Personal Transportation

The predominant mode of travel in the U.S. is automobiles and light trucks, accounting for 86% of passenger miles traveled in 2024.[1] Rail is 6.7% of passenger-miles in the European Union and 0.5% in the U.S.[28] The U.S. has just over 4% of the world's population, but owns 11% of the world's cars.[2,3] By comparison, China owns 20%, Japan 6%, Germany 4%, and Russia 5%.[3] Since 1990, China (18%), India (9.8%), and Indonesia (9.6%) have seen the highest average annual growth in registered cars.[3] Transportation use patterns indicate that the current system is unsustainable.[4]

Patterns of Use

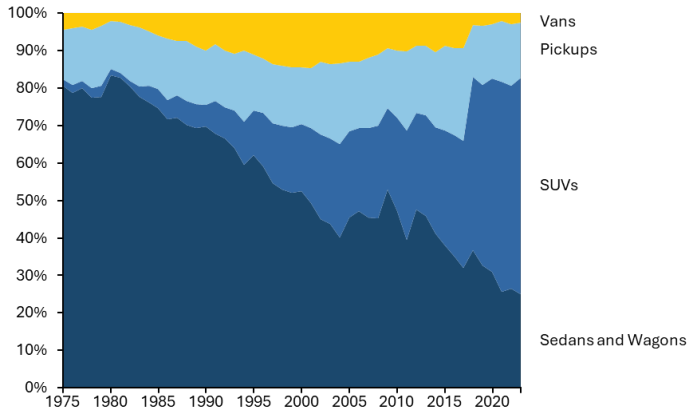
Miles Traveled

- In 2024, Americans traveled 5.2T person-miles.[1]
- From 1980 to 2024, the U.S. population grew 49%,[5,6] while vehicle miles traveled (VMT) rose by 116%.[1]
- 69% of VMT occurred in urban areas in 2024.[1]

Vehicles and Occupancy

- U.S. average vehicle occupancy declined from 1.87 persons per vehicle mile in 1977 to 1.5 in 2019.[3,7]
- In 2024, the U.S. had 297M registered vehicles and 240M licensed drivers.[1]
- In 2022, 21% of U.S. households had ≥3 vehicles, 4% less than in 2017,[8,9] and 8.4% of households had no vehicles.[9]

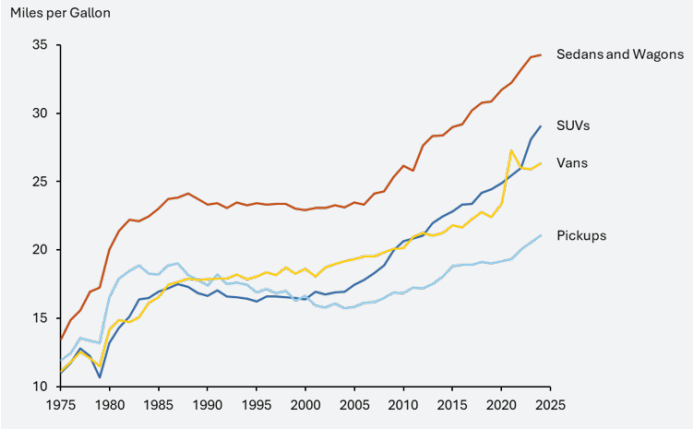
Production Share by Model Year and Vehicle Type[10]



Average Fuel Economy

- New vehicle fuel economy declined from 22 mpg in 1987 to 19 in 2004, then steadily increased, reaching 27.2 mpg for the 2024 model year.[10]
- Fuel economy varies by vehicle type, from 21.3 mpg for pickups to 36.2 for sedans/wagons and 28.4 for SUVs.[10]

Fuel Economy by Model Year[10]



- In 2020, the U.S. had one of the lowest fuel economy standards among industrialized nations, below the EU, China, and Japan.[11]

Vehicle Size and Power

- From 1981 to 2024, average new vehicle weight increased by 36%, largely driven by SUV market growth. Passenger car weight decreased by 14% since 1975, while pickup weight rose by 31%. Horsepower increased 88% for all vehicles, and 0–60 mph acceleration times improved by 45%.[10]
- In 2024, SUVs accounted for 60% of new vehicles sold in the U.S., and pickups accounted for 15%.[10]
- Most of the energy in wheeled transportation and aircraft is used to move vehicle mass. Lightweighting can save energy.[12]

Energy Use

- The transportation sector makes up 29% of U.S. energy use.[13] Since 1990, energy use in the sector grew by 43%, while its share of total U.S. energy use rose by just 3%.[13]
- In 2019, U.S. cars and light trucks used 15.1 quads of energy, representing 15% of national energy consumption.[3]
- In 2025, 94% of primary energy used in transportation came from fossil fuels, with 89% from petroleum.[13]
- In 2022, the transportation sector produced 1,802 Mt CO_2e, 28% of U.S. GHG emissions.[14]
- In 2022, passenger cars emitted 370 Mt CO_2e and light trucks 660 Mt CO_2e. Together, they contributed 57% of U.S. transportation emissions and 16% of total U.S. emissions.[14]

Lifecycle Impacts

- A typical passenger car generates various burdens during its lifetime (raw material extraction through end-of-life). Most impacts are due to fuel production and vehicle operations.[15]
- Vehicle lifetime energy use for fuel production is 1.22 MJ/mi, for vehicle operations is 4.54 MJ/mi, and for material production, manufacturing, maintenance, and end-of-life combined is 0.56 MJ/mi.[15]

