

Overview of Transit Vehicles

What types of vehicles are used in transit systems? How much do they cost and what are their capacities? The answer to these questions is often the same: “It depends!” It depends on the type of operation, the desired layout, the preferred options, the number of wheelchair tiedown positions, etc. Below is a general description of transit vehicles. They are divided into two categories: fixed route vehicles and demand responsive vehicles.

FIXED ROUTE VEHICLES:

Transit Bus (or Transit Coach): A bus with front and center doors, normally with a rear-mounted engine, low-back seating, and without luggage compartments or restroom facilities for use in frequent-stop service. This is what is used most typically on fixed route systems. A 40-foot coach is the common type bus used in larger systems. This vehicle can usually hold about 42 ambulatory passengers when two wheelchair tiedowns are provided. The cost of such a bus averages between \$250,000 and \$280,000. A 35-foot coach will hold about 35 ambulatory passengers and cost about \$250,000. A 30-foot coach will hold about 30 passengers and cost about \$205,000. The average life expectancy of transit coach chassis is about 12 years. It is common for the engine and other equipment to be rebuilt a number of times.

Articulated Bus: Extra-long (54 to 60 feet) bus with the rear body section connected to the main body by a joint mechanism. The accordion-like joint mechanism allows the vehicle to bend when in operation for sharp turns and curves and yet have a continuous interior. It can hold about 60 passengers and costs about \$375,000.

Double Decked Bus: High-capacity bus having two levels of seating, one over the other, connected by one or more stairways. Total bus height is usually 13 to 14.5 feet, and typical passenger seating capacity ranges from 40 to 80 people.

Intercity Bus: (Also referred to as an over-the-road coach.) A bus with front door only, separate luggage compartments, and usually with restroom facilities and high-backed seats for use in high-speed long-distance service. Usually 40-foot or longer, with only forward-facing, reclining seats. Most noted for being the vehicles of choice for the intercity bus industry. They usually hold about 40 passengers and cost about \$350,000. These buses usually are not wheelchair accessible; this, according to the private sector, is largely due to the cost of retrofitting, the loss of seats and luggage space, and the space required for restroom facilities. However, while the ADA granted an exemption to the private sector, this exemption is now expiring.

Suburban Bus: A bus with front doors only, normally with high-backed seats, and without luggage compartments or restroom facilities for use in longer-distance service with relatively few stops. They are usually 35 to 42 feet in length and cost about \$290,000.

Trolley Replica Bus: A bus with an exterior (and usually an interior) designed to look like a streetcar from the early 1900s. They usually hold 20 to 40. The cost varies greatly, from \$140,000 to custom models at \$260,000 and up, depending on quality of construction materials (pine vs. walnut), type of suspension (spring vs. air), etc.

Commuter Rail Car: Commuter rail passenger vehicle. There are two types: 1) Commuter Rail Passenger Coach: not independently propelled and requiring one or more locomotives for propulsion; and 2) Commuter Rail Self-propelled Passenger Car: not requiring a separate locomotive for propulsion.

Commuter Rail Locomotive: Commuter rail vehicle used to pull or push commuter rail passenger cars. Locomotives do not carry passengers themselves.

Heavy Rail Car: Rail car with motive capability, driven by electric power taken from overhead lines or third rails, configured for passenger traffic and usually operated on exclusive right-of-way.

Light Rail Vehicle: Rail car with motive capability, usually driven by electric power taken from overhead lines, configured for passenger traffic and usually operating on non-exclusive right-of-way. Also known as “streetcar,” “tramway,” or “trolley car.” The minimum cost for each light rail car is over \$2.38 million.

DEMAND RESPONSIVE VEHICLES

Standard van: A factory-built 12- or 15-passenger vehicle (including the driver) that is manufactured by Ford, GM or Chrysler. The minimum cost is usually about \$20,000. These vehicles have side passenger doors and are difficult for some elderly persons to board because they must pull themselves up into the vehicle while also ducking down at the same time. Furthermore, because of the cramped quarters and low ceiling height, and because entry into the final row requires one to step over a wheel well, movement within the vehicle is also difficult. In the past, some vans have been retrofitted with wheelchair lifts and extended roofs, but such retrofits do not meet ADA requirements. The usual life expectancy of vans ranges from about 125,000 to 150,000 miles.

Minivan: A factory-built vehicle designed to be something between a car and a van. Examples are the Dodge Caravan and Chevy Astro. They hold seven passengers, including the driver. They can be obtained for about \$28,000. A **wheelchair minivan** is one which has gone through an extensive after-factory conversion. The firms performing this after-factory work raise the roofs and literally drop the floor of the minivans about six inches, enabling them to use short wheelchair ramps, rather than wheelchair lifts. These vehicles usually hold two wheelchairs and one ambulatory passenger, in addition to the driver. The cost of such a vehicle averages about \$38,000.

Van conversion: A standard factory-built van that has been significantly altered by a specialty retrofitter after leaving the van maker’s factory. These retrofitters remove the seats and the top half of the van. Among the features are an extended height roof, a specific wheelchair entry door, a front entry door with a convenient low step for ambulatory passengers, and new seating with a center aisle. The conversion van has three-across seating: two-person seats on the driver’s side and one-person seats on the other. The usual configuration is 8 ambulatory seats and one wheelchair tiedown. The average cost is about \$34,000.

“Body-on-chassis” minibus: A specially-made body placed on a Ford or Chevy “cutaway” truck (not van) chassis. The chassis is made by Ford or Chevy, but the bodies are manufactured by companies such as Champion, Collins, Diamond, El Dorado, and Supreme. These vehicles are wider and taller than standard vans. Like van conversions, they have walk-in, front entry doors and a center aisle, but they are wider and higher than van conversions, with interiors tall enough to allow a person to stand and four-

across seating. Minibuses are made with various wheelbases, designed to accommodate 16, 20, 24 or 28 ambulatory passengers (excluding the driver). When equipped to handle 24 or more passengers, an extra rear axle, referred to as a “tag axle,” is usually added by the manufacturer.

When minibuses are equipped to handle wheelchairs, four seats are removed for the wheelchair lift assembly and four seats for each wheelchair tiedown. Therefore, a minibus designed to handle 20 ambulatory passengers would convert to a vehicle holding 12 ambulatory passengers and one wheelchair tiedown. A smaller minibus costs about \$38,000, while the larger one is about \$42,000. Retrofitting these vehicles with a wheelchair lift and related equipment adds about \$6,000. ❖