Transportation and Economic Trends and Projections

Joint Committee Workshop on Transportation Energy Demand and Fuel Infrastructure Requirements

Sacramento, California

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Transportation Energy Demand Forecasts

- Light-duty vehicle fuel demand forecast – Malachi Weng-Gutierrez
- Transit fuel demand forecast– Laura Lawson
- Aviation fuel demand forecast – Bob McBride and Gerald Zipay
- Freight fuel demand forecast – Nick Janusch
- Off-road fuel demand forecast – Ryan Eggers

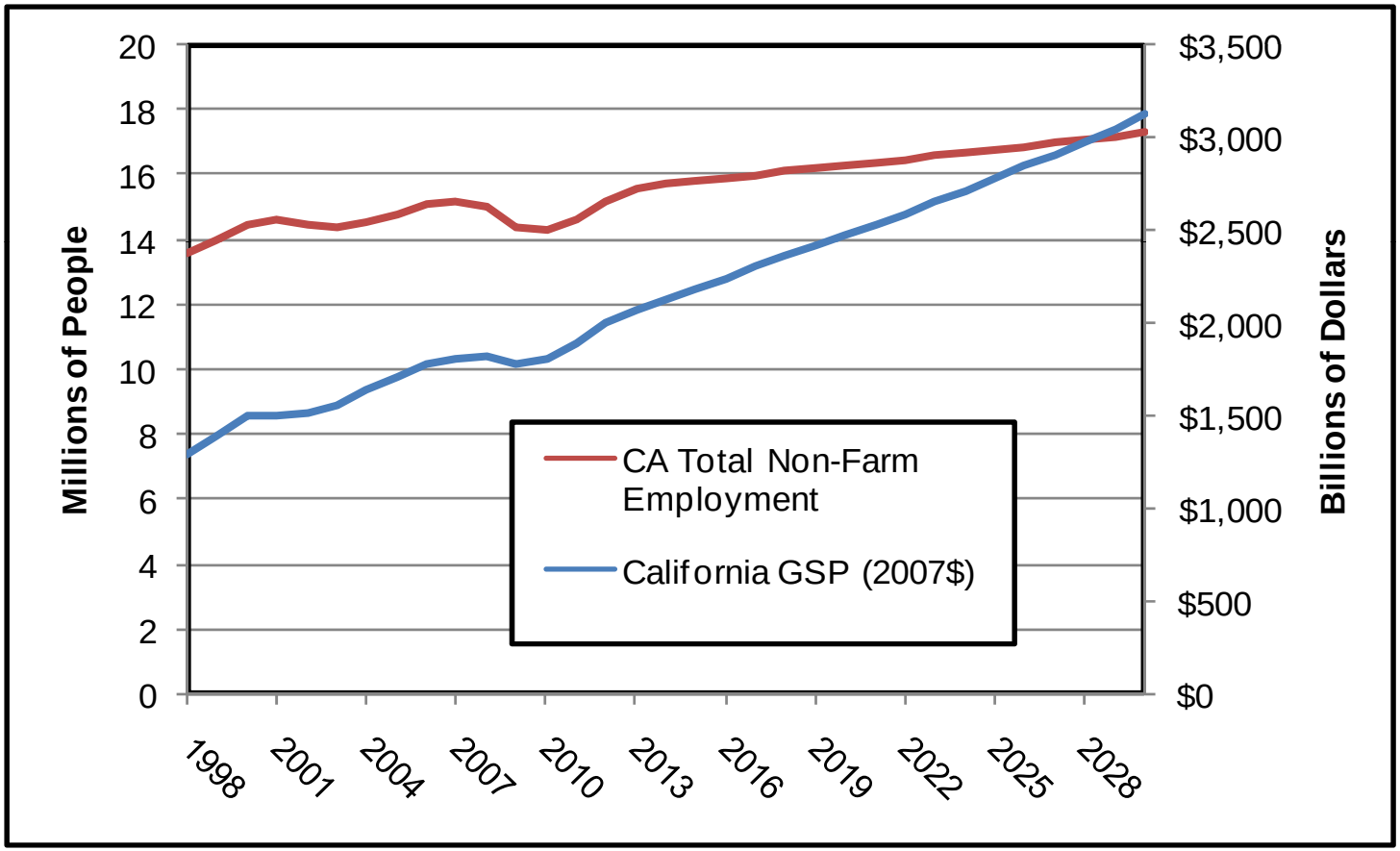
Topics Discussed

- Forecast Uncertainties
- Current Transportation Trends and Economic and Demographic Projections
  - Actual and Projected Demographic and Economic Trends
  - Light-Duty Vehicle Stock and New Vehicle Sales
  - Medium- and Heavy-Duty Vehicle Stock
  - Import Goods Movement and California Ports
  - Rail and Truck Activity
  - Transit Ridership
  - Trends in Aviation

