

# **Greenfield Development Without Sprawl: The Role of Planned Communities**

**Jim Heid**



**Urban Land  
Institute**

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Richard M. Rosan  
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## About This Paper

The Urban Land Institute is recognized as the leading real estate and land use research and education organization in the United States. For more than 60 years, it has served as a forum for discussion among diverse parties on a host of issues relating to real estate practice and land use policy.

*Greenfield Development Without Sprawl: The Role of Planned Communities* is the second in a series of papers by noted authors on land use policy and practice issues of pressing concern to ULI members and the broader real estate and land use community. In this paper, Jim Heid was asked to share his thoughts on a model for applying smart growth principles in suburban greenfields, and the role of planned communities in a regional greenfield strategy. The ideas and insights in this paper are those of the author and do not necessarily represent the views of all ULI members.

We believe that by publishing this paper and others like it in our series *ULI Working Papers on Land Use Policy and Practice*, we continue to raise and illuminate topics of interest and importance to our members. We hope this paper and others to follow accomplish that goal.

As always, your comments and insights are welcome.

Richard M. Rosan  
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## About the Author

### Jim Heid

A nationally recognized advocate for environmentally responsible land development, Jim Heid focuses on what he calls “common-sense sustainability.” In 2002, he founded UrbanGreen, LLC, to act as a real estate developer and adviser. Heid also serves as executive vice president for Bachmann Springs, a land development company in Arizona, a position he has held since 2001. From 1994 to 2001, Heid served as chief operating officer and senior vice president with EDAW, and from 1986 to 1993, he was a principal with Design Workshop.

As a consultant to communities and private developers, Heid combines his understanding of best practices with an ability to distill complex design ideas into easily grasped techniques. Serving as a principal for both land development and urban infill projects, he also understands the challenges presented by regulatory agencies and the capital markets.

Over 20-plus years of practice, Heid has led award-winning urban revitalization, new community, and resort development projects throughout the world. In 2003, his work on the Jinji Lake master plan in China was recognized by the American Society of Landscape Architects with a Merit Award for Design. He holds a master’s degree in real estate development from Massachusetts Institute of Technology and a bachelor’s degree in landscape architecture from the University of Idaho. Heid is a member of the Urban Land Institute and is a regular speaker at annual meetings and conferences. Since 1999, he has instructed the ULI/Conservation Fund’s workshop in environmentally sensitive development.

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Jim Heid

# Smart Growth in Greenfields: The Role of Master-Planned Communities Forum

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# Executive Summary

Between 2003 and 2025, the United States will grow by almost 58 million people. Where will this new population find housing? Many see infill—adding households within revitalized city neighborhoods or inner-ring suburbs—as the responsible, resource-conscious way to meet the need.

But infill strategies, even if universally accepted, cannot happen fast enough or in great enough numbers to make much of a difference by 2025. Portland, Oregon, projects in its metropolitan regional plan that 70 percent of near-term growth will be on greenfield land versus built-up areas. Other U.S. jurisdictions predict numbers closer to 90 percent.

While it is often lumped with sprawl, greenfield development offers the most practical, affordable, and achievable chance to build without sprawl, given its potential to create large-scale, conserved open lands and sustainable modern infrastructure. Much evidence suggests that public will plus enlightened private self-interest can rid greenfield development of sprawl's dysfunctions: indiscriminate and incremental use of open land; low-density residential 'tract' subdivisions; land-consumptive strip commercial development; lack of connectivity among residential and commercial development projects; transportation systems that are exclusively auto-dependent; social homogeneity; and economic segregation.

The basics of smart growth can already be found in a limited number of greenfield communities that demonstrate a holistic approach to meeting the needs of growth and development. These examples provide a model that can apply to future greenfield development. Any agenda for positive, sprawl-free greenfield development involves three prerequisites:

1. A preestablished regionwide system of sustainable open space that is connected and available throughout the region for active and passive recreational use;
2. Ways to reduce car trips: more and higher concentrations of mixed-use development—especially in areas accessible to public transit—that are walkable or "bikable" from residential development; transportation and land use systems that offer a wide range of mobility options; and a regional approach to transportation planning.
3. A diverse mix of housing types, sizes, and prices within regions and communities, and, where possible, within neighborhoods. Life and lifestyle options should also

include local or regional access to employment, education, and personal growth resources, connections to commercial and recreation centers, and ways to meet neighbors and take part in the community.

Achieving these prerequisites seems to require what only a larger project can offer. This includes sizable resources up front, economies of scale, a long horizon for planning and buildout, and flexible, multiproduct delivery that can test and respond to changing markets. The realities of financial markets, land assembly, and entitlements point to a modest number of developments of 500 to 3,000 acres, built and sold over a five-year period, as the likely alternative to the freestanding new towns that dominated past suburban visions. Some of these smaller communities will contribute a specialty—an office campus, a sports and recreation center—linked to neighboring communities as part of the regional mix. In this way a regional vision, including a significant public process, can yield many of the benefits of a new town with multiple landowners and developers.

A regional greenfield strategy needs planners, public officials, developers, and citizens willing to understand, and determined to create, high-quality development. Like developments everywhere, planned communities face obstacles of political and regulatory acceptance, land assembly, and financing. But compared with development as usual, the well-executed result can be more land-efficient, fiscally secure, environmentally responsive, in addition to delivering a better way of life not only for residents of the developed communities, but also for residents of the region.

Then why are such projects still in the minority? One reason may be the tendency to equate a planned community with an end product seen as highly prescribed and hard to achieve, from greenbelt communities and new towns in the 1950s, to traditional neighborhood developments (TNDs) in the 1990s. In contrast, many of today's successes have grown out of a flexible, citizen-based planning process. Responding to local realities, these communities often draw from several planning and design tool kits, yielding results high in livability. The challenge for developers and consumers alike is to recognize and encourage these incremental successes, while avoiding both dogmatic rules, and too loosely reviewed cases of "subdivisions on steroids."

Approached in a principled, quality-conscious way, planned communities can help achieve the potential of greenfield development, ensuring that the places where most Americans will live are economically diverse, environmentally sustainable, and livable.

# Where Most Americans Will Live

*Most of the development in the United States, 90 percent or something like that, is new development on the edge. If we ignore that and just concentrate on infill, the edge city will never repair itself. New development needs to be informed by the principles of urbanism. It would be a mistake for people who care about cities and urban design to assume that any greenfield development is bad—because it's going to happen, and if it doesn't improve it will overwhelm whatever infill we are doing in the cities.*

—Milwaukee Mayor John Norquist,  
interview in *Metropolis*, October 2003

As it has evolved from a planner's worry to a household word, sprawl has inspired more and more thoughtful responses. No growth has gradually yielded to smart growth, as more people take part in deciding what makes their communities livable.

Yet even the smartest answers typically fall back on no growth when it comes to addressing sprawl on its home turf—the suburban fringe. While smart growth's preferred cure for sprawl is to redirect new development from suburban greenfields—undeveloped areas—to infill sites in urban neighborhoods, it recognizes that greenfields make up an important part of the answer to sprawl.

Infill and regeneration paint a fine picture: mature parkland, existing (and thus practically free) infrastructure, transit, and institutions. Other promised benefits range from reduced car travel and saving open land, to reviving cities and giving faded suburbs a second chance. Even suburban developers can profit, after some retooling. Almost everyone wins.

The problem is, it can't happen fast enough or at a large enough scale to make an immediate difference. Even if every prospective homebuyer and renter in America decided tomorrow to return to the city, the supertanker of population and suburban development would steam on for years before making much of a course correction.

Despite the much-touted “return to the cities” of retirees, empty nesters, and young professionals, which is transforming older neighborhoods and business centers in many cities, experts believe that this trend will capture only a relatively small proportion of future development. Portland, Oregon's metropolitan regional plan assumes that, even with the region's well-recognized growth management efforts, some 70 percent of future growth will be in greenfield areas rather than in built-up areas. Some experts predict that about 90 percent of California's metropolitan growth is expected to occur in greenfields.

Between 2003 and 2025, the United States will grow by almost 58 million people—a Census Bureau forecast that roughly continues the average 2.75 million to 3 million-plus-a-year increase since 1980. Even the most optimistic assumptions foresee accommodating at most 18 million or so of these new people through infill. That leaves at least 40 million to still be accommodated in some sort of new greenfield community.

While the basic story is simply a lack of infill sites to house projected populations, there are other, more intrinsic limits to both suburban and urban infill:

- Existing infrastructure often proves too small or too old to serve the kind of new development required to support land cost. Brownfield remediation is often an added obstacle.
- Especially in inner-ring suburbs, land assembly may involve hundreds of small landowners and entitlement may take many more years.
- Security issues (or fears) present marketing, operating, and funding challenges in tough urban quarters.
- Dysfunctional school systems in most cities (and many older suburbs) preclude marketing to many young families.
- Land prices in close-in locations often are too high to support affordable market-rate housing.

