

February 22, 2010

Memorandum

To: Travel Management Subcommittee

From: Daivamani Sivasailam 

Subject: Local Data Inputs For MOVES2010 Model

During April 2009 EPA released a draft version of the MOVES model and a convertor to develop local data inputs in MOVES format. Staff developed methodologies to convert local data for four transportation inputs namely, 1) Vehicle Population, 2) Vehicle Age Distribution, 3) Annual VMT by Vehicle Type, and 4) VMT percentage by MOVES facility type.

On December 23, 2009, EPA released the final version of the MOVES model called MOVES2010 along with convertors to develop local data. In addition to the four transportation related local data, a new convertor for developing average speed distribution by VMT profile was released. Substantial changes were made to the annual VMT by vehicle type convertor which can now be used with daily VMT. This memorandum discusses the recommendations staff has developed for two of the local inputs, 1) Vehicle Population, and 2) Vehicle Age Distribution.

Vehicle Population

A staff developed methodology for this input used the source type vehicle fractions supplied by EPA and the Mobile 6.2 vehicle population developed using the VIN decoder. Table 1 shows the MOVES vehicle type mapping and table 2 shows the vehicle population developed using the source type vehicle fractions from draft MOVES 2009, MOVES2010 convertor 1, and MOVES2010 convertor 2. Staff recommends that we use the source type vehicle fractions in convertor 2 for developing this local input.

Vehicle Age Distribution

This input was developed directly using the EPA provided convertor. Changes to the convertor logic were made by EPA as shown on the attached flow charts as well as the source type vehicle fractions. Comparative age distributions for the 13 MOVES vehicle types for Montgomery County, Maryland generated using the draft and MOVES2010 convertors are shown as attachments. Staff recommends that we use the new convertor to develop age distribution fractions from Mobile 6 age distribution fractions.

attachments

Table 1: MOVES Vehicle Types

MOVES Vehicle Types Description	
Source Type ID	Source Type Name
11	Motorcycle
21	Passenger Car
31	Passenger Truck
32	Light Commercial Truck
41	Intercity Bus
42	Transit Bus
43	School Bus
51	Refuse Truck
52	Single Unit Short-Haul Truck
53	Single Unit Long-Haul Truck
54	Motorhome
61	Combination Short-Haul Truck
62	Combination Long-Haul Truck

Table 2: MOVES Vehicle Population Comparison for Montgomery County - 2005

Source Type ID	Type	MOVES2009 Draft Version	MOVES2010 Converter 1	MOVES2010 Converter 2
11	MC	8,902	8,902	8,902
21	PC	415,452	415,452	415,452
31	PT	214,048	189,027	189,027
32	LCT	30,036	60,676	60,676
41	IB	24	25	267
42	TB	1,131	1,042	800
43	SB	2,360	2,475	2,475
51	RT	112	54	54
52	SUST	7,436	2,111	2,111
53	SULT	351	161	161
54	MH	115	195	195
61	CST	1,080	824	824
62	CLT	489	595	595
Total		681,537	681,537	681,537

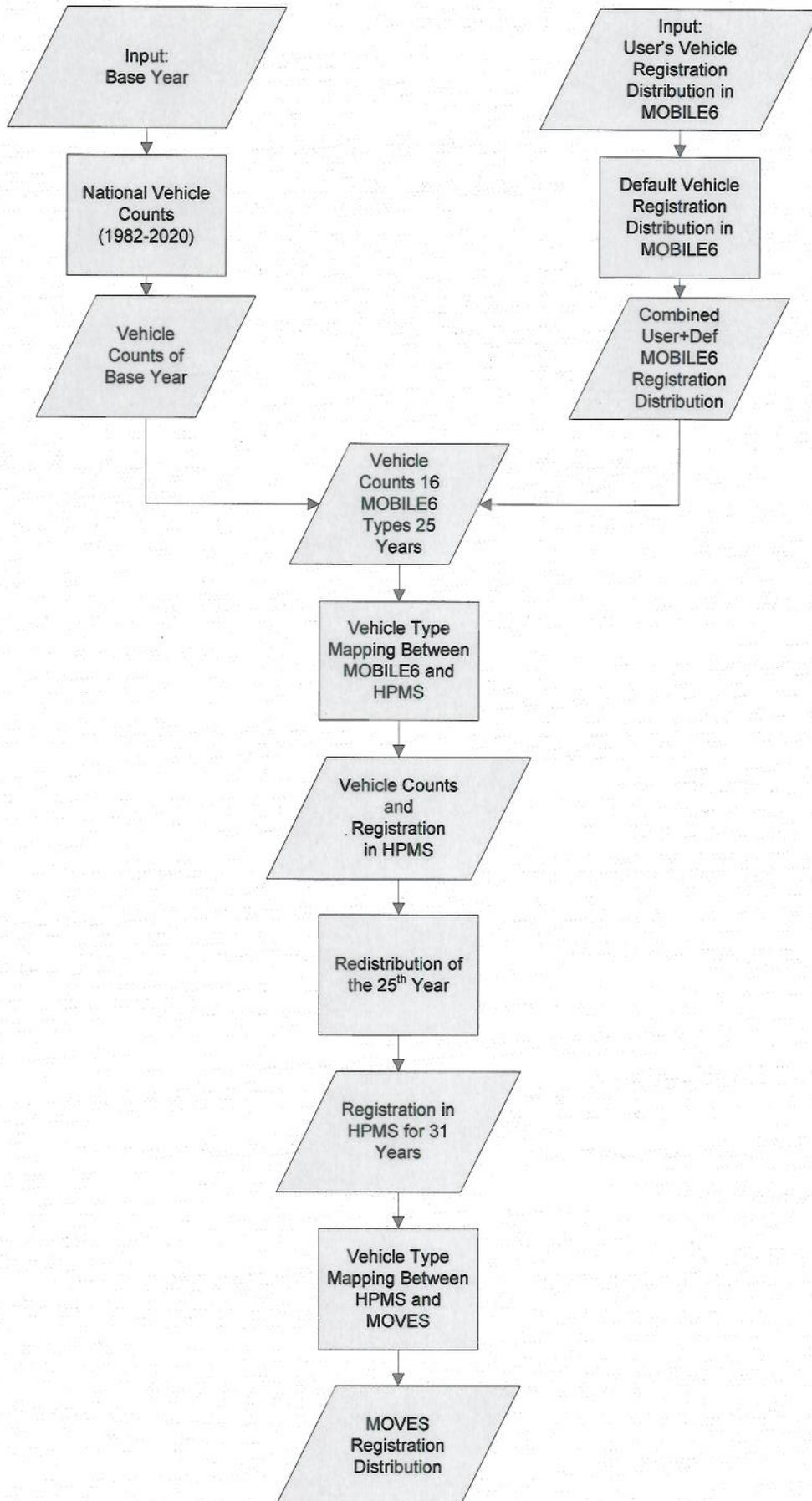
* In MOVES2009 draft version, MH was manually adjusted ; use the IB and TB fractions from COG's VIN database

* In MOVES2010 Converter 1 (December 23, 2009), use the IB and TB fractions from COG's VIN database

