

Personal Transportation

The predominant mode of travel in the U.S. is automobiles and light trucks, accounting for 86% of passenger miles traveled in 2023.¹ The U.S. has just over 4% of the world’s population, but owns 11% of the world’s cars. By comparison, China owns 20%, Japan 6%, Germany 4%, and Russia 5%.^{2,3} Since 1990, China (18%), India (9.8%), and Indonesia (9.6%) have seen the highest growth in registered cars. Transportation use patterns indicate that the current system is unsustainable.³

Patterns of Use

Miles Traveled

- In 2023, Americans traveled 5.1T person-miles.¹
- From 1990 to 2023, the U.S. population grew by 34%,^{4,23} while vehicle miles traveled (VMT) rose by 51%.¹
- 69% of VMT occurred in urban areas.¹

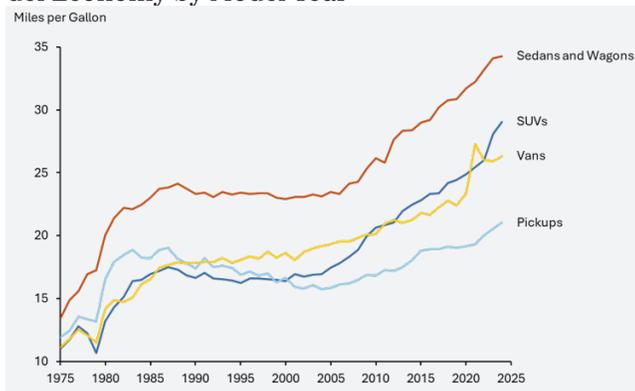
Vehicles and Occupancy

- U.S. average vehicle occupancy declined from 1.87 persons per vehicle mile in 1977 to 1.5 in 2019.^{3,5}
- In 2023, the U.S. had 285M registered vehicles and 238M licensed drivers.¹
- In 2022, 21% of U.S. households had three or more vehicles, 4% less than in 2017.^{6,7}

Average Fuel Economy

- New vehicle fuel economy declined from 22 mpg in 1987 to 19 in 2004, then steadily increased, reaching 27 mpg for the 2023 model year.⁸
- Fuel economy varies by vehicle type, from 20.5 mpg for pickups to 34.1 for sedans/wagons and 40.5 for car SUVs.⁸
- In 2020, the U.S. had one of the lowest fuel economy standards among industrialized nation, below the EU, China, and Japan.⁹ Proposed standards for 2027–2032 (60–66 mpg) would close this gap.²⁵

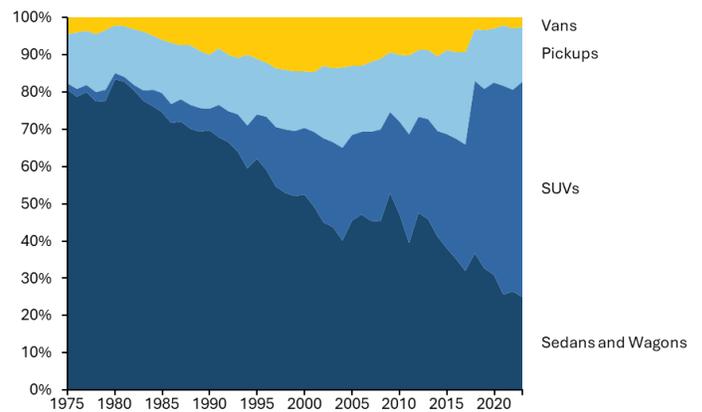
Fuel Economy by Model Year⁸



Vehicle Size and Power

- From 1990 to 2023, average new vehicle weight increased by 28%, largely driven by SUV market growth. Passenger car weight increased by 15%, while pickup truck weight rose by 32%. Horsepower increased by 97%, and 0–60 mph acceleration times improved by 37%.⁸
- SUVs and pickups accounted for 73% of new vehicles sold in the U.S. in 2023—58% was from SUVs alone.⁸
- Most of the energy spent in wheeled transportation and aircraft is used to move vehicle mass. Lightweighting can improve energy efficiency.¹⁰

Production Share by Model Year and Vehicle Type⁸



Energy Use

- The transportation sector makes up 28% of U.S. energy use.³ Since 1990, energy use in the sector grew by 20%, while its share of total U.S. energy use rose by just 1%.³
- In 2019, U.S. cars and light trucks used 15.1 quads of energy, representing 15% of national energy consumption.³
- In 2024, 93% of primary energy used in transportation came from fossil fuels, with 88% from petroleum.¹¹
- In 2022, the transportation sector produced 1,802 Mt CO₂e, 28% of U.S. greenhouse gas (GHG) emissions.¹²
- In 2022, passenger cars emitted 370 Mt CO₂e and light trucks 660 Mt CO₂e. Together, they contributed 57% of U.S. transportation emissions and 16% of total U.S. emissions.¹²