## Infill: Modest Success, Limited Potential

In his working paper, *Planned Communities and the Smart Growth Movement*, Don Priest, a land development consultant and former ULI research director and staff vice president, makes a strong case that most future growth will continue to occur in outlying areas, in part because of the difficulties of redirecting growth to built-up areas. He says that infill development in central cities and older suburbs is proceeding too slowly to significantly offset the need for outlying growth. Using building permit data from three metropolitan areas to back up his case, Priest shows that even in metropolitan areas with successful records of infill development, infill as a percentage of total area growth remains a minor portion of total growth. For example, in the Washington, D.C., metropolitan area, which has experienced extensive infill over the last 25 years, and which has conditions very favorable to infill, central and older suburban jurisdictions are capturing less than 25 percent of total area growth. Similarly in Portland, which has an urban growth boundary to direct growth inward, the bulk of development is occurring on the edges of the boundary and not in the central area. In the Los Angeles region, the central city captures only 12 percent of regional growth.

Looking to the future, Priest says the demands of growth will overwhelm efforts to increase the rate of infill as a method of obviating the need for outlying growth. For

example, if Los Angeles County is to capture even 50 percent of growth predicted for the Los Angeles region over the next 25 years, it will have to grow at the same rate that it did from 1950 to 2000, a period of exceptional growth by any standard and not one that is likely to be repeated in Los Angeles. Los Angeles (a large part of Los Angeles County) is already one of the densest urban jurisdictions in the nation and would require major, very expensive transportation improvements to accommodate a large increase in population.

The key to understanding the limitations of infill is to recognize that there are many practical obstacles that are very difficult to overcome, even though in theory there may be capacity for achieving increased density by developing or redeveloping underused properties. In fact, inadequate and obsolete infrastructure, NIMBY opposition, high land and development costs, obstructive, lengthy regulatory processes, and other factors severely limit the ability of older jurisdictions to accommodate infill. There are some good prospects for infill, but it is a slow process. According to Priest, “We have to accept the probability that for many jurisdictions, at least 50 percent of the growth is, and will be, in greenfields.”

For more information, contact Don Priest at [priestde@msn.com](mailto:priestde@msn.com).

Other challenges include well-organized neighborhood NIMBYist opposition (often framed as anti-density or anti-traffic sentiment) to compact, mixed-use projects, and the very real concern of gentrification.

None of these problems makes infill planning any less important for a balanced regional housing strategy. But they suggest that even with strong market demand and political will, repopulating older neighborhoods will be a slow process.

Counting all urban and suburban infill and regeneration alternatives, and other growth sites such as rural small towns and exurban settlements, it is clear that today's greenfields will have to take on the lion's share of housing needed to meet America's continually growing population. In the near future, at least, greenfield development is inevitable. Given that reality, we must focus our energies not on whether to develop, but on how to develop better.

# The Challenges and Opportunities of Greenfield Development

There is much evidence that public will and private self-interest can end greenfield development's attachment to sprawl, and renew the much longer American relationship of living well on the land. While suburban pundits cry that greenfields and sprawl have merged into one evil, greenfield development per se retains much of the same potential that attracted many people who chose to live outside the central city 150 years ago.

Greenfields, unconstrained by surrounding land uses, large and easy to assemble and afford, allow developers to plan comprehensively and build efficiently. Here on the edge, saving open land, building modern and sustainable infrastructure, and creating diverse and livable communities can still be done right. To be sure, the suburban ideal has shifted from escaping the city to creating a new "edge-less" regional form—where city and country mutually benefit from one another. But understanding and winning this new game is part of the greenfield challenge.

From the start, greenfield development has promised ordinary Americans a way to enjoy the best of city and country, and remarkably often this mix of utopia and pragmatism has delivered. For many, greenfields have simply meant affordable housing; real estate draws a straight-line rent gradient between the urban core and the fringe, and a longer commute reduces the cost of shelter. But creative planning has also regularly captured a touch of utopia. Sought-after communities from Illinois's Riverside and New York's Forest Hills Gardens to California's Mill Valley were all once greenfields.

Today, a greenfield is defined as any parcel of land not previously developed, and is characterized by:

- rural or extremely low-density lands;
- significant natural, cultural, or agricultural resources; and
- locations outside recognized urban limits.

It is these very characteristics that make greenfields an incredible asset, and liability, for accommodating growth:

*"Disorderly growth in areas that surround our cities is fast destroying the open space, the fresh air, and the pleasant surroundings that originally attracted people to these areas. The problems of slum and blight, unequal economic and social opportunity, air and water pollution, clogged traffic arteries, disappearing open spaces, destruction of natural resources—all these have been aggravated, if not directly caused by, the way our national growth took place."*

Reading like today's op-ed page, HUD Secretary George Romney's testimony before Congress in the 1960s shows how little has changed in the way growth and sprawl are perceived.

The Sierra Club defines sprawl as "the expansion of low-density, automobile-dependent development that occurs at the fringe of the urban landscape." Isolating land uses and lacking transportation alternatives, sprawl forces long car trips to schools, employment, stores, and community activities. Combining homogeneous, economically segregated housing with formless public space, sprawl's generic look seems to suppress anything local or special. Perhaps the only new thing about all this is the growing number of voices raised against it, from environmentalists decrying habitat loss, to mayors protesting the drain of jobs and tax revenue from urban cores, to commuters facing lengthening drive times, and psychologists mourning loss of community.

It is understandable that the average citizen looks no farther than suburban development to explain sprawl, and seeks to stop one by turning off the other. But what if you could develop in the greenfields and generate high-quality, diverse living environments? The recent smart growth movement has developed a series of concepts to help shape new development in both location and form, to be more socially contributory.

In the 2002 publication, *Making Smart Growth Work*, author Doug Porter articulated the following six elements of smart growth:

- Compact, multiuse development;
- Open space conservation;
- Expanded mobility;
- Enhanced livability;
- Efficient management and expansion of infrastructure; and
- Infill, redevelopment, and adaptive use in built-up areas.

While these attributes describe the antithesis of sprawl, and when taken together create an environment different from many typical suburbs, they should be as easily applied to greenfield development as urban infill development. It is really only the final principle—location—that implies a preference for infill and a belief that greenfields aren't "smart."

In smart growth circles, debate persists as to whether development must border established communities in order not to be considered sprawl. In fact, many new planned communities have been, and will be, next to existing urban areas. But must development be contiguous to be considered smart growth? Surely there are instances where noncontiguous development presents a more preferable alternative. For example, it may be better to save high-quality open space by leapfrogging to an area more suitable for urbanization.

This concept is well demonstrated in greenfield developments across the country that by their vision, scale, planning, and program achieve high-quality living environments—offering jobs/housing balance, transportation mobility, resource conservation, and enhanced public open space and wildlife habitat to a much higher degree than could be realized in either an infill or a suburban regeneration setting. But as development moves forward apace, the question becomes, How can we ensure that all greenfield development is as appropriate as the few models we look to today?

## Getting to Good Greenfield Development

Thinking about sprawl and its alternatives demands a little post-1945 perspective. The blurring of urban boundaries is part of a long, basic change in the way most people live. With characteristic optimism, most Americans still assume that there will be plenty of green space on the other side of the fence. But this time there won't be. It is not merely that the countryside is ever receding; in the great expansion of the metropolitan areas the subdivisions of one city are beginning to meet up with the subdivisions of another.

In 1957, when William H. Whyte, Jr., wrote about urban sprawl in *The Exploding Metropolis*, the idea of a Northeast Corridor or Los Angeles megalopolis was already familiar. Since then subdivisions have indeed merged, erasing old distinctions of city and suburb. Hub-and-spoke commuters have yielded to random gridlock. That edge cities like Tysons Corner, Virginia, are the retail and office centers of their metropolitan areas is old news. Nowadays, "edgeless cities" are making all jurisdictional boundaries an anachronism. The era of the megalopolis is here.

In this context, the history of ideal community planning appears in a new light. From Pullman, Illinois, to Greenbelt, Maryland, or Celebration, Florida, the notion of a complete new town has attracted serious attention, while the individual subdivision or commercial project has become suspect for its contribution to sprawl due to its lack of context or connection.

To tackle sprawl on its own terms, the good ideas behind yesterday's planned community must now be expanded to a regional scale. Only by addressing the complex benefits and costs of development at this scale can the issues of land use balance, resource conservation, multimodal transportation, employment, diversity, and affordability be resolved. While this regional approach may yield full-service new towns completed over decades, providing anchors and needed financial and planning resources, the realities of financial markets, land assembly, and entitlement point to modest developments of 1,500 to 3,000 acres, built and sold over a five-year period, as the more realistic building blocks of tomorrow's metropolitan form.

Dealing with smaller developments need not mean the loss of a connected, regional perspective. Already in places as diverse as Santa Fe, New Mexico; Chattahoochee Hill Country, Georgia; and San Jose, California, separate, smaller planned developments are being guided under a vision that will make them appear as if they were a single entity and applied to a larger, regional setting. In this process, a community with a specific emphasis—shopping, affordable housing, land conservation, educational campus—can play a role like that of a district or neighborhood in a conventional city. Even resort and retirement enclaves, minus a few walls and gatehouses, can contribute if they join the mix and connect with the region as a whole.

The creation of a larger regional vision, which typically includes a significant public input process, results in many of the benefits of a large-scale new town, delivered through multiple landowners and developers. In the end, the key to creating greenfields without sprawl is not the size or capitalization of each development, or whether it is fully contiguous with other developments, or even how perfectly it is designed internally. It is the success with which each development connects with the others, and the symbiotic role each plays in making the region greater than the sum of its parts. The goal is to form a cohesive, regionally cooperative human and natural environment.

