Section 2: Supporting Sustainable Approaches to Building Infrastructure

2.1: Background
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Traditional Development Model

Historically, growth in building infrastructure has indicated prosperity and economic health. How and where residential, industrial and commercial development occurs is largely determined by two main factors: population growth and economic conditions. Population growth drives the demand for infrastructure and land consumption, while higher income levels increase the amount of land consumed per person (Ingram and Hong, 2009). In addition, tax subsidies and loan guarantees affect where new development goes and the type of developments created (Smart Growth America, n.d.).

As the demand for development increases, developers seek to build their projects so as to gain access to particular demographics (e.g., people, income levels) and infrastructure/utilities (e.g., roads, water, sewer and electric). The specific factors considered by developers, and their general importance to the project, will depend on the development goals of each project.

For example, an urban/suburban market featuring growing population and increases in household size where demand exceeds supply will drive residential development. Developers of second homes will focus on lands within a four-hour radius of major population centers, in close proximity to amenities such as recreational opportunities and lakefront property (J. Kilberg, personal communication, February 18, 2011).

In the case of commercial development, new infrastructure is driven to places that guarantee a demand for a particular product, which is often measured by retail sales (Bodamer, 2010). Both developers and retailers look to establish in areas where success is guaranteed (ibid).

Trends in U.S. industrial development have shifted in many areas from a focus on manufacturing to distribution. As manufacturing is being relocated to cheaper international locations, large distribution centers are necessary to hold mass quantities of product (Newberg, 2010). Declines in global trade have also created the need to downsize from multiple
centers to one large center. In both cases, it is necessary for industrial development to be located near transit – rail stations, highways – to ensure efficient distribution of the product (Bodamer, 2010; Newberg, 2010).

Why is “Development” a Concern?

Development continues to consume land beyond sustainable levels. The U.S. Forest Service reports that 6,000 acres of open space – forests, grasslands, farms, ranches, wetlands, riparian areas and urban greenspace – are lost to development per day. Historically, the growth of development in the U.S. was enhanced by the expansion of the interstate highway system and federal support for home mortgages (Kelly, 2010). Due to a lack of comprehensive planning in many parts of the U.S., ad hoc development resulted in low-density isolated housing, increased automobile use (and subsequent air pollution), and a loss of open space. The formula for sprawl is perpetuated when population size, household income, and buildable land increase, while transportation costs decrease, leading to the loss of agricultural buffers on the urban landscape (Shlomo et al., 2011).

Land is by nature a scarce resource, as indeed are the resources and services (e.g., water quality, flood control) that natural areas provide. As such, future development should focus on using already developed land more efficiently, while limiting the use of undeveloped land. With census reports estimating a 42% increase in the United State's population from 2010 to 2050, demand for new housing and infrastructure is only expected to increase as well (U.S. Census Bureau, 2011). Given such statistics, it is imperative to find ways to “grow” without degrading our natural resources.

Development will inevitably continue, but a holistic approach to land use planning in the U.S. is both desirable and possible. Given the increasing demand for sustainable development by consumers and the diminishing amounts of open space nationwide, the nature of future development should be based on a more natural methodology with the goal of producing fewer pollutants and reducing land, water and energy consumption. Taking a “triple bottom line” approach to development will help ensure social, economic and environmental factors are addressed, while accounting for the full cost of doing business.

