

2014 Vehicle Registration Data Analysis

TPB Technical Committee
January 9, 2015

Background

- Vehicle registration data from the three states — MD, DC,VA — is obtained every three years to be used in the Air Quality analysis and occasionally in the development of mobile emissions for State Implementation Plans and/or Maintenance Plans
- The data is obtained from the state air agencies through the MWCOG Department of Environmental Programs
- The 2008, 2011 & 2014 VIN data presented here was decoded & processed in-house; earlier data was decoded and processed by a consultant on behalf of TPB.



Number of Registered Records as of July 1, 2014

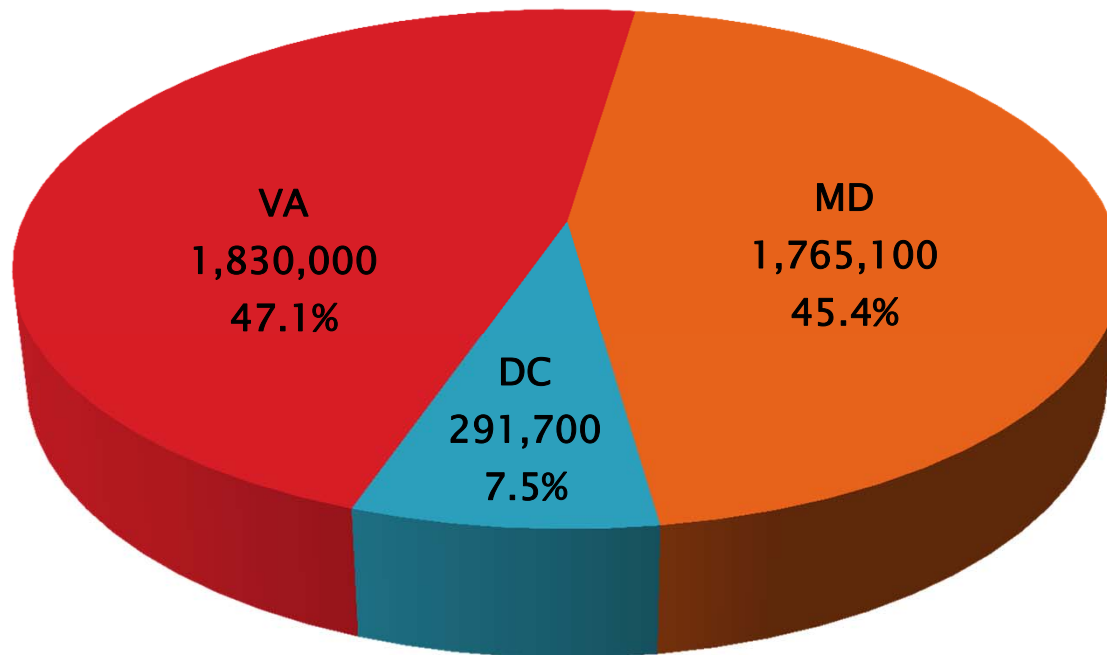
State	2008	2011	2014	2014-11 Difference	2014-11 % Difference
DC	267,900 ⁽¹⁾⁽²⁾	275,600 ⁽²⁾	291,700	16,100	5.8%
MD	1,652,600 ⁽²⁾	1,732,300 ⁽²⁾	1,765,100	32,800	1.9%
VA	1,699,200	1,768,300	1,830,000	61,700	3.5%
REGION	3,619,700	3,776,200	3,886,800	110,600	2.9%

(1) Estimate derived by averaging the January 2008 and the January 2009 figures reported by DDOE

(2) Adjusted subsequently to the 2011 VIN analysis in order to exclude trailers in the vehicle fleet



Regional Fleet (Shares by State)



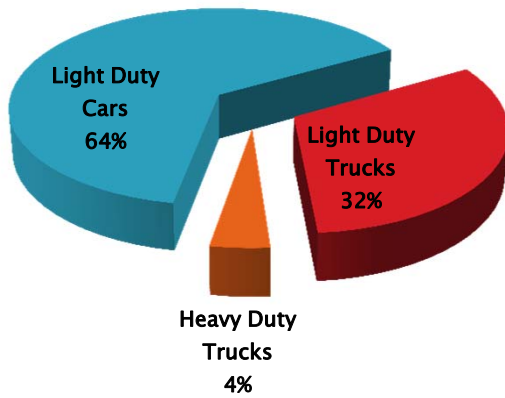
Successfully Decoded Records by State/Vehicle Type

