

GREENING SUBURBIA?

THE ENVIRONMENTAL AGENDA OF NEW URBANISM AND SMART GROWTH



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EXECUTIVE SUMMARY ---

The North American landscape is increasingly dominated by suburban sprawl. On the environmental front, critics depict the suburbs as ecologically destructive and in direct conflict with the goals of sustainable development. New urbanism and smart growth are two movements that aim to reduce the effects of suburban sprawl; they make similar claims about the benefits of preserving land through compact, mixed-use development. Yet, the literature indicates that the movements do not go far enough towards implementing a vision of sustainability (Godschalk, 2004; Grant, 2006). Using the Washington D.C. suburbs of Gaithersburg and Rockville, Maryland as a case study, this research project asks *how do environmental values inform new urbanism and smart growth design in North American suburbs?*



The Kentlands in Gaithersburg, Maryland

The project builds on the existing body of data available through a larger study, *Theory and*

Practice in Planning the Suburbs, funded by the Social Sciences and Humanities Research Council of Canada. As data has already been gathered on the trends and implementation of new urbanism principles in three Canadian municipalities, this research examines two American municipalities – Gaithersburg and Rockville, Maryland – to place the Canadian experience within an international context. During the summer of 2008, I held 13 semi-structured interviews with planners, municipal councillors, developers, an architect, and members of community associations in the study area. As Maryland's second and third largest cities, respectively, Gaithersburg and Rockville are high-value, rapid growth municipalities. They contain a high proportion of recent and established new urbanism communities, including the Kentlands in Gaithersburg, whose success spurred the development of similar new urbanism and smart growth communities in the area.

The study adopts a qualitative, exploratory approach, and utilizes discourse analysis to understand the meanings conveyed through key principles, policies and plans, and interviews with practitioners. The first phase of the research involved a content analysis of key new urbanism and smart growth documents. I developed a template of 18 environmental themes within three general categories: conserving natural re-

sources, sensitivity to the local environment, and sustainable development. Six core documents guided the analysis: *The Ahwahnee Principles for Resource-Efficient Communities* (LGC, 1991), the *Charter of the New Urbanism* (CNU, 1996), *Best Development Practices: A Primer for Smart Growth* (SGN, 1998a), *Getting to Smart Growth II: 100 More Policies for Implementation* (SGN, 2003), *LEED for Neighbourhood Development* (CNU, USGBC & NRDC, 2007), and *Canons of Sustainable Architecture and Urbanism: A Companion to the Charter of the New Urbanism* (CNU, 2008b). I assessed the documents according to whether the environmental theme was merely addressed, or integrated into the guiding principles for the movement.

During the second phase of the research, I applied the template of environmental themes to municipal planning documents, including the master plans of Gaithersburg and Rockville, along with neighbourhood plans for six new urbanism communities in the study area: the Kentlands, King Farm, Rockville Town Center, Olde Towne Gaithersburg, Crown Farm, and Kentlands Boulevard. I then analyzed the interview data collected in Gaithersburg and Rockville in 2008 to interpret my findings.

The third phase of my research project examined how the theory of new urbanism and smart growth, exemplified by its core principles, is implemented in practice, as demonstrated through planning documents and interviews with practitioners. By examining the environmental premises guiding new suburban

developments, I arrived at three major research findings. First, while the master plans of Gaithersburg and Rockville incorporate a wide range of environmental issues into their policies, the neighbourhood plans incorporate environmental principles selectively. In particular, the infill projects of Rockville Town Center, Olde Towne Gaithersburg, and Kentlands Boulevard adopt few environmental principles. Second, by defining sustainable communities as 'green' and 'smart,' new urbanism and smart growth reduce complex environmental issues into simple and trendy rhetoric. Third, I conclude that new urbanism and smart growth adopt an anthropocentric view of the environment. While their most current documents address a range of environmental issues, the environment is emphasized in terms of human utility, as opposed to a biocentric view, which values the environment in and of itself.

This project makes an important contribution to the literature in its assessment of the environmental claims of new urbanism and smart growth, which treat the environment as a secondary or tertiary priority. It helps us understand the complex relationship between theory and practice in planning the suburban landscape and argues that planners need to adopt a holistic perspective of ecological issues, particularly during a time of political and economic change in the United States.

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LIST OF ACRONYMS

AAA	American Automobile Association
APA	American Planning Association
BMPS	Best Management Practices
CEU	Council for European Urbanism
CNU	Congress for the New Urbanism
DC	District of Columbia
DPZ	Duany Plater-Zyberk & Company
EPA	(U.S.) Environmental Protection Agency
ICMA	International City/County Management Association
IPCC	Intergovernmental Panel on Climate Change
LEED	Leadership in Energy and Environmental Design
LGC	Local Government Commission
LEED-ND	LEED for Neighbourhood Development
MD	Maryland (State of)
MDP	Maryland Department of Planning
M-NCPPC	Maryland-National Capital Park and Planning Commission
MP	Master Plan
MXD	Mixed-Use Designation (City of Gaithersburg)
NRDC	Natural Resources Defense Council
PFA	Priority Funding Area (State of Maryland)
SDP	Schematic Development Plan
SGN	Smart Growth Network
TDR	Transfer of Development Rights (Montgomery County)
TND	Traditional Neighbourhood Development
TOD	Transit-Oriented Development
ULI	Urban Land Institute
USGBC	United States Green Building Council
WCED	World Commission on Environment and Development

1. A GREEN AGENDA

“Suburbia is where the developer bulldozes out the trees, then names the streets after them” – Bill Vaughn (n.d.: n.p.)

This project is concerned with the future of suburbia. More specifically, it examines the environmental premises that drive new suburban developments. Depicted as the embodiment of the American Dream, the suburbs dominate the North American landscape and are home to an increasing number of people. Critics characterize the suburbs as the proliferation of sprawling single-family homes, monotonous and automobile dependent, with segregated uses and high carbon footprints. Sprawl has been associated with a host of social, environmental and economic costs, which have a detrimental impact on quality of life (Garde, 2004).

On the environmental front, suburban developments are portrayed as ecologically destructive; they require a perpetual rate of expansion to fuel the economy, emit high levels of pollution and ultimately depend upon the automobile and a constant supply of crude oil for their survival (Greene, 2004). In response, new urbanism looks to traditional town planning as a solution to sprawl; it advocates compact, mixed-use, pedestrian-friendly, sustainable communities. Smart growth is an associated movement with a similar set of principles that promote a strong environmental ethic, includ-

ing growth management and transit-oriented development. Using the Washington D.C. suburbs of Gaithersburg and Rockville, Maryland as a case study, this research project asks *how do environmental values inform new urbanism and smart growth design in North American suburbs?*

1.1 THE ENVIRONMENTAL COSTS OF SPRAWL

While the suburbs are as old as the city itself, the process of suburbanization as a lifestyle, wherein the urban fringe grows quicker than the city itself, is a more recent phenomenon. During the mid to late nineteenth century, the values of domesticity, privacy and isolation permeated the social fabric of the United States. As a result, the single-family home became the



Figure 1.1: Traditional town planning exemplified by the Kentlands

ultimate expression of the American Dream (Jackson, 1985). Communities across Canada adopted a similar set of values (Harris, 2004), which together encouraged the proliferation of suburban landscapes across North America.



Figure 1.2: Suburban development in Gaithersburg

Early notions of the suburbs characterized these landscapes as the perfect union between city and country, located on the fringe of urban centres (Jackson, 1985). Such perceptions of suburbia entailed a distinct relationship with the city core: individuals lived in the suburbs and commuted to the city for work and leisure activities. Modern day suburbs, however, exemplify a clear distinction from the city, and no longer depend on it for employment or amenities. As a result, population growth in the suburbs has continually outstripped the growth of city centres (Lang & LeFurgy, 2007). In the United States, eighteen of the twenty-five largest cities suffered a net population loss between 1950 and 1980, while independent suburbs gained more than sixty million people (Jackson, 1985). In this way, suburbanization

“...represent[s] the most fundamental realignment of urban structure in the 4,500-year past of cities on this planet” (Jackson, 1985: 20). Continued growth on the urban fringe has led to many critiques of suburban sprawl. Low, Gleeson, Green and Radovic (2005: 43) argue that the suburban landscape is composed of “...endless hectares of housing reaching out to a distant periphery.” Such critiques gain momentum on the environmental front, where the suburbs are portrayed as in direct conflict with the values of sustainable development.

In Canada, the concepts of sustainable development entered planning discourse during the 1980s and early 1990s (Grant, 1994). This trend was heavily influenced by the publication of the Bruntland Commission’s *Our Common Future* in 1987, which defined sustainable development as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (WCED, 1987: 8). While there are many competing discourses on sustainability, the term is generally defined by three pillars or the “triple bottom line:” economy, equity and ecology (McDonough & Braungart, 2002: 153). Ideally, all three considerations are deemed equal in order to achieve the goal of sustainable development and ensure the needs of future generations are met. According to Beatley and Manning (1997: 3) “sustainability finds many of its roots in the concept of ecological ‘carrying capacity’ – the notion that a given ecosystem or environment can sustain a certain animal population, and beyond that

level, overpopulation and species collapse will occur.” As such, the discourse of sustainable development has become heavily entrenched in the field of planning; its concepts have been integrated into policies and plans at all three levels of the Canadian government. The literature argues, however, that sustainability is far from achieving its potential in the realm of urban planning. In practice, we find that the economic pillar of sustainability tends to take precedence over the social and environmental realms (McDonough & Braungart, 2002).

Critiques abound on the permeation of sustainability rhetoric in Canadian planning. Grant (1994: 2) argues “...too many indicators demonstrate how little progress we have made in creating sustainable communities in Canada... [and] scientific debate about the impacts of global warming and ozone depletion show no sign of influencing mass society.” Tamminga (1996) similarly asserts that ecosystems planning is far from achieving its potential in planning discourse and practice. He contends, “from the 1950s through to recent times, planning policy in Canadian urbanizing regions and locales contributed to a 200-year-long process of resource extraction and settlement that left spindly, isolated, and commodified natural communities in their wake. A degraded ecology remains...” (Tamminga, 1996: 244). How has planning responded to such concerns? According to Tamminga, few comprehensive plans in Canada address critical issues of ecological restoration and biodiversity. He thus argues for planning to adopt a systems approach based on

clear ecological principles (Tamminga, 1996).

