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Green urbanism: environmental discourse in new urbanism and smart growth

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Contemporary discussions about new urbanism and smart growth argue that the strategies contribute to environmental protection and sustainability. The paper follows the discourse about environmental concerns over two decades through close reading of foundational documents from the movements and of local plans from Maryland communities: a heartland of new urbanism and smart growth. Analysis illustrates a relatively weak commitment to environmental protection in the foundational documents, although approaches such as LEED-ND portend some recent shifts. Neighborhood plans in Maryland reveal selective local concerns, such as the loss of farmland and environmentally sensitive areas. Broader environmental problems such as adaptation for climate change rarely appear in the discourse at any level. The paper concludes that new urbanism and smart growth theory and practice take a utilitarian approach which promotes growth and environmental disruption while employing the rhetoric of sustainability.

New urbanism, smart growth, and the environmental agenda
       The green agenda has grown in significance in the planning community in recent years. As Berke (2008, p. 401) noted, 'now that big problems like climate change, loss of biodiversity, vulnerability of cities to natural disasters, and potential big solutions for creating green communities have emerged, the [sustainable development] debate has been revived'. In the wake of natural catastrophes and economic upheavals, notions of sustainability and resilience have gained currency in public discourse. Concerns about climate change, species extinction, depletion of fossil fuel reserves, and food shortages have brought environmental issues renewed attention. Planners increasingly recognize that plans and policies at all levels need to address the environment.
       In this paper we evaluate elements of the environmental agenda in new urbanism and smart growth theory and practice. These movements have become increasingly influential in North American planning in the last two decades. Their principles provide the foundation for contemporary planning's theory of community design (although conventional suburban development continues to adhere to an older paradigm). From the days of its precursors, new

urbanism highlighted concerns about conserving land and energy, and advocated taking a regional approach to managing development (Katz, 1994; Ewing, 1996; 1997; Calthorpe & Fulton, 2001). In recent decades new urbanism design strategies have become increasingly linked with smart growth policies that promote efficient use of land and resources (Gordon, 2003; White & Ellis, 2007). We are interested in understanding the environmental premises that inform new urbanism and smart growth theory and in examining how the ideas translate into local planning policies in Maryland, an area seen as part of the heartland of new urbanism and smart growth practice.

New urbanism has generated a substantial literature documenting its philosophies and practices (e.g., Calthorpe, 1993; Katz, 1994; Duany, Plater-Zyberk & Speck, 2000; Steuteville & Langdon, 2003; Grant, 2006). It has advocated compact, mixed-use, well-designed communities with connected street networks, transportation options, and open space systems. Proponents suggest that employing new urbanism principles and practices would result in economic, social, and environmental benefits. The rise of new urbanism in the US paralleled interest in sustainable development in Canada and Europe during the 1980s and 1990s. In popularizing the concept, the Brundtland Commission defined sustainable development as balancing economic, social, and environmental objectives in order to preserve options for future generations (WCED, 1987). While authors took a range of approaches to sustainable development (e.g., Van der Ryn & Calthorpe, 1986; Sorensen, Marcotullio & Grant, 2004), within planning sustainability often entailed a strong environmental imperative. For instance, the ecological footprint concept generated an important critique of conventional development practices that argued the need to cut consumption and reduce growth (Rees, 1995; Rees & Wackernagel, 1996). In many ways, however, the environmental stream of the sustainability movement threatened the social underpinnings of the 'growth machine', the coalition of development and political interests that shaped land use practices for decades (Molotch, 1976; Logan & Molotch, 1987). A more circumspect approach to sustainability, which focused on balancing competing interests, gained greater traction in the US and influenced metropolitan plans in some jurisdictions (Berke & Conroy, 2000; Conroy & Berke, 2004).

In the 1990s many Americans had reasons to oppose growth. Traffic congestion, air and water pollution, sprawling consumption of land and resources, and heavy tax burdens led some local governments to try to control or stop development. Planners suggested alternative strategies to manage and shape growth (Cervero, 1986; Downs, 1994). By the second half of the decade political leaders such as Governor Parris Glendening of Maryland had coined the phrase 'smart growth' to suggest that appropriate public policy could facilitate good growth (USEPA, 2008; Maryland, 2009). Instead of asking households to reduce consumption, smart growth would employ new urbanism principles of compact development and mixed-use form to conserve land and energy resources. Organizations such as the American Planning Association, the Urban Land Institute, the National Governors Association, and the Congress for the New Urbanism soon became fulsome advocates for smart growth. New urbanism became one of the design mechanisms for 'doing the right thing and making money at the same time' (Ewing, 1996, p. i) and for enabling 'sustainable growth' (Garde, 2004, p. 154).

To what extent have new urbanism and smart growth principles and practices contributed to embedding environmental concerns into plans, improving environmental outcomes, and promoting sustainability? Results are mixed. Ewing (1996) set out 12 principles for best environmental practices and illustrated their application in Florida projects. Gordon and Tamminga (2002) concluded that new urbanism plans in Markham, Ontario, successfully

preserved many ecologically sensitive features in urban fringe development. Evaluating design strategies for their ability to contribute to sustainability, Jabareen (2006, p. 47) suggested that neo-traditional development proved moderately effective in 'Greening—Ecological design' and in the 'low' range for 'Passive solar design'. White and Ellis (2007) argued that new urbanism included explicit design principles that promoted an environmental agenda. They pointed to work of the Congress for the New Urbanism with the US Green Building Council to develop green design standards for neighborhoods. They suggested that work on the 'transect,' a zoning system drawing on ecological principles (Duany & Talen, 2002), permitted designers to 'permanently preserve ecologically sensitive land as the 'green infrastructure' of regions' (White & Ellis, 2007, p. 129): their evaluation of selected projects showed that new urbanism can meet environmental objectives for reducing energy and water use. Berke, Macdonald, White, Holmes, Line, Oury, and Ryznar (2003) concluded that while new urbanism proved more successful at conserving hydrologically sensitive areas, the developments they studied contained more impervious surface than conventional suburbs.