State	Vehicle Category	Number of Decoded Records *		
		2008	2011	2014
DC	Light Duty Cars/Motorcycles	161,700	179,400	184,300
	Light Duty Trucks	67,100	82,400	92,700
	Heavy Duty Vehicles/Buses	10,600	13,100	12,300
	TOTAL	239,400	274,900	289,300
MD	Light Duty Cars/Motorcycles	935,700	961,700	957,300
	Light Duty Trucks	616,400	666,300	700,900
	Heavy Duty Vehicles/Buses	95,400	99,900	98,200
	TOTAL	1,647,500	1,727,900	1,756,400
VA	Light Duty Cars/Motorcycles	913,300	986,100	985,000
	Light Duty Trucks	608,700	697,800	753,900
	Heavy Duty Vehicles/Buses	73,600	79,600	83,900
	TOTAL	1,595,600	1,763,500	1,822,800
REGION	Light Duty Cars/Motorcycles	2,010,800	2,127,200	2,126,600
	Light Duty Trucks	1,292,200	1,446,500	1,547,500
	Heavy Duty Vehicles/Buses	179,600	192,500	194,400
	TOTAL	3,482,500	3,766,200	3,868,500

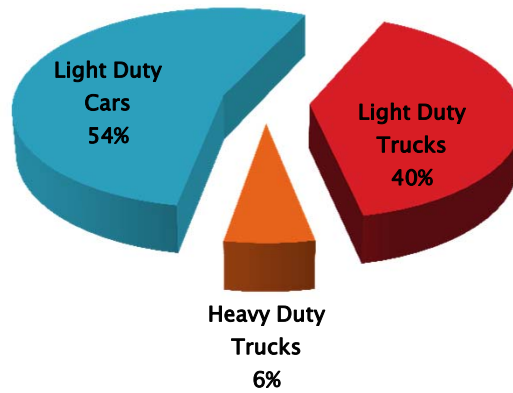
* 95% or higher decoding success rate

Breakdowns by State

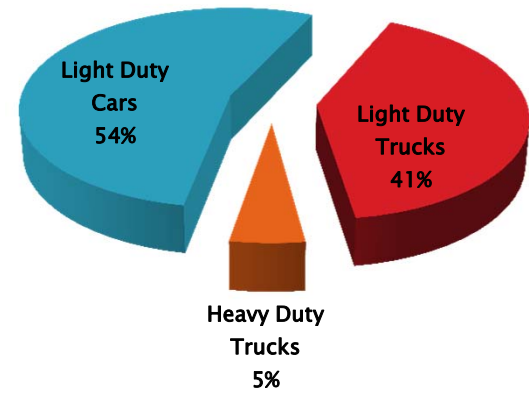
DC



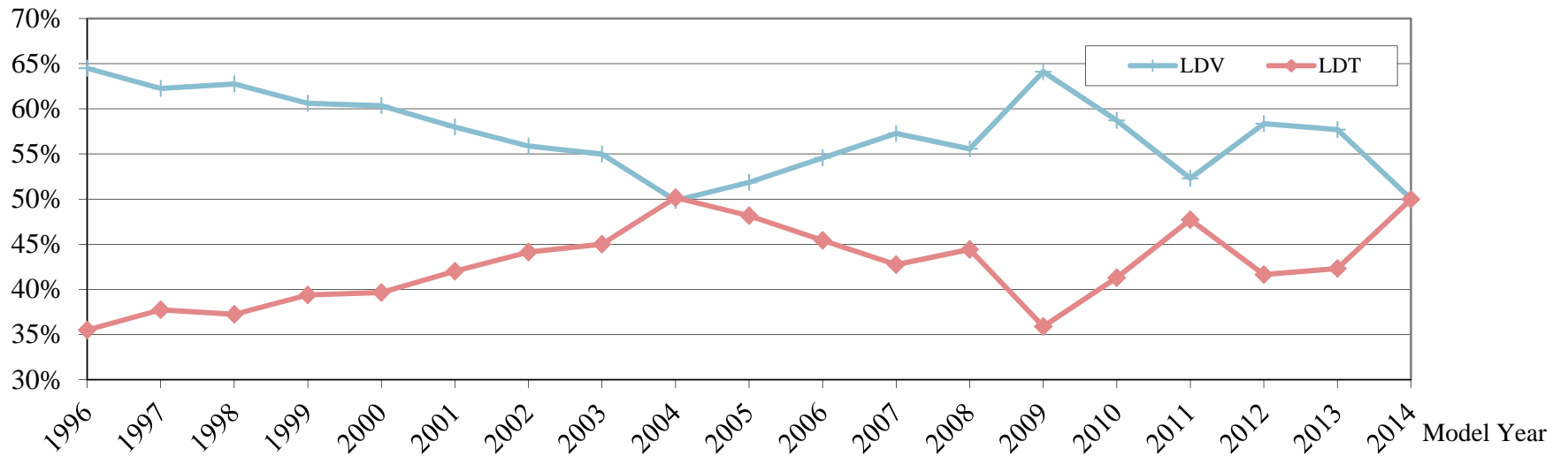
MD



VA



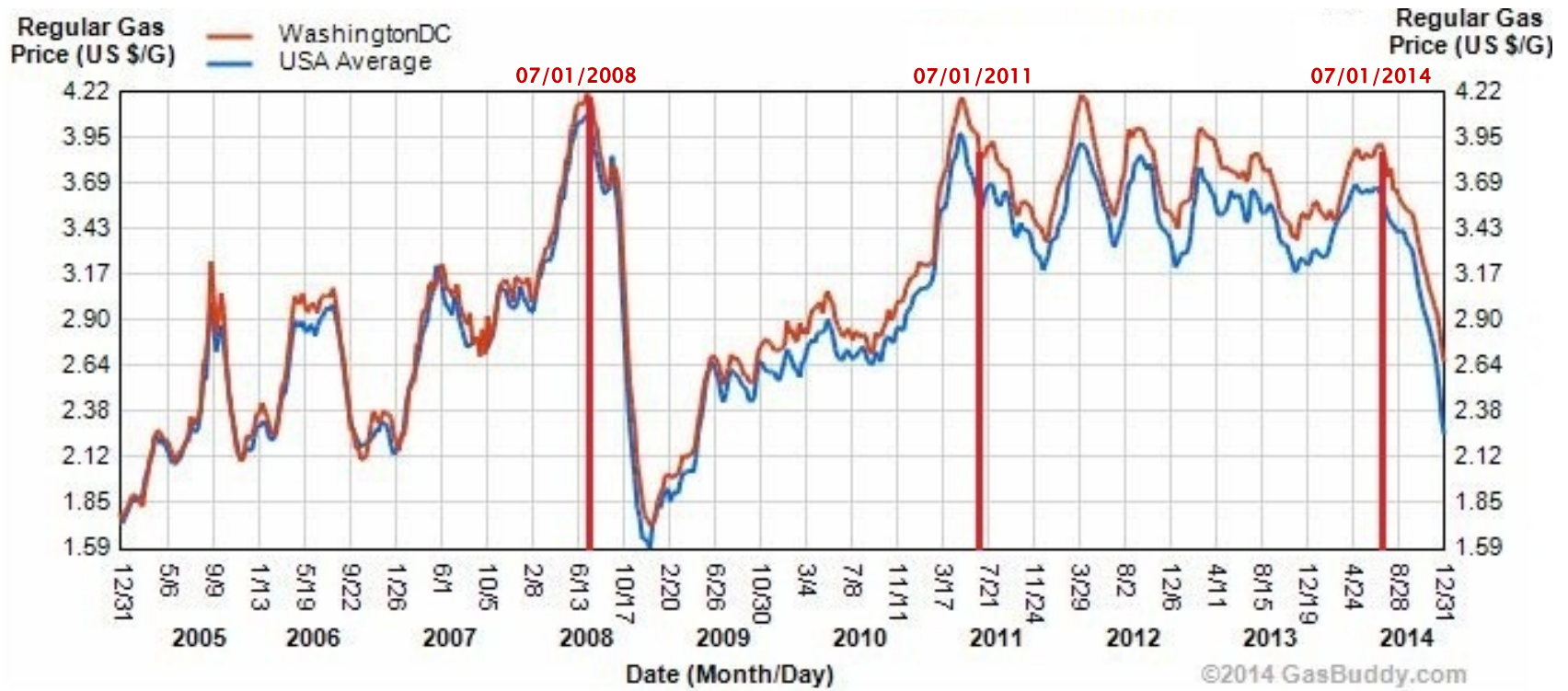
Light Duty Vehicles (LDV) versus Light Duty Trucks (LDT)



