

Energy & Mobility

Carbon, Our Energy Future & You: A Community Workshop

Background

In the US, the transportation end-use sector accounted for 1,818,100,000 metric tons of CO₂ equivalent emissions in 2008, which represented 32% of CO₂ emissions, 24% of CH₄ emissions, and 65% of N₂O emissions from fossil fuel combustion, respectively. Among domestic transportation sources, light duty vehicles (including passenger cars and light-duty trucks) represented 62% of CO₂ emissions, medium- and heavy-duty trucks 22%, commercial aircraft 7%, and other sources 9%. Transportation is second only to the electricity generation sector in total emissions.

Land use patterns contribute significantly to transportation emissions. The National Household Travel Survey has found that households located in very high density areas produce about half the CO₂ than households located in very low density areas. High density areas promote walkability, transit viability, and reduce trip distances.

Locally, transportation accounts for 39% of combined City and County emissions. Thanks to improving vehicle mileage in new vehicles, growth in transportation emissions is markedly less than other sectors.

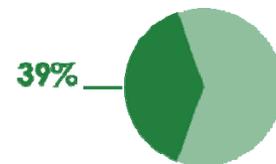
Facts

Every day, vehicles in Charlottesville and Albemarle County travel over 4.2 million miles, a distance that stretches to the moon and back over 8 times. This travel burns about 190,000 gallons of gas per day and emits approximately 1,700 metric tons of CO₂.

Charlottesville Area Transit (CAT) and the University Transit Service (UTS) recorded a combined 5.1 million passengers in FY2010.

Carpooling is a great alternative for those living outside of areas served by transit. Using UVA employees as an example for employers in our region, the average commute for faculty and staff at UVA is 18 miles. Although this puts transit and bicycling out of reach for a large number of employees, 90% of UVA employees have at least 1 other UVA employee living within half a mile. 83% have 4 or more, and on average, UVA employees have over 100 other UVA employees living within a half mile. With those odds, the chance of finding a carpool match is pretty good.

Energy and Mobility Contribution to Total Emissions



What Produces 1 Metric Ton of eCO₂?



112 Gallons of Gas



Driven 3460 miles



Driven 1740 miles

Calculate Your Annual Vehicle-Based Carbon Emissions (In Metric Tons)

		Vehicle Miles Driven Per Year																
		4,000	5,000	6,000	7,000	8,000	9,000	10,000	11,000	12,000	13,000	14,000	15,000	16,000	17,000	18,000	19,000	20,000
Vehicle Fuel Efficiency (MPG)	14	2.5	3.2	3.8	4.5	5.1	5.7	6.4	7.0	7.6	8.3	8.9	9.6	10.2	10.8	11.5	12.1	12.7
	16	2.2	2.8	3.3	3.9	4.5	5.0	5.6	6.1	6.7	7.3	7.8	8.4	8.9	9.5	10.0	10.6	11.2
	18	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5	5.9	6.4	6.9	7.4	7.9	8.4	8.9	9.4	9.9
	20	1.8	2.2	2.7	3.1	3.6	4.0	4.5	4.9	5.4	5.8	6.2	6.7	7.1	7.6	8.0	8.5	8.9
	22	1.6	2.0	2.4	2.8	3.2	3.7	4.1	4.5	4.9	5.3	5.7	6.1	6.5	6.9	7.3	7.7	8.1
	24	1.5	1.9	2.2	2.6	3.0	3.3	3.7	4.1	4.5	4.8	5.2	5.6	5.9	6.3	6.7	7.1	7.4
	26	1.4	1.7	2.1	2.4	2.7	3.1	3.4	3.8	4.1	4.5	4.8	5.1	5.5	5.8	6.2	6.5	6.9
	28	1.3	1.6	1.9	2.2	2.5	2.9	3.2	3.5	3.8	4.1	4.5	4.8	5.1	5.4	5.7	6.1	6.4
	30	1.2	1.5	1.8	2.1	2.4	2.7	3.0	3.3	3.6	3.9	4.2	4.5	4.8	5.1	5.4	5.7	5.9
	32	1.1	1.4	1.7	2.0	2.2	2.5	2.8	3.1	3.3	3.6	3.9	4.2	4.5	4.7	5.0	5.3	5.6
	34	1.0	1.3	1.6	1.8	2.1	2.4	2.6	2.9	3.1	3.4	3.7	3.9	4.2	4.5	4.7	5.0	5.2
	36	1.0	1.2	1.5	1.7	2.0	2.2	2.5	2.7	3.0	3.2	3.5	3.7	4.0	4.2	4.5	4.7	5.0
	38	0.9	1.2	1.4	1.6	1.9	2.1	2.3	2.6	2.8	3.1	3.3	3.5	3.8	4.0	4.2	4.5	4.7
	40	0.9	1.1	1.3	1.6	1.8	2.0	2.2	2.5	2.7	2.9	3.1	3.3	3.6	3.8	4.0	4.2	4.5
	42	0.8	1.1	1.3	1.5	1.7	1.9	2.1	2.3	2.5	2.8	3.0	3.2	3.4	3.6	3.8	4.0	4.2
	44	0.8	1.0	1.2	1.4	1.6	1.8	2.0	2.2	2.4	2.6	2.8	3.0	3.2	3.4	3.7	3.9	4.1
	46	0.8	1.0	1.2	1.4	1.6	1.7	1.9	2.1	2.3	2.5	2.7	2.9	3.1	3.3	3.5	3.7	3.9
48	0.7	0.9	1.1	1.3	1.5	1.7	1.9	2.0	2.2	2.4	2.6	2.8	3.0	3.2	3.3	3.5	3.7	
50	0.7	0.9	1.1	1.2	1.4	1.6	1.8	2.0	2.1	2.3	2.5	2.7	2.9	3.0	3.2	3.4	3.6	

Mitigation Strategies

- Focus Land Use and Transportation Planning on Density and Infill
- Improve Travel Efficiency by Combining Trips, Preferred Parking for Carpool Vehicles, Tele-Commuting Options
- Encourage Alternatives to Single Occupancy Vehicle Use Including Public Transit, Biking, Walking

Tips and More Information

Learn about vehicle fuel economy and tips to improve your mileage: <http://www.fueleconomy.gov/>

Learn about RideShare and Carpool Opportunities in our area: <http://www.rideshareinfo.org/>

Charlottesville Area Transit (CAT) offers real-time arrival info and more:

<http://www.charlottesville.org/transit/>

UVa employees - visit P&T's website to explore travel options: <http://www.virginia.edu/parking/>

Get rewards from local and national stores when you walk, bike, telecommute, carpool, vanpool, take a bus, ferry or even work a compressed week: <http://www.nuride.com/>

Albemarle County trail maps: <http://www.albemarle.org/parks>

City of Charlottesville trail maps: <http://www.charlottesville.org/trails>