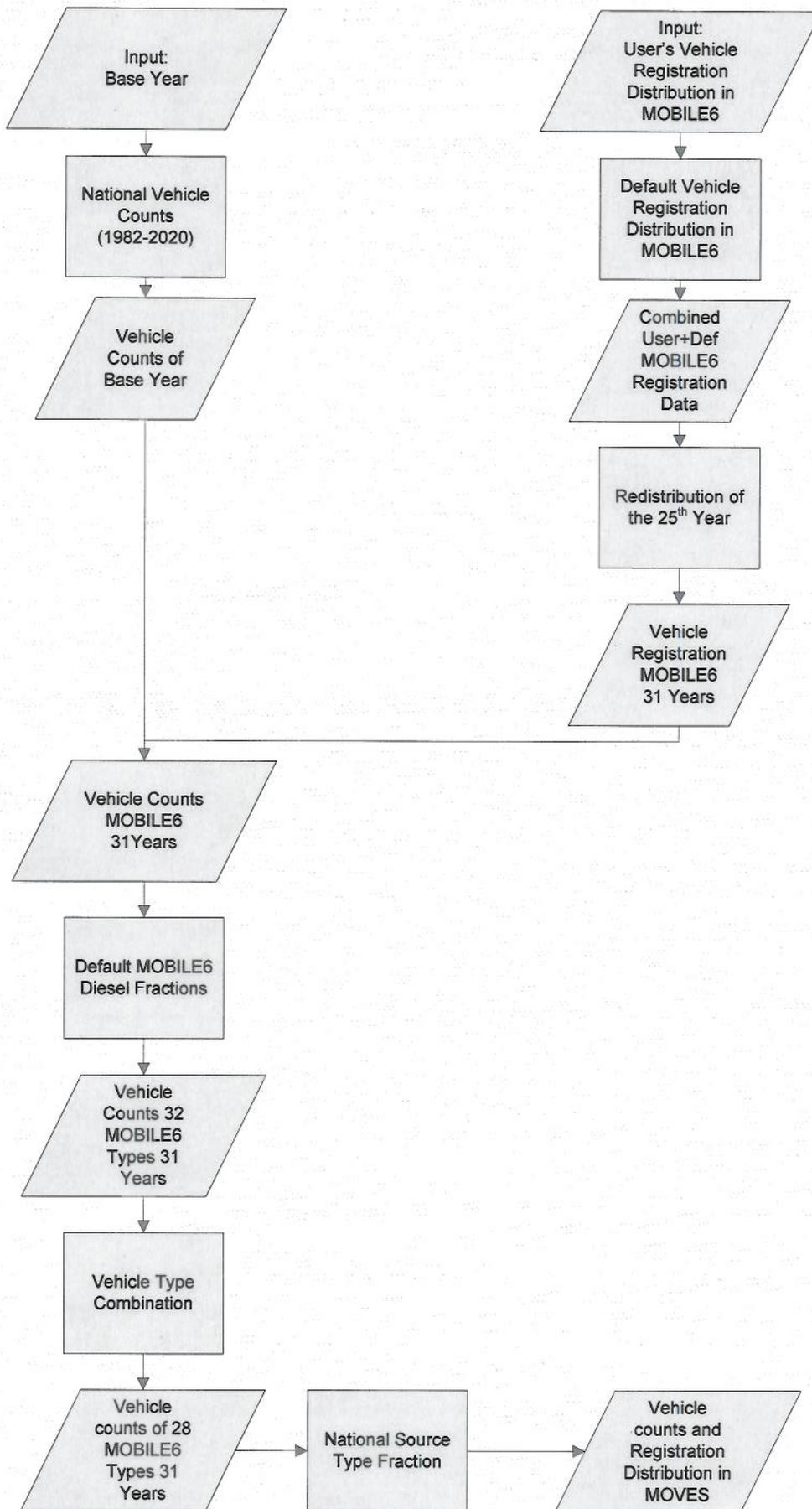
* In MOVES2010 Converter 2 (February 11,2010), use source type fraction table for all vehicle types

Attachment 1A

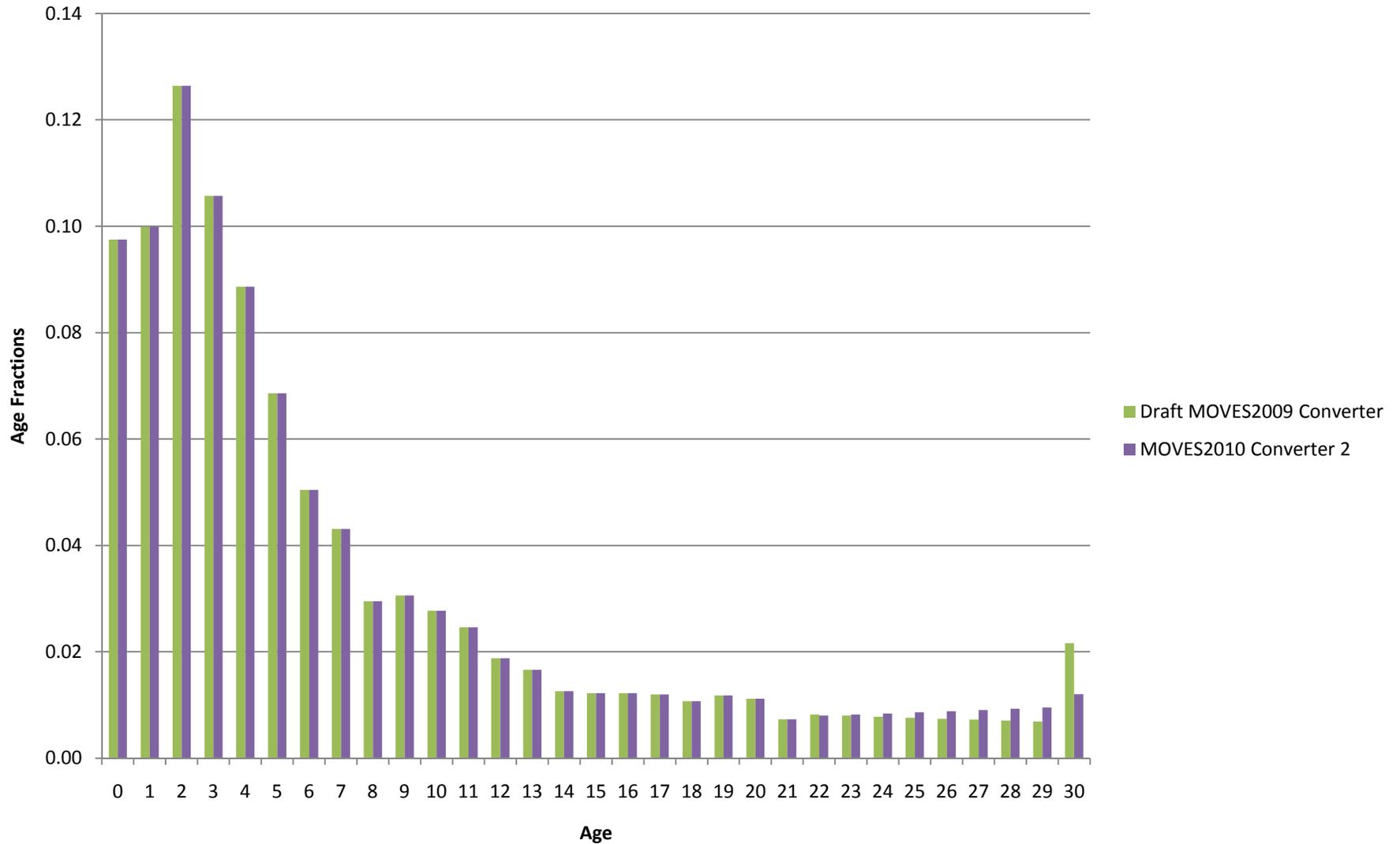
Draft MOVES 2009 Registration Distribution Converter Flowchart



