

Environment and Development

Myth and Fact



**Urban Land
Institute**

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About ULI—the Urban Land Institute

ULI—the Urban Land Institute is a nonprofit education and research institute that is supported by its members. Its mission is to provide responsible leadership in the use of land in order to enhance the total environment.

ULI sponsors educational programs and forums to encourage an open exchange of ideas and sharing of experiences; initiates research that anticipates emerging land use trends and issues and proposes creative solutions based on that research; provides advisory services; and publishes a wide variety of materials to disseminate information on land use and development. Established in 1936, the Institute today has more than 17,000 members and associates from more than 60 countries representing the entire spectrum of the land use and development disciplines

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Across the nation, communities are seeking ways in which to grow and prosper and ways in which to protect and enhance local and regional environmental resources. As the U.S. population increases by more than 60 million over the next 25 years, the pressure for development to accommodate growth will intensify, as will demand for development to do its part to protect the environment and conserve energy. ULI is a leader in addressing environment and development issues through timely research and publications; interactive workshops, forums, and symposiums; and community outreach initiatives.

In partnership with the Conservation Fund, ULI sponsors two educational workshops a year on the practice of environmentally sensitive development. Recently, ULI published *The Practice of Sustainable Development*, a book that explores land use and development techniques that achieve environmental objectives. Periodic symposiums and forums keep ULI members and other attendees abreast of the latest policies and trends in the area of environmentally sensitive development.

Through its community outreach efforts, ULI works closely with its district councils and leading national, state, and local environmental organizations to remove the barriers to and enhance the markets for environmentally sensitive development.

Environment and Development: Myth and Fact continues ULI's tradition of conducting high-quality research and producing publications on environmental topics. This is the fourth in a series of publications designed to address myths and offer good examples on issues related to growth and land development. It tackles some of the more challenging and complicated aspects of balancing development with environmental protection.

Through publications like this, ULI continues to provide forums in which all stakeholders can explore and debate environmental and development issues. Through research and documentation of best practices, ULI and its partners will strive to find solutions that accommodate growth and also meet important environmental objectives.

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Environment and Development: Myth and Fact

It is clear that pressure will intensify for development to both accommodate growth and do its part to protect the environment. Consider the following trends. The U.S. population is expected to grow by more than 60 million by the year 2025. This tremendous amount of growth will not be equally distributed across the nation. In fact, the majority of new growth will occur in coastal metropolitan areas where environmental resources tend to be most fragile. For instance, Orange County, California, is expected to grow by 25,000 people per year for the next 20 years and to add 300,000 jobs by 2010.

Curtis Johnson and Neal Peirce of the Citistates Group, a network of journalists and advisers involved in metropolitan issues, have calculated that 37 square miles of new parking spaces and 1,300 additional lane-miles of interstate highway will be needed to accommodate the 1.8 million additional South Floridians expected by 2020. This will be roughly equivalent to completely paving a half-mile strip along the Atlantic coast from Miami Beach to Boca Raton.

The rate at which land is being urbanized to accommodate growth is a point of some contention. According to the National Resources Inventory (NRI), a U.S. Department of Agriculture database, more than 25 million acres of land were developed between 1982 and 1997. Some land planners suggest that only about 1 million acres are developed per year.

While consensus may be lacking, a growing body of evidence suggests that the public is concerned about the loss of open space. Nearly two-thirds of the respondents in the National Association of Realtors' summer 2001 survey of homebuyers believe that it is very important to preserve land used for agriculture, forests, wetlands, and stream corridors.

Recent ballot initiatives validate the results of this survey. More than 78 percent of the November 2000 ballot measures designed to preserve open space or build and maintain parks and recreation facilities passed. Initiatives on parks and open space did well in 1998 and 1999 elections also.

Open-space protection efforts are valuable, but they are not sufficient to address the nation's long-term environmental and economic objectives. These objectives need a broader range of options. One important tool in the effort to make growth more environmentally sensitive will be the development of more projects that meet environmental objectives.

Environmentally sensitive development will become an increasingly important part of the solution to the challenges of population and job growth and environmental quality. Development projects that use innovative techniques to protect the environment are the exception today, not the norm. Many barriers—related to regulatory issues, financing problems, market issues, and neighborhood opposition—stand in the way of developers who want to build projects that promote environmental quality.

Fortunately, awareness of how these regulatory and other factors impede smart development is growing and a broad range of entities—including developer associations, state and local governments, planning groups, and environmental organizations—are working to change them. These efforts are crucial, because accommodating future

growth without a serious loss of environmental quality requires viewing environmentally sensitive projects as a solution, not as an exception.

By debunking some of the prevailing myths about the environment and development, this booklet aims to make public and private sector decision makers more aware of the barriers to and opportunities for environmentally sensitive development—and perhaps to inspire them to undertake and support sensitive projects.

Environment and Development: Myth and Fact is the fourth in the Urban Land Institute's Myth and Fact Series. The first addressed transportation and growth, the second smart growth, and the third urban infill housing.

This latest publication in the series offers facts to counter eight of the most prevalent myths concerning the relationship between the environment and land development. And in support of those facts it offers examples—best practices case studies that highlight the lessons learned from innovative programs and development projects.

Environment and Development: Myth and Fact examines the impact of certain land use policies and practices on environmental resources. It explores the growing market for environmentally sensitive development, which is development that incorporates siting, land use, and design features that protect the environment or are sensitive to environmental concerns including energy and other resource use. It compares compact development with dispersed development in terms of the traffic they generate. And it highlights the positive role that development and developers are playing in environmental protection.

Profile

MCI Center

The revitalization of downtown Washington, D.C., owes much to the MCI Center, a pioneer development in the area known as Gallery Place.

The MCI Center is a 1 million-square-foot multipurpose sports and entertainment facility that opened in 1998. Home to three professional sports teams, it seats nearly 21,000 spectators. Restaurant and retail space complements the arena.

High-density development in urban areas well served by transit is per se environmentally sensitive because it uses less land and requires less car travel than the same land uses located in suburbs and exurbs. If this project had been located in the suburbs, it would have required acres of parking and it would have generated long, air-polluting car trips.

The success of the MCI Center transformed this location served by the Metrorail subway system from one shunned by developers to one sought by developers. The MCI Center is within easy walking distance of downtown corporate centers, the Mall, and government buildings. Rail access reduces parking requirements. Nearly 70 percent of the ticket holders for sports events take public transit to and from the games.

Like many infill developments of this scale, the MCI Center faced many obstacles, including site constraints, financing difficulties, and regulatory barriers. Soil on the site was contaminated from years of commercial laundry operations and from more than 20 underground heating-oil and fuel storage tanks. The city government committed to cleaning up this contamination, which, as remediation costs soared above initial estimates, ultimately proved critical to the project's success.

The MCI Center overcame these obstacles and now exemplifies pioneer infill development. Since the development of the MCI Center, more than \$3 billion has been invested in development in the area and more than 5,000 jobs have been created.²



The MCI Center started a development boom in its downtown Washington, D.C., neighborhood.

Myth #1

Environmental protection and land development objectives are incompatible.

Fact #1

The careful development of land can enhance environmental resources and reduce development pressure on more sensitive resources elsewhere.