Some Sources of Forecast Uncertainties

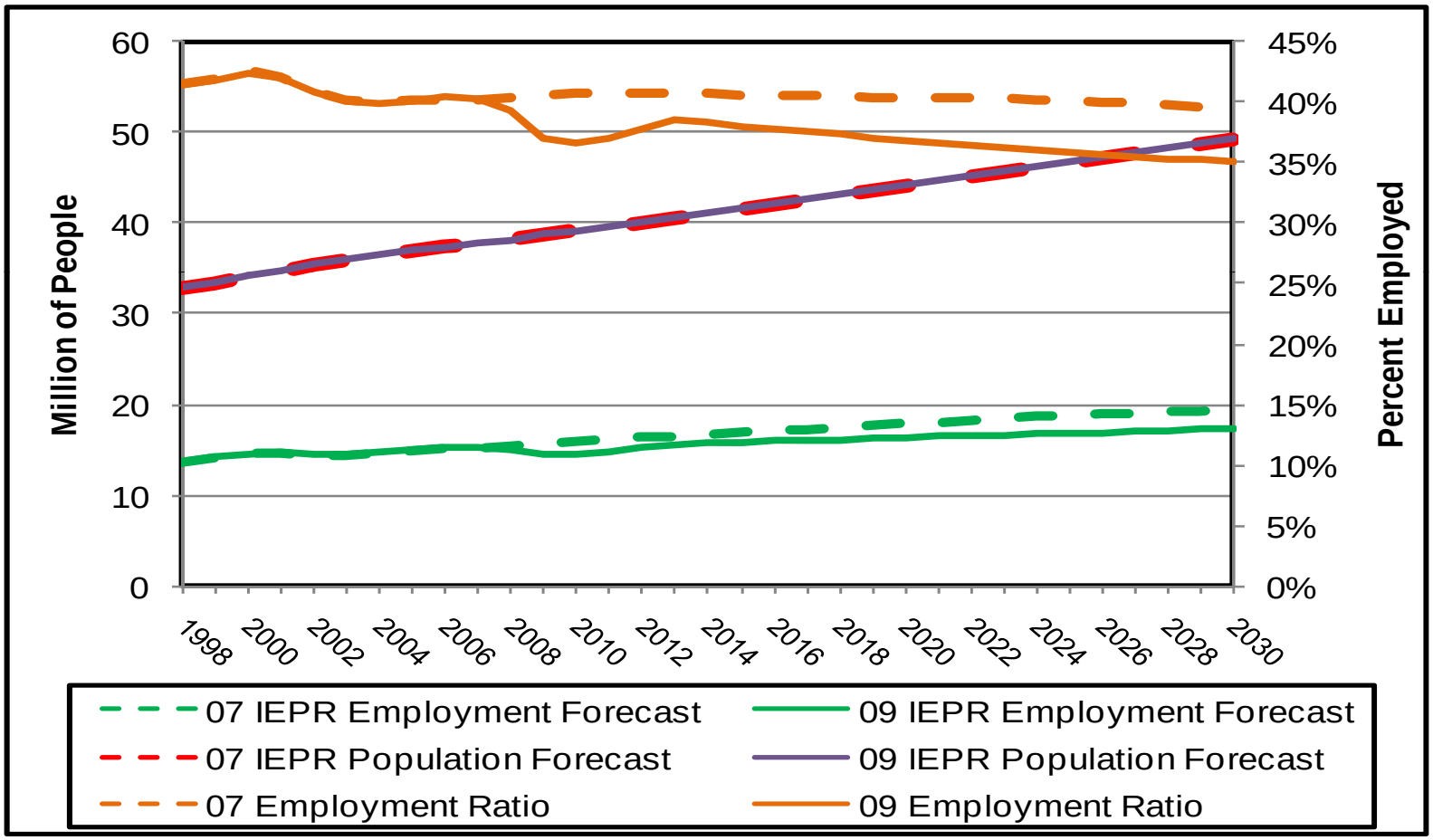
- Changes in regulatory environment, land use patterns, and fuel and vehicle technology, as well as the unusual transportation fuel and economic price fluctuations, for instance:
  - Adoption of low carbon fuel standard (LCFS)
  - Changes in land use plans and varying development of refueling infrastructure
  - Uncertainty of alternative and emerging vehicles and transportation fuels
  - Fuel price volatility

California GSP and Employment History and Forecasts, 1998 to 2030



Source: Moody's economy.com

California Population, GSP, and Employment Projections Used in the 2007 and 2009 *IEPR*s