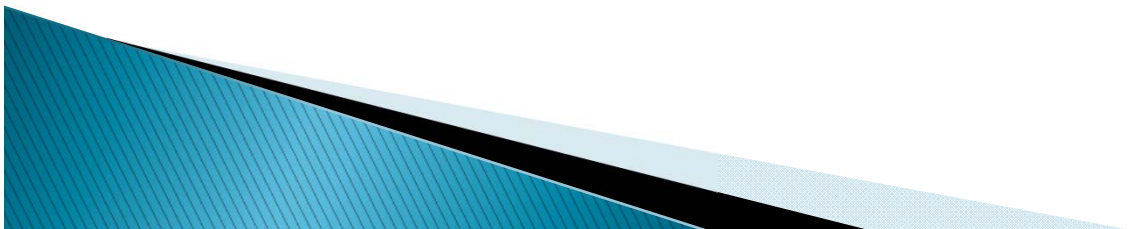
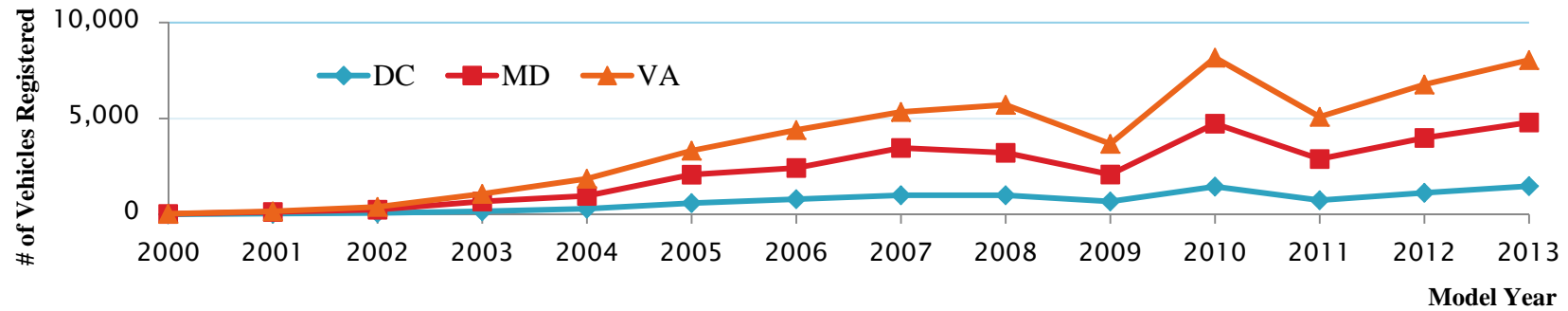
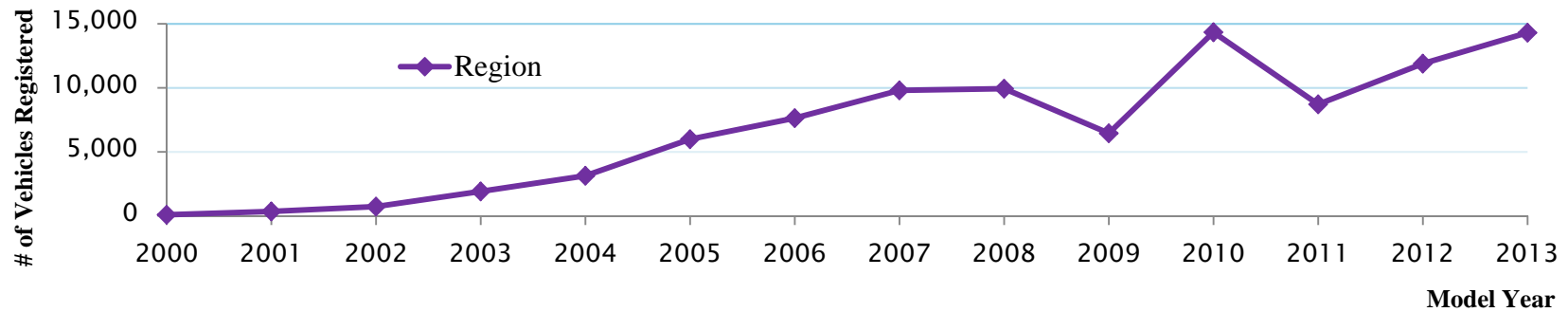
Note: Vehicle registration data as of July 1, 2014