New Trends in Building Infrastructure

The recent economic downturn has encouraged a new consumer trend towards valuing low cost, and high resource efficiency infrastructure. An Emerging Trends in Real Estate Study (2011) reports that the “Age of Excess” is changing to an “Era of Less” as infill developments become popular with younger generations preferring to live in urban areas and the baby boomers preferring to live in convenient, localized housing (ULI and PWC, 2010). Preference is also being given to dwellings with smaller square footage and lot size in home design (AIA, 2010). Less fringe development is expected to occur in both residential and commercial markets since these areas of development are typically more expensive than centrally located projects (e.g., higher transportation costs, commuting time, maintenance of larger homes) (ULI and PWC, 2010). In fact, the Center for Transit Oriented Development (n.d.) reports that 15.2 million people will want to live near transit by 2030 – which would require building 2,000 units near transit stations.
Following this notion, the New Urbanism movement is calling for a reversion to historical city model development, supporting walkability, accessibility and mixed-use development. For example, Denver’s Highlands Village features infill, high-density development with pedestrian accessibility and proximity to mass transit. The development, placed in an area vacated by a popular amusement park, preserves a cultural relic and offers residents an opportunity to live in a beloved part of the community (Onaron, 2011). Communities using designs that reduce transportation costs and energy use while providing a community lifestyle with health benefits are gaining popularity. As a result, similar developments are sprouting throughout the United States.

Traditional Conflicts with Conservation Organizations

Conservation organizations have a long history of opposition to development. Efforts to derail opposition come in many forms from testifying against proposed developments to advocating for ballot measures precluding certain kinds of development from occurring. For example, environmentalists and residents from the Mill Basin Community in Brooklyn, New York are currently objecting to a shopping center development within their neighborhood. Both parties testified in opposition to the development, which will build several stores, including a Walmart, on top of protected marshland (Tracy, 2011). In another case, residents and environmentalists from Maryland’s Charles County decried the proposed development of a large housing project that would overburden current infrastructure by increasing traffic congestion and degrading local, fragile watersheds with increased run-off (Warner, 2011).

In both instances, a lack of effort to communicate goals and concerns among stakeholders prevents productive conversations and precludes effective solutions. In rare cases, activists without affiliations to environmental organizations have taken extreme measures to prevent or destroy development. Such actions often do not effectively conserve land and only polarize the development community from conservation efforts.

Opportunities to Move Forward

Historically, the goal of land trusts has been to conserve land and protect it from development, however, the goals and functions of conservation organizations are shifting to a new paradigm in land conservation. While efforts to preserve the integrity of the land continue, new innovative ways of working to enrich the lives of the local community through the protection of working farmlands, implementation of affordable housing, and support of enterprise-related growth are being considered and implemented.

Conservation organizations have an excellent potential to help shape the future of development, including influencing where it should and shouldn’t go. Although many conservation organizations may have reservations about supporting development, new approaches should be embraced if they promote widely accepted social and economic goals, while avoiding or minimizing environmental impacts. Conservation organizations have the capacity to engage stakeholders in the decision-making process, inform developers and communities about best green practices and identify innovative solutions that will help make smart growth and sustainable development more efficient and affordable.
To foster future relationships, land conservation organizations need to convince developers that not all organizations are anti-development and that productive relationships are possible. In the same way, developers need to show conservation organizations that they are willing to propose and support more sustainable projects. Proactive efforts to collaborate on helping development go where it “should” can actually help each constituency achieve its goals.

**Supporting “Good” Development in Washington, D.C.**

The Washington Smart Growth Alliance promotes regional collaboration in the Washington, D.C. metropolitan area. The Alliance was started when area leaders, homebuilders, board of trade members and developers came together and asked, “Where should we be building?” Today, the coalition consists of seven organizations with representatives from private business, environmental, building and civic interests. The group fosters sustainable growth by informing regulators, public officials and local citizens about development proposals exhibiting smart growth characteristics. Through the Smart and Sustainable Growth Recognition program, the Alliance vets submitted development proposals on criteria including walkability, accessibility to transportation, affordable housing and the use of green building principles. Proposals achieving these standards are supported in press releases and business journals. Alliance members also testify in support of the development for planning board hearings. The support from the diverse coalition lends legitimacy to the projects while ensuring future development features smartgrowth principles.

For more information see: www.sgalliance.org.

Conservation groups should also endorse sustainably sound developments with economic and social goals that avoid negatively impacting the ecosystem or incorporate mitigation measures to reduce their impacts. In turn, developers should be welcome to endorse conservation projects, such as efforts to preserve open space as part of a regional plan.

