

## WHAT IS A DESIGN VEHICLE?

Design Vehicle information is presented in the FDOT Greenbook, the state standard at:  
<http://www11.myflorida.com/rddesign/Florida%20Greenbook/Florida%20Greenbook%202002.htm>

A "design vehicle" is a selected motor vehicle whose weight, dimensions, and operating characteristics are used to establish highway design controls to accommodate vehicles of a designated type. For the purpose of geometric design, the design vehicle should be one with dimensions and minimum turning radii larger than those of almost all vehicles in its class. Design vehicles are listed in Table 3 - 2.

One or more of these vehicles should be used as a control in the selection of geometric design elements. In certain industrial (or other) areas, special service vehicles may have to be considered in the design. Fire equipment and emergency vehicles should have reasonable access to all areas.

If a significant number or percentage (5 % of all the total traffic) of vehicles of those classes larger than passenger vehicles are likely to use a particular street or highway, that class should be used as a design control. The design of major arterial streets and highways should normally be adequate to accommodate all design vehicles. The decision as to which of the design vehicles (or other special vehicles) should be used as a control is complex and requires careful study. Each situation must be evaluated individually to arrive at a reasonable estimate of the type and volume of expected traffic.

Design criteria significantly affected by the type of vehicle include: horizontal and vertical clearances, alignment, lane widening on curves, shoulder width requirements, turning roadway and intersection radii, intersection sight distance and acceleration criteria.

Particular care should be taken in establishing the radii at intersections, so vehicles may enter the street or highway without encroaching on adjacent travel lanes or leaving the pavement. It is acceptable for occasional trucks or buses to make use of both receiving lanes, especially on minor side streets.

**TABLE 3 – 2  
DESIGN VEHICLES**

DESIGN VEHICLE		DIMENSIONS IN FEET					
Type	Symbol	Wheelbase	Overhang		Overall Length	Overall Width	Height
			Front	Rear			
Passenger Car	P	11	3	5	19	7	4.25
Single Unit Truck	SU	20	4	6	30	8.5	13.5
Single Unit Bus	BUS	25	7	8	40	8.5	13.5
Articulated Bus	A-BUS	18+24=42	8.5	9.5	60	8.5	10.5
Motor Home	MH	20	4	6	30	8	---
Car & Camper Trailer	P/T	11+5+18=34**	3	10	49	8	---
Car & Boat Trailer	P/B	11+5+15=31**	3	8	42	8	---
Semi-Trailer Combination, Intermediate	WB-40	13+27=40	4	6	50	8.5	13.5
Semi-Trailer Combination, Large	WB-50	20+30=50	3	2	55	8.5	13.5
Semi-Trailer Combination, Combination	WB-60	9.7+20+9.4* +20.9=60	2	3	65	8.5	13.5

\* Distance between rear wheels of front trailer and front wheels of rear trailer

\*\* Distance between rear wheels of trailer and front wheels of car