APPENDIX C

SUMMARIES OF ACTIVITY DATA AND EMISSIONS MODELING INPUTS PREPARED FOR ON-ROAD EMISISON INVENTORIES:

VEHICLE-MILES OF TRAVEL,
FLEET DISTRIBUTIONS,
FUELS CHARACTERISTICS,
AND
REGULATORY CONTROLS

Pages C-3 through C-14 (12 pages) illustrate vehicle-miles of travel (VMT) compiled for each CENRAP state. One- to two-page data summary sheets were prepared for each state. Each data summary sheet includes the following elements of information. (The page position of each element is indicated relative to landscape orientation.)

Element of Information (Page Position)

- Sources of information—i.e., specific state agencies or “default”, which indicates EPA guidance defaults (page header)
- CENRAP overview map identifying location of the state of interest (upper left)
- State overview map with interstate freeways (upper center)
- County-specific total annual VMT for 2002 (upper right)
- Distribution of total annual VMT by road type (lower left)
- Distribution of total annual VMT by vehicle type (lower center)
- Average speed by road type (most states: center right; Texas and Louisiana: lower right)
- Weekday diurnal pattern of VMT (most states: lower right; Texas, Louisiana, and St. Louis, Missouri, area: second page of data summary sheet for each state)

Box whisker plots were prepared as follows. The box centerline indicates the median, and the box extents represent the 25th and 75th percentiles with "outliers" plotted above the whiskers.

The whiskers have a maximum length equal to 1.5 times the length of the box (interquartile range). If there are data outside this range, the points are shown on the plot and the whisker ends on the highest or lowest data point within the range of the whisker. The outliers are further identified with asterisks representing the points that fall within 3 times the interquartile range from the end of the box and with squares representing points beyond this range.

Pages C-15 through C-18 (4 pages) illustrate the inputs that were compiled for MOBILE6 and NONROAD 2004 to describe fuel characteristics (such as sulfur content) for areas throughout the CENRAP.

Pages C-19 through C-21 (3 pages) illustrate the inputs that were compiled for MOBILE6 to describe regulatory programs (such as inspection and maintenance, or I/M) for areas throughout the CENRAP.

Pages C-22 through C-24 (3 pages) illustrate the inputs that were compiled for MOBILE6 to describe the IM 240 program of St. Louis, Missouri.

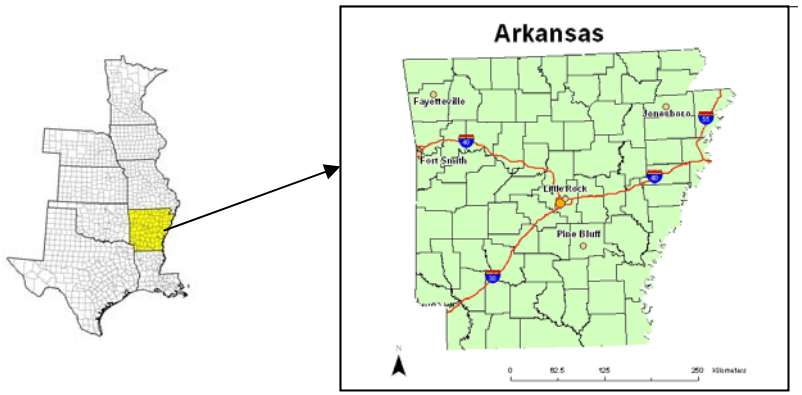
Pages C-25 through C-32 (8 pages) illustrate the MOBILE6 default age distribution of the vehicle fleet (for comparison purposes) and the weighted-average age distribution of the vehicle fleets for each of the CENRAP states. The weighted averages were calculated as the averages of county-level age distributions, weighted by the number of vehicles in each county. Thus, counties with more registered vehicles were weighted proportionally more heavily.

Pages C-33 through C-35 (3 pages) illustrate the fractions of the light-duty vehicle and light-duty truck fleets that are diesel-powered.

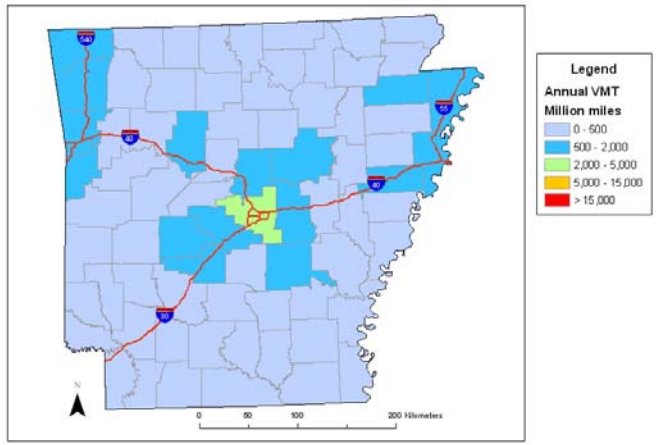
Data Summary Sheet: Arkansas

Data Source: [1] Arkansas Dept. of Transportation & Highways

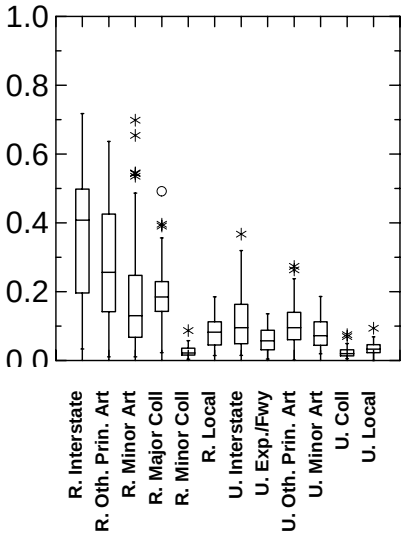
[2] Default Data



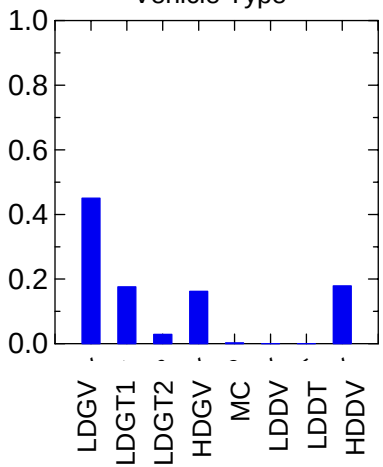
2002 Countywide VMT [1]



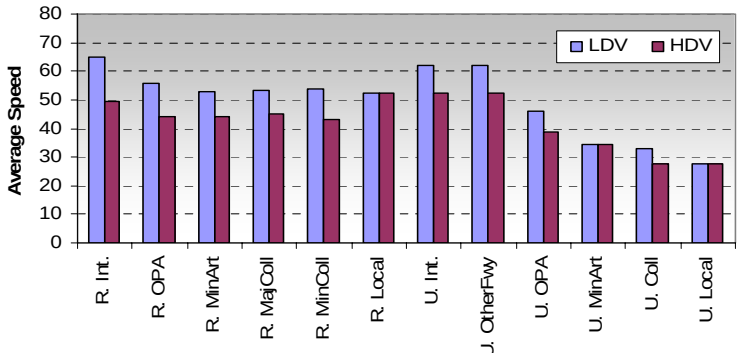
VMT Distribution by Road Type [1]



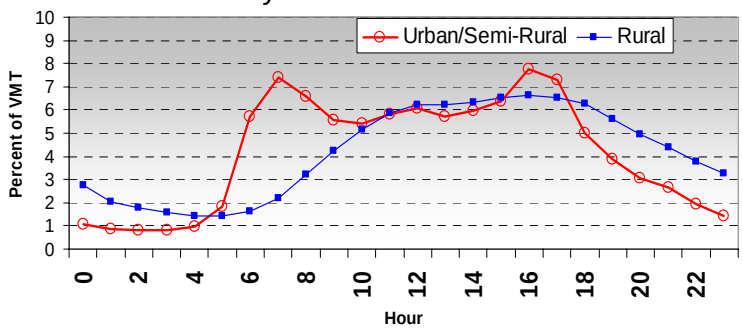
VMT Distribution by Vehicle Type [1]



Average Speed by Road Type [2]



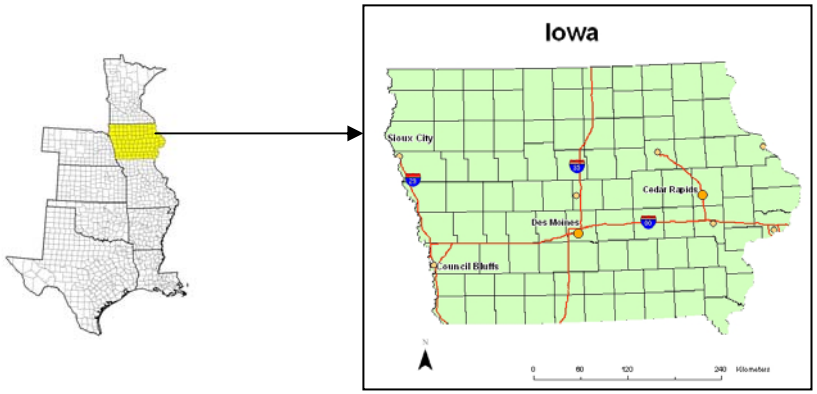
Weekday VMT Diurnal Distribution [2]



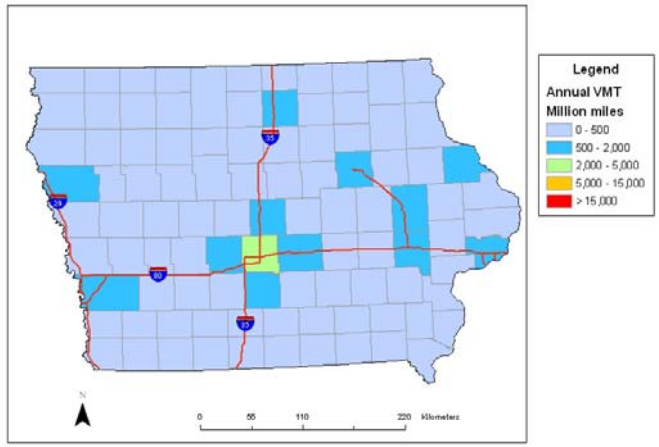
Data Summary Sheet: Iowa

Data Source: [1] Iowa Dept. of Transportation

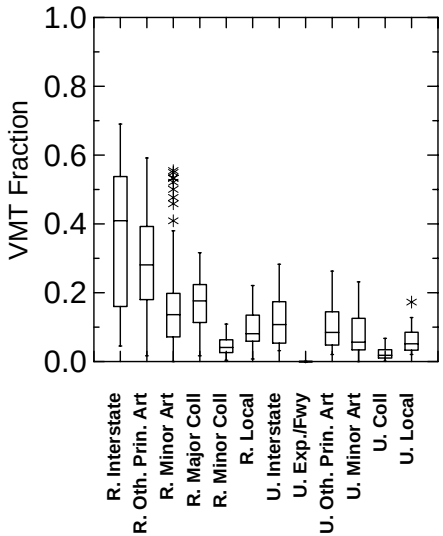
[2] Default Data



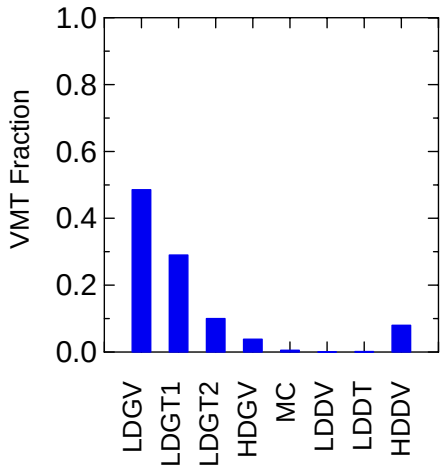
2002 Countywide VMT [1]



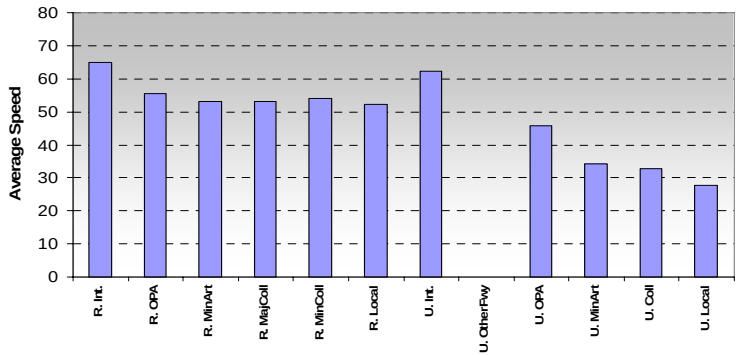
VMT Distribution by Road Type [1]



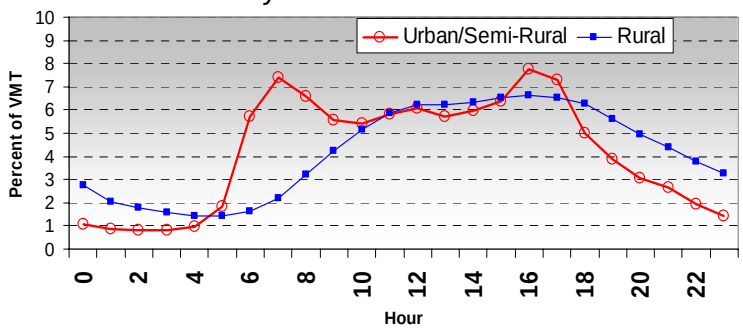
VMT Distribution by Vehicle Type [2]



Average Speed by Road Type [1]



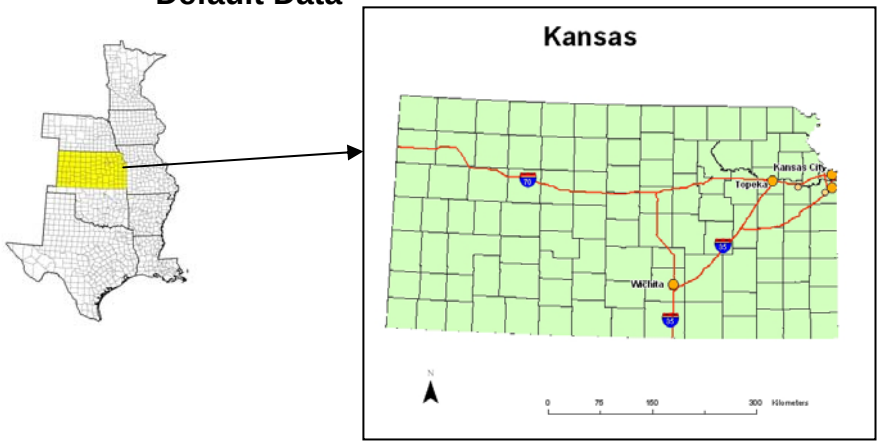
Weekday VMT Diurnal Distribution [2]



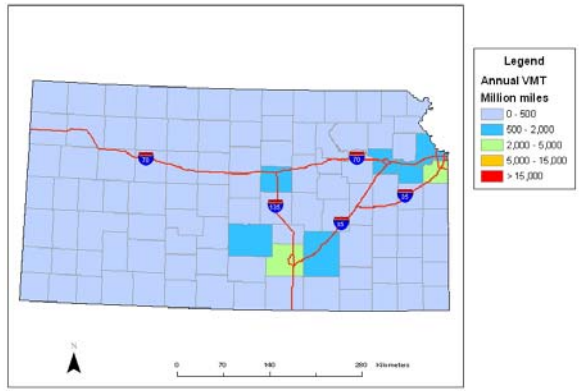
Data Summary Sheet: Kansas

Data Source: [1] **Kansas Highway Dept.**

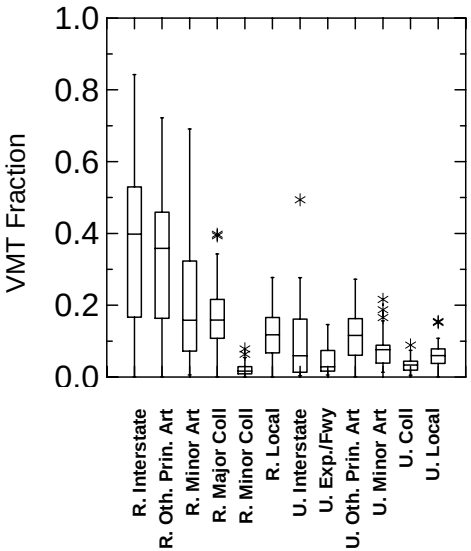
[2] **Default Data**



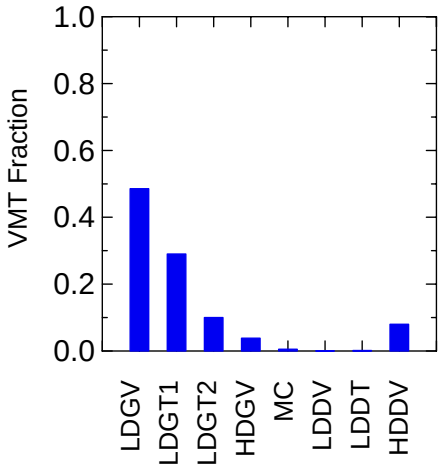
2002 Countywide VMT [1]



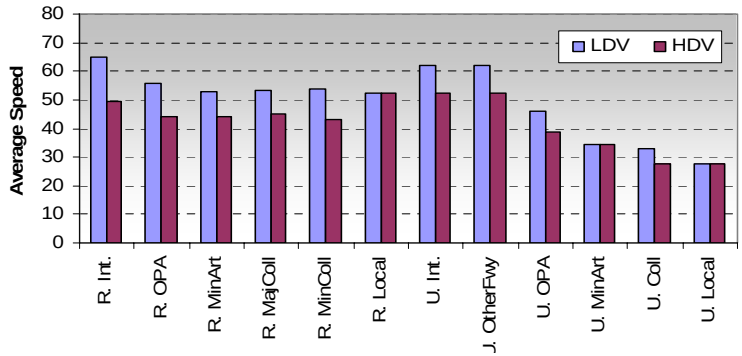
VMT Distribution by Road Type [1]