Source: Department of Finance and Moody's economy.com

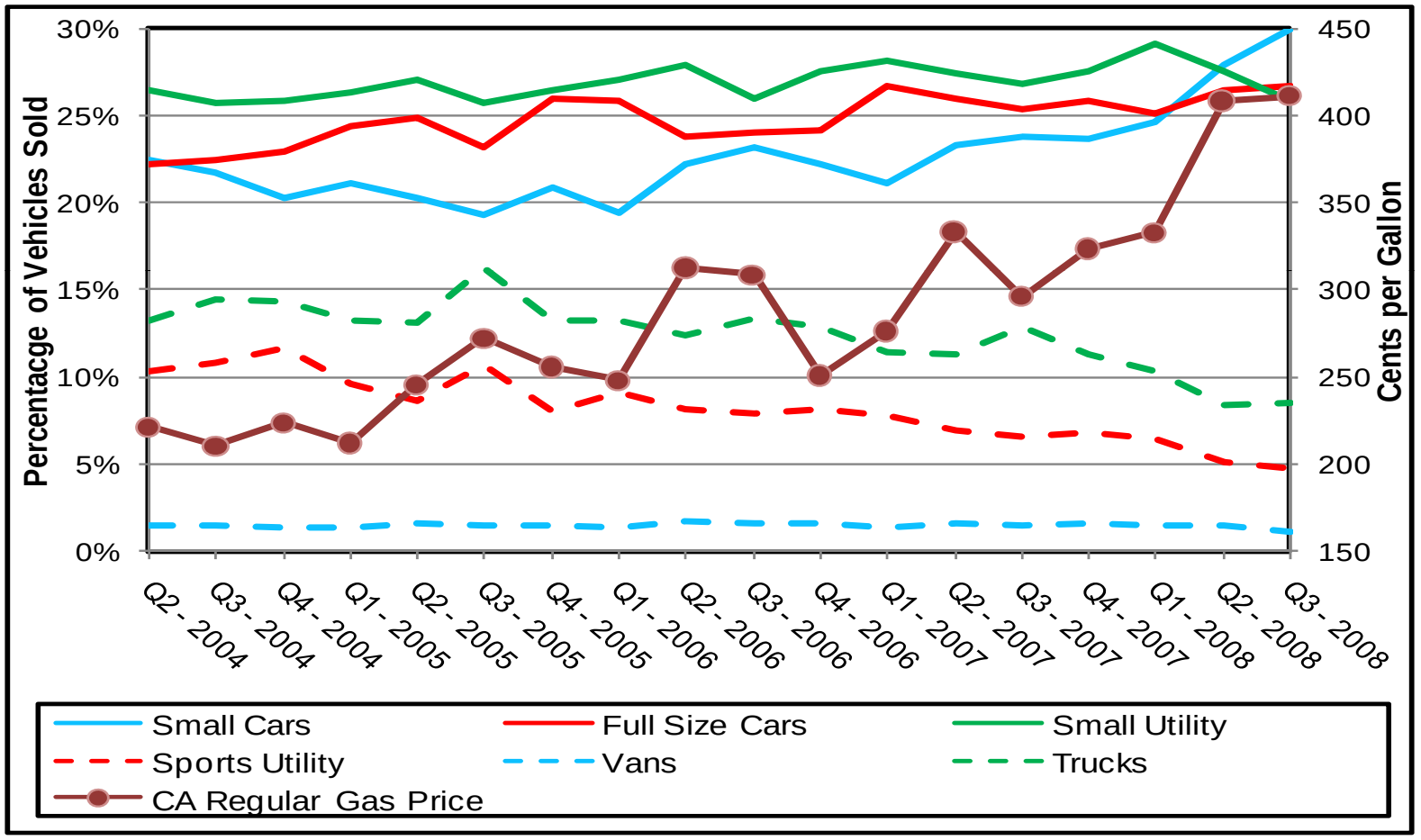
Light-duty Vehicles

Light-Duty Vehicle Stock by Fuel Type

Year	Gasoline	Diesel	Hybrid	Flex Fuel	Electric	Natural Gas
2001	22,779,246	316,872	6,609	97,611	2,905	3,082
2002	23,384,639	334,313	15,159	129,734	11,963	25,682
2003	24,516,071	364,411	24,182	183,546	23,399	17,228
2004	24,785,578	391,950	45,263	195,752	14,425	21,269
2005	25,440,904	424,137	91,438	269,857	13,947	24,471
2006	25,741,051	449,305	154,165	300,806	14,071	24,919
2007	25,815,758	465,654	243,729	340,910	13,956	25,196
2008	25,654,102	463,631	333,020	381,584	14,670	24,810
Compound Average Growth Rate	**1.71%**	**5.59%**	**75.06%**	**21.50%**	**26.03%**	**34.71%**