Environmental protection and land development are not necessarily incompatible objectives. Indeed, by developing the land with care, natural resources can be enhanced and development pressure on more sensitive resources can be reduced.

The development or redevelopment of abandoned or vacant contaminated sites as vibrant urban places—an activity generally known as brownfield development—is one example of development that can enhance the environment. The Can Company redevelopment project in Baltimore, Washington's Landing in Pittsburgh, and the Chiron Life Sciences Center in Emeryville, California, are cases in point.

Another kind of development that protects and enhances the environment is called sustainable development. This involves a combination of progressive land use practices—including innovative stormwater management techniques, open-space protection, and forest and other habitat restoration—undertaken to improve a development site's natural systems, protect water quality, and enhance wildlife habitat. Examples of sustainable development projects include Hidden Springs in Ada County just outside of Boise, Idaho; Dewees Island in Charleston, South Carolina; Bonita Bay in Bonita, Florida; and Prairie Crossing in Grayslake, Illinois.

Green building—the use of ecologically sensitive materials and design techniques for buildings to limit their impact on the environment—has grown into a serious industry. The Chesapeake Bay Foundation (CBF), a large regional environmental advocacy organization, built its new headquarters green to reflect CBF's core environmental values. The construction materials used reduce the consumption of scarce natural resources. Rainwater supplies the tap water and composting toilets keep the building off the sewage treatment grid. A ground-source heat pump and a solar hot-water heater significantly reduce the building's energy consumption.¹

Green buildings are catching on across the nation. With the assistance of initiatives such as Rebuild America (a program of

the U.S. Department of Energy), the LEED™ Green Building Rating System (offered by the U.S. Green Building Council, a nonprofit coalition of building industry leaders), and supportive government policies in a growing number of cities and states, the green building movement has converted many developers, government officials, and environmentalists to a new way of thinking.

Brownfield development, sustainable development, and green building projects come immediately to mind as examples of environmentally sensitive development. Less obvious at first are the environmental benefits of many well-conceived or well-located master-planned communities, infill development projects, and mixed-use projects.

The design of many master-planned communities, for example, establishes a green infrastructure—the preserved important natural features of the site—as an organizing framework for the overall development. Infill projects in urban areas make altogether different contributions to environmental quality. For one thing, they provide an alternative to development on the urban fringe and to the extent that they deflect development from undeveloped areas they help protect open space. For another thing, infill projects are closer to other locations to which people might want to travel and they usually offer more transportation choices. Therefore they generate fewer vehicle-miles traveled (and less air pollution) than do isolated developments.

Proposed projects that are innovative in their approach frequently encounter significant barriers. In fact, many developers find that environmentally sensitive projects are the most challenging kind of project to develop. Zoning and other development regulations and policies make them difficult, if not impossible. Financial institutions are often reluctant to fund innovations for which they can come up with few comparables. Neighbors are often difficult to persuade.

Finding one's way around these too numerous barriers is too time-consuming and too costly. Unless the barriers to environmentally sensitive development are lowered, the prospects for wholesale changes in the form and type of development are slim—despite the apparently strengthening market appeal of green development projects.

Profile

High Plains Village at Centerra

High Plains Village at Centerra reflects its developer's commitment to green building practices. Developed by McStain Enterprises, a Boulder region homebuilder, and located in the growing community of Loveland, Colorado, High Plains

Village integrates a mix of housing, including condominiums, townhouses, and detached single-family houses, with a comprehensive system of parks, greenways, and open-space corridors. Located within the larger community of Centerra, the village is a short walk from shops and offices.



High Plains Village at Centerra is a moderately priced green development in Loveland, Colorado.

High Plains Village is planned for 403 condominiums, 386 townhouses, and 961 small and medium-size single-family houses on approximately 320 acres (not including the land dedicated for open space). Condominium and house prices range from the low \$100,000s to the mid-\$200,000s, demonstrating that green development practices can meet midmarket price points.

High Plains Village is carefully sited to preserve important environmental features. Natural drainage areas are preserved to protect water quality and serve as part of the stormwater management system. The project includes a 275-acre living laboratory, the High Plains Environmental Center staffed by a full-time environmental educator, that offers opportunities to residents and visitors to experience and study the ecosystem of the Front Range foothills.

A founder of Colorado's Built Green program (see profile on page 11), McStain Enterprises uses a variety of green construction materials in its homebuilding. At High Plains Village at Centerra, energy-efficient heating and cooling equipment, improved insulation, high-efficiency windows, energy-conserving appliances, and other green techniques and materials are used to reduce energy use and conserve natural resources.³

Profile

Hidden Springs

Hidden Springs is a 1,844-acre new town designed as a traditional small town. It nestles in the Dry Creek Valley, which is part of the Boise Front Foothills, just 20 minutes northwest of downtown Boise, Idaho. The town, with about 900 housing units planned, includes a variety of neighborhoods ranging from a tightly knit village to an area of custom homes on large lots.

A fabric of civic spaces, parks and open space, and pedestrian trails weaves the community together and protects important natural ecosystems. More than 800 acres will be kept as protected open space. Public walking and biking trails totaling several miles will eventually connect to an off-site trail system.



The master-planned community of Hidden Springs keeps more than 800 acres as protected open space.

Based on the first 135 home sites sold, the community shows immense promise from a financial standpoint. Item one: the sites adjacent to protected open space usually sold first, regardless of price. Item two: the sites adjacent to protected open space generally sold at price premiums ranging from 10 to 20 percent over other sites at Hidden Springs. And item three: most of the sites at Hidden Springs achieved price premiums ranging from 15 to 30 percent over comparable sites in the market area.¹²

Myth #2

Development that protects and enhances the environment adds little market value.

Fact #2

Projects that incorporate green features often achieve premium prices and faster absorption rates than conventional developments.

The value that consumers, developers, and lending institutions place on environmentally sensitive development has risen in recent years, resulting in a growing market for this type of product. The drivers of this market are changing demographics, increased environmental awareness, and the market success of projects that incorporate environmental features.

People are willing to pay a premium for environmental features and amenities. A majority of housing consumers surveyed in 1998 by American LIVES, Inc., valued open space, gardens, and walking and biking paths, and would be willing to pay a premium for such amenities.⁴ Similar surveys have found that smart-growth features, including protected open space, a mix of land uses, and a pedestrian-orientation, are valued community features.

In fact, the demand for environmentally sensitive projects is strong enough to have outrun supply, it seems. Nearly 70 percent of developers from around the country who were surveyed recently say that the supply of alternative developments—for example, conservation communities, higher-density developments, mixed-use developments, and pedestrian- and transit-oriented developments—is inadequate. These developers think that between 10 and 25 percent of households in their own market areas would be interested in alternative development forms. Developers think that the market for alternative development exceeds 50 percent in some regions of the country.⁵

For market reasons, a number of developers are building projects that accommodate growth while also protecting environmental resources.

The developer of Dewees Island, for instance, an island near Charleston, South Carolina, has put in place a variety of innovative water conservation measures, developed the land in a way that protects hundreds of acres of island habitat, and used green building materials to save energy and protect scarce natural resources. Sales have surpassed expectations and property values far exceed those in the rest of the South Carolina sea islands market, in part because of the project's environmental features.