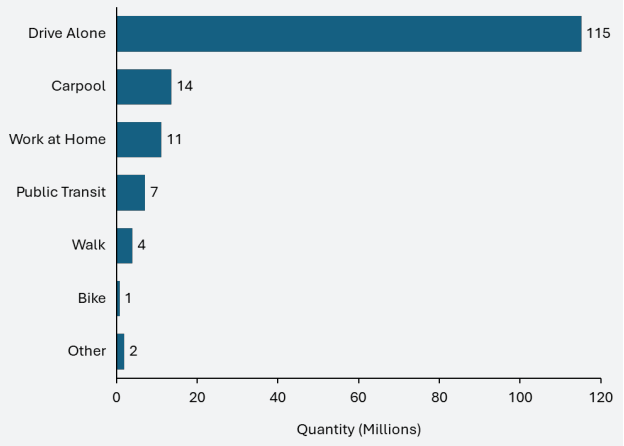
- GHG emissions (g CO_2e/mi) for a current technology small SUV are 429 for an ICEV, 312 for a PHEV, 258 for an HEV, and 267 for a BEV with 200-mi range.[16]

Solutions and Sustainable Actions

Reduce Vehicle Miles Traveled

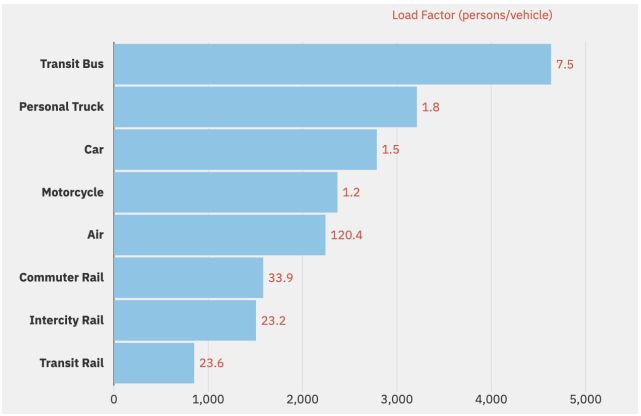
- Driving to/from work represents 30% of all vehicle miles driven, the average trip is 12 mi. Consider living closer to work or working from home.[3]
- In 2020, 75% of U.S. workers commuted by driving alone, while only 9% of workers carpooled (down from 20% in 1980).[3] Carpooling can reduce household fuel costs, cut GHG emissions, and reduce traffic congestion.

U.S. Modes of Transportation to Work, 2020[3]



- 20% of vehicle trips are shopping-related. Combine errands (trip chaining) to avoid unnecessary driving.[3]
- In 2022, traffic congestion cost Americans 8.5B extra hours on the road and 3.3B additional gal of gas, 5% and 8% lower than 2019 levels respectively. Switching to bikes, buses, or trains can cut GHG emissions and save time and money.[17]
- Micromobility (e.g., bikes, scooters) and shared transportation services (e.g., bike shares) have grown rapidly. In 2019, 136M trips were taken by shared micromobility users, over 6 times the number in 2015.[3]

Energy Intensity of U.S. Passenger Travel, 2019[3]



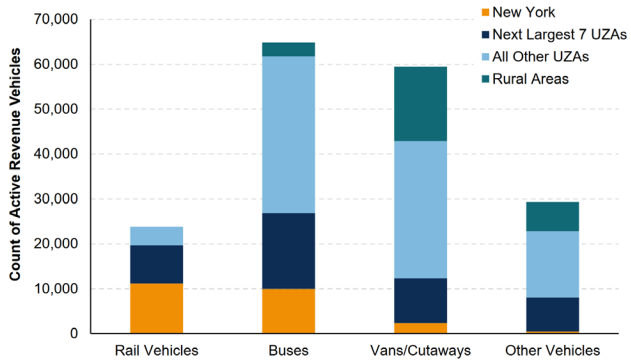
Improve Energy Efficiency

- Consider buying a best-in-class vehicle for fuel economy. The U.S. EPA and DOE publish an annual Fuel Economy Guide ranking the most efficient models.
- Drive responsibly. Aggressive driving and speeding can lower gas mileage by 10% to 40%.[19]
- Gallons per mile (gpm) is a better indicator of fuel efficiency than miles per gallon (mpg). For instance, upgrading from a vehicle that gets 16 mpg to one that gets 20 mpg saves 125 gallons of fuel over 10,000 miles, whereas upgrading from a vehicle that gets 34 mpg to one that gets 50 mpg saves only 94 gallons over the same distance.[20] EVs in the U.S. report efficiency in kWh / 100 mi.[21]
- Follow EV battery charging best practices to extend battery life and minimize GHG emissions.[22] See Electric Vehicles Factsheet.

Promote Supportive Public Policy

- Dense, mixed-use communities promote walking and biking by reducing travel time between homes, businesses, and workplaces.[23]
- Support policies that invest in public transit infrastructure. Transit availability is highly concentrated. Eight urbanized areas account for 73% of all transit trips, with New York making up 46%, and rural areas 2%.[25]

U.S. Public Transit Availability, 2024[25]



A UZA is an urbanized area.

- Fuel economy standards tied to vehicle size may encourage a shift toward larger vehicles—a current trend—which could increase traffic safety risks. Predicted vehicle size increases of 2–32% under such policies could offset fuel economy gains by 1–4 mpg.[26]
- In 2025, the EPA removed civil penalties for car manufacturers who do not meet Corporate Average Fuel Economy (CAFE) standards.[24]
- In 2026, the EPA rescinded the 2009 Greenhouse Gas Endangerment Finding, which was the basis for regulation of GHG standards for vehicles.[27]

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