Some assessments of new urbanism's environmental record proved less flattering. Audirac, Shermyen, and Smith's (1990) study of neo-traditional projects in Florida revealed a poor record of environmental protection of wetlands and other important habitats. They argued that 'regulating development to be more dense and compact delays confronting the real environmental impacts of rapid population growth and unplanned conversion of land to urban uses' (Audirac et al., 1990, p. 475). Building at high densities, as new urbanism advocates, can undermine landscape function (Grant, Manuel, & Joudrey, 1996). Frantz and Collins (1999) criticized Disney, the developers of Celebration, for draining wetlands, cutting trees, and building artificial lakes. Several studies (Beatley, 2000; Durack, 2001; Till, 2001; Zimmerman, 2001) suggested that new urbanism communities showed limited environmental sensitivity but used nature to support project marketing. Brown and Cropper (2001) noted that new urbanism often resulted in greenfield development of large houses at relatively low densities: not an environmentally sound product. Although Gordon and Vipond (2005) appreciated the higher densities found in new urbanism communities, they indicated that designers needed to pay greater attention to environmental restoration and biodiversity. Grant (2006) described new urbanism's understanding of ecological issues as shallow and criticized the transect approach as insufficiently sensitive to ecosystem dynamics.

With mixed results in the literature, further investigation of new urbanism's green agenda proves warranted. In this paper we examine how environmental discourse has been integrated into new urbanism and smart growth documents and into community planning practice. On the one hand, Godschalk (2004, p. 7) argued that the CNU's *Charter* 'is basically a design manifesto' that lacks genuine attention to environmental sustainability. On the other hand, White and Ellis (2007) believed that environmental sustainability has been gradually strengthening in new urbanism over the years. Beatley (2000) and Grant (2006) described new urbanism's commitment to sustainability as weak, but new urbanism supporters have adopted sustainability as a new term for principles they have consistently advocated (Steuteville, 2008).

To evaluate the extent to which the green agenda may be influencing planning policies we conducted field research in Gaithersburg and Rockville: two Maryland cities which subscribe to new urbanism and smart growth philosophies. The State of Maryland has a reputation as a leading site of new urbanism and smart growth practices. One of the earliest year-round new urbanism communities, the Kentlands, is in Gaithersburg. If environmental principles are influencing plans for new urbanist neighborhoods anywhere, we would expect to see a strong

effect in Maryland. Believing that discourse does matter (Feindt & Oels, 2005) in shaping urban processes and outcomes, we focus principally on the discourse framing the design and implementation of new communities. We seek to understand how plans, regulations, and policies actively embed the environmental priorities advocated in seminal new urbanism and smart growth documents.

        To develop a framework for evaluating environmental discourse we examined key new urbanism and smart growth documents influential within the movements. We then applied that framework to plans and policies produced to guide new urbanism projects in the study cities. In addition to evaluating the documents we interviewed planners, developers, and local decision makers working with the policies, and conducted site visits to the neighborhoods. Together the methods offer useful insights into how the environmental agenda has evolved and how cities identified as important sites for new urbanism and smart growth interpret and prioritize the environment.

A framework for analyzing discourse

        After reviewing a range of materials in the summer of 2008, we selected eight new urbanism and smart growth documents which best articulated the core principles and theory of the movements and were commonly cited as foundational (see Table 1). *The Ahwahnee Principles* written in 1991 by a group of architects including Peter Calthorpe, Andrés Duany, and Elizabeth Plater-Zyberk, established 23 principles, seven of which dealt with various environmental issues such as resource conservation and wildlife corridors (LGC, 1991). The *Charter of the New Urbanism* (CNU, 1996), the guiding document of the Congress for the New Urbanism, featured 27 principles, six of which mentioned environmental issues such as topography and energy conservation. In 2008, the CNU released a pilot version of *Canons of Sustainable Architecture and Urbanism*, which defined an explicit environmental agenda in response to global climate change (CNU, 2008).

Table 1: New urbanism and smart growth foundational documents assessed

Document	Date	Source
Ahwahnee Principles	1991	Local Government Commission (LGC, 1991)
Charter of the New Urbanism	1996	Congress for the New Urbanism (CNU, 1996)
Best Development Practices: A primer for smart growth	1998	Smart Growth Network (SGN), International City/County Management Association (ICMA), US Environmental Protection Agency (USEPA), American Planning Association, Urban Land Institute (Ewing, 1998)
Getting to Smart Growth: 100 policies for implementation	2002	SGN, ICMA, USEPA (SGN, 2002)
Getting to Smart Growth II: 100 more policies for implementation	2003	SGN, ICMA, USEPA (SGN, 2003)
This is Smart Growth	2006	SGN, ICMA, USEPA (SGN, 2006)
LEED for Neighborhood Development (pilot version)	2007	CNU, US Green Building Council, Natural Resources Defense Council (CNU et al., 2007)
Canons of Sustainable Architecture and Urbanism	2008	CNU (CNU, 2008)

        The Smart Growth Network, a partnership between several non-profit and government agencies, articulated the basis for smart growth in 1998 with *Best Development Practices: A*

Primer for Smart Growth (Ewing, 1998). Key players included the International City/County Management Association (ICMA), the US Environmental Protection Agency (USEPA), the American Planning Association (APA), and the Urban Land Institute (ULI). Several documents also produced by the Smart Growth Network -- *Getting to Smart Growth* (SGN 2002), *Getting to Smart Growth II* (SGN 2003), and *This is Smart Growth* (SGN, 2006) -- described the movement's environmental principles, such as conserving energy and preserving open space. The US Green Building Council, a non-profit organization responsible for producing the Leadership in Energy and Environmental Design (LEED) rating system for green buildings, partnered with the CNU and the Natural Resources Defense Council to produce *LEED for Neighborhood Development*, generally known as LEED-ND (CNU, US Green Building Council, & National Resource Defense Council, 2007): it integrates green building design with new urbanism and smart growth principles at a neighborhood and regional scale.