“Greenprinting” is one tool that helps stakeholders map out the areas where development should occur. Participants in Greenprinting exercises identify a landscape’s grey and green infrastructure needs along with other important landscape features. Grey infrastructure represents man-made public infrastructure services, such as roads, conventional water systems and power lines. Green infrastructure represents strategically planned and managed lands that, as interconnected networks, conserve ecosystem values, which may benefit humans (Benedict and McMahon, 2006). Examples of green infrastructure include wetlands protected near an urban center to absorb stormwater flows and decrease urban flood risks. By bringing together stakeholders, a greenprinting process may help a community to identify the best ways to use their region’s natural resources before plans to develop the land even begin. The process moves beyond a parcel-by-parcel planning approach and focuses on large-scale landscape conservation to ensure the long-term survival of endangered species, habitat and natural resources used by humans.
Because the development community is interested in predictability and certainty, the creation and implementation of a comprehensive land-use plan helps ensure that these needs of the development community are being recognized. Conservation organizations can help communities develop comprehensive plans that prioritize land for development or protection before specific development projects are initiated. Such plans can help to reduce opposition by both developers and environmental groups because both parties will have contributed to the development and articulation of the community’s conservation goals and needs.

**10 Principles of Green Infrastructure**

1. Connectivity is key.
2. Context matters.
3. Green infrastructure should be grounded in sound science and land-use planning theory and practice.
4. Green infrastructure can and should function as the framework for conservation and development.
5. Green infrastructure should be planned and protected before development.
6. Green infrastructure is a critical public investment that should be funded up front.
7. Green infrastructure affords benefits to nature and people.
8. Green infrastructure respects the needs and desires of landowners and other stakeholders.
9. Green infrastructure requires making connections to activities within and beyond the community.

*Source: Benedict and McMahon 2006*

As a result of anticipated population growth, the Open Space Institute took proactive measures to map out places for development and lands in need of protection in the Catskills. The study found that between 20,000-40,000 acres are likely to be developed as a result of anticipated population growth. Within the current landscape, the report identified 520,000 acres of private land that could be developed without negatively impacting the region’s ecosystems. While the report did not advocate for developing every “developable” piece of land or specify how development should occur, it did lay the groundwork for further discussion. In addition, the mapping effort identified sensitive pieces of land that should not be developed. While responses to this report were mixed, some developers welcomed the opportunity to come to the table and discuss the community’s concerns and priorities in a thoughtful manner (Bosch, 2011).
Quantifying the value of conserved land also helps to address economic concerns related to land protection. By identifying the economic benefits of sustainable land-use, conservation practitioners promote sound land management. For example, the Minnesota Environmental Partnership, a coalition of more than 80 conservation groups in the state, commissioned a study to identify the return on investment of protecting open space. Results from the study found that for each $1 spent on protecting land, the state had a $1.70-$4.40 return (Myers, 2011). Such research shows that conserving the land is beneficial for providing services such as clean water and recreational opportunities but also proves to be a good investment that makes economic sense.

Discussion Questions

• In what ways might land conservation organizations be most helpful to developers pursuing projects that are consistent with broader conservation goals?

• What venues and mechanisms are available to foster relationships between developers and conservation practitioners?

• How can preservation and conservation goals best be integrated with development planning?

• How might the impacts of industrial, commercial or residential development best be avoided, minimized or mitigated?

• What messages are likely to resonate across different communities in support of a greater move toward smartgrowth strategies?

Organizations Doing Interesting Work


Congress for the New Urbanism promotes livable cities offering a sustainable, healthy living environment. See www.cnu.org/.

The Conservation Fund works with diverse stakeholders to conserve land by employing strategies that offer ecological and economic benefits. See www.conservationfund.org.

The Conservation Fund’s Green Infrastructure Leadership Program offers strategies and tools to help representatives from conservation organizations, business and government identify and implement green infrastructure. See www.greeninfrastructure.net.

