

Economic Benefits of Smart Growth and Costs of Sprawl

Sprawling patterns of development create heavy economic burdens -- problems, costs and liabilities far in excess of the benefits. Conversely, smart growth strategies can enhance economic vitality.

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Summary

Sprawling patterns of development increase travel costs; decrease the economic vitality of urban centers; increase tax burdens due to more extensive road, utility and school construction and maintenance costs; increase health care costs due to pollution from automobile-centered neighborhood designs; and cause the loss of productive agricultural and forestry lands and the loss of natural lands that support tourism and wildlife related industries. Smart growth strategies, in contrast, can reduce development costs to both governments and individuals without reducing economic activity, including the number of residential or commercial units built.

Background

We have two real choices for future development: We can grow more compactly or we can continue to sprawl across the landscape at great economic, environmental, and social cost. — Urban Land Institute (ULI) Senior Resident Fellow Ed McMahon

Sprawl’s Consequences

“Urban sprawl” is typically described as having some or all of these characteristics: It is low density, automobile dependent, has a leapfrog design, has a seemingly endless outward expansion and consumes significant amounts of natural and man-made resources.

Sprawl development is the dominant form of development in America. The American Farmland Trust reports that between 1982 and 2007, the U.S. population grew by 30% percent. During the same time period, developed land increased 57%. In Pennsylvania, between 1992 and 2005, the population grew by 4.5% and developed land increased by 131.4% (1.2 million acres to almost 2.5 million acres).

Sprawl has multiple economic costs, including increased travel costs; decreased economic vitality of urban centers; loss of productive farm and timberland; loss of natural lands that support tourism and wildlife related industries (worth \$6 billion/year in Pennsylvania alone); increased tax burdens due to more expensive road, utility and school construction and maintenance costs; loss of the rural characteristics that make many communities attractive to homebuyers; and increased car use leading to higher air pollution and increased health care costs for diseases like asthma.

As residential development sprawls ever farther across the countryside, many core-cities and established communities see their populations decline and vacant land go unused. Cities, towns, and older suburbs decline as growth shifts toward outlying newer communities. When jobs and middle-class families move into sprawling developments, low-income and minority workers in the older neighborhoods become spatially separated from economic opportunities.

Sprawl creates large amounts of impervious surfaces, such as roads, parking lots and residential lawns over which rain water flows and picks up pollutants; a one-acre parking lot will cause 16 times more runoff than an acre of undeveloped meadow and the large turf grass lawns typical of sprawl development are often nearly as impervious as concrete. The capacity to recharge water supplies is diminished both by the decrease in pervious surfaces and because sprawl development fills or buries many small streams in underground pipes to make way for buildings, roads, and parking lots. Economic impacts of increased impervious surfaces include increased water treatment costs, fisheries impacted by increased pollutants, reduced residential and municipal water supplies, and increased occurrences and intensities of floods.

Agricultural economies are particularly threatened by sprawl development. Between 1982 and 2007, America lost 23,163,500 acres of farmland to development. According to the American Farmland Trust, “the farms closest to our urban areas produce an astounding 91% of our fruit and 78% of our vegetables, but they remain the most threatened. In addition, many of these at-risk, urban-edge farms are the ones growing fresh food for farmers markets, CSA’s and other direct-to-consumer outlets.”

Smart Growth

In contrast to sprawl is smart growth. According to 1,000 Friends of Maryland:

Smart growth focuses new development and redevelopment where there is existing or planned infrastructure. Smart growth is sustainable and is characterized by compact, often transit-oriented, land use with neighborhood schools, walk-able or bike-able streets, mixed-use development and a wide range of housing choices. It conserves valuable natural resources through the efficient use of land, water and air; creates a sense of community; expands transportation, employment, and housing choices; distributes the costs and benefits of development in an equitable manner; and promotes better public health.

