

surface transportation policy project

Transportation and the Environment

Transportation investments, services and incentives should meet our travel needs, promote economic prosperity and environmental justice, preserve and protect open space, scenic resources and agricultural land, protect and enhance the integrity of natural resource systems and wild places and improve air and water quality. Such efforts can promote resource efficiency and energy conservation, while reducing reliance on foreign oil and offering solutions to climate change.

—New Transportation Charter

The impact of transportation on quality of life is perhaps most easily seen in environmental degradation. America's auto-oriented transportation system dirties the air, contaminates oceans and rivers, consumes open space and wildlife habitat, hastens climate change, and guzzles energy.

Transportation is a Significant Source of Air Pollution

More than 125 million Americans live in areas with unacceptable air pollution. The EPA attributes the premature deaths of over 64,000 Americans to air pollution annually. Asthma, lung and respiratory illnesses, and heart disease are also exacerbated by air pollution. Economically disadvantaged communities tend to be disproportionately affected by these public health problems. In addition to negative impacts on human health and environmental justice, air pollution in the form of smog and acid rain have been shown to kill or harm agricultural crops and damage buildings at a cost of between \$2 and \$3 billion annually.

Motor vehicles are the largest source of urban air pollution, generating more than two-thirds of the carbon monoxide in the atmosphere, a third of the nitrogen oxides (which react to form smog), and a quarter of the hydrocarbons (which also form smog). Some pollutants emitted by cars and trucks are known or likely to cause cancer, including toxic substances such as soot (fine particulates), benzene, arsenic compounds, formaldehyde, and lead. In the 1996 National Toxics Inventory, EPA estimates that mobile sources such as cars, trucks, and buses release about 3 billion pounds of cancer-causing, hazardous air pollutants each year.

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Roads are a Major Source of Water Pollution

Transportation also has a significant impact on water quality. Runoff from roads, bridges, parking lots and other impervious surfaces can pollute drinking water and lead to changes in water chemistry that degrade habitat quality. This significant non-point pollution source deposits road salt, dirt and dust, fertilizers, pesticides, antifreeze, engine oil, rubber and metal deposits, litter and other pollutants into aquifers, lakes, rivers, streams and oceans.

A recent report from the Pew Oceans Commission finds that "when more than ten percent of the acreage of a

watershed is covered in roads, parking lots, rooftops, and other impervious surfaces, the rivers and streams within the watershed become seriously degraded."

Groundwater contamination is also attributed to underground gasoline storage tanks (UST) which leak. One example is the gasoline additive MTBE which has been linked to hyperactivity, convulsions, kidney damage, and possibly cancer.

Finally, the necessity of moving millions of gallons of oil to serve motor vehicles has consequences for water quality: marine oil spills. The infamous *Exxon Valdez* spill in Alaska was only one of thousands of oil spills reported annually.

Highways Threaten Wildlife and Habitat

More than 1 million animals are killed on the nation's highways every day. But roadkill is just the most obvious way that an auto-oriented transportation network impacts wildlife. By altering, degrading, and destroying wildlife habitat, and by encouraging additional development, roads have helped bring dozens of species to the brink of extinction. Estimates of oil resources in the Arctic National Wildlife Refuge, which range from 3 billion barrels of oil to 16 billion barrels of oil, also put this natural habitat at risk.

(See STPP's fact sheet, [Transportation and Biodiversity](#))

Transportation Contributes to Climate Change

According to the Intergovernmental Panel on Climate Change (IPCC), the 1990s were the hottest decade of the 20th century. The IPCC further predicts that the earth's average temperature will increase by as much as 10° F during the next century, leading to record heat waves, droughts, an increase in frequency of severe storms, rising sea levels, and the migration of insect-borne tropical diseases like malaria.

Carbon dioxide (CO₂) is the largest contributor to climate change and the transportation sector is one of the largest sources of CO₂. Cars and light trucks emit 20 percent of the nation's CO₂ pollution. Each gallon of gasoline burned pumps 28 pounds of CO₂ into the atmosphere – 19 from the tailpipe and nine pounds from upstream refining, transporting and refueling. The U.S. transportation sector as a whole is responsible for about 32 percent of U.S. CO₂ emissions, and almost nine percent of the world's total CO₂ emissions.

Transportation is Responsible for High Energy Consumption

The transportation sector is over 95 percent dependent on oil. In 2000, cars and trucks guzzled 132 billion gallons of gasoline and an additional 33 billion gallons of diesel and other special fuels. Cars and trucks accounted for 43 percent of all petroleum consumed in the U.S. in 2000 (EIA. Energy Outlook 2002.). In fact, cars and light trucks consume more energy than domestic oil producers extract. And the trend is expected to worsen: The growing popularity of SUVs and trucks has led to a decrease in fuel economy, and the total U.S. fleet's fuel economy reached its lowest point since 1980 in 2001.

Americans spend over \$100,000 per minute to purchase foreign oil, making oil consumption an important part of the national trade deficit. The transportation sector's dependence on oil is not fully reflected at the gas pump; it also drives US foreign policy.