

Another Interesting Installment of "Car Wars"

By Mary S. Smith

We have completed our annual analysis update of vehicle sales data for CY 2001, which was recently made available by *Automotive News*. Before going further let me note that we decided in 1983 to use *Automotive News* and to use a very consistent approach to monitor vehicle size trends each year. In that way we don't have to remember what we did 10 years ago or why we did it. Much as I hate the fact that the Design Vehicle for 2001 is a pickup, it is. Let me also note that we employ the Parking

Consultants Council definition of vehicle classes: Classes 5-7 are "small" and 8-11 are "large." In this way we can understand changing vehicle sizes in more detail.

Although I don't normally go into detail about changes in models and brand market shares in this nearly annual article, there is enough interesting stuff going on right now that I have spent more time on that side of it this year. Tantalized? Read on.

Let's start with the biggest news: It was widely reported in early January 2001, that "light truck" sales (which include pickups, vans, sport utility vehicles, and are abbreviated as "LTVU") exceeded car sales for the first time ever. That is not the result of the *Automotive News* data—LTVUs totaled 49.5 percent. The difference is mostly how some crossover vehicles are reported. For example, *Automotive News* considers the PT Cruiser as a car, but if it is counted in the

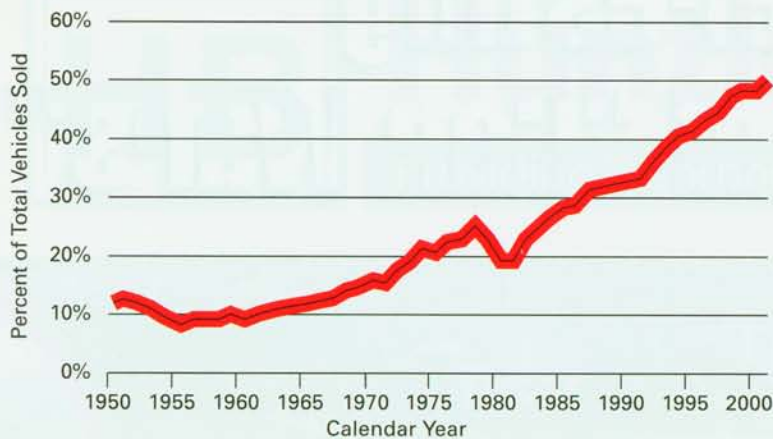


LTVU category as some do, it alone swings the ratio one full percent to 50.5 percent. Figure 1 summarizes LTVU market share since 1950.

One reason that LTVUs comprised half the market was that Chevy and Ford waged a pitched battle in November and December to be able to claim the title of full-sized pickup sales king. December LTVU sales were up 17 percent over December 2000. Chevy won, regaining the position it lost in 1995. According to *Automotive News* it is also the first year ever that GM sold more LTVUs than cars.

The other most significant trend is reflected in a new category in LTVU data for 2002: sport wagons (SW). Also called "crossovers," these are sport utility-type vehicles built off a car chassis instead of a truck; thus they tend to ride and handle like cars rather than trucks. But most are counted as LTVUs; could that possibly be because they then don't have to meet the stiffer

Figure 1. LTVU Market Share



mileage and safety requirements of the federal government for “cars”? *Automotive News* decided to separate sport wagons from sport utility vehicles (SUVs) this year, so we did too. Figure 2 summarizes the sales of cars and LTVUs by type since we began monitoring LTVUs in 1987.

Sport wagons have a pretty amazing story. Sales doubled in 2001 from 2000. Sport wagons have grown from 14,569 vehicles sold in 1997 to 820,973 in 2001—and more models are coming. It appears that sport wagon sales are coming from large cars, minivans, and SUV sales. *Automotive News* is making noises about separating out the new luxury pickups (Cadillac, Lincoln, and Chevy Avalanche) as “sport-utility pickups” too, but at this point they only total 54,184 vehicles in sales; maybe next year!

Considering both cars and LTVUs, *Automotive News* noted that the fourth quarter financing deals pushed 2001 sales to 17.2 million, far better than expected shortly after September 11. The only question remains: have they robbed Peter (2002 sales) to pay Paul (2001)? Prognosticators seem to feel that incentives are going to drive the market most of this year, too.