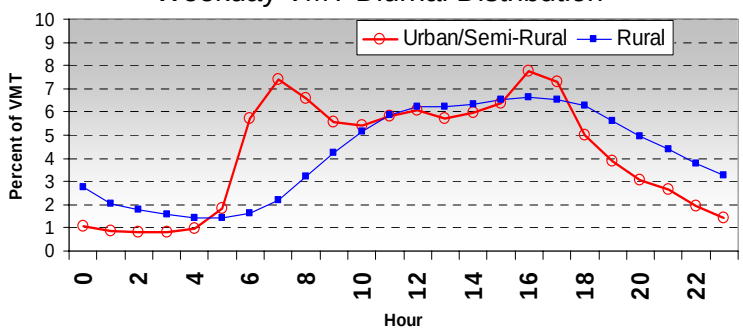
VMT Distribution by Vehicle Type [2]



Average Speed by Road Type [2]



Weekday VMT Diurnal Distribution [2]

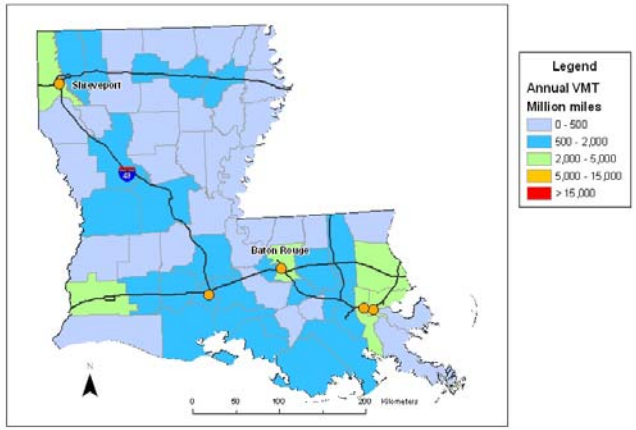


Data Summary Sheet: Louisiana

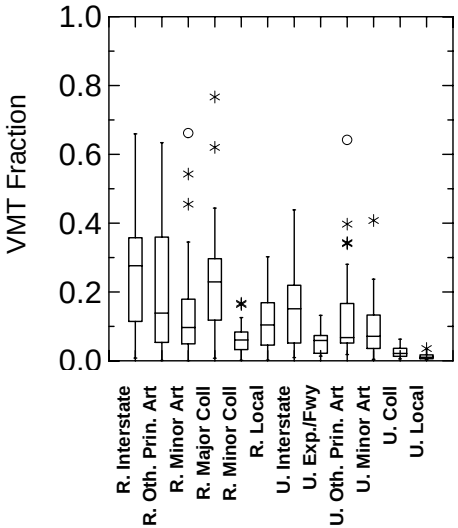
Data Source: [1] Louisiana Dept. of Environmental Quality

[2] Default Data

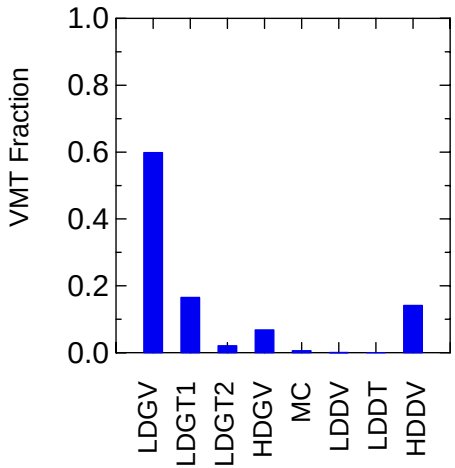
2002 Countywide VMT [1]



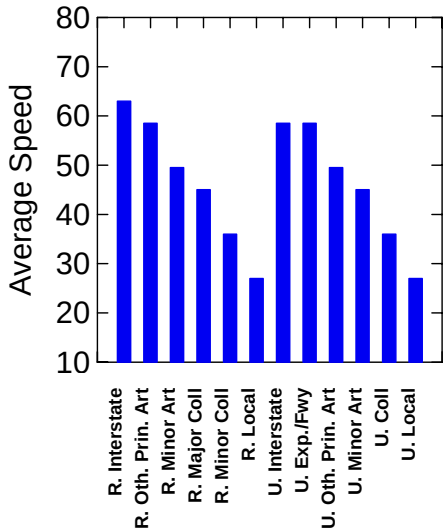
VMT Distribution by Road Type [1]



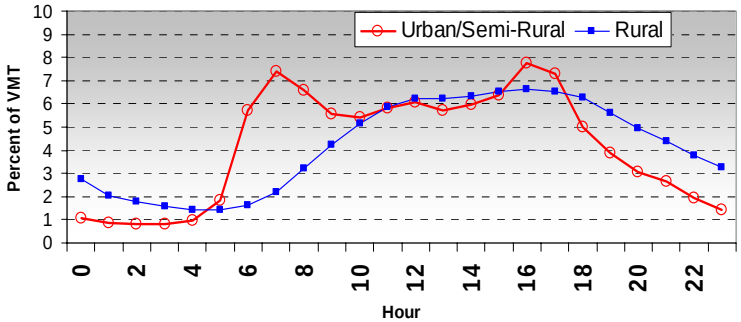
VMT Distribution by Vehicle Type [1]



Average Speed by Road Type [1]



Weekday VMT Diurnal Distribution [2]

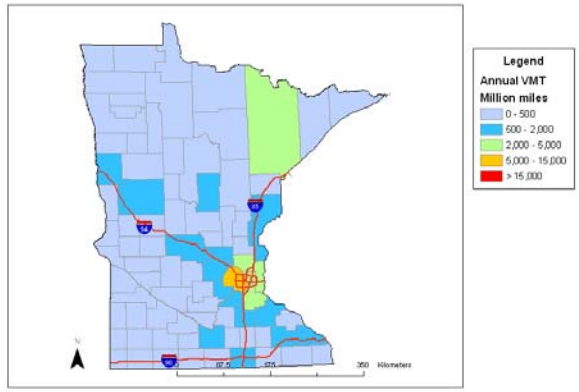


Data Summary Sheet: Minnesota

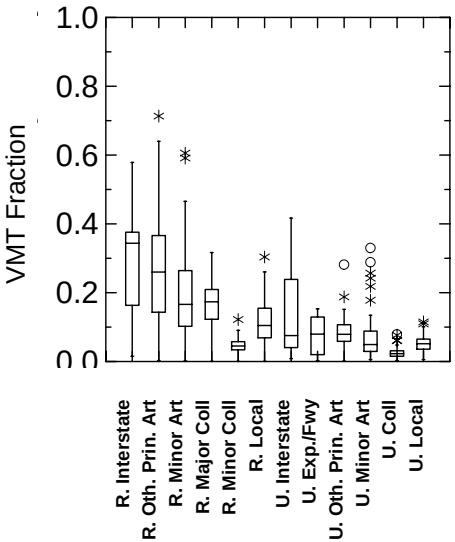
Data Source: [1] Minnesota Dept. of Transportation

[2] Default Data

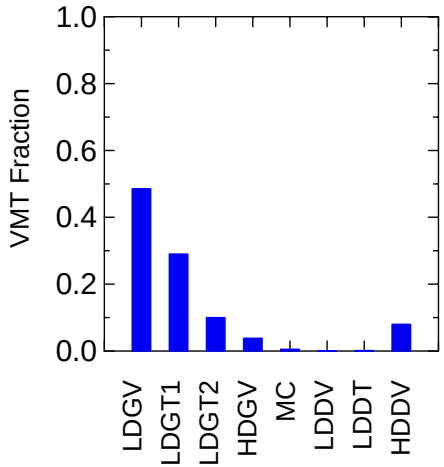
2002 Countywide VMT [1]



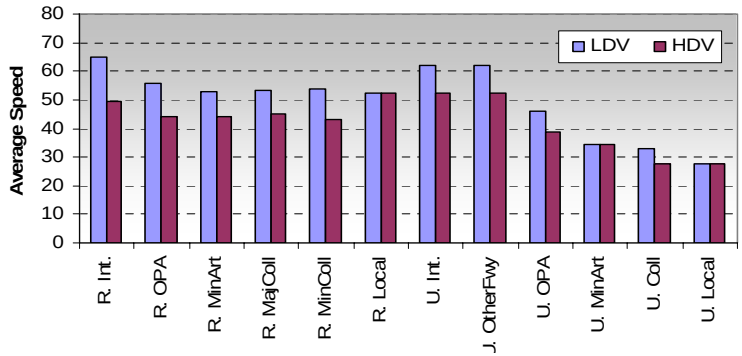
VMT Distribution by Road Type [1]



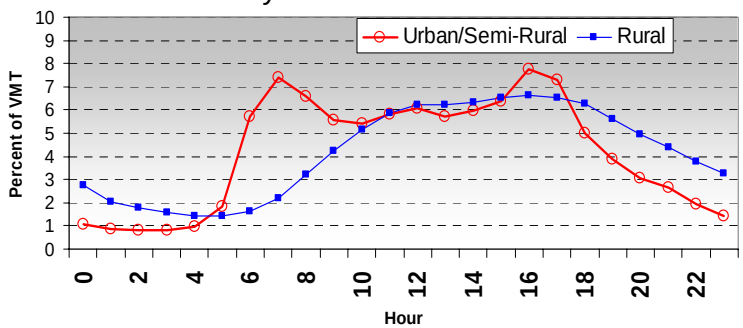
VMT Distribution by Vehicle Type [2]



Average Speed by Road Type [2]



Weekday VMT Diurnal Distribution [2]



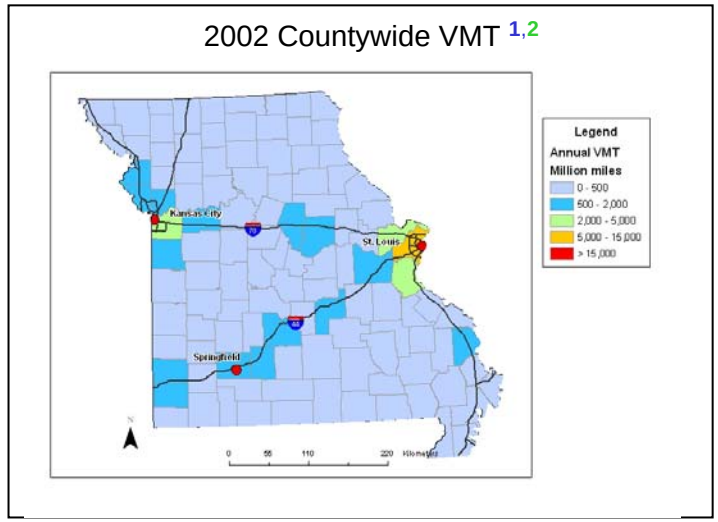
Data Summary Sheet: Missouri

Data Source: [1] Missouri Dept. of Transportation &

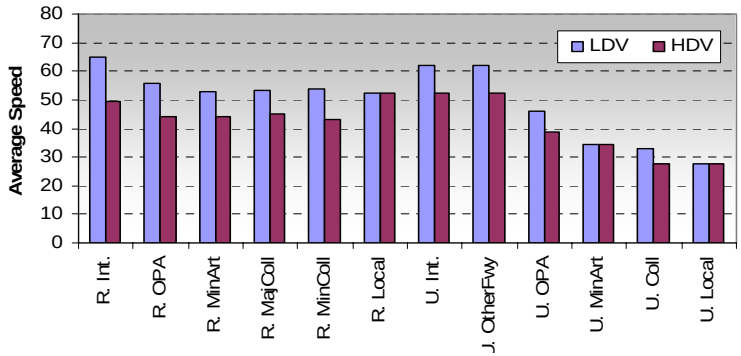
[2] East-West Gateway Coordinating Council

[3] Default Data

2002 Countywide VMT [1,2]

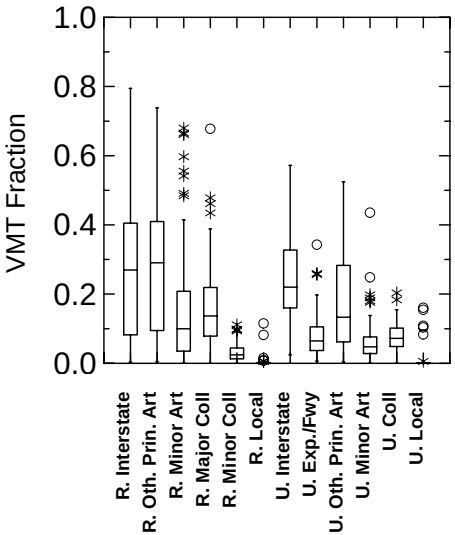


Average Speed by Road Type [3]



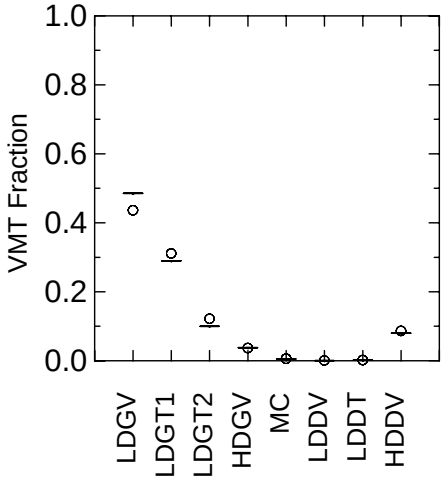
VMT Distribution by Road Type

MoDOT [1] & EWGCC Data [2]

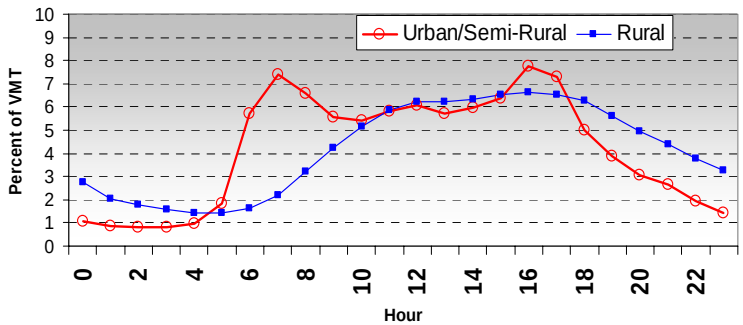


VMT Distribution by Vehicle Type

EWGCC Data [2] & Default Data [3]

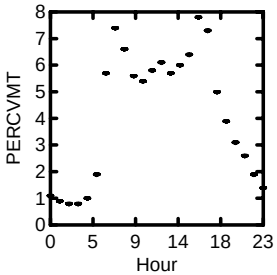


Weekday VMT Diurnal Distribution Outside of St. Louis Area [3]

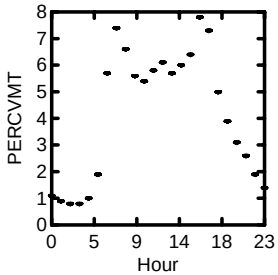


Average of hourly VMT distributions by road type, St. Louis Area**

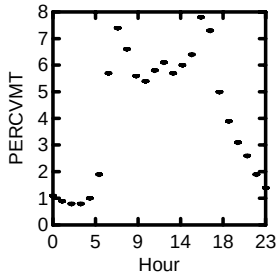
R. Intst



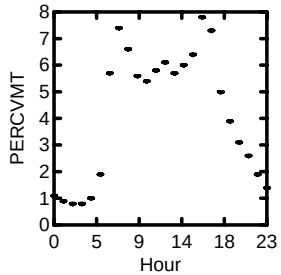
R. OPrArt



R. MinArt



R. MajCol



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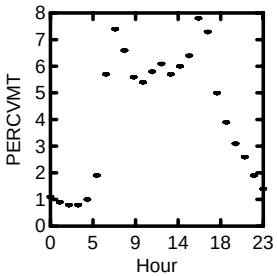
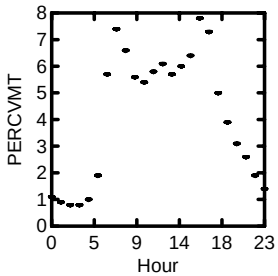
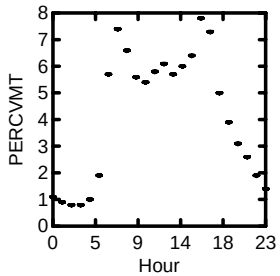


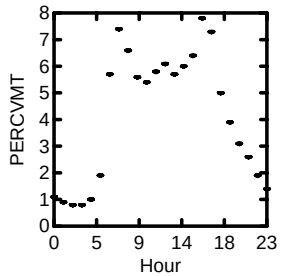
R. Local



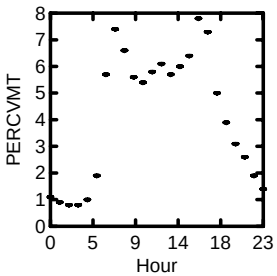
U. Intst



U. ExpFwy



U. OPrArt



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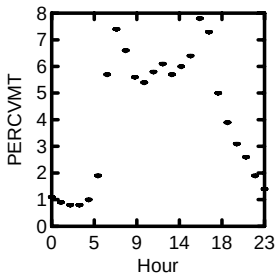
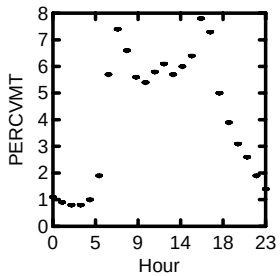
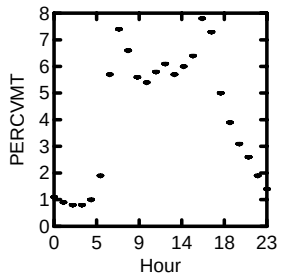


U. Coll



U. Local



Note that box-whisker plots appear as points because only a small number of counties with negligible variability are plotted.