In the United States of America, the integration of sustainability concepts into planning discourse is currently on the rise. Beatley and Manning (1997) identify that sustainability is relatively new on the planning agenda, having emerged in the 1970s and attained a state of significance during the 1980s. The authors argue that “contemporary land use patterns do not acknowledge the finiteness of land, air, water, and biological diversity” and that nowhere is this pattern more explicit than in the sprawling suburbs of the United States (Beatley & Manning, 1997: 6). Reid Ewing (1997: 109) addresses various indicators of sprawl, including its “lack of functional open space.” He argues that the conservation of large open spaces is not possible with low-density suburban development, which only provides open space in the form of private backyards. Ewing identifies the importance of open space for its function as a public realm, its economic benefits, and also for its environmental assets, such as supporting wildlife and purifying groundwater.

Berke and Conroy (2000) examine how comprehensive plans address six principles of sustainable development. The authors determine that the inclusion of sustainability principles into comprehensive plans has little effect on how these principles are achieved in practice. As a result, they argue that planners need to move beyond the rhetoric of sustainability and adopt a wider, more holistic view in order to successfully implement such principles (Berke

& Conroy, 2000). More recently, Steil, Salinger, and Mehaffy (2008) identify the need to create more sustainable suburbs in the current context of the climate change and peak oil debate. The authors advocate an incremental approach to transforming the suburbs through short-term strategies, including a combination of bottom-up market forces with top-down political forces, such as changing restrictive zoning codes to encourage sustainability.



Figure 1.3: Mixed-use development in the Kentlands

Beatley (2008) discusses the emergence of green urbanism, which strives to be environmentally responsible in two respects: providing natural features such as urban parks and forests, and having a small ecological footprint. Green urbanism argues for integrating of cities and the natural world, rather than historical perceptions which suggest an inherent conflict between cities and nature (Beatley, 2008). Overall, the literature indicates that the elusive concept of sustainable development, while heavily absorbed in planning rhetoric, fails to address the complexities of environmental is-

ssues in the realm of practice. Yet, Berke (2008: 401) argues: “now that big problems like climate change, loss of biodiversity, vulnerability of cities to natural disasters, and growing inequalities, and potential big solutions for creating green communities have emerged, the debate has been revived.” This debate is evident in the United States, as the environmental pillar of sustainability becomes increasingly integrated into the discourse of new urbanism and smart growth.

1.2 NEW URBANISM, SMART GROWTH, AND THE ENVIRONMENT

New urbanism is an urban design movement that arose in the United States during the 1980s (Garde, 2004). It was influenced by the ideas of Jane Jacobs, Christopher Alexander and Kevin Lynch, along with the movements of sustainable development and healthy communities (Grant, 2006). The main intent of new urbanism is to reverse the effects of suburban sprawl and create diverse communities through utilizing specific design principles. It advocates mixed-use, mixed-income, pedestrian-friendly, compact, sustainable neighbourhoods (Garde, 2004). Smart growth is an associated movement that arose in the late 1990s. It endorses a similar set of principles that promote a strong environmental agenda through growth management strategies and transit-oriented development (TOD). While new urbanism and smart growth share many

of the same principles, the former has a stronger focus on urban design and sense of community (Gordon, 2003). Across Canada and the United States, the number of new urbanist and smart growth communities are increasing every year. Europe has jumped on board with the establishment of the Council for European Urbanism (CEU, 2004), which has adopted selective new urbanist principles.

New urbanism and smart growth make similar claims about the environmental benefits of preserving land through compact, mixed-use development. Garde (2004) examines how new urbanist principles are utilized as a tool for sustainable growth. He argues that distinct policy barriers limit the implementation of new urbanist projects; zoning ordinances such as R-1 for example, permit only low-density, single-family detached homes. Gordon and Vipond (2005) identify that the gross density of new urbanist communities in Markham, Ontario, is significantly higher than conventional suburban developments. They argue, however, that while higher gross densities contribute to sustainable development, more attention needs to be paid to environmental restoration and biodiversity. Meanwhile, Gordon and Tamminga (2002) determine through their study of new urbanist projects that ecosystems planning should be done at a regional scale in order to be effective at the neighbourhood level. Delving deeper into new urbanism's environmental claims, Berke et al. (2003) address the issue of stormwater management and watershed protection. Their study concludes that while new

urbanism is more successful at conserving hydrologically sensitive areas, the developments tend to have more impervious surfaces than conventional suburbs. They identify the need for more research to examine the potential environmental assets of new urbanism.

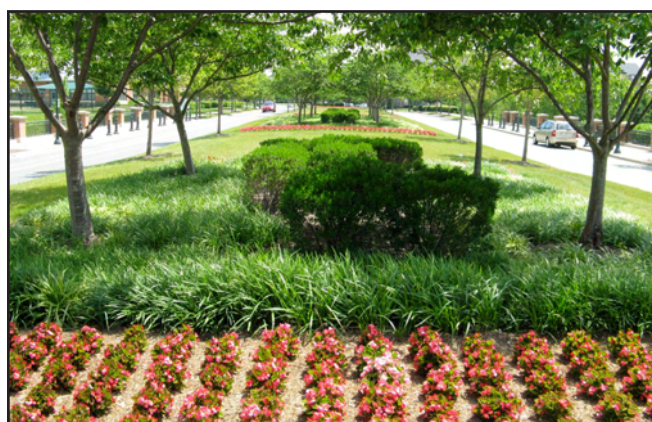


Figure 1.4: Nature as a utopian garden (King Farm)

Till (2001) provides a detailed account of the environmental rhetoric of new urbanism, which views traditional neighbourhood development as healthy and natural in contrast to the “cancerous growth” associated with suburban sprawl. Till argues that new urbanist literature represents nature in three ways: nature as a utopian garden, nature as a design element and resource, and nature as a consumer product. Similarly, Zimmerman (2001) investigates how sustainable development is promoted through the practice of new urbanism. By addressing the ecological health of the region and preserving large areas of open space through increased densities, new urbanism appears consistent with the goals of sustainability. Zimmerman (2001) concludes, however, that new urbanism is not an ecologically sensi-

tive form of development, but rather contributes to the rhetoric of capitalism in its defense of the suburban middle class. For Zimmerman (2001: 251), new urbanism represents “...the exclusive residential retreat physically removed and insulated from the city, that, when viewed within its broader metropolitan context, should be understood as contributing to sprawl and its concomitant environmental harm.”

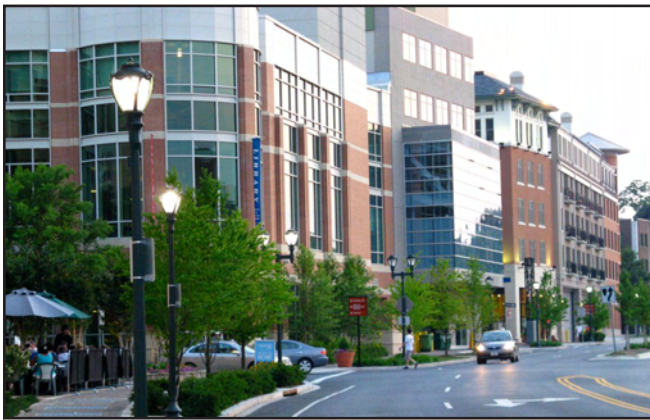


Figure 1.5: High-density development in Rockville Town Center

Other authors argue that growth is antithetical to ecological values, despite attempts by new urbanism and smart growth to integrate these two concepts within a capitalist framework. Audirac, Shermeyen and Smith (1990: 475) assert in their study of Florida’s growth management strategies 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.” Grant, Manuel and Joudrey (1996) similarly identify that despite the growing popularity of sustainable development, new urbanism does little to address the complexities

of environmental degradation due to human impact; instead, the authors advocate a landscape ecology approach, which entails that human settlements adapt to the existing context of the landscape, rather than altering the landscape to accommodate residential needs. Grant (2006: 191) further argues “many new urbanists seem to see sustainability as essentially a design problem. Their understanding of ecological issues and options for sustainable development seems shallow or unidimensional.” Godschalk (2004) also advocates an interdisciplinary understanding of suburban form; he asserts that neither new urbanism, smart growth nor sustainable development sufficiently address all the value conflicts between livability, equity, ecology, and economy.

Overall, while there is support for the environmental benefits of new urbanism and smart growth, many authors suggest that the movements do not go far enough towards implementing a vision of sustainability. Godschalk (2004: 7) notes that the *Charter of the Congress for the New Urbanism* “...is basically a design manifesto” that lacks genuine attention to environmental sustainability. Knaap and Talen (2005) agree: they describe various perspectives on new urbanism and smart growth and argue that “...both have attained a level of legitimacy and currency that warrant new serious scholarly examination of their premises and implications.” Amidst the critiques and support for new urbanism identified in the literature, it is clear that additional research is necessary to contribute to this dialogue. In response, my research study examines

the premises underlying the environmental discourse of new urbanism and smart growth, and their application in two Maryland cities.

The CNU's *Charter of the New Urbanism* identifies "the conservation of natural environments" as a central objective (CNU, 1996: 1). Smart growth promotes a similar environmental agenda, which aims to "preserve open space, farmland, natural beauty, and critical environmental areas" (SGN, 2002: 43; 2003: 51). More recently, the CNU's *Canons of Sustainable Architecture and Urbanism: A Companion to the Charter of the New Urbanism* (2008b) advocates sustainable human settlements in response to an environmental crisis. The CNU has partnered with the United States Green Building Council (USGBC) and the Natural Resource Defense Council (NRDC) to produce LEED-ND: Leadership in Energy and Environmental Design at the level of Neighborhood Design, which strives to incorporate new urbanism and smart growth principles for a comprehensive environmental strategy in the built environment (CNU et al., 2007). Duany Plater-Zyberk and Company (DPZ, 2008a), one of the key players in new urbanism, is in the process of creating the *Light Imprint Handbook*, which integrates engineering practices with design principles. Another key player in the movement has recently published *Sustainable Urbanism: Urban Design with Nature* (Farr, 2008), which combines the principles of new urbanism, green building design, and smart growth into a single agenda. Smart growth, meanwhile, has been endorsed by the U.S. Environmental Protection Agency

(EPA, 2008) and various municipal policies due to its promotion of a sustainable economy, environment and quality of life.

