

# Vehicle Registration Data

## What it is and why we should care!

3 May 2018

Dennis Perkinson, Ph.D.

# What is it?

- Motor vehicle registration defined.
- Why do we register vehicles?
- Who's in charge?
- What do we mean when we say vehicle registration?

# Model Year

PROGRAM: AGEPERKN  
 WRITTEN BY: KATHY SMITH

TEXAS DEPARTMENT OF MOTOR VEHICLES  
 AGE COUNTS BY COUNTY USING GROSS WEIGHT

RUN DATE 02/05/14  
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COUNTY 101 HARRIS

YEAR MODEL	PASSENGER	MOTOR- CYCLES	TRUCKS <=6000	TRUCKS >6000 <=8500	TOTAL TRUCKS <=8500	GAS TRUCKS >8500	DIESEL TRUCKS >8500	TOTAL TRUCKS >8500	TOTAL ALL TRUCKS
2013	157,605	3,363	11,072	27,276	38,348	4,522	3,160	7,682	46,030
2012	138,503	3,351	11,677	22,667	34,344	3,224	6,179	9,403	43,747
2011	116,038	2,245	12,503	22,869	35,372	2,257	4,321	6,578	41,950
2010	110,685	1,670	11,705	18,131	29,836	1,015	1,657	2,672	32,508
2009	99,036	3,986	11,455	14,710	26,165	1,275	1,762	3,037	29,202
2008	141,945	3,859	22,648	27,828	50,476	2,779	4,718	7,497	57,973
2007	147,227	4,762	26,099	30,693	56,792	1,480	4,310	5,790	62,582
2006	135,854	4,024	30,002	18,317	48,319	1,520	4,087	5,607	53,926
2005	125,276	3,109	29,723	17,598	47,321	1,265	3,552	4,817	52,138
2004	107,881	2,353	30,501	22,092	52,593	993	2,487	3,480	56,073
2003	101,416	2,851	34,860	18,764	53,624	878	1,877	2,755	56,379
2002	97,844	2,404	39,911	14,766	54,677	701	1,825	2,526	57,203
2001	89,544	1,764	35,478	13,335	48,813	776	1,887	2,663	51,476
2000	85,149	1,413	29,982	8,466	38,448	710	2,034	2,744	41,192
1999	66,232	1,119	24,516	8,588	33,104	577	1,667	2,244	35,348
1998	53,032	798	20,679	3,273	23,952	330	905	1,235	25,187
1997	41,585	513	18,391	4,138	22,529	431	1,023	1,454	23,983
1996	29,750	555	11,985	2,529	14,514	230	710	940	15,454
1995	24,884	456	12,009	2,195	14,204	469	618	1,087	15,291
1994	17,081	356	10,291	1,193	11,484	176	478	654	12,138
1993	12,790	269	6,884	947	7,831	123	361	484	8,315
1992	9,484	188	4,988	630	5,618	93	266	359	5,977
1991	7,235	129	3,904	438	4,342	96	317	413	4,755
1990	5,463	147	3,378	325	3,703	126	241	367	4,070
1989	3,738	121	2,954	293	3,247	73	209	282	3,529
1988	2,788	134	2,078	193	2,271	91	138	229	2,500
1987	2,218	109	1,361	92	1,453	77	89	166	1,619
1986	1,821	177	1,571	128	1,699	77	48	125	1,824
1985	1,848	155	1,326	129	1,455	46	35	81	1,536
1984	1,521	114	1,241	127	1,368	35	39	74	1,442
OLDER	13,421	1,205	6,606	521	7,127	194	54	248	7,375
TOTAL	1,948,894	47,699	471,778	303,251	775,029	26,639	51,054	77,693	852,722

# Vehicle Categories

PROGRAM: AGEPERKN  
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TEXAS DEPARTMENT OF MOTOR VEHICLES  
AGE COUNTS BY COUNTY USING GROSS WEIGHT

RUN DATE 02/05/14  
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COUNTY 101 HARRIS