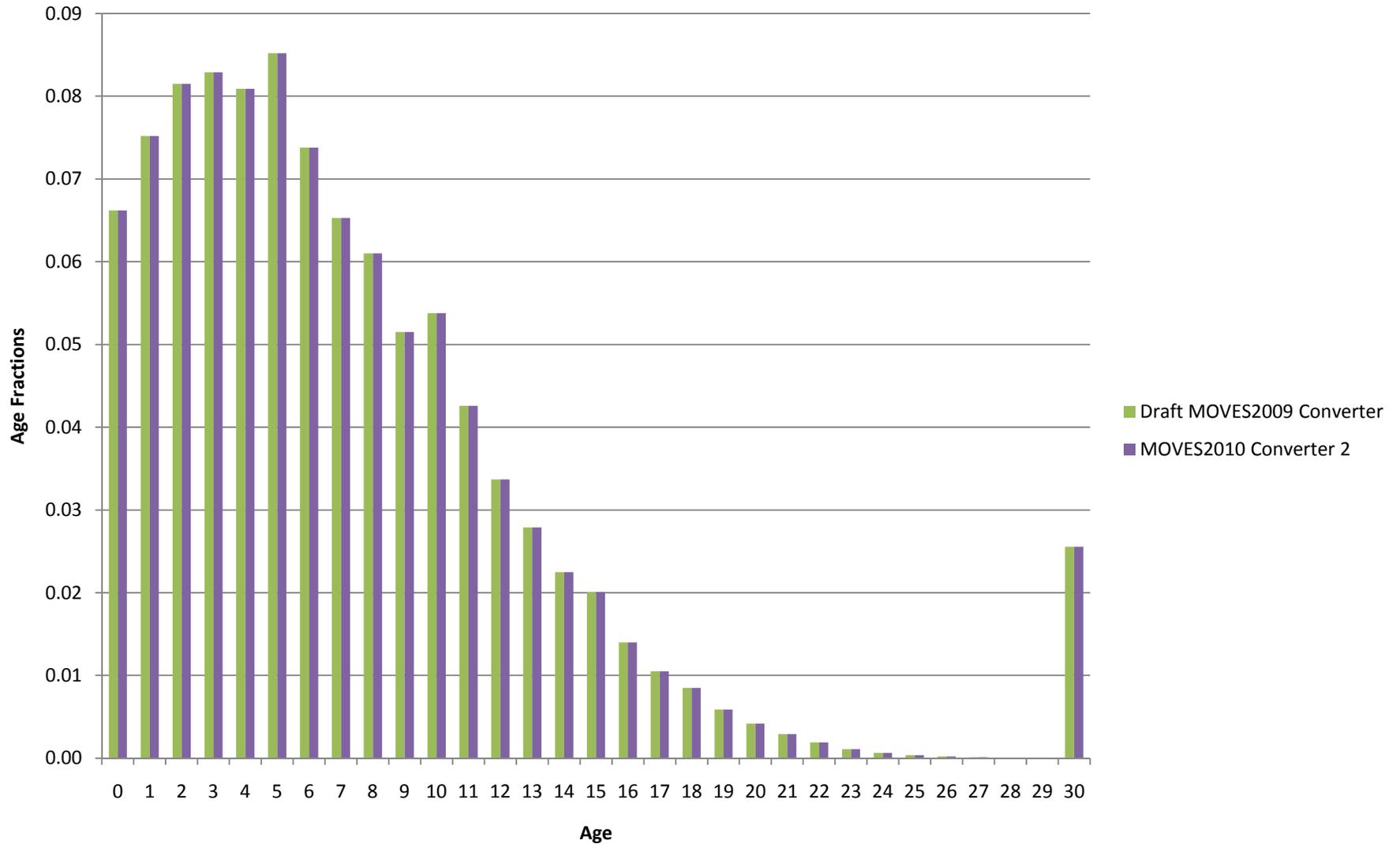
Attachment 1B MOVES 2010 Registration Distribution Converter Flowchart



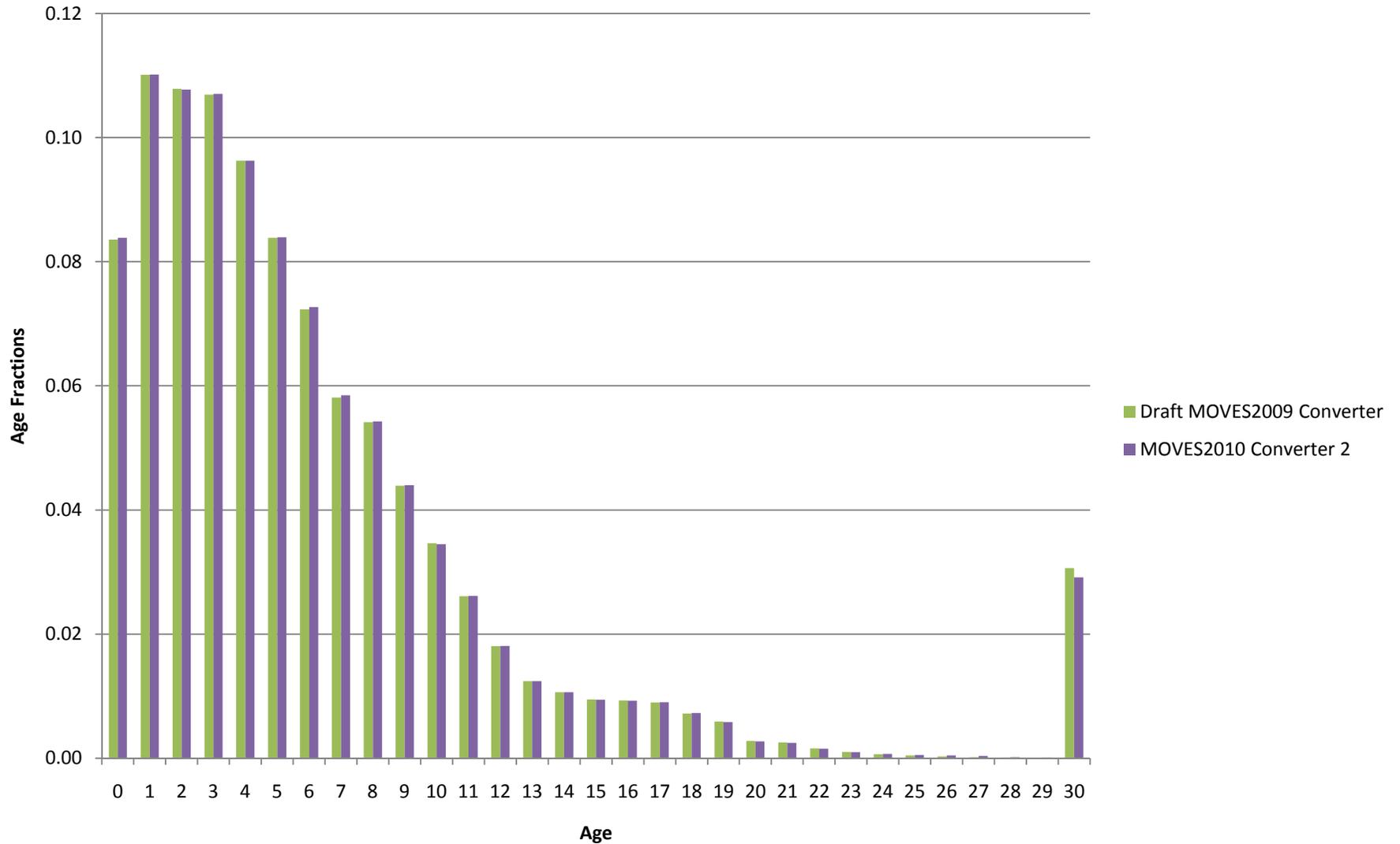
2005 Age Distribution Comparison for Montgomery County Draft MOVES2009 Converter VS. MOVES2010 Converter 2 Vehicle Type = Motorcycle