Overall, new urbanist and smart growth literature indicates that communities simultaneously enjoy environmental, social and economic benefits. Ecological theory suggests, however, that a constant state of growth places too strong a demand on natural resources and that our economy ultimately depends on the ecosphere for its survival (Ewing, 1997; Rees, 1995; Wright, 2004). Wright (2004: 84) further argues that any civilization which must maintain a constant state of growth in order to succeed is "most unstable at its peak, when it has reached maximum demand on the ecology." The growth paradigm is reflected in the very foundations of Western society, whose capitalist ideology maintains that the economy must continue to grow indefinitely despite the strain it places on the environment. Ewing (1997) also identifies, in contrast to the capitalist worldview, that natural resources are finite and we must learn to live within our means. Thus, while both new urbanism and smart growth address the need for sustainability, it is questionable whether simply adopting these principles is enough to reduce the environmental impacts of human civilizations, particularly when it comes to suburban sprawl. My research addresses these gaps through a case study examination of how environmental principles are implemented into practice.

1.3 RESEARCH APPROACH AND METHOD

This research project builds on the existing body of data available through Jill Grant's project, *Theory and Practice in Planning the Suburbs*, funded by the Social Sciences and Humanities Research Council of Canada. The suburbs project aims to reconcile the gap between the livable and sustainable communities promoted in planning theory with what is developed in practice. Data has already been gathered on the trends and implementation of new urbanist principles in three Canadian municipalities, specifically the suburbs of Markham, Ontario, Calgary, Alberta, and Surrey, British Columbia.

In the fall of 2007, I became involved in the second stage of the research project, which seeks to place the Canadian experience within an international context. In my work as a research assistant, I conducted a literature review of new urbanism and smart growth initiatives occurring throughout Canada and the United States. This was accomplished by examining journal articles and books, relevant policy documents, and the associated websites of the organizations. I focused my research on the case study communities of Gaithersburg and Rockville, Maryland, which are located within commuting distance (about 31 and 24 kilometres respectively) of Washington D.C. (see Figure 1.6). The suburbs of Washington D.C. are a hotbed of new urbanist projects, influenced by the success of the first year-round new ur-

banist community developed in 1988: the Kentlands. Located in Gaithersburg, Maryland, the Kentlands inspired a host of neotraditional development to emerge within the municipality and surrounding areas, including the city of Rockville, which is situated to the immediate southeast of Gaithersburg. While the influence of the Kentlands has extended to other cities in Maryland, such as Baltimore and Silver Spring, along with parts of Virginia, this research study focuses specifically on new urbanism projects within Gaithersburg and Rockville.

During June of 2008, I traveled to Gaithersburg and Rockville, Maryland, and conducted visual surveys of the new urbanism communities. In addition to documenting various characteristics of the new urbanist projects, I held 13 focused interviews with key stakeholders: planners, municipal councillors, developers, an architect, and members of community associations. Each interview was approximately 40 to 90 minutes in length and included semi-structured and open-ended questions (see Appendix). The questions adopted the framework set out in the previous research of *Theory and Practice in Planning the Suburbs* and sought to understand major trends, including how new urbanism and smart growth have influenced municipal policies, objections raised as to the environmental impacts of the projects, and challenges to the implementation of new urbanist developments. Through conducting this research, the environmental values driving new urbanism and smart growth emerged as a subject for more detailed analysis.

Based on the case study communities of Gaithersburg and Rockville, Maryland, I ask *how do environmental values inform new urbanism and smart growth design in North American suburbs?*

Three objectives arise from this question:

1. To determine the major themes pertaining to environmental values expressed through new urbanism and smart growth principles.
2. To understand the explicit and implicit environmental values represented by new urbanism and smart growth principles, municipal policies and plans, and key practitioners (planners, municipal councillors, developers, architects, and members of community associations).
3. To examine how new urbanism and smart growth theory is implemented into practice (as documented in plans and informed by practitioners), and extract useful lessons for fostering more sustainable suburbs on the urban fringe.

My research adopts a qualitative, exploratory approach, and utilizes discourse analysis to understand the meanings conveyed through key principles, policies and plans, and interviews with practitioners. This was supplemented by site visits to the target communities conducted in the summer of 2008. Overall, the aim of the research is to reveal important trends that help us understand the relationship of theory and practice in planning the suburban landscape.



Figure 1.6: Context map of Gaithersburg and Rockville, Maryland (Google Earth, 2008)

During the first phase of the research, I conducted a content analysis of key new urbanism and smart growth principles to extract the major environmental themes as a basis for comparison with other sources of data; this enabled me to accomplish my first objective. Through a series of keyword searches, including terms such as the environment, sustainability, green design, and conservation, I discerned 18 environmental themes within six core new urbanism and smart growth documents. The themes were classified according to three general categories: conserving natural resources, sensitivity to the local environment, and sustainable development. By means of these categories, I assessed the documents according to whether the environmental theme was merely addressed, or was integrated into the guiding principles for the movement. Six core documents guided the analysis: *The Ahwahnee Principles for Resource-Efficient Communities* (LGC, 1991) that preceded the movements of

new urbanism and smart growth, the CNU's Charter of the New Urbanism (1996) and its recent companion on sustainability (2008b), the LEED-ND pilot project (CNU et al., 2007), and smart growth principles promoted in key EPA and Smart Growth Network documents: *Best Development Practices: A Primer for Smart Growth* (1998a), and *Getting to Smart Growth II* (2003). These documents, along with the selection process for determining which were most relevant for the purposes of the study, are described in section two of the report.



Figure 1.7: Greenfield development in King Farm

After establishing how the environmental themes were addressed within core new urbanism and smart growth documents, I applied the same template to municipal policies and plans to assess the implementation of theory in practice. This included the master plans of Gaithersburg and Rockville, along with neighbourhood plans for six new urbanism communities in the study area: the Kentlands, King Farm, Rockville Town Center, Olde Towne Gaithersburg, Crown Farm, and Kentlands Boulevard. I then turned to the interview data collected in Gaithersburg and Rockville in 2008, and analyzed it according to the same template. The knowledge and perspectives inherent in the interviews enabled me to supplement my research findings of new urbanism and smart growth theory, along with municipal policies and plans. The purpose was to interpret how environmental values are driving the practice of new urbanism and smart growth projects in accordance with my second objective. By utilizing discourse analysis, I sought to understand the meanings conveyed through new urbanism and smart growth principles, municipal policies and the interview data, as these cultural texts are “... sensitive indicators of sociocultural processes, relations, and change” (Fairclough, 1995: 4). By understanding how the environment is represented in the data, my research interprets how environmental values shape the practice of new urbanism and smart growth. These values are both explicit and implicit; discourse analysis seeks to move beyond the explicit meanings in order to interpret the implicit values and premises conveyed within a cultural text (Fairclough, 1995).

The third phase of my research examined how the theory of new urbanism and smart growth, exemplified by its core principles, is implemented into practice, as demonstrated through planning documents and interviews with practitioners. This enabled me to summarize my research findings and extract useful lessons in fostering more sustainable suburbs on the urban fringe, hence accomplishing my third objective. I sought to understand how environ-

mental values are similar or divergent in the discourse among the principles, planning documents, and interview data, which together inform the design of suburban neighbourhoods. In its examination of the premises driving new urbanism and smart growth, this project delivers an important contribution to the dialogue surrounding environmental issues and sustainability. By understanding how values drive practice, my research explores how planners can implement more environmentally sustainable practices in North American suburbs.

1.4 STUDY AREA

This study focuses on the municipalities of Gaithersburg and Rockville, Maryland, located adjacent to one another within Montgomery County on the suburban fringe of Washington D.C. As Maryland's second and third largest cities, respectively (ULI, 2002), Gaithersburg and Rockville are high-value, rapid growth municipalities. They contain a high proportion of recent and established new urbanism communities, including the Kentlands and its sister community, Lakelands, both located in Gaithersburg. The Kentlands' success spurred the development of similar traditional neighbourhood developments (TNDs) and transit-oriented developments (TODs) within Gaithersburg and Rockville. Rockville, located to the immediate southeast of Gaithersburg, is home to the new urbanist communities of King Farm, and Rockville Town Center; the former has been recognized by the U.S. Environmen-

tal Protection Agency (EPA, 2008) as a key example of smart growth, while the latter received an award from the CNU (2008c) for advancing *Charter* principles. Both cities have endorsed planning and land use policies that draw upon new urbanism and smart growth principles, including mixed-use zones, compact development, the preservation of open space, and sustainability. Two municipalities were included in the research to provide a greater sample size of new urbanism communities and key stakeholders to inform the analysis.

Maryland is often described as a proactive state in growth management and preservation strategies aimed at reducing sprawl (Steuteville & Langdon, 2003: 21-2). The former governor of the state of Maryland, Parris Glendening, implemented various initiatives to manage growth. In 1992, the state passed the Maryland Economic Growth, Resource Protection and Planning Act, a growth management program aimed at environmental protection. Under this law, all local comprehensive plans must incorporate stewardship and protection of the Chesapeake Bay into their policy framework. In addition, the 1992 Act recommends that "...the 'sensitive areas' element of each municipal plan should include goals, objectives, principles, policies, and standards designed to protect streams and their buffers; 100-year floodplains; habitats of threatened or endangered species; and steep slopes" (Johnson, 1999: 29).

Glendening introduced the 1997 Smart Growth Areas Act, which builds upon the 1992 Act and

encourages smart growth practices by directing development to specific growth corridors, such as previously built-up areas (Johnson, 1999). Gaithersburg and Rockville are designated as Priority Funding Areas (PFAs), which entails that the municipalities are given priority for state funded development and future growth (MDP, 2004a).

The 2000 Smart Codes program, also proposed by Glendening, further promoted smart growth initiatives within the state (Johnson, Salkin, Jordan, & Finucan, 2002). Maryland has over 80 programs in place to advance smart growth principles and curb suburban sprawl (MDP, 2004b). According to the American Planning Association (Johnson, 1999: 28), “the state believes that growth management practices will be one of the most important ways to reduce non-point water pollution in the future.” Through a variety of open space protection programs, Maryland aims to protect up to 200,000 acres of farmland and open space by the year 2011. Development outside PFAs is, however, still permitted by local governments and private developers provided they supply their own funds for the project (Johnson, 1999).