### **Three Prerequisites**

It is one thing to craft a vision for a vibrant regional form. But how does it actually get realized when the realities of landownership, sensitive resources, or a reluctant populace come to bear?

If we accept that greenfield development will create homes for 50 million or more Americans in the next 20 years, and wish not only to avoid sprawl, but also to build truly livable environments, how do we begin?

The three elements that follow introduce the critical prerequisites for sprawl-free greenfield development. The downfall of most development to date, and the sprawl it has created, is that most processes, communities, or developers may attempt to address only one or two of these elements. But one or two are simply not enough. All three need to be incorporated to ensure success as measured by high livability and a truly connected, dynamic quality of development.

### **Green Infrastructure**

Although road congestion probably tops lost open space as a sprawl complaint, resolving both issues depends on first defining where greenfield development should and should not go. Where should we build and, more important, where should we not build? Approached from a regional perspective, the land itself gives answers. A green infrastructure—preserved watersheds and other natural and cultural resources in a connected open-space system—can also make “hard” infrastructure such as rights-of-way, utilities, and recreation more land-friendly and cost-effective.

### **Mobility and Access**

For residents, traffic may be the worst thing about sprawl. An integrated, multimodal transportation network should reduce automobile dependence by as much as 25 percent. Local and regional greenfield planning can enable smarter use of car trips and create alternatives, from pedestrian-accessible shopping and schools to bikeways, carpools, vanpools, and future bus and rail connections.

### **Livability and Lifestyle Choices**

A third, more complex priority is providing a range of life and lifestyle choices. Over the past 20 years, the American household has dramatically shifted; now, only 25 percent of homebuyers are the traditional two-parent/two-child household. This change in demographics requires a diverse mix of housing types, sizes, and prices within regions and communities (and, where possible, within neighborhoods). Furthermore, lifestyle options should include local or regional access to employment (at ratios from 0.25 job per every household and up), a host of educational and personal growth options, connections to commerce and public life, and a full range of opportunities for meeting neighbors or getting involved in the community.

## Green Infrastructure

Identifying sensitive regional resources and agreeing where development should go must be a proactive, community-based process. Although in the end it comes down to public decision making, it invites significant public/private cooperation. And it can get a substantial boost from the private developer of a large-scale planned community.

In an ideal world, communities, leaders, and stakeholders would come together to decide how much growth is reasonable and where it should go. With greenfield development, location choices would follow agreed-upon community values (e.g., preserving important views, water quality, cultural resources). Land supporting these values would be mapped and ranked, and residual land would be earmarked for development. Based on the land's carrying capacity, projected population would be split among the designated parcels. The result: new development that is welcomed because it is holistic, environmentally sound, community-friendly, and understood by the local constituency. With high predictability as to where and when development would happen, projects would have lower entitlement risk and lower carrying costs and therefore facilitates more generous budgets to create high-quality development.

While limited versions of this ideal sometimes occur (see “Three Approaches to Achieving Smart Growth” feature box), they do not reflect current realities of land acquisition, entitlement, or financing. Regionally based design and approval is a difficult, multijurisdictional effort that counters a tradition of zealously protected local land use decisions, made by authorities who often see development as either a tax base to be captured, or an evil to be foisted off on the next county. As a result, jurisdictions large and small make short-term decisions that they perceive suit their constituents' best interest, when in reality they have compromised the long-term regional environment, transportation, and/or quality of life.

Increasingly, however, public planners, grass-roots constituencies, nongovernmental organizations (NGOs), and citizen groups are stepping out of the traditional channels of local land use jurisdictions to address growth as a regional issue. These collaborative forums view development and its impacts proactively, believing that good development, economic growth, and environmental protection can support each other.

## Treating Open Space as Infrastructure

Categorical opponents of greenfield development tend to depict it as an either/or proposition: win and protect open space, or lose and get blanket development and sprawl. As Ed McMahon, director of the Greenways Program for the Conservation Fund, says, “When citizens think all land is up for grabs, they oppose development everywhere . . . when people have some assurance that special places will be saved, they become more amenable to accommodating new development.”

But saving special places on a piecemeal basis rarely succeeds. Reactively buying up land to preempt development is neither an efficient use of tax dollars nor an intelligent way to shape urbanization. McMahon calls for an approach that is:

- more proactive and less reactive;
- more systematic and less haphazard;
- multifunctional, not single purpose;
- large scale, not small scale; and
- integrated with other efforts to manage growth.

In *Green Infrastructure: Smart Conservation for the 21st Century*, McMahon and Mark Benedict propose the concept of green infrastructure. While green space is often viewed as something that is nice to have, green infrastructure implies that protecting and restoring our natural life support system is a necessity, not merely an amenity. Green infrastructure emphasizes interconnected systems of natural areas and open spaces that are actively maintained.

Green infrastructure exemplifies the kind of tool needed to build an initial framework for new development in greenfield areas—a framework that identifies in advance both ecologically sensitive land and land suitable for development. Instead of getting bogged down in the development versus open-space debate, citizens and authorities can concentrate on setting predictable ground rules for developers that will, by reducing risk and delay and clarifying expectations, help pay for a high-quality result. By getting in front of the development curve, progressive towns and regions are already forming partnerships with developers and landowners to craft green infrastructure community maps that are livable, affordable, and environmentally sound.

## Three Approaches to Achieving Smart Growth

Across the country, planners, conservation organizations, and citizens are helping constructively to shape the growth they acknowledge is inevitable. Employing state-of-the-art mapping and analysis tools as well as grass-roots fireside chats, people are discussing appropriate forms of growth and how to make it happen in their communities. While each community's process is unique to its local issues and culture, there are several common hallmarks of success:

- Educating the public about the impacts, benefits, and various forms of growth;
- Detailed mapping and analysis of natural and cultural resources to help support established community values;
- Community consensus on those issues that are collectively important, and how they should be prioritized in determining where growth should occur;
- Community outreach and ranking tools including newsletters, Web sites, surveys, Internet-based discussion threads and chat rooms, and old-fashioned town hall meetings and community workshops; and
- Patience and time: none of today's successful plans was crafted overnight. The process of educating, mapping, and discussing takes time and patience to ensure that voices are heard and ideas are expressed and understood.

The role of organizing these tools and leading the process can also take many forms. The three primary categories include:

- Public sector: Whether a regional government agency, a county planning department, or a local jurisdiction, public sector employees often take responsibility for developing and leading the process;
- Public/private: Nongovernmental organizations (NGOs) that have traditionally operated as nonprofits but bring together the best of the public and private sectors have been very effective at leading many of these efforts.
- Private: In limited instances, private citizens who are concerned about growth and environmental issues band together to tackle the issues head-on.

The following case studies demonstrate three recent successes, each organized and led by one of the entities described above.

### The Public Sector–Led Process

The Santa Fe Community College District Plan emerged out of Santa Fe County's efforts to create a growth management plan, which was finally adopted in 1999. The development of the district plan (adopted in 2000) included extensive participation from property owners and residents, as well as public officials. The plan arose from discussions about alternative development scenarios, possible and logical in the metropolitan area when participants began to consider traditional land use patterns compared to more modern subdivision patterns. Paraphrasing from the final document's introduction:

*The heart of the planning effort has been to develop a new way to think about metro area edge problems and to develop a new set of rules and regulations for developments in nonurban areas near the city of Santa Fe. The basic premise of the plan is that the land and the remarkable countryside should determine patterns of development—not the other way around.*

The plan was mandated by the county's board of commissioners with the purpose of recommending specific ways in which infrastructure and community facilities can be built and maintained for the entire district. Additional objectives of the commissioners were connected open space and trails, as well as a balance of differing land uses joined by transit.

*A planning committee, which included members from a broad cross section of the community, was established and met biweekly to develop the plan's vision and ten principles (a sampling includes the land system, circulation and connections, infrastructure, environmental and sustainable systems, operations and maintenance).*

*Each principle formed the basis of a specific set of recommendations and guidelines for the plan. Recent land developments in the district have used the plan to help shape both their final form and entitlement process.*

For more information, see "The Santa Fe Community College District Plan," available from Santa Fe County.

## The Public/Private Approach

In 2002, the Greenbelt Alliance, a California-based NGO, sponsored a yearlong public process that examined what an alternative to traditional sprawl patterns of development might look like if a group of developers simply rethought the form of their entitled, but as yet undeveloped land. The final report, “Getting It Right: Preventing Sprawl in the Coyote Valley,” captures the dilemma facing many communities. Focused on 6,800 acres in the Coyote Valley, one of the last vestiges of nonurbanized agricultural lands in rampantly developed Silicon Valley, the plan seeks to offer community leaders and residents an alternate future form of development while acknowledging the city’s goal of accommodating at least 50,000 jobs and 25,000 homes in the valley. Instead of repeating the surrounding area’s pattern of generic sprawl, the plan demonstrates how approved development can be accommodated, while still creating a place “where you know your neighbors, you can walk to work, and your kids can walk to school.” The plan describes a vision for a livable community that includes affordable housing and connections to parks, farms, and spectacular rolling hills.