Prairie Crossing is another project that is experiencing price premiums for environmental features. Located north of Chicago in Grayslake, Illinois, this development, which is planned to protect the site's environmental resources and rural character, is still under construction. Its 362 housing units will occupy only a small portion of the site's 677 acres, leaving most of the land as open space. According to a 1999 market analysis by Robert Charles Lesser and Company, houses were selling for \$139 per square foot, which was 33 percent higher than comparable houses in the competitive market area. Prairie Crossing's high level of amenities and open space is responsible in part for this premium, according to the market analysis.⁶

Numerous studies have shown that developments that protect environmental features can achieve premiums down the road. Properties in the vicinity of open space, for example, show higher values according to some studies. Houses near open space, trails, and greenways sell more quickly than do similar properties elsewhere, according to anecdotal evidence.⁷

The market for infill and transit-oriented development (TOD) is also growing. Infill and TOD are environmentally sensitive forms of development, although typically they may not be recognized as such. How such development protects environmental quality has been shown in some recent studies. One simulation of the same amount of development on infill sites and on greenfield sites, for example, concluded that the infill development would use less open space and produce less air pollution (including carbon monoxide and nitrous oxide emissions).⁸

Recent housing construction activity in cities confirms the infill development trend: in 1999, housing permit activity in major U.S. cities exceeded by 35 percent the average annual permit activity experienced in these cities in the previous nine years.⁹

The urban infill and TOD development markets are benefiting from this growth in demand. Appreciable value is added to commercial properties located near transit, according to a recent study by Robert Cervero and Michael Duncan of the University of California at Berkeley. The study found that commercial properties in Santa Clara County, California, yield a 23 percent premium in the value of the land when located within a quarter mile of a light-rail station, and a 120 percent premium when located within a business district and within a quarter mile of a commuter-rail station.¹⁰

American LIVES characterizes some 50 million Americans—or nearly 22 percent of adults—as “cultural creatives.” These are people who tend to purchase products that reflect environmental, spiritual, and social-consciousness values.¹¹ The emergence of this demographic category is important for the growing market for environmental products.

As more successful models are built and as developers, financial institutions, and public officials gain confidence, the market for environmentally sensitive development will continue to grow.

Profile

Currituck Club

Preserved marshes, dunes, and native vegetation are prominent features of the Kitty Hawk Land Company's 582-acre master-planned community called the Currituck Club. That environmental protection and successful development can go hand in hand is shown clearly by the Currituck Club.

This primary- and second-home community includes 412 single-family home sites, 20 patio houses, 142 detached houses, four club cottages, 90 condominiums, and a limited amount of commercial uses. It is on land that was formerly part of the Currituck Shooting Club, the oldest continuously operating hunting club in North



Natural elements are protected and serve as focal points at the Currituck Club development.

America, and it is the only golf course community on the northern Outer Banks.

The Currituck Club is bordered on the south by a 1,000-acre Audubon Society sanctuary, on the north by residential and municipal utility property, on the east by residential development and the Currituck Shooting Club, and on the west by 1,500 acres of marshlands that extend to the Currituck Sound and are owned by the hunting club.

The site's environmental assets—its wetlands, natural vegetation, marshes, and dunes—are incorporated into the community and used as focal points for the residential neighborhoods.

Single-family houses and homesites have appreciated in value. Houses that originally sold for around \$300,000 are now selling for around \$550,000. Homesites have achieved similar appreciation rates. More than 200 homesites have sold, at an average price of almost \$185,000. For early lot buyers who are now planning to build, this appreciation in land value makes obtaining construction loans easier.¹³

Low-Impact Development Strategies

Reducing the impact of new development on water quality has long been a shared goal of developers, regulators, and environmentalists. A relatively new approach to stormwater management called low impact development (LID) seeks to reduce pollution, improve hydrologic function, and protect habitat areas.

The traditional way of managing stormwater is to convey and direct it into large detention ponds at the base of drainage areas. This helps to remove pollutants caused by urbanization, but does little to protect or enhance a site's hydrologic function or preserve such environmental features as wetlands or forested stream buffers.

LID uses a variety of small-scale site design techniques (such as rain gardens, grass swales, and channels) distributed throughout the development to control runoff discharge, frequency, and quality to mimic pre-development runoff conditions.¹⁸

LID's use of built and natural landscapes to retain and infiltrate stormwater can save developers money. The Low Impact Development Center, a non-profit research and education organization, concludes that LID in place of traditional stormwater management techniques can yield a cost savings of up to \$5,000 per lot and reduce infrastructure maintenance costs.¹⁹

Unfortunately, LID and other alternative stormwater management techniques are not allowed in many communities. The Center for Watershed Protection, a nonprofit corporation that promotes site design techniques for protecting waterways, lists subdivision codes, parking and street standards, and zoning codes as among the local regulations that can make LID techniques difficult to implement despite their environmental and economic benefits.²³



Prairie Crossing's natural system of stormwater management reduced infrastructure costs by more than \$1 million, compared to conventional systems.

Myth #3

Zoning and other land use regulations protect the environment.

Fact #3

Land use regulations often discourage or disallow development practices that protect the environment.

Many urban planners and developers believe that submitting environmentally sensitive development proposals that conflict with conventional suburban style zoning codes, first adopted decades ago, is an exercise in futility. In many cases, these suburban codes tend to be the antithesis of good environmental stewardship, in that they require wide streets, large lots, and deep setbacks; require outdated stormwater management techniques; and prohibit a mix of land uses.

Project-specific problems also may be encountered by a proposed innovative green development project. Neighbors might not like the idea of clustering housing at a relatively high density on one portion of the site to preserve open space on the remainder of the site. The fire department may not agree to reduced road widths (which decrease stormwater runoff) because of concerns that narrower roads will not accommodate large fire trucks in an emergency. The health department may be skeptical of the ability of innovative wastewater treatment systems (like composting toilets that convert waste into fertilizer) to protect human health and water quality.

Efforts to address growth and development issues can lead communities to amend their land use regulations and adopt policies to permit more design flexibility, facilitate the protection of natural resources, and allow developers to respond effectively to market demand for environmentally sensitive projects.

Some communities, for example, have adopted town center policies that encourage a mix of land uses, a pedestrian-orientation, relatively narrow streets, and relatively high densities. Other communities permit conservation-design developments, which are projects that cluster homes on one portion of the site and leave the remaining land in permanent open space.

Still other communities focus on incentives that encourage multiuse projects, infill projects, and transit-oriented development. Such incentives might include density bonuses, permit fee waivers, green tapping (streamlining the permit review process), abatement of local property taxes, and the provision

of infrastructure improvements, such as parks, roads, and pedestrian linkages.

