0	0
Lawrence	223	81.7	50	18.3	12	75.0	4	25.0	7	77.8	2	22.2	6	66.7	3	33.3
McDonald	0	0	0	0	26	81.3	6	18.7	0	0	0	0	0	0	0	0
Newton	172	74.5	59	25.5	85	90.4	9	9.6	0	0	0	0	0	0	0	0
Polk	0	0	0	0	0	0	0	0	91	81.3	21	18.7	0	0	0	0
St. Clair	0	0	0	0	12	80.0	3	20.0	0	0	0	0	0	0	0	0
Taney	5	62.5	3	37.5	0	0	0	0	0	0	0	0	0	0	0	0
Vernon	27	87.1	4	12.9	0	0	0	0	0	0	0	0	0	0	0	0
Webster	231	84.9	41	15.1	25	80.7	6	19.3	1	100.0	0	0	0	0	0	0

County	Freeway				Expressway				Two-Lane				Other			
	Restrained		Not Restrained		Restrained		Not Restrained		Restrained		Not Restrained		Restrained		Not Restrained	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Troop E																
Bollinger	0	0	0	0	0	0	0	0	12	63.2	7	36.8	0	0	0	0
Butler	0	0	0	0	26	59.1	18	40.9	0	0	0	0	0	0	0	0
Cape Girardeau	155	77.1	46	22.9	0	0	0	0	25	62.5	15	37.5	0	0	0	0
Dunklin	0	0	0	0	0	0	0	0	7	58.3	5	41.7	0	0	0	0
Mississippi	150	77.3	44	22.7	0	0	0	0	0	0	0	0	0	0	0	0
New Madrid	265	73.4	96	26.6	0	0	0	0	0	0	0	0	0	0	0	0
Pemiscot	287	75.3	94	24.7	0	0	0	0	0	0	0	0	0	0	0	0
Scott	174	81.7	39	18.3	0	0	0	0	7	70.0	3	30.0	13	54.2	11	45.8
Stoddard	0	0	0	0	14	66.7	7	33.3	10	58.8	7	41.2	0	0	0	0
Troop F																
Audrain	0	0	0	0	12	66.7	6	33.3	15	71.4	6	28.6	0	0	0	0
Boone	504	96.9	16	3.1	33	78.6	9	21.4	0	0	1	100.0	4	57.1	3	42.9
Callaway	461	88.3	61	11.7	26	86.7	4	13.3	0	0	0	0	0	0	0	0
Camden	0	0	0	0	23	74.2	8	25.8	0	0	0	0	0	0	0	0
Cole	79	79.0	21	21.0	0	0	0	0	2	40.0	3	60.0	0	0	0	0
Cooper	204	96.2	8	3.8	0	0	0	0	0	0	0	0	0	0	0	0
Gasconade	0	0	0	0	0	0	0	0	6	60.0	4	40.0	0	0	0	0
Miller	0	0	0	0	27	93.1	2	6.9	0	0	0	0	0	0	0	0
Moniteau	0	0	0	0	0	0	0	0	4	80.0	1	20.0	0	0	0	0
Montgomery	212	96.8	7	3.2	0	0	0	0	0	0	0	0	0	0	0	0
Osage	0	0	0	0	0	0	0	0	0	0	0	0	11	84.6	2	15.4

County	Freeway				Expressway				Two-Lane				Other			
	Restrained		Not Restrained		Restrained		Not Restrained		Restrained		Not Restrained		Restrained		Not Restrained	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Troop G																
Howell	0	0	0	0	32	60.4	21	39.6	4	50.0	4	50.0	21	56.8	16	43.2
Oregon	0	0	0	0	0	0	0	0	3	50.0	3	50.0	6	60.0	4	40.0
Texas	0	0	0	0	48	80.0	12	20.0	0	0	0	0	27	52.9	24	47.1
Troop H																
Andrew	0	0	0	0	13	59.1	9	40.9	0	0	0	0	0	0	0	0
Atchison	92	68.2	43	31.8	0	0	0	0	0	0	0	0	0	0	0	0
Buchanan	217	73.8	77	26.2	19	59.4	13	40.6	0	0	0	0	12	75.0	4	25.0
Clinton	164	84.1	31	15.9	0	0	0	0	0	0	0	0	0	0	0	0
Daviess	101	78.9	27	21.1	0	0	0	0	0	0	0	0	0	0	0	0
DeKalb	0	0	0	0	0	0	0	0	1	50.0	1	50.0	0	0	0	0
Gentry	0	0	0	0	0	0	0	0	7	50.0	7	50.0	0	0	0	0
Harrison	87	75.0	29	25.0	0	0	0	0	0	0	0	0	0	0	0	0
Holt	122	70.1	52	29.9	0	0	0	0	0	0	0	0	0	0	0	0
Nodaway	0	0	0	0	0	0	0	0	14	73.7	5	26.3	0	0	0	0
Troop I																
Crawford	280	81.2	65	18.8	0	0	0	0	19	47.5	21	52.5	0	0	0	0
Laclede	352	75.1	117	24.9	0	0	0	0	1	100.0	0	0	8	72.7	3	27.3
Phelps	194	71.9	76	28.1	0	0	0	0	6	60.0	4	40.0	0	0	0	0
Pulaski	304	71.9	119	28.1	0	0	0	0	0	0	0	0	0	0	0	0
Total 76 Counties	**11,944**	**82.1**	**2,597**	**17.9**	**1,794**	**83.2**	**363**	**16.8**	**617**	**72.9**	**230**	**27.1**	**193**	**63.7**	**110**	**36.3**

Table 11 and 12 depicts the commercial vehicle driver's safety belt use by type of vehicle. Type 7 vehicles generally had six or more tires and a straight frame and Type 8 vehicles had 10 or more tires and were combination vehicles. The commercial vehicle driver's safety belt use was lower for the Type 7 vehicles (75.9%) than for Type 8 vehicles (82.8%). Among the Type 7 vehicles, bus driver's had the highest safety belt use whereas dump truck driver's the lowest with 86.0 and 60.6 percent respectively. The Type 8 double trailer drivers' safety belt use was 90.0 percent while the Type 8 dump drivers' had only a 60.1 percent safety belt usage rate.

Table 11
CMV Driver's Safety Belt Use
By Vehicle – Type 7

Vehicle Type 7 Straight Frame	Restrained		Not Restrained	
	Frequency	Percent	Frequency	Percent
Van	1,251	79.0	332	21.0
Tanker	61	82.4	13	17.6
Dump	134	60.6	87	39.3
Flat Bed	289	66.7	144	33.3
Bus	338	86.0	55	14.0
Other	490	72.7	184	27.3
Total	**2,563**	**75.9**	**815**	**24.1**

Table 12
CMV Driver's Safety Belt Use
By Vehicle – Type 8

Vehicle Type 8 Combination Vehicle	Restrained		Not Restrained	
	Frequency	Percent	Frequency	Percent
Box Trailer	8,015	84.5	1,472	15.5
Single Tanker	975	86.8	148	13.2
Double Trailer	651	90.0	72	10.0
Flat Trailer	1,390	79.4	361	20.6
Car Hauler	179	84.0	34	16.0
Bobtail	203	78.1	57	51.9
Dump	412	60.1	274	39.9
Other	160	70.5	67	29.5
Total	**11,985**	**82.8**	**2,485**	**17.2**

There were 745 vehicles with hazardous material placards. Of those commercial vehicle drivers', 90.2 (672) percent were wearing safety belts. These results are displayed in Figure 3.

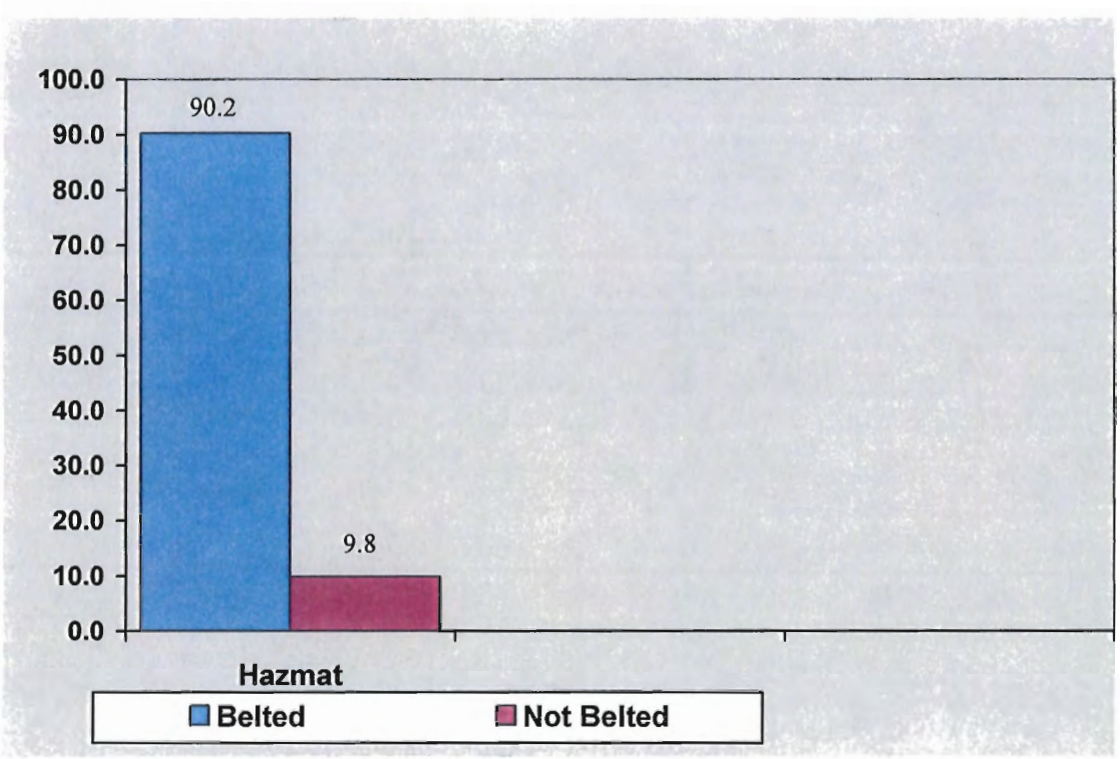


Figure 3 Safety Belt Use Rate for Commercial Drivers' of Vehicles with Hazardous Material Placards

Attachment A

Usage Rate by County

2004 vs. 2005
2005 vs. 2006
2006 vs. 2007
2007 vs. 2008
2008 vs. 2010
2010 vs. 2012

Attachment A

Please note the percentage change between 2005, 2006, 2007, 2008, 2010 and 2012 may be somewhat misleading in counties where the sampling was small. Data collections from larger frequency bases are more reflective of indicated change.