YEAR MODEL	PASSENGER	MOTOR- CYCLES	TRUCKS		TOTAL	GAS		DIESEL	TOTAL	TOTAL
			TRUCKS <=6000	>6000 <=8500	TRUCKS <=8500	TRUCKS >8500	TRUCKS >8500	TRUCKS >8500	TRUCKS >8500	ALL TRUCKS
2013	157,605	3,363	11,072	27,276	38,348	4,522	3,160	7,682	46,030	
2012	138,503	3,351	11,677	22,667	34,344	3,224	6,179	9,403	43,747	
2011	116,038	2,245	12,503	22,869	35,372	2,257	4,321	6,578	41,950	
2010	110,685	1,670	11,705	18,131	29,836	1,015	1,657	2,672	32,508	
2009	99,036	3,986	11,455	14,710	26,165	1,275	1,762	3,037	29,202	
2008	141,945	3,859	22,648	27,828	50,476	2,779	4,718	7,497	57,973	
2007	147,227	4,762	26,099	30,693	56,792	1,480	4,310	5,790	62,582	
2006	135,854	4,024	30,002	18,317	48,319	1,520	4,087	5,607	53,926	
2005	125,276	3,109	29,723	17,598	47,321	1,265	3,552	4,817	52,138	
2004	107,881	2,353	30,501	22,092	52,593	993	2,487	3,480	56,073	
2003	101,416	2,851	34,860	18,764	53,624	878	1,877	2,755	56,379	
2002	97,844	2,404	39,911	14,766	54,677	701	1,825	2,526	57,203	
2001	89,544	1,764	35,478	13,335	48,813	776	1,887	2,663	51,476	
2000	85,149	1,413	29,982	8,466	38,448	710	2,034	2,744	41,192	
1999	66,232	1,119	24,516	8,588	33,104	577	1,667	2,244	35,348	
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1994	17,081	356	10,291	1,193	11,484	176	478	654	12,138	
1993	12,790	269	6,884	947	7,831	123	361	484	8,315	
1992	9,484	188	4,988	630	5,618	93	266	359	5,977	
1991	7,235	129	3,904	438	4,342	96	317	413	4,755	
1990	5,463	147	3,378	325	3,703	126	241	367	4,070	
1989	3,738	121	2,954	293	3,247	73	209	282	3,529	
1988	2,788	134	2,078	193	2,271	91	138	229	2,500	
1987	2,218	109	1,361	92	1,453	77	89	166	1,619	
1986	1,821	177	1,571	128	1,699	77	48	125	1,824	
1985	1,848	155	1,326	129	1,455	46	35	81	1,536	
1984	1,521	114	1,241	127	1,368	35	39	74	1,442	
OLDER	13,421	1,205	6,606	521	7,127	194	54	248	7,375	
TOTAL	1,948,894	47,699	471,778	303,251	775,029	26,639	51,054	77,693	852,722	

# Vehicles

PROGRAM: AGEPERKN  
WRITTEN BY: KATHY SMITH

TEXAS DEPARTMENT OF MOTOR VEHICLES  
AGE COUNTS BY COUNTY USING GROSS WEIGHT

RUN DATE 02/05/14  
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COUNTY	101 HARRIS								
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<b>TOTAL</b>	<b>1,948,894</b>	<b>47,699</b>	<b>471,778</b>	<b>303,251</b>	<b>775,029</b>	<b>26,639</b>	<b>51,054</b>	<b>77,693</b>	<b>852,722</b>