The Atlanta Regional Commission (ARC) runs an incentive-based program called the Livable Centers Initiative to encourage local governments in the metropolitan region to support transit-oriented, mixed-use projects that will help ameliorate the region's jobs/housing imbalance. The program funds local planning and capital improvements to achieve its smart-growth objectives.¹⁴

In New Jersey, a new code regulating rehabilitation projects has lowered the financial and administrative barriers to redeveloping buildings in urban areas. Since the rehabilitation code was put into effect in 1998, New Jersey's five largest cities have increased their rehabilitation work by 60 percent. Some initial research indicates that the cost of rehabilitating older buildings is now 10 to 30 percent lower than under the old code.¹⁵

The achievement of long-term environmental objectives and economic goals will require revision of antiquated regulations and provision of incentives to stimulate development that is consistent with smart-growth principles. According to *Emerging Trends in Real Estate 2002*, communities with sensible land use policies—that is, communities that permit a mix of land uses, provide for a meaningful amount of open space, and encourage pedestrian-oriented design—hold value better in economic downturns and appreciate more in upturns.¹⁶

Many communities, however, have revised their land use policies only in response to mounting opposition to development, failing thereby to take into account future growth. Developers, according to a recent survey, find land use regulations to be the greatest obstacle to alternative forms of development.¹⁷

Local policies that drastically limit new growth are at the regulatory extreme. These fail to acknowledge the inevitability (and the benefits) of growth. Simply put, development is needed to support a growing population. Growth prevented from occurring in one location will inevitably go somewhere else, often far from existing infrastructure and job centers.

If the two broad objectives that are the subject of this publication—the protection of the environment and the accommodation of future growth—are to be achieved, government policies regulating land use development need to be reformed in many localities. But challenging obsolete requirements subjects developers to time-consuming and costly legal battles in which they are reluctant to engage.

Regulatory reforms are indeed occurring in many places as local and state governments reconsider regulations that have fostered scattered and disconnected land development and as they adopt policies that favor more transportation and housing choices, the provision of open space, and the protection of natural resources.

Profile

Built Green Colorado

Built Green Colorado is a voluntary program that encourages homebuilders to use technologies, products, and practices that promote energy-efficiency, reduce pollution, improve indoor air quality, reduce water use, preserve natural resources, make houses more durable, and reduce maintenance needs. It was established in 1995 through a joint effort of the Home Builders Association of Metro Denver, the Governor's Office of Energy Management and Conservation, Xcel Energy, and

E-Star Colorado. It has become the largest green building program in the country.

The overall goal of Built Green Colorado is to encourage the production of profitable housing that uses energy-efficient products and technologies that help maintain the health of the environment and the health of people in houses and apartments. More than 100 builders participate in the program.

Builders and suppliers enrolled in the program are not required to meet all the program's standards for green construction. Each can choose a level of participation that suits its needs and expertise. Developers that are building moder-

ate- to low-income housing may elect to incorporate fewer green materials in order to keep upfront costs down. The Built Green program is helping to increase the market share of green building materials, and, as a result, is lowering the cost of these products.²¹



Development that preserves natural drainage areas and riparian forests can preserve water quality while increasing property values.

Envision Utah's Quality Growth Strategy

The Greater Wasatch region of northern Utah has envisioned a more compact future, which it calls the Quality Growth Strategy. The pressure of rapid growth—the population of Utah is growing at a rate more than twice the national average—and a limited supply of developable land led to the formation of a coalition to address growth issues.

Concerned citizens initiated a process to determine how the region could best grow in the future. Leading that process is Envision Utah, a nonprofit partnership of state and local government officials, business leaders, developers, conservationists, and landowners. Envision Utah developed four alternative growth scenarios based on the implementation of different strategies over the next 20 to 50 years.

Each growth scenario was modeled to determine its impact on the community.

A community participation process was used to select the preferred scenario, which is called the Quality Growth Strategy (QGS). The QGS emphasizes infill development and better patterns of new growth on the urban fringe. Its transportation component downplays roads and stresses investment in transit.

The modeling of the QGS predicts that more infill development and a reduction of lot sizes from 0.35 of an acre to 0.29 of an acre could lower per capita water consumption from 298 gallons per day to 267 gallons.²⁷ Under this growth scenario, total vehicle-miles traveled (VMT) could be reduced by 2.4 million per day, average speeds could increase by 12.5 percent, and commute times could decrease by 5.2 percent. These reductions in traffic congestion and automobile use would, in turn, lower mobile-source air pollutants by 7.3 percent.²⁸



Mountains limit growth choices in the Greater Wasatch area of northern Utah.

Myth #4

Compact development causes more harm to the environment than does low-density development.

Fact #4

Compact development can minimize impervious surfaces and direct growth away from environmentally sensitive areas—and thus protect the environment.

Compact development—either infill or greenfield—usually harms the environment less than does a comparable amount of scattered, lower-density development. By using less land, by concentrating development in less sensitive areas, and by minimizing impervious surfaces, compact development compared with low-density development infringes less on wetlands and forests; prevents the fragmentation of wildlife habitat; reduces stormwater runoff; and saves pristine open space.

The amount of roads and parking necessary to support compact development is less than that required to support low-density development, which means that less impervious cover is needed. Less impervious cover means less urban runoff, which is urbanization's leading pollutant. Compact development can achieve a 30 percent reduction in runoff compared with conventional suburban development, according to a study completed for the state of New Jersey.²²

A major environmental benefit of compact development is that it consumes less land than does conventional suburban development—as much as half as much to accommodate the same amount of growth. Even on a single site, if the planned housing units are clustered on a portion of the developable land, significant open space can be left intact.

The smaller land requirement provides opportunities to preserve contiguous open-space areas that can be used for recreation, serve as habitat for wildlife, naturally absorb waterborne pollution before it enters waterways, and shield neighbors from noise. Compact development can be planned to minimize habitat fragmentation, especially if steps are taken to connect intact open spaces to other natural areas in the region. Conventional suburban development, on the other hand, provides few opportunities to conserve contiguous parcels of land or workable habitat for wildlife.

Water quality is better protected by development that impacts as little land as possible. Replacing natural drainage systems with constructed stormwater systems can affect an entire watershed's hydrology, including groundwater recharge, stream flow, stream sedimentation, and water quality. Furthermore, development on smaller lots generally means less landscaping and therefore smaller applications of pesticides and fertilizers and lower emissions from power lawn equipment.²³

Stormwater pollution produced in low-density areas can be double that produced in medium-density areas.²⁴ Linking destinations requires roads, and since the distances between destinations in low-density development are long, low-density development generally requires more roadbuilding. Per unit of development, low-density development also requires wider streets and more driveway surfaces, more rooftop area and rain gutters, and more dead-end turnaround streets—all impervious surfaces—than does compact development.

Concentrated development makes feasible various transportation alternatives to the car, including walking, biking, and mass transit. As a result, people living in compact communities tend to rely less on the automobile. In fact, doubling the residential density of land can result in a 10 to 15 percent decrease in per capita driving miles.²⁵

Even when people living in compact communities choose to drive, their total trip distance is often shorter. "Envision Utah's Quality Growth Strategy" (see profile at left) modeled various growth scenarios in northern Utah and determined that even a slight increase in density can result in major reductions in vehicle-miles traveled and vehicle emissions.²⁶ This model predicts that increasing density through policies favoring infill development and more connected growth at the urban fringe can reduce the total vehicle-miles traveled, increase the number of transit trips, reduce commute times, and increase travel speed enough to achieve a 7 percent reduction in air polluting mobile emissions.

The myth that compact development is more harmful to the environment than low-density development fails to acknowledge the reality that compact development consumes less land, requires less impervious cover, and accommodates growth more efficiently so that valued areas, such as open space and habitat, can be left undeveloped.