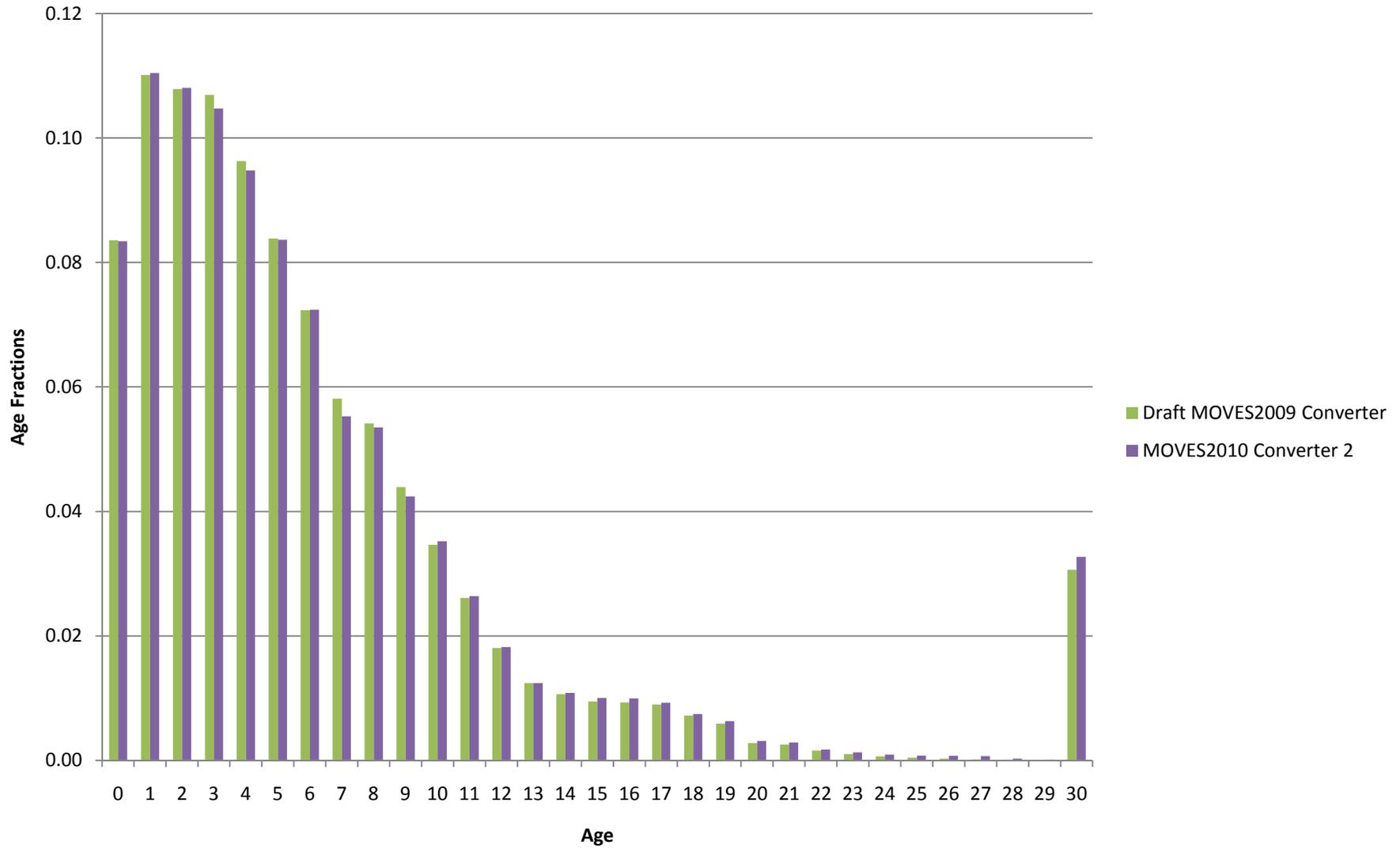
2005 Age Distribution Comparison for Montgomery County Draft MOVES2009 Converter VS. MOVES2010 Converter 2 Vehicle Type = Passenger Car



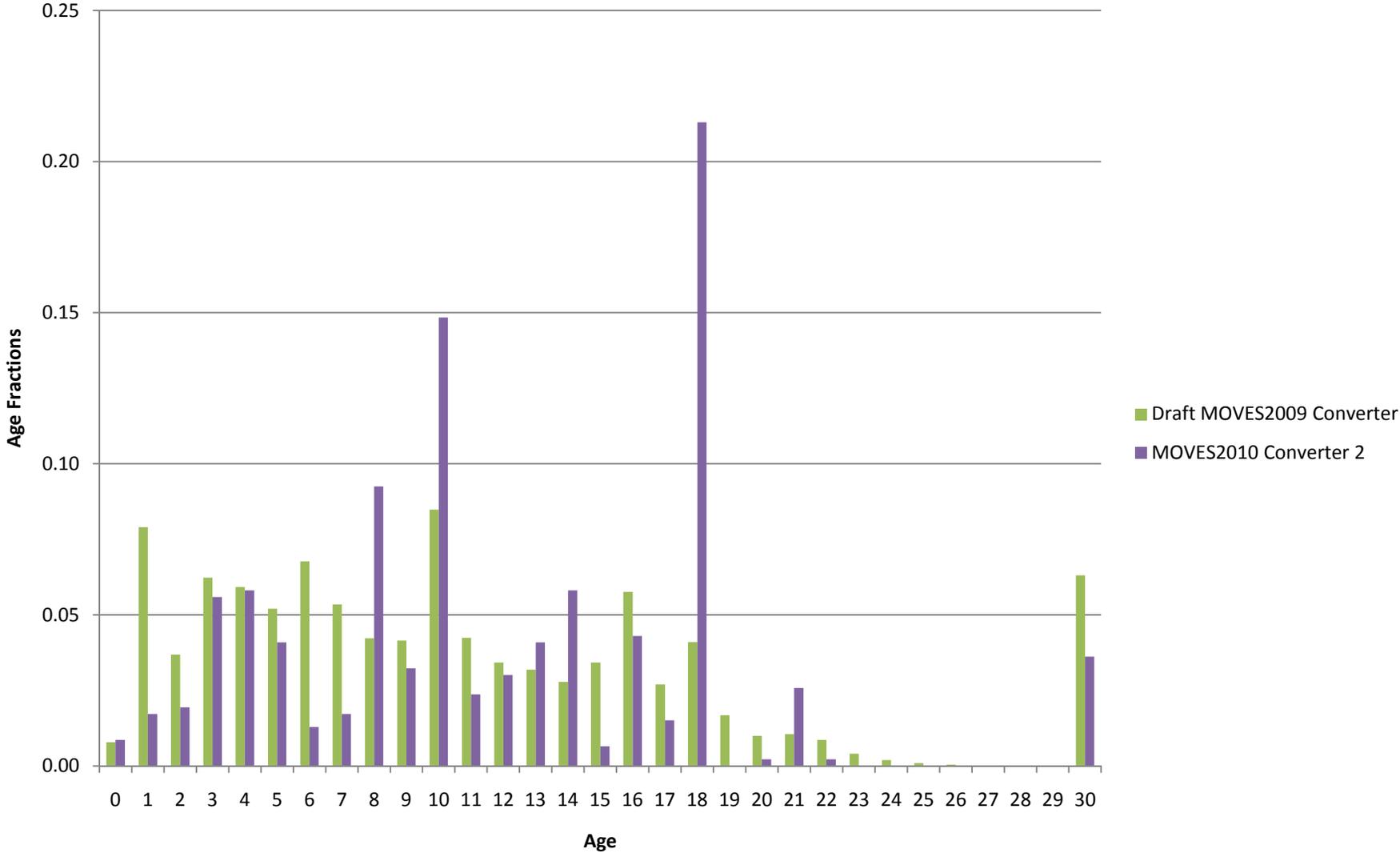
2005 Age Distribution Comparison for Montgomery County Draft MOVES2009 Converter VS. MOVES2010 Converter 2 Vehicle Type = Passenger Truck