# Heavy Truck Sub-Categories

DSLPERKN  
WRITTEN BY: KATHY SMITH

TEXAS DEPARTMENT OF MOTOR VEHICLES  
DIESEL TRUCK COUNTS BY COUNTY USING GROSS WEIGHT

RUN DATE 02/05/14  
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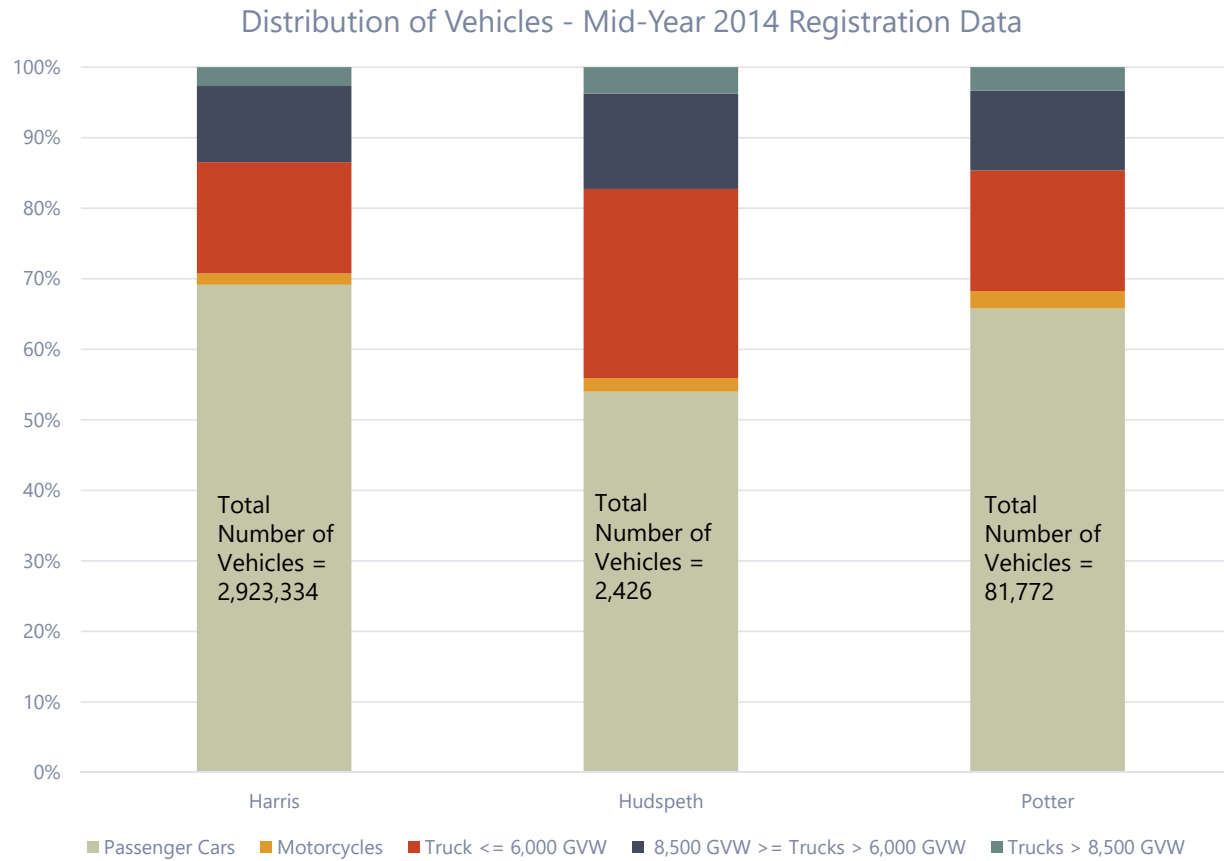
COUNTY	101	HARRIS								
YEAR		DIESEL	DIESEL	DIESEL	DIESEL	DIESEL	DIESEL	DIESEL	DIESEL	DIESEL
MODEL		> 8500	> 10000	> 14000	> 16000	> 19500	> 26000	> 33000	> 60000	TOTALS
2013		1,743	402	112	285	334	79	107	98	3,160
2012		3,765	961	214	494	488	74	109	74	6,179
2011		2,694	673	98	280	358	71	89	58	4,321
2010		946	148	60	73	291	62	38	39	1,657
2009		753	268	61	138	252	61	136	93	1,762
2008		2,523	686	359	356	456	132	129	77	4,718
2007		1,281	514	423	334	928	234	409	187	4,310
2006		1,560	621	302	316	662	157	299	170	4,087
2005		1,656	329	183	205	546	145	234	254	3,552
2004		1,017	275	180	137	439	79	170	190	2,487
2003		782	223	149	112	262	101	152	96	1,877
2002		660	235	202	101	301	92	159	75	1,825
2001		550	281	192	119	402	97	167	79	1,887
2000		447	315	208	123	445	129	286	81	2,034
1999		342	282	156	113	385	95	226	68	1,667
1998		106	60	115	34	288	90	180	32	905
1997		159	125	184	32	266	70	148	39	1,023
1996		80	61	80	86	143	50	175	35	710
1995		53	63	36	17	134	42	246	27	618
1994		60	52	25	13	66	39	201	22	478
1993		29	31	11	10	68	28	168	16	361
1992		34	28	9	10	32	18	126	9	266
1991		22	22	37	51	44	25	108	8	317
1990		20	23	9	19	45	26	89	10	241
1989		3	15	31	17	32	9	89	13	209
1988		5	13	1	5	14	6	94	0	138
1987		4	5	6	4	9	10	44	7	89
1986		7	1	0	3	9	1	26	1	48
1985		5	6	0	1	3	4	14	2	35
1984		2	4	0	0	8	6	19	0	39
OLDER		6	2	1	3	7	7	27	1	54
TOTAL		21,314	6,724	3,444	3,491	7,717	2,039	4,464	1,861	51,054

