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Cars Beat Transit for Energy, CO2, Cost, Time & Convenience

Cars Are Cheaper Than Transit

AAA says that the cost of driving is 59.2 cents per mile. Allowing for the fact that the average car has 1.6 passengers, the average cost per passenger-mile is 37 cents. This is a highball number based upscale AAA member's car costs, not the USA average. The cost for an average car is around 27 cents. [1] Data from AAA: http://exchange.aaa.com/wp-content/uploads/2015/04/Your-Driving-Costs-2015.pdf (see reverse side for excerpt)

C-Tran reports that it carried 36,193,395 fixed route passenger miles for a cost of $34,483,217. This is 95 cents per passenger-mile, about three times the actual cost of driving.[2] Data from page 68 of C-TRAN Comprehensive Annual Financial Reports (CAFR) http://www.c-tran.com/images/CAFR/c-tran_2014_cafr.pdf (see reverse side for excerpt)

Cars Use Less Energy

The Transportation Energy Data Book shows cars use 3,144 BTU per- passenger-mile and "Transit Buses" use 4,071, 29% more. Data from http://cta.ornl.gov/data/tedb34/Edition34_Chapter02.pdf Table 2.14. See reverse side for excerpt (Also see table 2.15)

Cars Emit Less CO2 Than Buses

CO2 emission is the result of burning fuel, cars burn much less fuel and thus emit much less CO2 than buses.

Cars Save Commute Time

Based on data from the American Community Survey, commute to work on transit takes about twice as long as driving a car. The average car commute was found to be 25.2 minutes while the average transit commute was 48.1 minutes. Interestingly commute to work time was about the same for drivers whether they lived in suburbs or cities. Data from: http://www.debunkingportland.com/commutetime.html

[1] The AAA shows Operating cost per mile at 17 cents for a Medium Sedan. The ownership costs work out to be 41 cents for 15,000 annual miles. About 25 cents of that is depreciation of the new car. Assuming depreciation on the average USA car is only 5 cents, and an added 5 cents for maintenance, the cost of driving would be (59-15)/1.6 or 27 cents per passenger-mile.

[2] People may wonder how a bus full of people can use more fuel per passenger than a car. The answer is that the average C-tran bus carries 7.8 people. See over.

Cars Are More Convenient

Your car is usually a few steps away in your garage (or within a short walk of your front door) compared to several blocks away for transit, or ¼ mile for light rail.

You car takes you when you want to go instead of being a slave to a bus schedule. There is no waiting for the bus in 100 degree heat or 0 degree cold. There is no exposure to criminals on the way to, or at, the bus stop.

You can make many stops on your way, unlike transit which involves a long wait for a bus after each stop.

When shopping, you can load up a weeks (or month's) worth of groceries in your car, or carry a day or two's worth of groceries on, the sometimes crowded bus.

And you NEVER have to stand up, jammed cheek to cheek with strangers, in your car

For older people driving is much easier than using transit - there is little walking involved and little exposure to crime or the elements. See: http://www.debunkingportland.com/elderly%20travel.html

A Pew research poll found cars are rated as the most needed item. See: http://www.debunkingportland.com/carsnecesary.html

Compared to buses,

- Cars use less energy,
- Cars emit less CO2,
- Cars are faster,
- Cars are cheaper,
- Cars are more convenient,
- Cars are easirer to use than transit which is especially important for older people and handicapped people.
- Pew research found that peole rate cars the most needed item.

Cost Data

AAA Average Costs Per Mile

miles per year	10,000	15,000	20,000
small sedan	58.2 cents	44.9 cents	38.0 cents
medium sedan	75.9 cents	58.1 cents	49.0 cents
large sedan	93.3 cents	71.0 cents	59.5 cents
composite average*	**75.8 cents**	**58.0 cents**	**48.8 cents**

From: http://exchange.aaa.com/wp-content/uploads/2015/04/Your-Driving-Costs-2015.pdf

CLARK COUNTY PTBA

OPERATING INFORMATION

2014-2005

	2014	2013	2012	2011	2010	2009	2008
PASSENGER MILES							
A. Fixed Route	36,193,395	38,399,963	32,408,972	33,748,700	31,773,904	34,730,798	36,883,205
B. Demand Response	1,703,745	1,671,950	1,542,584	1,468,523	1,528,543	1,295,897	1,409,969
C. Vanpool	2,014,887	1,996,671	1,570,340	756,260	461,647	379,442	0
OPERATING MILES							
A. Fixed Route	4,636,289	4,637,508	4,645,968	4,656,656	4,618,039	4,970,828	5,155,643
B. Demand Response	1,562,463	1,541,863	1,454,013	1,366,941	1,436,388	1,431,783	1,535,597
C. Vanpool	449,502	412,699	303,654	145,611	78,431	65,864	0
NET OPERATING COST							
A. Fixed Route	$34,483,217	$31,781,431	$31,063,712	$29,935,491	$28,219,249	$28,689,099	$28,283,504
B. Demand Response	9,965,245	8,999,356	8,554,901	7,771,570	7,775,082	7,816,398	8,791,796
C. Vanpool	229,465	189,693	172,019	128,488	219,071	281,796	0

Selected from: page 68 of http://www.c-tran.com/images/CAFR/c-tran_2014_cafr.pdf

Passengers per bus: 36,193,395 passneger-miles/ 4,636,289 vehicle miles = **7.8 passengers/vehicle**

Energy Data

Table 2.14
Passenger Travel and Energy Use, 2013

	Number of vehicles (thousands)	Vehicle-miles (millions)	Passenger-miles (millions)	Load factor (persons/vehicle)	Energy intensities (Btu per vehicle-mile)	Energy intensities (Btu per passenger-mile)	Energy use (trillion Btu)
Cars	**113,676.0**	**1,446,000**	**2,241,300**	**1.5**	**4,873**	**3,144**	**7,046.6**
Personal trucks	**106,018.4**	**1,032,554**	**1,899,899**	**0.0**	**6,446**	**3,503**	**6,655.4**
Motorcycles	**8,405.0**	**20,366**	**23,625**	**1.2**	**2,871**	**2,475**	**58.5**
Demand response[a]	**68.6**	**1,565**	**2,171**	**1.4**	**16,898**	**12,182**	**26.4**
Buses	b	b	b	b	b	b	**204.1**
Transit	71.7	2,425	22,306	9.2	37,442	4,071	90.8
Intercity[c]	b	b	b	b	b	b	32.8
School[c]	720.3	b	b	b	b	b	80.5
Air	b	b	b	b	b	b	**1,599.1**
Certificated route[d]	b	5,512	579.944	105.2	253,190	2,406	1,395.5
General aviation	199.9	b	b	b	b	b	203.6
Recreational boats	**13,706.6**	b	b	b	b	b	**245.0**
Rail	**20.2**	**1,452**	**39,053**	**26.9**	**66,008**	**2,455**	**95.9**
Intercity (Amtrak)	0.5	319	6,810	21.3	45,205	2,118	14.4
Transit	12.4	774	20,381	26.3	63,265	2,404	49.0
Commuter	7.3	359	11,862	33.0	90,407	2,737	32.5

Table 2.14 from http://cta.ornl.gov/data/tedb34/Edition34_Chapter02.pdf