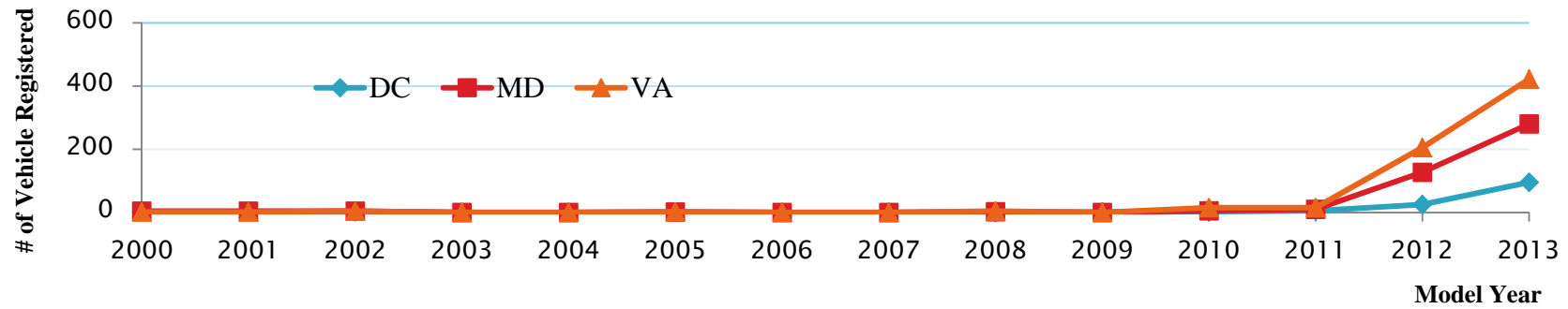
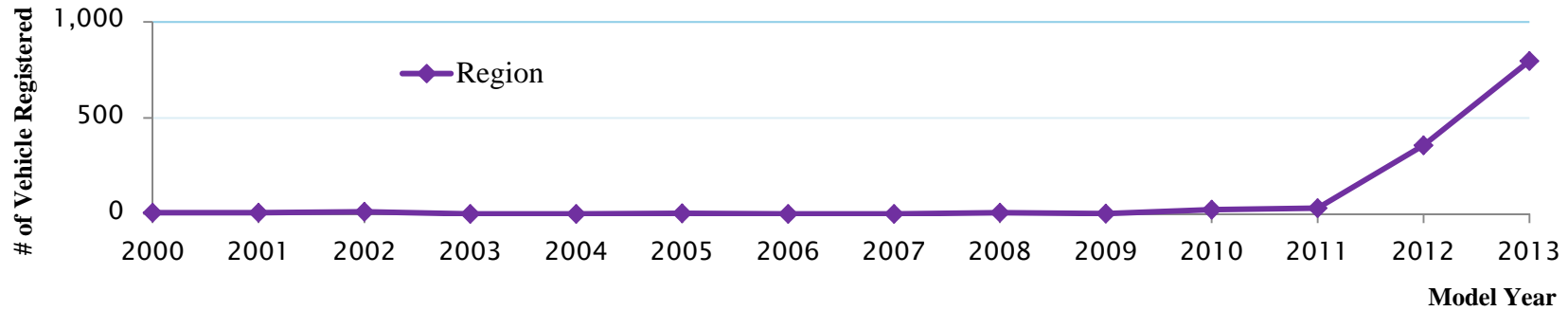
Historic Gasoline Price Fluctuations