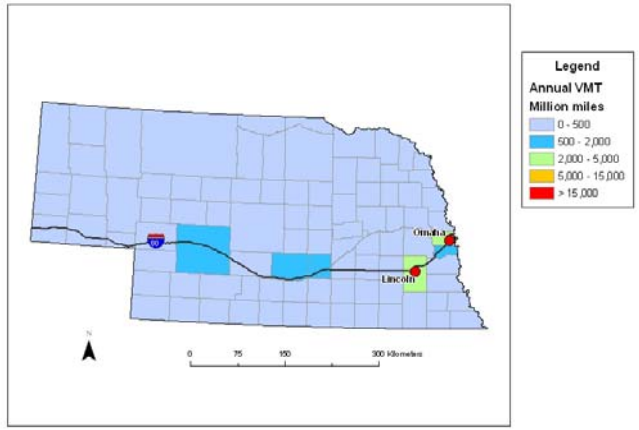
Data Summary Sheet: Nebraska

Data Source: [1] Nebraska Dept. of Transportation &

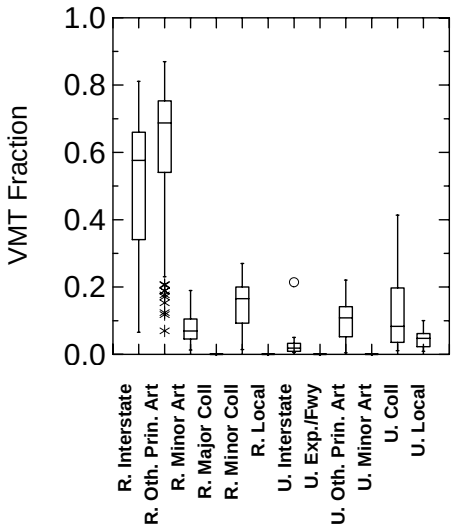
[2] Lincoln-Lancaster MPO

[3] Default Data

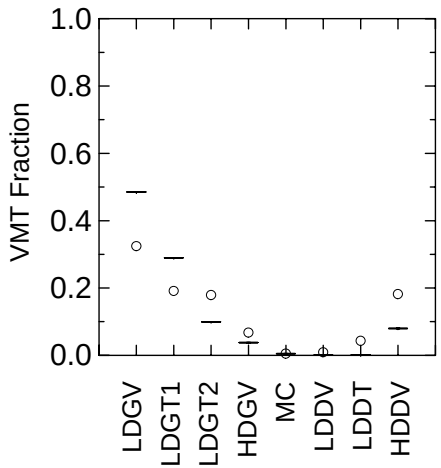
2002 Countywide VMT [1]



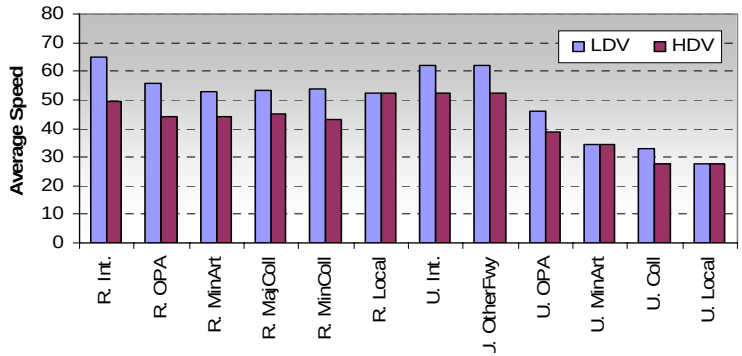
VMT Distribution by Road Type
NeDOT [1] & LLMPO Data [2]



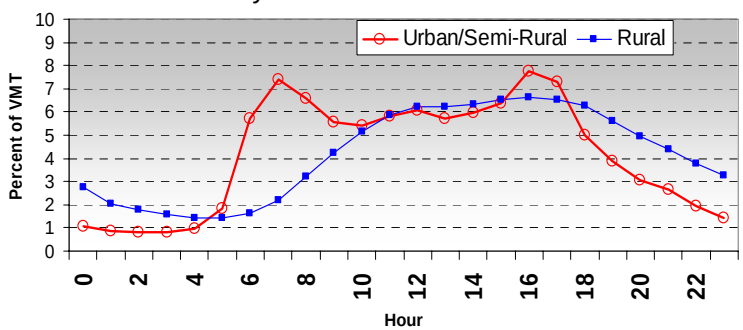
VMT Distribution by Vehicle Type
LLMPO Data [2] & Default Data [3]



Average Speed by Road Type [3]



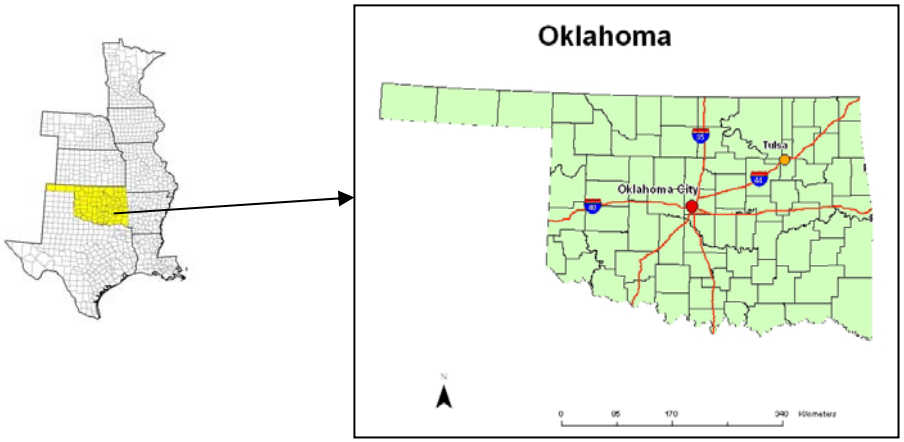
Weekday VMT Diurnal Distribution [3]

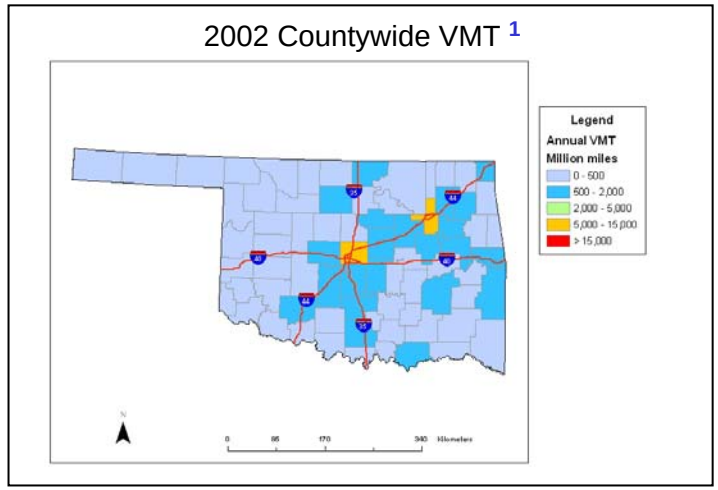


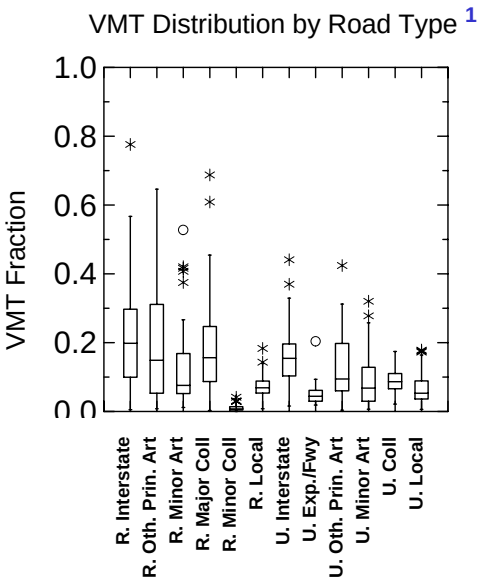
Data Summary Sheet: Oklahoma

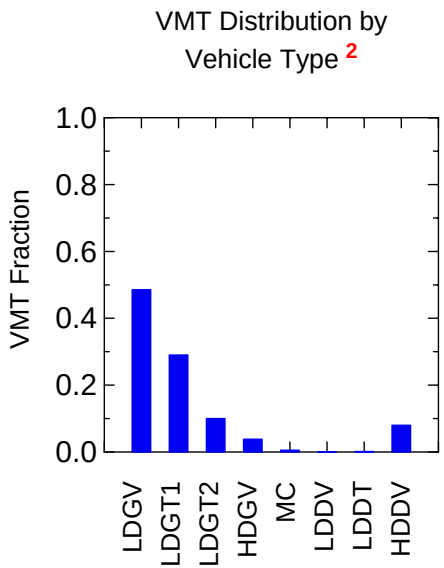
Data Source: [1] **Oklahoma State Highway Dept.**

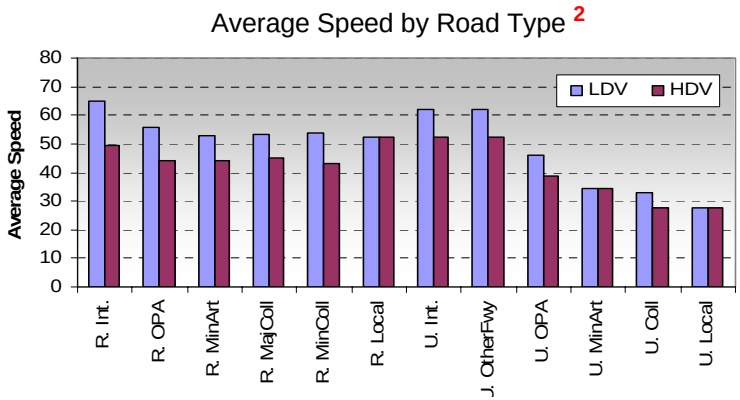
[2] **Default Data**

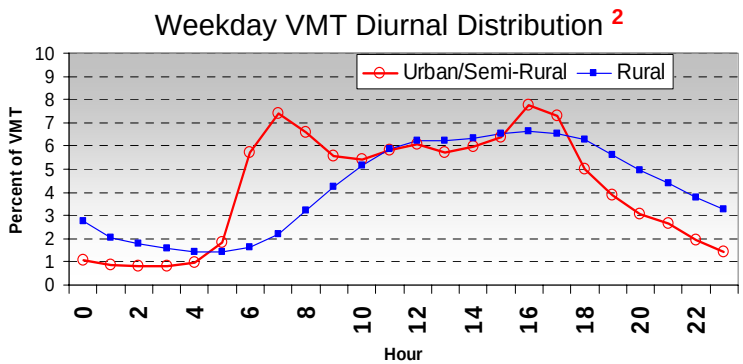






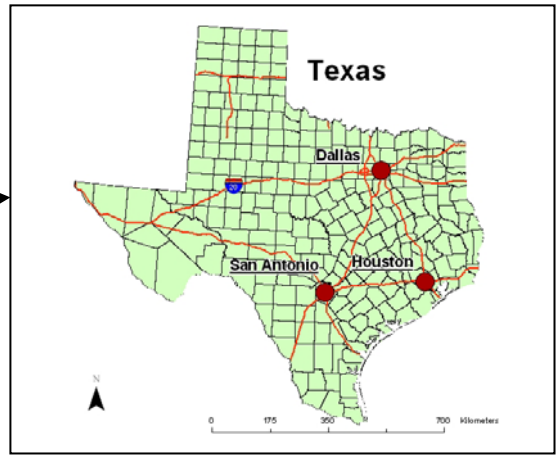


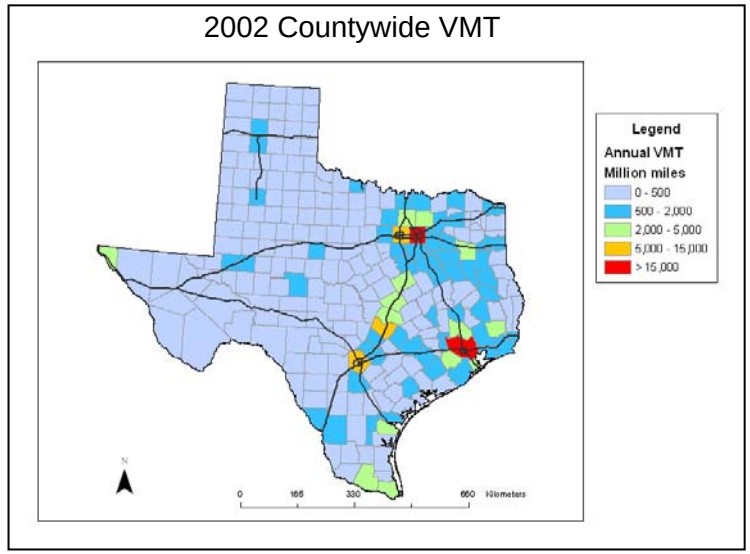


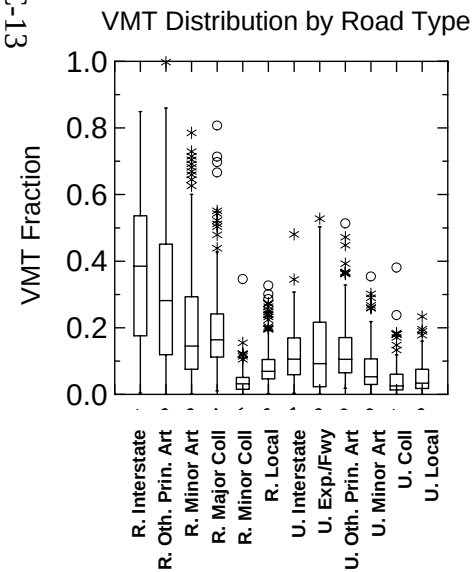


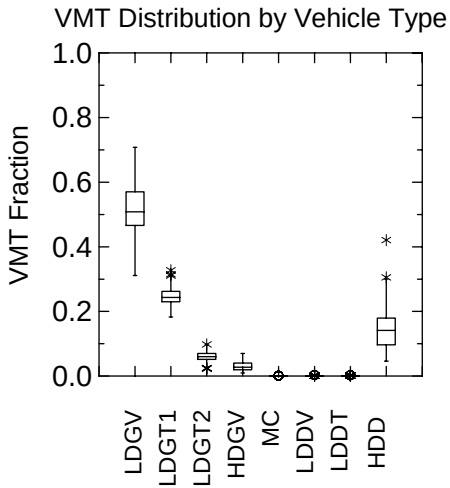
Data Summary Sheet: Texas

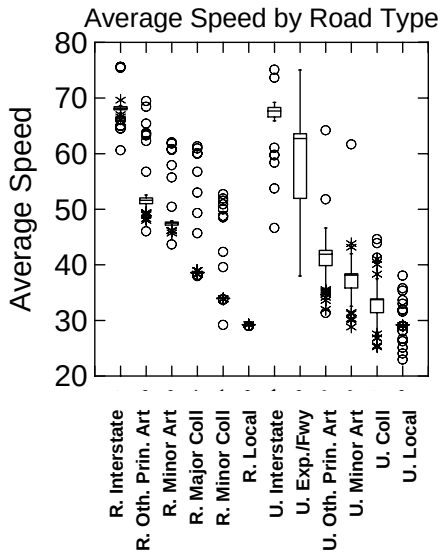
Data Source: Texas Transportation Institute & TCEQ.

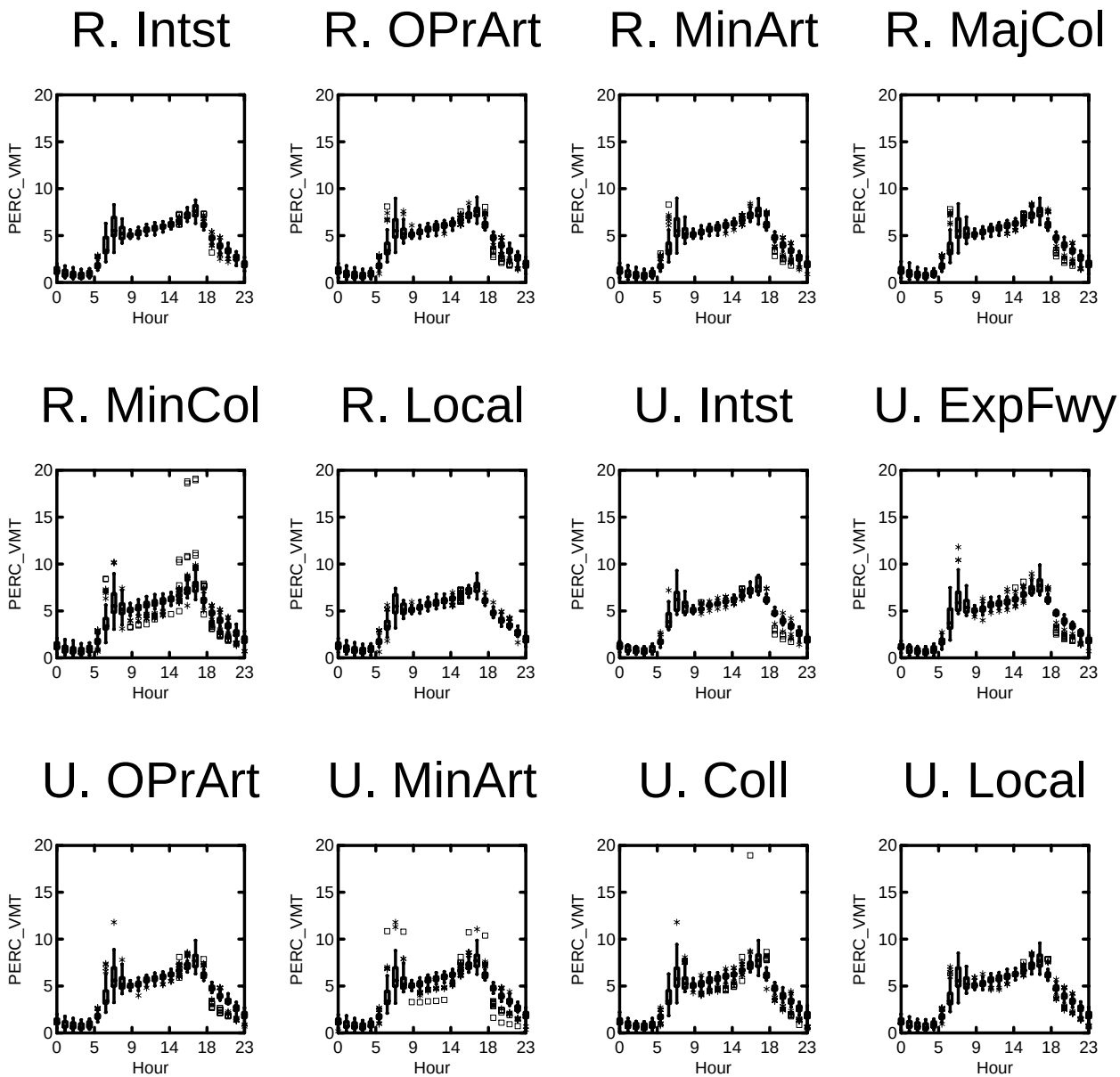












Average of hourly VMT distributions by road type.