We conducted a content analysis of each document, distinguishing between environmental terms and environmental issues: the texts simply noted the former, but identified the latter as specific concerns to address. Our analysis revealed five environmental terms and 12 environmental issues that referred explicitly to the environment as a central priority (see Table 2). We systematically documented how and when environmental terms and issues were integrated into new urbanism and smart growth discourse.

Table 2: Central environmental terms and issues analyzed in documents

Environmental Terms	
Environment	Sustainability
Ecology	Climate change
Green design	
Environmental Issues	
Conserve land	Respect topography
Conserve energy	Respect local climate
Use renewable energy	Protect air quality
Conserve water	Protect agriculture and/or local food
Protect habitat	Use local and/or green building materials
Restore ecological functions	Protect biodiversity

We analyzed the type of discourse based on four categories of implicit intention: descriptive, predictive, normative, and prescriptive. Descriptive statements identified the current state of environmental conditions or issues through explanatory language or examples, but did not use language addressing implementation policies. Predictive statements linked likely outcomes with plan policies or design interventions. Normative statements identified desired outcomes. Prescriptive statements enjoined actors to implement particular environmental practices or to achieve particular outcomes: as the strongest category of intention, they mandated implementation activities. Table 3 provides samples of the types of statements that reveal particular intents in the discourse of the documents examined. Using these linguistic categories we attempted to identify the motivations behind new urbanism and smart growth principles and to understand how the discourse translated into Maryland planning policies and the development proposals applying them.

Table 3: Categories of intent, with samples from documents

Category	Details	Sample Language	Sample Phrase
Descriptive	Describes current state, existing conditions, and/or case study	'is' 'such as'	'The potential for energy, water, and waste reduction has caught the attention of both the public and private sectors' (SGN, 2003, p. 75)
Predictive	Indicates expected outcome resulting from policy or design	'will' 'may' 'proposed'	'The proposed plan will enhance the environment by adding afforestation (tree planting) areas on the property' (Gaithersburg, 2006b, p. 22)
Normative	Describes desired activities, methods and outcomes; reflects value base	'should' 'encourage' 'consider'	'Communities should provide for the efficient use of water through the use of natural drainage, drought tolerant landscaping and recycling' (LGC, 1991, p. 1)
Prescriptive	Requires particular activities to generate specific outcomes	'shall' 'must' Imperative verb forms such as 'preserve'	'Applicant must obtain approval of the preliminary Forest Conservation Plan prior to the submission of final site plan' (Gaithersburg, 2006a, p. 6)

Maryland: heartland of smart growth

Next, we applied the framework to municipal plans and policies within two Maryland cities. Gaithersburg and Rockville are neighboring municipalities in Montgomery County on the suburban fringe of Washington DC (Figure 1). Both cities have endorsed planning and land use policies that draw upon new urbanism and smart growth principles: they contain several new urbanism communities, including the Kentlands in Gaithersburg, a development whose initial success spurred the rise of other new urbanism communities in the area. The State of Maryland committed to smart growth principles to reduce sprawl under the leadership of Governor Parris Glendening in the 1990s. The 1997 Smart Growth Areas Act, for example, encouraged smart growth practices by directing development to specific growth corridors, such as previously built-up areas (Johnson, 1999). The Act designated Gaithersburg and Rockville as Priority Funding Areas: that gave the cities priority for state-funded development and future growth (Maryland Department of Planning, 2004). In coordination with state policies, smart growth principles were implemented at the county level. For example, the transfer of development rights program, adopted by Montgomery County in 1980, protected more than 35,000 acres of agricultural lands and environmentally sensitive areas (O'Neill, 2000).

Figure 1. Location of Gaithersburg and Rockville, Maryland

[Source: J. Haggett based on Google Earth (2008)]

Our case study involved evaluating plans and policies for Gaithersburg and Rockville, including their neighborhood plans for new urbanist and smart growth communities.[1] We conducted site visits to the neighborhood projects in the summer of 2008, and interviewed 13 respondents involved with implementing planning policies or building or running communities[2]. Together these data provided insight into how local governments and practitioners interpreted the application of new urbanism and smart growth principles.

Following requests to local authorities and searches of online resources we obtained neighborhood plans for 11 new urbanism / smart growth projects: seven greenfield and four infill developments. Some projects are built out, while others were still under construction. Four of the neighborhoods were in Rockville; seven in Gaithersburg. Two projects, Twinbrook Station (Rockville) and Crown Farm (Gaithersburg), are part of the LEED-ND pilot program. We systematically examined the plans from the communities for environmental terms and issues, and classified the types of statements found in the discourse according to the intent signified.

The next section presents our analysis. We summarize the way that environmental terms and issues appeared in documents and were discussed by practitioners in the study communities. We examine three environmental issues in some detail to demonstrate differences in the trajectory of the discourse on them in the foundational and the local documents. The final section discusses some implications of our findings.

The nature of environmental discourse

Our analysis of environmental terms in new urbanism and smart growth foundational documents revealed a generally utilitarian approach to the environment. While the term environment appeared frequently throughout the documents, the intent associated with the language was predominantly descriptive or normative (Table 4). Early foundational documents

such as the *Ahwahnee Principles*, the *Charter* and *Best Development Practices* identified the importance of environmental protection without adopting strong principles for achieving the aim. Only smart growth policies used prescriptive language associated with a specific outcome: *Getting to Smart Growth I* and *II* advocated 'preserv[ing] open space, farmland, natural beauty, and critical environmental areas' (SGN, 2002, p. ii; see also, SGN, 2003, p. ii).