Commercial Vehicle Driver's Safety Belt Usage Rate
By MSHP Troop by County by Year of Survey

County	Restrained 2004		Restrained 2005		% Change	Restrained 2006		% Change	Restrained 2007		% Change	Restrained 2008		% Change	Restrained 2010		% Change	Restrained 2012		% Change
	Freq	%	Freq	%		Freq	%		Freq	%		Freq	%		Freq	%		Freq	%	
Troop A																				
Bates	31	46.3	42	55.3	+9.0	46	61.3	+6.1	72	69.2	+7.9	63	75.9	+6.7	93	83.0	+7.1	188	93.1	+10.1
Cass	81	72.3	82	56.5	-15.8	119	76.8	+20.3	115	73.7	-3.1	110	76.4	+2.7	128	83.1	+6.7	293	88.0	+4.9
Clay	494	50.8	472	61.2	+10.4	415	58.7	-2.5	505	66.7	+8.0	498	71.2	+4.5	532	71.3	+0.1	626	80.2	+8.9
Henry	35	62.5	22	84.6	+22.1	23	76.7	-7.9	26	70.3	-6.4	33	86.8	+16.5	34	85.0	-1.8	34	91.9	+6.9
Jackson	355	52.7	337	52.7	0	446	65.0	+12.3	523	61.1	-3.9	696	68.7	+7.6	887	85.1	+16.4	1,149	93.6	+8.5
Johnson	28	63.6	6	66.7	+3.1	9	60.0	-6.7	20	80.0	+20.0	25	78.1	-1.9	17	58.6	-19.5	16	72.7	+14.1
Lafayette	268	73.6	185	78.7	+5.1	292	81.6	+2.9	350	69.2	-12.4	533	79.3	+10.1	549	87.4	+8.1	564	92.0	+4.6
Pettis	28	59.6	9	90.0	+30.4	18	85.7	-4.3	14	60.9	-24.8	26	86.7	+25.8	26	78.8	-7.9	19	90.5	+11.7
Platte	159	43.0	177	42.7	-0.3	246	52.1	+9.4	514	50.5	-1.6	320	55.7	+5.2	375	62.0	+6.3	409	70.0	+8.0
Ray	11	61.1	9	47.4	-13.7	15	51.7	+4.3	7	43.8	-7.9	16	50.0	+6.2	16	57.1	+7.1	30	83.3	+26.2
Saline	217	66.6	242	87.4	+20.8	347	84.8	-2.6	318	75.5	-9.1	455	84.4	+8.9	478	86.6	+2.2	357	90.4	+3.8
Total	**1,707**	**56.0**	**1,583**	**60.4**	+4.4	**1,976**	**66.8**	+6.4	**2,464**	**62.9**	-3.9	**2,775**	**72.0**	+9.1	**3,135**	**79.0**	+7.0	**3,685**	**86.7**	+7.7
Troop B																				
Linn	40	52.6	23	52.3	-0.36	29	82.9	+30.6	28	82.4	-0.5	32	82.1	-0.3	44	84.6	+2.5	21	60.0	-24.6
Ralls	44	68.8	62	64.6	-4.17	38	67.9	+3.3	61	76.3	+8.4	62	64.6	-11.7	98	81.7	+17.1	111	83.5	+1.8
Randolph	44	58.7	44	60.3	+1.6	36	63.2	+2.9	56	78.9	+15.7	48	85.7	+6.8	55	77.5	-8.2	51	57.1	-20.4
Schuyler	4	66.7	3	50.0	-16.7	2	40.0	-10.0	1	50.0	+10.0	5	55.6	+5.6	2	50.0	-5.6	13	81.3	+31.3
Total	**132**	**59.7**	**132**	**60.3**	+0.54	**105**	**68.7**	+8.4	**146**	**78.1**	+9.5	**147**	**73.5**	-4.6	**199**	**80.6**	+7.1	**196**	**75.4**	-5.2

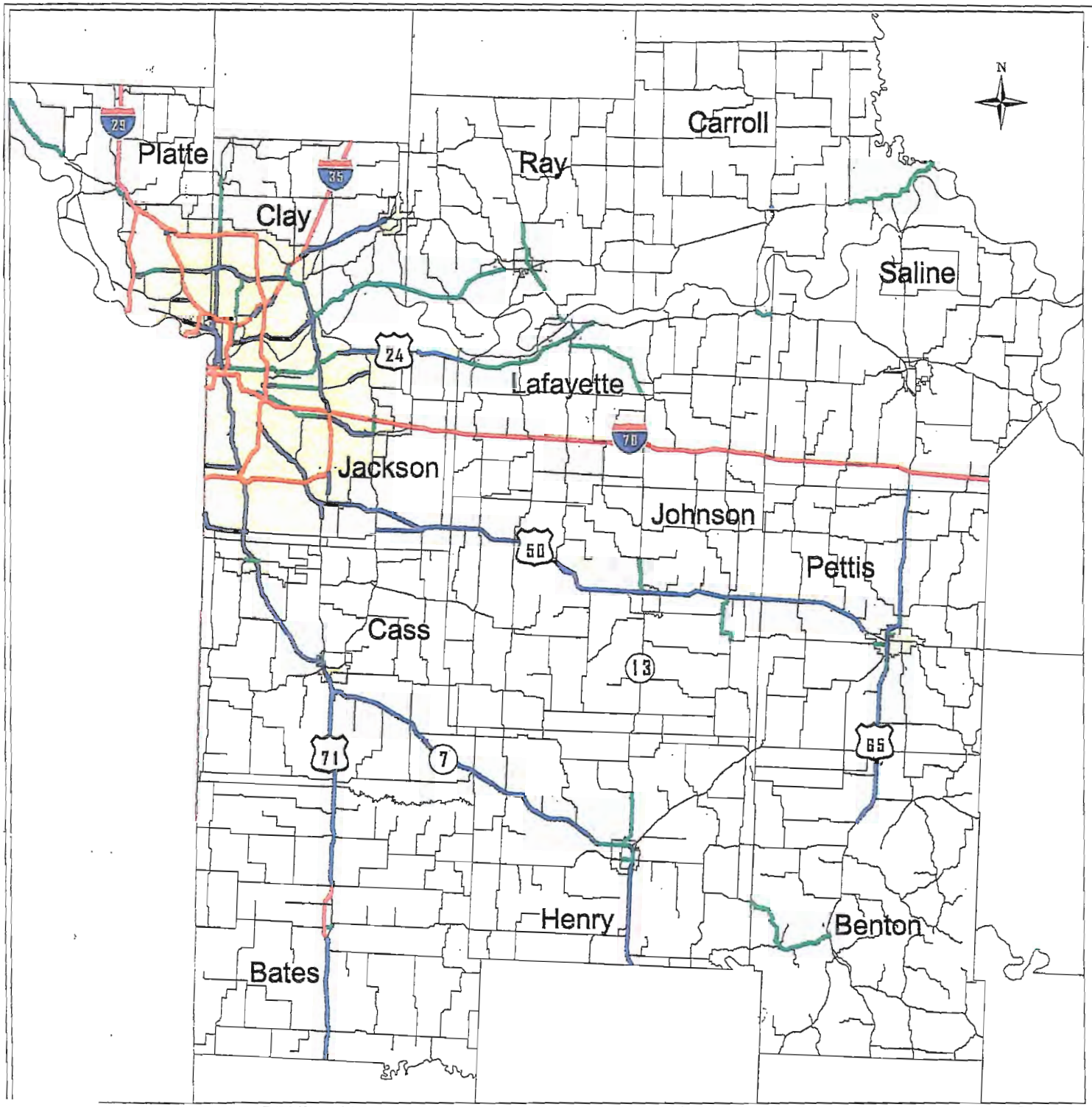
County	Restrained 2004		Restrained 2005		% Change	Restrained 2006		% Change	Restrained 2007		% Change	Restrained 2008		% Change	Restrained 2010		% Change	Restrained 2012		% Change
	Freq	%	Freq	%		Freq	%		Freq	%		Freq	%		Freq	%		Freq	%	
Troop C																				
Franklin	183	71.6	254	66.2	- 5.3	311	55.8	-10.3	938	66.5	+10.7	1,134	76.4	+9.9	747	85.2	+8.8	825	80.3	-4.9
Jefferson	176	50.3	148	69.8	+ 19.5	257	64.1	-5.7	482	77.9	+13.8	699	70.3	-7.6	253	72.5	+2.2	380	92.7	+20.2
Lincoln	65	54.6	70	57.9	+ 3.2	80	55.6	-2.3	236	71.1	+15.5	112	66.3	-4.8	247	80.5	+14.2	124	87.3	+6.8
Perry	148	44.2	197	75.5	+ 31.3	236	79.2	+3.7	255	83.1	+3.9	285	95.3	+12.2	282	93.1	-2.2	328	80.8	-12.3
Pike	81	45.8	91	47.6	+ 1.9	112	57.1	+9.5	288	72.2	+15.1	51	73.9	+1.7	116	81.7	+7.8	106	91.4	+9.7
St. Charles	222	60.7	232	52.1	- 8.5	390	65.6	+13.4	550	63.9	-1.7	404	64.0	+0.1	834	87.0	+23.0	342	68.7	-18.3
St. Francis	15	32.6	19	51.4	+ 18.7	29	64.4	+13.1	50	84.8	+20.4	48	87.3	+2.5	35	87.5	+0.2	63	84.0	-3.5
St. Louis	984	47.3	1,194	69.7	+ 22.4	1,478	63.0	-6.7	2,616	65.5	+2.5	3,571	75.0	+9.5	1,972	83.0	+8.0	1,044	74.2	-8.8
Ste. Genevieve	190	58.3	212	77.7	+ 19.4	224	73.2	-4.5	232	87.2	+14.0	304	95.6	+8.4	225	87.9	-7.7	331	86.2	-1.7
Warren	151	75.9	182	80.5	+ 4.7	183	64.7	-15.9	419	73.6	+8.9	240	63.2	-10.4	621	87.6	+24.4	410	89.9	+2.3
Total	**2,215**	**52.1**	**2,599**	**67.3**	**+ 15.2**	**3,300**	**63.8**	**-3.5**	**6,066**	**68.8**	**+5.0**	**6,848**	**74.7**	**+5.9**	**5,332**	**84.4**	**+9.7**	**3,953**	**80.3**	**-4.1**
Troop D																				
Barry	13	52.0	19	63.3	+ 11.3	17	48.6	-14.8	13	68.4	+19.8	16	51.6	-16.8	17	89.5	+37.9	10	66.7	-22.8
Barton	20	87.0	32	91.4	+ 4.5	28	93.3	+1.9	20	74.1	-19.2	12	75.0	+0.9	42	100.0	+25.0	33	89.2	-10.8
Christian	42	56.0	34	42.0	- 14.0	31	38.8	-3.2	81	75.7	+37.0	54	67.5	-8.2	45	64.3	-3.2	128	92.8	+28.5
Dallas	20	66.7	38	63.3	- 3.3	102	85.0	+21.7	24	46.2	-38.8	32	57.1	+10.9	46	79.3	+22.2	58	68.2	-11.1
Greene	287	65.5	258	56.6	- 9.0	255	52.2	-4.4	335	72.4	+20.3	282	64.7	-7.7	285	71.3	+6.6	439	88.3	+17.0
Jasper	180	88.7	246	91.5	+ 2.8	268	91.8	+0.3	143	80.3	-11.5	136	78.6	-1.7	192	83.8	+5.2	201	81.4	-2.4
Lawrence	178	82.8	182	86.3	+ 3.5	189	87.1	+0.8	184	87.6	+0.5	169	84.5	-3.1	183	87.1	+2.6	248	80.8	-6.3
McDonald	15	79.0	25	83.3	+ 4.4	36	97.3	+14.0	29	96.7	-0.6	36	85.7	-11.0	27	90.0	+4.3	26	81.3	-8.7
Newton	243	85.0	203	83.8	- 1.1	213	87.3	+3.5	229	89.8	+2.5	241	91.6	+1.8	213	97.7	+6.1	257	79.1	-18.6
Polk	54	52.4	71	73.2	+ 20.8	72	64.9	-8.3	76	71.1	+6.8	57	60.0	-11.1	71	78.0	+18.0	91	81.3	+3.3
St. Clair	3	37.5	2	33.3	- 4.2	3	37.5	+4.2	7	35.0	-2.5	1	20.0	-15.0	7	63.6	+43.6	12	80.0	+16.4
Taney	2	50.0	7	77.8	+ 27.8	1	14.3	-63.5	2	66.7	+52.4	2	33.3	-33.4	4	50.0	+16.7	5	62.5	+12.5
Vernon	23	92.0	27	100.0	+ 8.0	22	84.6	-15.4	17	73.9	-10.7	16	84.2	+10.3	12	80.0	-4.2	27	87.1	+7.1
Webster	186	61.0	165	67.9	+ 6.9	200	71.4	+3.5	203	71.7	+0.3	350	87.1	+15.4	329	86.8	-0.3	257	84.5	-2.3
Total	**1,266**	**72.0**	**1,309**	**72.9**	**+ 0.9**	**1,437**	**72.7**	**-0.2**	**1,364**	**76.8**	**+4.1**	**1404**	**77.0**	**+0.2**	**1,473**	**82.8**	**+5.8**	**1,792**	**83.2**	**+0.4**

