



APPENDIX D
VEHICLE SIZE TRENDS

Vehicle Sizes Inch Down...

Literally!



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This article is part of an annual series of articles on the impact of changing vehicle sizes on parking geometrics.

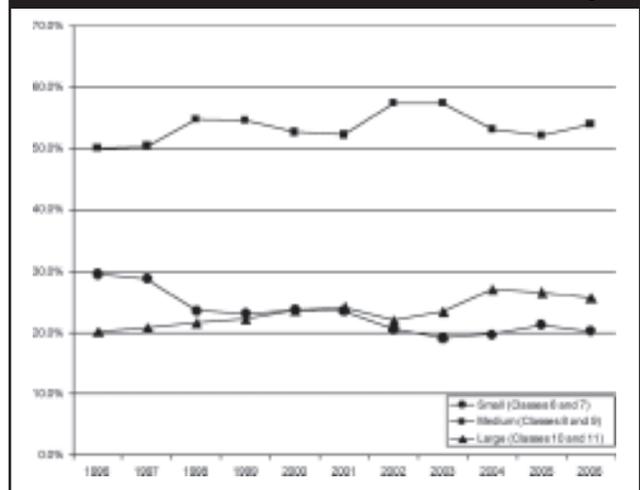
For all the media glee over declines in “gas guzzler” vehicle sales in calendar year 2006, the high prices of gasoline had very little impact on the overall size of vehicles sold in the U.S. for personal transportation, including cars and light trucks (pickups, vans, sport utility vehicles, and crossover utility vehicles). As seen in Figure 1, while the sales of the largest vehicles sold in the U.S. did decline in market share, the sales of the smallest vehicles declined just as much. The movement is clearly toward vehicles in the middle of the size range.

It is noted that the evaluation of vehicle sizes is based on the Parking Consultants Council (PCC) size classification system, which uses the area or the footprint of the vehicle (length times width.) Classes 6 and 7 are considered appropriately sized to park in the traditional “Small Car Only” or “Compact Only” parking stall of 7’6” by 16’0”. Some other studies may find that small car sales increased, but they use the manufacturer’s labels. Some of their “compact” cars and SUVs are in Class 8 and too large to park in “small car only” stalls. The approach of analyzing by footprint area gives a much more consistent picture of changes in vehicle size over time.

Car sales did increase in market share for the first time since 2000, as did “crossover utility vehicles”

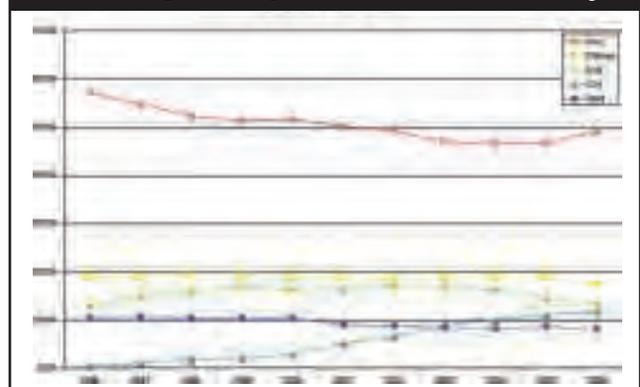
Cars & Light Truck Sales by Size Since 1995

Figure 1



Market Share by Vehicle Type

Figure 2



(CUV), which are built on the platforms of—and perform like—cars rather than SUVs (designed for off-road performance). See Figure 2. (Note that we employ the terminology used by *Automotive News*; this year they changed the name of this vehicle type from sport wagons to CUV.) Pickups, SUVs and vans all declined slightly in market share.

In 1998 through 2003 sales, the 85th percentile vehicle was a Ford Expedition or one of its sister vehicles, the Lincoln Navigator or the Ford F150 pickup; the difference in dimensions among these vehicles is a matter of trim. In 2004, the vehicle was a longer but narrower Toyota Tundra. In 2005, the vehicle was the Nissan Pathfinder, and in 2006, it is the Pathfinder’s sister vehicle, the Infiniti QX56.

Since 1998 we have been using the 6’7” by 17’1” Ford Expedition as our design vehicle. The 85th percentile vehicle in the last two years is still slightly larger, as it is the same width and two inches longer than our current design vehicle.

Conclusions

In sum, the impact of high gas prices was somewhat overstated in the press, as both large- and small-vehicle sales declined in market share. The overall market moved towards the middle in 2006. One continuing limitation on changing market trends is that the manufacturers continue to offer incentives for consumers to buy the larger vehicles the manufacturers are currently geared up to produce. Despite this, in 2006 there was a definite decline in large pickup and SUV sales, and a shift to mid-sized cars and CUVs. Looking forward, both the newly elected Democratic Congress and President Bush appear to agree that it is time to raise mileage efficiency standards, which would tend to keep vehicle sizes from increasing, if not cause some further decline. It is likely, however, that much of the fuel economy improvement will come from alternative fuels and other technological advances, rather than reduction in vehicle length and width.

We have not increased our design vehicle since 1998 to reflect the peak vehicle size observed, but neither is it yet time to reduce the design vehicle and in turn reduce recommended parking dimensions. We will continue to follow vehicle sales trends to see if the 85th percentile vehicle continues to “inch” downwards from what clearly now appears to be a rather historical peak in vehicle sizes. 

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Impact on Design Vehicles

To provide a rational foundation for parking geometrics as vehicle sizes change, Walker Parking Consultants determines the 85th percentile vehicle in the range of smallest to largest vehicles. Essentially, we assume that all vehicles using the facility are the size of design vehicles. Obviously, we are not going to change our design vehicle and resulting parking geometric standards every year, particularly if the 85th percentile vehicle changes only an inch or two in either length or width. The mix of vehicles on the road lags sales by three to five years. Since 1996, the 85th percentile vehicle has had the following dimensions:

| | |
|----------|---------------------------|
| 1996/97: | 6’5” x 17’6”, 111.4 sq ft |
| 1998: | 6’7” x 17’1”, 111.7 sq ft |
| 1999/00: | 6’7” x 17’0”, 112.5 sq ft |
| 2001: | 6’8” x 17’2”, 114.3 sq ft |
| 2002: | 6’7” x 17’2”, 112.5 sq ft |
| 2003: | 6’8” x 17’2”, 114.3 sq ft |
| 2004: | 6’3” x 18’2”, 114.0 sq ft |
| 2005/6: | 6’7” x 17’3”, 113.2 sq ft |