Table 4: Sample discourse in foundational documents

Year	Document	Excerpt	Intent
1996	CNU *Charter*	'We stand for…the conservation of natural environments, and the preservation of our built legacy' (CNU, 1996, p. 1).	Normative
2002	*Getting to Smart Growth*	'In Chicago, the Center for Neighborhood Technology has developed the Neighborhood Early Warning System (NEWS) that makes it easy to obtain housing information that can be critical to the success of any sustainable community development project' (SGN, 2002, p. 81).	Descriptive
2002	*Getting to Smart Growth*	'Preserve open space, farmland, natural beauty, and critical environmental areas' (SGN, 2002, p. ii).	Prescriptive
2007	*LEED-ND*	'LEED provides rating systems that are voluntary, consensus-based, market-driven, grounded in accepted energy and environmental principles, and that strike a balance between established practices and emerging concepts' (CNU et al., 2007, p. 1).	Normative
2008	CNU *Canons*	'Yet the profound nature of the environmental crisis…' (CNU, 2008, p. 2).	Descriptive
2008	CNU *Canons*	'It is imperative for a unified design, building and conservation culture to advance the goals of true sustainability' (CNU, 2008, p. 1).	Normative

The new urbanist documents opportunistically discussed new environmental terms and issues (e.g., green design, climate change) without re-evaluating the movement's basic assumptions about growth and urban form. For example, the *Charter of the New Urbanism* aimed to protect the natural environment, yet cast development as a central priority: 'conservation areas and open lands should be used to define and connect different neighborhoods and districts' (CNU, 1996, p. 2). The *Canons* explicitly identified the need to respond to an 'environmental crisis,' yet the underlying premise afforded the environment a utilitarian function (CNU, 2008, p. 2).

The term sustainability arrived late to the scene in new urbanism and smart growth documents. Among the documents analyzed, *Getting to Smart Growth* (SGN, 2002) was the first document to reference the term. Despite the strong influence of sustainable development on the planning agenda in Europe and Canada from the early 1990s on, it caught on more slowly in the US. New urbanism and smart growth documents generally referred to sustainability in generic, positive terms. The movements used sustainable and sustainability as ancillary terms to describe inputs or outcomes linked to particular design concepts. For example, the CNU *Canons* (CNU, 2008, p. 1) stated, 'it is imperative for a unified design, building and conservation culture to advance the goals of true sustainability.' In most of the documents' discourse, however, sustainability remained undefined: sometimes it was linked to environment issues, but other times it had little substance.

Climate change, a central environmental term in scientific circles since the late 1980s, appeared in only two core documents. *Getting to Smart Growth* suggested that conventional suburban development had degraded the natural environment and 'increased the threat of global climate change' (SGN, 2002, p. 51). The CNU *Canons* stated that 'global climate change and habitat destruction, accelerated by global settlement patterns of sprawl, pose significant challenges requiring a global response' (CNU, 2008, p. 1). Although describing the risks and

challenges associated with climate change, neither document specifically addressed how policies might mitigate or reverse climate change impacts. Readers might infer that principles such as green building design and energy conservation are intended to respond to increasing greenhouse gas emissions; however, the discourse surrounding climate change in the documents was not specifically linked with outcomes.

The CNU (2007) argued that new urbanism principles have always addressed sustainability concerns, yet analysis of the documents suggested otherwise. Several critical environmental concerns have only been integrated with the philosophy of new urbanism with the most recent documents. New urbanism and smart growth's commitment to the environment has grown through time in response to a social and political context that increasingly brought environmental issues to the fore. A close reading of the documents suggests, however, that the green commitment remained conditional. Many documents implicitly defined nature as useful for human purposes: for instance, habitat corridors served principally as edges to contain or connect settlements while land conservation reduced the costs of development.

By comparison with the new urbanism and smart growth documents, local Maryland policies adopted stronger language regarding the environment (see Table 5). Most of the relevant local policy discourse anticipated specific environmental outcomes (such as tree preservation and afforestation) arising from designs or plans. In some cases, documents articulated prescriptions, such as requiring LEED development standards. While some of the discourse remained normative, such the plans for Twinbrook Station and Kentlands Boulevard, environmental terms were more clearly defined and typically associated with language requiring specific implementation. More recent neighborhood plans reflected increasing recognition and adoption of environmental themes and addressed sustainability to varying degrees. The plan for the neighborhood Spectrum imposed a specific approach to 'sustainable design' on the developer. The Crown Farm plan was generally descriptive in its language, but linked environmental standards with the identity of the development as a 'sustainable community'.

Table 5: Sample discourse in neighborhood plans

Year	Plan	Excerpt	Discourse
1989	The Kentlands, Gaithersburg	'The plan for [the Kentlands] will focus attention and priorities on the natural environment by preserving trees, lakes, open spaces and other natural features' (Gaithersburg, 1989, p. 3).	Predictive
2005	Twinbrook Station, Rockville	'The proposed development incorporates many environmentally sensitive measures and is designed to ensure that a significant portion of the preservation and planting requirements required will occur on site' (Rockville, 2005, p. 4).	Normative
2006	Spectrum, Gaithersburg	'The developer shall also incorporate architecturally acceptable and commercially reasonable LEED elements, such as healthy buildings, into the design…and encourage sustainable design' (Gaithersburg, 2006a, p. 6-7).	Prescriptive
2008	Crown Farm, Gaithersburg	'The Crown Farm Design Guidelines create a framework for the development of a sustainable community that incorporates high environmental standards and has its own unique identity' (Gaithersburg, 2008a, p. 23).	Descriptive
2008	Kentlands Boulevard, Gaithersburg	'Encourage sustainable development strategies at every level – from site work to building technology to energy efficiency' (Gaithersburg, 2008b, p. 4.5).	Normative

Interviews with practitioners reflected varied understandings of the term sustainability.

Some defined it narrowly. For instance, one municipal planner explained: 'I think sustainability's got to be more of the materials – you might see the materials in Kentlands last longer because they're more natural as opposed to something that's going to give off more of a carbon footprint.' Yet other practitioners dismissed natural materials as less sustainable because of higher costs and maintenance issues.