Using a highly public process, the Greenbelt Alliance and its consultants worked with local residents, environmentalists, transportation and labor leaders, developers, elected officials, and landowners to craft the plan using smart growth principles. Over 100 organizations participated in the process as members of a partnership committee. Three committee workshops, as well as newsletter and E-mail updates, were used to gather input and build consensus. A seven-member advisory committee provided feedback on the direction and content of the vision as it developed.

The Greenbelt Alliance was careful to ensure that its participation did not signify either its support for development in the designated area, or the planning approach recommended by the final plan.

The resulting plan demonstrated how the city’s goals of 50,000 jobs and 25,000 homes could be achieved, while still preserving 2,380 acres as working agricultural open space. Using compact, high-density development, the plan also helped demonstrate how the vision could be realized by achieving four key ideas: building community; protecting the environment and agriculture; ensuring social equity; and promoting economic vitality.

For more information, visit [www.greenbeltalliance.org/resource/reports/report\\_coyote\\_valley.html](http://www.greenbeltalliance.org/resource/reports/report_coyote_valley.html).

## The Grass-Roots Approach

The Chattahoochee Hill Country Alliance (CHCA) is a study in how one man’s concern and extraordinary patience can lead to large-scale regional change. When Steve Nygren started living full time in his bed and breakfast in Fulton County, outside Atlanta, the last thing he imagined doing was leading a comprehensive planning process for 40,000 acres. But over time, realizing he could not afford to continue buying up land to protect his bucolic setting, he began informal discussions with landowners who shared similar concerns about growth. By identifying the top 31 landowners in the region, the CHCA was able to form a nonprofit organization that represented over 51 percent of the total lands in the county. A simple assessment of \$2 per acre provided enough working capital to begin a series of planning studies and town hall and living room meetings with all local landowners. Working collaboratively with the Georgia Conservancy, the Nature Conservancy, the National Park Service, and local government, the CHCA worked to “preserve the rural character of the the area, and determine the type, form, and location of all new development in the 40,000-acre landscape.” After more than two years of meetings and discussions, the group had participation from most of the landowners and an \$80,000 economic development grant from the county to conduct a planning charrette, including GIS analysis of natural resources. The charrette and study yielded a master plan that sets the model for future development by creating:

- Three primary receiver sites where high-density, neotraditional development would occur, consistent with existing infrastructure and land carrying capacity;
- A transfer of development rights bank, where landowners could trade their as-of-right development to the receiver zones, and in turn protect sensitive resources;
- Immediate acquisition of the county’s most sensitive resources by a land trust, creating the backbone of the plan’s conserved open-space plan.

The plan’s significant resident acceptance and model for future growth have led adjoining counties (even in adjoining states) to inquire about replicating the Chattahoochee Hill Country model, or simply join the plan.

For more information, visit [www.chatthillcountry.org](http://www.chatthillcountry.org).

The green infrastructure concept reminds us that open space must be planned as rigorously and managed as effectively as any “hard” infrastructure element like water, sewer, or roads. Investment should happen far in advance of development and may involve zoning, acquisition, or just community consensus on critical resource sites. Rather than a luxury to add when public coffers are full, this essential element deserves to be budgeted for and managed as prudently as any other civic asset. The green infrastructure concept also reinforces the critical ingredient of regional connectivity that gives open space meaning, both biologically and as a practical human utility. “Who would ever think of building a road system that does not connect?” asks McMahon.

The Greenprinting for Growth program, created by the Trust for Public Land (TPL), helps local communities to draft land conservation strategies that will permanently protect the most important natural resources in their regions and help shape growth around them (see “Greenprinting for Growth Case Study: Confluence Greenway, St. Louis, Missouri” feature box). The Greenprinting for Growth process involves three key steps:

- Visioning—Defining a land-protection vision, or “greenprint,” that reflects a community’s growth goals and enjoys public support;
- Funding—Identifying and securing funds to implement the greenprint. Funding may come from a combination of public and private sources including federal, state, and local programs that can provide support for parks and open space, as well as funds from private foundations, nonprofit organizations, business partnerships, and individuals; and
- Acquisition and stewardship—Completing the necessary transactions to implement the greenprint, and then actively managing the protected land.

Since 1999, TPL has helped communities across the country raise over \$25 billion to help them implement their land conservation and protection strategies.

## Greenprinting for Growth Case Study: Confluence Greenway, St. Louis, Missouri

By the time it flows past St. Louis, the Mississippi River is already mighty, having just swallowed both the Illinois and the Missouri rivers. But the Mississippi’s physical magnitude alone does not set the entire scale. The flow of history is as powerful as the waterway. Nearly 200 years ago, the confluence of the three rivers set the stage for Lewis and Clark to blaze a trail to the Pacific. One hundred years later, this spot was home to the 1904 World’s Fair. When the St. Louis 2004 initiative began searching for a public space to commemorate these historic events, the Confluence Greenway project was born. This case study illustrates the dramatic possibilities for land protection when there is regional cooperation among two states, four counties, and one city all working together. The Confluence Greenway project has created and funded bistate regional park districts to manage the creation of a 40-mile-long greenway that stretches along both banks of the Mississippi.

### Vision

The Confluence Greenway project is an ambitious plan to create an interconnected series of riverbank parks, stretching north 40 miles from the Gateway Arch in St. Louis to Père Marquette State Park on the bluffs overlooking the confluence of the Illinois River with the Mississippi. Such a large-scale goal requires innovation and unprecedented collaboration—things that the residents and leaders of the St. Louis metropolitan region have generously supplied.

To begin, an extensive process of opinion polls, workshops, and public meetings was undertaken to determine a shared vision for the region’s future. This public participation initiated many civic projects, ranging from downtown revitalization to an expansive Clean Waters, Safe Parks, and Community Trails program that has made completing the Confluence Greenway its first goal. The 2004 Parks and Open Space Task Force, a committee of citizens, community leaders, and park professionals, conceived of legislation for parks and open-space preservation. The Gateway Parks and Trails 2004, a small nonprofit organization, then produced a conceptual regional

parks and open-space plan. Through this process, local leaders envisioned two new regional park districts—one in Illinois, the other in Missouri—that would work together, using funds from a dedicated sales tax to create an interconnected park and open-space system.

Since the Confluence Greenway and other projects cross jurisdictional lines, Missouri and Illinois legislatures took up mirror-image bills to create metropolitan park and recreation districts on either side of the river and linked by an intergovernmental agreement. Having initiated the nation's first bistate park and recreation project, the two districts will work together to protect riparian open space, build trails, create new parks, and refurbish older parks in the St. Louis metropolitan region.

### Funding

In November 2000, after years of discussion, deliberation, and debate, funding for the bistate vision was finally realized. Voters in four counties and the city of St. Louis approved Proposition C, the Clean Water, Safe Parks, and Community Trails initiative. "Prop C" won overwhelming support throughout the metropolitan region, including landslide approval in both St. Louis County (70 percent) and the city of St. Louis (75 percent). The proposition approved a 0.1-cent sales tax in each of the local jurisdictions—which, over 20 years, is expected to generate nearly \$500 million to restore parks, preserve open space, and protect water quality.

Half of the money raised from Prop C—about \$10 million per year in Missouri and \$1.5 million per year in Illinois—will be used for regional parks and trails and administered through the two new park districts. The rest of the money will be returned to the counties and municipalities where it was generated, although each state has slightly different local government distribution formulas. The park districts represent five jurisdictions and more than 80 percent of the residents of the St. Louis metropolitan area. Some believe that the size and sweeping nature of the park project will foster a sense of unity at the regional level.

*"An undertaking the size of Proposition C requires coordination and cooperation across party and jurisdictional lines—not to mention a lot of hard work. Fortunately, we had the help of the Trust for Public Land, a nonprofit with national expertise in managing land conservation funding campaigns. TPL studied the issues, understood the challenges, and helped us communicate the benefits of the regional park districts to voters throughout the St. Louis metro region."*

—Former U.S. Senator John C. Danforth, Chair, St. Louis 2004

### Implementation

One of the challenges in creating a trail on both sides of a river is crossing the water. The old Chain of Rocks Bridge, which once carried Route 66 across the mile-wide Mississippi between St. Louis, Missouri, and East St. Louis, Illinois, had sat derelict for some 30 years—just waiting for an idea like the Confluence Greenway. In June 1999, following a \$4 million renovation, Chain of Rocks Bridge reopened as a major bike path and walkway. Now, on weekends, several thousand people use the bridge to cross the great river. One month after the reopening of the Chain of Rocks Bridge, the late Governor Mel Carnahan of Missouri and Governor George Ryan of Illinois met mid-span to sign a historic document creating the nation's first local bistate park and recreation project. A 400-mile-long section of the riverbank has been dedicated to the Mississippi River Trail, a multistate cycling route. The state has also acquired key properties in the city of St. Louis and in Madison County that will become part of the Confluence Greenway.

This shared vision for the region makes the St. Louis 2004 initiative a model for the country. According to E. Terrence Jones, professor of political science at the University of Missouri at St. Louis, the Confluence Greenway "will draw attention and activity back to the waterways that bind us all, the historic reason for our location, and the common geographic thread among us."

Source: The Trust for Public Land Web site ([www.tpl.org](http://www.tpl.org)).