Source: California Energy Commission analysis of California DMV data

Percent of New Vehicles Sold by Body Type



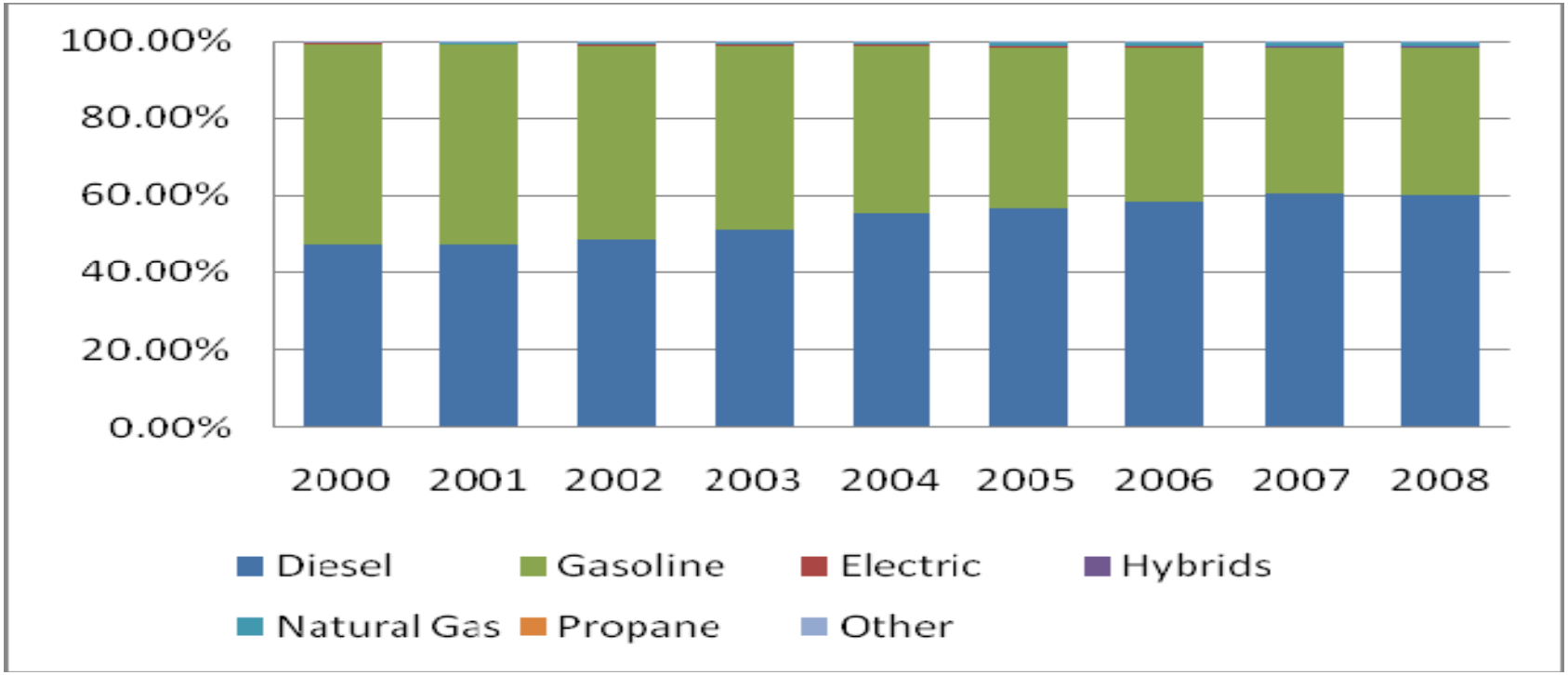
Source: California Energy Commission analysis of California DMV data

Medium- and Heavy-duty Vehicles

Medium- and Heavy-Duty Vehicle Stock

- Medium- and heavy-duty vehicles are used primarily in the freight and transit sectors.
- Gross vehicle weight rating (GVWR) designates the maximum amount of weight for a vehicle in each vehicle class.
  - Class 1 and 2 vehicles are vehicles that have a GVWR of 10,000 lbs or less and are generally described as light-duty vehicles
  - Classes 3 to 8 are assigned to vehicles with a GVWR greater than 10,000 lbs and described as medium- and heavy-duty vehicles.

Medium- and Heavy-Duty Vehicle Stock Distribution by Fuel Type



	2000	2001	2002	2003	2004	2005	2006	2007	2008
Vehicle Population	808,512	819,104	867,426	884,919	851,568	920,784	952,082	982,456	952,191