Practitioners often sought to balance the three pillars--social, environmental, and economic--in describing sustainable practices. One developer explained that the future focus of the company would be on 'infill, more sustainable neighborhoods – not necessarily projects, but neighborhoods. Sustainable from infill and being close to transit, to materials used, to social sustainability, economic sustainability…Compact, mixed-use, real neighborhoods.'

All respondents described high gas prices as a driving force for reducing sprawl and contributing to more sustainable development trends. We interviewed in the summer of 2008, as fuel prices spiked and the financial crisis loomed. A community association member commented, 'The key concern is, particularly in light of the recent serious hike in gasoline prices, sprawl is not sustainable.' Developers also referred to the impact of gas prices on settlement patterns. One spoke to the future of suburbia, 'Not only with gas prices, but with health and quality of life and congestion and traffic and community – I think that the suburbs have peaked.' The hike in gas prices legitimized environmental concerns for some respondents. Political and economic crises can have significant effects on public opinion, shaping the kinds of principles people commit to and influencing the kinds of policies practitioners implement.

Addressing environmental issues

After examining the way that environmental terms appeared in the discourse we then considered the types of environmental issues discussed in the documents. We identified a significant rise in prescriptive statements within the foundational documents beginning with the *Ahwahnee Principles* in 1991 and proceeding to the CNU *Canons* in 2008 (see Figure 2[3]). Neighborhood plans tended to be more consistent over time, using both prescriptive and normative statements. Given the role that local plans play in regulating development we would expect to find prescriptive intents within them: on environmental issues, however, this is not universally the case. Gaithersburg in particular, regularly adopted environmental policies, beginning in 1988 with the Kentlands, a project respondents described as progressive in its environmental sensitivity. Rockville made major strides in recognizing and adopting environmental principles into its policy with the development of its first new urbanist project, King Farm, in 1996 (Rockville, 1996; ULI, 2002).

Figure 2: Number of environmental principles appearing in neighborhood plans
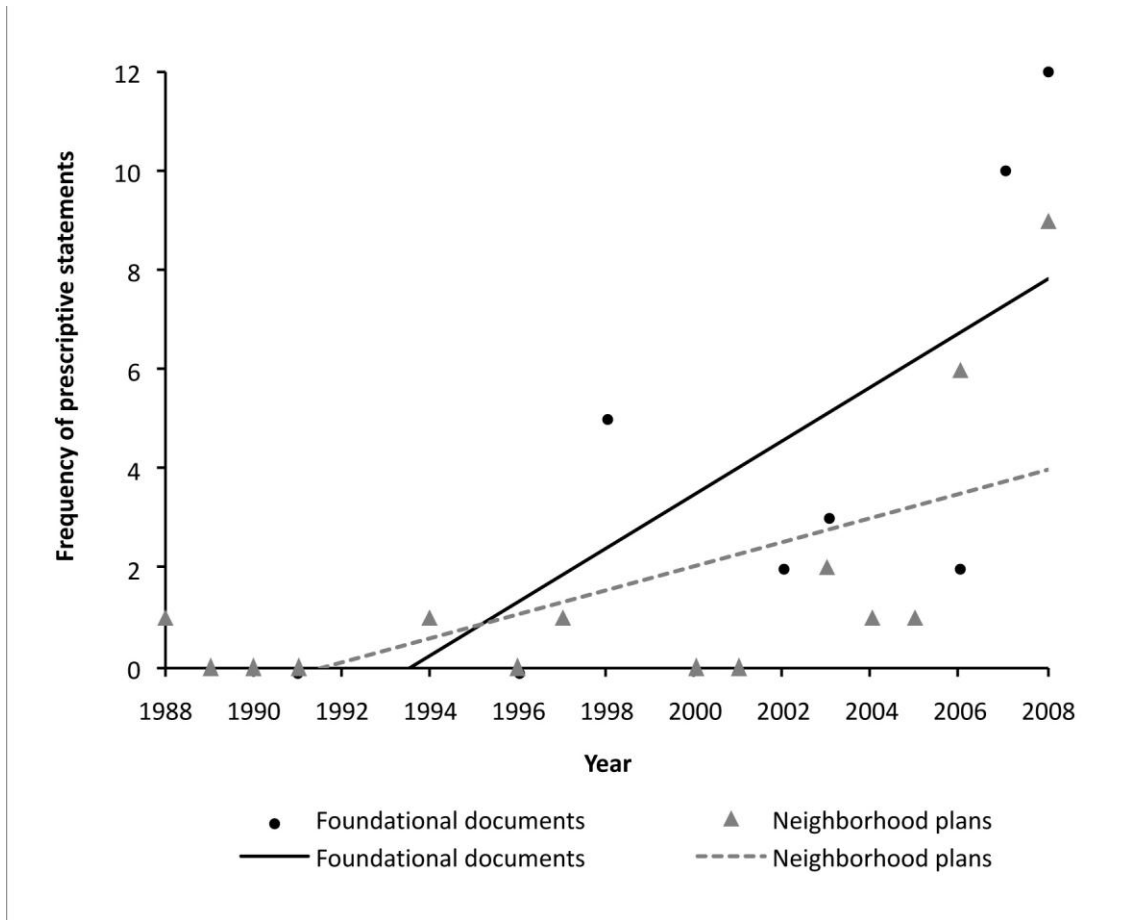
[Source: based on CNU 1996, 2008; CNU et al. 2007; Ewing 1998; Gaithersburg 1988b, 1988c, 1989a, 1989b, 1990, 1991, 1994a, 1994b, 1997a, 1997b, 1997c, 2003, 2005, 2006a, 2006b, 2006c, 2008a, 2008c; LGC 1991; Rockville 1996, 2000, 2004, 2005; SGN 2003, 2003, 2006).