## Combining Infrastructure: Gray Meets Green

We have seen that what at first may seem like an ecologically responsible solution to public utilities may risk degrading the environment by overtaxing outdated systems. For example, older neighborhoods that appear to be an ideal alternative to greenfield development can be a source of pollution by combining stormwater and sanitary sewer networks in a combined storm outflow (CSO) system.

In contrast, an integrated plan can employ new technology and management systems that are holistic in design and environmentally sound in operation. Stormwater runoff, an urgent issue for greenfield development, can be man-

aged using a set of best practices centered around non-pipe solutions. In addition to better storm event management, nonpipe designs can help create or enhance wildlife habitat, reduce capital and operational costs, and deliver better water quality to the environment than traditional engineered solutions.

Similar innovations in wastewater treatment are likewise reducing initial capital costs by means of easily phased, self-contained decentralized treatment systems. By approaching greenfield development holistically and on a regional scale, the sequential process of water treatment can be designed to support varied development forms over time, reduce large capital outlays, and remove the issue of expanded mainline infrastructure that indirectly encourages sprawl.

### The Benefits of Integrated Infrastructure

The term *nonpipe solution* refers to design of stormwater management in a manner that does not rely on underground pipes and catchment systems. Ranging from old techniques such as vegetation-lined trenches (swales) to innovations such as level spreaders (perforated pipe that allows collected stormwater to self-meter its release into absorption or infiltration fields), nonpipe designs can reduce capital costs, improve the quality of water released into the environment, and often afford a significant amenity to the community.

Prairie Crossing, a 660-acre conservation development in Grayslake, Illinois, used a nonpipe solution to resolve its on-site stormwater management issue. Through a combination of frontyard swales and noncurbed streets, stormwater is collected and fed by gravity to a community focal point, a 22-acre pond. The swales are heavily planted with native plants that support the community's prairie aesthetic. The root system of the plants captures toxins, greases, and heavy metals, naturally filtering the stormwater as it makes its way to the community pond. Upon entering the pond, the water is at such a high level of quality that it serves as a community swimming amenity in the summer. The result of this system is very high-quality stormwater runoff entering the ecosystem of the lake, visual support of the community's image from the street, a no-cost community amenity (swim-

ming in the summer, skating in the winter), and savings to the developer of \$1.2 million in initial capital costs.

Off the coast of Charleston, South Carolina, lies a unique island community known as Dewees Island. With over 1,200 acres and only 150 units, Dewees Island Partners successfully developed a failed high-density resort development into a showpiece of sustainability. One of the primary elements of the Dewees strategy was an innovative wastewater treatment system that gained the favor of project opponents because of its low-tech, high-quality simplicity. A combination of residence-based grinder pumps and anaerobic pretreatment tanks allows for all solids to be digested prior to entering the effluent stream. Liquids are conveyed via a small-diameter pressurized piping system (STEP) that centralizes treatment through hydrogen peroxide pretreatment and traditional leach field. After ten years of active use, the digesters at each residence have shown no residual biosolids, meaning 100 percent decomposition. One of the primary reasons for this very high rate of success is the banning of garbage disposals in any residence. Disposals create water treatment problems by concentrating and suspending fats and oils, the one element that will preclude successful decomposition using anaerobic or aerobic digesters.

## Landownership and Entitlements

Today, more NGOs and planning firms are taking an active role in educating families and institutions that hold legacy lands. Green infrastructure can give these landowners a vision and a timeline for development or conservation, so that parcels may be acquired and protected as part of a larger regional strategy.

Financial pressures can force families with large, resource-rich landholdings into expedient development. Often, the first purchaser's lands pass to third and fourth generations who lack a conservation ethic or an estate tax plan. As a result, large and small working landscapes—farms and ranches—suddenly come up for development without benefit of contextual or regional planning.

In general, unpredictable entitlement processing, exacerbated by antigrowth sentiment, extends the approval process and drives up costs. Delays consume funds available for habitat enhancement or acquisition of open space, and may force the developer to add units or reduce quality.

In the end, one of the most challenging aspects of greenfield development remains the fragmented way in which land is acquired, planned, and developed. Jurisdictions need to strengthen their political will to create—and stick to—a vision for connected regional development.

## Mobility: A Public/Private Balance

If open space is the rallying point for citizens concerned about greenfield development, transportation issues are usually the platform.

Activists and the media often portray congestion and long commutes as issues for local government, calling for some specific road building or transit fix. In reality, however, mobility is probably the most holistic of the three main greenfield issues.

An integrated, multimodal transportation network involves a true balance of traditionally public utilities—highways, collector roads, regional open-space paths and bikeways, transit—and the private streets, sidewalks, community path networks, carpool and vanpool systems, and telecommuting resources often best provided by larger planned

community developers. Here, too, there is a need for community and regional citizen participation to make sense of thousands of different consumer transportation profiles.

In many ways, the process is an extension of green infrastructure and its “smart conservation”—an equally multifaceted and interconnected “smart transportation.”

To quote Robert Dunphy, ULI's senior resident fellow for transportation:

*“Transportation systems become smart when they offer community residents and workers a range of travel options that can expand choices and reduce increases in traffic congestion. It means expanding access to travel by transit, paratransit (such as vanpools and carpools), walking, and biking. Currently, conventional greenfield development patterns make transit expensive and underused, render carpooling ineffective, and discourage walking and biking.”*

The challenge for planners and developers, then, is to conceive and create patterns of development that will make balanced transportation feasible, both at the project's outset and after buildout (including so-called transit-ready plans). A particular need is to encourage—through design, inviting connections, and attention to comfortable distances—walking and biking.

A related issue is interconnected streets to provide multiple access points and optional travel patterns, relieving congestion caused by single-point entry/exit road hierarchies. The concept of interconnectivity goes beyond traffic management, adding benefits in creating a secure and walkable community when, for example, streets are properly designed for narrower widths, on-street parking, and four-way stop intersections.

At a larger scale of connectivity, the regional perspective of green infrastructure is inseparable from transportation planning. The combination of green infrastructure at a regional level, plus a multimodal transportation overlay to connect the interstitial areas suitable for development, creates a holistic framework for future growth.

## Livability and Lifestyle Choices

The small-town ideal of neighbors of diverse ages and incomes living close together and walking or taking public transit to work, school, shopping, entertainment, and community activities—an ideal effectively impossible with suburban sprawl—can readily reemerge in good greenfield development.

A study released in August 2003 by Smart Growth America showed a clear link between sprawl-type suburban living and health problems. “Measuring the Health Effects of Sprawl” used census data from 448 counties in the United States to examine sprawl patterns and health problems such as obesity and hypertension, and identified a clear correlation between the two. Recent emphasis on compact and walkable forms of development is not simply a planner’s ideal, but a real benefit to quality of life—both in terms of character and longevity.

Recent compact greenfield developments such as Celebration, Florida, or Kentlands, Maryland—often called traditional neighborhood developments (TNDs)—have demonstrated the level of market interest: premium buyers are willing to pay for a small-town feel with full-service offerings. This underscores the idea that alternatives to sprawl are more than academic arguments—the market clearly recognizes the improved lifestyle of “smarter” development patterns.

However, the traditional town may not be the ideal for all residents. American consumers are no more likely to accept a fine-grained TND as a one-size-fits-all solution, than they are to embrace urban infill as the only responsible way to build. An overall greenfield strategy that is both market-responsive and socially appropriate requires a mix of uses and housing types, sizes, and prices offered in a variety of physical forms. While some communities may be small-town in character, others may become specialized—built around an office park, a retail center, or an extended-care village, for example.

To some, this may sound like more sprawl. But to distinguish the development patterns of the past from a vision for the future, a successful regional approach must include a comprehensive framework of green infrastructure and transportation mobility, infilled with a carefully crafted range of lifestyle and product choices. The differentiating

factor between the sprawl of today and the vision outlined here is the connectivity provided by the framework of green infrastructure and transportation mobility. This framework is further enhanced by the carefully crafted synergy that will evolve from mixing uses.

Integrated and varied land uses, neighborhood designs and housing types, densities and price ranges, and innovative products in general often seem to need the scale, longer horizon view, multiple product delivery system, and testing capability that a larger, single-developer project offers. This kind of development is best known as a planned community.

Perhaps the strongest argument for considering planned communities a critical component to developing greenfields without sprawl is their ability to provide affordable housing at several price levels, skillfully designed to be seamless and invisible alongside market-rate housing. By offering areas of higher density, or by allocating land costs to shift the burden from lower-priced houses and apartments, larger individual communities can more readily deliver home products at a variety of price points.

Furthermore, providing employment and education choices, mixed uses, and a variety of housing types in greenfields works better under the umbrella of an individual planned community.

## Planned Communities: Core Elements

The tradition of comprehensively planning virgin tracts of land for settlement in the Americas dates to the Spanish Law of the Indies of 1573. Later, New Englanders used the central common to create both a utilitarian focus and an organizing structure. Visionaries from Penn to Pullman experimented with planned settlements to foster community and a utopian way of life.