Smart growth balances development and environmental protection. Instead of debating whether or not growth should be allowed, smart growth focuses on how and where new development should be accommodated. Smart growth allows for the same amount of development that would have taken place under uncontrolled growth, but it uses a more compact design and directs the development to locations where it is more efficient to provide public services and away from open space and agricultural land. Under smart growth, resources, either natural or economic, need not be as aggressively consumed

In contrast to conventional suburban developments, which are generally residential only and offer only one kind of housing such as single-family detached homes, smart growth developments offer a range of housing choices. Instead of development that requires residents to drive long distances between jobs, homes, shopping and recreation, smart

growth places workplaces, homes, and services closer together to allow children and adults to walk or use public transit to reach their daily destinations.

Directing smart growth to existing communities provides the economic benefits of more cost effective development that revitalizes older communities. According to smartgrowth.org, “communities benefit from a stronger tax base, closer proximity of a range of jobs and services, increased efficiency of already developed land and infrastructure, reduced development pressure in edge areas which preserves more open space, and, in some cases, strengthening rural communities.” Smart growth reinvests in and strengthens existing communities and achieves more balanced regional development.

Related Benefits

While this guide focuses on economic benefits, it is not meant to diminish the importance of the environmental and social benefits of smart growth.

Related guides at ConservationTools.org include:

- Cost of Community Services Studies
- Economic Benefits of Biodiversity
- Economic Benefits of Land Conservation
- Economic Benefits of Parks
- Economic Benefits of Trails
- Environmental Benefits of Conservation

Organization of Guide

This guide presents an inventory of studies. The heading of each section is the title of the study and is hyperlinked to the ConservationTools.org library listing where the study can be viewed and downloaded. The organization responsible for the study is given, followed by a summary of the key economic findings of the study.

The Costs of Sprawl

Back to Prosperity - A Competitive Agenda for Renewing Pennsylvania

The Brookings Institution

- The state is squandering a key source of competitive advantage: its superb natural assets.
 - Between 1982 and 1997, Pennsylvania’s population grew by 2.5%, while its urbanized footprint grew by 47%.
 - Between 1990 and 2000, Pennsylvania ranked 48th among the states for population growth but 6th for acres of land urbanized.

- Pennsylvania's cities, towns, and older suburbs decline as the locus of the state's growth shifts toward outlying newer communities.
 - During the 1990s, 538,000 people, many of them from within state, moved to Pennsylvania's outer townships. As the populations of these outer townships grew by nearly 12%, the populations of the state's cities, boroughs, and more established suburbs collectively declined by nearly 2%.
 - Ninety percent of the state's household growth and 72% of its new-housing production occurred around the state's outer townships. Job creation has also shifted outward.
 - This unbalanced growth impacts the health and real estate markets of the state's original neighborhoods of choice. Vacancy is on the rise in older municipalities. The worst impacted areas face cycles of social distress, deterioration, and abandonment that destroy neighborhood appeal.
- Sprawl and urban decline burden taxpayers.
 - Providing infrastructure to sprawling communities, where long distances separate houses and businesses, frequently costs more than in more compactly built neighborhoods, resulting in higher tax bills.
 - Urban decay depresses property values and therefore tax revenues.
 - Between 1993 and 2000, real property values in Pennsylvania's cities, boroughs, and older townships, did not, as a group, appreciate. At the same time, outer townships gained more than 17% in inflation-adjusted market value.
 - The subsequent need for older communities to have higher property tax rates than outer townships further weakens their ability to compete for new residents and investments.
- Current demographic and development trends are undercutting the state's economic competitiveness.
 - Young and mobile educated workers are attracted to vibrant downtowns, healthy urban neighborhoods, pristine scenery and close-in job markets. Sprawl and urban decline hurt Pennsylvania's ability to retain highly educated young workers, including the top students from its colleges and universities, which undermines efforts to build and maintain the skilled and educated workforce necessary to encourage the creation of high-paying knowledge jobs and cultivate entrepreneurialism. Instead of creating the environment to attract these young workers, Pennsylvania is experiencing an aging population coupled with the losses of young adults.
- Sprawl creates economic isolation for minorities and low-income residents.
 - When jobs and middle-class families move into sprawling outer townships, low-income and minority workers in the older neighborhoods become spatially separated from economic opportunities. Compounded by serious

skills shortfalls among urban workers, this creates a significant drag on the state's productivity and social health.