Life Cycle Impacts

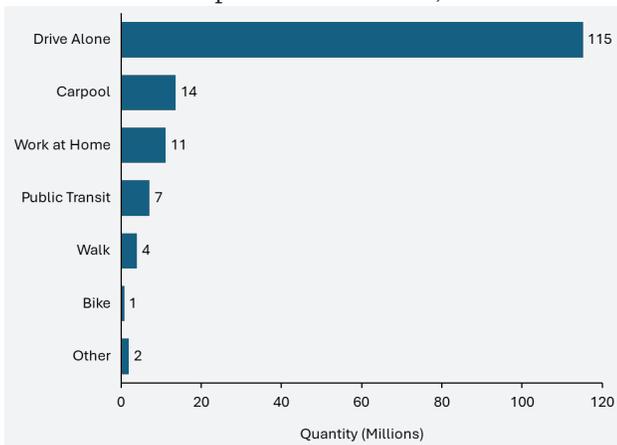
- A typical passenger car generates various burdens during its lifetime (raw material extraction through end-of-life). Most impacts are due to fuel production and vehicle operations.¹³
- Vehicle lifetime energy use for fuel production is 1.22 MJ/mi, for vehicle operations is 4.54 MJ/mi, and for material production, manufacturing, maintenance, and end-of-life combined is 0.56 MJ/mi.¹³
- GHG emissions (g CO₂e/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.²²

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, 2020³

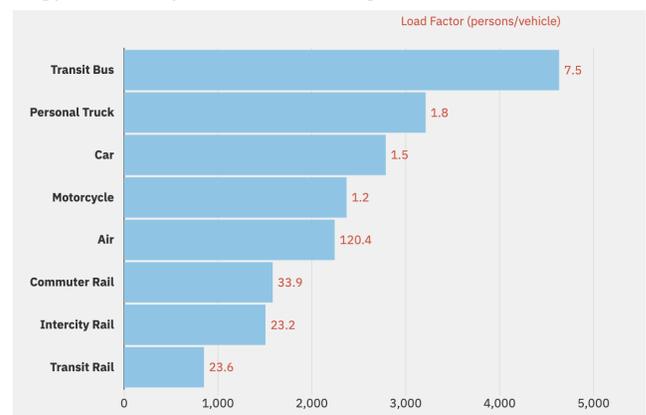


- 20% of vehicle trips are shopping-related. Combine errands (trip chaining) to avoid unnecessary driving.³
- In 2022, traffic congestion cost Americans 8.5B extra hours on the road and 3.3B additional gal of gas, 5% and 8% lower than 2019 levels respectively. Switching to bikes, buses, or trains can cut GHG emissions and save time and money.¹⁴
- 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

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.¹⁵
- Drive responsibly. Aggressive driving and speeding can lower gas mileage by 10% to 40%.¹⁶
- 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.¹⁷
- When driving electric vehicles (EVs), follow battery charging best practices to extend battery life and minimize GHG emissions.¹⁸ [See Electric Vehicles Factsheet.](#)

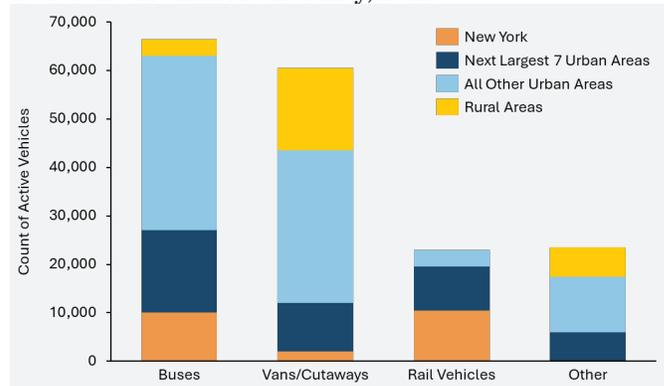
Energy Intensity of U.S. Passenger Travel, 2019³



Promote Supportive Public Policy

- Dense, mixed-use communities promote walking and biking by reducing travel time between homes, businesses, and workplaces.
- Support policies that invest in public transit infrastructure. Transit availability is highly concentrated. Eight urbanized areas account for 72% of all transit trips, with New York making up 45%, and rural areas 2%.²⁶

U.S. Public Transit Availability, 2023²⁶



- The EPA set new emissions standards for light- and medium-duty vehicles for model years 2027–2032, aiming to reduce tailpipe emissions to 85 g/mile by 2032—50% lower than the 2027 standard.¹⁹
- In 2024, new fuel economy standards were set for model years 2027–2031, including a 2% annual increase for passenger cars and raising corporate average fuel economy (CAFE) to 50.4 mpg for new light-duty vehicles by 2031.²⁰
- 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.²¹
- In 2025, the EPA announced major changes including the reconsideration of climate regulations, GHG reporting requirements, clean energy initiatives, and reversal of vehicle emissions standards.²⁷