

SOV (single occupancy vehicle)

What is a single occupancy vehicle commute?

A single occupancy vehicle commute is a trip to or from a daily destination (usually work) by an individual alone in a car, truck or van. The category “Drove alone,” includes people who usually drove alone to work as well as people who were driven to work by someone who then drove back home or to a non-work destination.

How do single occupancy vehicle commutes affect our environment?

When compared to ride sharing, car pooling, or transit, single occupancy vehicle commutes contribute more greenhouse gas emissions and decrease energy efficiency of transportation.

Large SUV = (gas guzzling, single occupancy vehicle) = worst case commuting

Why shouldn't people drive what they want?

The importance of reducing larger vehicles which require greater fuel use becomes more evident as we try to reduce our carbon footprint. Road expansion and livable communities continue to emphasize fewer vehicles, thus the need for alternatives to SOV's and VMT's (vehicle miles traveled) but as everything tends to be incremental, **just the choice of a smaller vehicle with a much lower carbon footprint** would be an incremental victory for our environment. All politics is local and all choices are personal. If our citizens can make a positive personal choice, they will choose smaller vehicles with better fuel economy (**30+ MPG**) and encourage others to do the same.

Positive vehicle choice is a step in the right direction.

Top 10 Low Carbon Footprint Passenger Vehicles listed from lowest to highest in carbon footprint.

1. Toyota Prius
2. Honda Civic Hybrid
3. Honda Insight
4. Ford Fusion Hybrid
5. smart fourtwo
6. Nissan Altima Hybrid
7. Honda Civic CNG
8. Toyota Camry Hybrid
9. Ford Escape Hybrid
10. Mini Cooper and Clubman

From: U.S. EPA and DOE's valuable: fuelconomy.gov . The EPA combined miles per gallon rating is based on 45% highway and 55% city driving. The carbon footprint is carbon dioxide equivalent (CO₂e) based on 15,000 miles of driving, using the GREET 1.7 model.

Car pooling

Carpooling (also known as **car-sharing**, **ride-sharing**, and **lift-sharing**), is the shared use of a car by the driver and one or more passengers, usually for commuting.

Carpooling reduces the costs involved in repetitive or long distance driving by sharing cars, sharing rental charges, or paying the main car owner. Many larger cities have introduced high-occupancy vehicle (HOV) lanes to encourage carpooling and use of public transit, to combat rising traffic congestion. In reducing the number of cars on the road, carpooling decreases pollution and the need for parking space, and in a global perspective, reduces greenhouse gas emissions.

Second to reducing vehicle size, forming a car pool is the most economical and least expensive way of saving our environment. Just car pooling **one to two days a week** can reduce your carbon footprint by 20-25% **OVERNIGHT**, **save you** money on fuel and place fewer cars on the road. Where common sense is concerned, car pooling is a big winner for our planet and our communities.

Public Transit

Public transit comprises passenger transportation services which are available for use by the general public, as opposed to modes for private use such as automobiles or vehicles for hire. Public transit services are usually funded by fares charged to each passenger, with varying levels of subsidy from local or regional tax revenue (**Ozark Regional Transit**); fully-subsidized, zero-fare services operate in some towns and cities (**Razorback Transit**). The Federal Transit Administration subsidizes NWA transit systems with both capital and operating grants. This year's regional federal grant totals **\$2,113,012** with additional stimulus and capital grants from Little Rock and Washington, DC. Obviously our federal and state governments are encouraging transit infrastructure and operation through **direct financial assistance**.

Public transit can consist of subways, trolleys and light rail, commuter trains, buses, van pool services, para-transit services for senior citizens and people with disabilities, ferries, water taxis, or monorails. **Systems grow evolutionary** from small to large buses, then from buses to BRTs (Bus Rapid Transit) and from there to rail systems.

Public Transit

The Federal Transit Administration awards grants to large-scale, expensive projects through a well defined planning and grant award process. That process awards grants to those regions and systems which have grown incrementally and has shown historically increased ridership to justify large capital outlays.

Larger and older cities now have extensive public transit systems, most out of necessity. One person, one car (SOV) is not a practical option in a large urban environment. Most newer cities however have more sprawl and much less comprehensive public transit, based on their historical development patterns. The only way to avoid this sprawl is through the planning process which would include a higher emphasis on community planning and development. If comprehensive planning includes alternatives to the practice of encouraging SOVs (i.e. simply building more and wider roads for increased traffic flow) then some of the lessons learned in cities like Los Angeles in the 70s can inform our process.

Any use of public transit automatically avoids SOV use and reduces vehicle miles traveled. All intelligent communities recognize the value of an advanced public transit strategy, including leveraging federal subsidies to provide for and encourage public transit use.

BRT

Bus Rapid Transit (BRT) refers to frequent bus service operating in special lanes. BRT aims to provide performance and service qualities comparable to those of rail transit but at a cost that is considerably lower than that of light rail systems (an average of \$9 million/mile versus \$34.8 million/mile for light rail transit according to U.S. General Accounting Office estimates). Because of its favorable economics, BRT is receiving increased attention from the U.S.

Department of Transportation and is picking up support in the transit community. **Transit officials realize that the federal New Starts program can only fund a small fraction of the rail candidate projects currently in the pipeline.** They see BRT as offering a new generation of less costly transit systems that would extend the benefits of rapid transit to a much larger number of communities.

HOV lanes

High-Occupancy Vehicle (HOV) lanes designate one lane of traffic on an expressway (often separated by a barrier) for non-single occupancy vehicles (SOVs), buses, van pools, etc. This can mean vehicles carrying 2, 3, or greater occupants, depending on the local governing authorities' definition. When HOV lanes are underutilized over time (which is often the case, unfortunately), they can be replaced with HOT lanes. (see next slide)

HOT lanes

HOT lanes are limited-access lanes reserved for buses and other high-occupancy vehicles but open to single occupant vehicles upon payment of a toll. HOT lanes operate alongside existing highway lanes to provide users with a faster and more reliable travel option. Buses, carpools (HOV-3), motorcycles and emergency vehicles will have free access to HOT lanes. Drivers with fewer than three occupants can choose to pay to access the lanes. Tolls for the HOT lanes will change according to traffic conditions to regulate demand for the lanes and keep them congestion free - even during peak hours. California's two HOT lane projects, which have been in operation for several years, have demonstrated the ability of electronic variable pricing to maintain congestion-free conditions even during peak hours. Surveys in California have shown widespread public acceptance of the HOT lane concept.