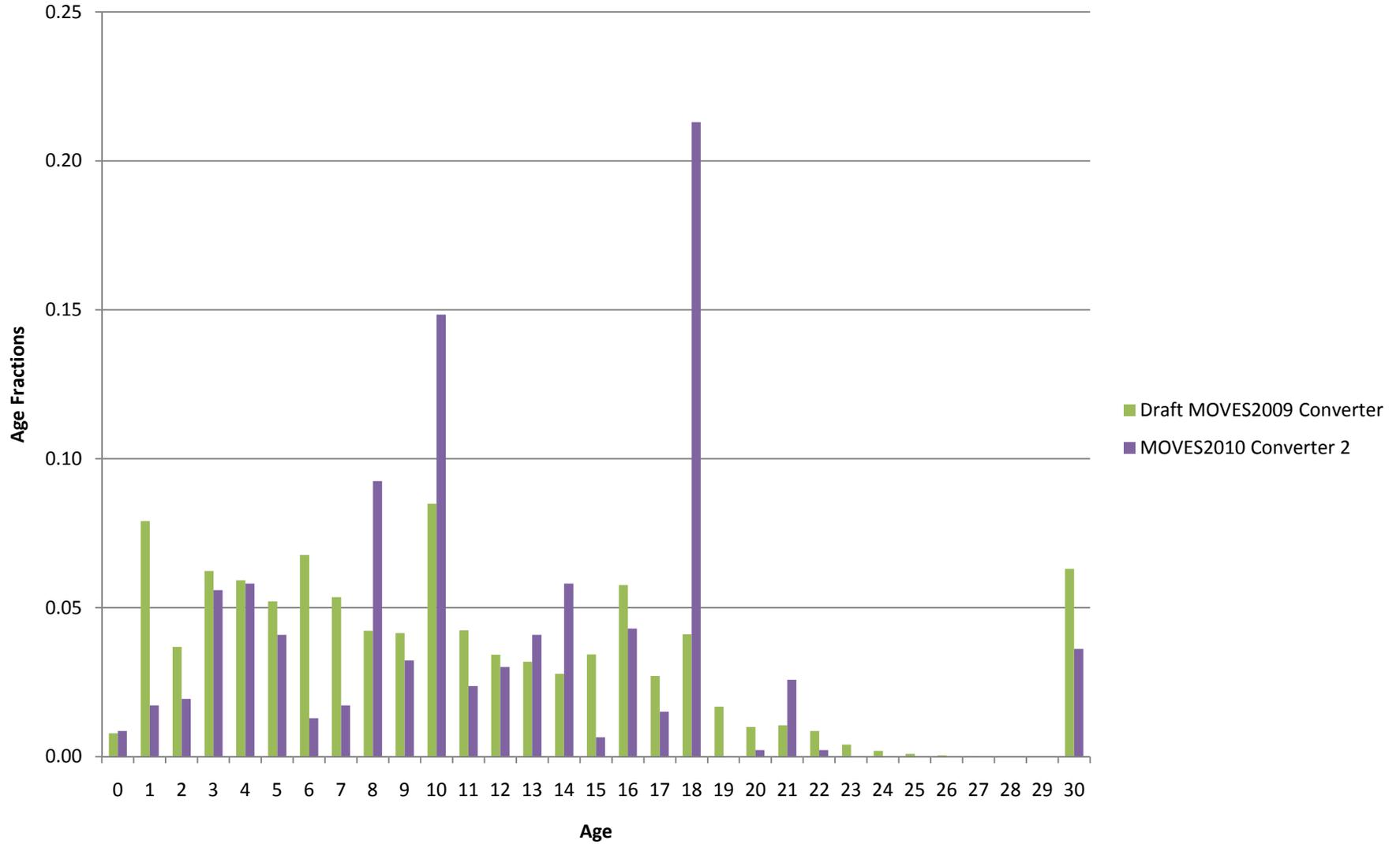
2005 Age Distribution Comparison for Montgomery County Draft MOVES2009 Converter VS. MOVES2010 Converter 2 Vehicle Type = Light Commercial Truck



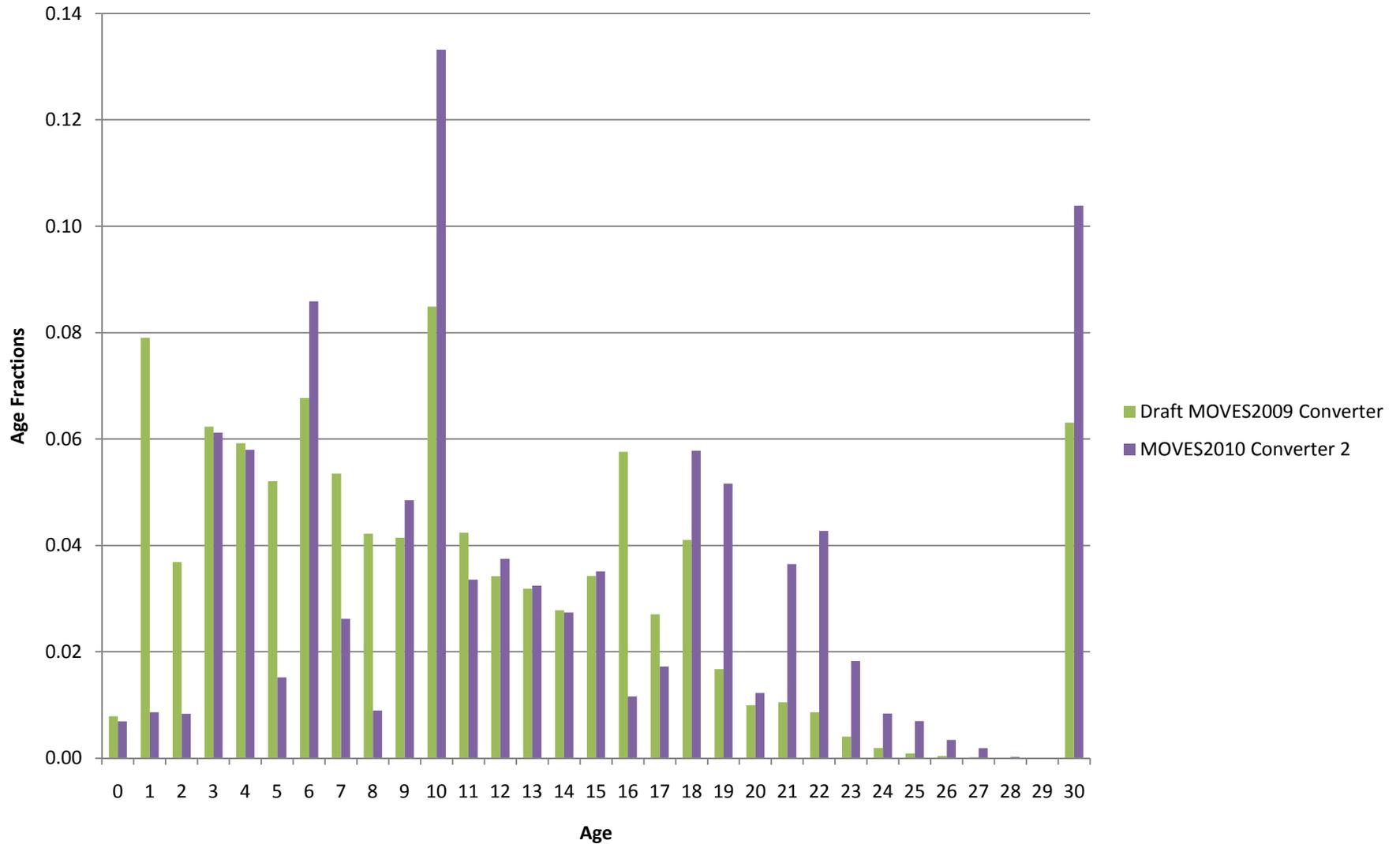
**2005 Age Distribution Comparison for Montgomery County
Draft MOVES2009 Converter VS. MOVES2010 Converter 2
Vehicle Type = Intercity Bus**



