

the rate at which land is preserved as public or private land (FIGURE 12-14).

Causes of Sprawl

Surveys consistently show that most people tend to have a negative opinion of sprawl. Then why does it happen? Suburban sprawl has many causes. One of the most important is the rise of automobile use and the proliferation of roads that make commuting easy. Economics influences both of these factors in the United States, where gasoline is much cheaper than in nearly all other nations. In addition, road construction is encouraged by federal and state gasoline taxes that are strictly dedicated to the state and federal departments of transportation and provide enormous funds for the purpose of building roads.

Of course, ease of transportation is only part of the cause. Suburbanites must have some incentive to move to the outer fringes of cities. When asked, many suburban dwellers say that the main attraction to living in suburbia is the desire to own a parcel of land that can be gardened. (Gardening is the most popular outdoor activity in the United States.) Another reason often cited is the desire to escape the greater perceived crime rates of downtown areas.

Cheap land at the suburban fringe is yet another incentive because it allows developers



the housing



FIGURE 12-15 There are no easy answers to the question of which is more desirable: affordable homes for a growing population or farmland to feed the growing population?

include economic and human health costs, sprawl is more likely to live better. Sprawl requires more infrastructure and television and many other things per person than individual residential densities (such as apartment buildings) do. In terms of

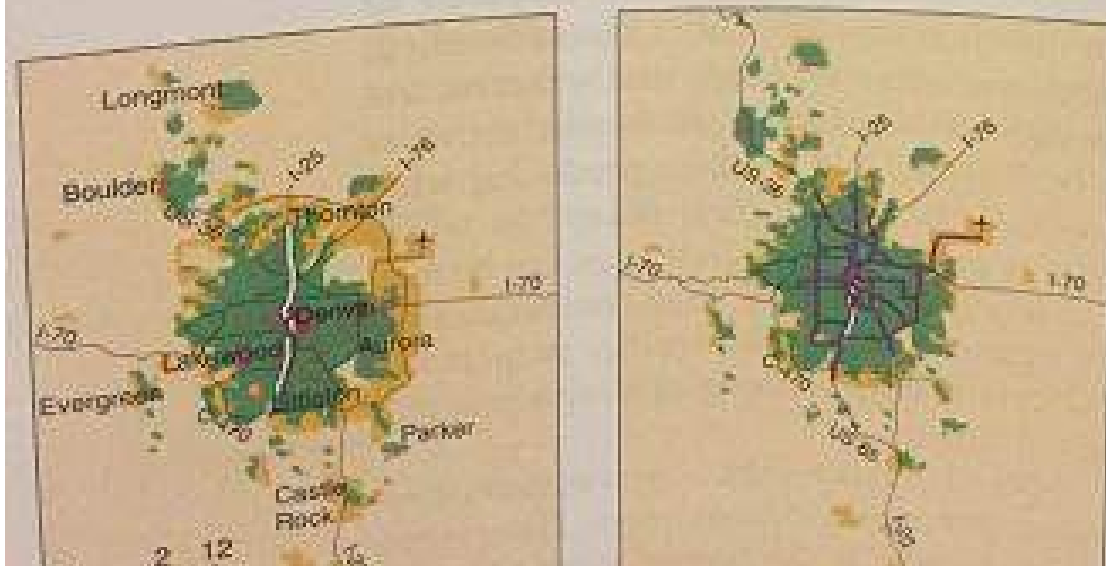
the harmful way to impact per person, sprawl is dispersing the landscape, the resulting air and noise (consuming resources and life habitat) are more. For example, a single gallon of oil can produce 20 pounds of carbon dioxide. Automobiles on the road, most of them used to go to a store, or perhaps because walking is not possible. Water pollution is a result of extensive pavement. Sprawl necessitates: the area of the aver-

age suburb or commercial center is covered with buildings and pavement. In fact, 5% of the surface area of the lower 48 states is covered with pavement and concrete. Such "sealed surfaces" do not permit the infiltration of rainfall into the ground; thus, surface water runoff carries increasing amounts of litter, oil, and many chemicals into local streams. This also slows the recharge of groundwater supplies and increases flooding. Extensive areas of roads and concrete are the most devastating of all human activities to both plants and wildlife, producing what is essentially a "biological desert" in which nothing grows. If ugly landscapes can be considered visual pollution, then we should note the ugliness created by traffic, strip malls, and monotonous housing developments that sprawl causes.

Sprawl increases the consumption of resources per person in many ways. There is one car per person in the United States. The extensive driving of these cars consumes many billions of gallons of gasoline. The average American adult drives more than 200 miles per week. Nationally, Americans drive more than 1.5 trillion miles per year, which is equal to nearly 15,000 trips to the sun, which is 93 million miles away.

12.5 Managing Lands to Reduce Urban Impacts

Sprawl also takes a very heavy toll on human health. Many thousands of people in the United States die prematurely of illnesses caused by smog that originates mainly from automobiles (a review of air pollution provides more information). Water pollution arising from sprawl contains sewage and many other harmful substances that take a human toll in waters used for drinking and recreation (a review of water pollution provides more information). Perhaps a less obvious health cost is the lack of exercise produced by spending so many hours in a car. The average American spends nearly an hour per day in a car, which adds up to nearly 3 years for a person who has a lifespan of 70 years or so. Instead of walking to the store or the neighbor's house, suburbanites drive everywhere and as a result get out of shape. In 2002, the American Medical Association issued a report stating that about 60% of Americans are overweight, and many Americans have heart disease and other health problems; the main cause is apparently a lack of exercise that their suburban lifestyle produced. Finally, there are mental health costs. Many studies by social scientists have concluded that the typical suburban lifestyle produces consid-



to build residential subdivisions at relatively low cost. This land is often cheap because it is agricultural land, and the farm industry in the United States is in decline in many areas (FIGURE 12-15). This is especially true of the small family-owned farms surrounding many urban areas. The expansion of large-scale corporate farming has made it very difficult for small farms to compete. As a result, it is usually much more profitable for individuals to sell farmland near cities for development into residential and commercial subdivisions than to farm the land. Thus, many homeowners move to the suburbs because the housing is most affordable there.

Consequences of Sprawl

Sprawl has many costs. These include economic, environmental, and human health costs. Starting with economic costs, sprawl is the most expensive way for people to live because it requires a widespread infrastructure of roads, sewers, telephone and television cables, police and fire units, and many other services. It is much more costly per person to provide these services to individual residences than to a few communities (such as large apartment buildings) that house many people. However, to be fair, apartment buildings are a major resource sink in terms of construction materials.

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Sprawl is also the most harmful way to live, in terms of harmful impact per person on the environment. By widely dispersing human habitation on the landscape, the effects of each person in producing air and water pollution and consuming resources (such as gasoline and wildlife habitat) are greatly enhanced. For example, a single gallon of gasoline produces more than 20 pounds of carbon dioxide plus considerable amounts of smog and other harmful pollutants. Nevertheless, 80% of the automobiles on the road have only one person in them, most of them commuting to work, going to a store, or performing some other local chore that can be accomplished only in a car because walking is not feasible. Similarly, water pollution is greatly increased by the extensive pavement and concrete that much sprawl necessitates: at least 50% of the surface area of the aver-