(range limited to 20%, 1 outlier was excluded)

Summary of MOBILE6 Inputs for Fuels Characteristics

State	County	FUEL PROGRAM command[a]							
AR	All counties	FUEL PROGRAM : 1							
IA	All counties	FUEL PROGRAM : 1							
KS	All counties	FUEL PROGRAM : 1							
LA	All counties	FUEL PROGRAM : 1							
MN	All counties	FUEL PROGRAM : 4							
		300.0	299.0	100.0	100.0	100.0	92.0	33.0	33.0
		30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0
		1000.0	1000.0	1000.0	1000.0	303.0	303.0	87.0	87.0
		80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
MO	St. Louis area[b,c]	FUEL PROGRAM : 2 S							
NE	Western counties[d]	FUEL PROGRAM : 3							
	All other counties	FUEL PROGRAM : 1							
OK	All counties	FUEL PROGRAM : 1							
TX	Dallas/Fort Worth counties[c,e]	FUEL PROGRAM : 2 S							
	Houston/Galveston counties[c,f]	FUEL PROGRAM : 2 S							
	All other counties	FUEL PROGRAM : 1							

[a] If not specified, MOBILE6 assumes FUEL PROGRAM : 1, which corresponds to "Conventional Gasoline East": i.e., an average 2002 fuel sulfur content of 279 ppm and a maximum 2002 fuel sulfur content of 1000 ppm. For areas using Federal Reformulated Gasoline (RFG), the designation "S" or "N" is based upon the classification of regions in 40 CFR 80.71.

[b] Includes Franklin, Jefferson, St. Charles, and St. Louis Counties, and St. Louis City.

[c] All FUEL PROGRAM : 2 S areas should also use the SEASON command. SEASON : 1 applies May 1 through September 15; SEASON : 2 applies for the rest of the calendar year.

[d] Includes the following counties: Banner, Box Butte, Cheyenne, Dawes, Deuel, Garden, Keith, Kimball, Morrill, Scotts Bluff, Sheridan, and Sioux (40 CFR 80.215(a)(2)(i). Although this is the program recommended by EPA for these counties, use of this fuel program command in 2002 is optional, since the 2002 sulfur contents for FUEL PROGRAM : 3 are the same as those for FUEL PROGRAM : 1.

[e] Includes the following counties: Collin, Dallas, Denton, Tarrant.

[f] Includes the following counties: Brazoria, Chambers, Fort Bend, Galveston, Harris, Liberty, Montgomery, Waller.

Summary of MOBILE6 Inputs for Sulfur Contents of Diesel Fuels

State	DIESEL SULFUR command[a]
AR	DIESEL SULFUR : 360.0
IA	DIESEL SULFUR : 360.0
KS	DIESEL SULFUR : 330.0
LA	DIESEL SULFUR : 380.0
MN	DIESEL SULFUR : 360.0
MO	DIESEL SULFUR : 390.0
NE	DIESEL SULFUR : 360.0
OK	DIESEL SULFUR : 360.0
TX	DIESEL SULFUR : 364.0

[a] Value is sulfur content in units of parts per million by weight (ppmw); regulatory limit is 500 ppmw in 2002.

Summary of MOBILE6 Inputs for Oxygenated Fuels Specifications

State	Area	Period	Command	Ethers market share (fraction)	Alcohols market share (fraction)	Avg. wt. frac. Oxygen in Ether Blends	Avg. wt. frac. Oxygen in Alcohol Blends	RVP Waiver for Alcohol Blends
AR	All areas	All Months	OXYGENATED FUELS :	0.500	0.000	0.006	0.000	2
IA	All areas	All Months	OXYGENATED FUELS :	0.000	0.555	0.000	0.035	2
KS	All areas	All Months	OXYGENATED FUELS :	0.000	0.040	0.000	0.035	2
LA	All areas	All Months	OXYGENATED FUELS :	0.300	0.000	0.009	0.000	2
MN	All areas	All Months	OXYGENATED FUELS :	0.000	0.977	0.000	0.034	2
MO	St. Louis area[a]	All Months	(N/A)[b]					
	All other areas	All Months	OXYGENATED FUELS :	0.000	0.095	0.000	0.033	2
NE	All areas	All Months	OXYGENATED FUELS :	0.000	0.420	0.000	0.035	2
OK	All areas	All Months	OXYGENATED FUELS :	0.000	0.000	0.000	0.000	2
TX	Dallas/Fort Worth area[c]	All Months	(N/A)[b]					
	Houston/Galveston area[d]	All Months	(N/A)[b]					
		All Months	(N/A)[b]					
	El Paso County	Oct to Mar	OXYGENATED FUELS :	0.000	1.000	0.000	0.027	2
		Apr to Sep	OXYGENATED FUELS :	0.000	0.000	0.000	0.000	2
	All other areas	All Months	OXYGENATED FUELS :	0.000	0.000	0.000	0.000	2

[a] Includes Franklin, Jefferson, St. Charles, and St. Louis Counties, and St. Louis City.
[b] The OXYGENATED FUELS command is not specified for these areas (overridden by FUEL PROGRAM : 2 S command).
[c] Includes the following counties: Collin, Dallas, Denton, Tarrant.
[d] Includes the following counties: Brazoria, Chambers, Fort Bend, Galveston, Harris, Liberty, Montgomery, Waller.

Summary of MOBILE6 Inputs for Fuel Volatilities

State	Area	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep 1-15	Sep 16-30	Oct	Nov	Dec
AR	All areas	13.0	13.0	12.0	10.0	9.0	9.0	9.0	9.0	9.0	9.0	9.5	11.0	12.0
IA	All areas	13.2	12.8	11.8	10.3	9.0	8.7	8.3	8.4	8.4	8.3	9.4	11.2	12.0
KS	Kansas City area[a]	13.2	12.4	11.3	10.3	7.3	7.0	7.0	7.0	7.0	8.4	9.4	11.2	12.0
	All other areas	13.2	12.8	11.8	10.4	9.1	8.9	8.2	8.5	8.4	8.4	9.1	11.0	11.5
LA	Baton Rouge area[b]	13.0	13.0	12.0	10.0	9.0	7.8	7.8	7.8	7.8	9.0	9.5	11.0	12.0
	Beauregard, Calcasieu, Grant, Lafayette, Lafourche, Pointe Coupee, St. James, and St. Mary Parishes	13.0	13.0	12.0	10.0	9.0	7.8	7.8	7.8	7.8	9.0	9.5	11.0	12.0
	New Orleans area[c]	13.0	13.0	12.0	10.0	9.0	7.8	7.8	7.8	7.8	9.0	9.5	11.0	12.0
	All other areas	13.0	13.0	12.0	10.0	9.0	9.0	9.0	9.0	9.0	9.0	9.5	11.0	12.0
MN	All areas	13.4	13.6	12.8	10.4	9.2	8.8	8.7	8.6	8.5	8.5	9.6	10.1	12.4
MO	Kansas City[a]	13.1	12.4	11.3	10.3	7.3	7.0	7.0	7.0	7.0	8.4	9.4	11.2	12.0
	St. Louis[d,e]	13.1	12.8	11.0	7.4	6.0	6.7	6.7	6.7	6.7	6.8	9.1	10.3	12.6
	All other areas	13.2	12.8	11.8	10.1	8.8	8.5	8.4	8.4	8.4	8.2	9.7	11.5	12.4
NE	All areas	13.2	12.8	11.8	10.3	9.0	8.7	8.3	8.4	8.4	8.3	9.4	11.2	12.0
OK	Tulsa area[f]	13.0	13.0	12.0	10.0	9.0	7.8	7.8	7.8	7.8	9.0	9.5	11.0	12.0
	All other areas	13.0	13.0	12.0	10.0	9.0	9.0	9.0	9.0	9.0	9.0	9.5	11.0	12.0
TX	Beaumont/Port Arthur area[g]	13.0	13.0	12.0	10.0	9.0	7.5	7.5	7.5	7.5	9.0	9.5	11.0	12.0
	Dallas/Fort Worth area[e,h]	13.1	12.8	11.0	7.4	6.0	6.7	6.7	6.7	6.7	6.8	9.1	10.3	12.6
	Houston/Galveston area[e,i]	13.1	12.8	11.0	7.4	6.0	6.7	6.7	6.7	6.7	6.8	9.1	10.3	12.6
	Other East Texas counties[j]	13.0	13.0	12.0	10.0	7.8	7.5	7.5	7.5	7.5	9.0	9.5	11.0	12.0
	El Paso County	12.3	13.0	12.0	10.0	9.0	6.8	6.8	6.8	6.8	9.0	9.5	11.0	12.0
	All other areas	13.0	13.0	12.0	10.0	9.0	9.0	9.0	9.0	9.0	9.0	9.5	11.0	12.0

[a] Includes the following counties: Johnson (KS), Wyandotte (KS), Clay (MO), Jackson (MO), Platte (MO).
[b] Includes the following parishes: Ascension, East Baton Rouge, Iberville, Livingston, West Baton Rouge.
[c] Includes the following parishes: Jefferson, Orleans, St. Bernard, St. Charles.
[d] Includes Franklin, Jefferson, St. Charles, and St. Louis counties, and St. Louis City.
[e] Although the FUEL RVP command must be used, input data will be overridden by the FUEL PROGRAM : 2 S command during May 1 through September 15.
[f] Includes the following counties: Creek, Osage, Rogers, Tulsa, Wagoner.
[g] Includes the following counties: Jefferson, Hardin, Orange.
[h] Includes the following counties: Collin, Dallas, Denton, Tarrant.
[I] Includes the following counties: Brazoria, Chambers, Fort Bend, Galveston, Harris, Liberty, Montgomery, Waller.
[j] Includes the following counties: Anderson, Angelina, Aransas, Atascosa, Austin, Bastrop, Bee, Bell, Bexar, Bosque, Bowie, Brazos, Burleson, Caldwell, Calhoun, Camp, Cass, Cherokee, Colorado, Comal, Cooke, Coryell, De Witt, Delta, Ellis, Falls, Fannin, Fayeete, Franklin, Freestone, Goliad, Gonzales, Grayson, Gregg, Grimes, Guadalupe, Harrison, Hays, Henderson, Hill, Hood, Hopkins, Houston, Hunt, Jackson, Jasper, Johnson, Karnes, Kaufman, Lamar, Lavaca, Lee, Leon, Limestone, Live Oak, Madison, Marion, Matagorda, McLennan, Milam, Morris, Nacogdoches, Navarro, Newton, Nueces, Panola, Parker, Polk, Rains, Red River, Refugio, Robertson, Rockwall, Rusk, Sabine, San Jacinto, San Patricio, San Augustine, Shelby, Smith, Somervell, Titus, Travis, Trinity, Tyler, Upshur, VanZandt, Victoria, Walker, Washington, Wharton, Williamson, Wilson, Wise, Wood.

Summary of MOBILE6 Inputs for Anti-tampering Programs

State	County		Start Year	Earliest MY	Final MY	Vehicles types covered (1 = exempt, 2 = covered)														Inspection Frequency (11 = annual, 12 = biennial)	Program Compliance Rate (%)	Inspections (1 = no, 2 = yes)							
						LDGV	LDGT1	LDGT2	LDGT3	LDGT4	HDGV2B	HDGV3	HDGV4	HDGV5	HDGV6	HDGV7	HDGV8A	HDGVB	GAS BUS			Air pump	Catalyst	Inlet	Lead deposit	EGR system	Evap system	PCV system	Gas cap
Louisiana	All		00	80	50	2	2	2	2	2	2	1	1	1	1	1	1	1	1	11	072.	2	2	2	2	2	2	2	2
Texas	Harris	Program A	84	78	83	2	2	2	2	2	2	2	2	2	2	2	2	2	2	11	096.	2	1	1	1	2	2	2	2
		Program B	84	84	00	2	2	2	2	2	2	2	2	2	2	2	2	2	2	11	096.	2	2	1	1	2	2	2	2
		As modeled	84	78	00	2	2	2	2	2	2	2	2	2	2	2	2	2	2	11	096.	2	2	1	1	2	2	2	2
Texas	El Paso	Program A	86	81	83	2	2	2	2	2	2	2	2	2	2	2	2	2	2	11	096.	2	1	1	1	2	2	2	2
		Program B	86	84	00	2	2	2	2	2	2	2	2	2	2	2	2	2	2	11	096.	2	2	1	1	2	2	2	2
		As modeled	86	81	00	2	2	2	2	2	2	2	2	2	2	2	2	2	2	11	096.	2	2	1	1	2	2	2	2
Texas	Dallas, Tarrant	Program A	86	76	83	2	2	2	2	2	2	2	2	2	2	2	2	2	2	11	096.	2	1	1	1	2	2	2	2
		Program B	86	84	00	2	2	2	2	2	2	2	2	2	2	2	2	2	2	11	096.	2	2	1	1	2	2	2	2
		As modeled	86	76	00	2	2	2	2	2	2	2	2	2	2	2	2	2	2	11	096.	2	2	1	1	2	2	2	2

Summary of MOBILE6 Inputs for Inspection and Maintenance Programs

							Vehicle Model Years, Types, and Ages Covered																			Compliance Rate	Waiver Rate		Exhaust I/M Parameters				
							Model Years (MY)		Vehicles types covered (1 = exempt, 2 = covered)																						TR Effectiveness		
State	Counties	Start Year	End Year	Inspection Frequency (1 = annual, 2 = biennial)	Inspection Facility Type[a]	Inspection Test Type[b]	Earliest	Final	LDGV	LDGT1	LDGT2	LDGT3	LDGT4		HDGV2B	HDGV3	HDGV4	HDGV5	HDGV6	HDGV7	HDGV8A	HDGV8B		GAS BUS	EXEMPTION AGE	GRACE PERIOD		MY 1980 and older	MY 1981 and newer	Stringency (Failure Rate for MY 1980 and older)	Tech. Training?	HC	CO	NOx
Louisiana	Ascension, East Baton Rouge, Iberville, Livingston, West Baton Rouge	2000	(current)	1	TRC	GC	1980	(current)	2	2	2	2	2		2	1	1	1	1	1	1	1		1	(N/A)	1	96.0%	0%	0%	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
Missouri	Jefferson, St. Charles, St. Louis, St. Louis City	1990	(current)	2	T/O	IDLE	1971	1980	2	2	2	2	2		1	1	1	1	1	1	1	1		1	(N/A)	2	96.0%	25.3%	(N/A)	18.0%	Yes	(N/A)	(N/A)	(N/A)
		2000	(current)	2	T/O	IM240	1981	(current)	2	2	2	2	2		1	1	1	1	1	1	1	1		1	(N/A)	2	96.0%	(N/A)	25.3%	(N/A)	Yes	(N/A)	(N/A)	(N/A)
		2000	(current)	2	T/O	GC	1981	(current)	2	2	2	2	2		1	1	1	1	1	1	1	1		1	(N/A)	2	96.0%	(N/A)	0.0%	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
	Franklin	2000	(current)	1	T/O	IDLE	1971	(current)	2	2	2	2	2		1	1	1	1	1	1	1	1		1	(N/A)	2	96.0%	10.9%	9.9%	15.2%	Yes	(N/A)	(N/A)	(N/A)
		2000	(current)	1	T/O	GC	1981	(current)	2	2	2	2	2		1	1	1	1	1	1	1	1		1	(N/A)	2	96.0%	(N/A)	0.0%	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
Texas	Harris	1997	Apr. 2002	1	TRC	2500/IDLE	1978	2000	2	2	2	2	2		2	2	2	2	2	2	2	2		2	(N/A)	2	96.0%	0.0%	0.0%	10.0%	Yes	(N/A)	(N/A)	(N/A)
		May 2002	(current)	1	TRC	2500/IDLE	1978	2000	1	1	1	1	1		2	2	2	2	2	2	2	2		2	(N/A)	2	96.0%	2.1%	4.4%	14.2%	Yes	100%	100%	100%
		May 2002	(current)	1	TRC	ASM 2525/5015 PHASE-IN	1978	1995	2	2	2	2	2		1	1	1	1	1	1	1	1		1	(N/A)	2	96.0%	1.1%	0.7%	27.4%	Yes	100%	100%	100%
		May 2002	(current)	1	TRC	OBD I/M	1996	2000	2	2	2	2	2		1	1	1	1	1	1	1	1		1	(N/A)	2	96.0%	(N/A)	0.2%	(N/A)	Yes	100%	100%	100%
		1997	(current)	1	TRC	GC	1978	2000	2	2	2	2	2		2	2	2	2	2	2	2	2		2	(N/A)	2	96.0%	0.0%	0.0%	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
Texas	Brazoria, Chambers, Fort Bend, Galveston, Liberty, Montgomery, Waller	2000	(current)	1	TRC	GC	1978	2000	2	2	2	2	2		2	2	2	2	2	2	2	2		2	(N/A)	2	96.0%	0.0%	0.0%	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
Texas	Dallas, Tarrant	1990	Apr. 2002	1	TRC	2500/IDLE	1975	2000	2	2	2	2	2		2	2	2	2	2	2	2	2		2	(N/A)	2	96.0%	0.3%	0.0%	10.0%	Yes	100%	100%	100%
Texas	Collin, Denton, Dallas, Tarrant	May 2002	(current)	1	TRC	2500/IDLE	1978	2000	1	1	1	1	1		2	2	2	2	2	2	2	2		2	(N/A)	2	96.0%	0.8%	1.5%	15.3%	Yes	100%	100%	100%
		May 2002	(current)	1	TRC	ASM 2525/5015 PHASE-IN	1978	1995	2	2	2	2	2		1	1	1	1	1	1	1	1		1	(N/A)	2	96.0%	2.7%	1.9%	28.7%	Yes	100%	100%	100%
		May 2002	(current)	1	TRC	OBD I/M	1996	2000	2	2	2	2	2		1	1	1	1	1	1	1	1		1	(N/A)	2	96.0%	(N/A)	0.3%	(N/A)	Yes	100%	100%	100%
Texas	Collin, Denton	May 2002	(current)	1	TRC	GC	1975	2000	2	2	2	2	2		2	2	2	2	2	2	2	2		2	(N/A)	2	96.0%	0.0%	0.0%	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
Texas	Dallas, Tarrant	1996	(current)	1	TRC	GC	1975	2000	2	2	2	2	2		2	2	2	2	2	2	2	2		2	(N/A)	2	96.0%	0.0%	0.0%	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
Texas	El Paso	1987	(current)	1	TRC	2500/IDLE	1950	(current)	2	2	2	2	2		2	2	2	2	2	2	2	2		2	(N/A)	2	96.0%	0.0%	0.0%	10.0%	Yes	(N/A)	(N/A)	(N/A)
		1997	(current)	1	TRC	GC	1950	(current)	2	2	2	2	2		2	2	2	2	2	2	2	2		2	(N/A)	2	96.0%	0.0%	0.0%	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)

[a] TRC = Test and Repair program, computerized; T/O = Test Only program

[b] GC = gas cap check (evaporative emissions); IDLE = idling only test; 2500/IDLE = idling and 2500 rpm test; ASM 2525/5015 PHASE-IN = testing at 25 mph/25% load and 15 mph/50% load, phased-in cutpoints; OBD I/M = check of malfunction indicator lights; IM240 = transient 240-second test

[c] Default Waiver Rate is 5.0% for evaporative programs, except where an exhaust I/M program is also applicable, in which case the waiver rate for the evaporative program is the same as that for the exhaust program.