County	Restrained 2004		Restrained 2005		% Change	Restrained 2006		% Change	Restrained 2007		% Change	Restrained 2008		% Change	Restrained 2010		% Change	Restrained 2012		% Change
	Freq	%	Freq	%		Freq	%		Freq	%		Freq	%		Freq	%		Freq	%	
Troop E																				
Bollinger	7	31.8	4	33.3	+ 1.5	9	52.9	+19.6	9	50.0	-2.9	8	57.1	+7.1	10	62.5	+5.4	12	63.2	+0.7
Butler	18	36.0	13	28.3	- 7.7	13	36.1	+7.9	20	45.5	+9.4	22	53.7	+8.2	22	56.4	+2.7	26	59.1	+2.7
Cape Girardeau	124	49.8	106	47.3	- 2.5	119	60.1	+12.8	143	56.5	-3.6	181	68.8	+12.3	155	68.3	-0.5	180	74.7	+6.4
Dunklin	7	36.8	4	28.6	- 8.3	2	28.6	0.0	3	27.3	-1.3	1	14.3	-13.0	5	62.5	+48.2	7	58.3	-4.2
Mississippi	105	54.7	111	56.9	+ 2.2	122	64.2	+7.3	116	63.0	-1.2	140	71.8	+8.8	150	75.8	+4.0	150	77.3	+1.5
New Madrid	183	49.9	205	56.6	+ 6.8	217	60.3	+3.7	222	62.0	+1.7	240	69.0	+7.0	273	72.4	+3.4	265	73.4	+1.0
Pemiscot	193	55.6	199	57.9	+ 2.2	209	57.3	-0.6	233	63.0	+5.7	288	73.1	+10.1	286	77.1	+4.0	287	75.3	-1.8
Scott	121	44.5	119	44.7	+ 0.3	148	55.9	+11.1	165	57.7	+1.9	156	63.2	+5.5	171	69.0	+5.8	194	78.5	+9.5
Stoddard	15	27.8	14	31.8	+ 4.0	15	41.7	+9.9	23	51.1	+9.4	15	51.7	+0.6	20	62.5	+10.8	24	63.2	+0.7
Total	**773**	**49.2**	**775**	**51.4**	**+ 2.3**	**854**	**57.9**	**+6.5**	**934**	**59.5**	**+1.6**	**1,051**	**68.3**	**+8.8**	**1,092**	**72.0**	**+3.7**	**1,145**	**74.5**	**+2.5**
Troop F																				
Audrain	18	37.5	24	52.2	+ 14.7	18	41.9	-10.3	21	46.7	+4.8	18	69.2	+22.5	29	56.9	-12.3	27	69.2	+12.3
Boone	519	80.4	445	85.4	+ 5.1	348	85.7	+0.3	451	80.5	-5.2	333	74.3	-6.2	500	83.9	+9.6	541	94.9	+11.0
Callaway	397	63.5	215	69.4	+ 5.8	222	71.2	+1.8	385	70.0	-1.2	460	67.9	-2.1	472	67.9	0.0	487	88.2	+20.3
Camden	13	28.9	22	38.6	+ 9.7	39	52.7	+14.1	22	34.4	-18.3	22	50.0	+15.6	12	60.0	+10.0	23	74.2	+14.2
Cole	52	41.9	70	59.3	+ 17.4	67	55.8	-3.5	81	60.9	+5.1	83	73.5	+12.6	67	69.8	-3.7	81	77.1	+7.3
Cooper	261	92.2	167	86.5	- 5.7	140	94.6	+8.1	155	77.5	-17.1	224	75.7	-1.8	207	83.5	+7.8	204	96.2	+12.7
Gasconade	3	60.0	3	50.0	- 10.0	6	60.0	+10.0	2	25.0	-35.0	6	66.7	+41.7	15	88.2	+21.5	6	60.0	-28.2
Miller	8	25.0	17	65.4	+ 40.4	13	34.2	-31.2	8	47.1	+12.9	27	77.1	+30.0	17	77.3	+0.2	27	93.1	+15.8
Moniteau	5	62.5	6	54.6	- 7.9	8	80.0	+25.5	3	23.1	-56.9	8	61.5	+38.4	9	75.0	+13.5	4	80.0	+5.0
Montgomery	174	90.2	87	74.4	- 15.8	86	91.5	+17.1	141	83.9	-7.6	180	66.9	-17.0	184	88.0	+21.1	212	96.8	+8.8
Osage	9	64.3	5	27.8	- 36.5	14	66.7	+38.9	7	58.3	-8.4	12	57.1	-1.2	17	81.0	+23.9	11	84.6	+3.6
Total	**1,459**	**72.1**	**1,061**	**74.6**	**+ 2.4**	**961**	**75.3**	**+0.8**	**1,276**	**72.1**	**-3.2**	**1,373**	**70.3**	**-1.8**	**1,529**	**77.0**	**+6.7**	**1,623**	**90.9**	**+13.9**