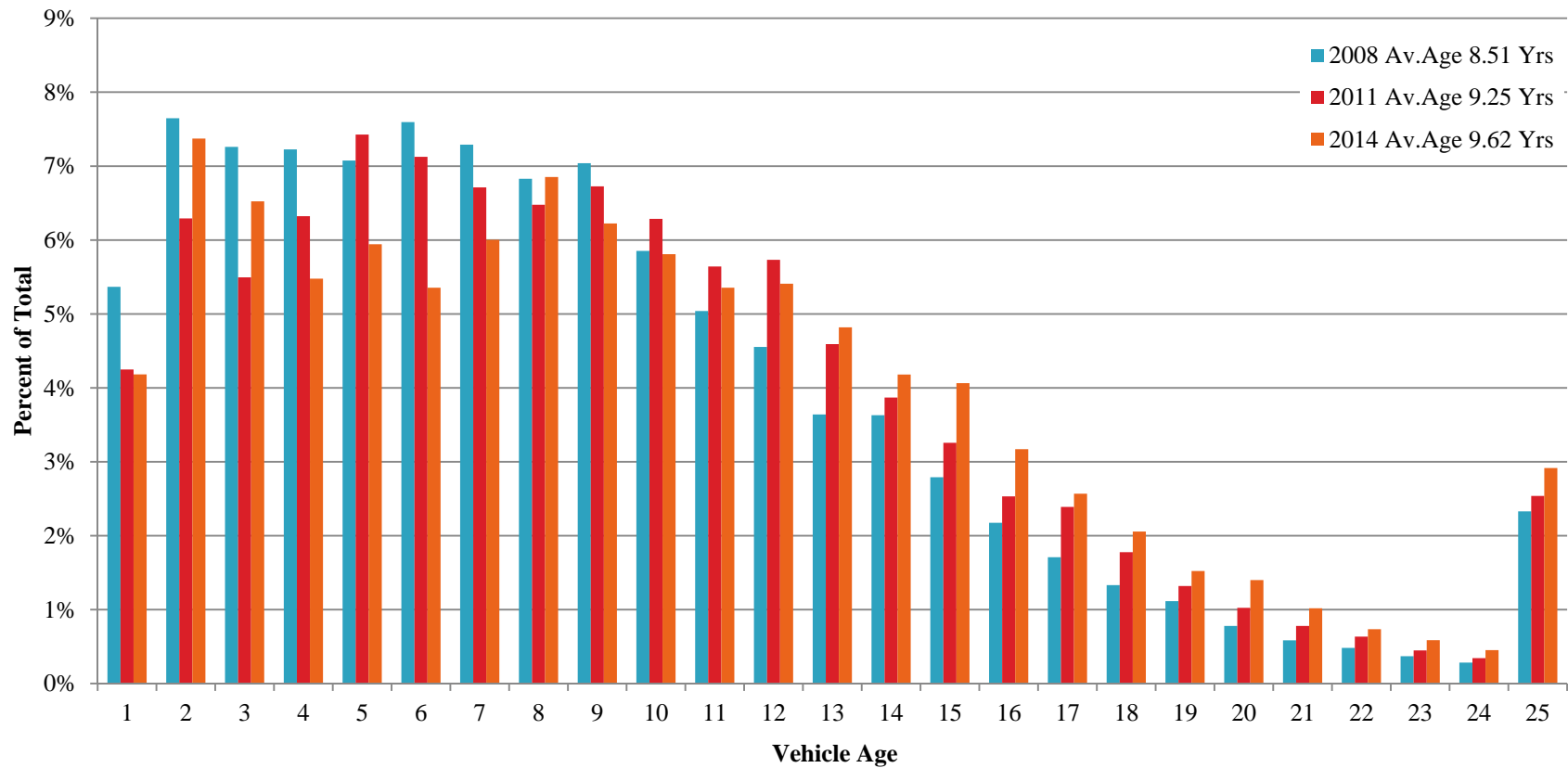
Popularity of Hybrid Vehicles over Time