# How does it vary by county?

- Texas has 254 counties.
- These counties are very different in terms of physical size, demography, road network, etc.
- Not surprisingly, they also vary widely in terms of fleet composition.

Here's an example...

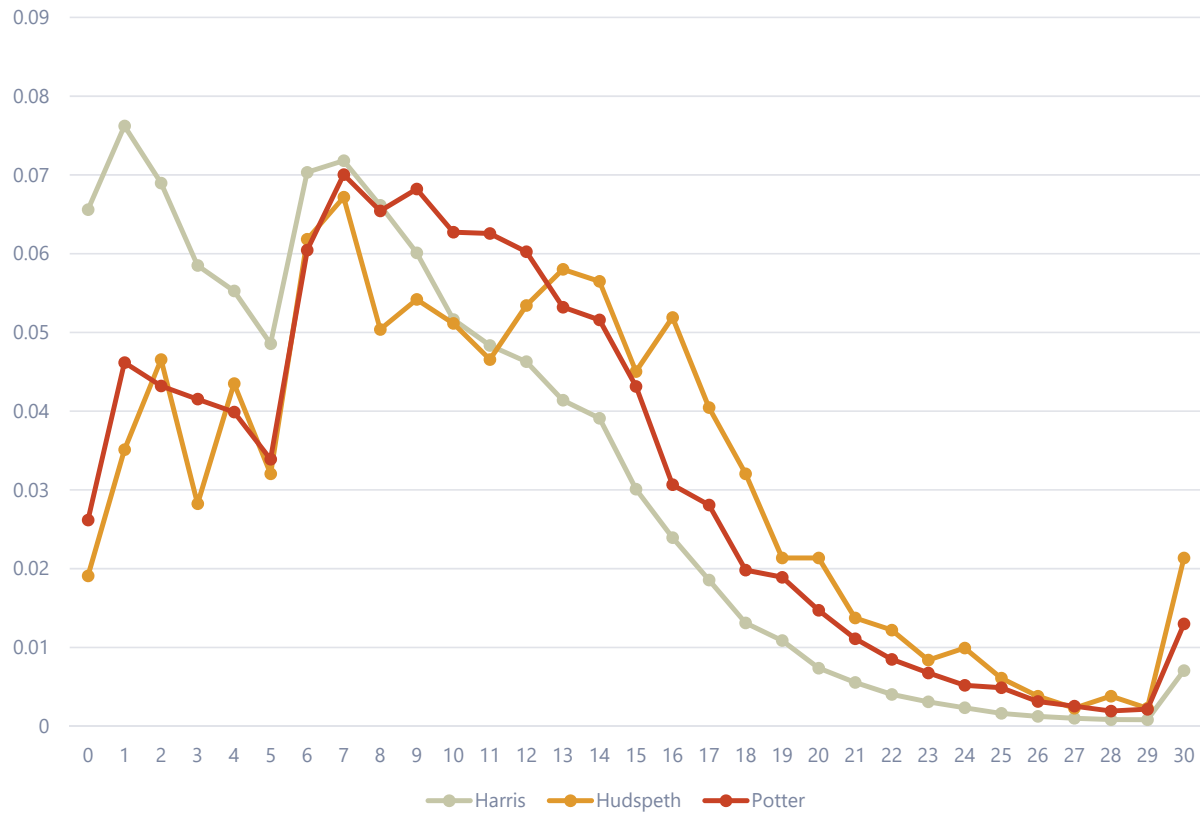
# Distribution of Vehicles





# Vehicle Age

Passenger Cars Age Distribution - 2014 Registration Data



# Where does it come from?

- Originally from TxDOT
- More recently from TxDMV
- Specialized extraction for TTI / conformity.