In coordination with state policies, smart growth principles have been implemented at the county level. For example, the transfer of development rights (TDR) program, adopted by Montgomery County in 1980, has protected more than 35,000 acres of agricultural lands and environmentally sensitive areas. The TDR program

enables developers to achieve higher densities in designated growth areas by transferring their rights to develop farmland (O’Neill, 2000).

As the most populous and affluent county in the state of Maryland, Montgomery County had a population of 962,000 in 2007, which is projected to reach 1,145,000 by 2030 (M-NCP-PC, 2007). Rockville (2005), the county seat, has a population of 53,710, while the city of Gaithersburg (2008c) has a current estimated population of 59,912. Both municipalities have implemented their own smart growth policies in accordance with state and county growth management initiatives; these are discussed in section three of the report.

2. EVALUATING THEORY

“Historically, we have rebuilt our nation every fifty to sixty years, so it is not too late”
– Andres Duany, Elizabeth Plater-Zyberk, & Jeff Speck (2000: xiv)

In this section, I evaluate how new urbanism and smart growth theory incorporate environmental principles. I begin by outlining the selection process for documents included in the analysis, and explain their relevance within the context of the study. I reviewed six documents as representative of the core principles of new urbanism and smart growth: *The Ahwahnee Principles for Resource-Efficient Communities*, the *Charter of the New Urbanism*, *Best Development Practices: A Primer for Smart Growth*, *Getting to Smart Growth II: 100 More Policies for Implementation*, *LEED for Neighbourhood Development* (pilot version), and *Canons of Sustainable Architecture and Urbanism: A Companion to the Charter of the New Urbanism* (pilot); they are described in detail below. Following is an account of the template I developed to evaluate the environmental themes present in new urbanism and smart growth theory, along with an analysis of how the core documents measure up against the framework.

2.1 CORE DOCUMENTS OF NEW URBANISM AND SMART GROWTH

I analyzed six new urbanist and smart growth documents due to their status as core, founding

documents that outline the guiding principles of the movements. While other publications produced by the key players of new urbanism and smart growth are available (see Table 2.1), I identified six as most pivotal to the study. They were chosen to address a wide time span, and include documents that preceded the movements, founding documents for the respective organizations, and current publications outlining how their core principles have shifted. Further details on the significance of each document are provided next.



Figure 2.1: CNU award-winning Rockville Town Center

2.1.1 THE AHWAHNEE PRINCIPLES FOR RESOURCE-EFFICIENT COMMUNITIES

The Ahwahnee Principles for Resource-Efficient Communities were written in 1991 by the Local Government Commission (LGC), a nonprofit

Document	Organization(s)	Date Published
<i>The Ahwahnee Principles for Resource-Efficient Communities</i>	Local Government Commission	1991
<i>Charter of the New Urbanism</i>	The Congress for the New Urbanism	1996
<i>Ahwahnee Principles for Economic Development</i>	Local Government Commission	1997
<i>Best Development Practices: A Primer for Smart Growth</i>	Smart Growth Network, International City/County Management Association, U.S. Environmental Protection Agency, American Planning Association, Urban Land Institute	1998
<i>Why Smart Growth: A Primer</i>	Smart Growth Network, International City/County Management Association, U.S. Environmental Protection Agency	1998
<i>Pedestrian and Transit-Friendly Design: A Primer for Smart Growth</i>	Smart Growth Network, International City/County Management Association, U.S. Environmental Protection Agency, American Planning Association	1999
<i>Getting to Smart Growth: 100 Policies for Implementation</i>	Smart Growth Network, International City/County Management Association, U.S. Environmental Protection Agency	2002
<i>Getting to Smart Growth II: 100 More Policies for Implementation</i>	Smart Growth Network, International City/County Management Association, U.S. Environmental Protection Agency	2003
<i>The Ahwahnee Water Principles for Resource Efficient Land Use</i>	Local Government Commission	2005
<i>This is Smart Growth</i>	Smart Growth Network, International City/County Management Association, U.S. Environmental Protection Agency	2006
<i>LEED for Neighbourhood Development (Pilot version)</i>	The Congress for the New Urbanism, The United States Green Building Council, The Natural Resource Defense Council	2007
<i>Canons of Sustainable Architecture and Urbanism: A Companion to the Charter of the New Urbanism (Pilot)</i>	The Congress for the New Urbanism	2008
<i>Smart Code v. 9.0</i>	Duany Plater-Zyberk and Company	2008
<i>Light Imprint Handbook (Pilot version 0.9)</i>	Duany Plater-Zyberk and Company - Charlotte	2008
<i>The Ahwahnee Principles for Climate Change</i>	Local Government Commission	2008

Table 2.1: New Urbanism and Smart Growth Documents

 Documents selected for analysis

organization based in California. The LGC (2007) consists of elected officials, government staff, planners, architects, and community leaders. The *Ahwahnee Principles* served as the foundation for the movements of new urbanism and smart growth. The document provides 15 community principles, four regional principles, and four principles for implementing an anti-sprawl agenda focused on mixed use, walkable, transit-oriented development. These principles have been cited in a wide variety of literature. Many of the authors of the principles, including Peter Calthorpe, Andres Duany, and Elizabeth Plater-Zyberk, moved on to create the *Charter of the New Urbanism* (CNU, 1996).

The LGC has since published other documents outlining its guiding principles, including *The Ahwahnee Principles for Economic Development* (1997), *The Ahwahnee Water Principles for Resource-Efficient Land Use* (2005), and most recently, *The Ahwahnee Climate Change Principles* (2008). These three documents, while relevant to environmental and planning discourse, were excluded from the analysis due to my specific focus on the movements of new urbanism and smart growth. Since the original *Ahwahnee Principles for Resource-Efficient Communities* were published, the CNU and SGN have produced their own core founding documents. I included the original document in the analysis to illustrate changing environmental values among the related movements.

2.1.2 THE CHARTER OF THE NEW URBANISM

The *Charter of the New Urbanism* is the guiding document of the Congress for the New Urbanism (2007b), which currently has over 3,100 members in 20 countries and 49 states. The *Charter* was created in 1996 at the CNU's fourth annual Congress and is self-described as "applying valuable lessons from the past to the modern world, [and] outlin[ing] principles for building better communities, from the scale of the region down to the block" (CNU, 1996: n.p.). The two-page document builds upon *The Ahwahnee Principles for Resource-Efficient Communities* to assert twenty-seven principles at three levels of development: the region, metropolis, city, and town; the neighbourhood, the district, and the corridor; and the block, the street, and the building (CNU, 1996). Representing a combination of public and private sectors, community activists, and professionals, The *Charter* promotes traditional, mixed-use development in contrast to conventional suburban sprawl (CNU, 1996). It has been widely cited throughout the literature and informed the development of hundreds of new urbanist projects across North America and Europe. The principles espoused by the *Charter* have been incorporated into many municipal policies, and also served as an inspiration for associated movements such as smart growth to emerge.

2.1.3 BEST DEVELOPMENT PRACTICES: A PRIMER FOR SMART GROWTH

Best Development Practices: A Primer for Smart Growth articulates the basis for the smart growth movement. It was written by Reid Ewing and Robert Hodder in 1998 for the Smart Growth Network and International City/County Management Association (ICMA). Based on a book prepared for the Florida Department of Community Affairs, *Best Development Practices* was published by the American Planning Association in cooperation with the Urban Land Institute. The Smart Growth Network is an organization made up of a combination of private sector, public sector and non-profit organizations, coordinated by the United States Environmental Protection Agency. *Best Development Practices: A Primer for Smart Growth* promotes an anti-sprawl agenda through a return to traditional town planning (SGN, 1998a). It offers a set of forty-three overlapping principles based on best land use practices, best transportation practices and best housing practices.

Other important primer documents from the Smart Growth Network include *Why Smart Growth: A Primer* (1998b) and *Pedestrian and Transit-Friendly Design: A Primer for Smart Growth* (1999). I excluded both of these documents from my analysis, as it was not possible to analyze all three primer documents within the time constraints of the study. *Best Development Practices* was included because it was the first of these three documents to be pub-

lished; it also best articulates the core values of the movement, which have influenced current smart growth policy.

2.1.4 GETTING TO SMART GROWTH II: 100 MORE POLICIES FOR IMPLEMENTATION

Getting to Smart Growth II: 100 More Policies for Implementation was published in 2003 by the Smart Growth Network, International City/County Management Association, and U.S. Environmental Protection Agency. It offers the same ten principles of smart growth as its predecessor *Getting to Smart Growth: 100 Policies for Implementation*, published in 2002. These ten principles have exerted a wide influence on the planning realm by informing various conferences, academic coursework, city councils, planning committees, and smart growth commissions in North America and around the world (SGN, 2003). *Getting to Smart Growth II: 100 More Policies for Implementation* was selected for analysis because it is the more current of the two policy documents. There is a more recent publication entitled *This is Smart Growth* (SGN, 2006), but I did not include it in the analysis due to its status as a promotional, rather than policy-specific, document.

Getting to Smart Growth II builds upon the previous policy document published by the SGN by presenting new policies, and incorporating the private sector in addition to the public sector. In its detailed description of the ten guiding principles for smart growth, the docu-

ment suggests a strategy for managing growth amidst the “growth-as-usual versus no-growth debates” (SGN, 2003). Smart growth outlines similar strategies to those endorsed by new urbanism, including mixed-use, diverse housing types, transportation alternatives, and preserving open space.

2.1.5 LEED FOR NEIGHBOURHOOD DEVELOPMENT (PILOT)

LEED for Neighbourhood Development results from a partnership between the CNU, the Natural Resources Defense Council, and the United States Green Building Council, the latter of which is responsible for creating Leadership in Energy and Environmental Design (LEED), a recognized benchmark for green building design. The pilot version of LEED-ND, released in 2007, introduces the first system of green neighbourhood certification in North America. With 106 points possible overall, certification for LEED-ND platinum requires 80-106 points, LEED-ND gold requires 60-79 points, LEED-ND silver requires 50-59 points, and LEED-ND certified requires 40-49 points. The rating system involves a few prerequisites and various optional credits which contribute to the overall score.