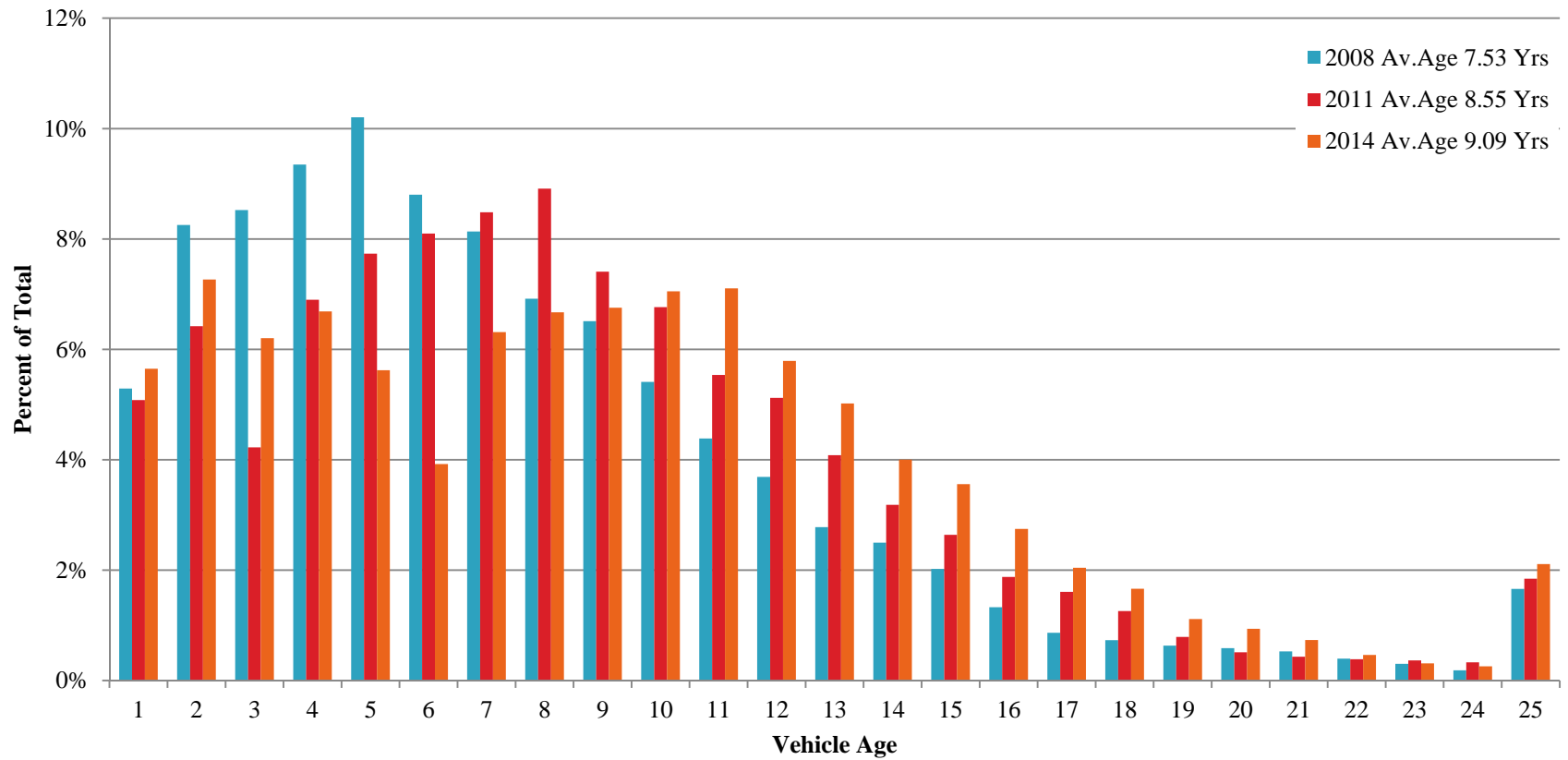
Popularity of Electric Vehicles over Time