Summary of MOBILE6 Inputs for Stage II Vapor Recovery Programs

State	MSA/CMSA	County	Start Year	Phase In Period (Years)	In-use control efficiency (%)	
					LDGV/ LDGT	HDGV
Louisiana	Baton Rouge	Ascension	93	2	77.	77.
Louisiana	Baton Rouge	East Baton Rouge	93	2	77.	77.
Louisiana	Baton Rouge	Iberville	93	2	77.	77.
Louisiana	Baton Rouge	Livingston	93	2	77.	77.
Louisiana	Baton Rouge	West Baton Rouge	93	2	77.	77.
Louisiana	Pointe Coupee	Pointe Coupee	93	2	77.	77.
Missouri	St. Louis	St. Louis City	87	2	89.	89.
Missouri	St. Louis	Jefferson County	87	2	89.	89.
Missouri	St. Louis	St. Charles County	87	2	89.	89.
Missouri	St. Louis	Franklin County	87	2	89.	89.
Missouri	St. Louis	St. Louis County	87	2	89.	89.
Texas	Beaumont-Port Arthur	Hardin	92	2	84.	84.
Texas	Beaumont-Port Arthur	Jefferson	92	2	84.	84.
Texas	Beaumont-Port Arthur	Orange	92	2	84.	84.
Texas	Dallas-Ft. Worth	Collin	92	2	84.	84.
Texas	Dallas-Ft. Worth	Dallas	92	2	84.	84.
Texas	Dallas-Ft. Worth	Denton	92	2	84.	84.
Texas	Dallas-Ft. Worth	Tarrant	92	2	84.	84.
Texas	El Paso	El Paso	92	2	84.	84.
Texas	Houston-Galveston	Brazoria	92	2	84.	84.
Texas	Houston-Galveston	Chambers	92	2	84.	84.
Texas	Houston-Galveston	Fort Bend	92	2	84.	84.
Texas	Houston-Galveston	Galveston	92	2	84.	84.
Texas	Houston-Galveston	Harris	92	2	84.	84.
Texas	Houston-Galveston	Liberty	92	2	84.	84.
Texas	Houston-Galveston	Montgomery	92	2	84.	84.
Texas	Houston-Galveston	Waller	92	2	84.	84.

Summary of MOBILE6 Inputs for the IM240 Program in St. Louis, Missouri (Page 1 of 3)

Approx. VMT Mix				
LDGV	LDGT1	LDGT2	LDGT3	LDGT4
0.46	0.071	0.24	0.073	0.033

Calendar Year
2002

% Final
25%

HC Cutpoints

	LDGV		LDGT1 & LDGT2		LDGT3 & LDGT4	
Model Year	Phase-In	Final	Phase-In	Final	Phase-In	Final
1981	2.0	0.8	7.5	3.4	7.5	3.4
1982	2.0	0.8	7.5	3.4	7.5	3.4
1983	2.0	0.8	7.5	3.4	7.5	3.4
1984	2.0	0.8	3.2	1.6	3.2	1.6
1985	2.0	0.8	3.2	1.6	3.2	1.6
1986	2.0	0.8	3.2	1.6	3.2	1.6
1987	2.0	0.8	3.2	1.6	3.2	1.6
1988	2.0	0.8	3.2	1.6	3.2	1.6
1989	2.0	0.8	3.2	1.6	3.2	1.6
1990	2.0	0.8	3.2	1.6	3.2	1.6
1991	1.2	0.8	2.4	1.6	2.4	1.6
1992	1.2	0.8	2.4	1.6	2.4	1.6
1993	1.2	0.8	2.4	1.6	2.4	1.6
1994	1.2	0.8	2.4	1.6	2.4	1.6
1995	1.2	0.8	2.4	1.6	2.4	1.6
1996	0.8	0.6	1.0	0.8	2.4	0.8
1997+	same as 1996		same as 1996		same as 1996	

Allowable range in model

Min	Max
0.80	5.0

MOBILE6 ages

0	1	2	3	4	5	6	7	8	9
10	11	12	13	14	15	16	17	18	19
20	21	22	23	24					

Model year standards applicable to each MOBILE6 age

1996	1996	1996	1996	1996	1996	1996	1995	1994	1993
1992	1991	1990	1989	1988	1987	1986	1985	1984	1983
1982	1981	1981	1981	1981					

MOBILE6 Block 1 (LDGV & LDGT1)

0.800	0.800	0.800	0.800	0.800	0.800	0.800	1.247	1.247	1.247
1.247	1.247	1.847	1.847	1.847	1.847	1.847	1.847	1.847	2.338
2.338	2.338	2.338	2.338	2.338					

MOBILE6 Block 2 (LDGT2 & LDGT3)

1.195	1.195	1.195	1.195	1.195	1.195	1.195	2.200	2.200	2.200
2.200	2.200	2.800	2.800	2.800	2.800	2.800	2.800	2.800	5.000
5.000	5.000	5.000	5.000	5.000					

MOBILE6 Block 3 (LDGT4)

2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.200	2.200	2.200
2.200	2.200	2.800	2.800	2.800	2.800	2.800	2.800	2.800	5.000
5.000	5.000	5.000	5.000	5.000					

Approx. VMT Mix				
LDGV	LDGT1	LDGT2	LDGT3	LDGT4
0.46	0.071	0.24	0.073	0.033

Calendar Year
2002

% Final
25%

CO Cutpoints

	LDGV		LDGT1 & LDGT2		LDGT3 & LDGT4	
Model Year	Phase-In	Final	Phase-In	Final	Phase-In	Final
1981	60.0	30.0	100.0	70.0	100.0	70.0
1982	60.0	30.0	100.0	70.0	100.0	70.0
1983	30.0	15.0	100.0	70.0	100.0	70.0
1984	30.0	15.0	80.0	40.0	80.0	40.0
1985	30.0	15.0	80.0	40.0	80.0	40.0
1986	30.0	15.0	80.0	40.0	80.0	40.0
1987	30.0	15.0	80.0	40.0	80.0	40.0
1988	30.0	15.0	80.0	40.0	80.0	40.0
1989	30.0	15.0	80.0	40.0	80.0	40.0
1990	30.0	15.0	80.0	40.0	80.0	40.0
1991	20.0	15.0	60.0	40.0	60.0	40.0
1992	20.0	15.0	60.0	40.0	60.0	40.0
1993	20.0	15.0	60.0	40.0	60.0	40.0
1994	20.0	15.0	60.0	40.0	60.0	40.0
1995	20.0	15.0	60.0	40.0	60.0	40.0
1996	15.0	10.0	20.0	13.0	60.0	15.0
1997+	same as 1996		same as 1996		same as 1996	

Allowable range in model

Min	Max
15.00	100.0

MOBILE6 ages

0	1	2	3	4	5	6	7	8	9
10	11	12	13	14	15	16	17	18	19
20	21	22	23	24					

Model year standards applicable to each MOBILE6 age

1996	1996	1996	1996	1996	1996	1996	1995	1994	1993
1992	1991	1990	1989	1988	1987	1986	1985	1984	1983
1982	1981	1981	1981	1981					

MOBILE6 Block 1 (LDGV & LDGT1)

15.000	15.000	15.000	15.000	15.000	15.000	15.000	23.597	23.597	23.597
23.597	23.597	32.100	32.100	32.100	32.100	32.100	32.100	32.100	35.108
57.848	57.848	57.848	57.848	57.848					

MOBILE6 Block 2 (LDGT2 & LDGT3)

25.363	25.363	25.363	25.363	25.363	25.363	25.363	55.000	55.000	55.000
55.000	55.000	70.000	70.000	70.000	70.000	70.000	70.000	70.000	92.500
92.500	92.500	92.500	92.500	92.500					

MOBILE6 Block 3 (LDGT4)

48.750	48.750	48.750	48.750	48.750	48.750	48.750	55.000	55.000	55.000
55.000	55.000	70.000	70.000	70.000	70.000	70.000	70.000	70.000	92.500
92.500	92.500	92.500	92.500	92.500					

Approx. VMT Mix				
LDGV	LDGT1	LDGT2	LDGT3	LDGT4
0.46	0.071	0.24	0.073	0.033

Calendar Year
2002

% Final
25%

NO_x Cutpoints

Model Year	LDGV		LDGT1 & LDGT2		LDGT3 & LDGT4	
	Phase-In	Final	Phase-In	Final	Phase-In	Final
1981	3.0	2.0	7.0	4.5	7.0	4.5
1982	3.0	2.0	7.0	4.5	7.0	4.5
1983	3.0	2.0	7.0	4.5	7.0	4.5
1984	3.0	2.0	7.0	4.5	7.0	4.5
1985	3.0	2.0	7.0	4.5	7.0	4.5
1986	3.0	2.0	7.0	4.5	7.0	4.5
1987	3.0	2.0	7.0	4.5	7.0	4.5
1988	3.0	2.0	3.5	2.5	5.0	3.5
1989	3.0	2.0	3.5	2.5	5.0	3.5
1990	3.0	2.0	3.5	2.5	5.0	3.5
1991	2.5	2.0	3.0	2.5	4.5	3.5
1992	2.5	2.0	3.0	2.5	4.5	3.5
1993	2.5	2.0	3.0	2.5	4.5	3.5
1994	2.5	2.0	3.0	2.5	4.5	3.5
1995	2.5	2.0	3.0	2.5	4.5	3.5
1996	2.0	1.5	2.5	1.8	4.0	2.0
1997+	same as 1996		same as 1996		same as 1996	

Allowable range in model	
Min	Max
2.00	4.5

MOBILE6 ages

0	1	2	3	4	5	6	7	8	9
10	11	12	13	14	15	16	17	18	19
20	21	22	23	24					

Model year standards applicable to each MOBILE6 age

1996	1996	1996	1996	1996	1996	1996	1995	1994	1993
1992	1991	1990	1989	1988	1987	1986	1985	1984	1983
1982	1981	1981	1981	1981					

MOBILE6 Block 1 (LDGV & LDGT1)

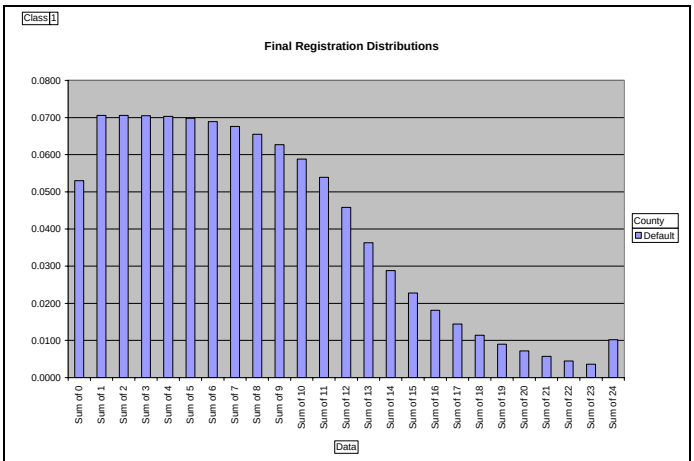
2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.442	2.442	2.442
2.442	2.442	2.817	2.817	2.817	3.235	3.235	3.235	3.235	3.235
3.235	3.235	3.235	3.235	3.235					

MOBILE6 Block 2 (LDGT2 & LDGT3)

2.599	2.599	2.599	2.599	2.599	2.599	2.599	3.196	3.196	3.196
3.196	3.196	3.571	3.571	3.571	4.500	4.500	4.500	4.500	4.500
4.500	4.500	4.500	4.500	4.500					

MOBILE6 Block 3 (LDGT4)

3.500	3.500	3.500	3.500	3.500	3.500	3.500	4.250	4.250	4.250
4.250	4.250	4.500	4.500	4.500	4.500	4.500	4.500	4.500	4.500
4.500	4.500	4.500	4.500	4.500					



(a)

Key to Figures

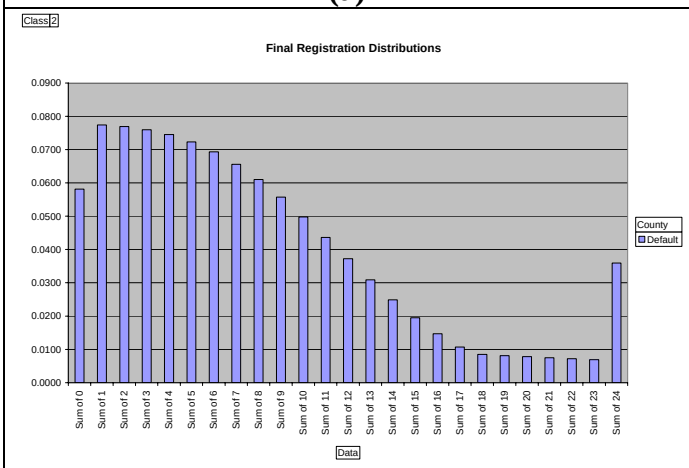
Y-axis: Fraction of total fleet in the indicated age bin

X-axis: Vehicle age from <1 year to ≥ 24 years

Gross vehicle weight rating (GVWR) equals the total weight of the vehicle including its curb (empty) weight, fluids, driver and the maximum recommended payload.

Adjusted loaded vehicle weight (ALVW) is the numerical average of the vehicle curb weight and the gross vehicle weight rating (GVWR).

Loaded vehicle weight (LVW) is the curb weight of the vehicle plus 300 lbs., which is intended to correspond to the weight of a driver plus incidental payload.



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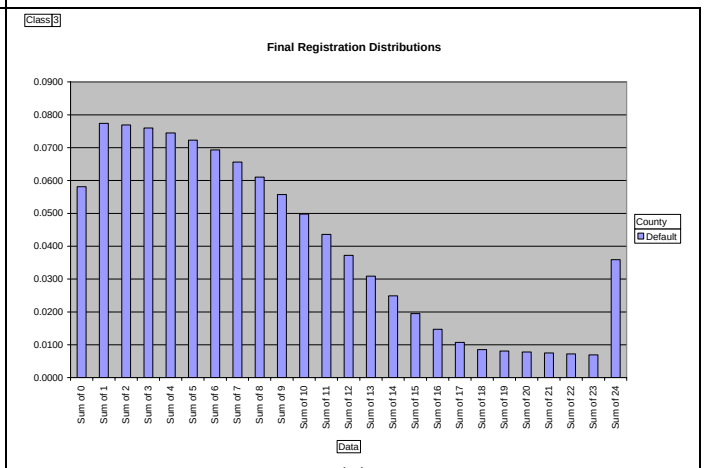

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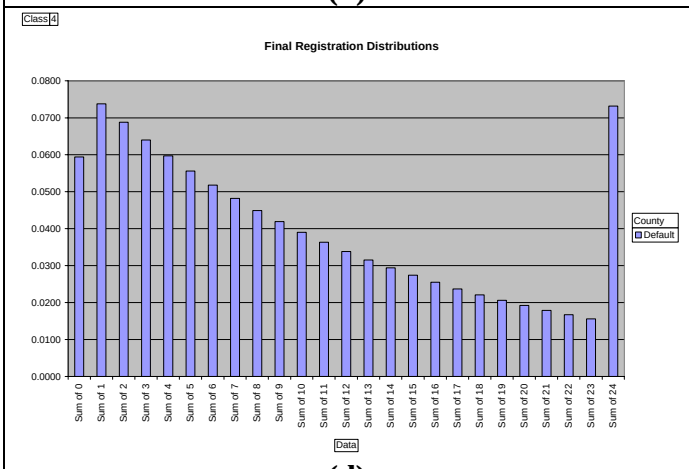

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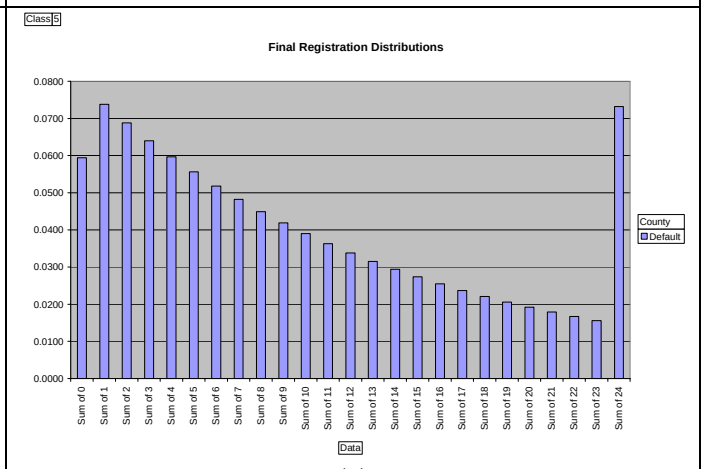
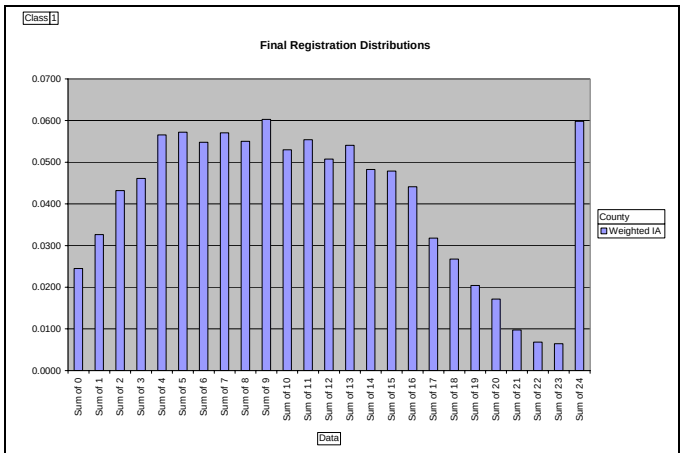


(e)

Age distributions of vehicle fleets corresponding to the **MOBILE6 defaults** for:

(a) Light-Duty Vehicles (Passenger Cars)
(b) Light-Duty Trucks, Class 1 (0-6,000 lbs. GVWR, 0-3750 lbs. LVW)
(c) Light Duty Trucks, Class 2 (0-6,001 lbs. GVWR, 3751-5750 lbs. LVW)
(d) Light Duty Trucks, Class 3 (6,001-8500 lbs. GVWR, 0-5750 lbs. ALVW)
(e) Light Duty Trucks, Class 4 (6,001-8500 lbs. GVWR, >5750 lbs. ALVW)



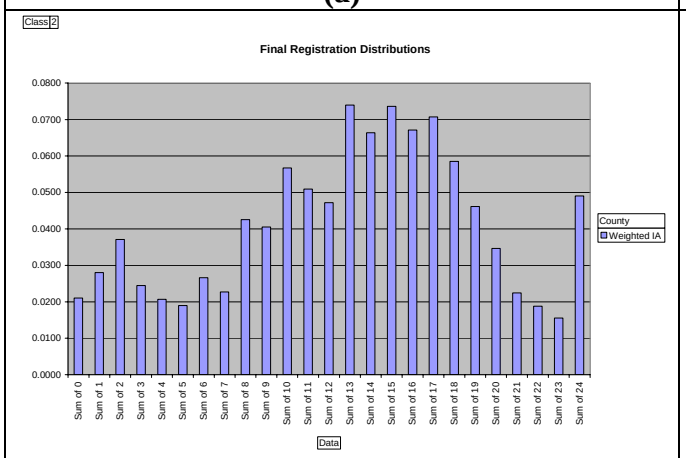
(a)

Key to Figures

Y-axis: Fraction of total fleet in the indicated age bin

X-axis: Vehicle age from <1 year to ≥ 24 years

Gross vehicle weight rating (GVWR) equals the total weight of the vehicle including its curb (empty) weight, fluids, driver and the maximum recommended payload.
Adjusted loaded vehicle weight (ALVW) is the numerical average of the vehicle curb weight and the gross vehicle weight rating (GVWR).
Loaded vehicle weight (LVW) is the curb weight of the vehicle plus 300 lbs., which is intended to correspond to the weight of a driver plus incidental payload.