Profile

I'On Village

I'On Village exemplifies infill development and also the clustering and careful siting of development to preserve important environmental resources. The 243-acre development is in Mount Pleasant, South Carolina, which is near Charleston. It clusters 762 housing units on just 121 acres.

The community's design is intended to reduce dependency on the automobile. Streets are narrow and follow a grid pattern to provide connectivity and shorten distances between destinations. Amenities are located within walking or biking distance of residential neighborhoods. A 30,000-square-foot town center, I'On Square, contains shops and other commercial spaces.

Many residents have only a short commute to jobs in Charleston.

The community's design also ensures that few environmental resources are disturbed.²⁹ Streams and other water and wetlands are important site elements. The site plan creates buffers planted with native vegetation to protect the quality of the water in Hobcaw Creek and the Cooper River, both of which flow into Charleston Harbor, and

the numerous wetlands and creeks that extend into I'On Village. These buffers filter stormwater runoff from the community.

A five-acre slough at the southern end of the property is lined with nesting boxes and native vegetation to provide a nesting ground for waterfowl, including egrets, herons, ducks, and geese. Mammals and other wildlife also make use of this habitat area.³⁰

I'On Village offers two miles of walking trails, numerous playgrounds and parks, a swim and tennis club, a boat ramp, and a banquet hall. Open space and recreational uses occupy 63 acres. The project received the 1999 Stewardship Award from the South Carolina Department of Natural Resources, signifying its commitment to the environment.



I'On Village's 762 homes are clustered on only 121 acres.

Myth #5

Concentrated development means people driving more, which causes traffic congestion.

Fact #5

In areas of concentrated development, people drive less, walk more, and use mass transit more.

People who live in dense urban communities drive considerably less and use other transportation options more than people who live in dispersed, low-density areas. The former may drive an average of 2.3 miles a day and the latter as many as 21 miles per day, according to a ULI study.³¹ The number of daily trips per person is the same in both environments, according to this study, but urban residents use a variety of transportation options—car, transit (bus and rail), walking, biking, and taxi—to meet their daily travel needs, while the residents of low-density areas make nearly all their trips by car.

A 1994 study that examined residential patterns and transit use in California found a direct correlation between residential density and the number of vehicle-miles traveled (VMT) and between density and transit use.³² Persons living where development is more concentrated tend to take fewer and shorter vehicle trips. In areas as densely populated as neighborhoods in the city of San Francisco compared with typical suburban neighborhoods that are half as dense, per capita VMT is reduced by 25 to 30 percent.

The density of business districts is similarly related to the frequency of car trips, as demonstrated in a 1997 study that analyzed midday trips by employees at four business districts in metropolitan Washington, D.C.³³ Employees in downtown Washington made 80 percent of their midday trips by walking. Employees in Bethesda, Maryland—a compact inner-ring suburban community accessible to rail transit—made more than 67 percent of their midday trips by walking. At the Gaithersburg Office Park—a far-out suburban business district served by county bus transit with rail transit one to three miles away—walking accounted for only 8.5 percent of all midday trips, while driving

Profile

Atlantic Station

The former Atlantic Steel property in Atlanta is a 138-acre site now being planned for mixed-use development. With 3,000 to 4,000 residential units, 1.5 million to 2 million square feet of entertainment and retail space, three hotels, and 7 million square feet of office space, the Atlantic Station project qualifies as concentrated development.³⁹

A multimodal (transit, pedestrian, bicycle, and car) bridge will be constructed to link the development to the Arts Center station, a station in the MARTA rail system, and to other parts of the surrounding community. Atlantic Station's transit orientation means that it will produce less mobile-source pollution than would the same development on a greenfield site that is not transit oriented. An EPA model predicts that compared with a greenfield project, Atlantic Station will reduce VMT by 15 to 52 percent and thus reduce nitrous oxide emissions by 37 to 81 percent.⁴⁰

Profile

Reston Town Center

Reston Town Center, located in Fairfax County, Virginia, 18 miles southwest of Washington, D.C., generates nearly 50 percent less car traffic than other suburban business districts of a comparable size, according to a recent study. A complementary mix of land uses in the 85-acre town center and the availability of bus transit and vanpool services have much to do with this traffic reduction. The pedestrian-oriented, mixed-use town center contains office uses, stores, restaurants, entertainment uses, a large hotel, and an open-air civic plaza. Hotel guests and employees, store customers and employees, and office employees account for 70 percent of the evening patronage of the restaurants and 40 percent of the patronage of the cinema, according to this study.⁴¹



Reston Town Center has successfully reduced the importance of the automobile.

accounted for 84 percent. In Bethesda, driving accounted for 23 percent of midday trips and in downtown Washington it accounted for less than 6 percent. (Rock Spring Park, Maryland, a fragmented suburban business district served by bus transit with rail transit two miles away, is the fourth area included in this study.)

Spread-out development promotes driving and makes transportation alternatives either unappealing or economically unfeasible. In most major metropolitan regions, outward expansion continues to lengthen the distances between housing and other destinations—jobs, recreation, and shopping. This fragmented pattern of growth provides few economic opportunities for transit operations. In spread-out suburbs, it is generally more convenient to drive. As a result, increases in VMT and traffic congestion are occurring throughout the United States. According to the Texas Transportation Institute, which monitors congestion trends, congestion is becoming more severe in all U.S. metropolitan regions. It lasts longer and affects more of the transportation system than ever before.³⁴

The leading contributor to increased VMT is the overall increase in trip length.³⁵ Between 1990 and 1995, the average distance for general car trips increased from 8.98 miles to 9.06 miles and the daily average time spent driving increased from 49.35 minutes to 56.20 minutes.³⁶ Between 1990 and 1999, average driving distances increased 24 percent. Between 25 and 50 percent of the growth in VMT may be ascribed to low-density, dispersed development patterns, according to information produced for the National Transit Institute (NTI).³⁷ In most metropolitan regions, a failure to coordinate land use and transportation planning and the lack of viable transportation alternatives exacerbate traffic problems.

Reducing daily VMT is an important air quality measure. A 1999 Georgia Tech study of the metropolitan Atlanta region found that households in conventional cul-de-sac communities generate up to three times as much nitrogen oxide (NO_x)—a key element of ozone pollution—than do households in pedestrian-oriented, mixed-used neighborhoods.³⁸ The study concludes that changing land use patterns to make communities more walkable and less car dependent can help metropolitan Atlanta achieve its ozone reduction goals.

Concentrated growth that features a complementary mix of uses, supports pedestrian activities through its mix and design, and provides transportation choices can reduce VMT and associated pollution. This is true for suburban areas as well as in the urban core.

Profile

San Mateo TOD Program

In 1999, the San Mateo (California) City and County Association of Governments (C/CAG) launched an incentive program to enhance transit use. Rather than the more usual approach of providing transportation funds to municipalities with little consideration given to their land use policies, this program provides them with a financial incentive for improving the linkage between development practices and transportation planning.