To examine the evolving discourse on environmental issues, we will focus on the trajectory of three key issues: land conservation/preservation, local food and agricultural land protection, and green building design. Although these are not the only concerns of importance, they illustrate the differing patterns found.

a) Conserving land

Land conservation proved the most frequently discussed environmental issue in new urbanism and smart growth foundational documents, although early documents adopted a utilitarian approach to the environment that viewed nature as an asset to development (see Table 6). The CNU *Charter* (1996) identified a preference for using conservation areas to define or link neighborhoods. Later documents, such as the CNU *Canons* (2008) used prescriptive language calling for preserving watersheds and biodiversity.

Table 6: Sample land conservation discourse in foundational documents

Year	Document	Excerpt	Discourse
1996	CNU *Charter*	'Conservation areas and open lands should be used to define and connect different neighborhoods and districts' (CNU, 1996, p. 2).	Normative
2002	*Getting to Smart Growth*	'Preserve open space, farmland, natural beauty, and critical environmental areas' (SGN, 2002, p. ii).	Prescriptive
2008	CNU *Canons*	'Design must preserve the proximate relationships between urbanized areas and both agricultural and natural lands in order to provide for local food sources; maintain local watersheds; a clean and ready water supply; preserve clean air; allow access to local natural resources; conserve natural habitat and to guard regional biodiversity' (CNU, 2008, p. 3).	Prescriptive

In comparison with the foundational documents, neighborhood plans were more specific and utilized stronger policies which required elements such as conservation plans or tree inventories (see Table 7). Land conservation proved a common theme in plans for greenfield projects. The policy discourse typically employed normative or prescriptive language. Plans for the Kentlands spoke to conservation through prescriptive language, which addressed designated tree-save areas, wetlands protection and stream buffers, and improvements to storm-water management (Gaithersburg, 1989). Later plans and policies for the Kentlands discussed habitat protection and enhancement, along with reforestation (Gaithersburg, 1990; 1997a; 1997b; 1997c). Hidden Creek required approval of a Forest Conservation Plan, while other neighborhood plans similarly prescribed conservation measures. Crown Farm, a LEED-ND project in Gaithersburg, aimed to preserve key environmental areas, while simultaneously addressing public enjoyment of these areas.

Table 7: Sample land conservation discourse in neighborhood plans and policies

Year	Plan	Excerpt	Type of discourse
1988	The Kentlands, Gaithersburg	'A tree inventory will be a prerequisite to any preliminary subdivision approval for any portion of the acreage, and a determination of trees to be saved must be made prior to any grading permits' (Gaithersburg, 1988, p. 35).	Prescriptive
2003	Spectrum, Gaithersburg	'Preserve and maintain environmentally sensitive areas (stream valley buffer, wetland, floodplain, steep slope, etc.) and establish additional parks throughout the development that are outside of environmentally protected areas' (Gaitherburg, 2003, p. 125).	Prescriptive
2005	Twinbrook Station, Rockville	'The proposed development incorporates many environmentally sensitive measures and is designed to ensure that a significant portion of the preservation and planting requirements required will occur on site' (Rockville, 2005, p. 4).	Prescriptive
2008	Hidden Creek, Gaithersburg	'The Applicants shall submit and have approved a Forest Conservation Plan showing required afforestation to be met onsite prior to the approval of the Schematic Development Plan…' (Gaithersburg, 2008c, p. 24).	Prescriptive
2008	Crown Farm, Gaithersburg	'The Proposed Development will…preserve and enhance open space and critical environmental areas and will foster public use and enjoyment of these areas via trails parks and recreational facilities' (Gaithersburg, 2008a, p. 2).	Prescriptive

Municipal planners interviewed suggested that local planning and development processes conserved environmentally sensitive areas. They noted refinements over the years. In reference to the role of preservation in the Kentlands, one Gaithersburg planner said 'There was some redesigning of the original plan to allow for wetlands…, [but] at that time we did not have the state's afforestation and tree preservation laws, so the city staff had to work very hard to get some of the tree stands saved within the development.' Other respondents proved critical of the projects, with some suggesting that new urbanism does not go far enough towards protecting important open spaces.

Councilors explained the trade-offs involved in protecting natural resources during the development process. For the Kentlands, a Gaithersburg councilor explained, 'One of the things we did was protect all the lakes and stream valleys. We put in a lot of green space, we put in a lot of parks – from that standpoint, we were environmentally conscious. But there's always somebody opposed to cutting a tree down or doing anything to a piece of property.' A Gaithersburg developer noted, 'There was a lot of greenfield and farm that was still consumed and developed on' in the process of building the Kentlands. Plans and policies can only go so far in mediating the tension between growth dynamics and environmental concerns in urban development.

Of the infill projects only Twinbrook Station, a LEED-ND development proposed in Rockville, adopted prescriptive language regarding land conservation issues. A consultant planner argued that 'As for traditional open space – forest preservation and streams – that's not a part of inner city redevelopment.' His comment suggests that practitioners view infill development as an inherently environmentally-sensitive practice without the need to implement conservation principles. A Rockville councilor proved skeptical of the environmental commitment. 'The greenery is sometimes behind closed doors, or inside another system, or on the roof… Even our town center, while I like it a lot, we have only a little tiny patch of grass – that's it' (Figure 3).

Figure 3. Rockville Town Center infill development green strip [Source: authors]

The focus on land conservation constituted a central issue that resonated through the plans and through the discourse surrounding new urbanism and smart growth at the local level. It provided philosophical foundations for initiatives such as green design, LEED certification, and major infill projects. Through the years the plans increasingly linked these issues with the language of sustainability. Analysis of the neighborhood plans and of interview data with respondents in Gaithersburg and Rockville suggested, however, that pressing environmental concerns such as biodiversity and renewable energy have yet to make it onto the local agenda.

b) Protecting local food and agriculture

We documented a distinct rise in discourse on local food/agricultural protection in the foundational documents, which reflects the general interest in planning around this issue over the years. The early documents, such as the *Ahwahnee Principles* and the CNU *Charter,* used general descriptive and normative statements about agricultural land protection. Discussion evolved in the later documents to prescriptive language addressing the value of preserving agricultural lands for local food production. *LEED-ND* (CNU at al., 2007, p. 17) aims to protect 'irreplaceable' farmland, while the CNU *Canons* (2008, p. 7) moves beyond conserving farmland to promoting new agricultural opportunities (see Table 8).