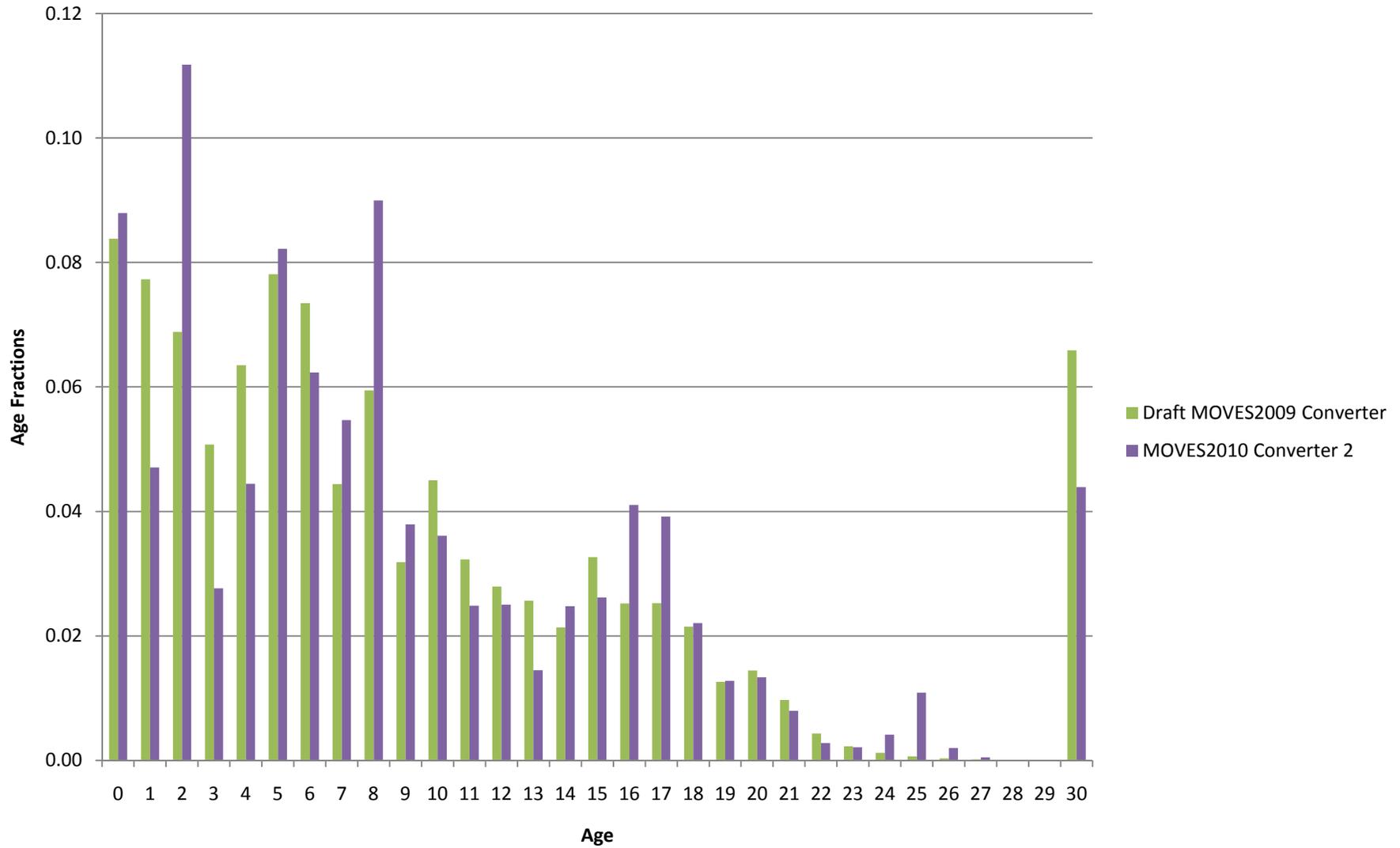
2005 Age Distribution Comparison for Montgomery County Draft MOVES2009 Converter VS. MOVES2010 Converter 2 Vehicle Type = Transit Bus