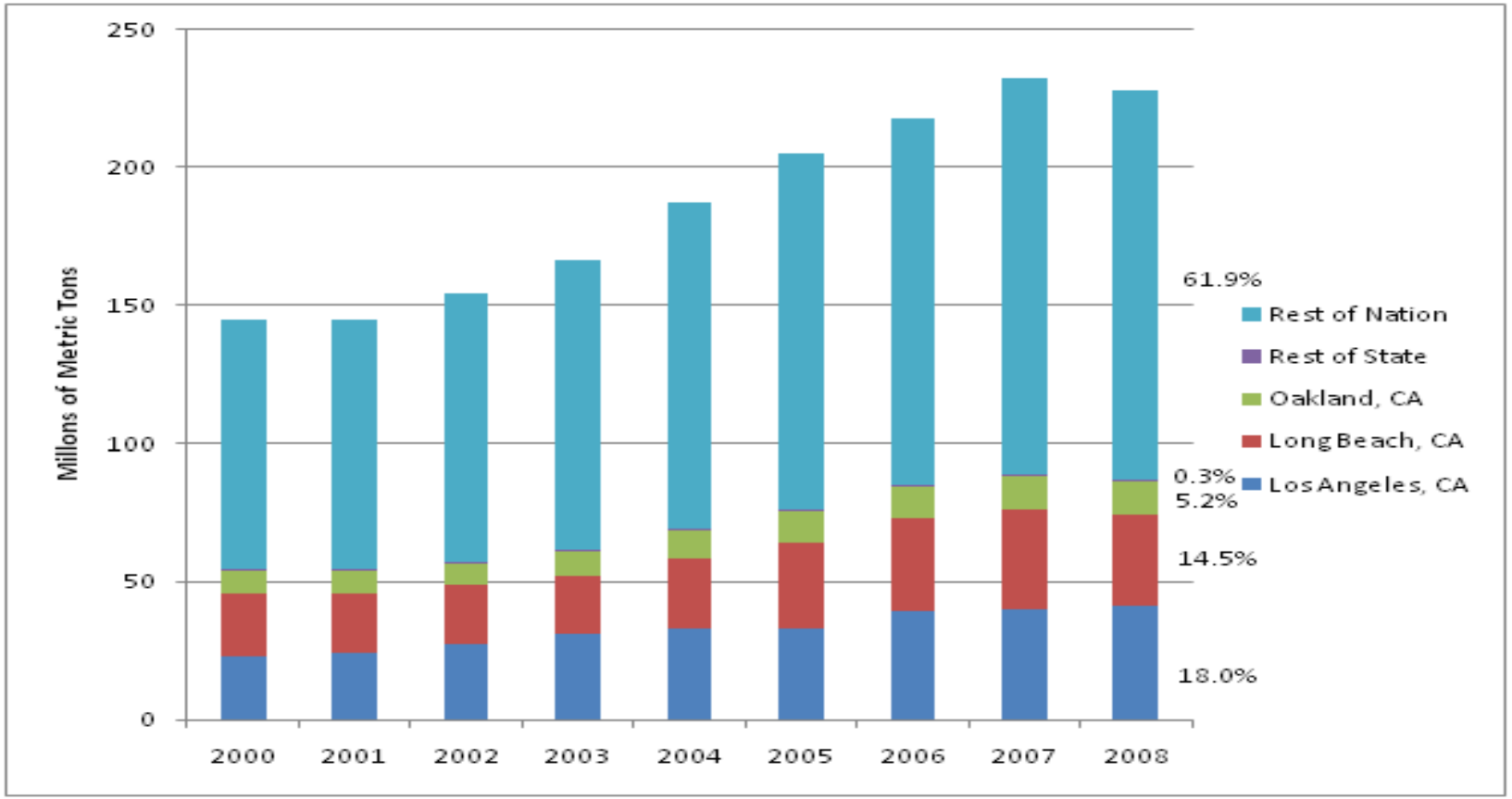
Source: DMV Registration Database, File Pass for October 2008

Freight

Import Goods Movement and California Ports

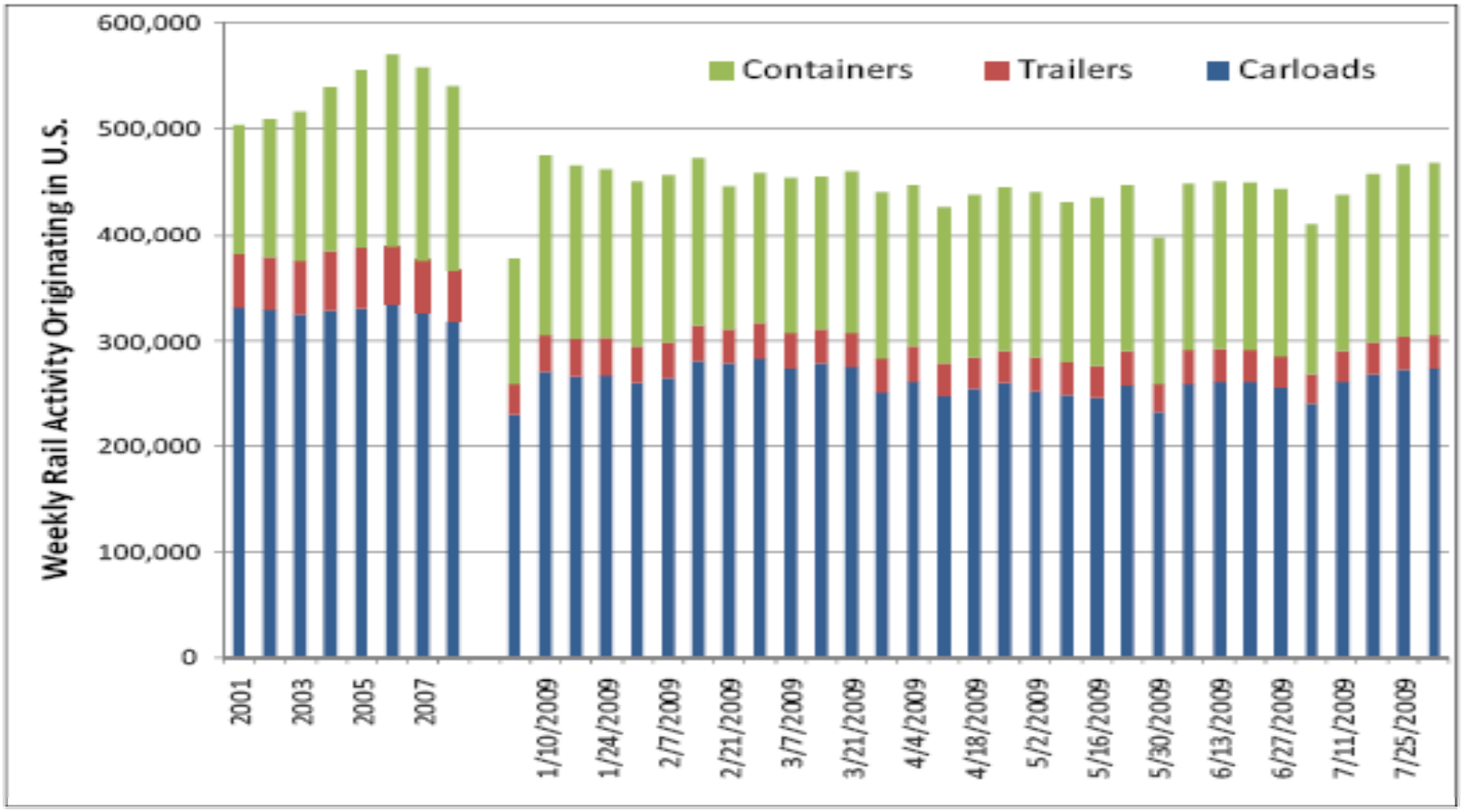
- A significant portion of the goods imported into the United States move through California ports, and these goods are then loaded onto trucks and railcars moving to destinations inside and outside California.
- Cargo containers that are imported and exported through California ports are a reflection of economic activity and help determine diesel demand in the state.
- California ports will continue to play a major role in the national and global economy.