County	Restrained 2004		Restrained 2005		% Change	Restrained 2006		% Change	Restrained 2007		% Change	Restrained 2008		% Change	Restrained 2010		% Change	Restrained 2012		% Change
	Freq	%	Freq	%		Freq	%		Freq	%		Freq	%		Freq	%		Freq	%	
Troop G																				
Howell	31	53.6	40	75.5	+ 22.0	60	57.1	-18.3	129	69.7	+12.6	102	77.3	+7.6	85	81.7	+4.4	57	58.2	-23.5
Oregon	19	76.0	33	71.7	- 4.3	29	55.8	-16.0	11	55.0	-0.8	87	79.1	+24.1	22	73.3	-5.8	9	56.3	-17.0
Texas	28	60.9	50	75.8	+ 14.9	72	70.6	-5.2	117	74.5	+3.9	114	82.0	+7.5	38	79.2	-2.8	75	67.8	-11.4
Total	**78**	**60.5**	**123**	**74.6**	+ 14.1	**161**	**62.2**	-12.4	**257**	**71.0**	**+8.8**	**303**	**79.5**	**+8.5**	**145**	**79.7**	**+0.2**	**141**	**62.7**	-17.0
Troop H																				
Andrew	4	17.4	13	50.0	+ 32.6	15	51.7	+1.7	15	51.7	-0.02	8	36.4	-15.3	11	44.0	+7.6	13	59.1	+15.1
Atchison	85	51.8	72	60.5	+ 8.7	121	72.9	+12.4	90	62.9	-10.0	64	54.7	-8.2	123	68.3	+13.6	92	68.2	-.01
Buchanan	234	66.3	235	58.5	- 7.8	235	60.4	+1.9	284	65.4	+5.0	195	58.0	-7.4	205	64.3	+6.3	248	72.5	+8.2
Clinton	153	71.8	128	59.3	- 12.6	138	56.8	-2.5	106	71.1	+14.3	113	64.9	-6.2	136	69.4	+4.5	164	84.1	+14.7
Daviess	45	51.1	60	50.4	- 0.7	113	76.4	+25.6	106	62.4	-14.0	95	71.4	+9.0	61	57.0	-14.4	101	78.9	+21.9
DeKalb	0	0	4	66.7	+ 66.7	3	75.0	+8.3	1	20.0	-55.0	0	0.0	+55.0	1	50.0	+50.0	1	50.0	0.0
Gentry	1	50.0	1	50.0	0	1	50.0	0.0	1	16.7	-33.3	1	33.3	+16.6	6	54.6	+21.3	7	50.0	-4.6
Harrison	45	67.2	39	45.9	- 21.3	87	71.3	+25.5	79	56.8	-14.5	56	62.2	+5.4	61	58.7	-3.5	87	75.0	+16.3
Holt	85	48.9	53	61.6	+ 12.8	84	62.7	+1.1	60	53.6	-9.1	70	70.0	+16.4	107	64.1	-5.9	122	70.1	+6.0
Nodaway	4	26.7	8	47.1	+ 20.4	7	35.0	-12.1	3	27.3	-7.7	6	40.0	+12.7	9	52.9	+12.9	14	73.7	+20.8
Total	**656**	**59.4**	**613**	**56.9**	- 2.6	**804**	**64.0**	+7.1	**745**	**62.2**	**-1.8**	**608**	**61.4**	**-0.8**	**720**	**63.8**	**+2.4**	**849**	**74.0**	+10.2
Troop I																				
Crawford	180	62.5	229	72.7	+ 10.2	250	72.7	0.0	247	63.3	-9.4	414	82.3	+19.0	359	93.3	+11.0	299	77.7	-15.6
Laclede	260	60.1	357	77.6	+ 17.6	244	47.6	-30.1	552	72.8	+25.2	482	66.0	-6.8	464	90.6	+24.6	361	75.1	-15.5
Phelps	189	55.4	239	76.1	+ 20.7	197	64.2	-11.9	222	55.1	-9.1	309	80.1	+25.0	359	86.7	+6.6	200	71.4	-15.3
Pulaski	165	60.9	210	74.7	+ 13.8	197	67.9	-6.8	329	68.5	-0.6	451	88.6	+20.1	407	92.9	+4.3	304	71.9	-21.0
Total	**794**	**59.6**	**1,035**	**75.6**	+ 16.0	**888**	**61.1**	-14.5	**1,350**	**66.5**	**+5.4**	**1,656**	**77.8**	**+11.3**	**1,589**	**90.9**	**+13.1**	**1,164**	**74.2**	-16.7
Total 76 Counties	**9,080**	**58.8**	**9,230**	**65.7**	+ 6.9	**10,486**	**65.6**	-0.1	**14,602**	**67.5**	**+1.9**	**16,165**	**73.4**	+5.9	**15,214**	**80.6**	**+7.2**	**14,548**	**81.5**	+0.9