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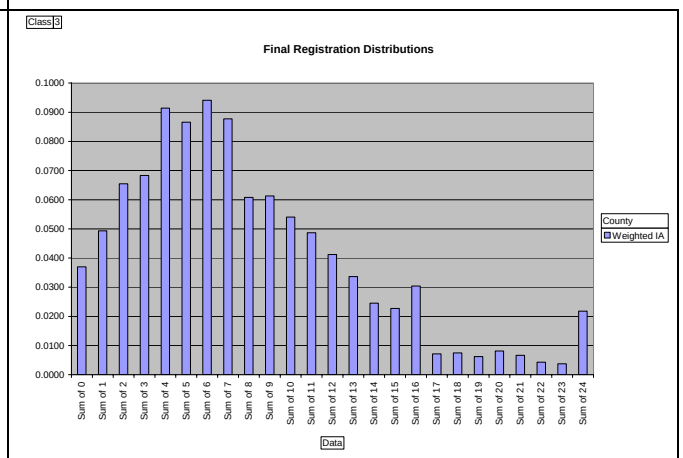

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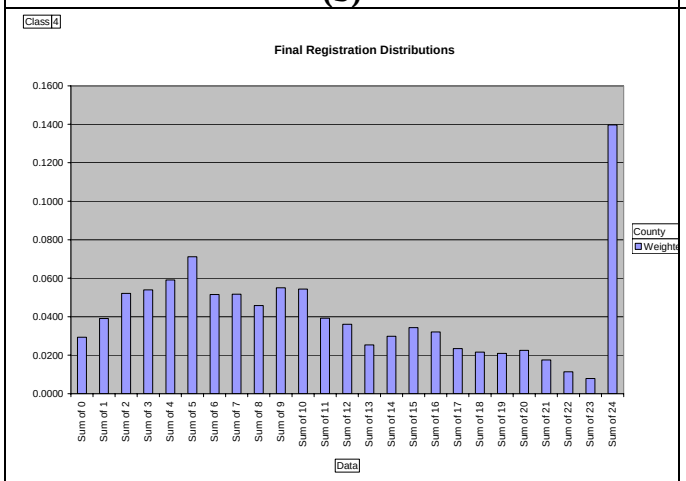

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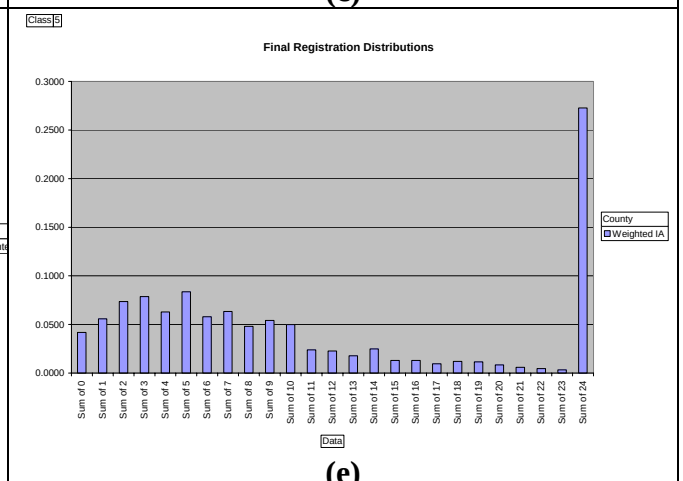
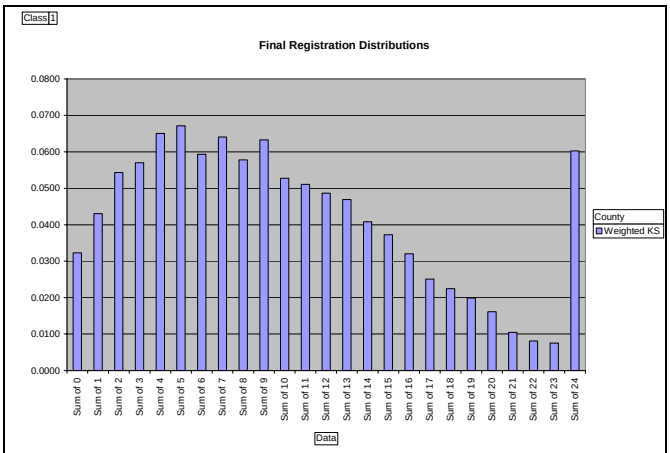


(e)

Weighted-average age distributions of vehicle fleets for **<u>Iowa</u>** and for the following vehicle classes:

(a) Light-Duty Vehicles (Passenger Cars)
(b) Light-Duty Trucks, Class 1 (0-6,000 lbs. GVWR, 0-3750 lbs. LVW)
(c) Light Duty Trucks, Class 2 (0-6,001 lbs. GVWR, 3751-5750 lbs. LVW)
(d) Light Duty Trucks, Class 3 (6,001-8500 lbs. GVWR, 0-5750 lbs. ALVW)
(e) Light Duty Trucks, Class 4 (6,001-8500 lbs. GVWR, >5750 lbs. ALVW)



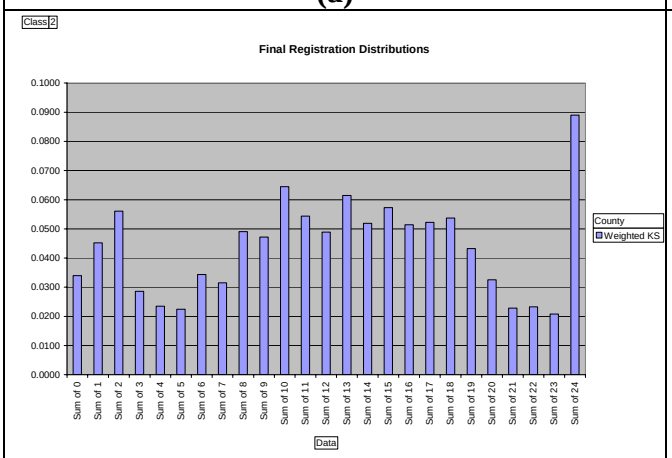
(a)

Key to Figures

Y-axis: Fraction of total fleet in the indicated age bin

X-axis: Vehicle age from <1 year to ≥ 24 years

Gross vehicle weight rating (GVWR) equals the total weight of the vehicle including its curb (empty) weight, fluids, driver and the maximum recommended payload.
Adjusted loaded vehicle weight (ALVW) is the numerical average of the vehicle curb weight and the gross vehicle weight rating (GVWR).
Loaded vehicle weight (LVW) is the curb weight of the vehicle plus 300 lbs., which is intended to correspond to the weight of a driver plus incidental payload.



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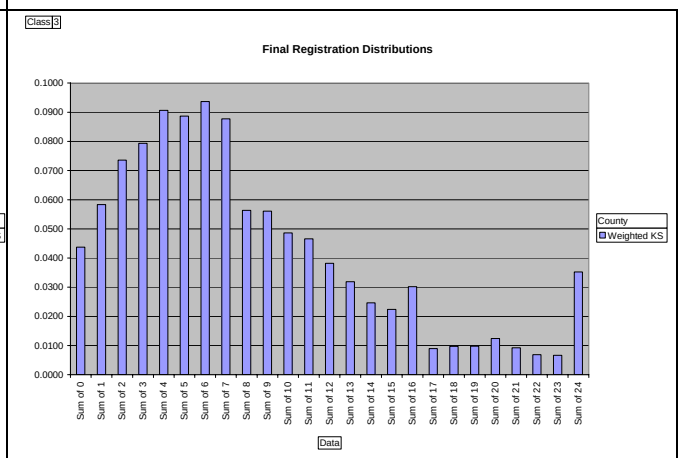

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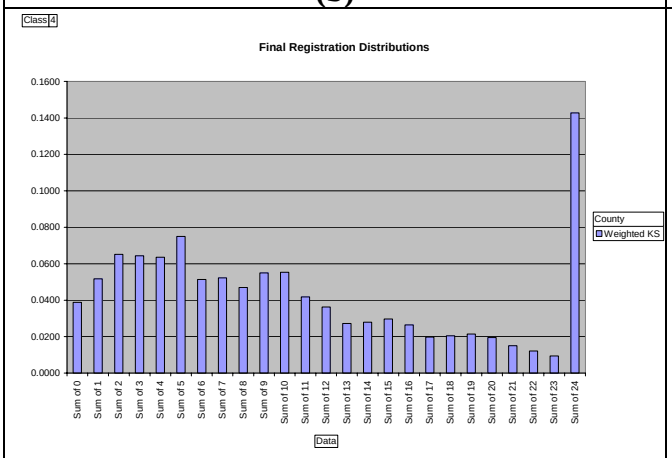

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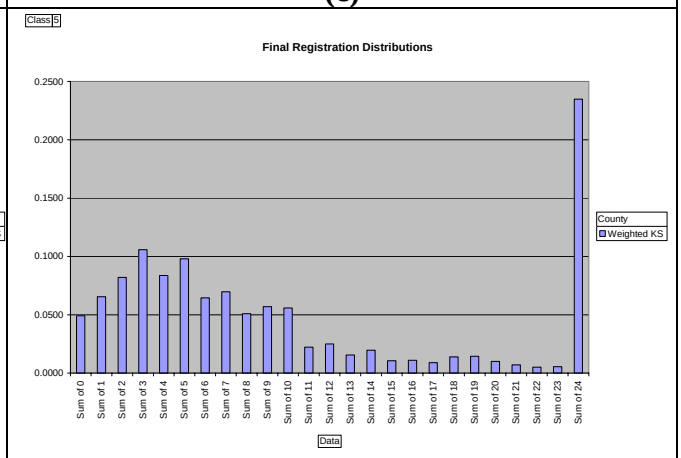
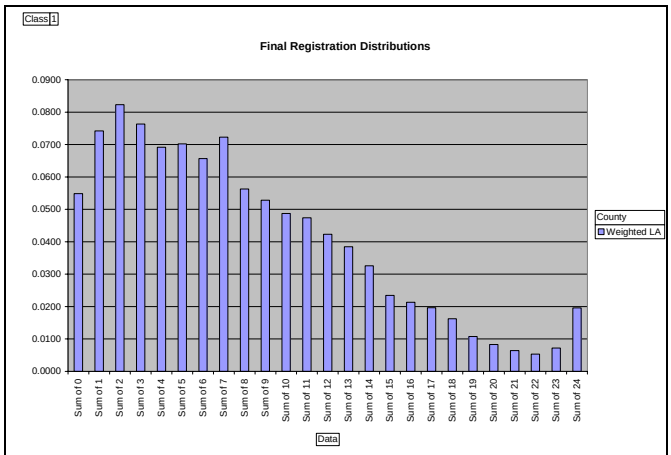


(e)

Weighted-average age distributions of vehicle fleets for **Kansas** and for the following vehicle classes:

(a) Light-Duty Vehicles (Passenger Cars)
(b) Light-Duty Trucks, Class 1 (0-6,000 lbs. GVWR, 0-3750 lbs. LVW)
(c) Light Duty Trucks, Class 2 (0-6,001 lbs. GVWR, 3751-5750 lbs. LVW)
(d) Light Duty Trucks, Class 3 (6,001-8500 lbs. GVWR, 0-5750 lbs. ALVW)
(e) Light Duty Trucks, Class 4 (6,001-8500 lbs. GVWR, >5750 lbs. ALVW)



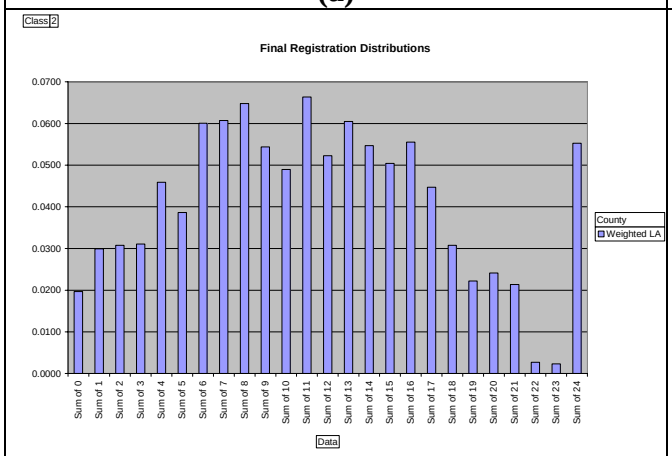
(a)

Key to Figures

Y-axis: Fraction of total fleet in the indicated age bin

X-axis: Vehicle age from <1 year to ≥ 24 years

Gross vehicle weight rating (GVWR) equals the total weight of the vehicle including its curb (empty) weight, fluids, driver and the maximum recommended payload.
Adjusted loaded vehicle weight (ALVW) is the numerical average of the vehicle curb weight and the gross vehicle weight rating (GVWR).
Loaded vehicle weight (LVW) is the curb weight of the vehicle plus 300 lbs., which is intended to correspond to the weight of a driver plus incidental payload.



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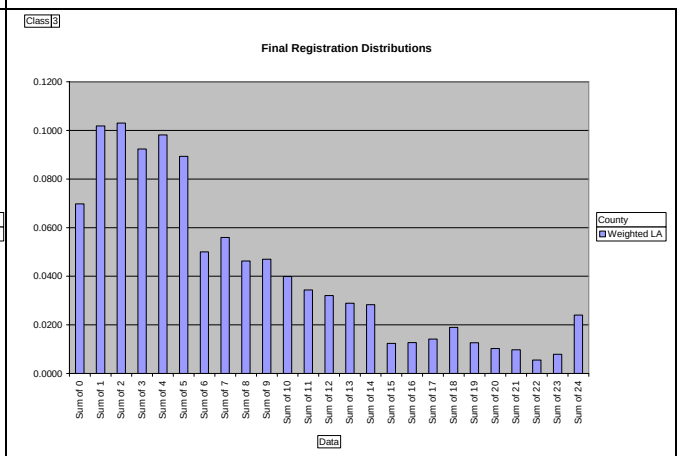

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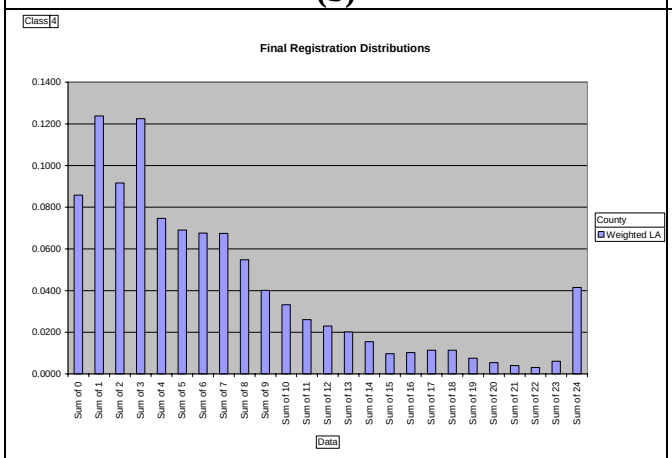

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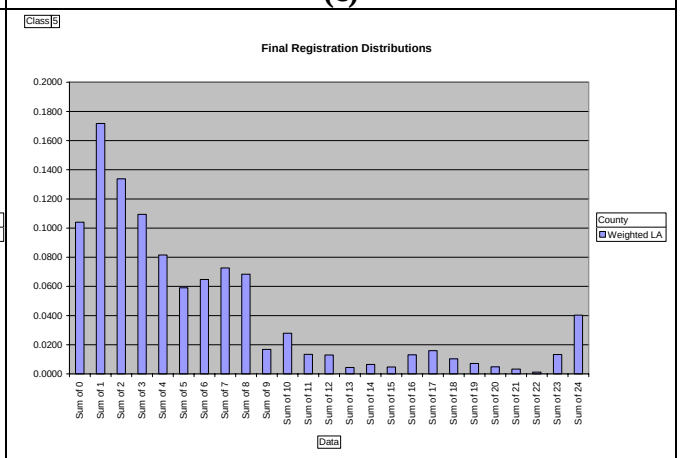
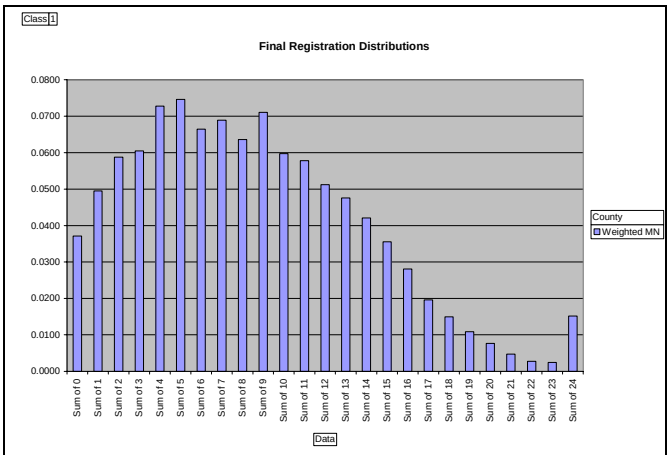