As we have seen, however, the freestanding ideal planned community quickly became an anachronism (except among planners and academics) after World War II. The U.S. government’s resolve to provide housing and maintain economic growth led to rapid deployment of planned development across the national landscape. Somewhere in the rush to provide housing, the concept of creating a sense of place was lost, and planned developments replaced

planned communities. The factors at work included the commodification of housing, the desire to create a modern look and feel unlike Depression-era Elm Streets, and the market’s desire to serve the automobile. Especially in the South and West, the move to edgeless urbanization was swift and sure.

Nowadays, the knack of distinguishing a high-quality planned community from what one observer calls a “subdivision on steroids” is not to be underestimated. It is often easier to identify the difference after the fact rather than during planning, however. But the name “planned community” still captures the essence of the two main clusters of ideas that have distinguished good development in greenfields since the 1500s:

- “Planned” implies a comprehensive approach to analysis, programming, construction, development, and management.

- “Community” describes a balanced and purposeful linkage of uses that makes it possible for people not only to live, work, and play in their local environs and socialize formally or informally with their neighbors, but also to be part of a place they take pride in.

As the concepts have evolved, “planned” may now refer to both a site-specific area and a region. A “community,” while it should still operate at a neighborhood level, may now also involve a linked network of communities on a regional scale. The major distinction will be entities that indeed look like villages and call themselves planned communities—walled golf course enclaves or limited-price single-family housing tracts, for example—yet fail the test by being unconnected, homogeneous, and regionally obstructive rather than contributory.

**TABLE 1: SOME PLANNED COMMUNITIES COMPARED**

Planning Form	Defining Characteristic(s)	Image	Examples
<b>New Communities/Towns</b>	Large scale, long term, balanced/mixed land uses	A new town	<ul style="list-style-type: none"> <li>• Reston, Virginia</li> <li>• The Woodlands, Texas</li> <li>• Summerlin, Nevada</li> </ul>
<b>Traditional Planned Communities</b>	Moderate scale, moderate term, mixed uses, and high open space/recreation component	A new village, contemporary in form	<ul style="list-style-type: none"> <li>• Ladera, California</li> <li>• Gainey Ranch, Arizona</li> </ul>
<b>Recreation Communities</b>	Recreation and lifestyle organizing element(s), predominantly second home	A resort lifestyle community	<ul style="list-style-type: none"> <li>• Desert Mountain, Arizona</li> <li>• Hualalai, Hawaii</li> </ul>
<b>Active Adult Communities</b>	Age-restricted with central facilities for fostering resident interaction and lifestyle	A retirement lifestyle community	<ul style="list-style-type: none"> <li>• Sun City, Arizona</li> <li>• Sun City, Nevada</li> </ul>
<b>New Urbanist Developments</b>	Garages loaded from rear, street-separated sidewalks, fine-grain mixed use	A traditional village	<ul style="list-style-type: none"> <li>• Seaside, Florida</li> <li>• Kentlands, Maryland</li> </ul>
<b>Conservation Developments</b>	Conserved open space focus, typically under conservation trust	A rural hamlet	<ul style="list-style-type: none"> <li>• Spring Island, South Carolina</li> <li>• Prairie Crossing, Illinois</li> </ul>

## **Benefits of Planned Communities**

Well-executed planned communities offer significant advantages of scale and are comprehensive in accommodating growth, which in turn can generate other benefits. While planned communities may range from 500 to over 10,000 acres, the most common size is 2,000 to 3,500 acres, according to Robert Charles Lesser & Co., a leading independent real estate advisory firm. This size gives planners and developers flexibility to integrate uses, ensure compatibility between development and land, and conduct site inventory and analysis using a whole-systems approach, a base for sustainable development.

### **Green Infrastructure**

Preservation of large open spaces is facilitated by large-scale community development. Environmental protection and enhancement are served because the site is evaluated in its larger context, and project economics often allow for development areas to underwrite both initial and long-term management costs associated with conservation measures.

### **Efficient and Responsible Infrastructure Use**

The planned community process offers opportunities to locate, design, and phase infrastructure incrementally, together with residential and other land uses, in ways not possible with small-scale subdivisions. A comprehensive approach often improves systems' operating efficiency and financial feasibility, and makes sustainable technologies more accessible. Examples include integrating potable water, storm drainage, and wastewater treatment with habitat development, employing low-energy natural treatment instead of mechanical systems. Finally, infrastructure financing can take advantage of special service districts, which are difficult to obtain with fragmented ownerships.

### **Financial Advantages**

Arguments against both greenfield development and sprawl cite the cost of extending infrastructure and social services for incremental development. Analyses show tax revenues generated by new subdivisions often fail to cover basic services. Mixed-use planned communities, on the other hand, can balance or generate new revenues to cover extended services and systems, including advanced cost-effective technologies. In addition, the larger scale of development and the access to special service district financing that it affords allows planned communities to avoid taxing existing utility districts for implementation.

## **Mobility and Alternative Transportation**

Likewise, a comprehensive planning and development process can foster a diverse, efficient transportation network connecting neighborhoods, employment, retail, and recreation centers within and outside the planned community. Interconnected streets, walking and hiking trails, and path systems for alternative vehicles (e.g., electric cars and carts) offer residents the benefits of increased exercise and fewer car trips. Large planned communities can plan far into the future to provide room for transit links that may not be supportable at the outset of development, but could never even be considered in incremental development.

### **Jobs/Housing Balance**

No community can be a self-contained job source in this age of mobility, but planned communities with employment centers can give more people the option of living near work, shopping, and recreation and education facilities. The regional vision described earlier is essential to fostering communities that develop in a mutually supportive manner, so that one community may be the employment focus, while another may serve as the residential focus, and still another may provide a major recreation resource.

### **Mixed Uses and Varied Housing Types**

Integration of a variety of land uses, neighborhood designs, housing types, densities, and price ranges is often best accomplished in a planned community. By shifting density and allocating land costs, planned communities can deliver more diversity and affordability through nontraditional products. Examples include overgarage apartments, live/work lofts, English basements, and "multifamily mansions."

These are some of the benefits that make high-quality planned communities valuable additions to any region, and an important tool in developing greenfields without sprawl. But what elements define and ensure a quality result, and how are they achieved?

## What Makes a High-Quality Planned Community?

Greater than the sum of its parts, a high-quality planned community is the product of plans and components effectively organized to create the intangibles of community and place. Regardless of their size, good planned communities incorporate a variety of housing types, sizes, and prices; include a complementary mix of land uses; and provide ample common space and a vital public realm. Other critical characteristics that developers and professional planners agree upon are the following: a form of community governance to maintain resources and character; a comprehensive approach to planning and delivery; and a long-term vision zealously adhered to by a single entity.

Finally and not least, there is the critical ingredient of connectivity, of playing a complementary part in a planned regional network of preserved open space and balanced greenfield development. But having explored this element at the outset, we should now concentrate on the individual development. What are the important characteristics of the proposed site, what uses need to be included in the community, and how should they be spatially organized to create a lively, high-quality environment for residents, employees, and visitors?

The best of today's planned communities encompass the following principles:

### Systems-Based Structure

Starting with Olmsted at Riverside and moving through McHarg, this is one of the most enduring and fundamental benefits of comprehensive planning, the hallmark of planned community development. A thorough understanding of a site and its carrying capacity is critical to sustainable development. Today, the power of GIS technology and improved scientific analysis allow much more intelligent analysis and modeling of development alternatives.

### Contextually and Locationally Responsive

In situations where a project is located in a greenfield, planning or studying outside the parcel boundary to identify affected systems and linkages, as well as potential synergies within an appropriate development shed, will result in a more responsive and appropriate development plan.

### Resource Efficiency

A contribution of the green development movement, resource efficiency is a simple moniker with a diversity of implementation strategies. It starts at the macro scale of transportation, reducing vehicular dependence; down to a micro level of energy efficiency for habitable spaces; and finally analysis and recognition of the embedded energy in materials used in construction. Other issues include water, wastewater, and stormwater management and their impacts on both energy consumption and their being perceived as a resource rather than a nuisance. Finally, recycling and waste stream management programs all affect resource use.

### Streets as the Public Realm

What had been banished to the infrastructure column in land development pro formas has reemerged as the cornerstone of the public realm. Attentive and detailed understanding of the complex interplay of width and scale, pedestrian character, texture, light and shadow, architectural and landscape edge conditions has allowed us to convert asphalt to agora, a higher plane of public connection and place making.

### Infrastructure as an Asset

With the element of streets removed from the infrastructure category, attention can be focused on the capital-intensive and entitlement-critical issues of stormwater and wastewater management. Once considered a nuisance to be piped away as quickly as possible, enlightened thinking has now recognized that these two can be a significant resource. Increasing science and sustainable thinking on both subjects have produced solutions that are scientifically possible, biologically beneficial, and aesthetically appealing. In arid climates, the simple act of effluent reuse on landscape reduces potable water consumption and provides reduced piping requirements for disposal, while also recharging the aquifer. The role of stormwater retention, detention, and first flush treatment has generated the opportunity for both new landscape and habitat environments while also reducing infrastructure costs.

### Places, not Projects

Place making, however difficult to define, is another ingredient without which there can be no smart growth. Program mix and synergy; material color, light, and transparency; the role of landscape and pedestrian space; and the type and spatial organization of furnishings, signage, art, and soft programming are all being carefully woven into environments that make places out of projects.