# What is it used for?

Regulatory compliance

Policy analysis

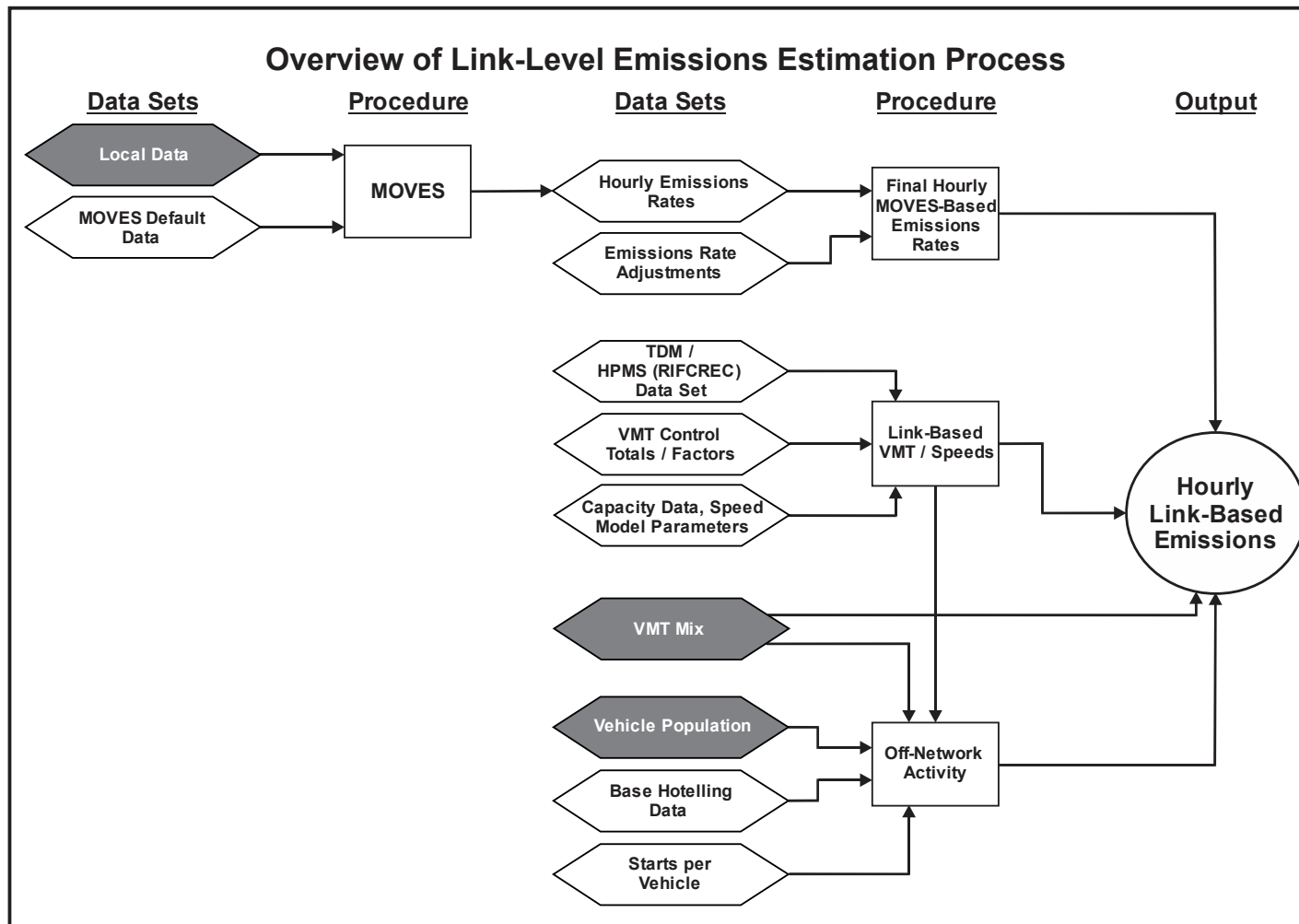
Special studies

# Regulatory Compliance

MOVES emissions estimation process overview.