LEED-ND was selected for study because it combines the principles of smart growth, new urbanism, and green building design (CNU et al., 2007). It moves beyond the design of green buildings to address the neighbourhood con-

text, along with the surrounding region and landscape affected by development. Some 120 projects were selected as part of the LEED pilot program to examine how effectively the rating system can be applied to practice. The certification process involves three stages: one, an optional pre-review; two, certification of an approved plan; and three, certification of a completed neighbourhood development (CNU et al., 2007). While LEED-ND is nearing its final release, the pilot version, published in February 2007, with amendments written in June 2007, is the version included in my analysis.

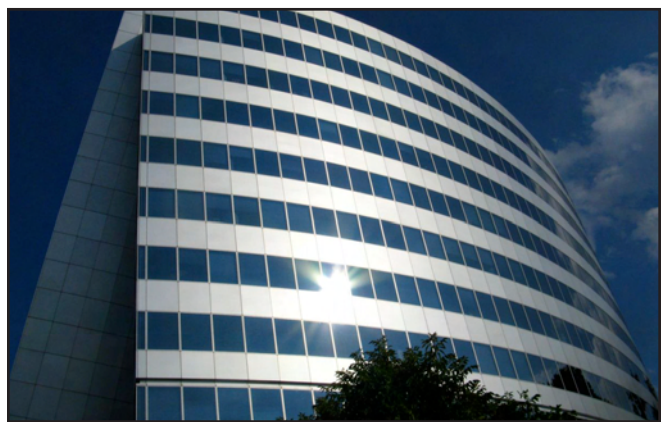


Figure 2.2: Tower Building in Rockville (LEED certified silver)

2.1.6 CANONS OF SUSTAINABLE ARCHITECTURE AND URBANISM (PILOT)

Earlier in 2008, the CNU released a pilot version of *Canons of Sustainable Architecture and Urbanism: A Companion to the Charter of the New Urbanism*. The CNU *Canons* most clearly defines the environmental agenda of new urbanism. According to the CNU, the purpose of



Figure 2.3: Stormwater management in the Kentlands

the document is “...to clarify and detail the relationship between New Urbanism and sustainability” (CNU, 2008b). Created to supplement the *Charter of the New Urbanism*, the *Canons* presents a set of 45 operating principles based on the relationship between the building, the community realm, and conservation practices. The principles are offered at six levels of analysis: general; the building and infrastructure; the street, block, and network; the neighbourhood, town and city; and the region (CNU, 2008b). Currently, 79 members of the CNU (2008b) have signed onto the *Canons*, which moves beyond the scope of the *Charter* to explicitly acknowledge and respond to the state of an environmental crisis and global climate change.

2.1.7 OTHER DOCUMENTS

Duany Plater-Zyberk and Company, established in 1980, is a planning and architecture firm with offices in Miami, Florida, Gaithersburg, Maryland, and Charlotte, North Carolina. Led by co-founders of the CNU, Andres Duany and Eliza-

beth Plater-Zyberk, DPZ has produced many documents central to the philosophy of new urbanism, including the *Smart Code* (2008b) and more recently, *Light Imprint Handbook* (2008a), a transect-based approach to stormwater management that integrates urban design principles with engineering standards. Of these two documents, *Light Imprint Handbook* would be the most relevant for the purposes of my study, as it specifically addresses environmental concerns. I did not include *Light Imprint Handbook* in my analysis, however, as only sections of the pilot project have been released to date.

2.2 A FRAMEWORK FOR ANALYSIS

To establish a framework for assessing environmental principles, I conducted a content analysis of the six core documents of new urbanism and smart growth selected for study. The purpose, in accordance with the first objective of my research study, was to identify themes that refer explicitly to the environment as a central priority, as distinguished from claims that treat the environment as a secondary priority.

I identified secondary environmental themes as those generally supportive of environmental concerns, including active transportation, mixed use, compact form, density, transit-oriented development, connectivity, infill, and recreational open space. Such themes were labeled as secondary and excluded from analysis because they simultaneously prioritize social and economic values in addition to environmental

concerns. For example, while a mix of uses may support an environmental ethic by diminishing trips for work and leisure purposes, the social benefits of encouraging a sense of community through mixed-use tends to take precedence over environmental considerations, which are seen as secondary. Similarly, while transit-oriented development is commonly perceived as an environmentally sensitive practice that reduces automobile usage, it still requires a significant amount of paved surfaces and contributes to greenhouse gas emissions; thus, I categorized it as a secondary environmental value.

In contrast, I identified a primary environmental theme as a theme that supports the environment **in and of itself**. Three broad environmental themes were determined through the analysis: conserving natural resources, sensitivity to the local environment, and sustainable

development. From these three general categories, I established 18 specific themes to guide the analysis (see Table 2.2). The first category of natural resources includes six themes: conserving land, energy and water, protecting significant habitats, restoring ecological functions, and renewable energy. The second category, sensitivity to the local environment, addresses topography, air quality, local food/agriculture, local climate, and local building materials/green building. The third and final category is sustainable development, with subthemes consist of a regional context, biodiversity, smart growth/design, green design, sustainability, longevity (or long-term planning), and climate change. After developing the framework, I analyzed new urbanism and smart growth theory according to the set of 18 environmental principles.

1. Natural Resources	2. Local Sensitivity	3. Sustainable Development
i. Land conservation/preservation/protection	i. Topography	i. Regional context
ii. Energy conservation	ii. Local climate	ii. Smart growth/design
iii. Water conservation	iii. Air quality	iii. Biodiversity
iv. Habitat protection	iv. Local food/agriculture	iv. Green design
v. Restoration of ecological functions	v. Local building materials/green building	v. Sustainability
vi. Renewable energy		vi. Longevity
		vii. Climate change

Table 2.2: Template of Environmental Themes

2.3 ANALYZING NEW URBANISM AND SMART GROWTH PRINCIPLES

The process of identifying primary environmental themes in new urbanism and smart growth documents revealed many interesting trends. The guiding principles of the movements integrate more and more environmental themes in the progression from the *Ahwahnee Principles* in 1991 to the publications of the CNU *Canons* in 2008. Throughout the process, I applied the template generously and was careful to incorporate any synonyms of the selected themes. For example, I included renewable energy if the document made any reference to solar energy, wind, or geothermal power, and not just an explicit reference towards “renewable energy.” I created a matrix to distinguish between environmental themes that were merely addressed in the documents, from themes that were integrated into the core principles of new urbanism and smart growth (see Table 2.3). This allowed me to identify patterns and gaps in environmental rhetoric among the six core documents, which are described in greater detail below.

2.3.1 CONSERVING NATURAL RESOURCES

Conserving land, energy and water proved a common theme across all the documents, and was typically referred to multiple times within a single document. Keywords associated with this theme included “conservation,” “protec-

tion,” “preservation,” and “stewardship,” along with specific references to water and energy conservation or efficiency. For example, the tenth community principle of the *Ahwahnee Principles* entails that “each community or cluster of communities should have a well-defined edge, such as agricultural greenbelts or wildlife corridors, permanently protected from development” (LGC, 1991: n.p.). Similarly, the CNU’s *Charter* (1996: n.p.) states, “infill development within existing urban areas conserves environmental resources...” Other documents make more specific references to energy and water conservation. *Getting to Smart Growth II* (2003: 53) recommends “us[ing] land management techniques and acquisition to protect drinking water sources,” while the CNU *Canons* (2008b: 3) affirm “building design, configuration and sizes must reduce energy usage...”

The theme of habitat protection was recognized and adopted in all of the documents, with the exception of the CNU *Charter*. Even as the *Ahwahnee Principles* exerted a major influence on the *Charter*, any reference to habitat and wildlife protection is noticeably absent in the later document.

The two final themes in the natural resources category, restoration of ecological functions, and renewable energy, are present in four and three of the six documents, respectively. For example, the Smart Growth Network’s *Best Development Practices* recommends the need to “restore and enhance ecological functions damaged by prior site activities” (1998a: 17). Mean-

Theme	Ahwahnee (1991)	CNU Charter (1996)	Best Dev't Practices (1999)	Getting to SG II (2003)	LEED-ND (2007)	CNU Canons (2008)
1. Natural resources						
i. Land conservation/ preservation/protection	✓	✓	✓	✓	✓	✓
ii. Energy conservation	✓	✓	✓	✓	✓	✓
iii. Water conservation	✓	✓	✓	✓	✓	✓
iv. Habitat protection	✓		✓	✓	✓	✓
v. Restoration of ecological functions			✓		✓	✓
vi. Renewable energy			✓		✓	✓
2. Local sensitivity						
i. Topography	✓	✓			✓	✓
ii. Local climate	✓	✓		✓	✓	✓
iii. Air quality				✓	✓	✓
iv. Local food/agriculture	✓	✓		✓	✓	✓
v. Local building materials/ green building	✓			✓	✓	✓
3. Sustainable development						
i. Regional context	✓	✓	✓	✓	✓	✓
ii. Smart growth/design				✓	✓	
iii. Biodiversity					✓	✓
iv. Green design				✓	✓	✓
v. Sustainability				✓		✓
vi. Longevity						✓
vii. Climate change						

Table 2.2: Analysis of New Urbanism and Smart Growth Principles

- ☒ Adoption of environmental principle
☐ Recognition of environmental issue

while, *Getting to Smart Growth II* mentions the concept of ecological restoration, but fails to incorporate the theme into its guiding principles (SGN, 2003: 56).



Figure 2.4: Mature trees preserved in the Kentlands

In terms of renewable energy, the CNU *Canons* (2008b: 4) states “renewable energy sources such as non-food source biomass, solar, geothermal, wind, hydrogen fuel cells and other non-toxic, non-harmful sources shall be used to reduce carbon and the production of greenhouse gases.” *Best Development Practices* and LEED-ND similarly integrate the concept of renewable energy into their guidelines. Thus, we can see that the themes of restoration and renewable energy do not appear in the earlier documents, but enter into the principles of new urbanism and smart growth in 1998 and remain present until 2008. The one exception is that renewable energy, which, while present in *Best Development Practices*, is not included in the SGN’s 2003 publication of *Getting to Smart Growth II*. Nonetheless, the patterns suggest that while new urbanism and smart growth address general ideas of environmental conserva-

tion throughout all of their documents, ecological restoration and renewable energy are more recent concepts recognized and applied to the discourse.