## **Fine-Grain Mixed Use**

While many new developments of the 1970s and 1980s sought to create the vitality and energy evocative of small villages and towns, their application and execution reflected a naiveté about market dynamics and a lack of sophistication in physical design. The “build it and they will come” approach to village centers created programmatically correct, but locationally deficient, struggling retail centers. But the concept of re-creating the small town main street was given a considerable boost with the advent of Celebration. While the economic merits and challenges to realizing equilibrium can be debated, a visit to Celebration today would suggest it is hard to deny the vital, exciting vibrancy that the Town Center affords the community. Less ambitious but equally important examples at Haile Plantation, Florida, and even Hidden Springs, Idaho, show that both place making and mixing diverse uses are critical to differentiating a community, while making it sustainable. Much more than a utilitarian place for selling goods and services, they provide a focal point, marketing icon, and communal venue for residents and visitors alike.

## **Connecting People and Culture**

One of the most compelling ideas to emerge from recent land development success stories is that premium buyers will pay to be part of something real or authentic. A site, properly selected and analyzed, will yield a wealth of information that affords not only land use and spatial organizing cues, but also the essence of the community or its roots. A carefully developed understanding of both the site and the region’s history (genuinely incorporated into the development program—not as an add-on or trite marketing ploy) will form the soul of a community that connects buyers with shared values. After capturing and sharing a community’s essence, individuals should be included in its evolution. This is accomplished not through a set of dogmatic and aesthetically driven codes, but through a shared set of goals and values that allow new residents and guests to develop authorship of their community, taking it to an even higher level of connection to each other, the community, and the region at large.

## **Good Design at the Project Level**

### **Rooting Development to the Land**

Land is often thought of as simply the ground upon which uses are developed. But each site combines physical, biological, and cultural characteristics that impart a quality and identity unlike any other. Early and thorough inventory and analysis help to shape community form.

### **Internal Open-Space Systems**

High-quality planned communities share the common theme of a significant, interconnected open-space system derived from understanding the site’s special character. This system should follow the clear hierarchy set forth by the National Recreation and Park Association. This starts at the block level with tot lots and moves up in scale and service area through neighborhood parks (one-half acre to one acre), village- or community-level parks (two to ten acres), to regional-level parks that may be in excess of several hundred acres. The key is a variety of open-space options, passive and active, located at various walking distances from development, and interconnected through a combination of open-space corridors, enhanced street linkages (parkways), and detached pedestrian and multi-purpose paths. This concept also speaks to marketing: in annual buyer surveys, the National Association of Realtors has found that the amenity homebuyers most want is walking trails and paths.

### **Enabling Transportation Alternatives**

Giving residents multiple routes to get from one place to another is a critical concept for building community, increasing the value of planned communities, and creating sustainable development. Alternative transportation in the context of planned communities most often means walking or cycling. While transit-ready development and paratransit are program elements that should be considered and planned for, the concept of walkability is a basic, easily developed precept for any high-quality planned community.

### **Walkability as a Design Tool**

Most people are comfortable walking one-quarter mile to a given destination, and depending on the circumstances will walk up to one mile. Walkable communities need both interconnected and pedestrian-friendly street and path systems, and well-arranged land uses to ensure that recreation, convenience goods and services, and a

**TABLE 2: ROLES AND INFLUENCE IN PLANNED COMMUNITY DEVELOPMENT**

Element	Policy Makers/Reviewers	Developers	Citizens
<b>Open Space</b>	Create regional priorities and establish standards based on scientific data.	Shape plans to support regional systems. Fund through real estate transfer tax, percent of sales price, or long-term endowments.	Embrace competing imperatives of growth and conservation and define areas of critical sensitivity.
<b>Transportation</b>	Establish funding and long-range plans for transit.	Accommodate future transit with “transit-ready” corridor planning. Ensure density support for future transit concepts.	Be realistic about cost and timing of transit systems. Be willing to fund long term through tax programs that support regional transit.
<b>Affordable Housing</b>	Establish realistic targets, based on econometrics of region. Reduce or remove development and impact fees that increase cost of housing for affordable components. Enact zoning changes and codes to accommodate nonaggregated forms of affordable housing.	Don't just rely on impact fee or fee-in-lieu solution. Look for innovative solutions including housing above retail, offering granny flats, and mixed lot size products.	Recognize the importance of diversity in communities and avoid NIMBY reactions. Support higher density products and mixed-use developments.
<b>Jobs/Housing Balance</b>	Look at location and opportunities for job creation on a contextual basis. Be realistic about number of jobs and retail that can be supported by corresponding number of rooftops.	Broaden planning context to look at regional influences. If your project has limited employment potential, how can you support nearby employment centers—i.e., financial marketing support, rubber tire transit program, joint marketing approach.	Remember that “a rising tide lifts all boats.” Think about best places for employment to be created and support clusters of employment in key areas that will allow transit and amenities to work.

choice of housing products all fall within a short walking distance. Ideally, more destination-oriented uses such as employment centers, village retail, and civic uses can be located within a one-mile radius. Walkability is further enhanced by the open-space network’s multipurpose paths, but a more important community identity ele-

ment is pedestrian connections made through the street network. The revival of a streetscape of detached sidewalks, narrower driving lanes, alley-loaded garages, and on-street parking all add to a walking experience that is pleasant to the eye, safer for pedestrians, and helpful in building a real community.

## Developing for Diversity and Market Flexibility

As early as the initiation of the Federal Title VII program in 1970, mixed use has been advocated as the cornerstone of high-quality planned communities. As “balanced development,” it was defined as “a complex objective that incorporates two principal subgoals: 1. Efficiency in land use and the consumption of natural resources, including energy; and 2. A physical living environment that meets human needs and minimizes adverse environmental impacts.” Successful planned communities of the past 20 years offer a long roster of residential and nonresidential uses, often highly integrated within neighborhoods of ten acres or less. This “fine-grain” unit of land use is inherently more walkable and richer in human terms than the traditional suburban superblock of homogeneous housing or commercial products. Another benefit is the flexibility to fine-tune product mix in response to market cycles or buyer preferences.

# Planned Communities: Beyond Basics

## Sustainability

Sustainability as a concept for development touches many aspects of the development process. Based on ideas first formally defined in 1987, sustainability is “meeting today’s needs without compromising the ability of future generations to meet *their* needs.” But a sustainable planned community can be elusive.

Sustainability requires balancing ecological, economic, and social equity needs. Great progress has been made in addressing at some level the ecological aspect of sustainability, starting with site understanding and proactive conservation. Newer planned communities take this concept further by exploring resource efficiencies—reducing energy consumption (through walkability, transit, building design), decreasing water use (through using indigenous landscape, reclaimed effluent), and controlling types of materials used in construction (high levels of recycled content, low embodied energy).

Meeting economic criteria can be more challenging; this requires looking holistically at the proposed development, in a manner not easily quantified in a typical pro forma. Life-cycle analysis and life-cycle costing are two concepts critical in sustainable “green building.” They examine not

only the first cost of certain features, but also the cost over their life span, including maintenance and ability to be adapted to later uses. Readily applied to corporate or civic structures where long-term owners care about long-term cost, such analysis may be of little interest to residential developers concerned with price-sensitive products designed to sell quickly. Planned communities that have introduced life-cycle costing and energy-efficient components, however, are able to charge a premium of 20 percent or more over neighboring developments, by showing buyers the value of better-built homes that cost less to operate and maintain over time.

The social equity component of sustainable planning is often considered both intangible and esoteric. Still, planned communities that provide more accessible transit, more diverse and cost-effective housing, more community-based social involvement, and more positive interactions among a diverse population of residents are increasingly seen as having their own market edge among younger, better-educated buyers.

## Community Interaction

During a recent symposium on sustainable development, John Knott, CEO of Dewees Island, remarked, “Like it or not, for better or for worse, by being in the community development business we are all social engineers.”

As many in the business realize, the craft of building planned communities is more than roads and houses. Over the past decade, a mantra has emerged: “creating community beyond the real estate.” What this implies is that finding ways for people to interact with their setting and with each other can be as critical for success as physical layout, financing, or construction.

A sense of community, then, is another intangible that has spurred widespread consumer interest. Soft programming—the development and management of operating programs encouraging people to participate in their community—is both a sales tool and a way to enhance project value. Local intranets offer another kind of belonging, but physical destinations remain the most important. Trails, tot lots, neighborhood parks, and corner cafés all create venues where chance meetings can occur, encouraging neighbors to connect with one another and with their community.

**TABLE 3: CRITICAL ELEMENTS: APPLICATIONS AT VARYING COMMUNITY SCALES**

Element	500–1,000 Acres	1,000–5,000 Acres	5,000+ Acres
<b>Open Space</b>	Neighborhood parks and central community green.	Extensive community system that may reach 50 percent of total acreage. Large conservancy areas along with large active recreational components.	Extensive range of program options and types of open space, consistent with national standards. Provide variety using per-capita ratios, within standard proximities to households. Anchor regional system of recreation and conservation programs.
<b>Program</b>	Range of residential products with limited neighborhood-serving retail. Employment centers driven by contextual influences and density.	Range of residential offerings, employment center, and retail potential up to regional center.	Range of residential offerings, significant employment center and retail ranging from neighborhood centers to major town center in excess of 1 million square feet.
<b>Transportation Systems</b>	Interconnected street system with sidewalks. Bike paths and walking trails system. Limited opportunity for on-demand rubber tire vehicle transit support, unless close to large regional network.	Interconnected street system with sidewalks. Extensive bike paths and walking trails system, providing a variety of experiences and types of path systems. Transit-ready planning should be initiated with rubber tire vehicle program run by homeowners association or transit authority.	Interconnected street system with sidewalks. Extensive bike paths and walking trails system, providing a variety of experiences and types of path systems. Should be connected or anchor major regional system. Transit-ready planning initiated with rubber tire vehicle program moving to regional system in future.