Automotive News also noted that “some of the biggest brands were the biggest percentage losers for 2001, including Lincoln (down 17.7 percent), Dodge (down 13.7 percent), Pontiac

Figure 2. Vehicle Sales by Type

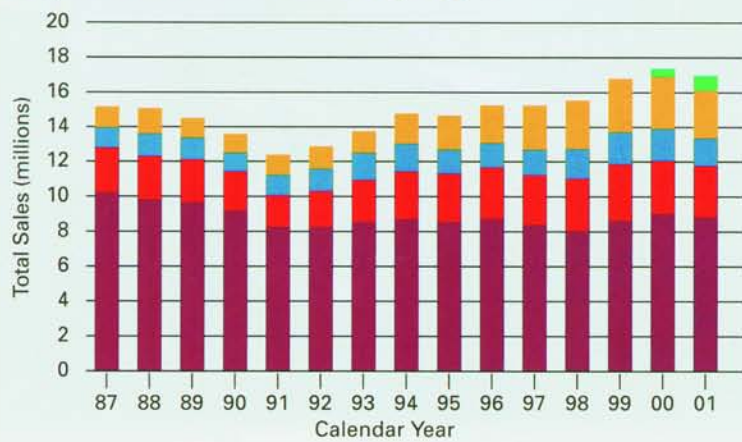


Figure 3. Sales of Small Vehicles by Type

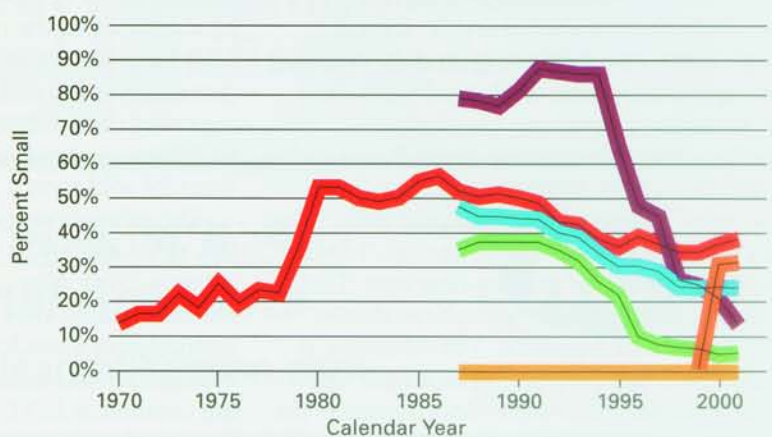
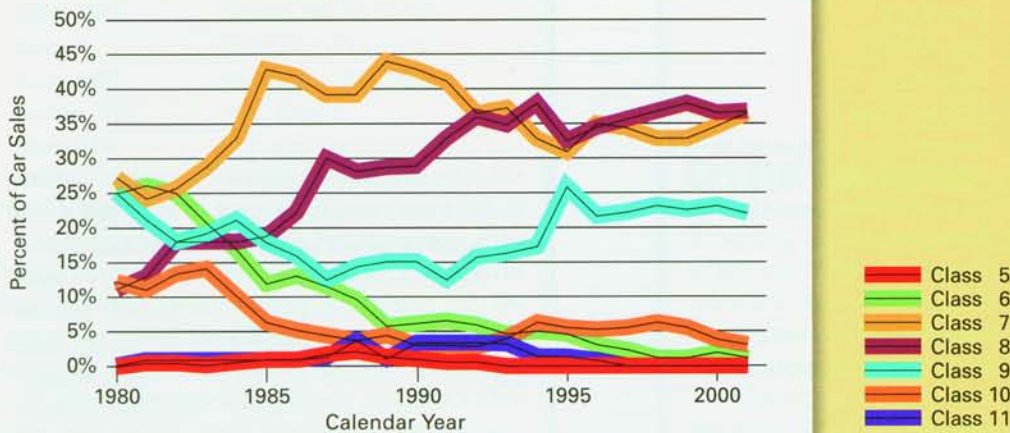


Figure 4. Car Sales by Class



(down 13.1 percent), and Mercury (down 13.2 percent). That's not counting lame ducks Plymouth and Oldsmobile." In Dodge's defense, they refused to get down in the muck of the Chevy/Ford incentive wars. Meanwhile, the biggest winners were the Koreans—Hyundai jumped 41.7 percent and Kia 39.3 percent—both after big gains the year before. Toyota became the first foreign company to capture 10 percent of the U.S. market, with Toyota and Lexus both up strongly.