U.S. Foreign Container Trades by U.S. Port, 2000-2008 (Million Metric Tons)



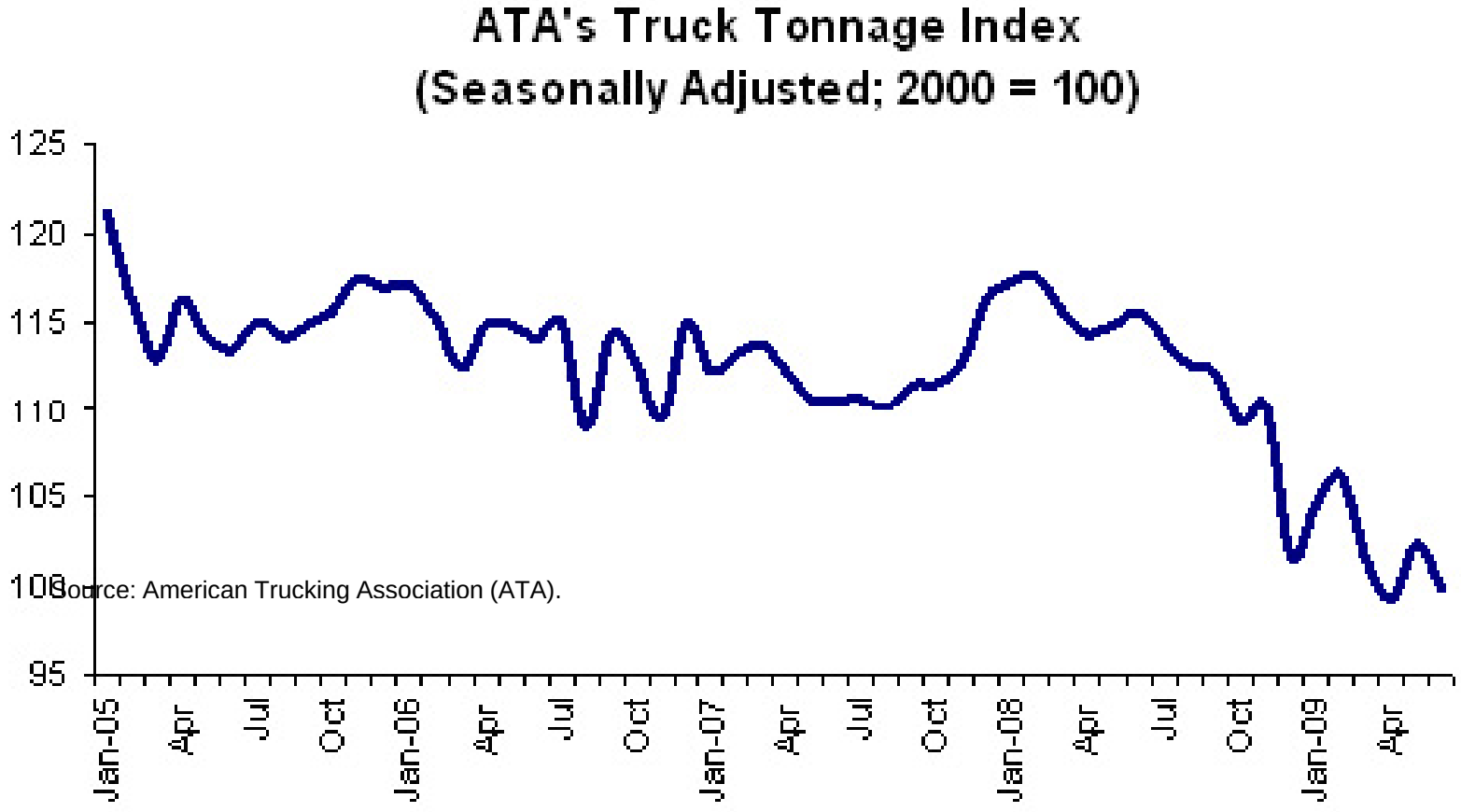
Source: The U.S. Department of Transportation Maritime Administration based on data from Port Import Export Reporting Service (PIERS), data collected from Vessel Manifests and Bills of Ladings

Rail Activity Originating in the United States (2001-2009)



Sources: American Association of Railroads (AAR) and Energy Commission analysis.