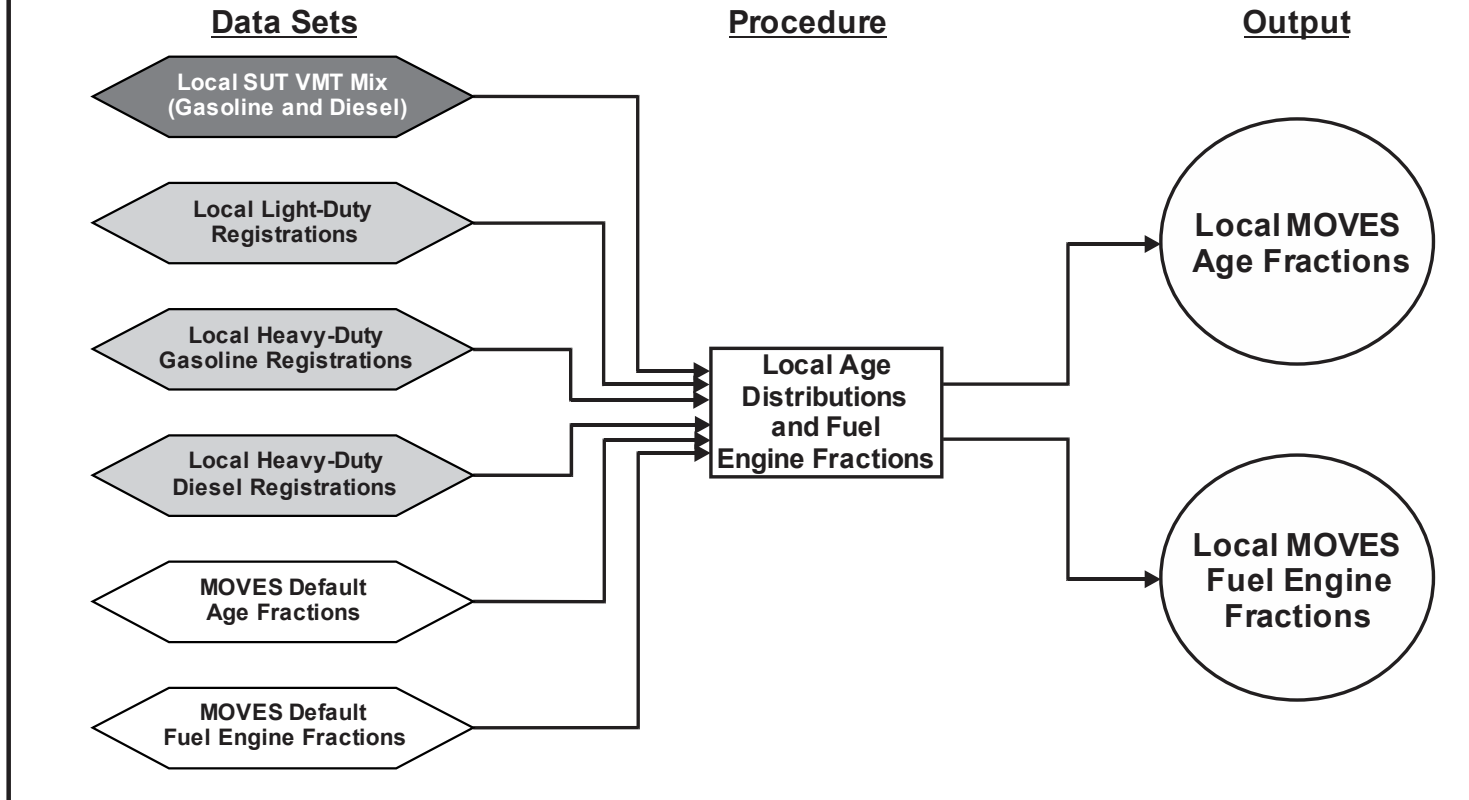
Three purposes:

- Emission Rates
- Fuel Fractions
- Vehicle Population
- Source Use Types / VMT Mix