DMB Associates is an Arizona-based real estate company that supports responsible and sustainable development fostering environmental stewardship in its real estate holdings. Projects range from resorts to commercial properties to primary residential communities. See www.dmbinc.com/sustainability.

GrowSmart Maine engages citizens to plan for the future by organizing stakeholders to explore, advocate and implement measures that will increase sustainability within the community. See www.growsmartmaine.org/programs/brookingsplan.asp.
Lincoln Institute of Land Policy brings together stakeholders from various sectors to discuss use, regulation and policies involving land. It furthers public debate and education by offering trainings, conferences, lectures, and workshops supporting relevant research and training opportunities. See www.lincolninst.edu.

Santa Lucia Preserve works with the Santa Lucia Conservancy to protect 90% of the land in permanent conservation while providing homes and services to its residents. See www.santaluciapreserve.com.

Sonoran Institute is a non-profit organization working to protect and restore land in the American West by supporting public polices involving community-based decision-making. See www.sonoraninstitute.org.

Tejon Mountain Village located in California, the mountain view resort is home to residential and commercial properties. Based on the core values of environmental sustainability and stewardship, the development fulfills the community’s social and economic goals while preserving 80% of the landscape. See www.tejonmountainvillage.com.

The Trust for Public Land offers greenprinting services to help communities map out conservation priorities. See www.tpl.org/what-we-do/services/conservation-vision/greenprinting.html.

Urban Land Institute (ULI) is a non-profit research and membership organization. ULI offers a venue for public agencies and private enterprise to share dialogue about land use practices. See www.uli.org/.

Useful Readings/ Works Cited


2.2: Examples, sources of information and other key points from the discussion

Some of the examples, sources of information and key points from the discussion included the following:

• The Urban Land Institute can be an effective partner for conservation organizations looking to engage on “good” projects in the built environment – both through their work on developing principles for smart growth as well as their network of councils on different topics and offices around the country. See: http://www.uli.org/.

• A proactive, collaborative approach between developers and conservation organizations looking to build “good” projects might usefully include:

  – Clear definitions of goals and accountability for achieving them at the very beginning of the process;
  – Use of scientifically rigorous information to inform siting and design efforts;
  – Support for incentives for environmentally friendly land uses;
  – Flexible, individual solutions tied to place and time;
  – Thinking about opportunities for mitigation on a regional scale; and
  – Public support by conservation organizations for development that meets their quality criteria.

Moosehead Lake Plan

Plum Creek, The Nature Conservancy (TNC) and many other organizations have been involved in an effort to conserve 95%, while developing 5%, of the land owned by Plum Creek in Northern Maine. In September of 2009, after four years of deliberation and plan revisions, the Land Use Regulation Commission (LURC) of Maine approved Plum Creek’s final concept plan for the Moosehead Lakes Region, resulting in the “lasting conservation of some 400,000 acres of pristine forestland in the North Woods,” as Michael Tetreault, Maine TNC Executive Director, described in a press release at the time. “Envision a two-million-acre ‘corridor of conservation’ across the North Woods, as these new protected areas connect with places already in conservation. Consider dozens of remote ponds removed from the threat of development, all within a landscape with working forests, guaranteed ecological protections, and public access.”

This unprecedented protection of hundreds of thousands of acres was partially the result of TNC’s decision to allow some development to occur. Quoting Mike Tetreault, “For allowing 203 additional homes and one additional resort – all developed under strict guidelines so as not to pose undue adverse impact to the region or its resources — the people of Maine have secured more than 400,000 acres of conservation.”

For more information see: http://www.nature.org/ourinitiatives/regions/northamerica/unitedstates/mainexplore/a-letter-from-the-state-director-celebrating-conservation-in-maines-north-.xml.
• Broader land use planning efforts can help direct “good” development by considering and articulating where, when, how and how much development should occur before the battles over permitting individual projects are joined.