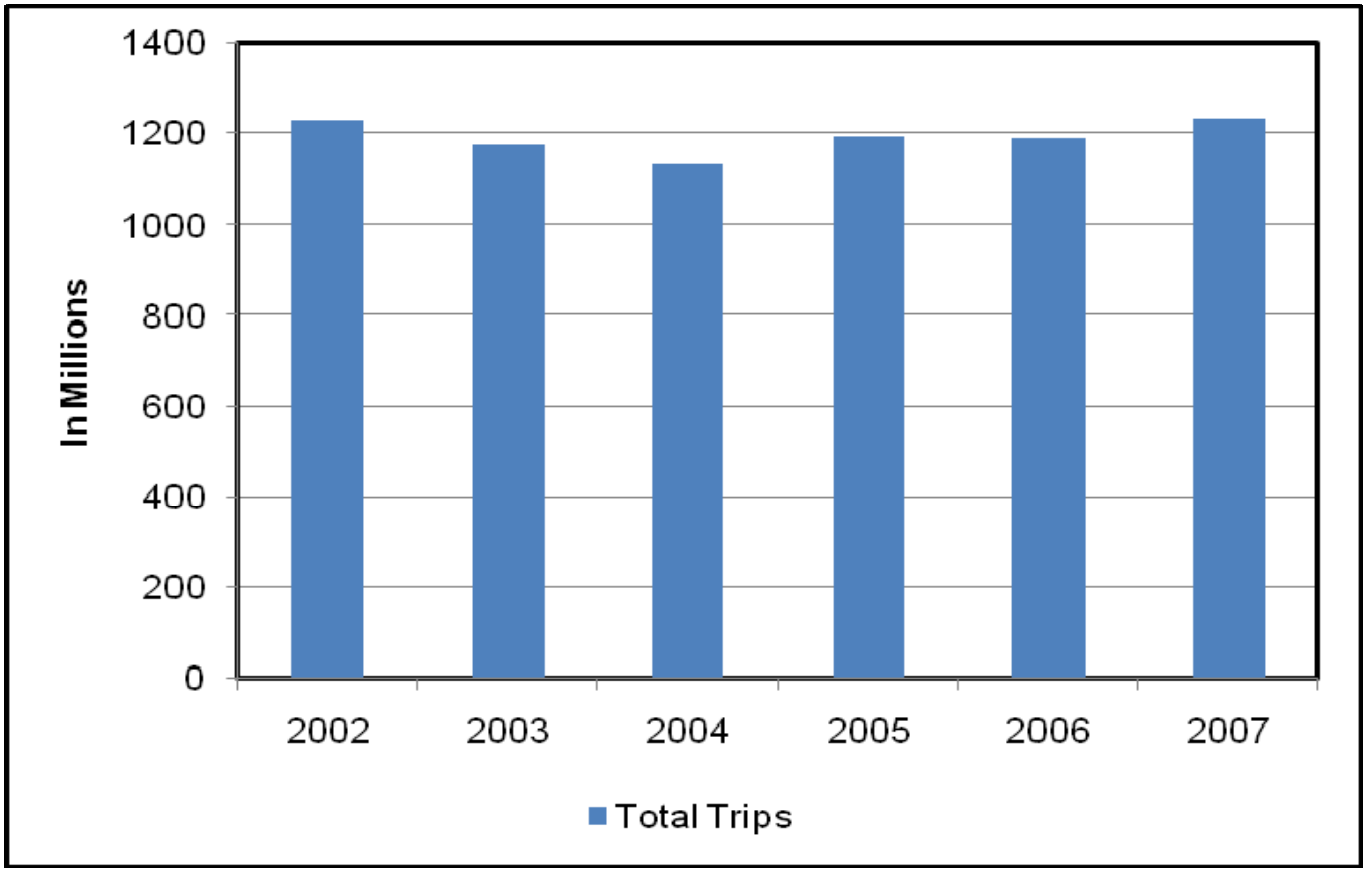
U.S. Trucking Activity –Tonnage Index (2005-2009)



Source: American Trucking Association (ATA).