2.3.2 SENSITIVITY TO THE LOCAL ENVIRONMENT

The core documents of new urbanism and smart growth fared better in the second category: sensitivity to the local environment. All documents addressed the themes of topography and local climate, although smart growth documents were less likely to include these themes in their guiding principles. While *Best Development Practices* and *Getting to Smart Growth II* merely mention the idea of working with the natural topography, new urbanism is much more explicit in its agenda. The 12th *Ahwahnee* community principle, for example, asserts “wherever possible, the natural terrain, drainage and vegetation of the community should be preserved with superior examples contained within parks or greenbelts” (LGC, 1991: n.p.). Likewise, the 24th principle of the CNU *Charter* (1996: n.p.) states, “architecture and landscape design should grow from local climate, topography, history, and building practice.”

Air quality appears in every document except for the CNU *Charter*, yet the theme is only adopted into the guiding principles of *Getting to Smart Growth II*, LEED-ND, and the *Canons*. LEED-ND, for example, has a prerequisite of Construction Activity Pollution Prevention (CNU et al., 2007: 4).

Local food and agriculture is present in five of the six documents; *Best Development Practices* excludes this theme entirely. The *Canons* (CNU, 2008b: 4) affirms “food production of all kinds shall be encouraged in individual buildings and on their lots consistent with their setting in order to promote decentralization, self-sufficiency and reduced transportation impacts on the environment.”

The final theme of local building materials is present in the *Ahwahnee Principles*, but fails to be recognized in either the *CNU Charter* or *Best Development Practices*. This theme evolves when it reaches the three most recent documents, where it is referred to more explicitly as green building design. LEED-ND has an entire section on Green Construction and Technology, which includes LEED Certified Green Buildings, and 19 other possible credits that overlap with themes such as renewable energy, and water conservation (CNU et al., 2007). Similarly, the *CNU Canons* (2008b: 4) proves explicit in its priority of local building materials and green building design: “building materials shall be locally obtained, rapidly renewable, salvaged, recycled, recyclable and have low embodied energy.”

Overall, the documents address local sensitivity to varying degrees. In general, the more recent the document, the more likely it was to incorporate the theme into its guiding principles. The main exception is *Best Development Practices*, which addresses three of the five themes in this category, but fails to integrate any into its

core principles. The *Ahwahnee Principles* also proves an exception by integrating four of the five themes in the category of local sensitivity as early as 1991.

2.3.3 SUSTAINABLE DEVELOPMENT

While the previous two categories appear fairly consistently throughout all of the documents, some interesting patterns emerge in how sustainable development has entered into the dialogue of these movements. In their guiding principles, all of the documents identify the importance of a regional context, which is viewed as critical to environmental concerns (Gordon & Tamminga, 2002). The notion of ‘smart’ growth and design, meanwhile, entered the discourse with *Best Development Practices* in 1998, and subsequently influenced current smart growth documents. Similarly, the concept of biodiversity is only present in three of the four most recent documents, produced between 1998 and 2008. For example, *Best Development Practices* identifies the need to “preserve entire ecosystems” and protect “...regional biodiversity” (1998a: 18), yet these values are not explicitly incorporated into current smart growth principles. ‘Green’ design enters heavily into the discourse beginning in 2003 with *Getting to Smart Growth II*, and continues to be adopted into the principles guiding LEED-ND and the *CNU Canons*.

Sustainability is mentioned in the three latest documents, but only adopted into the prin-

ciples of smart growth and the CNU *Canons*. LEED-ND does state the need to "...build more livable, sustainable, communities for people of all income levels" (CNU et al., 2007: 1), but does not include this theme within its certification system. In contrast, *Getting to Smart Growth II* adopts the principle of "...promot[ing] sustainable tree-harvesting practices" (SGN, 2003: 57).

The sixth subtheme in the sustainable development category, longevity, is addressed in LEED-ND and the CNU *Canons*. The latter document, in particular, specifically addresses the need to look beyond the present and consider the future impacts of development by adopting a long-term view: "...design and financing must recognize long life and permanence rather than transience" (CNU, 2008b: 2).

The final theme of climate change is found only in the most recent document, the CNU *Canons*. While climate change discourse has been around since the late 1980s, it has only recently been incorporated into the general philosophy of new urbanism. It has yet, however, to be adopted into the guiding principles of the CNU or even to appear in the smart growth documents analyzed for the study. The *Canons* provides only a general statement regarding the theme at the outset of the document: "global climate change and habitat destruction, accelerated by global settlement patterns of sprawl, pose significant challenges requiring a global response" (CNU, 2008b: 1). Thus, we can see how new urbanism and smart growth have become more

explicit with their environmental agenda, particularly over the last two years. Both the CNU and the SGN claim, retroactively, that their principles have always addressed sustainability concerns (CNU, 2007a). Yet, my analysis indicates that critical environmental themes only enter into core documents relatively recently, and even then only in the case of the *Canons*, the CNU's most recent publication. This timing reflects the slow emergence of environmental issues into American planning discourse.

3. ASSESSING PRACTICE

“Being human is itself difficult, and therefore all kinds of settlements (except dream cities) have problems” – Jane Jacobs (1961: 78)

This section assesses the practice of new urbanism and smart growth theory through a review of master and secondary plans in Gaithersburg and Rockville, along with an analysis of the interview data gathered from key stakeholders (planners, municipal councillors, an architect, developers and members of community associations). Comments from practitioners helped me to interpret the results gathered from my analysis of new urbanism and smart growth theory.

3.1 REVIEWING PLANNING DOCUMENTS

The policy and planning documents examined emerge from the study area of Gaithersburg and Rockville, Maryland. I reviewed the master plans for each city, along with secondary plans for six new urbanist/smart growth communities and analyzed them according to the same template of 18 environmental themes applied in the previous section.

Six neighbourhood plans (three greenfield projects and three infill developments) were selected for detailed analysis from a list of fifteen new urbanist/smart growth communities

located throughout Gaithersburg and Rockville (see Table 3.1). Two of the neighbourhoods are from Rockville (King Farm and Rockville Town Center), while the remaining four communities are located in adjacent Gaithersburg (the Kentlands, Olde Towne Gaithersburg, Kentlands Boulevard, and Crown Farm). I selected these communities based both on plan availability, as well as the decision to include a range of neighbourhoods built from the emergence of new urbanism in the 1980s to the current day.



Figure 3.1: Infill development in Olde Towne Gaithersburg

Three of the neighbourhoods were examined according to their individual master plans: Gaithersburg Olde Towne, Rockville Town Center, and Kentlands Boulevard. The remaining three communities included in the study do not have individual master plans. Instead, King Farm, and Crown Farm were analyzed according to their schematic development plans

Community	Location	Type	Size	Year Approved	Year Completed/ Status
The Kentlands	Gaithersburg	Greenfield	352 acres	1988	Residential area complete; commercial area currently being redeveloped (Kentlands Blvd.)
Washingtonian Center	Gaithersburg	Greenfield, mixed-use	236 acres	Annexed into the city in 1991	Commercial is complete; residential phase currently under construction
Lakelands	Gaithersburg	Greenfield, mixed-use	343 acres	1996	Complete
King Farm	Rockville	Greenfield, TOD, mixed-use	430 acres	1996	Residential largely complete; commercial area still under construction
Quince Orchard Park	Gaithersburg	Greenfield, mixed-use	Unknown	Mid 1990s	Complete
Fallsgrove	Rockville	Greenfield	254 acres	1999	Complete
Rockville Town Center	Rockville	Infill, mixed-use	483 acres	2001	Phase 1 completed in 2006; subsequent phases under construction
Hidden Creek/ Summit Center	Gaithersburg	Greenfield, mixed-use	56 acres	2003	Some residential complete; commercial still under construction
Upper Rock District	Rockville	Infill, brownfield, TOD	20 acres	2004	Approved; awaiting building permit
Gaithersburg Olde Towne	Gaithersburg	Infill, mixed-use	640 acres	2005 (earlier plan adopted in 1995)	Some phases complete; others in construction; part of 25-year downtown revitalization
Twinbrook Station	Rockville	Infill	26.49 acres	2005	Under construction
Crown Farm/ Avientiene	Gaithersburg	Greenfield, mixed-use	178 acres	2006	Construction beginning
Watkins Mill Town Center/ Casey West	Gaithersburg	Greenfield, mixed-use	198 acres	2006	Construction in progress
Spectrum/ Casey East	Gaithersburg	Greenfield, mixed-use	40 acres	2006	Construction in progress
Kentlands Boulevard	Gaithersburg	Infill, commercial	80 acres	2008	Construction beginning

Table 3.1 New Urbanism and Smart Growth Communities in Gaithersburg and Rockville

 Neighbourhood plans selected for analysis

(SDPs) and/or resolutions approved by their respective municipalities. For the Kentlands, the available planning documents included a combination of schematic development plans, land use plans, and resolutions for the various neighbourhoods, which were adopted over an eight-year period from 1988 to 1997.

3.1.1 ROCKVILLE COMPREHENSIVE MASTER PLAN

The first master plan for Rockville was adopted in 1960; after Baltimore's, it was the second master plan to be adopted within the state of Maryland. Four years later, the Maryland-National Capital Park and Planning Commission adopted a plan entitled *On Wedges and Corridors – A General Plan for the Maryland-Washington Regional District in Montgomery and Prince George's Counties*. The plan specified that development in the two counties would be concentrated into a series of corridors, and separated by protected agricultural or rural 'wedges.' Due to its location along the Interstate 270, Rockville (2002: 1-7) was designated as one of the corridor cities ripe for further growth.

Rockville's second master plan, created in 1970, built upon the framework established both by the 1960 plan and the *On Wedges and Corridors* plan. Various additions and amendments were made to the city's master plan over the next twenty years, followed by a new master plan adopted in 1993. The 1993 plan further refined the concept of wedges and corridors, while including new chapters such as Environmental

Quality/Sensitive Areas. The most recent master plan for Rockville was adopted in 2002 after a series of public consultations. Like the previous plans, the current master plan is influenced by the *Chesapeake 2000* agreement between Maryland, Virginia, Pennsylvania, the District of Columbia, the Chesapeake Bay Commission, and the U.S. Environmental Protection Agency, which is committed to cleaning up and restoring the quality of Chesapeake Bay (Rockville, 2002: 1-3).