Table 8: Sample local food/agriculture discourse in foundational documents

Year	Document	Excerpt	Discourse
1991	*Ahwahnee Principles*	'Each community or cluster of communities should have a well-defined edge, such as agricultural greenbelts or wildlife corridors, permanently protected from development' (CNU, 1991, p. 1).	Normative
1996	CNU *Charter*	'The Congress for the New Urbanism views disinvestment in central cities, the spread of placeless sprawl, increasing separation by race and income, environmental deterioration, loss of agricultural lands and wilderness, and the erosion of society's built heritage as one interrelated community-building challenge' (CNU, 1996, p. 1).	Descriptive
2002	*Getting to Smart Growth*	'Preserve open space, farmland, natural beauty, and critical environmental areas' (SGN, 2002, p. ii).	Prescriptive
2007	*LEED-ND*	'Preserve irreplaceable agricultural resources by protecting prime and unique farmland and forest lands from development' (CNU et al., 2007, p. 17).	Prescriptive
2008	CNU *Canons*	'Prime and unique farmland shall be protected and conserved. In locations with little or declining growth, additional agriculture, parklands and habitat restoration shall be promoted on already urbanized or underutilized land' (CNU, 2008, p. 7).	Prescriptive

Neighborhood plans did not follow the pattern of the foundational documents on the issue of agricultural land protection and local food; the plans used descriptive discourse that implicitly acknowledged development's role in transforming farmland to urban land (see Table 9). Only five neighborhood plans (Rockville Town Center, Hidden Creek, Olde Towne, Spectrum, and Crown Farm) mentioned agricultural protection and local food: all were limited to descriptive statements. Agricultural land protection appeared more frequently in the discourse of earlier plans than in later ones; the importance of local food production did not influence neighborhood plans and policies.

Table 9: Sample local food/agriculture discourse in neighborhood plans

Year	Plan	Excerpt	Discourse
2001	Rockville Town Centre	'Rockville's growth from the County seat of an agricultural community to one of the most economically healthy areas in the country has allowed the City to evolve into a collection of cosmopolitan neighborhoods' (Rockville, 2001, p. 19).	Descriptive
2003	Hidden Creek, Gaithersburg	'Currently, the Study area is undeveloped and contains a combination of active agricultural field, open land and forest' (Gaithersburg, 2003, p. 96-97).	Descriptive
2003	Spectrum	'The undeveloped land of the northern properties contains a combination of active agricultural field, open land and forest' (Gaithersburg, 2003, p. 120).	Descriptive

Many respondents discussed issues of local food and agricultural protection. A municipal planner was proud of Montgomery County's agriculture preserve: 'one of the first preserves in the nation.' A consultant took this concept further, declaring local food as a major principle that should be incorporated into the design of suburban neighborhoods because 'food's becoming an issue – the high prices of food, distance traveled.' New urbanist discourse is increasingly adopting language promoting local food; however, the issue had yet to make it onto the local agenda in Maryland. On the one hand, this difference might illustrate a lag between new urbanism and smart growth discourse and local policies. On the other hand, it may reflect local political priorities, development pressures, and the availability of agricultural land.

c) Green building design

Analysis revealed that green building discourse in new urbanism and smart growth foundational documents began with general descriptive and normative language. The *Ahwahnee Principles* and CNU *Charter* promoted the use of local building materials, without offering specific implementation policies. The discourse evolved with LEED-ND and the CNU *Canons*, which used more specific principles to encourage green building methods during construction (see Table 10).

Table 10: Sample green building discourse in foundational documents

Year	Document	Excerpt	Discourse
1991	*Ahwahnee Principles*	'Materials and methods of construction should be specific to the region, exhibiting a continuity of history and culture and compatibility with the climate to encourage the development of local character and community identity' (LGC, 1991, p. 1).	Normative
1996	CNU *Charter*	'Architecture and landscape design should grow from local climate, topography, history, and building practice' (CNU, 1996, p. 2).	Normative
1998	*Best Development Practices*	'Space heating demands are reduced by about half with passive solar architecture' (Ewing, 1996, p. 28).	Descriptive
2007	*LEED-ND*	'Encourage the design and construction of energy efficient buildings to reduce air, water, and land pollution and environmental impacts from energy production and consumption' (CNU et al., 2007, p. 96).	Normative
2008	CNU *Canons*	'Building materials shall be locally obtained, rapidly renewable, salvaged, recycled, recyclable and have low embodied energy. Alternatively, materials shall be chosen for their durability, exceptional longevity and sound construction, taking advantage of thermal mass properties to reduce energy usage' (CNU, 2008, p. 4).	Prescriptive

Green building design was absent from discourse in early neighborhood plans. Later plans, however, utilized strong language and a commitment to LEED principles (see Table 11). Plans for projects such as Twinbrook Station compelled the developer to achieve minimum LEED targets. The trajectory of the green building issue in local plans parallels the path taken in new urbanism and smart growth documents. In both cases, prescriptions related to LEED and green building principles have grown through the years.

Table 11: Sample green building discourse in neighborhood plans

Year	Plan	Excerpt	Discourse
2003	Spectrum, Gaithersburg	'Incorporate green building development techniques' (Gaithersburg, 2003, p. 126).	Prescriptive
2005	Twinbrook Station, Rockville	'Applicant will commit to an overall project that achieves a minimum of 21 LEED points per USGBC standards' (Rockville, 2005, p. 14).	Prescriptive
2008	Hidden Creek, Gaithersburg	'The Applicant shall work with staff to comply with the Residential Green Code requirements and provide *Energy Star* appliances and other features, such as windows, etc' (Gaithersburg, 2008c, p. 24).	Prescriptive

Most respondents we interviewed identified green building design as an environmentally-sensitive practice. Planners in Rockville discussed the emergence of green building design on the municipality's agenda. A consultant planner explained:

There's also increasingly an environmentally sound design policy that is being enforced on developers. Frankly, most of our clients are accepting this welcomingly and pushing it to the limits. The LEED certification process has given a yardstick for measuring environmentally friendly design. That has been imposed somewhat tentatively by some of the jurisdictions and now much more aggressively is spreading all over the metropolitan area.