The Costs of Sprawl in Pennsylvania

10,000 Friends of Pennsylvania

- Sprawl increases the costs of roads, housing, schools, and utilities.
 - Three major national research investigations found that smart growth development can lower the construction costs for roads, utilities and schools by up to 25%. Sprawl also results in higher operational costs for these.
 - In 1995, Pennsylvanians could have saved \$120 million in road, utility and school construction costs if sprawl development was avoided.
- Because the design of sprawl development is vehicle dependent, as compared to compact development, it increases automobile use, makes public transit less cost efficient and effective, increases costs incurred due to car accidents, and lowers the use of transit, bikes and walking.
 - In Pennsylvania, suburban residents travel 50% more miles in private vehicles than do urban residents. Rural residents travel 150% more miles than urban residents.
 - In the Philadelphia area, 40% of the Southeastern Pennsylvania Transit Authorities (SEPTA) annual operating deficit is due to the longer suburban-city commutes, which comprise only 13.6% of the total number of transit trips.
 - Sprawl increases reverse commuting (commuting to jobs from core cities to suburbs). In the Delaware Valley each reverse commute on public transit is subsidized by \$3.47. Intra-Philadelphia commutes are subsidized by \$0.81. Between 1970 and 1990, increases in reverse commuting increased the public transit subsidy costs by about \$6 million per year.
- Sprawl contributes to the concentration of poverty and the acceleration of socio-economic decline in cities, towns, and older suburbs.
 - Sprawl tends to create more expensive housing prices. This reduces affordable housing opportunities near the outer-ring suburban job opportunities, and reduces the ability of workers to locate closer to these jobs.
 - Of 12 Pennsylvania locations studied, there were only two in which core city residents could afford a median-priced home in an inner or outer suburb.
 - Sprawl concentrates poverty in both large and small urban areas across the state. In York in 1990, 31% of children under age 18 living in urban areas lived in poverty, while 6% living in the inner and outer suburbs lived in poverty. In Williamsport, these numbers were 30% in the urban core, and 10% in the suburbs.
 - Sprawl development is associated with a fragmented system of local governments. This results in core cities providing numerous expensive

services that are consumed by a whole region but paid for by core city residents. In Philadelphia, this costs residents over \$60 million a year and without it, the city's wage tax could be reduced by almost 40%.

- Sprawl increases pollution and stress.
 - Sprawling development leads to the destruction of large numbers of trees. The North American Forestry Association estimates a 50 year-old tree annually provides \$75 in soil erosion and storm water control benefits, \$75 in wildlife shelter benefits, \$73 of air-cooling services, and \$50 of air pollution control benefits. If the value of these benefits were capitalized at a conservative rate of 5%, the market would value each tree at over \$55,000.
 - Travel congestion has been found to have statistically significant effects on job satisfaction, work absences due to illness and the incidences of colds and flu. Low density and dispersed development patterns lead to increased freeway travel and travel congestion.

Costs of Sprawl—2000

Transit Cooperative Research Program, Sponsored by the Federal Transit Administration in cooperation with the Transit Development Corporation

This extensive report is the culmination of more than five years of research led by Rutgers University. It provides background information on sprawl, examines the public and personal costs of sprawl, including on the quality of life and the livability of cities, and discusses the benefits and negative impacts of sprawl.

The effects of sprawl growth are mixed. Sprawl has more costs, less revenue, and fewer benefits than compact growth. Many of the costs are measurable while the benefits often are not. Sprawl development consumes land and various types of infrastructure at a higher level than compact development and does not often provide for significant amounts of attached or multifamily housing. In a study of nationwide growth patterns, projected out 25 years and starting in 2000, researchers found that:

- Sprawl will consume 4.7 million more acres than compact development would have. Under sprawl development, 18.8 million acres of land will be used to build 26.5 million new housing units and 26.5 billion square feet of new nonresidential space. Almost one-quarter of this land conversion could be avoided through simple growth control measures, without compromising growth or altering housing markets.
- Average residential housing cost would decrease by 7.8% under a controlled versus uncontrolled growth scenario, from \$167,038 to \$154,035.
- Developers and local governments will expend more than \$190 billion to provide necessary water and sewer infrastructure under traditional development or uncontrolled growth. A controlled growth pattern requires a smaller number of water and sewer laterals needed to serve an equivalent number of residential and nonresidential occupants. Under controlled growth, lower tap-in fees and 4.6 million fewer laterals would amount to national infrastructure savings of \$12.6 billion.