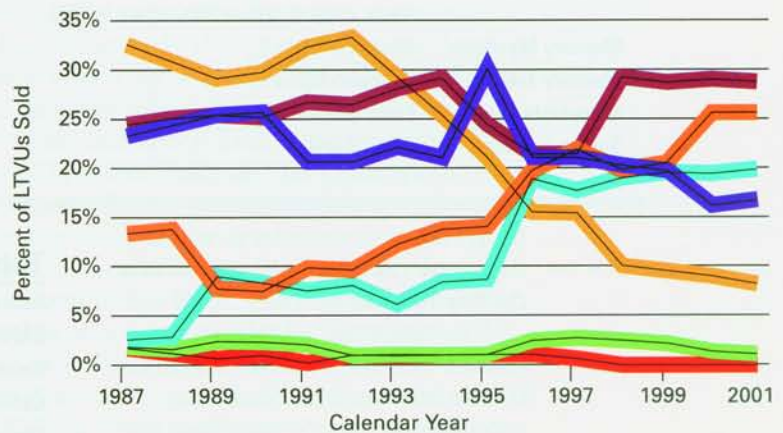
Small Vehicle Sales Trends

Our main purpose in doing this annual analysis is to try to determine what vehicle trends are likely to affect parking dimension requirements over the next few years. Other than 1983, when we purchased a database of all registered vehicles in the United States, this analysis is of calendar year sales. The mix of vehicles on the road will catch up to the mix in sales in 3-5 years, when this becomes the average mix on the road.

As seen in Figure 3, there has been a definite uptick in the percentage of small car sales (remember "car" excludes LTVUs) from a low of 33.9 percent in 1998 to 37.8 percent in 2001; however this is largely due to declines in large car sales as people move to LTVUs. Numerically, small car sales were virtually identical to last year. Meanwhile, Class 11 sales are down 21 percent; Class 10 down 9 percent; and Class 8 down 3 percent from 2000 sales (see Figure 4).

There are still no Class 5 or "mini cars" in the U.S. market. The smallest car sold in the U.S. in 2001 was the Suzuki Swift at 5'3" by 12'5", just across the border into Class 6. There

Figure 5. LTVU Sales by Class



is quite a bit of hype at the current round of auto shows about the new MiniCooper, which is a nostalgic reinterpretation of the 1960s British car. It is very short (just under 12 feet!) but rather wide (5'6½"), so it is firmly in the Class 6 category. We also have not yet seen the introduction of the very small "Smart" car in the U.S. These single-person commuting vehicles are gaining popularity in Europe.

Class 6 sales took a jump up in 2000 but were down 27 percent last year. The gains in small cars are thus just about all coming in Class 7, which is the largest of the small classes. It is the only car class that actually increased share, albeit by only 1 percent. The PT Cruiser, as well as newer foreign entries such as Kia, are contributing to the surge. The Toyota Echo in Class 6 is gaining, as is the Prius in Class 7. The Mercedes C series and CLK convertible have done well in Class 7. Hyundai sales continue to grow in both Class 7 and Class 8. The Mitsubishi Eclipse Spyder (7) has doubled sales over a couple years ago. The restyling of the Nissan

Table 1

Audi A4	Class 7 to 8
BMW Z8	New, Class 8
Cadillac Deville	Class 10 to 9
Chevy/Geo Metro	Dropped, Class 6
Chrysler Cirrus	Dropped, Class 8 (replaced by New Sebring models)
Chrysler Concorde	Class 10 to 9 (merging of LHS and Concorde)
Dodge Avenger	Dropped, Class 8
Ford Contour	Dropped, Class 8
Ford Escort	Replaced by Focus and ZX2, all Class 7
Ford Thunderbird	New, Class 8 (last time it was available it was a 9)
Kia Optima	New, Class 8
Kia Rio, Spectra	New, Class 7
Lexus IS 300	New, Class 7
Lexus SC 430	Replaced 400, both in Class 8 but sales really surged; convertible added in 2002
Mercury Mystique	Dropped, Class 8
Mercury Tracer	Dropped, Class 7
Mitsubishi Lancer	New, Class 7
Subaru Legacy	Class 7 to 8

Sentra has restored sales to where they were five years ago after having dropped in half by 1999.