Attachment B

MSHP Troop Maps Color-Coded by Roadway Type



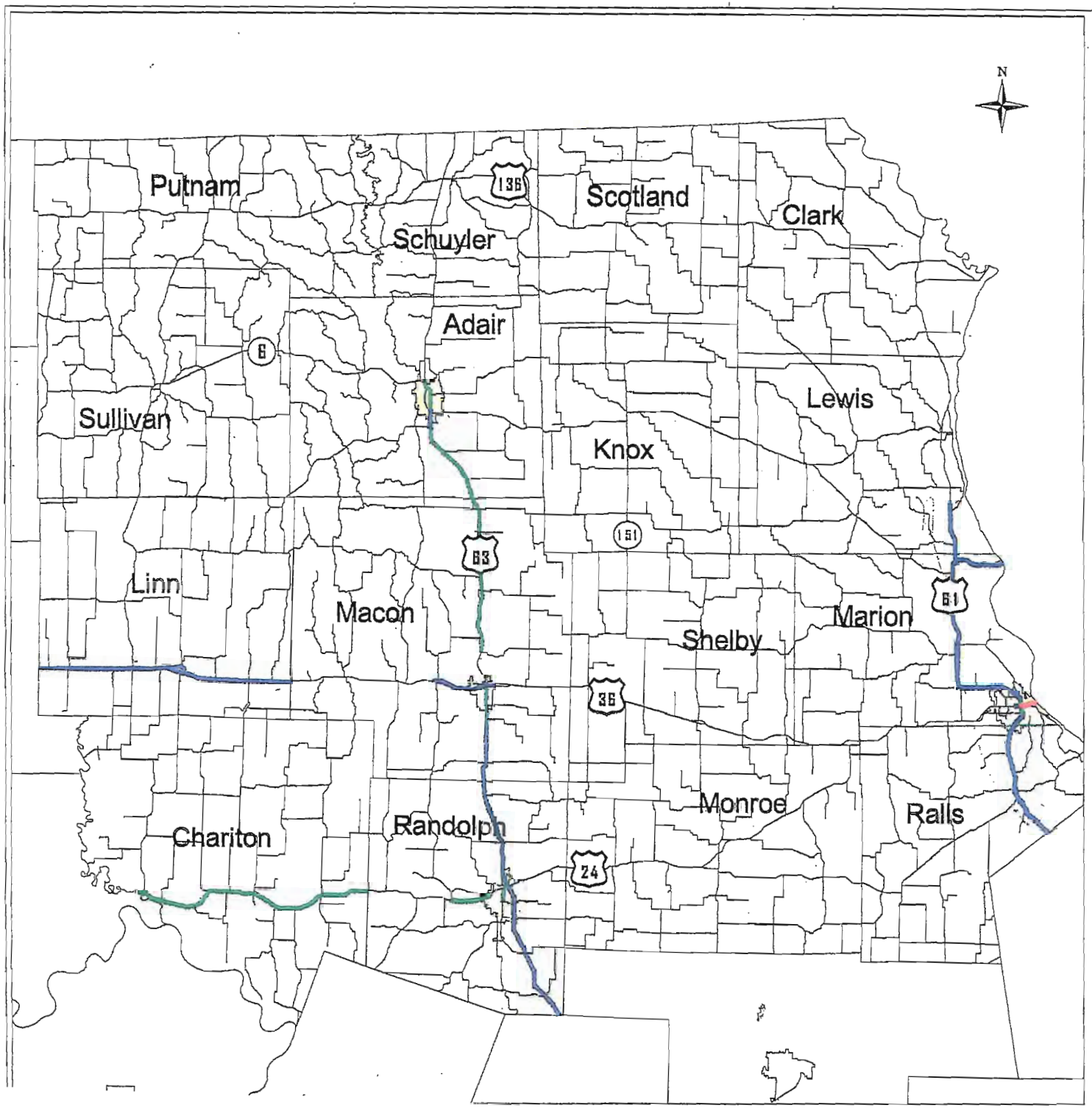
MoDOT

Troop A

Roadway Type
- FREEWAY
- EXPRESSWAY
- TWO-LANE
- 3 LANE SECTION
- 5 LANE SECTION
- MULTI-LANE
- ONE-WAY
- SUPER 2-LANE

Prepared By
MoDOT TMS Query Application

19-Jul-2004



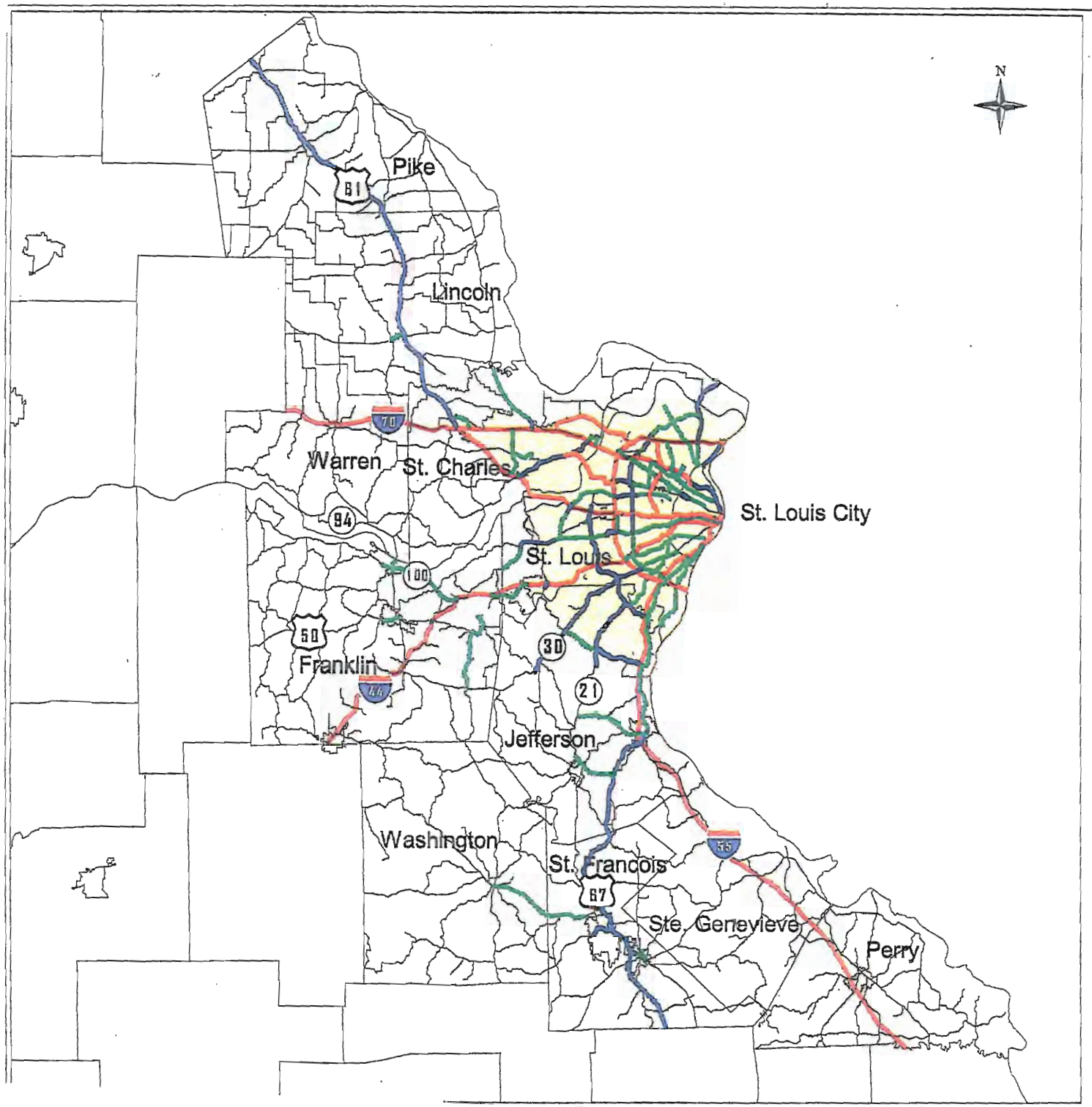
MoDOT

Troop B

Roadway Type
- FREEWAY
- EXPRESSWAY
- TWO-LANE
- 3 LANE SECTION
- 5 LANE SECTION
- MULTI-LANE
- SUPER 2-LANE

Prepared By
MoDOT TMS Query Application

19-Jul-2004



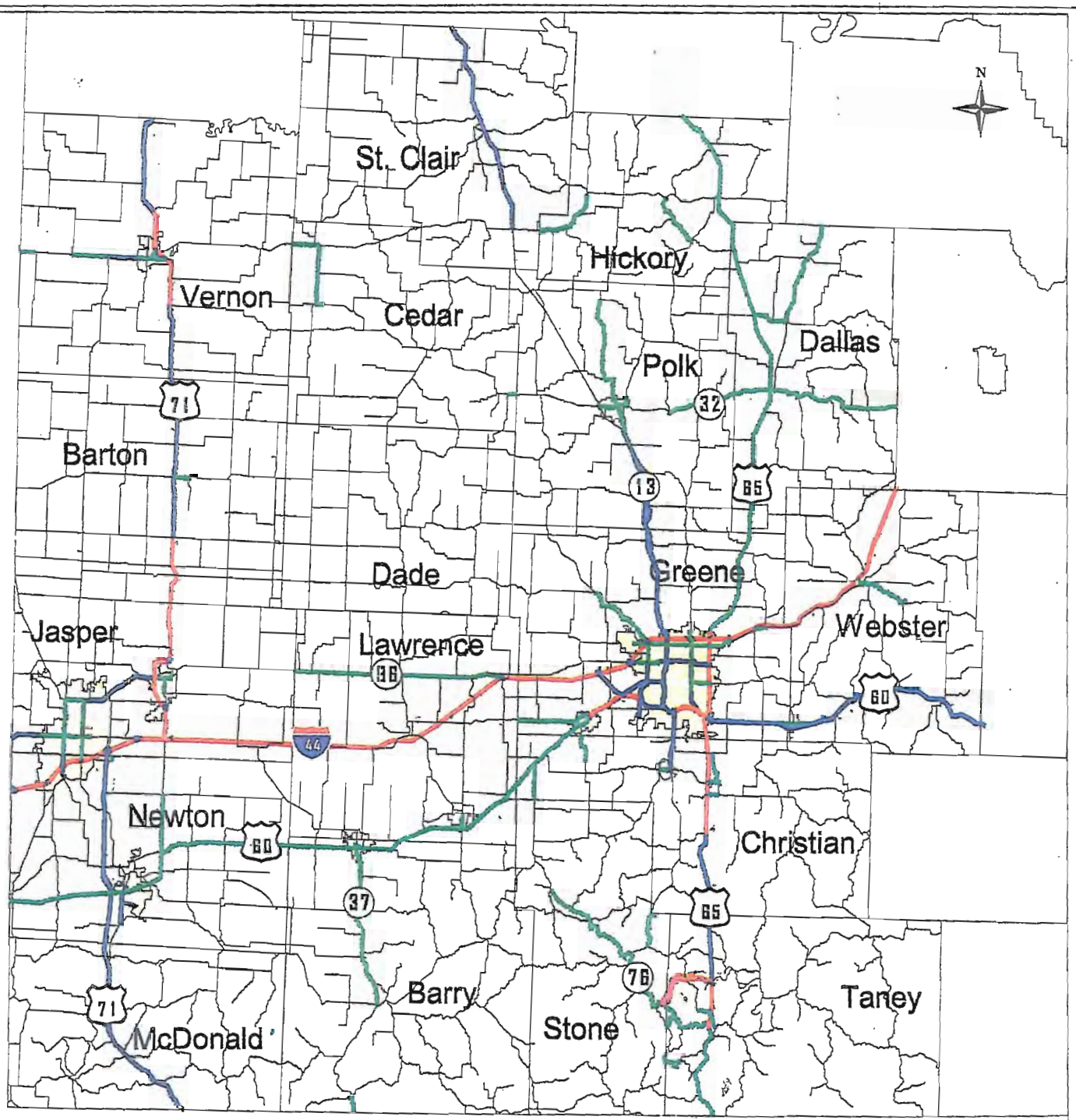
MoDOT

Troop C

Roadway Type
- FREEWAY
- EXPRESSWAY
- TWO-LANE
- 3 LANE SECTION
- 5 LANE SECTION
- MULTI-LANE
- ONE-WAY
- SUPER 2-LANE

Prepared By
MoDOT TMS Query Application

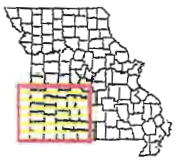
19-Jul-2004



MoDOT

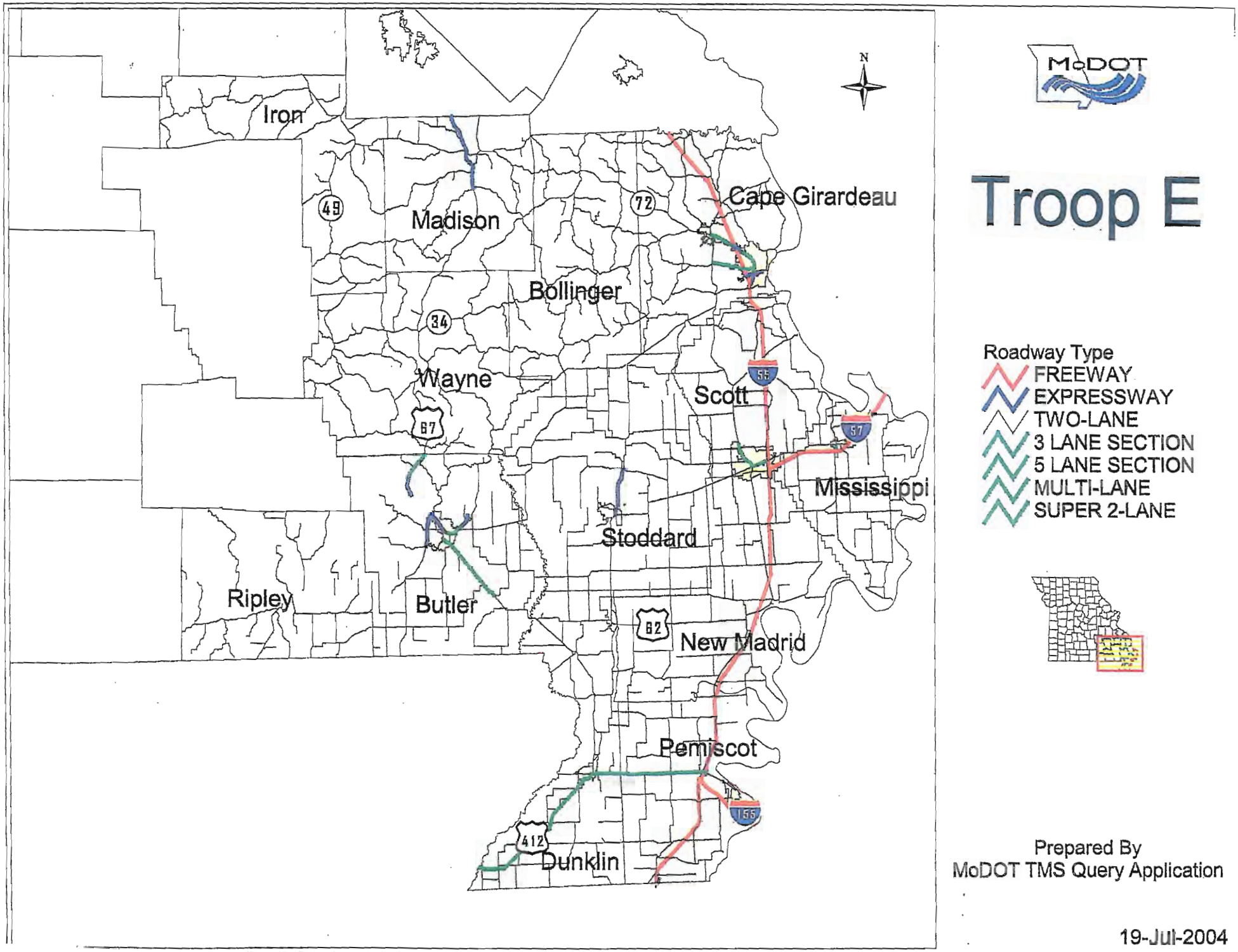
Troop D

Roadway Type
- FREEWAY
- EXPRESSWAY
- TWO-LANE
- 3 LANE SECTION
- 5 LANE SECTION
- MULTI-LANE
- ONE-WAY
- SUPER 2-LANE



Prepared By
MoDOT TMS Query Application

19-Jul-2004



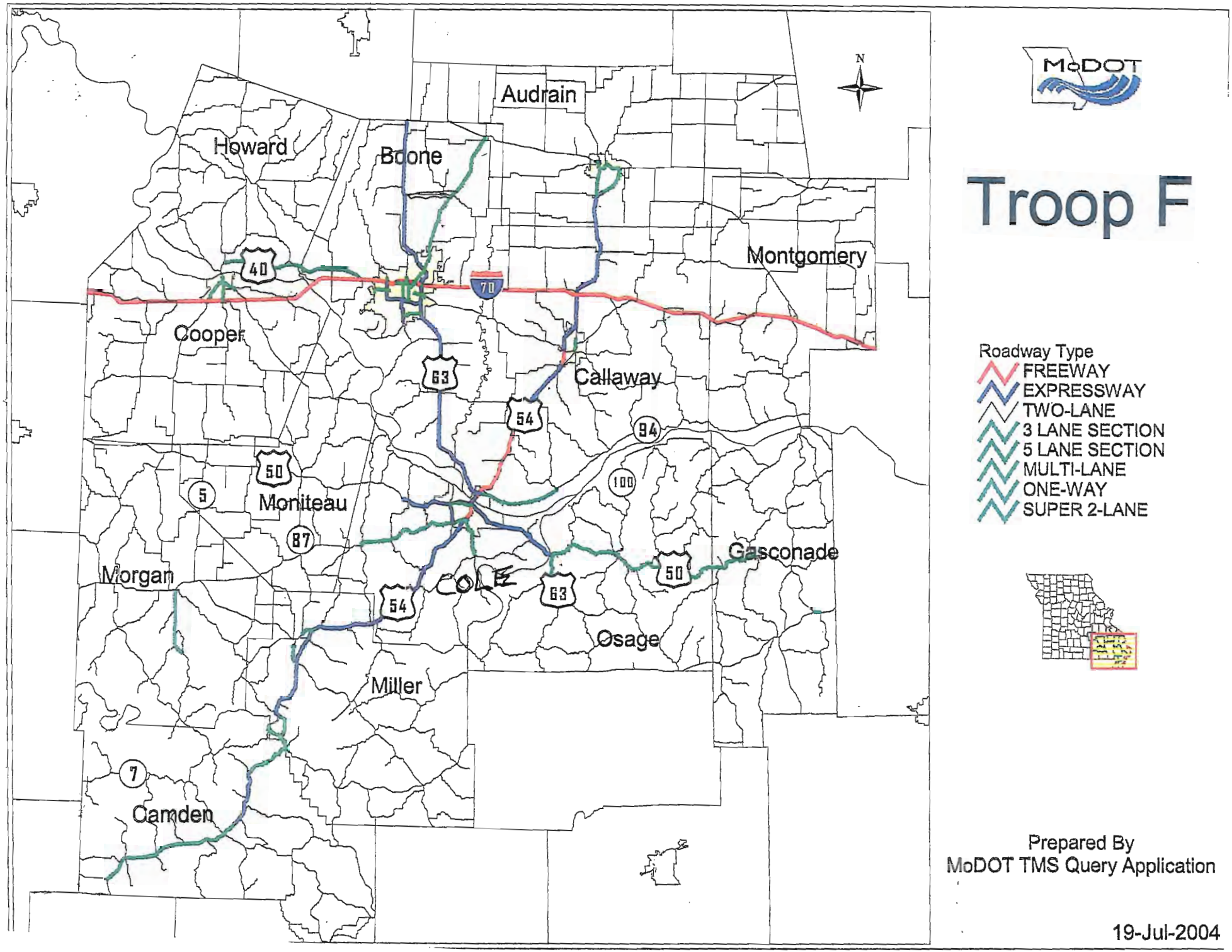
MoDOT

Troop E

Roadway Type
- FREEWAY
- EXPRESSWAY
- TWO-LANE
- 3 LANE SECTION
- 5 LANE SECTION
- MULTI-LANE
- SUPER 2-LANE

Prepared By
MoDOT TMS Query Application

19-Jul-2004



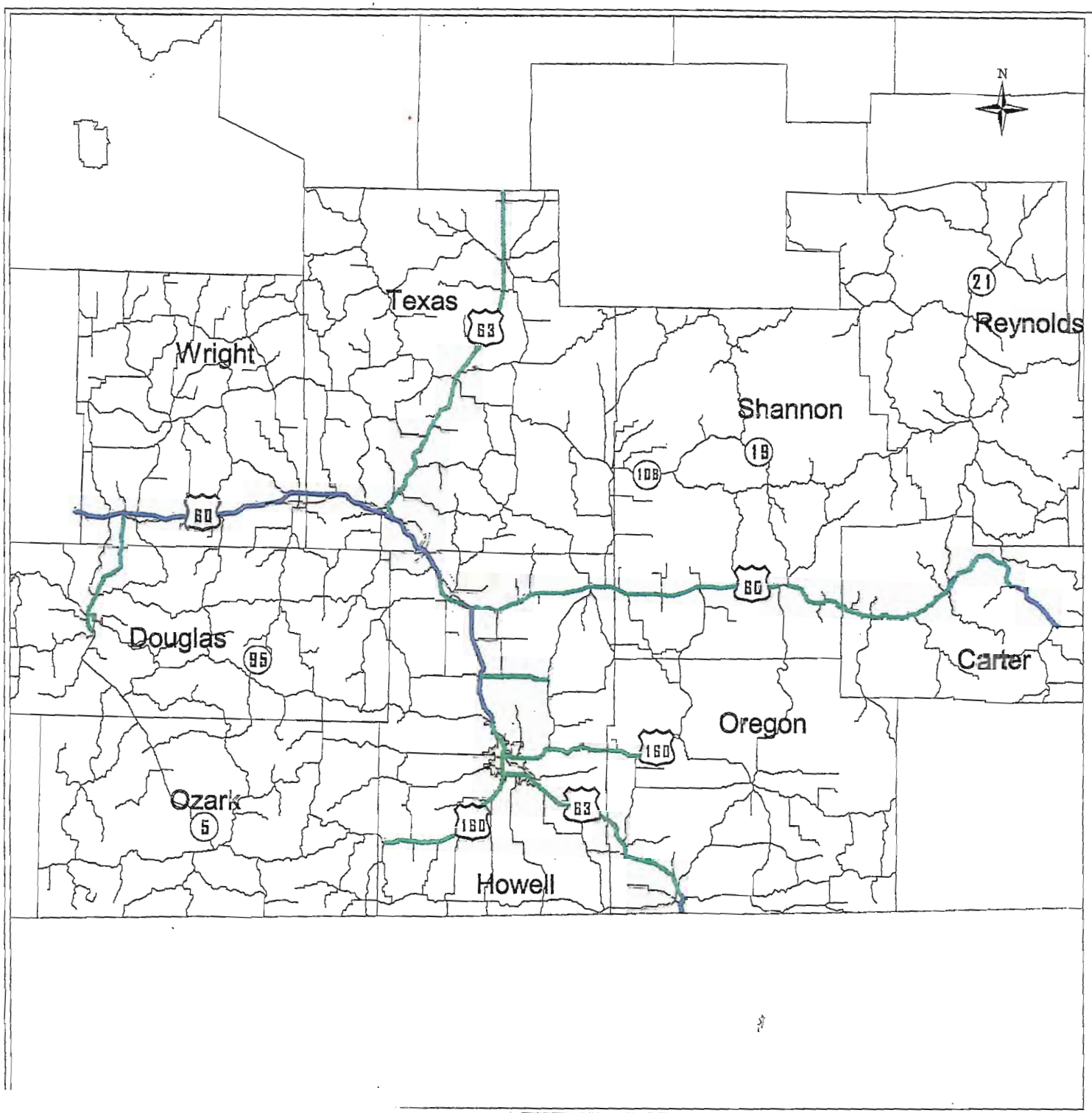
MoDOT

Troop F

Roadway Type
- FREEWAY
- EXPRESSWAY
- TWO-LANE
- 3 LANE SECTION
- 5 LANE SECTION
- MULTI-LANE
- ONE-WAY
- SUPER 2-LANE

Prepared By
MoDOT TMS Query Application

19-Jul-2004



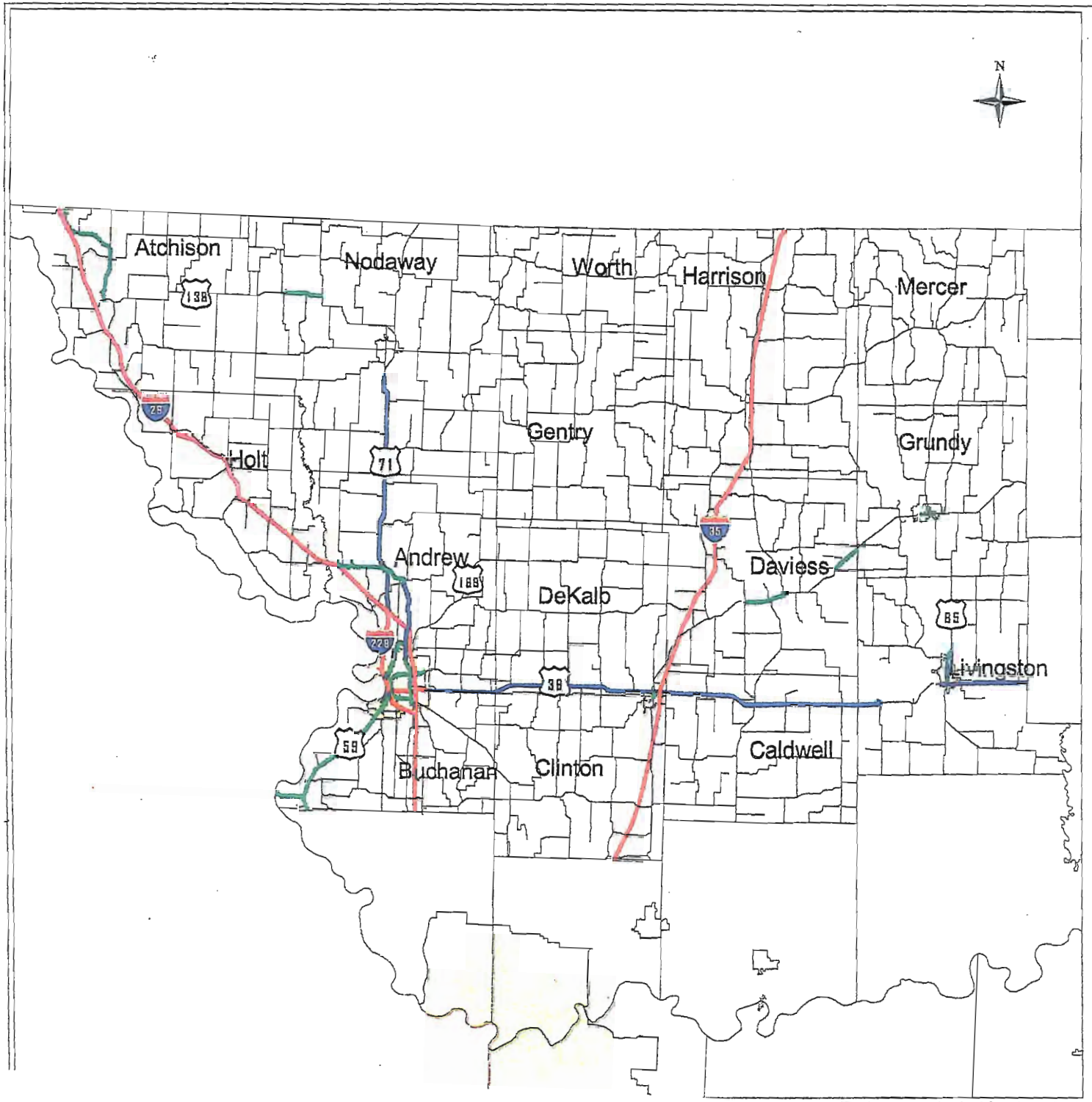
MoDOT

Troop G

Roadway Type
- EXPRESSWAY
- TWO-LANE
- 3 LANE SECTION