**Places, Landmarks, and Identity**

Place making, or creating a sense of place, is a planning abstraction that has become widely accepted in the broader circles of development and by the buying public. It requires fostering identity and connectivity for a community, so that in the end people take pride in where they live.

Place making happens through heroic gestures of building town centers, as well as the mundane details of street signs and sidewalks. It is the result of detailed and experienced attention to the form and look of local buildings, landscape design that anchors a project in its local and regional environmental setting, and symbolic placement and design of community for schools, churches, squares, retail centers, and corner stores.

## Outreach and Communication

As significant land users, planned communities have a role in educating the public about what they are doing well and why it is important for the broader region. Especially in communities that emphasize sustainability, marketing materials and centers are often more about education than selling. Advertisements, community literature, and the design of the centers themselves involve potential buyers and tour groups in concepts of community, sustainability, and living lightly on the land.

Combining marketing and education can lead to permanent education facilities that form a focus for the community and an asset for the region. Interpretive centers at several recent planned communities give residents a sense of pride and connection to the land, plus valuable outreach, research, and education serving local schoolchildren, environmental groups, and interested citizens.

### Community Outreach as an Amenity

One of the hallmarks of today's leading environmentally responsible planned communities is their commitment to environmental education. In communities such as Dewees Island and Spring Island, both in South Carolina, naturalist centers form a significant component of the community's focus. While both communities have a fairly small number of units (Dewees with 150 and Spring Island with 350), each used a combination of real estate transfer taxes and initial percentage of sales to endow and continue to fund full-time naturalists and programs for habitat restoration, resident education, research, and—most important—community outreach. Dewees, accessible only by ferry, regularly shuttles schoolchildren out from inner-city Charleston, so that they begin at an early age to value and appreciate the uniqueness of the low-country ecosystem. Resident children are encouraged to research and document local flora and fauna for the center, and for their work are rewarded with something called “bio-bucks,” which are beyond the benefits they gain from creating a living piece of information for the community's residents.

## Planned Communities: Obstacles

### A Short Track Record

What kind of impact do planned communities currently have as an antidote to sprawl? Some 973,000 single-family homes were completed in 2002, a number expected to remain constant for the next two decades, according to *The Housing Boom: Another Twenty Years of Growth*, published in March 2003 by the National Association of Home Builders. A valuable piece of information would be to know how many of these homes were built in planned communities. However, while there are a number of firms that have built successful businesses analyzing and forecasting planned community demand, there is no central database of how many communities exist in the United States, or how many homes they deliver to the market on an annual basis.

Two pieces of information do provide some anecdotal information relative to this issue. Robert Charles Lesser & Co. (RCLCo) creates an annual survey from an initial screen of approximately 50 large planned communities, to determine which communities are selling the most units on an annual basis. Published in April 2003, the 2002 survey showed the top-selling 20 planned communities sold 24,542. Another source of information is Newland Communities, which through its acquisition of Terrabrook Communities in fall 2003, is now the largest developer of planned communities, with a portfolio of 60-plus communities in 11 states. Three of Newland's communities made RCLCo's annual survey of top-selling communities. Newland's remaining 57-plus communities delivered just under 8,000 units according to Kathleen Farley, Newland's director of marketing and communications. This combination of the top-selling 20 planned communities, and the top developer of planned communities delivered 32,542 units in 2002, or less than 3.5 percent of the total residential units built in the United States that year.

If optimistic projections anticipate urban infill and suburban regeneration will accommodate 30 percent of all required new homes in the coming decades, then at least 800,000 units a year need to be developed in greenfield locations. If less than 5 percent are currently being developed in planned communities, what are the factors limiting their more broad-based use in developing greenfields without sprawl?

## **Public Perceptions**

Beyond distrusting greenfield development per se, some localities oppose a perceived elitist quality in planned communities, especially master-planned communities. This is especially clear with recreation developments or active adult communities, which by nature market to specific demographic or economic strata.

In February 2003, a conference titled “Preserving the American Dream of Mobility and Homeownership” took direct aim at smart growth and densification, urban growth boundaries, and other “intrusive planning policies” associated with planned greenfield development. One featured speaker asserted that if people want to live in sprawl, they should be able to do so. Undoubtedly, some such opposition faces any national agenda for planned community development.

## **Uncertainty and Risk**

### **Entitlement and Approvals**

As the entitlement process becomes more challenging and new rules and guidelines are imposed, any developer embarking on a planned community program confronts significant uncertainty and financial risk. Political uncertainties represent a high risk for any kind of development, consuming dollars with no guarantee of a reasonable return. A developer may be forced to compromise on quality because of the time and money consumed in the entitlement process, building faster and cheaper simply to meet cash flow and financing needs. Conversely, out-of-date codes and unenlightened public officials often force developers to give up on innovating and instead build what they are allowed “as of right,” resulting in run-of-the-mill development that is all that the codes will permit.

## **Capital Markets**

As the process of developing planned communities has become more widely researched and documented, so has the record of financial failures and successes. Of 13 new towns that received loans or guarantees through the Federal Title VII program, only one—the Woodlands outside Houston, Texas—managed to survive financially intact. Underwriting of new development has become more stringent, investment time frames have shortened, and required rates of return have increased. These factors have combined to shorten the cycle of a typical project to three to five years—greatly reducing the scale of projects that may be financed, and discouraging progressive products and concepts.

### **Visionary Developers: A Dying Breed**

Some of today’s most influential planned communities emerged during the 1970s and 1980s from the real estate departments of large resource companies such as Mobil and Gulf Oil. Others reflect the leadership of visionary builders such as James Rouse and Charles Fraser. Today’s developers, however, may well decline to follow in their footsteps. Most resource companies have left the planned community business because the risk was not commensurate with the rewards. National merchant builders have moved in, not with visions of a great place to live, but to have more lot inventory on which to build homes. With no experience or interest in mixing uses, they continue to build one-dimensional bedroom communities. The challenges of entitlement, patient capital, and fluctuating markets have further reduced the field of developers willing to spend a decade creating an innovative planned community.

## Conclusion

Continued growth and the resulting demand for new residences, retail shops, and places to work are inevitable. Dialogue of the past 20 years has focused on the real and perceived problems associated with growth, yet only now are we beginning to converse constructively about how to shape new development effectively. Urban infill is an important part of the shaping process, but we must also recognize that even our best efforts at redirecting growth will still result in a majority of new development being located in greenfield settings. Consequently, we can waste time debating the problems attributed to greenfield development, or we can focus energy on making sure that greenfield development is done right.

Identifying and agreeing on appropriate areas for development cannot be done through reactive, incremental actions or short-sighted legislation and planning. Visions for the future of our exurban areas must be created by giving stakeholders an appreciation of the significant challenges that need to be addressed, as well as a say in how they are resolved. Policy makers and political leaders must have the will and long-term outlook to make decisions that will benefit their constituents over generations, not just election terms. Real estate developers must be willing to participate proactively in helping define appropriate areas for development, while concurrently supporting conservation and green infrastructure efforts on resource lands.

When there is agreement on where development should take place, high-quality design and construction must be delivered. This means connected, diverse, visually and socially appealing development that is carefully conceived and well executed. Planned communities provide a very good vehicle for achieving all these objectives and more. Planned communities have greater potential to conserve large tracts of open space that are biologically significant. They can help construct financial mechanisms to support a variety of housing types and price points. And they can mix uses over their development life, bringing vitality, walkability, and a sense of community.

Realizing the potential of planned communities as a development tool for accommodating growth is easier said than done, however. A combination of negative public sentiment, inconsistent application of ideas and execution of designs, and the funding duration offered by the capital markets often precludes the ability to create long-term visionary plans that are allowed to develop and evolve over time the way cherished urban centers have.

To effectively realize the potential of planned communities, we need a more informed private and public audience. This can be achieved starting with distribution of this publication, and continuing through the formation of broader alliances of organizations that champion real estate, conservation, and homebuilding issues to agree on the process and content of better greenfield development. Developers need to become better informed on best practices in community development and be more honest in their marketing and expression of terms. Currently, the U.S. Green Building Council is working with a multidisciplinary task force of experts, including ULI, to create rating criteria for community design, similar to the very successful LEED rating program developed for commercial buildings.

With a projected growth of 60 million people over the next 25 years, no growth and slow growth are not realistic options. Smart growth is an idea that captures the imagination, but lacks definitive implementation tools. Planned communities are a proven tool that is already playing a significant role in balancing the challenges of preventing sprawl, while creating high-quality living environments in greenfield areas. If we are to avoid the development patterns of the past and still respond to inevitable market demand for new housing, understanding the value and role of planned communities is absolutely critical.