(e)

Weighted-average age distributions of vehicle fleets for **Louisiana** and for the following vehicle classes:

(a) Light-Duty Vehicles (Passenger Cars)
(b) Light-Duty Trucks, Class 1 (0-6,000 lbs. GVWR, 0-3750 lbs. LVW)
(c) Light Duty Trucks, Class 2 (0-6,001 lbs. GVWR, 3751-5750 lbs. LVW)
(d) Light Duty Trucks, Class 3 (6,001-8500 lbs. GVWR, 0-5750 lbs. ALVW)
(e) Light Duty Trucks, Class 4 (6,001-8500 lbs. GVWR, >5750 lbs. ALVW)



(a)

Key to Figures

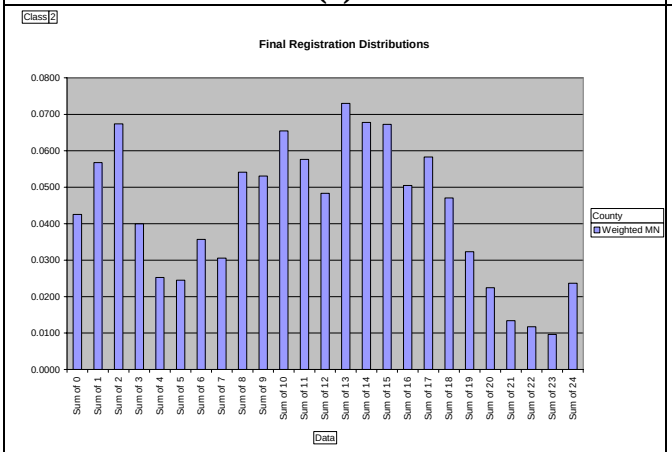
Y-axis: Fraction of total fleet in the indicated age bin

X-axis: Vehicle age from <1 year to ≥ 24 years

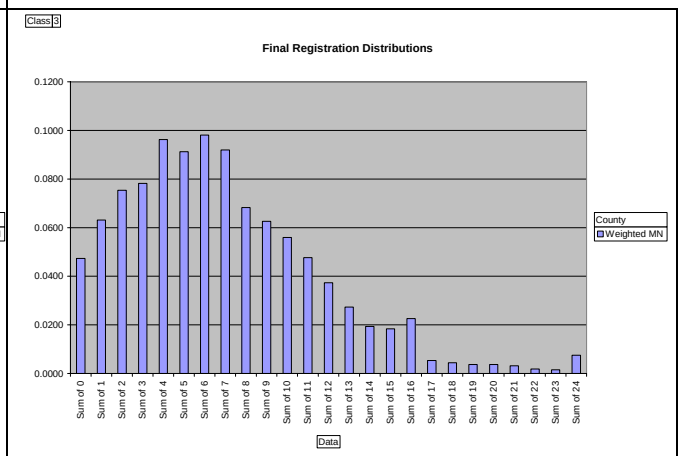
Gross vehicle weight rating (GVWR) equals the total weight of the vehicle including its curb (empty) weight, fluids, driver and the maximum recommended payload.

Adjusted loaded vehicle weight (ALVW) is the numerical average of the vehicle curb weight and the gross vehicle weight rating (GVWR).

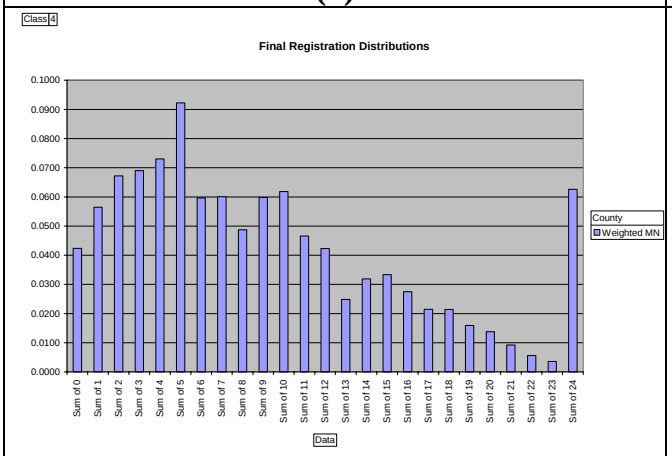
Loaded vehicle weight (LVW) is the curb weight of the vehicle plus 300 lbs., which is intended to correspond to the weight of a driver plus incidental payload.



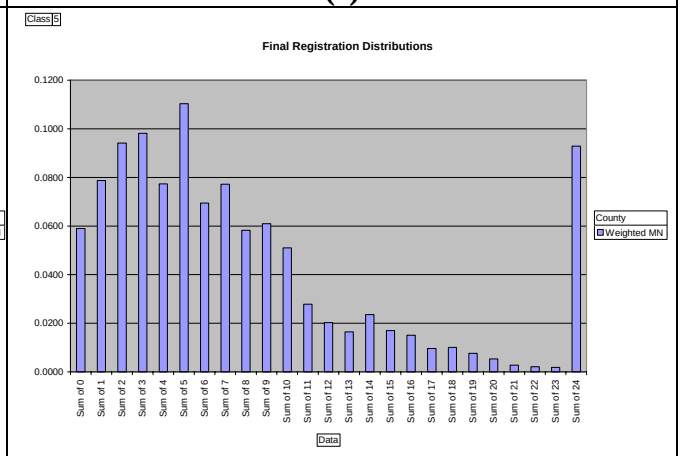
(b)



(c)



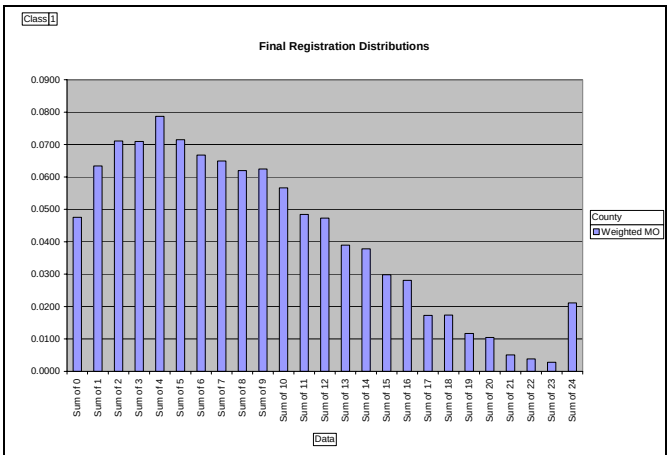
(d)



(e)

Weighted-average age distributions of vehicle fleets for **Minnesota** and for the following vehicle classes:

(a) Light-Duty Vehicles (Passenger Cars)
(b) Light-Duty Trucks, Class 1 (0-6,000 lbs. GVWR, 0-3750 lbs. LVW)
(c) Light Duty Trucks, Class 2 (0-6,001 lbs. GVWR, 3751-5750 lbs. LVW)
(d) Light Duty Trucks, Class 3 (6,001-8500 lbs. GVWR, 0-5750 lbs. ALVW)
(e) Light Duty Trucks, Class 4 (6,001-8500 lbs. GVWR, >5750 lbs. ALVW)



(a)

Key to Figures

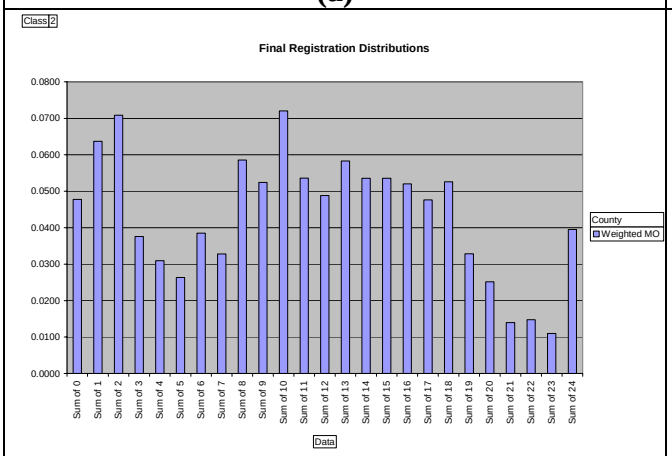
Y-axis: Fraction of total fleet in the indicated age bin

X-axis: Vehicle age from <1 year to ≥ 24 years

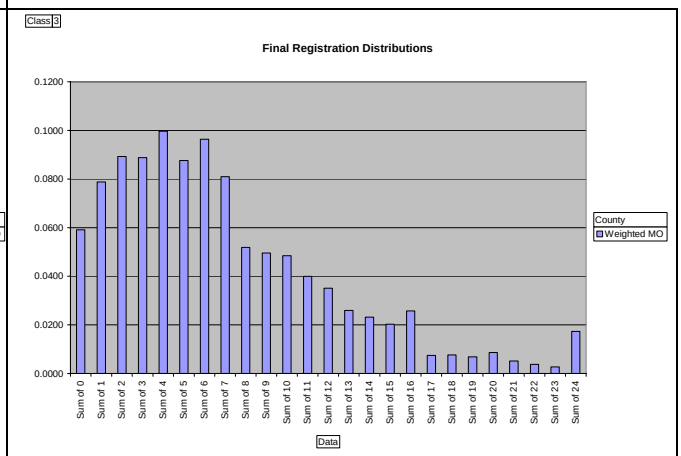
Gross vehicle weight rating (GVWR) equals the total weight of the vehicle including its curb (empty) weight, fluids, driver and the maximum recommended payload.

Adjusted loaded vehicle weight (ALVW) is the numerical average of the vehicle curb weight and the gross vehicle weight rating (GVWR).

Loaded vehicle weight (LVW) is the curb weight of the vehicle plus 300 lbs., which is intended to correspond to the weight of a driver plus incidental payload.



(b)



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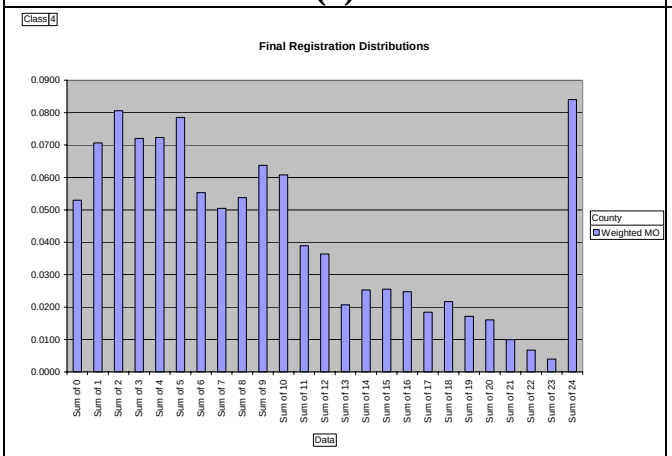
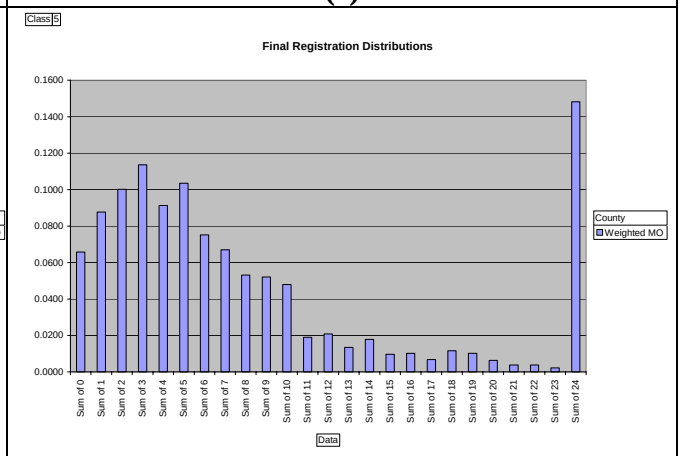


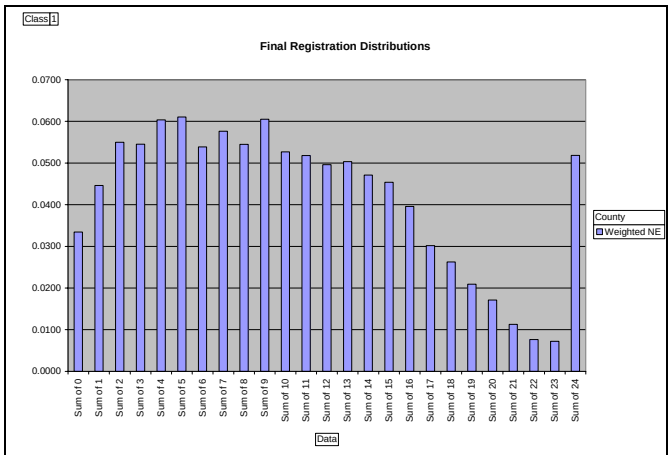
(d)



(e)

Weighted-average age distributions of vehicle fleets for **Missouri** and for the following vehicle classes:

(a) Light-Duty Vehicles (Passenger Cars)
(b) Light-Duty Trucks, Class 1 (0-6,000 lbs. GVWR, 0-3750 lbs. LVW)
(c) Light Duty Trucks, Class 2 (0-6,001 lbs. GVWR, 3751-5750 lbs. LVW)
(d) Light Duty Trucks, Class 3 (6,001-8500 lbs. GVWR, 0-5750 lbs. ALVW)
(e) Light Duty Trucks, Class 4 (6,001-8500 lbs. GVWR, >5750 lbs. ALVW)



(a)

Key to Figures

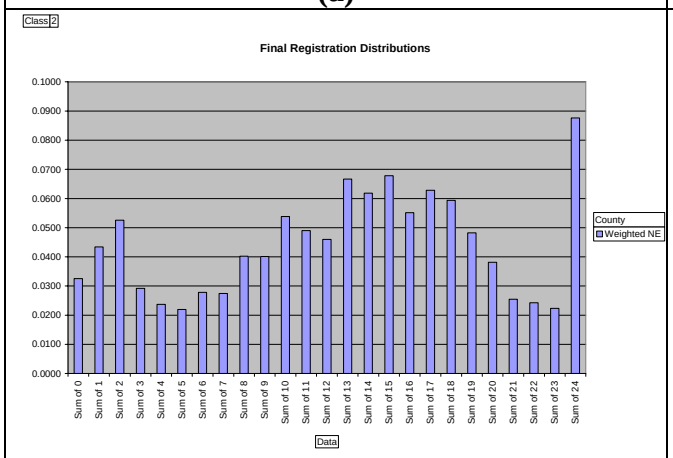
Y-axis: Fraction of total fleet in the indicated age bin

X-axis: Vehicle age from <1 year to ≥ 24 years

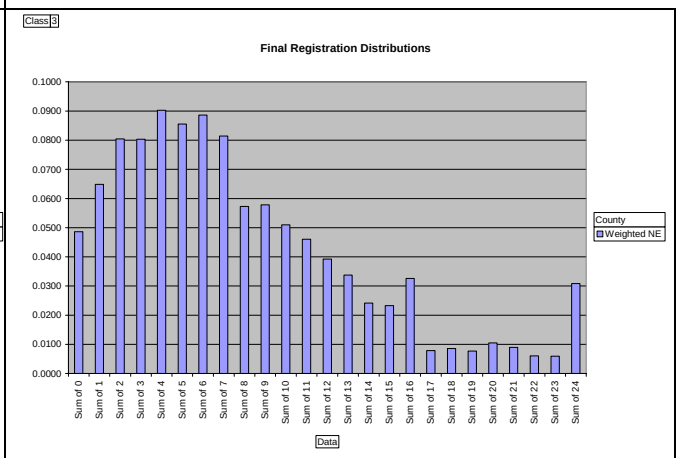
Gross vehicle weight rating (GVWR) equals the total weight of the vehicle including its curb (empty) weight, fluids, driver and the maximum recommended payload.

Adjusted loaded vehicle weight (ALVW) is the numerical average of the vehicle curb weight and the gross vehicle weight rating (GVWR).

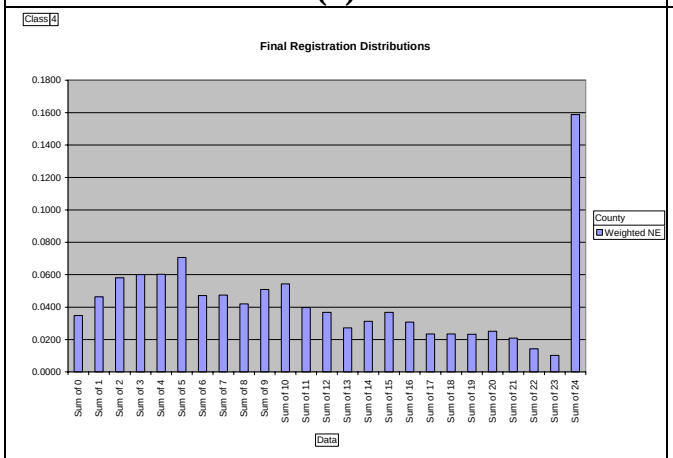
Loaded vehicle weight (LVW) is the curb weight of the vehicle plus 300 lbs., which is intended to correspond to the weight of a driver plus incidental payload.