Transit

Transit Ridership in California



Source: Federal Transit Administration, National Transit Database, http://204.68.195.57/ntdprogram/data.htm

2008 California Top Transit Growth Cities, by Transit Mode

City	Growth Rate (percent)	Transit Mode
Oakland	16.1	Commuter Rail
Stockton	14.7	Commuter Rail
Sacramento	14.4	Light Rail
San Diego	10.0	Bus
Los Angeles	7.7	Heavy Rail

Source: American Public Transit Association, http://www.apta.com/media/releases/090309_ridership.cfm, March 2009

Miles-to-work and Transit Use in California in 2008

Region	Mean Vehicle Miles to Work	Percent Transit Use
San Francisco	14.23	8.9%
Los Angeles	15.44	2.3%
San Diego	14.38	2.5%
Sacramento	15.29	2.7%
Rest of State	14.51	1.3%
Overall Statewide	14.87	3.6%
Household Size	**Mean Vehicle Miles to Work**	**% Transit Use**
1	14.94	2.0%
2	14.76	3.4%
3	14.88	3.3%
4+	14.98	2.4%
Number of Vehicles	**Mean Vehicle Miles to Work**	**% Transit Use**
1	12.85	4.8%
2	14.60	2.8%
3+	17.20	2.0%

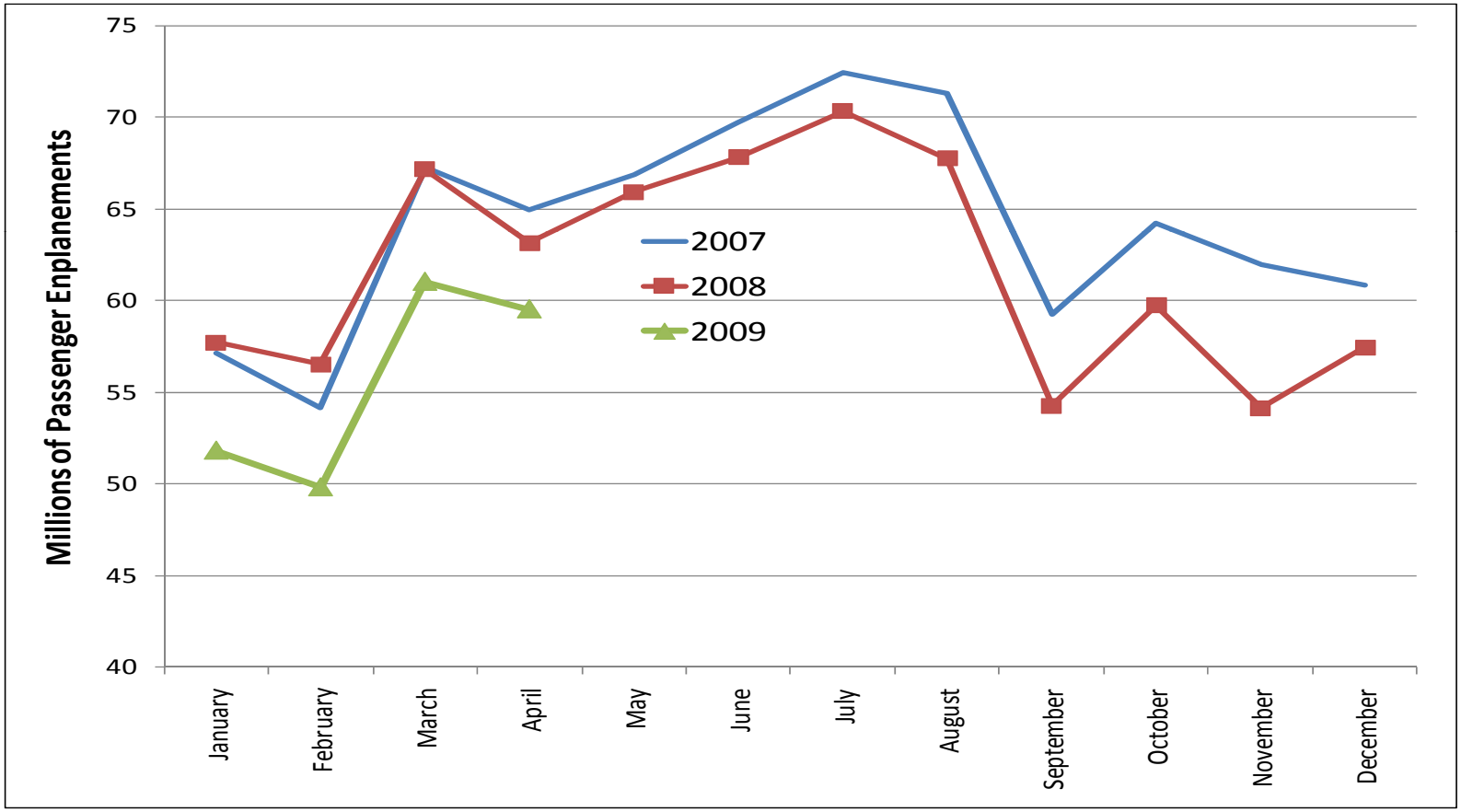
Source: California Energy Commission, 2008 California Vehicle Survey

Aviation

Aviation

- General (or private) aviation is increasingly dominated by jet turbine and turboprop engines running on kerosene-type jet fuel.
- Airlines have responded to fuel price increases of recent years by reducing both the number of empty seats and the number of flights.
- In response to decreased demand, airlines have financial reasons for taking the least efficient aircraft out of service

U.S. Airline Passenger Enplanements (2007-2009)



Questions

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