- Under uncontrolled growth, more than \$927 billion will be needed to construct 2.0 million new lane-miles of local roads. Under controlled growth, \$817 billion would be spent to construct 1.9 million lane-miles of new local roads. The controlled growth scenario saves 9.2% in local lane-miles and 11.8% in local road costs.
- Under the controlled-growth scenario, travel costs decrease by 4% because of a 4% decrease in miles traveled. The controlled growth scenario achieves 4.7% fewer miles traveled in privately operated vehicles and 19% more miles traveled in public transit.
- Controlled growth development would save the country \$4 billion annually in local public-service costs, decreasing from \$143.2 billion/year to 139.2 billion/year. Although under controlled growth, more development will take place in developed areas where public services may be more expensive, demand for the services can be absorbed more readily due to the excess capacity found there.

Impacts of Land Use on County Finances: A Fiscal Study of Queen Anne's County, MD

AKRF, Inc.

- This study, prepared for the Queen Anne's Conservation Association, presents the key findings of an assessment of budget and fiscal trends for Queen Anne's County, Maryland. It examines several myths about development and its relationship to the County's fiscal position:
 - A lack of residential development has hurt the county's fiscal health.
 - Increased residential development will lead to healthier fiscal conditions
 - More commercial zoning can solve the county's budget problems.
 - Agriculture and open space are unproductive land uses.
- Between 2000-2009, county revenues grew drastically, primarily because of increasing taxable income and appreciating real estate values driven by rising property values for existing properties, not because of new development. Queen Anne's county has derived a substantial amount of revenue, despite a relatively small number of residents, from its large agricultural industry, which creates large amounts of productive, tax-paying land and generates few residents that require services.
- In fiscal years 2010 and 2011, amidst the nationwide recession, the county faced a budget deficit. It is clear that the lack of development in the county was not to blame. It was caused mainly by the loss of State Highway User Revenue funding and decreasing income tax revenue.
- Agricultural lands, other open space, and Chesapeake Bay waterfront have increased the quality of life in the county, and therefore property values.
- Absorbing new and expanding businesses into existing commercial developments, including the use of vacant built space and vacant or underutilized parcels in already zoned lands, would be the most effective way to plan for and attract more businesses to the county.

The Costs and Benefits of Alternative Growth Patterns: The Impact Assessment of the New Jersey State Plan

New Jersey Office of State Planning

This impact assessment compares two possible growth plans for New Jersey, one in which growth is managed according to the State Development and Redevelopment Plan, and one in which it continues according to historical trends. The state plan will direct more development into existing and new centers and less development into rural and environmentally sensitive areas. Development under the plan will be close-in, contained, and somewhat denser compared with development according to historic trends. Over a 20-year projection period of 2000 to 2020:

- Development under the state plan will attract income to and expand the tax base of communities with existing and new centers; save appreciable amounts of developable land; require fewer roads and water/sewer infrastructure; slow the increase in housing prices; and substantially reduce the need for expanded local public services in rural and environmentally sensitive areas.
- Both plans will accommodate the same level of population and job growth. Under the state plan, almost twice the number of new jobs will be found in urban communities and household growth will be six times greater in urban communities. Communities with more densely developed planning areas and communities characterized by the presence of urban, regional, and/or town centers will also see higher population growth.
- The state plan will reduce fiscal deficits due to growth by \$160 million a year. Under either plan, most development will be residential, which, under any growth scenario, creates fiscal deficits. By continuing along historical trends, municipalities, counties and school districts will have an annual \$418 million fiscal deficit. Under the state plan, local governments will experience an annual fiscal deficit of \$257 million dollars.
- Under the state plan, 870 fewer miles of centerline roads will need to be constructed and \$870 million in local road infrastructure costs will be saved.
- Under the state plan, more people will be able to afford housing. Continuing along historic trends, the percentage of the state's households able to afford housing will drop from 77% to 62%. Under the state plan, it will drop to 67%.