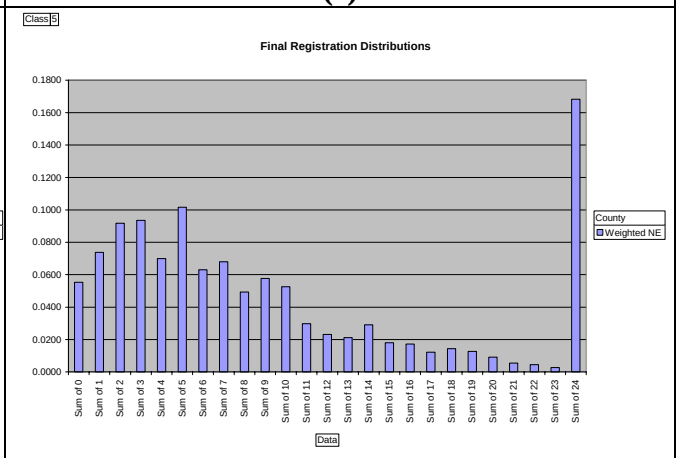
(b)



(c)



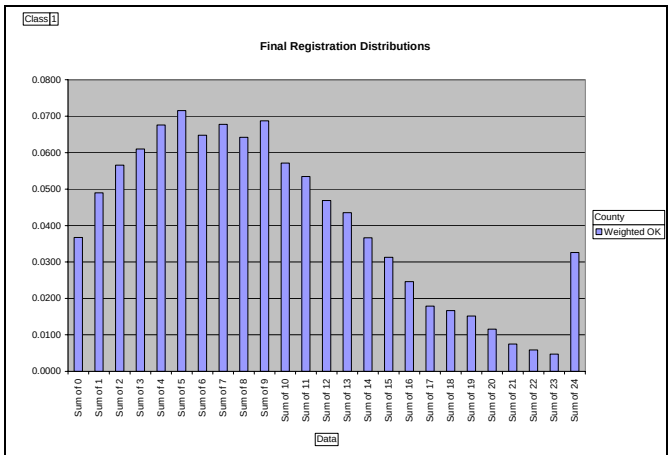
(d)



(e)

Weighted-average age distributions of vehicle fleets for **Nebraska** and for the following vehicle classes:

(a) Light-Duty Vehicles (Passenger Cars)
(b) Light-Duty Trucks, Class 1 (0-6,000 lbs. GVWR, 0-3750 lbs. LVW)
(c) Light Duty Trucks, Class 2 (0-6,001 lbs. GVWR, 3751-5750 lbs. LVW)
(d) Light Duty Trucks, Class 3 (6,001-8500 lbs. GVWR, 0-5750 lbs. ALVW)
(e) Light Duty Trucks, Class 4 (6,001-8500 lbs. GVWR, >5750 lbs. ALVW)



(a)

Key to Figures

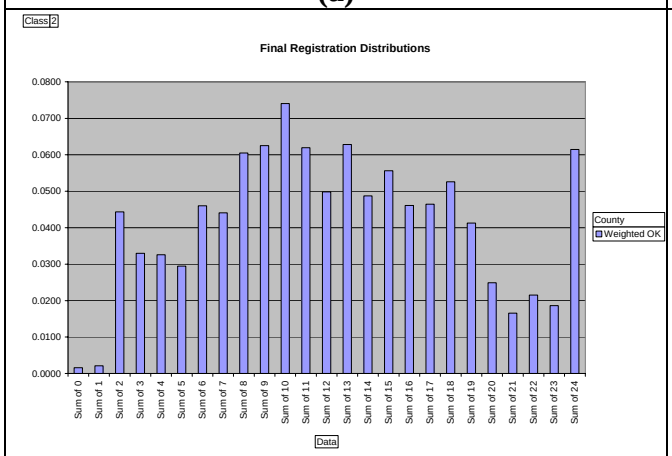
Y-axis: Fraction of total fleet in the indicated age bin

X-axis: Vehicle age from <1 year to ≥ 24 years

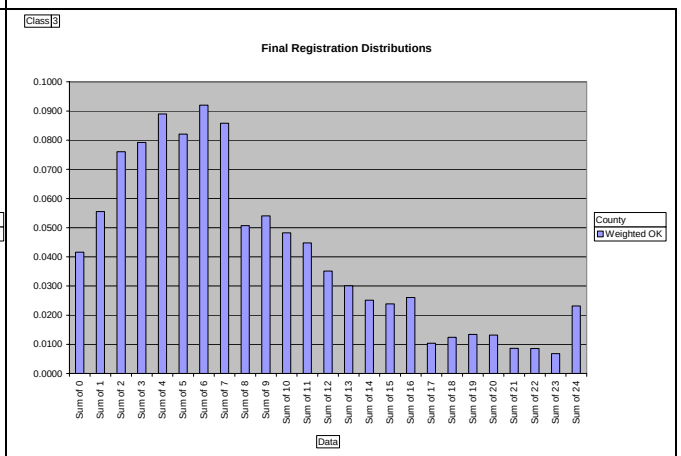
Gross vehicle weight rating (GVWR) equals the total weight of the vehicle including its curb (empty) weight, fluids, driver and the maximum recommended payload.

Adjusted loaded vehicle weight (ALVW) is the numerical average of the vehicle curb weight and the gross vehicle weight rating (GVWR).

Loaded vehicle weight (LVW) is the curb weight of the vehicle plus 300 lbs., which is intended to correspond to the weight of a driver plus incidental payload.



(b)



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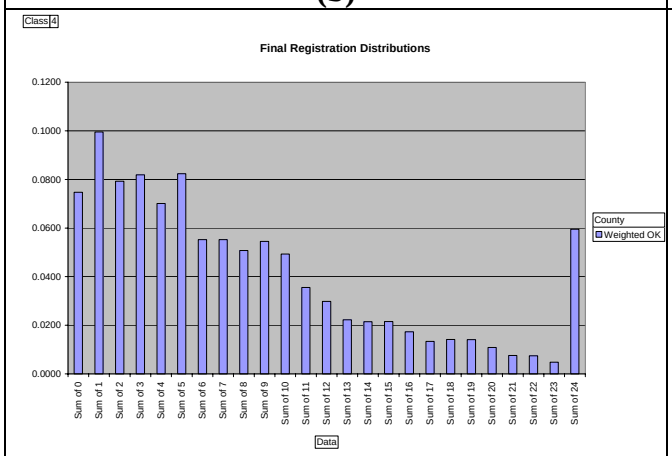
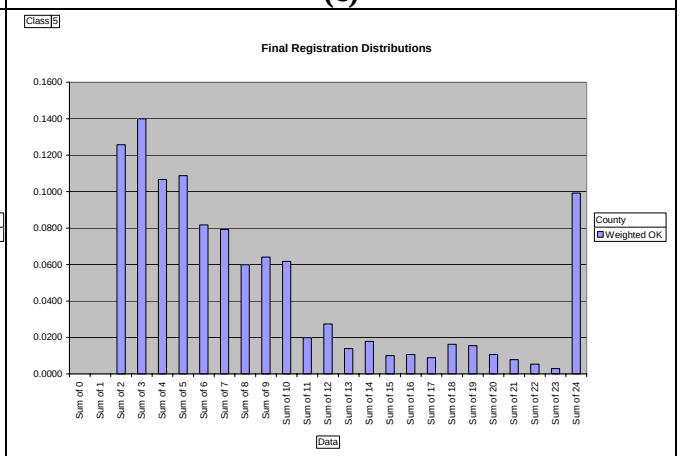


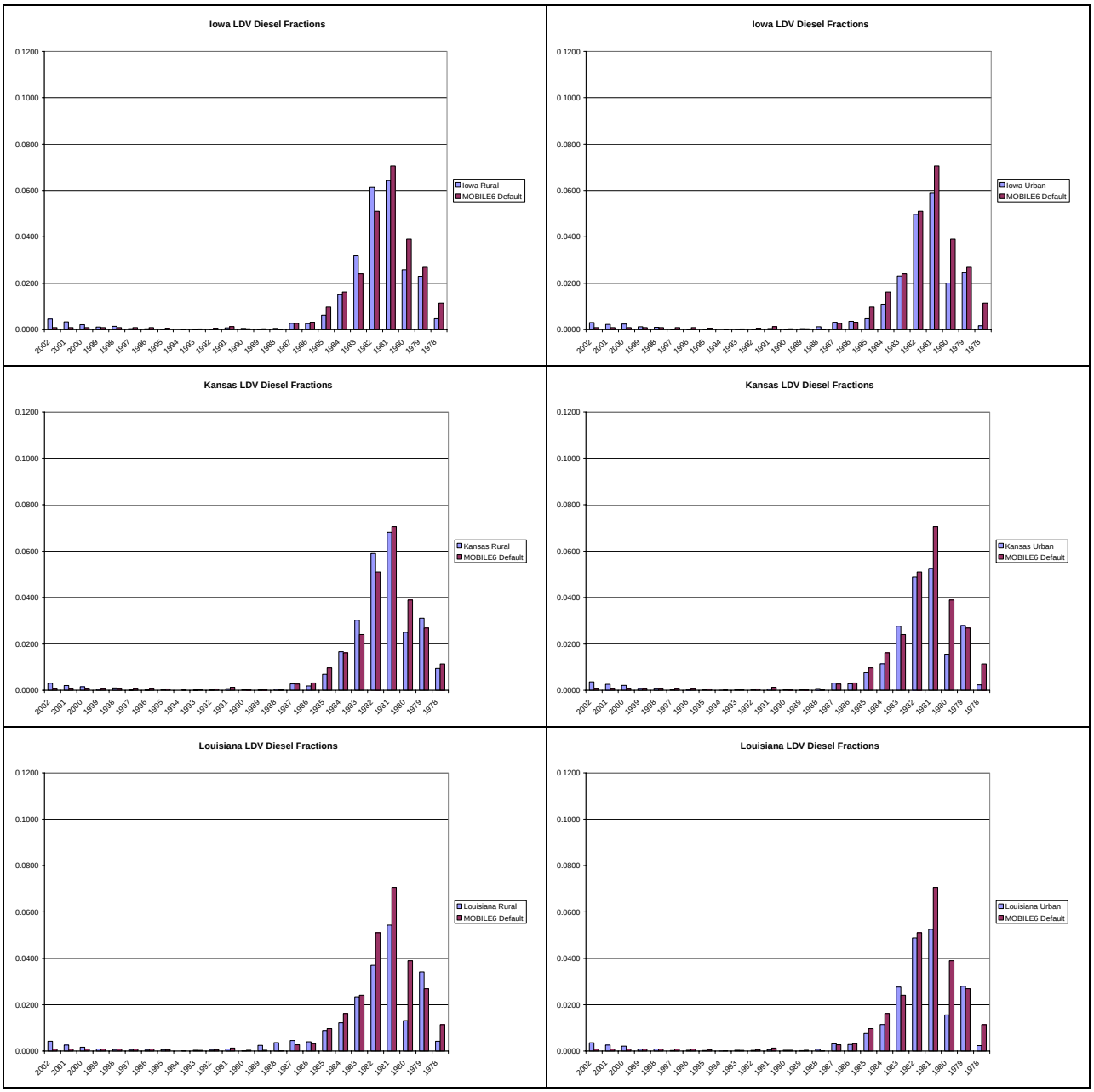
(d)



(e)

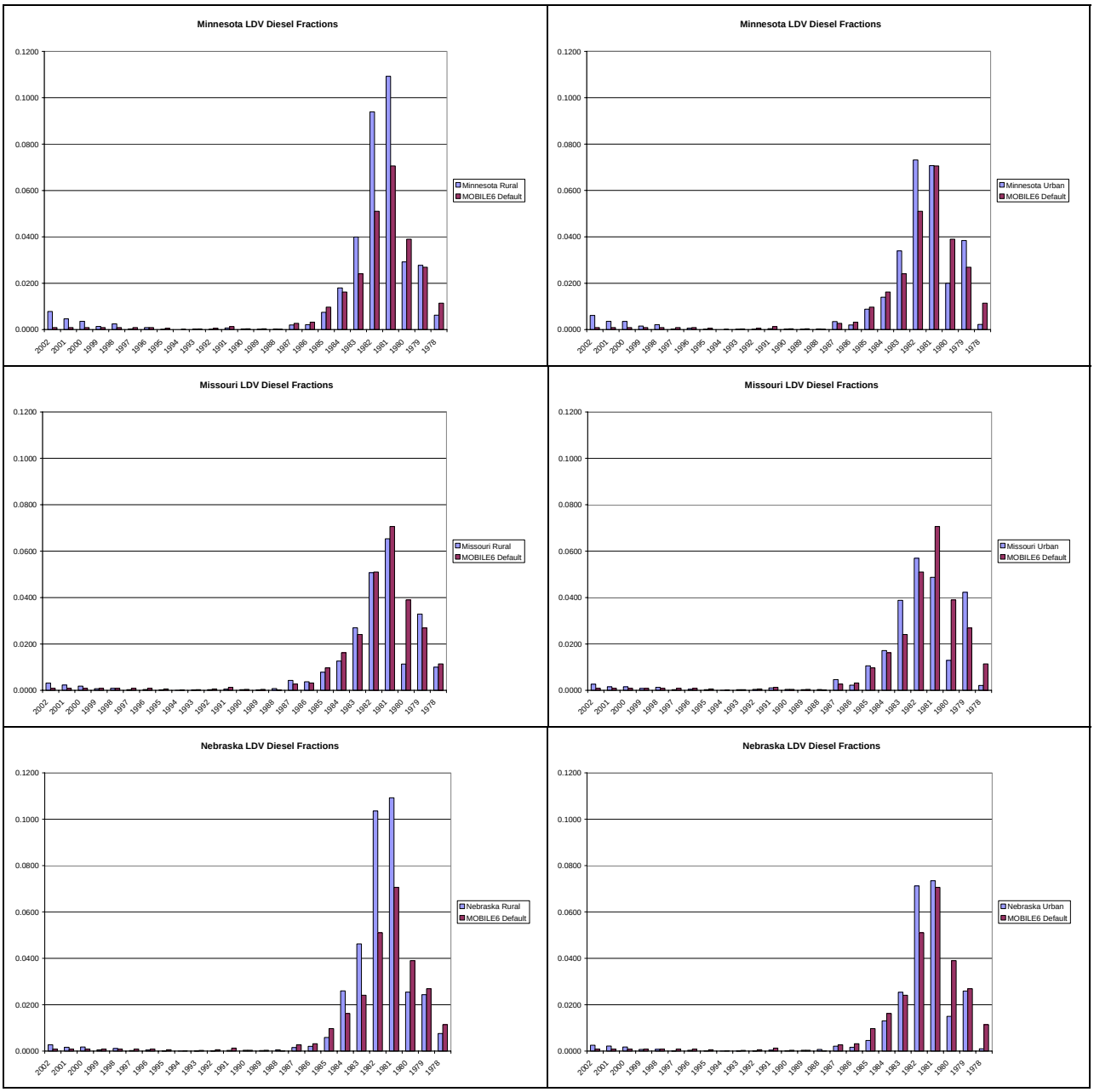
Weighted-average age distributions of vehicle fleets for **Oklahoma** and for the following vehicle classes:

(a) Light-Duty Vehicles (Passenger Cars)
(b) Light-Duty Trucks, Class 1 (0-6,000 lbs. GVWR, 0-3750 lbs. LVW)
(c) Light Duty Trucks, Class 2 (0-6,001 lbs. GVWR, 3751-5750 lbs. LVW)
(d) Light Duty Trucks, Class 3 (6,001-8500 lbs. GVWR, 0-5750 lbs. ALVW)
(e) Light Duty Trucks, Class 4 (6,001-8500 lbs. GVWR, >5750 lbs. ALVW)



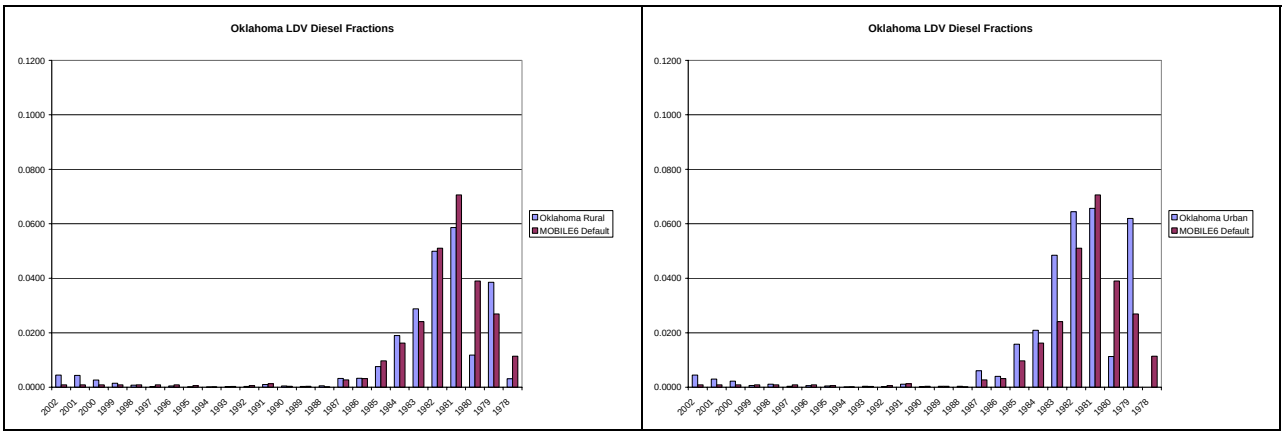
Fractions of the light-duty vehicle fleet that are diesel-powered vehicles for the rural (left) and urban (right) areas of the states of Iowa, Kansas, and Louisiana. The diesel fractions corresponding to MOBILE6 defaults are plotted for comparison on each chart.

<u>Key to Figures:</u>
Y-axis: Fraction of the total fleet that is comprised of diesel-powered vehicles
X-axis: Vehicle age from <1 to ≥24 years

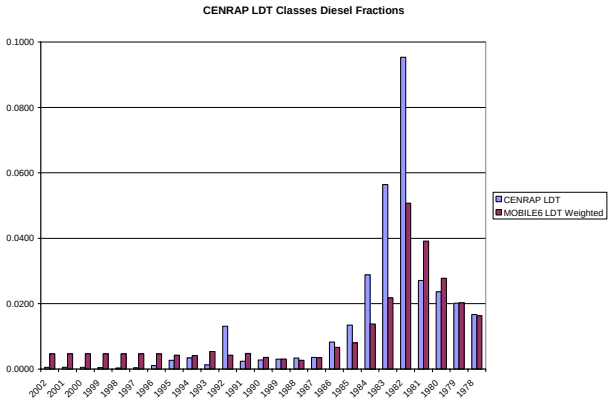


Fractions of the light-duty vehicle fleet that are diesel-powered vehicles for the rural (left) and urban (right) areas of the states of Minnesota, Missouri, and Nebraska. The diesel fractions corresponding to MOBILE6 defaults are plotted for comparison on each chart.

<u>Key to Figures:</u>
Y-axis: Fraction of the total fleet that is comprised of diesel-powered vehicles
X-axis: Vehicle age from <1 to ≥24 years



Fractions of the light-duty vehicle fleet that are diesel-powered vehicles for the rural (left) and urban (right) areas of the state of Oklahoma. The diesel fractions corresponding to MOBILE6 defaults are plotted for comparison on each chart.



Fractions of the light-duty truck fleet that are diesel powered in the CENRAP region. The diesel fractions corresponding to MOBILE6 defaults are plotted for comparison.

<u>Key to Figures:</u>
Y-axis: Fraction of the total fleet that is comprised of diesel-powered vehicles
X-axis: Vehicle age from <1 to ≥24 years