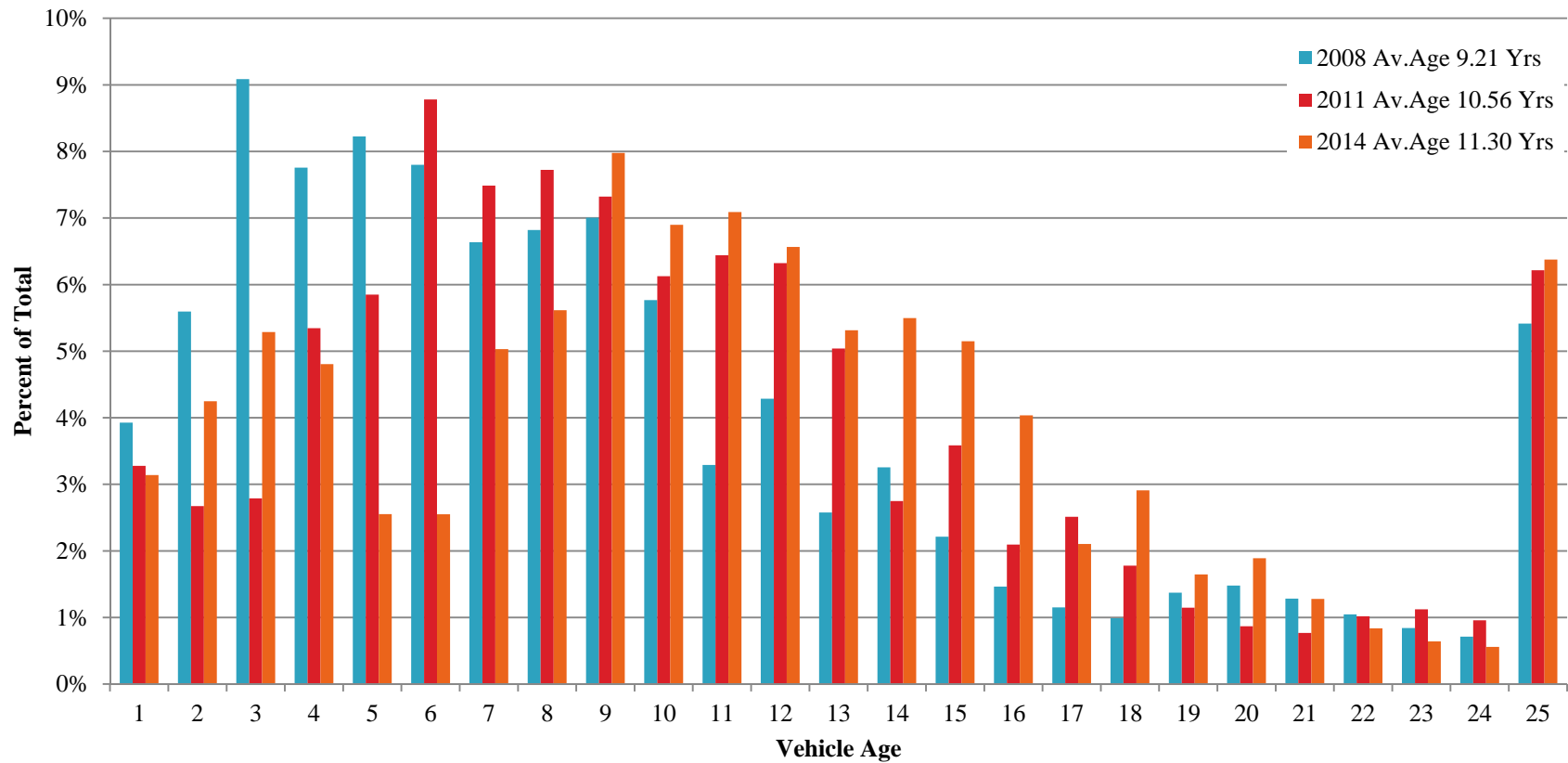
Age Distribution – Light Duty Vehicles



Age Distribution – Light Duty Trucks



Age Distribution – Heavy Duty Vehicles



Average Age of the Regional Vehicle Fleet

	Average Age			
Year	Light Duty Vehicles (LDV)	Light Duty Trucks (LDT)	Heavy Duty Vehicles (HDV)	All Vehicle Types
2008	8.51	7.53	9.21	8.18
2011	9.25	8.55	10.56	9.05
2014	9.62	9.09	11.30	9.49
2008-2011 Average Age Difference	0.74	1.02	1.35	0.87
2011-2014 Average Age Difference	0.37	0.54	0.74	0.44

Age Distribution – By Vehicle Type

Light Duty Cars	VIN Database	Average Age	Vehicle Age Ranges					Total
			1-5	6-10	11-15	16-20	21+	
	2008	8.51	34.6%	34.6%	19.7%	7.1%	4.1%	100%
	2011	9.25	29.8%	33.3%	23.1%	9.0%	4.7%	100%
	2014	9.62	29.5%	30.2%	23.8%	10.7%	5.7%	100%

Light Duty Trucks	VIN Database	Average Age	Vehicle Age Ranges					Total
			1-5	6-10	11-15	16-20	21+	
	2008	7.53	41.6%	35.8%	15.4%	4.1%	3.1%	100%
	2011	8.55	30.4%	39.7%	20.6%	6.0%	3.4%	100%
	2014	9.09	31.4%	30.7%	25.5%	8.5%	3.9%	100%

Heavy Duty Vehicles	VIN Database	Average Age	Vehicle Age Ranges					Total
			1-5	6-10	11-15	16-20	21+	
	2008	9.21	34.6%	34.0%	15.6%	6.5%	9.3%	100%
	2011	10.56	19.9%	37.4%	24.1%	8.4%	10.1%	100%
	2014	11.30	20.0%	28.1%	29.6%	12.6%	9.7%	100%

In Conclusion:

- The regional vehicle fleet continues to age over time but at a slower pace during the 2011–2014 period than during the 2008–2011 period
 - The average age of Light Duty Vehicles in the region is 9.62 years
 - The average age of Light Duty Trucks in the region is 9.09 years
 - The average age of Heavy Duty Vehicles in the region is 11.30 years
- The regional vehicle fleet has increased by 2.9% the 2011–2014 period
 - Maryland jurisdictions constitute 45.4% of the regional total
 - District of Columbia constitutes 7.5% of the regional total
 - Virginia jurisdictions constitute 47.1% of the regional total
- The growth of hybrids and electric vehicles in the region has been substantial, and they now constitute 2.74% and 0.04% of the regional Light Duty Vehicles/Trucks respectively



Questions?