The spread of LEED standards may reflect the popularity of green building strategies in the United States. Not all respondents shared the commitment to the principle though. A municipal councilor in Gaithersburg noted that in the Kentlands, 'They wanted to use natural woods and all these natural materials, [but] they don't hold up. We have humungous

maintenance problems.' Conflicting priorities, particularly regarding the maintenance and costs of natural building materials, may affect the willingness of local governments to mandate green building standards in situations where developers may resist.

Greening new urbanism

Our analysis of new urbanism and smart growth indicates that the movements have a long-standing environmental agenda that has expanded through the last two decades, although not in a simple linear manner. New urbanism and smart growth's foundational documents reflect a utilitarian view of land and nature: as Sandberg and Wekerle (2010, p. 42) say in describing the Oak Ridges Moraine, 'nature is seen to serve instrumental goals by generating social and economic capital'. Proponents did not seek to protect nature for its own intrinsic merits, but because safeguarding the environment would benefit people. Thus to some extent critics may argue that the movements have used environmental and sustainability discourse for marketing design concepts and planning approaches that have other priorities: namely, development and growth. In the context of the developing discourse within the foundational documents, sustainable and sustainability appear as generic terms to describe desired outcomes of the design and planning process. Rather than implying an effort to simultaneously consider environmental, social, and economic objectives in a context that considers future generations, the movement seems to suggest that sustainability is the condition attained simply by virtue of applying the concepts.

The three issues we examined in detail reveal the range of trajectories in the documents examined. On issues related to land conservation and habitat protection, local policies proved bolder in terms of prescriptive power than the foundational documents of new urbanism and smart growth[4]. On issues of food land protection, however, the foundation documents bounded ahead of local policies in presenting normative and prescriptive intents. On the issue of green building technologies foundational documents and local plans followed a parallel path, enhancing their commitment to environmental action with each new document released.

Of the documents analyzed, LEED-ND (CNU et al., 2007) offered the strongest benchmark in imposing specific environmental targets, methods, and outcomes. As Garde (2010) noted, LEED-ND projects are appearing in many jurisdictions as a strategy for implementing environmental goals. The Maryland case we explored indicates that recent LEED-ND projects made the strongest environmental commitments in their plans.

Plans for greenfield sites in Gaithersburg and Rockville tended to include more environmental principles than did infill projects, perhaps because of local perceptions that infill projects were less likely to disrupt natural systems. Some issues – such as agricultural land preservation – that had gained traction at a national level in the new urbanism and smart growth movements barely appeared in local discourse. Other nationally significant environmental issues barely registered in any of the documents examined: for instance, climate change received few mentions in any of the plans or foundational documents, despite scientific consensus on its significance. As Dierwechter (2010, p. 61) indicated, commitment to smart growth does not guarantee action on climate change issues.

New urbanism and smart growth advocates have made progress in recent years in collaborating with the proponents of energy and water conservation and designers of alternative technologies for managing adverse environmental effects. The discourses of new urbanism, smart growth, and sustainable development – at one time promoted by different constituencies and with distinct emphases – show signs of blurring and blending in contemporary community

design theory and practice. In reaching a shared vision the varying groups softened their dogmas to achieve compromises on their priorities. Debates about whether new urbanism can be sustainable have been largely mooted by cooptation of the language of sustainability.

Analysis of key documents in theory and practice indicate the tentative way in which new urbanism and smart growth stepped into the sustainability debate. The study reported here identified some gaps and tensions in the environmental agenda of the movements as they influence practice. New urbanism and smart growth are principally philosophies of urban development: their priority is in building places to meet people's needs in a responsible fashion. Because they embrace growth they treat nature as a commodity that adds marketing value to a project prospectus: as Duany et al. (2000, p. 196) noted, 'natural features – not just waterfront and hillsides, but wetlands and trees – can add significantly to property value.' Nature and wild lands require the designer's hand to control them within an orderly landscape managed to meet human needs and sensibilities (Duany & Talen, 2002). Undeveloped land offers economic opportunity through conversion rather than environmental opportunity for conservation. In the context of new urbanism and smart growth sustainability *requires* development. Those who believe that sustainability means protecting the environment for its own sake (and for the long-term benefit of future generations) will find the foundational documents and local development practices of new urbanism and smart growth weakly committed to the concept.

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Notes:

1. Fifteen neighborhoods in Gaithersburg and Rockville demonstrated new urbanism and smart growth principles to varying degrees. Local authorities were able to provide copies of plans and related documents for 11 neighborhoods: this included neighborhood master plans, schematic development plans, resolutions and relevant sections of the respective municipality's master plan. We are grateful to staff and respondents in Gaithersburg and Rockville for their cooperation in the study.

[2] The practitioners included four municipal planners, one consultant planner, one architect, three municipal councilors, two developers, and two members of community associations. Interviews lasted 40 to 90 minutes and were recorded for transcription. We employed semi-structured and open-ended questions according to a protocol approved by the university ethics committee. The questions sought to understand major trends in Gaithersburg and Rockville, including how new urbanism and smart growth have influenced municipal policies, environmental concerns raised by the projects, efforts to protect ecologically sensitive areas, and challenges to implementing new urbanism developments and smart growth policies.

[3] Figure 2 illustrates how many environmental issues were addressed using prescriptive statements, up to a maximum of 12 (one per each environmental issue analyzed). Multiple prescriptive statements for a single issue are not shown.

[4] We reviewed many more documents than are sampled here in the tables. Our conclusions reflect the wider analysis.