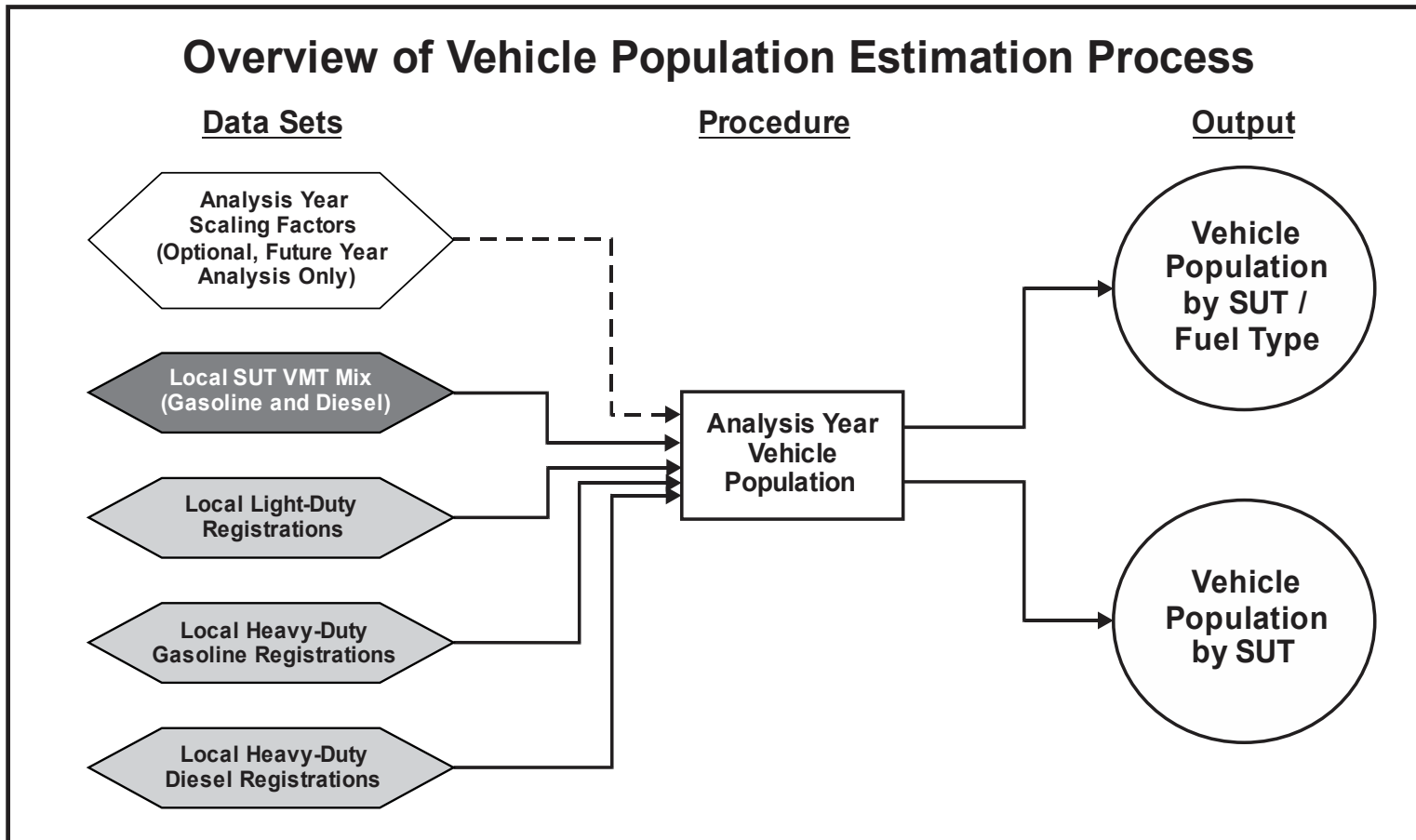
Source: Texas A&M Transportation Institute, January 2018.