Since the adoption of its 2002 Comprehensive Master Plan, the city has created various strategies with the intention of making Rockville more 'green' and sustainable (Rockville, 2007). This includes *Strategy for a Sustainable Rockville*, produced in 2007 by the Environmental Management Division within the Department of Public Works. The municipality has posted resources on its website pertaining to environmental sustainability, the built environment, energy and climate protection, watersheds, waste management, drinking water, natural resources, transportation, and its environmental regulations (Rockville, 2007). While these resources are no doubt relevant to the research study, they were not included due to my specific focus on how the environmental principles of new urbanism and smart growth are implemented into specific neighbourhoods. Rather than a providing a general overview of Rockville's sustainability initiatives, this study provides a comprehensive analysis of how its master and secondary plans deal with environmental issues.

3.1.2 GAITHERSBURG MASTER PLAN

The city of Gaithersburg was also influenced by the 1964 *On Wedges and Corridors* plan for Montgomery and Prince George's counties. Gaithersburg, located northwest of Rockville along the I-270, was designated by the plan as a corridor city (Gaithersburg, 2003: 31). Master planning efforts in the city began in the 1980s with a neighbourhood by neighbourhood strategy initiated by the Planning Commission, along with the mayor and city council. The results of the planning effort were amended several times until the adoption of Gaithersburg's 1997 master plan. In the process of updating the 1997 plan, the municipality held a series of visioning sessions with the community, which established six elements to be included in the master plan, along with the designation of ten special study areas (Gaithersburg, 2003: 4-5). Of the six elements that comprise the 2003 plan, five have been adopted: the land use element, the sensitive areas or environment element, the historic

preservation element, the community facilities element, and the municipal growth element. The transportation element and remaining special study areas have yet to be adopted.

For the purposes of my study, the 2003 Gaithersburg Master Plan is included due to its status as the guiding policy document for the planning processes in the city. Neighbourhood plans for new urbanism communities in Rockville and Gaithersburg selected for more detailed analysis are outlined next.

3.1.3 THE KENTLANDS

The Kentlands was the first large-scale, year round new urbanist development. Located in Gaithersburg, Maryland, it is one of the most famous new urbanist communities in North America and has subsequently "...served as a kind of laboratory for new urbanist theories..." (Gause, 2002: 118). A 1992 article in *Time Magazine* declared the Kentlands as "...one of the best designs of 1991" (ULI, 1994: 5).

A 352-acre mixed-use community, the Kentlands was developed by Joseph Alfandre & Co., and designed by Duany Plater-Zyberk & Company in 1988. A "friendly foreclosure" in 1991 transferred development of the project to the Great Seneca Development Corporation (Gause, 2002: 118). Designed as an alternative to conventional suburban sprawl, the community was planned as a small town, complete with higher density residential units interspersed with commercial uses, a modified grid



Figure 3.2: Map of the Kentlands (Google Earth, 2008)

street pattern, garages located on back alleyways, and a variety of traditional architectural styles (ULI, 1994). In order for the project to proceed, the city of Gaithersburg created a new MXD or mixed-use zone to accommodate the Kentlands within municipal policy. The development incorporated various environmental considerations, such as preserving mature trees, conserving artificial lakes and ponds for stormwater management, and using natural building materials such as brick, wood siding and stone (Community association member MD08, 2008). The natural topography of the site was also preserved in development through minimal grading (Southworth, 1997). In order to protect the wetlands, the community was divided into two distinct halves; designers turned this into an opportunity by creating five unique neighbourhoods separated by green spaces: Old Farm Neighbourhood, Hill District, Lake District, Midtown and Downtown (Girling, 1994).

In addition to drawing media interest, the Kentlands has attracted a lot of attention from the academic realm; research studies have analyzed various aspects of the development, including its walkability and sense of community. Southworth (1997: 43) determined that "... [the] Kentlands stands out in its sensitivity to the landscape and its interesting streets and pedestrian ways." Lee and Ahn (2003) examined the pedestrian environment of the Kentlands in comparison to the Garden City paradigm exemplified by Radburn, New Jersey. Meanwhile, Joogsub and Kaplan (2000, 2004) determined that residents of the Kentlands exhibit a greater

sense of attachment to the community than the nearby suburban development of Orchard Village.

Despite some of its shortcomings, the Kentlands is a precedent-setting new urbanist development that has inspired several other new urbanist developments to emerge in the area. Since there is no comprehensive master plan available for the community, I examined seven schematic development plans for the Kentlands, adopted at various stages of its development. As the plans for its neighbouring community, Lakelands, were not available, they are not included in the study.



Figure 3.3: Map of King Farm (Google Earth, 2008)

3.1.4 KING FARM

King Farm is a 430-acre new urbanist community located in Rockville, Maryland. Based on the principles of traditional neighbourhood development, this mixed-use development was approved by the city in 1996, and built on former farmland. In accordance with the values of transit-oriented development, King Farm is

located near the Shady Grove Metro station, the last stop on the subway line which connects to Washington D.C. Two shuttles provide service from King Farm to the Shady Grove station, while light rail or bus rapid transit is anticipated to run through the community in the near future.

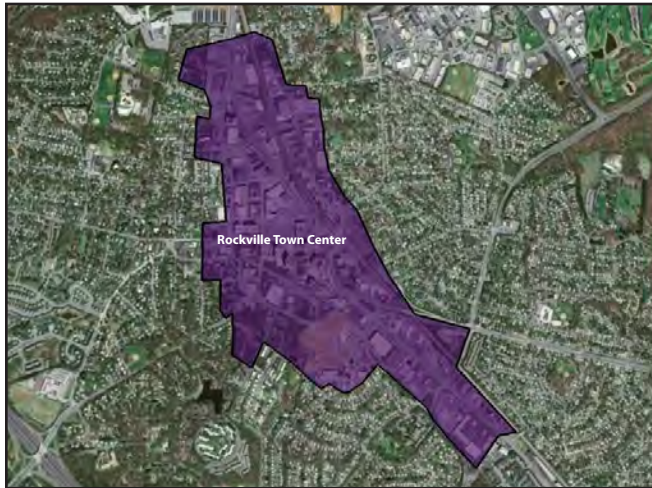


Figure 3.4: Map of Rockville Town Center (Google Earth, 2008)

There are three distinct areas within King Farm: Watkins Pond, a residential area with a mixture of housing types; Bailey Commons, a high density residential area with a village centre; and Irvington Centre, which combines commercial office space with restaurants and a hotel. Of these three areas, the residential portions are largely complete, while Irvington Centre is still under construction (ULI, 2002). King Farm has won a variety of awards for the community's design, including one from the CNU in 2001. It has also received recognition from the Environmental Protection Agency (2008) for utilizing smart growth principles such as the preservation of open space. More

than 100 acres of the community are in the form of dedicated green space, which includes recreational parks and public areas in addition to conservation areas and artificial lakes used for stormwater management (ULI, 2002). The open space network closely follows the stream corridors, while "Growing, Not Mowing" signs educate the public on the protection of stream buffers (MacDonald, Oury, Ryznar, Holmes & Berke, 2003: 13). Most of the literature on King Farm describes it as a successful, environmentally sensitive development: "...the antithesis of suburban sprawl" (Siegel, 1999). Other authors suggest that while King Farm is environmentally conscious, the developers did not implement all of the recommended watershed protection strategies (MacDonald et al., 2003: 21).

3.1.5 ROCKVILLE TOWN CENTER

Rockville Town Center is a 483-acre mixed-use, transit-oriented infill project located in Rockville, Maryland. This plot of land, located in the centre of Rockville, was developed as a shopping mall in the early 1970s amidst the zeitgeist of urban renewal. As the shopping centre declined, a public/private partnership redesigned the site in the late 1990s, and the final plan was approved by the city in 2001. The plan for Rockville Town Center required that the former mall be torn down and replaced with a clean slate: a mixed-use city centre, complete with a traditional street grid based upon the principles of new urbanism (Laurence, 1997). Phase one of the development, Rockville Town Square,

opened in 2006 and subsequently received an award in 2008 from the Congress for the New Urbanism. Complete with a new town square, a public library, and a cultural arts centre, Rockville Town Square is cited by the CNU as a successful example of new urbanism (CNU, 2008c), yet 60 percent of the residences remain unoccupied, largely due to the mortgage crisis in the United States (Municipal councillor MD10, 2008).

3.1.6 OLDE TOWNE GAITHERSBURG

The initial plan for the revitalization of Olde Towne Gaithersburg was adopted by the city in 1995 after a charrette held by Duany Plater-Zyberk & Company. The establishment of the plan helped drive economic growth and revitalization in the downtown core through a variety of residential and commercial developments. As part of a 25-year strategy for Olde Towne, the city of Gaithersburg adopted a new plan for the district in 2005, which continues to encourage redevelopment and infill in the downtown (Gaithersburg, 2005: 2). Through a variety of public consultations, including another planning charrette, the vision for Olde Towne was established as a mixed-use, new urbanist community that serves as a 24-hour destination for the region (Gaithersburg, 2005). I opted to include the 2005 Olde Towne Master Plan within the analysis because the plan was readily available, and, like Rockville Town Square, it provided the opportunity for infill projects to be analyzed in comparison to greenfield developments.

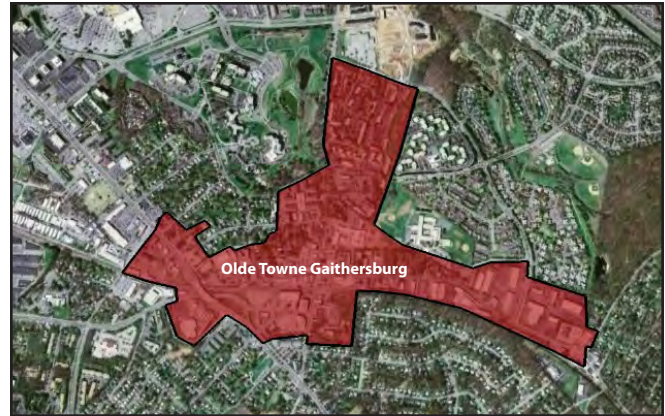


Figure 3.5: Map of Olde Towne Gaithersburg (Google Earth, 2008)

3.1.7 CROWN FARM

Crown Farm or Avientiene is a 170-acre parcel of land recently annexed by the city of Gaithersburg and rezoned as MXD or mixed-use. Along with Olde Towne Gaithersburg and Kentlands Boulevard, Crown Farm is one of the ten special study areas identified in the 2003 Master Plan for the city of Gaithersburg. Crown Farm provides an interesting case study because, along with the Casey East and West projects, it is the last greenfield project to be



Figure 3.6: Map of Crown Farm (Google Earth, 2008)

developed in the city of Gaithersburg, unless the municipality annexes more land. Crown Farm is also one of the registered pilot projects for LEED-ND, currently in phase two of the certification process. As a result, the schematic development plan for the site outlines the corresponding credits it hopes to achieve through the LEED-ND rating system. As Crown Farm is currently planned, it is set to achieve LEED-ND certification (Gaithersburg, 2008a), which is the minimum level of certification offered by the LEED-ND rating system.