The "clustering" of sales in Classes 7 and 8, on either side of the border between small and large, continues for cars. Seventy-four percent of cars sold in the U.S. in 2001 were within one foot in length and a few inches in width of the boundary. However, there is not quite as much clustering at the border for LTVUs; only 37 percent of those vehicles are in Classes 7 and 8. Still, even with LTVs comprising half the market, 55 percent of vehicles sold in 2001 are near the border between small and large. The concern with clustering, which was first noted as a trend in 1987, is that it increases confusion and reduces the self-enforcing ability of "small-car-only car stalls." When Class 8 or even Class 9 vehicles park in such stalls, the intended level of service to the public is not achieved in the design. Often a domino effect occurs down the aisle, and eventually a stall is rendered unusable, so the increase in capacity may be lost as well. With the precipitous decline in sales of

vehicles that are appropriately parked in these stalls, from over 50 percent to less than 25 percent, communities are beginning to change ordinances from the 1980s that allowed use of 40, 50, or even 60 percent small-car-only stalls. However, there are significant issues for many facilities across the country that were designed with extensive use of small-car-only stalls; if one restripes to remove them, there often aren't enough total stalls to serve the land use, which may in turn be a violation of local ordinances.

One locality struggling with the issue posted signs at each small-car-only stall, stating the maximum vehicle dimensions permitted to park in the stall. Of course, owners don't generally know the exact dimensions of their vehicles, and the parking enforcement officers were forced to carry tape measures to confirm exact

Table 2

Acura MDX	Wagon, Class 9
BMW X5	Wagon, Class 8
Buick Rendezvous	Wagon, Class 8
Cadillac Escalade	SUV, Class 10
Chevy Avalanche	Luxury pickup, Class 11
Chevy Trailblazer	SUV, Class 9
Ford Escape	Wagon, Class 7
GMC Envoy	SUV, Class 8 to 9
Honda CRV	Wagon, Class 7 to 8
Hyundai Sante Fe	Wagon, Class 8
Isuzu Hombre	Pick-up, Dropped, Class 8
Isuzu Axiom	SUV, Class 8
Jeep Liberty	SUV, Class 8 replaces Cherokee, Class 7
Kia Sportage	SUV, Classes 6 and 7
Land Rover Freelander	SUV, Class 8
Mazda Tribute	Wagon, Class 8
Mitsubishi Montero	SUV, Classes 8 and 9, replacing Classes 7 and 8
Nissan Frontier	Pickups, Classes 8 and 9 replacing Classes 7 and 8
Olds Bravada	SUV, Class 8 to 9
Pontiac Vibe	Wagon, Class 7
Pontiac Aztec	Wagon, Class 8
Suzuki X17	SUV, Class 8 replacing Viatra Class 7
Toyota Matrix	Wagon, Class 7
Toyota Sequoia	Van, Class 9
Toyota Highlander	Wagon Class 8

Table 3

BMW 760 Li	Shorter, but still Class 9
Acura CL	Restyled in 2003 model
Acura NSX	Restyled in 2003 model
Cadillac CTS	New, Class 8
Chevy SSR	Two seat "hot rod," 2003
Honda	Prelude Dropped, Class 7
Infiniti G35	Class 8, replaces Class 7 G20,
Lincoln Continental	Soon to be Dropped, Class 9
Mercury Cougar	Soon to be Dropped, Class 8
Mercury Marauder	"Tire-shredding muscle car"
Suzuki Aerio	Replaces Esteem but longer, wider
Toyota Corolla	Longer by 4 inches, but still Class 7
Volkswagen Phaeton	"Upper luxury sedan"

dimensions before ticketing violators. Moreover, such measures don't resolve the underlying problem: There are too many small-car-only stalls in many facilities for today's mix of vehicles. (See Table 1 for a brief summary of significant model changes in the last couple years that affected 2001 sales.)

Table 2 presents LTVU model changes making an impact on 2001 sales (includes new models unless noted otherwise).

Obviously, the major LTVU movements are in sport utility vehicles and sport wagons. But as stated by *Automotive News*, "There was both boom and bust—small, mid-sized, and premium sport utility sales were all down; sport wagons and large sport utilities gained sharply." Sport wagons nearly doubled from 5.2 to 9.6 percent of the LTVU market. Ford has a redesigned 2003 Expedition, perhaps to try to stem a 17 percent decline in sales in 2001. At the same time, the Suburban held constant while the Tahoe gained. Sales of minivans, however are dropping, down 13.5 percent.