Faced with two problems—a housing shortage and too much traffic—the San Mateo C/CAG came up with one solution, the Transit-Oriented Development Incentive Program. Municipalities that approve new residential projects that have a minimum density of 40 units per acre and that are within one-third mile of a Caltrain or BART station are granted up to \$2,000 per bedroom in State Transportation Improvement Program reserve funds, which may be used for an eligible transportation project.

Participating municipalities may require higher densities as well as establish design and parking guidelines. Grantees are selected by the C/CAG through an application process, and the funds, which are given after the project is completed, are reallocated if the project is not built within two years. In the first program year, five projects with a total of 1,282 bedrooms participated in the program.⁴²



Coordinating transportation investments with land use decisions helps protect the environment.

Profile

The Fields of St. Croix

The Fields of St. Croix in Lake Elmo, Minnesota, 20 minutes northeast of St. Paul, offers a low-density alternative in an area of large-lot development. Residential lots from 2.5 acres to ten acres are typical in Lake Elmo. To preserve sensitive habitats and the beauty of the property, the developer used only 40 percent of the 241-acre site for the development of 111 homesites, leaving 60 percent of the site for open space.

Contiguous farmland, a tree nursery, a lake and a pond, and wooded areas are included in this preserved open space. A 45-acre restored prairie using native vegetation provides habitat for birds and other wildlife.

Design techniques used to protect the environment and create a community with a strong sense of place are evident throughout the development. A constructed wetland system is used to treat wastewater. Houses are built to be energy-efficient. A public transit stop is located at the entrance to the community.

The Fields of St. Croix has received several awards for its design and environmental sensitivity, including the Land Use and Community Development Award of the Minnesota Environmental Initiative.⁵⁰



Sixty percent of the land at the Fields of St. Croix is used for farming, a tree nursery, and wooded open space.

Sales experience at this project proves the existence of a market for environmentally sensitive development. Close to 80 percent of the homes sold within six months of their offering in two phases, with lots ranging in price from \$44,500 to \$150,000 and houses ranging from \$300,000 to \$450,000.⁵¹

Myth #6

Large-lot residential development preserves open space, reduces infrastructure costs, and protects the environment.

Fact #6

Suburban large-lot residential development often is both ecologically and financially inefficient.

Many people think that, compared with compact development, development on large lots means less overall demand on community services and infrastructure and less environmental impact. In many cases, the opposite is true. Ranchette subdivisions developed at densities of one housing unit per two, five, or ten acres convert forests, wetlands, rangeland, and other natural areas into rooftops, driveways, and roads. They create patterns of development that are both ecologically fragmented and financially inefficient.

Large-lot lot zoning has become increasingly popular in communities across the country as a means to preserve agricultural land and open space. Requiring really large lots of say 25 or 50 acres can maintain open space and protect environmental resources. But requiring smaller large lots of two to ten acres encourages development that actually exacerbates the problems associated with rapid growth, including traffic congestion, high infrastructure costs, and loss of open space. Development at such densities does little to maintain the ecological value of natural areas and can carve up the countryside rather than protect it.

The financial inefficiencies of large-lot suburban development patterns are well documented. Roads, water supply, and sewer services become more costly when extended over great distances.⁴³ In some areas of the country, it can cost a municipality \$10,000 more to provide services to a residence on the urban fringe than to one in the urban core.⁴⁴

Prince William County, Virginia, found that providing municipal services to a house on a large lot far from existing infrastructure costs the county \$1,600 more than is returned in taxes and other revenues.⁴⁵ The state of Rhode Island could save \$142 million in sewer infrastructure costs if development were more dense and contiguous to existing development.⁴⁶

Suburban large-lot development can cause habitat fragmentation. Habitat fragmentation occurs when contiguous natural space such as a forest, a wetlands area, rangeland, or a wildlife corridor is divided by development. Development within such areas causes the loss of native vegetation and it breaks up natu-

ral migrating corridors. Such habitat fragmentation can reduce the size and the diversity of certain wildlife populations.⁴⁷

Suburban large-lot development can have a negative effect on water quality as well. Houses in large-lot subdivisions tend to be heavy users of fertilizers and pesticides for their landscaped lawns. Rain washes these chemicals off the land and carries them into local waters. Also, the bigger the lot, the greater the amount of water that is used for landscape irrigation. A study in New Jersey found that six times more water is used in single-family detached housing than in single-family attached and multifamily housing.⁴⁸

Rather than adopt large-lot zoning to preserve a fragmented system of open space, communities should undertake to plan more comprehensively for growth and conservation on the urban fringe. Planning for growth and conservation (and adopting regulations that support the planning) will help achieve a mix of land uses and densities that can have many advantages over unplanned growth and a uniformly low-density development pattern, including the more efficient provision of infrastructure, the more effective protection of natural resources and natural systems, the preservation of important open space, the establishment of a sense of community, and the creation of sustainable communities that increase in value over time.

Some master-planned large communities prove the environmental and economic development benefits of planning for growth—Otay Ranch, for example, a 5,300-acre planned community in San Diego. Otay Ranch provides much-needed housing and other services in a region that is expected to grow by more than 1 million people in the next 20 years and that has a projected ten-year job growth rate of 31 percent—making it one of the fastest-growing regional economies in the nation.⁴⁹

A range of housing serving households with a range of incomes and lifestyles is available at Otay Ranch. So are transportation choices and a variety of community services. Furthermore, the developers of Otay Ranch have committed to preserve half of the community's land in its natural state in perpetuity.

All in all, zoning that requires a minimum lot size of two acres or more contributes to a dispersed and inefficient pattern of growth in metropolitan regions and thus, far from protecting the environment, adds to its degradation. As a reaction to growth pressures, large-lot zoning often takes the place of planning. However, in poorly planned areas the cost of providing infrastructure can be high. Furthermore, a feeling of isolation often characterizes large-lot developments. Establishing a sense of community usually needs a more creative land plan.

Profile

Playa Vista

Growth is occurring, so it is smart to plan for it and accommodate it in an environmentally sensitive and cost-effective way. Playa Vista, a West Los Angeles community, exemplifies smart growth in a region that needs more such undertakings to make a dent in its housing crisis. Housing production is not keeping up with growth in Los Angeles County, which is expected to have a housing deficit of 28,000 units annually over the next ten years, according to the state Department of Housing and Community Development.

Playa Vista seeks to address the housing issue in a sustainable manner. The project is a 1,087-acre planned development incorporating a variety of housing, jobs, retail, recreation opportunities, and natural habitat. When the project is finished, Playa Vista will include 13,000 housing units (at a target density of 43 units per acre), 25 percent of which will be reserved for low- and moderate-

income renters and buyers. Housing is situated in neighborhoods, all of which are within a 2,000-foot radius (a short walk) of shops, jobs, and open space. Streets and public spaces are designed and organized to tie the neighborhoods together.⁵²

Playa Vista not only seeks to create a range of much-needed housing in the Los Angeles region, but also serves as a sustainable development model for the nation. Nearly half of the land on the site is to be protected open space. A large portion

of the open space is preserved and restored wetlands totaling 340 acres. The wetlands preservation aims to protect water quality and valuable habitat. Native landscaping that requires little irrigation and no chemicals will be specified and encouraged.