**Visioning Process in Alachua County, Florida**

In June of 2011 Plum Creek, the nation’s largest private landowner, began a two-year community planning and creative visioning process, “Envision Alachua,” to discuss future economic, environmental and community opportunities in Alachua County, Florida on lands owned by Plum Creek. The visioning process will feature a series of facilitated public meetings and workshops lead by a “Task Force” representing business, economic development, local government, education, environmental, conservation and resident interests in Alachua County.

With ownership of 65,000 acres, Plum Creek is the largest private landowner in Alachua County. The “Envision Alachua” visioning process will explore potential opportunities for Plum Creek lands that are suitable for uses other than timber – uses that could achieve long-range economic, environmental and community goals. This process will result in the creation of a visioning document that will describe goals and guiding principles for potential future economic development and conservation of company lands.

For more information see: http://www.envisionalachua.com/Content/10006/process.html.

• At the same time, creativity between developers and conservation groups in the design of individual projects on particular sites is mostly driven by permitting necessities and regulatory disputes.

> “Regulation provides a foundation for negotiations toward ‘good’ projects.”
> 
> — Armando Carbonell, Lincoln Institute

• The Lincoln Institute has recently produced a documentary on the battles over Portland, OR’s effort to put urban growth boundaries and other land use controls in place. See: http://www.lincolinst.edu/subcenters/making-sense-of-place/portland/.

• One of the lessons learned from the Portland growth boundary was that if the differential between developable (high price) and farm (low price) lands becomes too great, the political pressure to restore a balance in values is likely to become overwhelming.

> “Economic prosperity drives both development and conservation.”
> 
> — Jim Kilberg, Plum Creek
· New rooftops are not the same as new impacts. The focus of the conservation community should be on impacts – and on developing new metrics that go beyond the number of rooftops to understand better their broader impacts and how they might be avoided/minimized.

**Linking Rural and Urban Land Uses in Washington**

The state of Washington adopted innovative legislation in the 2011 legislature that links transfer of development rights and tax increment financing in an approach that will shift development from forests and farms into cities.

Through transfer of development rights, developers can increase the allowable density of their projects by buying development rights from farmers and foresters. Communities receiving the additional development can use the future gains in taxes from that development to finance infrastructure improvements. Resource landowners can realize the value of their lands without developing. Not only did the Cascade Land Conservancy actively design and support the development of this legislation, it is also looking to create a private investment vehicle to spur activity in urban areas by easing the transactional barriers and to serve as a leader in the emerging development right marketplace.

This legislation ties the idea of “good development” to the conservation of resource lands by giving cities new funding sources to improve infrastructure, services and quality of life while simultaneously protecting the region’s farms and forests. While transfer of development rights programs have been used in Washington for several years, this legislation will create incentives for these programs to be used on a regional level and to accomplish landscape-scale conservation.


· Private land conservation organizations are among the “community stewards” who can provide boots-on-the-ground support for good development.

“We need to make cities worthy of kids in order to stop sprawl from extending further into the woods.”

— Gene Duvernoy, Cascade Land Conservancy

Are there new roles for foundations and other philanthropies in supporting such efforts? For many environmental organizations, conflict has meant funding. Might some foundations build from the work on conservation in rural areas – largely driven by collaborations – to help increase the capacity for such efforts in the built environment? Note for example the

• The aesthetics of development are an incredibly important factor to consider. Many examples of “dense” development look terrible according to many of the participants. Joint ventures or other partnerships with developers to design and offer attractive buildings incorporating greenspaces may be one way to address these concerns. As one participant quoted Ed McMahon from the Urban Land Institute: “you need parks to attract people.”

• “Density” is a problem of public education. More work needs to be done (like that at the Lincoln Institute) to help people visualize density – as it is not a number but an attribute of development. See: http://www.lincolninst.edu/subcenters/visualizing-density/.

• The Sightline Institute (http://www.sightline.org/) is working to identify and change building codes and other regulatory requirements that stand in the way of implementing innovative, sustainable approaches to buildings. See: http://daily.sightline.org/projects/making-sustainability-legal-series/.