Smart Growth Enhances Property Value

Enhancing Subdivision Value Through Conservation Design

On Common Ground

- Conservation subdivision design offers a way to design land development that allows for the preservation of green space, increased property values, and for the same amount of buildings to be constructed. The conservation subdivision creates value-enhancing open space networks in a community by identifying open space that contains natural and cultural resources that should be preserved and ways to situate

houses in ways that both preserve that land and place houses close enough to it so residents can fully enjoy it. The article provides a basic example of how a partially wooded lot could be converted into a conservation subdivision.

- Most buyers prefer homes in attractive, park-like settings and views of protected green space allow homes to sell faster and at premium prices. Such homes also tend to appreciate more in value than homes with no views or nearby green space.
- In Indiana, the use of conservation subdivision design added \$20,000 in worth to each lot without decreasing the total number of lots, and, in Texas, by respecting natural terrain and designing around existing features for an 80-lot development, a developer cut grading costs by 83% (\$250,000) compared to a conventionally engineered plan.
- For more information on this tool, see the [Growing Greener: Conservation By Design](#) guide at [ConservationTools.org](#).

Market Acceptance of Smart Growth

United States Environmental Protection Agency

- More often than not, home buyers are willing to pay a premium to live in smart growth developments and housing in smart growth developments often have a greater resale appreciation than their conventionally suburban counterparts.
- In a study of 18 smart growth and 18 conventional suburban developments, 56% of the smart growth developments had higher resale appreciation than their suburban counterparts, 33% had lower resale appreciation, and resale appreciation for the rest were roughly the same or were inconclusive.
- Of 21 comparisons made between smart growth and conventional suburban developments, at any given time during the study, two-thirds of the smart growth developments had higher average home prices.
- This paper cites a case study of housing values for smart growth developments in Maryland where buyers were willing to pay an average price premium of 11% to live in a smart growth development over non-smart growth developments. Another study of smart growth housing in two neighborhoods in Maryland found the housing in these developments to be valued at 16.1% and 9.5% higher than the housing in the surrounding conventional subdivisions.

The Market Acceptance of Single-Family Housing Units in Smart Growth Communities

United States Environmental Protection Agency

This paper continues the research on the market acceptance of smart growth, first published in 1999. The authors' original work found that, in four case studies of housing developments in Maryland between 1994 and 1997, buyers were willing to pay an average price premium of 11% to live in a smart growth development over non-smart growth developments (as reported in the study *Market Acceptance of Smart Growth*)

In their new study, the authors examined whether this price premium would be sustained over time. They found that between 1997 and 2005, the houses in the two smart growth

neighborhoods sold for 16.1%, and 6.5% more than comparable houses in surrounding conventional developments. During this period, the price premium for both communities was sustained or increased, indicating a strong and sustained market acceptance of single-family housing units in smart growth communities.

Smart Growth Costs

A

voids Health

Smart Growth Will Help California Avoid Air Pollution-Related Illnesses, Deaths and Costs

American Lung Association in California

- By choosing the path for smarter growth, in 2035, reductions in emissions could save California between \$716 million and \$1.66 billion in health costs from fewer pollution-related illnesses and deaths. There would be more than 132,000 tons of air pollution reduced and up to 140 premature deaths, 105,000 asthma attacks and other respiratory issues avoided.
- These savings should be viewed along with the cost savings in municipal infrastructure, road maintenance and household vehicle ownership and travel provided by smarter growth. California's population growth will economically benefit from more compact communities with viable options for walking, biking and transit that reduce dependency on driving and polluting fuels.

Library

Related Library Categories at ConservationTools.org

Economic Benefits of Smart Growth and Costs of Sprawl

Featured Library Items at ConservationTools.org

[Featured library items are identical to those studies summarized in this guide.]

Related Guides

- Cost of Community Services Studies
- Economic Benefits of Biodiversity
- Economic Benefits of Conservation
- Economic Benefits of Parks
- Economic Benefits of Trails
- Environmental Benefits of Conservation

Experts

Elana Richman

Richman performed the research for this guide.

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