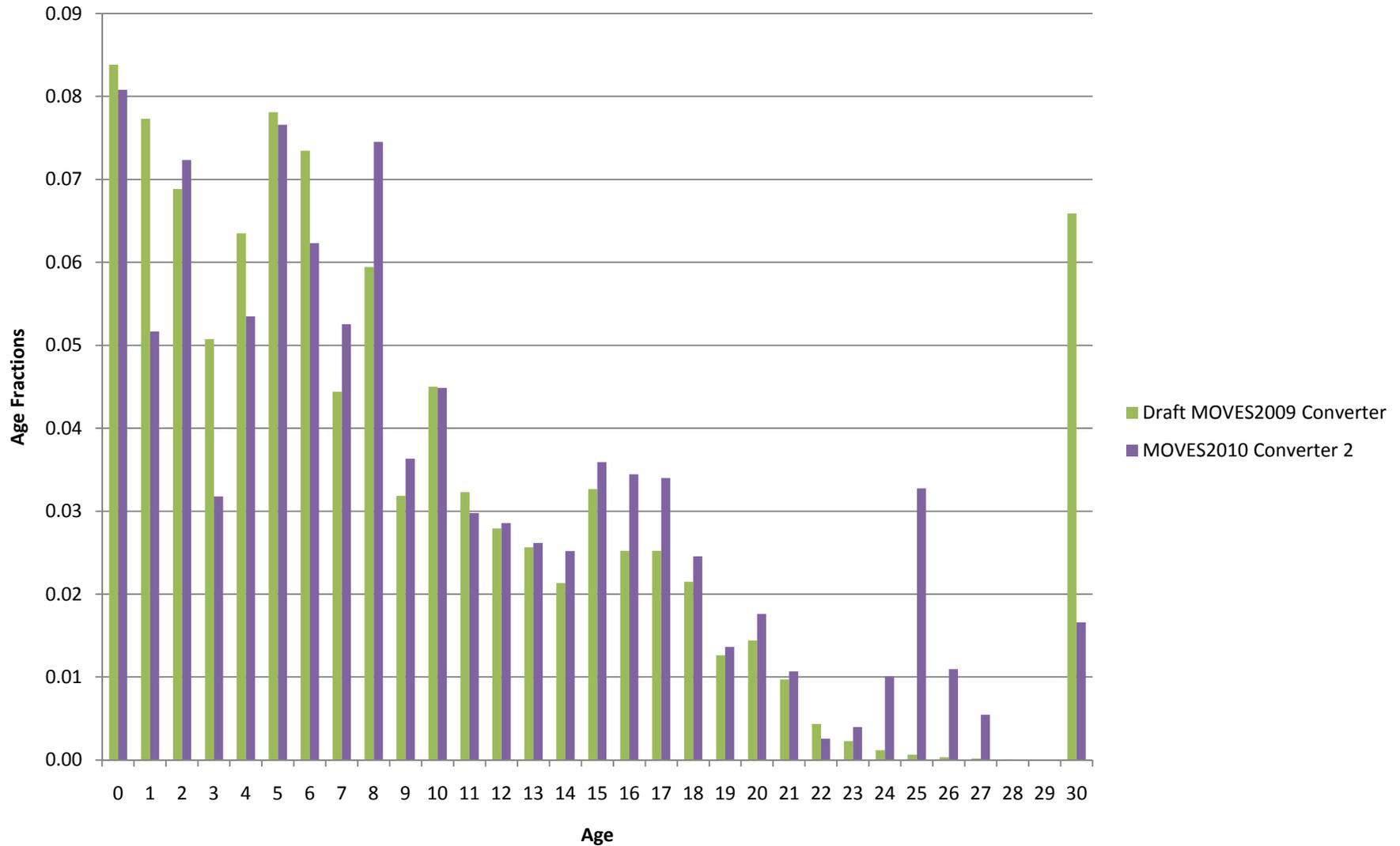
2005 Age Distribution Comparison for Montgomery County Draft MOVES2009 Converter VS. MOVES2010 Converter 2 Vehicle Type = School Bus



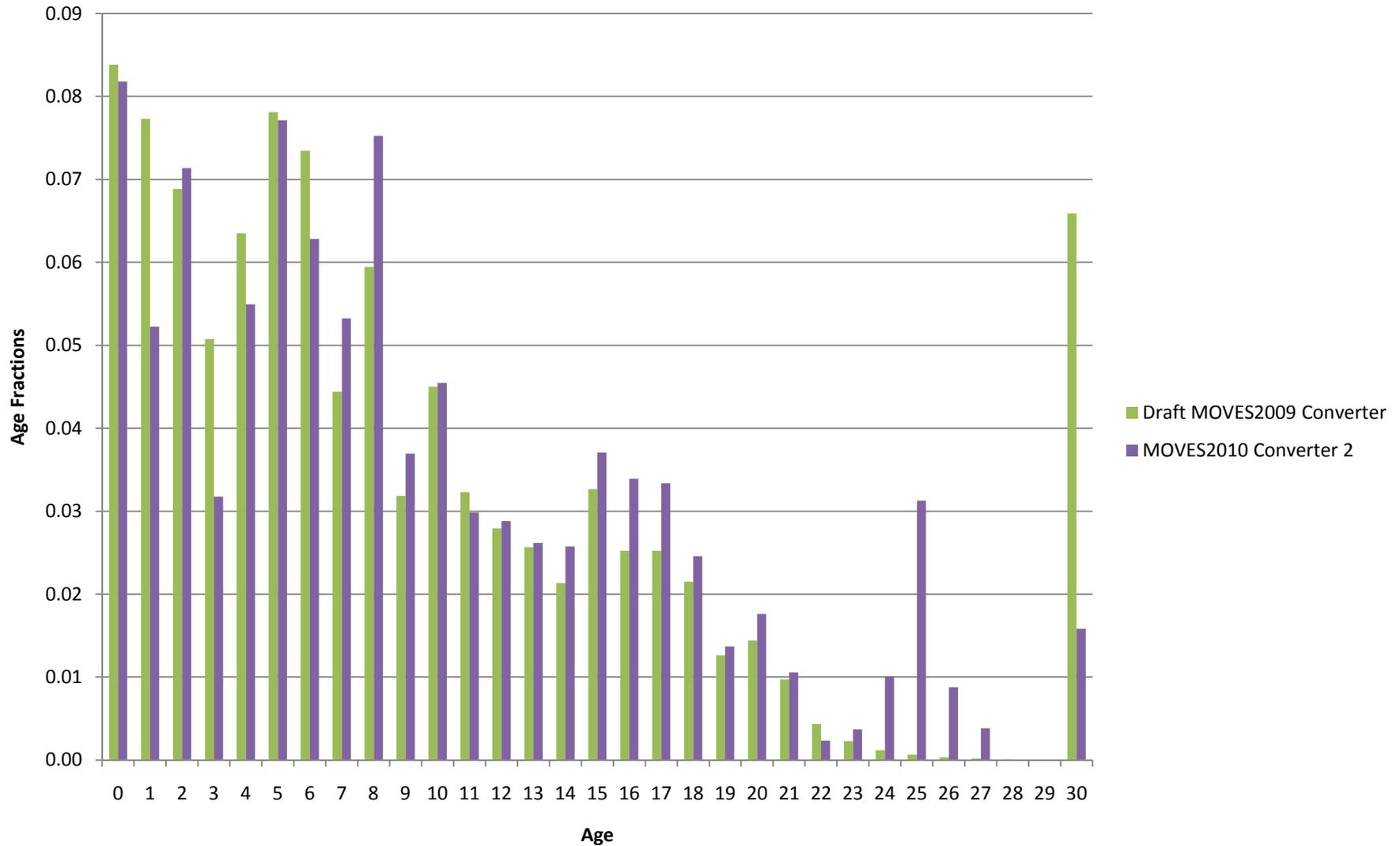
2005 Age Distribution Comparison for Montgomery County Draft MOVES2009 Converter VS. MOVES2010 Converter 2 Vehicle Type = Refuse Truck