A few known changes in 2003 car models that will likely affect 2002 sales are shown in Table 3.

Coming changes for LTVUs in the near term include a smaller, more refined Hummer. Saab is expected to introduce the 9-3 next summer; it's a "sports coupe with off-road capability." Honda will get a version of the Acura MD-X, the Pilot. Also coming from Honda this year is a mutation of the CR-V that is smaller and really boxy. Lexus has a SUV (not a sports wagon) sized between the RX 300 and LX 470. Volvo's seven-seater sport wagon should be coming out in the fall. Range Rover is aiming its 2003 model flagship SUV as head-to-head competition for traditional luxury sedans.

Crystal Ball Gazing

Browsing *Automotive News* discussion of the auto show concept cars, there are a few interesting trends. "The Big Three continued to sing their retro theme. And from design studios worldwide came signs that the line between cars and trucks is more blurred than ever."

Getting the biggest buzz at the auto shows are sports and high performance cars, but that is to be expected—these are car enthusiasts, after all! Seriously, though, performance does seem to be a big issue right now: GM has dedicated an entire special team to high performance vehicles, and Robert Lutz, although reinvigorating GM as vice chairman, has a little sports car company, Cunningham, blossoming on the side. Among the sports car concepts are the Pontiac Soltice, Nissan ZX, Cadillac Sien, Chrysler Cross Fire, and Dodge Razor. The Pontiac and Cadillac each won at least one "Best in Show" award. All are two-seaters. The Chrysler is scheduled to be a 2004 model. Ford has a GT40 that looks an awful lot like a '60s Corvette, but supposedly will go 200 mph. According to *Automotive News*, it has a "snowball's chance in you know where" of making it to market; the Dodge Razor's prospects may not be any better.

Ford and Chevy are both doing retro convertibles with the Forty-nine and Bel Air, respectively. According to *Automotive News*, Ford got some buzz with its "boy toy" Tonka pickup. Now that's retro—back to the sandbox! *Automotive News* apparently liked the Dodge concept pickup better, however, giving it an "A" for functionality. Volvo did a pretty innovative safety concept car that also won best in show awards. VW's next idea for retro is to bring back the Microbus. Nissan has a Quest mini-van that obviously is trying to masquerade as a sports wagon. It is larger than the current Quest and is expected to go into production in mid-2003.

New crossovers include concepts by Infiniti, Acura, Jeep, and Toyota. Chrysler's Pacifica, Mercedes' GST, and VW's Magellan concepts try to capture the best of sport utilities, minivans and luxury sedans, all in one vehicle. Unbeknownst to each other when both were con-

ceived three years ago, the initial concept for the GST was eerily similar to the independently conceived Pacifica. Daimler Chrysler then decided that they are inventing yet another segment—the sports touring vehicle. Chrysler is expecting the Pacifica to be in showrooms one year from now. According to JD Powers's counting, there was just one crossover, the Toyota RAV 4, six years ago. Today there are 18 models and by 2006 there could be 46.

GM introduced the most revolutionary vehicle, the Autonomy, which has fuel cell propul-

sion and electrical systems in a self-contained chassis. A variety of 10 different bodies, from one seat sports car to 10-passenger sport wagon, can be put on top. However, don't look for it any time soon—it is a vision of the automobile in 2020.

Impact on Parking Design

So what does all this mean to the parking industry? Well, each year we determine a design vehicle, which is the 85th percentile

Table 4. Design Vehicles

	On the Road, 1983 Smith 1985	1987 Sales PCC 1989	1993 Sales	1998 Sales	2001 Sales
Small Cars	5'7"x14'8"	5'8"x14'8"	5'8"x14'9"	5'8"x15'2"	5'8"x14'10"
Large Cars	6'7"x18'4"	6'6"x18'0"	6'2"x17'0"	6'3"x16'9"	6'2"x16'8"
All Cars	6'3"x17'2"	6'2"x17'0"	6'1"x16'8"	6'1"x16'8"	6'1"x16'6"
% Small Cars	36.0%	52.1%	42.0%	33.9%	37.8%
Pickups		6'7"x17'6"		6'8"x18'9"	6'8"x18'11"
Vans		6'8"x17'8"		6'8"x18'3"	6'8"x18'3"
Sport Utility		6'7"x15'4"		6'7"x17'1"	6'7"x17'1"
Sport Wagons		N/A		N/A	6'2"x15'4"
% Small		41.9%		12.1%	9.2%
Composite (Cars + LTVU)		6'4"x17'0"		6'7"x17'1"	6'7"x17'3"
% Small		48.8%		23.6%	23.6%