- 5 LANE SECTION
- MULTI-LANE
- SUPER 2-LANE

Prepared By
MoDOT TMS Query Application

19-Jul-2004



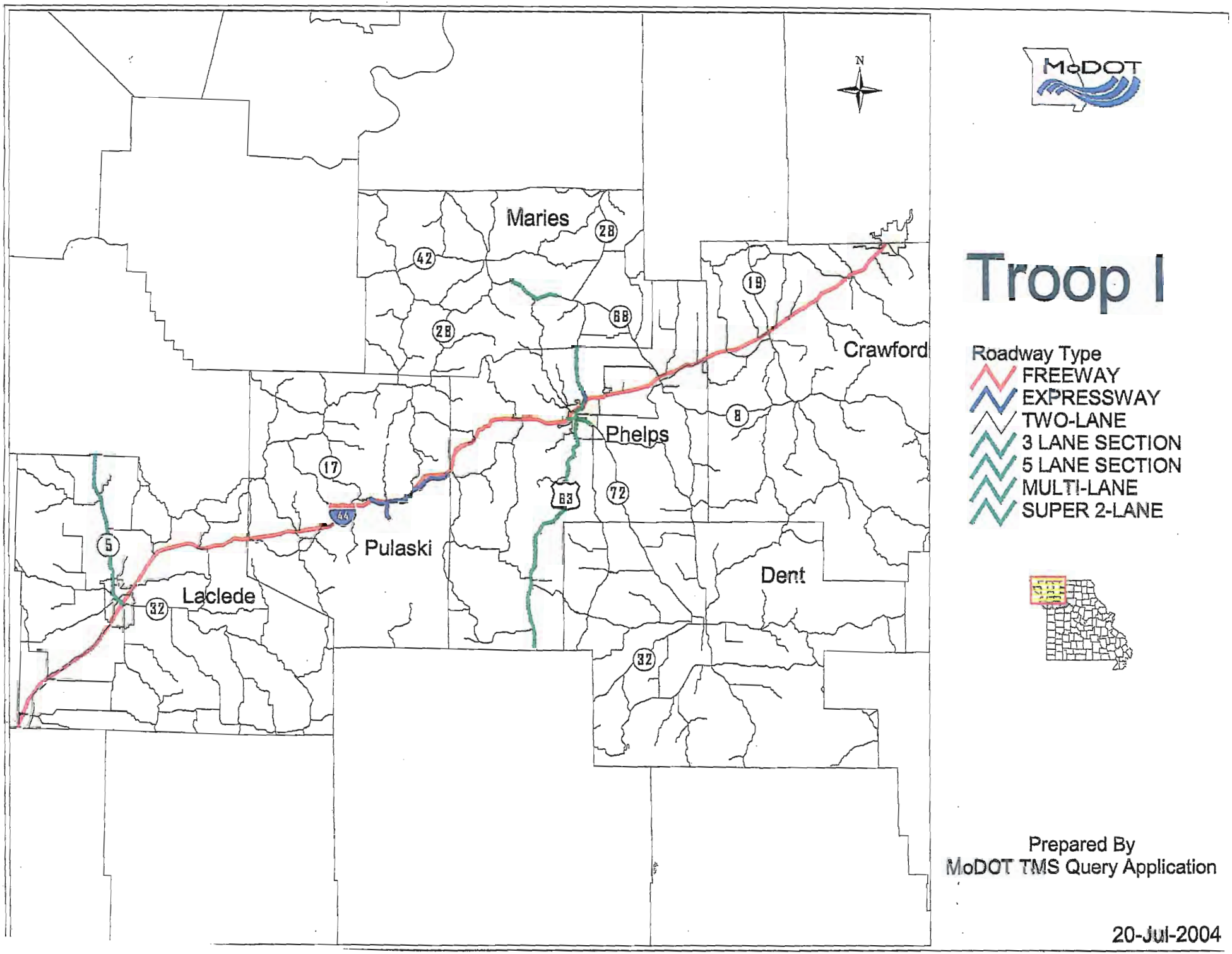
MoDOT

Troop H

Roadway Type
- FREEWAY
- EXPRESSWAY
- TWO-LANE
- 3 LANE SECTION
- 5 LANE SECTION
- MULTI-LANE
- SUPER 2-LANE

Prepared By
MoDOT TMS Query Application

20-Jul-2004



MoDOT

Troop I

Roadway Type
- FREEWAY
- EXPRESSWAY
- TWO-LANE
- 3 LANE SECTION
- 5 LANE SECTION
- MULTI-LANE
- SUPER 2-LANE

Prepared By
MoDOT TMS Query Application

20-Jul-2004

Attachment C

Observational Survey Instruments

Commercial Vehicle Safety Belt Survey

Site Summary Form

Observer(s): _____ Troop: _____

_____ County: _____

Date: _____ Time: Start _____ End _____

Troop:

O A
O B
O C
O D
O E
O F
O G
O H
O I

County:

O O 0
O O 1
O O 2
O O 3
O O 4
O O 5
O O 6
O O 7
O O 8
O O 9

Sites:

O O 0
O O 1
O O 2
O O 3
O O 4
O O 5
O O 6
O O 7
O O 8
O O 9

Road Type:

O Freeway
O Expressway
O Two-Lane
O Other: _____

Day of the Week:

O Monday
O Tuesday
O Wednesday
O Thursday
O Friday
O Saturday
O Sunday

Traffic Flow:

O North
O South
O East
O West

Road Condition:

O Dry
O Wet
O Fog
O Other: _____

Start Time:	O	O	O	O	O	O	O	O	O	O
	8:00	9:00	10:00	11:00	Noon	1:00	2:00	3:00	4:00	5:00

Observation Point (be specific): _____

_____

_____

_____

_____

_____

_____

Major Distraction: _____

_____

_____

Troop: _____ (O A, O B, O C, O D, O E, O F, O G, O H, O I)

County: _____ (O O 0, O O 1, O O 2, O O 3, O O 4, O O 5, O O 6, O O 7, O O 8, O O 9)

Site: _____ (O O 0, O O 1, O O 2, O O 3, O O 4, O O 5, O O 6, O O 7, O O 8, O O 9)

Observer(s): _____

_____

Page _____ of _____

	Vehicle Type 7–Straight Frame						Vehicle Type 8–Combination Vehicle											
	Van	Tanker	Dump	Flat Bed	Bus	Other	Box Trailer	Single Tanker	Double Trailer	Flat Trailer	Car Hauler	Bobtail	Dump	Other	Belted Yes	Belted No	Hazmat Yes	Hazmat No
1	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
2	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
3	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
4	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
5	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
6	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
7	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
8	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
9	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
10	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
11	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
12	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
13	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
14	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
15	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O

Attachment D

Surveyor Training Materials

Commercial Vehicle Safety Belt Survey
Instructions for Conducting the Survey

Thank you for serving as an observer for the 2012 Commercial Vehicle Safety Belt Survey. The following training materials will guide you through the survey process. Please read the **entire** set of instructions carefully. If you have any questions regarding the survey process, please call the Missouri Safety Center at 800-801-3588.