## Overview of Local MOVES Age Distribution and Fuel Fraction Inputs Process



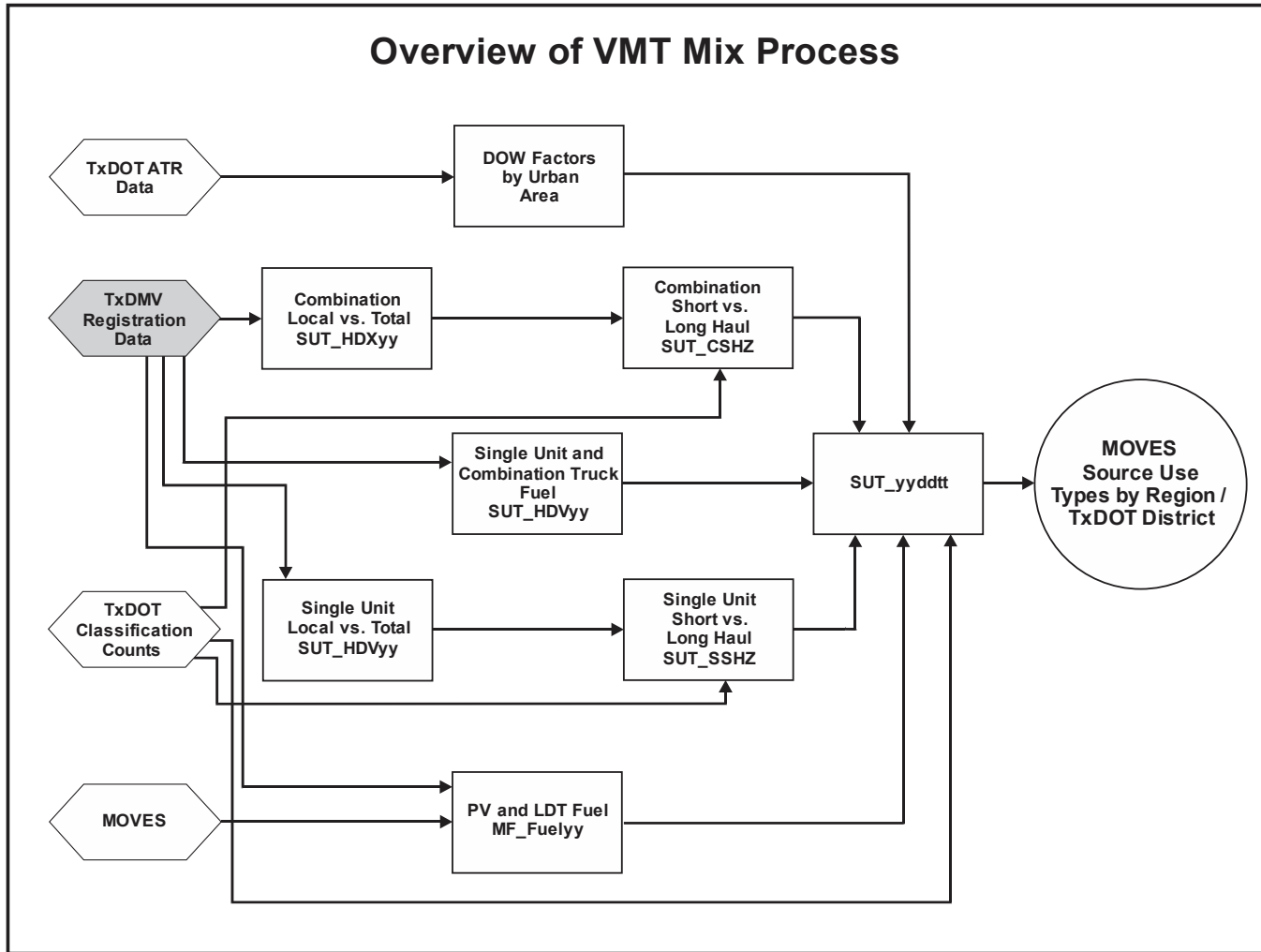
Source: Texas A&M Transportation Institute, January 2018.

# Overview of Vehicle Population Estimation Process



Source: Texas A&M Transportation Institute, January 2018.

## Overview of VMT Mix Process



Source: Texas A&M Transportation Institute, January 2018.



# Policy Analysis

What is policy analysis?

What if?

What kinds?

- Reduction programs
- Trends / technology

# Special Studies

What is a special study?

More basic and open than “What if” – Just “What?”

## Examples

- External trucks movement
- Micro-economic impacts
- Secondary impacts (e.g., health)

# What are the alternatives?

Current status

MOVES defaults

Background (How did this happen?)

- Migration to TxDMV
- Budget cuts
- Staff loss
- Computing technology

# What are our options?

## Discussion

- Legacy Agency to Agency
- Empirical Sampling
- The Myth of Fingerprints (VIN Decoding)
- Transitional Approach