

Parking Dimensions For The New Millennium

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RECOMMENDED PARKING DIMENSIONS

Stall Width Angle of Park	LOS D 8'3"	LOS C 8'6" Module (ft)	LOS B 8'9"	LOS A 9'0"
45	46.50	47.50	48.50	49.50
50	48.25	49.25	50.25	51.25
55	49.50	50.50	51.50	52.50
60	51.00	52.00	53.00	54.00
65	52.25	53.25	54.25	55.25
70	53.50	54.50	55.50	56.50
75	54.50	55.50	56.50	57.50
90	58.50	59.50	60.50	61.50

Table 2

In the November issue, we discussed the fact that soaring sales of wider pickups and sport utility vehicles (SUVs), combined with the decline in sales of small cars, is having a profound impact on parking dimensions. The small-car-only stall is dead or dying, and the pressure is on to design new parking facilities as well as restripe older ones, with more generous dimensions.

Traffic engineering practices use a design-vehicle approach, which assumes that all the vehicles parked in a facility are this size. The design vehicle used is the 85th percentile vehicle in the range from smallest (0 percentile) to largest (100th percentile.) Table 1 traces design vehicles since 1983. Overall, the design vehicle for cars sold in 1998 is 2 inches narrower and 6 inches shorter than in 1983. If parking stalls are only designed for cars, the same dimensions employed in 1983 would still be appropriate, if not generous. At the

same time, it should be noted that this also means that a higher level of comfort has come to be expected by users of parking stalls across the country as compared to what was accepted in the 1970s.

In 1999, however, the design pickup and van are longer, and the design SUV has taken a 1-foot-7-inch leap in length from the Ford Bronco in 1987 to the Ford Expedition in 1999. Indeed, the Ford Expedition, an SUV, is now the design vehicle overall among personal transportation vehicles sold in 1998, at 6 feet 7 inches wide by 17 feet 1 inch long. As the sales of larger SUVs are projected to be relatively flat over the next five years by auto industry analysts, the design vehicle among those on the road should be creeping up to the Expedition.

This statistical data is supported by the fact that most retailers who accepted 8-foot-6-inch wide stalls as an appropriate stall width just a few

years ago are asking for 8-foot-9-inch, if not 9-foot, stalls today. Some aggressive designs of the mid-1980s are also developing problems with inadequate turning radii, according to one of the larger owner/operators of parking facilities in the U.S.

With the surge in vehicle width through 1999, we have recently added 3 inches to our recommended stall widths while adjusting the modules for the turning impact and vehicle projection of a wider, slightly longer vehicle. Employing a level of service (LOS) approach to parking design that allows customization of the design for the circumstances at hand is the best route. The system familiar to most developers is the LOS standards of traffic engineering, which provides guidelines for comparison of the comfort afforded to the user.

Generally, airport short-term, shopping center and hospital visitor parking are all designed to LOS A,

DESIGN VEHICLES

	On The Road, 1983 Smith, 1985	1987 Sales PCC 1989	1993 Sales	1998 Sales
Small Cars	5'7" x 14'8"	5'8" x 14'8"	5'8" x 14'9"	5'8" x 15'2" Subaru Legacy
Large Cars	6'7" x 18'4"	6'6" x 18'0"	6'2" x 17'0"	6'3" x 16'9" Dodge Intrepid
All Cars	6'3" x 17'2"	6'2" x 17'0"	6'1" x 16'8"	6'1" x 16'8" Mercury Sable
Percent of Small Cars	36.0%	52.1%	42.0%	33.9%
Trucks		6'7" x 17'6"		6'8" x 18'9" Dodge Ram (long bed)
Vans		6'8" x 17'8"		6'8" x 18'3" Chevy Express
Sport Utility		6'7" x 15'4"		6'7" x 17'1" Ford Expedition
Percent of Small		41.9%		12.1%
Composite (cars + LTVU)		6'4" x 17'0" 48.8%		6'7" x 17'1" Ford Expedition 23.5%
(LTVU - Light Truck Vehicle Unit)				

Table 1

<p>ANN ARBOR (734) 663-1070</p> <p>ATLANTA (770) 218-1144</p> <p>AUSTIN (512) 492-0850</p> <p>BOSTON (617) 350-5040</p> <p>BURBANK (818) 953-9130</p> <p>CHICAGO (847) 697-2640</p> <p>DENVER (303) 694-6622</p> <p>INDIANAPOLIS (317) 842-6890</p> <p>KALAMAZOO (616) 381-6080</p> <p>MINNEAPOLIS (612) 595-9116</p> <p>NEWPORT BEACH (949) 553-1450</p> <p>PHILADELPHIA (610) 940-5800</p> <p>SAN FRANCISCO (415) 330-1895</p> <p>TAMPA (813) 888-5800</p> <p>WALKER EUROPE, LTD. (011) 4871-344-8931</p>	 <p>WALKER PARKING CONSULTANTS</p>	<p>PARKING FACILITY DESIGN Functional Design Architectural Design Structural & Durability Engineering Parking Equipment Systems Design Construction Administration Resident Services</p> <p>RESTORATION ENGINEERING Structural Evaluation Condition Appraisals Repair Documents Forensic Engineering Maintenance Programs Lighting Upgrades Wayfinding Upgrades</p> <p>PARKING STUDY SERVICES Alternatives & Site Analysis Parking & Traffic Master Planning Financial Feasibility Studies Parking Management Analysis Revenue Control Analysis Parking Facility Audits</p> <p style="text-align: center;">www.walkerparking.com 1-800-860-1579</p>
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unless the setting is very urban where it might fall to LOS B. Other visitor and longer-term parking at airports is typically designed to LOS B, while employee parking is often designed to LOS C. LOS D is rarely used except in the most urban of settings — downtown New York City, for example, where the user is thankful to find a parking space at all.

The combination of the stall width, angle of parking and the parking module — combined bay width of two rows of parked vehicles and the aisle between — are used to determine the level of service of a design. Typically, we would add 1 foot to the module for surface parking in the snow belt. If one wants to adjust either component without changing the level of service, a formula (1 inch of additional stall width is equal to 3 inches less module) is employed. For example, if 9-foot stalls are preferred, but LOS B is appropriate, the 90 degree module would be 60 feet, 6 inches — 3 feet, 3 inches equals to 59 feet, 9 inches. **SCB**

For further information, contact us at www.walkerparking.com