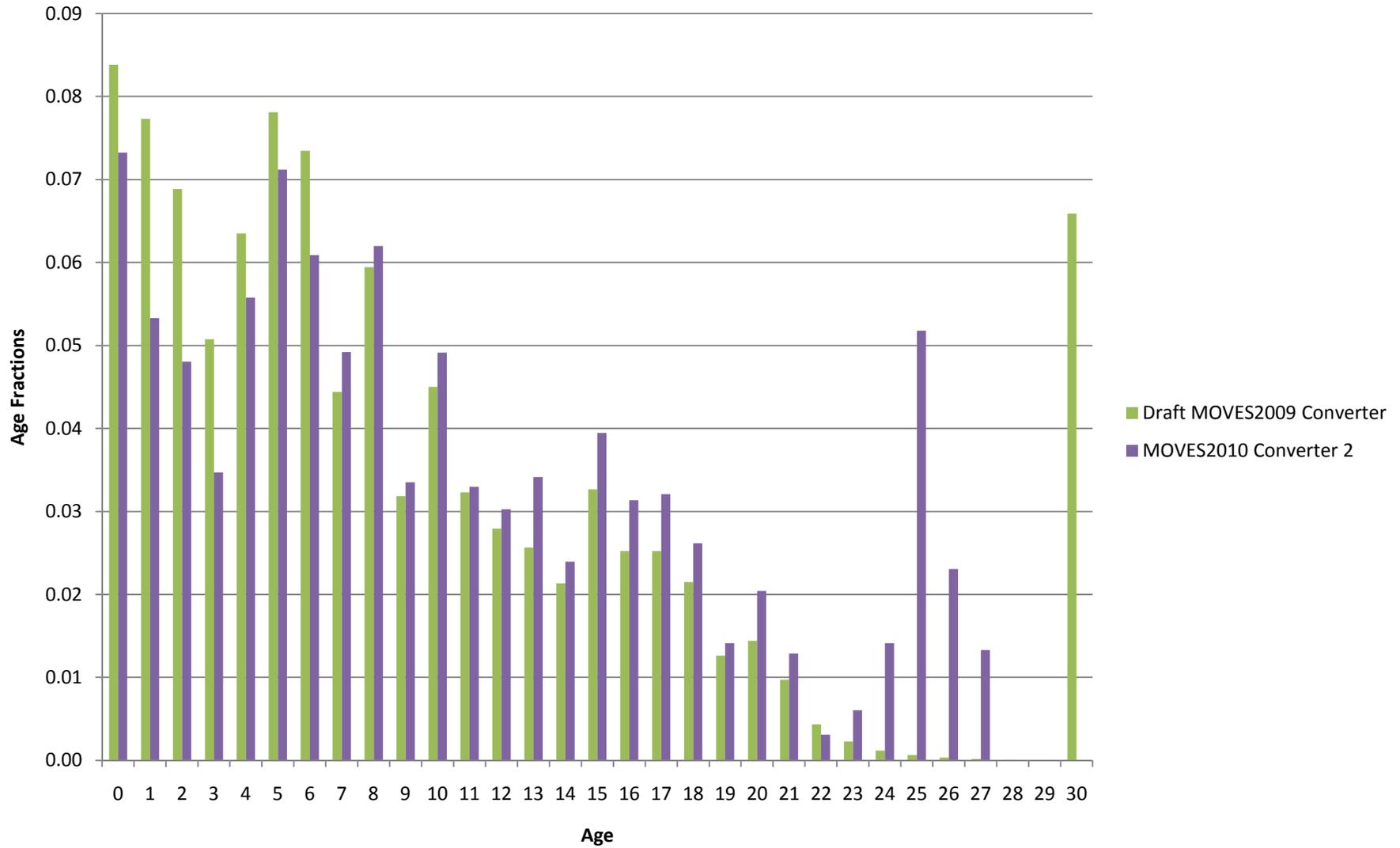
2005 Age Distribution Comparison for Montgomery County Draft MOVES2009 Converter VS. MOVES2010 Converter 2 Vehicle Type = Single Unit Short-Haul Truck



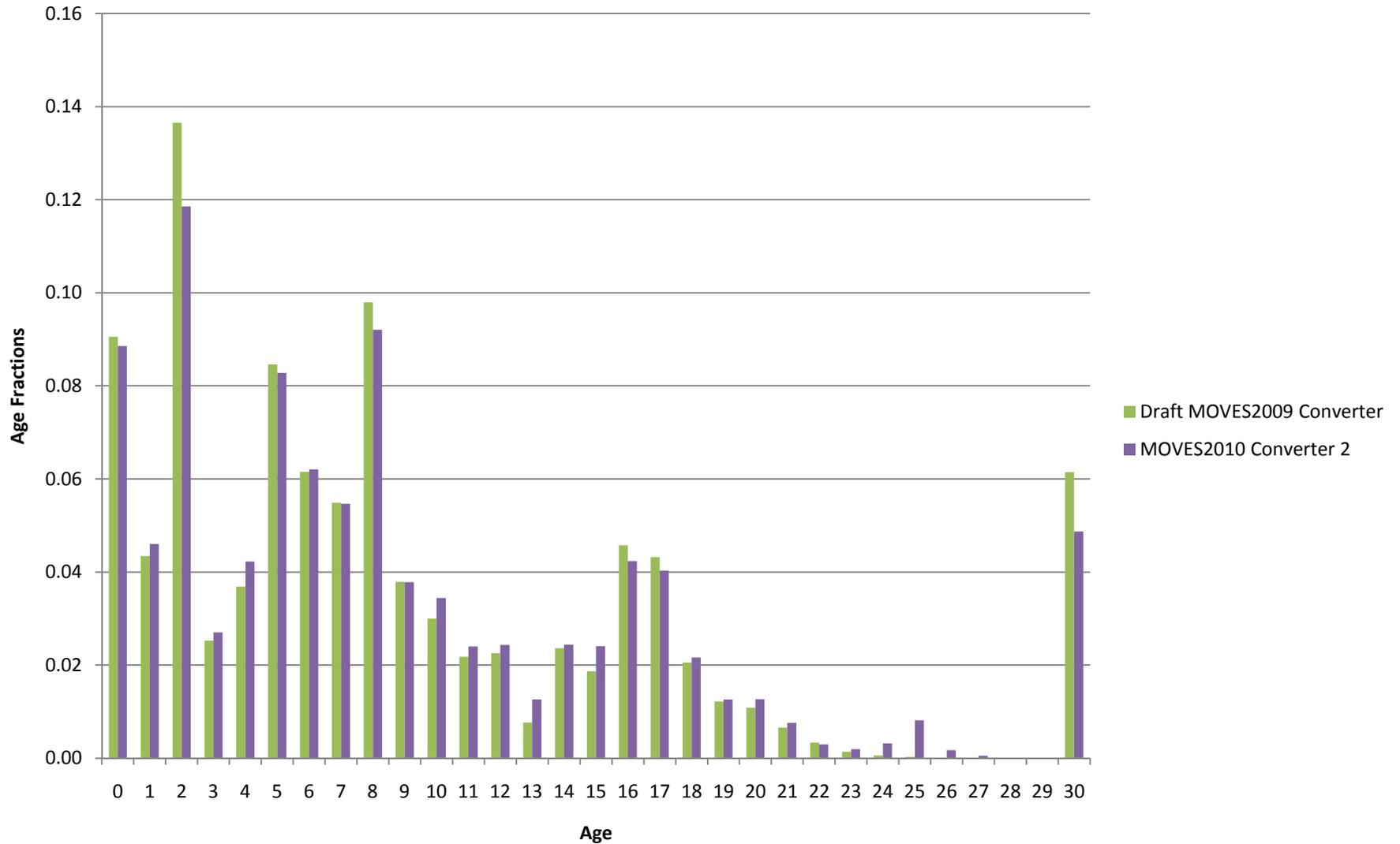
2005 Age Distribution Comparison for Montgomery County Draft MOVES2009 Converter VS. MOVES2010 Converter 2 Vehicle Type = Single Unit Long-Haul Truck



2005 Age Distribution Comparison for Montgomery County Draft MOVES2009 Converter VS. MOVES2010 Converter 2 Vehicle Type = Motorhome



2005 Age Distribution Comparison for Montgomery County Draft MOVES2009 Converter VS. MOVES2010 Converter 2 Vehicle Type = Combination Short-Haul Truck



2005 Age Distribution Comparison for Montgomery County Draft MOVES2009 Converter VS. MOVES2010 Converter 2 Vehicle Type = Combination Long-Haul Truck

