

Urban Transportation Cost Comparison

Costs of the Auto System

- Private Costs - Drivers' time and money cost
- Public Costs - Costs to construct and maintain roads
- External Costs - Congestion and air pollution

Costs of the Bus System

- Private Costs - Riders' time and money costs
- Public Costs - Operating Cost of the bus company plus the cost of modifying roads to accommodate buses
- External Costs - Congestion and air pollution

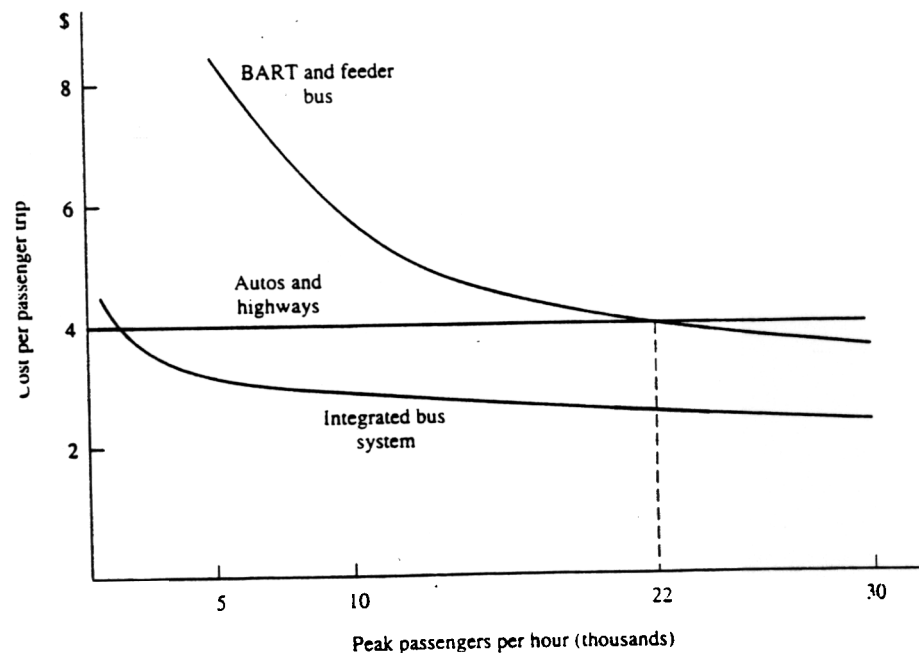
Costs of the Rail System

- Private Costs - Riders' time and money cost
- Public Costs - Operating cost of the railroad and feeder bus system
- External Costs - None

Rail and bus costs per passenger trip decrease as the number of passengers increases because the fixed costs are spread over more riders. Also as the number of passengers increases, rail and bus increase the frequency of service which reduces access time costs.

BART is more costly than bus because (a) BART has higher capital costs (b) BART has higher operating cost and (c) BART has higher access time cost.

FIGURE 20-2 Costs of Alternative Transit Systems



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The average cost of auto traffic is independent of auto volume, but the average costs of an integrated bus system and BART decrease as volume increases. The bus system is more efficient than BART for all volumes studied and more efficient than an auto-based system for volumes exceeding 1,100 passengers per hour.