The approval process for Playa Vista was arduous. Approvals took years of negotiation. More than 750 conditions imposed by the city had to be met. But development of the community is finally underway. A visitors center has been built and other development has started.⁵³



Playa Vista, a West Los Angeles sustainable community, includes 340 acres of preserved and restored wetlands.

Profile

Chicago's City Hall Rooftop Garden

In 1999, Chicago's Department of the Environment (DOE) launched an Urban Heat Island Initiative. The program's goals are to reduce summer temperatures, reduce energy consumption, improve air quality, reduce stormwater runoff, and beautify the city. Its techniques include light-colored roofs, rooftop gardens, tree plantings, and porous pavement in place of asphalt.

The initiative's first project is a rooftop garden atop city hall, on which construction was completed in 2001. Constructed with soil and vegetation, city hall's new roof covers 33,000 square feet. The vegetation consists mostly of native plants that are drought-resistant and tolerant of Chicago's climate. About 20,000 plants, including buffalo grass, common blue violets, junipers, and American bittersweet, are used. Two potted trees—a Washington hawthorn and a prairie crabapple—are included because the roof, originally designed to support another floor, can bear the weight. A drip irrigation system uses water from an adjacent penthouse roof.

City hall's green roof cost \$1.5 million. It is expected to save at least \$4,000 annually in heating and cooling costs. Other lasting benefits of the garden roof are a reduction in ozone and smog, a lower ambient temperature, and less runoff.

The city has established a grant for homeowners who wish to convert their roofs to rooftop gardens. The grants cover the difference in cost between a conventional roof and a green roof.⁶¹

Myth #7

Green building practices are too costly and too complicated to become mainstream.

Fact #7

The economic competitiveness of green features is on a steep upward curve—with both market share and demand on the rise.

To conserve natural resources, green buildings use recycled and engineered materials, incorporate designs and technologies for reducing water and energy use, and incorporate efficient (and less polluting) mechanical systems. They use any number of techniques and technologies—passive solar heating, structural insulated panels, efficient windows, and reliance on daylighting—to reduce energy consumption and increase usage of renewable sources of energy.

By relying more on natural air and light (and less on mechanical processes) and by avoiding building materials and products that emit pollutants, green buildings can create better working and living environments. Better working environments, studies show, improve workers' health, morale, and productivity and thus improve bottom lines.

Developers who use green building techniques report that there can be clear economic benefits in terms of improved project marketability, higher rents, and premium prices. Green building is generally more expensive than conventional construction. Practitioners estimate that using green materials tends to cost between 3 and 4 percent more than using conventional construction materials.

As the market share for green products and materials grows, their cost should decrease. Kristin Shewfelt, director of environmental programs for McStain Enterprises, a medium-size homebuilder in Colorado that has embraced green building techniques, has seen this happening over the last couple of years. Five years ago, building green cost McStain 5 to 10 percent more than building conventionally would have cost, but today a green house costs McStain less than 4 percent more than a conventional house.⁵⁴

As conventional energy becomes more expensive and as demand for green features in housing and commercial buildings increases, the cost differential between green and conventional development may become negligible. In fact, some people argue that the added cost of building green is already insignificant.

By reducing heating and cooling loads, green buildings can be made comfortable with dramatically smaller heating and air-conditioning plants and ductwork—and smaller systems cost less. Reducing waste (through the use of recycled building materials and through various construction management techniques) is a principle of green building, and by following this principle builders can cut construction costs.⁵⁵

For office development, the higher initial costs of green construction may be compensated by operating cost savings (especially energy cost savings), the tenant retention potential of healthy buildings, and the greater durability of green construction.

Chris Kurz, president of Linden Associates, an office developer in the Baltimore metropolitan region, sees green building as a tool for tenant retention: “If tenants see productivity increasing due to a healthy environment, they are likely to want to stay in that building. There are a number of short- and long-term economic benefits to green building, but tenant retention is a variable that many of us do not consider.”⁵⁶

Not oblivious to the long-term operating benefits of green buildings, many homebuyers and office tenants are willing to pay a premium for green features that improve operating performance.⁵⁷ Among such features are natural ventilation and daylighting (the more effective use of natural light), building orientation to reduce heating or cooling loads, and construction materials that absorb or radiate heat (such as light-colored roofs, certain glazes, stone, tiles, and brick). Buyers and tenants may pay more for better insulation and better weatherproofing. Shared walls (that is, shared insulation) in attached structures can reduce energy use by 50 percent.

Green development favors the use of natural systems—vegetated swales, rain gardens, wetlands, wet ponds, and dry ponds—to retain and filter runoff. Systems that trap and divert runoff—allowing it to infiltrate the ground slowly—are generally more cost-effective than conventional systems that transport runoff to storm sewers.⁵⁸ Such systems also benefit homeowners by providing water for irrigation and removing standing water from around houses.

Parking areas also can be designed to be green. Green parking collects runoff, filters it, and allows it to percolate into the ground slowly. It generally uses porous pavement. Porous pavements are about 10 percent more expensive than conventional types of pavement, but using them in stormwater management systems can reduce the total cost of these systems by 12 to 38 percent.⁵⁹

In Prince George’s County, Maryland, a five-acre parking lot was retrofitted with a landscaped bioretention area to drain and treat water from one-half acre of the lot. The retrofit cost \$4,500 to construct. However, a conventional device designed to treat the same area and volume of runoff would have cost \$15,000 to \$20,000 and would have been more expensive to maintain.⁶⁰

Profile

Norm Thompson Headquarters

The 54,519-square-foot Norm Thompson Headquarters in Hillsboro, Oregon, is an environmentally sensitive and energy-efficient building. Its design integrates the use of recycled materials, energy-efficient features, and a durable, adaptable building frame. The landscape, which includes a natural stormwater filtration system, is self-sustaining.

Recycled materials were used where possible. Steel was chosen as the framing material to avoid the use of wood. Partitions in the restrooms are made of 90 percent recycled materials. For energy-efficiency, the building was designed to channel daylight. Operational windows on the east and west ends of the building allow natural ventilation.

Indigenous trees, shrubs, and wildflowers were selected for landscaping because they have relatively low requirements for water, pesticides, herbicides, fertilizers, and maintenance. A meadow of wildflowers slopes toward the wetland and a bioswale drains the building and parking lot to the wetland.

Most of these green measures cost more than conventional materials and practices, but for this building the maximum payback period in terms of operational savings from green building will be less than eight years.⁶²



PRAMASH PATEL

The Philip Merrill Environmental Center embodies in its design the environmental mission of its owner, the Chesapeake Bay Foundation.

The Conservation Fund

The Conservation Fund works to protect land and water resources through land acquisition, sustainable development programs, and leadership training. Working with various partners, the Fund devises effective conservation solutions that emphasize the integration of economic and environmental goals. For several years, the Fund has worked with developers and landowners, providing development assistance and educational programs to encourage sustainable development practices.

For instance, the Conservation Fund is a partner in the development of Abacoa, a 2,000-acre community in South Florida based on new urbanist planning principles. Abacoa incorporates a mix of residential, commercial, and retail uses, and establishes a system of protected open spaces and greenways. The Fund's principal responsibility here is the development of a master plan for the 260-acre Abacoa Greenway, which will have multiple purposes—stormwater management, habitat for the endangered gopher tortoise, and an environmental amenity for residents of Abacoa.