Survey Dates

- Monday, August 20 – Sunday, August 26
- If you have excessive rain during one of your survey times or dates, the survey should be conducted either in a different time period on the same survey day or, if available, on a different day at the scheduled time during the scheduled survey week (Oct. 17-23). If it is not possible to complete this survey during the designated week, you can utilize the week of August 27 – September 2 as backup dates. Please notify the Missouri Safety Center (800-801-3588) if you are going to need to conduct surveys during the back-up week.

Observation Periods

- Your observation periods are scheduled Monday through Sunday and will begin at one of the following times: 8:00 am, 9:00 am, 10:00 am; 11:00 am, 12:00 noon, 1:00 pm, 2:00 pm, or 3:00 pm.
- The observation period at each site will be **40 minutes**. Actual observation time periods will begin at the scheduled times (8:00 am, 9:00 am, etc.) or as close to these times as practical (+ or – 15 minutes). Counting will end at the precise end of the 40-minute time period.
- Each day's observation sites have been clustered to decrease travel time from one site to another. If travel time exceeds the 20 minute allotted time period, then begin your next survey as close to the assigned time as possible.

Observation Materials

- **Informational Packet**—contains:
  - Authorization Letter(s)
  - Instructions for Conducting the Survey
  - County Map(s) with site locations marked
  - A "Daily Schedule" list that describes assigned sites, the site location and the direction of travel you are to survey
  - Dash signs for your vehicle
  - Commercial Vehicle Identification/Classification System—For the Commercial Vehicle Seat Belt Survey
  - FedEx Pak's and return labels, for returning completed survey's to the Missouri Safety Center

- **Daily Observational Packet**--your observation packet are several daily survey observation folders. Each folder is labeled with the date of the survey, i.e. Monday, August 20th ; Tuesday, August 21st, etc. These folders provide you the information you need to complete your observations for that particular day. Remember, you may not have a folder for each day of the week. You will only receive folders for the days you have been assigned to conduct observations.

Sample "Daily Schedule"

Daily Schedule
Troop D, Team 1

Day/Date – *The day and date you are to conduct the survey*	**Time –** *The time you are to start the survey*	**Site NO -** *Site Number These sites are also plotted on the county map(s) in your folder*	**County**	**Description** *Location of the Site Since we are most concerned about your safety, you may need to move to a location close to this reference point. You may choose to use frontage roads, entrance/exit ramps, truck stops, parking lots, etc. Again, please position your vehicle with safety and visibility in mind.*	**Roadway** *The road you are to survey*
Wednesday 8-22-12	10:00 am	9	Newton	WB I-44 at Hwy 43 exit 4 – view WB I-44 traffic	Freeway Hwy I-44
Wednesday 8-22-12	12:00 pm	10	Newton	EB Hwy I-44 at Hwy 43 exit 4 – view EB I-44 traffic	Freeway Hwy I-44
Wednesday 8-22-12	01:00 pm	20	Newton	NB Hwy 71 at Hwy V – view NB 71 traffic	Expressway Hwy 71

  - Survey Forms – Use only the black markers provided to fill in the dots on these forms. Refer to the attached Sample Forms

- **Site Summary Form**
  - You will have one Site Summary Form per location.
  - The following dots are filled in by the Missouri Safety Center staff
    - Troop
    - County
    - Sites
    - Road Type
    - Day of the Week
    - Traffic Flow
    - Start Time
  - The **surveyors must fill in the following areas** on the form:
    - Observer(s)
    - Date
    - Time: Start _____ and End _____
    - Road Condition
    - Observation Point – Please write a concise description of your location. Be very specific and identify any key reference points.
    - Major distractions. – If for any reason you are not able to use the site location, i.e. road construction, serious crash, etc., note it on the form. Find another usable location as close to the original site as possible and conduct or complete the observation.

- **Vehicle/Driver Observation Form**
  - You will have multiple Vehicle/Driver Observation forms for each location.
  - We have provided additional blank forms in case you exceed the number needed per site.
  - The following dots are filled in by the Missouri Safety Center staff
    - Troop
    - County
    - Sites
  - The surveyor must fill in the following areas on the form:
    - Observer(s)
    - Page _____ of _____
    - The15 observations per page

How Do I complete the Vehicle/Driver Observation Form? (Refer to Attached Sample Form)

The form is divided into four (4) sections; Vehicle Type 7 – Straight Frame; Vehicle Type 8 - Combination Vehicle; Belted (Driver); and Hazmat. For each observation you will make a total of **THREE** dots; one dot for type of vehicle, one dot for the driver's safety belt use (yes belted / no belted) and one dot if the vehicle is displaying a hazardous materials placard (hazmat – Yes or No).

We have attached two picture reference sheets to help you identify the Type 7 and 8 vehicles. As a general rule Type 7 vehicles have 6 to 9 tires with straight frames and Type 8 vehicles have 10 or more tires with a combination frame. For each observation, you will select **ONLY ONE** vehicle from the Vehicle Type 7 and Vehicle Type 8 sections.

For each observation you will make three (3) Dots. They are:

- **DOT ONE** (Refer to Picture Reference Sheets)

Select only ONE vehicle per observation from the following list of Type 7 or 8 vehicles. **REMEMBER:** if you are unsure or do not know which category of commercial vehicle to mark – go to the next vehicle. Do not guess.

Examples of Vehicle Type 7 – Straight Frame (general rule 6-9 tires)

- Van – Delivery truck, i.e. bread, potato chip, small Federal Express trucks
- Tanker – A truck carrying a liquid, i.e. gasoline, milk, propane, etc.
- Dump – A dump truck carrying dirt, rock, etc.
- Flat Bed – A truck carrying lumber, machinery, etc.
- Bus – a commercial bus or school bus
- Other – smaller trash trucks, smaller fire truck, utility truck, etc.

Examples of Vehicle Type 8 – Combination Vehicle (general rule 10 or more tires)

All 18-Wheelers fall into one of these categories

- Box Trailer – Semi truck with one box trailer
- Single Tanker – Semi truck with tanker, i.e. gasoline, liquid nitrogen, oil
- Double Trailer – Semi truck with 2 trailers
- Flat Trailer – Semi Truck with a flat trailer
- Car Hauler – Semi Truck with a car hauler
- Bobtail – Semi Truck only – no attached trailers
- Dump – Larger dump truck carrying dirt, rock, etc.
- Other – Larger trash trucks, larger fire truck, etc.

DOT TWO

You will record the safety belt use for **ONLY the DRIVER of the vehicle.** Mark "yes" if driver is belted and "No" if driver is not belted.

DOT THREE

If the vehicle is displaying a hazardous materials placard dot "Yes". Dot "No" if there is no placard or the placard frame is empty. See the picture reference sheet for samples of the hazardous material placards.

What if I make an ERROR? (Refer to the sample Vehicle/Driver Observation From)

If you make an error, go immediately to the next line and record the observation. After the survey is completed or at a convenient time, go back to the line with the error and fill in all the dots. By filling in all the dots on the line with the error, we immediately know that this observation should be deleted.

Equipment for Observers

Before you leave to do your observation, make sure you have:

1. The correct day's survey packet.
2. The site map(s) and site location sheet.
3. Clipboard and provided black markers
4. Clips
5. The correct day's and sites Observation Forms
6. The vehicle picture reference sheet.
7. Watch or timer.
8. Dash Survey signs
9. Appropriate clothing for current or potential weather conditions

Depending on the weather conditions and survey situations, you may want to consider taking:

1. Sunglasses
2. Sunscreen
3. Bug repellant
4. Water/snacks/lunch

Basic Observation Instructions

1. Arrive at collection site ahead of schedule to allow time to locate a safe and convenient observation site. Make sure it provides good visibility for the roadway and direction of travel you are observing.
2. Complete the Site Summary Sheet. Don't forget to fill out the "Observation Point" section with a concise description of your selected site.
3. Observation period should last for 40 continuous minutes. The observation period should start on the hour + or – 15 minutes.
4. Observation Instructions for Interstate Sites
   a. Safety should be your first concern when selecting an observation site.
   b. Select an observation point as close as possible to the designated location.
   c. Suggested locations may include frontage roads and exit ramps.
5. Vehicles to be observed – refer to previous information and picture reference chart. REMEMBER: if you are unsure or do not know which type of commercial vehicle to mark – go to the next vehicle. Do not guess.
6. Belt use will be recorded for only the driver of the vehicle.
7. When the observations are completed, clip each site together carefully and place all the observation for that day back in the appropriate folder.
8. When **all** surveys are completed, place all the daily folders in the provided Federal Express envelope(s) and mail. These envelopes have been pre-addressed to the Missouri Safety Center for your convenience.

Questions or notification of an emergency situation should be directed to the Missouri Safety Center at 800-801-3588.