Category

Design Vehicle (2002 models)

Small Cars	Mercedes Benz C32
Large Cars	Buick LeSabre
All Cars	Ford Taurus
Pickups	Ford F 250
Vans	GMC Savana
Sport Utility	Ford Expedition
Sport Wagons	BMW X5
Composite (cars + LTVU)	Ford F150 Truck

Source: Automotive News Market Data Books, 1984-2001.

vehicle in the range from smallest to largest. When there is a significant change, our parking geometric recommendations are then adjusted, predicated on the assumption that every vehicle in the facility is that size, i.e., a design vehicle has to park between two design vehicles, with a row of that size vehicle arrayed on the other side of the aisle. It is more conservative than the average vehicle, but not unreasonably so, as would be the case if we used a 100th percentile vehicle.

Table 4 represents the design vehicles (DV) at five-year intervals since we began this analysis in 1983. The DV has been shown for various vehicle types along with the percentage of small vehicles among the larger groupings, in order to facilitate understanding the trends that are documented by this analysis. In addition to showing the design vehicle dimensions, we have included a list of the 2002 model vehicle that was the DV for each sub-group analyzed in 2001.

The design vehicles have changed a little bit yet again from last year. One rather amusing thing is that a Mercedes Benz is the design vehicle for small cars! The Ford Taurus continues as the design vehicle among all cars, a position held by either the Taurus or its sister Mercury Sable for at least four years. The DVs for small cars and all cars both got shorter, while the large car lost an inch in width. The overall car in 2001 is still 10 inches shorter and 2 inches narrower than the car on the road in 1983, even though the ratios of small cars are quite similar (36 percent in 1983 vs 37.8 percent in 2001). This is because the larger car (at the 85th percentile in the range of all cars) is smaller today than it was in 1983. The design vehicles for the different LTVU segments have been pretty stable over the last four years (with the exception of all those macho pickups, which keep getting longer), even as the percentage of small LTVUs has declined.

The overall composite for cars and LTVUs for 2001 is a Ford 150 pickup truck. At 6'7" by 17'3", it is two inches longer than the Expedition, which had been the vehicle since 1998. Note that the percentage small among LTVUs is exactly the same as it was in 1998. The composite design vehicle is also 3 inches wider and

3 inches longer than in 1987, the first year we considered LTVUs. Compared to the cars on the road in 1983, it is 4 inches wider, but only 1 inch longer, even though the overall percentage of vehicles that qualify as small has been cut by one-third, from 36 percent to 23.6 percent.

My firm is not going to change its own geometric tables at this time, for the following reasons:

1. We had already adjusted them for an Expedition as the design vehicle and other changes that occurred through the year 2000;
2. The vehicle width and thus stall width is holding constant,
3. A higher proportion of pickups and vans (than cars and sport utility vehicles) are used solely for commercial purposes and are less likely to be parked in public parking facilities (thus the design vehicle as determined herein is a little conservative), and
4. We have yet to see the full impact of sport wagons on the market. The 85th percentile vehicle next year could very easily move back to the Expedition or a similar sized vehicle.

The Parking Consultants Council has been working on an update of its geometric standards, and with this same data as the last piece of information, is expecting to publish an update of its "Recommended Parking Geometrics" publication. It should be available in early spring.

References

- Jim Henry, "Pickup Spiffs Push Late Sales," *Automotive News*, January 7, 2002.
- Jim Henry, "2001: A Sales Odyssey," *Automotive News*, January 14, 2002.
- "No Stars—But Solid," *Automotive News*, January 14, 2002.
- Mary Connelly, "Beefy Boy-toy Concept Hints at Future Look of Ford Trucks," *Automotive News*, January 14, 2002. **P**

Mary S. Smith is vice president in the Indianapolis office of Walker Parking Consultants. She is also an active member of NPA's Parking Consultants Council and a frequent contributor to PARKING magazine. She has been monitoring trends in car sizes for the parking industry since 1983. For additional information about this article, contact Mary Smith at 317/842-6890.