The Fund worked in partnership with ULI to help design the curriculum for ULI's workshop on the practice of environmentally sensitive development. The popular workshop is available to developers and others interested in cutting-edge approaches to balancing development with environmental concerns.⁶⁶

Myth #8

When it comes to development, developers and environmentalists are always in conflict.

Fact #8

The growth-versus-environment debate is not an either-or proposition. Developers and environmentalists can and do work together to accommodate both.

While differences of opinion still exist between developers and environmentalists, across the country they find themselves collaborating on projects and programs. Many new collaborative initiatives indicate a willingness on the part of both parties to seek ways to accommodate growth and protect important environmental features. Collaboration is creating some win-win situations.

Developers have discovered that environmentally sensitive practices and features can enhance the value of projects, sometimes reduce construction costs, reduce operating costs, and improve project marketability. And environmentalists have discovered that working with developers can help them protect natural resources.

A number of environmental organizations work directly with developers in project development, to help them identify and protect important environmental features, incorporate innovative techniques for managing water resources and habitat, and achieve broad conservation objectives.

Instances of environmental organizations, public agencies, civic groups, and developers working together to achieve economic and environmental objectives simultaneously are becoming common. The redevelopment of Stapleton Airport in Denver offers a fine example of such multiparty, multipurpose collaboration.

Forest City Development and the city of Denver are partners in this massive 4,700-acre urban infill development. The redeveloped Stapleton will house 30,000 residents and provide jobs for 35,000 workers. A process involving hundreds of community meetings resulted in a sustainable development plan that calls for a community that balances residential, office, and retail development with a network of parks, trails, and open spaces that not only protect but also restore the site's significant natural resources. The plan will be implemented through partnerships that involve the public sector, developers, environmentalists, and civic organizations.

National organizations representing the building and development industry are working closely with environmental agencies and organizations to remove the barriers to development practices that protect the environment. The National Association of Home Builders, for example, is working with the National Arbor Day Foundation to educate builders, citizens, and public officials on tree protection in the development process. The Urban Land Institute works on a regular basis with environmental groups, such as the Trust for Public Land and the Conservation Fund, to identify and showcase examples of smart growth and sustainable development.

Trends in population growth and household formation indicate that growth pressures can only increase over the next decade. This means that collaboration between developers and environmentalists will grow in importance as growing regions—and the nation as a whole—seek ways to accommodate growth while preserving open space and natural resources. In the decade from 1990 to 2000, the U.S. population increased 13.2 percent, from nearly 249 million to more than 281 million. The Census Bureau projects an increase of 20 million by 2010 and more than 40 million by 2020.⁶³

Population growth means demand for new housing. According to the National Association of Home Builders, more than 18 million new houses will be built between 2001 and 2010.⁶⁴

While the median square footage of new housing is expected to continue to increase, the demand for higher-density housing products, including single-family houses on smaller lots, townhouses, and condominiums, will also grow. Changing national demographics are helping to drive the demand for more urban forms of development. Over the next decade, couples without children will be the fastest-growing homeowner market and single-person households will nearly equal the number of married-with-children households.

Important developer/environmentalist collaborative efforts are focusing on expanding the types and improving the form of new growth. Some very promising programs in this respect are underway.

In the state of Washington, for instance, the 1000 Friends of Washington, a collaborative partnership of environmentalists and civic organizations, established the Livable Future Endorsement Program to help secure the approval of proposals for well-designed, compact development within the region's urban growth area. If a proposed project meets five basic criteria, the 1000 Friends will prepare a letter of endorsement and testify on behalf of the project at local hearings. The endorsement program is designed to show local government officials why it is important to say "yes" to exemplary development.⁶⁵



The Smart Growth Alliance is seeking ways to achieve environmental objectives, while accommodating growth.

Profile

Smart Growth Alliance

The members of the Smart Growth Alliance (SGA)—a partnership of civic, business, and environmental organizations—have pledged to work together to find smart growth solutions to the challenges of growth in the Washington, D.C., metropolitan area. These members include the Coalition for Smarter Growth, Greater Washington Board of Trade, Chesapeake Bay Foundation, Metropolitan Washington Builders' Council, and ULI's Washington District Council. In the implementation of its mission and work program, the SGA receives valuable guidance from more than 30 other Washington area business and environmental organizations as well as from the public sector, in the implementation of its mission and work program.

With a region expecting to expand its economy by 3 percent annually and a population forecasted to increase by 1.4 million over the next 25 years, the SGA seeks to assure that the region's quality of life, environment, and economic competitiveness are maintained as growth occurs. Initial projects include a smart-growth recognition program; preparing a trends and indicators report on land use, development, and conservation; and providing technical assistance to communities within the region.

For developers, securing the support of environmentalists for high-quality development helps minimize a leading impediment to smart growth—neighborhood opposition.

The formation of the SGA hardly signifies an end to the challenges of growth in the Washington region. It does, however, signify a growing willingness among environmentalists, developers, and other business leaders to collaborate on the solutions.

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Organization/Agency/Community	World Wide Web Address
The Brownfields Non-profit Network	www.brownfieldsnet.org
Built Green Colorado	www.builtgreen.org
Center for Watershed Protection	www.cwp.org
Center of Excellence for Sustainable Development	www.sustainable.doe.gov
Chesapeake Bay Foundation	www.cbf.org
Chicago's Urban Heat Island Initiative	www.ci.chi.il.us/Environment/AirToxPollution/UrbanHeatIsland
City of Austin Green Building Program	www.ci.austin.tx.us/greenbuilder
City of San Jose, California Green Building Program	www.ci.san-jose.ca.us/esd/gb-home.htm
Envision Utah	www.envisionutah.org
Greeninfrastructure.net	www.greeninfrastructure.net
International City/County Management Association	www.icma.org
Low Impact Development Center	www.lowimpactdevelopment.org
Maryland Green Building Program	www.dnr.state.md.us/smartgrowth/greenbuilding/index.html
National Association of Home Builders Green Building Program	www.nahbrc.org
National Association of Realtors	www.nar.realtor.com
Northeast-Midwest Institute	www.nemw.org
Rocky Mountain Institute	www.rmi.org
The South Carolina Coastal Conservation League	www.scccl.org
Surface Transportation Policy Project	www.transact.org
Trust for Public Land	www.tpl.org
Urban Land Institute	www.uli.org
U.S. Department of Energy Rebuild America Program	www.eren.doe.gov/buildings/rebuild
U.S. Environmental Protection Agency Energy Star Program	www.energystar.gov
U.S. Green Building Council	www.usgbc.org
Utah Green Builder Program	www.utahenergy.org/index1.html

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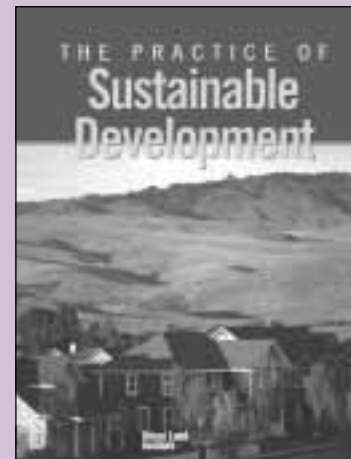
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