Figure 3.7: Map of Kentlands Boulevard (Google Earth, 2008)

3.1.8 KENTLANDS BOULEVARD

Kentlands Boulevard is 80-acre infill project located within the commercial district of Kentlands. The plan for Kentlands Boulevard was adopted by the city of Gaithersburg in 2008, and construction of the project is anticipated to begin shortly. Kentlands Boulevard has a separate master plan, which outlines the contextual factors of the development. The plan is

based upon the results of a public participation process, including a design charrette and three public workshops. A website for the project was set up to provide resources to the public throughout the process (Gaithersburg, 2008b). Since the current commercial area of Kentlands Boulevard is largely composed of big box stores and surface parking, the design for the infill projects seeks "...a form that is consistent with the character of the established surrounding neighborhoods of Kentlands, Lakelands and Quince Orchard Park" (Gaithersburg, 2008b: 1.6). The development was chosen for further analysis because it is the most recent neighbourhood master plan in the study area, and thus illustrates the contrast between the earlier plans for Kentlands and other new urbanist communities.

3.2 ANALYZING PLANS

In this section, the same 18 themes that were previously applied to the core principles of new urbanism and smart growth are examined in the context of Rockville and Gaithersburg's planning documents. Overall, my analysis indicates that the themes have a significant presence in the master plans (see Table 3.2), which are viewed as the guiding policy documents for each of the respective municipalities. In contrast, the neighbourhood plans and schematic development plans utilize few of the same environmental themes (see Table 3.3). Descriptions of these patterns and potential reasons for this

Theme	Rockville Master Plan (2002)	Gaithersburg Master Plan (2003)
1. Natural resources		
i. Land conservation/preservation/protection	✓	✓
ii. Energy conservation	✓	✓
iii. Water conservation	✓	✓
iv. Habitat protection	✓	✓
v. Restoration of ecological functions	✓	✓
vi. Renewable energy		
2. Local sensitivity		
i. Topography	✓	✓
ii. Local climate		
iii. Air quality	✓	✓
iv. Local food/agriculture		
v. Local building materials/green building	✓	✓
3. Sustainable development		
i. Regional context	✓	✓
ii. Smart growth/design	✓	✓
iii. Biodiversity		✓
iv. Green design	✓	✓
v. Sustainability	✓	✓
vi. Longevity	✓	✓
vii. Climate change		

Table 3.2: Analysis of Master Plans in Gaithersburg and Rockville

- ☒ Adoption of environmental principle
☐ Recognition of environmental issue

Theme	Kentlands (1988- 1997)	King Farm (1996)	Rockville Town Cen- ter (2001)	Olde Towne (2005)	Crown Farm (2006)	Kentlands Blvd. (2008)
1. Natural resources						
i. Land conservation/ preservation/protection	✓	✓			✓	
ii. Energy conservation					✓	✓
iii. Water conservation	✓	✓			✓	
iv. Habitat protection	✓				✓	
v. Restoration of ecological functions	✓				✓	
vi. Renewable energy						
2. Local sensitivity						
i. Topography	✓	✓				
ii. Local climate						
iii. Air quality					✓	
iv. Local food/agriculture						
v. Local building materials/ green building						
3. Sustainable development						
i. Regional context	✓		✓		✓	✓
ii. Smart growth/design						
iii. Biodiversity						
iv. Green design						
v. Sustainability				✓		✓
vi. Longevity	✓		✓	✓	✓	✓
vii. Climate change						

Table 3.3: Analysis of Neighbourhood Plans in Gaithersburg and Rockville

- ☒ Adoption of environmental principle
☐ Recognition of environmental issue

disconnect between the master and neighbourhood plans are provided below.

3.2.1 CONSERVING NATURAL RESOURCES

The master plans for Rockville and Gaithersburg each adopt five of the six themes within the category of natural resources: land conservation, energy conservation, water conservation, habitat protection, and the restoration of ecological functions. The 2002 Comprehensive Master Plan for Rockville (2002: 5-1) has a section entitled The Environment – Sensitive Areas and Critical Issues, which contains six policies that pertain to environmental issues, including “... environmental programs that will protect and enhance the city’s natural resources and ensure that environmental impacts from development are limited or mitigated.” Similarly, one of the strategic directions that informs Gaithersburg’s Master Plan (2003: 6) is to “implement recommendations from ongoing evaluations of natural resources and encourage protection and enhancement of the environment.” When it comes to renewable energy, however, Rockville fails to recognize this theme within its master plan. Gaithersburg briefly mentions the incorporation of passive solar design in one of its municipal buildings (Gaithersburg, 2008d: 9), but does not include the theme within the city’s policy framework.

The neighbourhood plans recognize and adopt significantly fewer environmental principles into their policies than the master plans. Of the

three categories in my framework, the neighbourhoods plans fare best within the first category of natural resources. Land and water conservation are common themes among all three greenfield projects. In the SDPs for the Kentlands, conservation is addressed through designated tree-save areas, wetlands protection and stream buffers, and improvements to stormwater management so that “residential units are to be phased in accordance with the provision of adequate stormwater management” (Gaithersburg, 1989: n.p.). Later plans for the Kentlands discuss habitat protection and enhancement, along with reforestation (Gaithersburg, 1997c: 11; 1997b: n.p.).

Development at King Farm followed a Stormwater Management Concept Plan consisting of seven major aspects: “Regional Stormwater Management Facilities, Stream Buffers, Stream Enhancements, Best Management Practices (“BMPS”), Stream Monitoring, Sediment Control and Education (Rockville, 1996: 26). The resolution for King Farm (Rockville, 1996) also stipulates that a separate stormwater management system was to be created for the neighbourhood.

Rockville Town Center fails to address any of the themes in the category of natural resources. While its status as an infill project may negate the need to address certain issues, such as land conservation, it is surprising that none of the themes are even mentioned within the plan for Rockville Town Center, particularly in comparison to the city’s master plan.

Olde Towne Gaithersburg(2005: 5), meanwhile, identifies the importance of proper stormwater management within the section of community input, but fails to integrate the issue into its guiding principles for the project, or even to address the remaining themes in this category.



Figure 3.8: “Growing Not Mowing” sign in King Farm

As the last infill project analyzed for the study, Kentlands Boulevard recognizes three of the six themes pertaining to natural resources in its master plan, but adopts only one, energy efficiency, into its guiding principles for the project (Gaithersburg, 2008b: 4.5).

Crown Farm stands out among these six communities by recognizing all of the themes within the natural resources category, and adopting five into its policy framework. The reason for Crown Farm’s success in this category is likely due to its status as a LEED-ND pilot project. The plan for the community outlines Crown Farm’s potential credits within the LEED-ND rating system. For example, Crown Farm aims to “restore native habitat, using only native spe-

cies, to an area equal to 10% of the development footprint” (Gaithersburg, 2006: 16), but identifies that the development is unlikely to attain the LEED-ND credit of “On-Site Renewable Energy Sources” (19).

3.2.2 SENSITIVITY TO THE LOCAL ENVIRONMENT

The master plans of Rockville and Gaithersburg yield the same results within the second category: sensitivity to the local environment. The municipalities address all five themes in the category, but incorporate only three into policy: topography, air quality, and local building materials/green building. In Rockville (2002: 5-7), for example, one of the city’s recommendations is to “participate in regional efforts to reduce air pollutants in the Washington D.C. metropolitan area.” Likewise, one of the objectives identified in the Gaithersburg Master Plan (2004a: 18) is to “encourage green building principles to be applied both in public and private development in order to support environmentally sensitive design, construction, operation, and maintenance of buildings and landscapes;” the plan also establishes five actions for carrying out the policy.

The neighbourhood plans address and incorporate only a few themes within the category of local sensitivity. Plans for the Kentlands discuss the importance of protecting topography and slope in the second SDP for the neighbourhood, which “...was subsequently revised from the original submission in terms of number

and types of units to reflect existing extreme topographic conditions” (Gaithersburg, 1990: n.p.). Later plans briefly mention that air pollution should be discouraged and building design should reflect environmental considerations, but such is the extent to which local sensitivity is addressed (Gaithersburg, 1994b: n.p.; 1997c: 9).

King Farm notably includes topography into its plan by prohibiting the construction of habitable structures within the 100-year floodplain (Rockville, 1996: 27), yet it fails to recognize any of other themes within the category of local sensitivity.

Rockville Town Center, Olde Towne Gaithersburg and Kentlands Boulevard do not fare much better; all three of these infill developments address local food/agriculture as a concern, but none include the element within planning policies. Kentlands Boulevard stands out among the three infill projects by recognizing two themes in the category of local sensitivity: local building materials/green building design, and topography. The master plan for this development asserts in a general fashion, “many successful new urban places have a network of curvilinear streets or streets that respond to the natural topography of the area,” however, it fails to include topographic considerations within its policy framework (Gaithersburg, 2008b: 3.8).

Once again, Crown Farm has the best results of all the neighbourhood plans. Crown Farm recognizes four of the five themes, but only incorporates one, air quality, into its policy. For example, Crown Farm recognizes green build-

ing design as part of the LEED-ND certification process, but determines that it is inconclusive whether the development will be able to attain the associated credit (Gaithersburg, 2006).

3.2.3 SUSTAINABLE DEVELOPMENT

When it comes to the category of sustainable development, Gaithersburg and Rockville each incorporate five of the seven themes into their master plans: regional context, smart growth/design, green design, sustainability, and longevity. In Rockville (2002: 1-1), the theme of sustainability contributes to the underlying policy of the entire master plan. The plan states “Rockville will be a city that...respects the natural environment and historic resources, and promotes the responsible, sustainable use of natural resources for present and future populations.” Gaithersburg (2003:14) uses similar language to assert “Gaithersburg is a community that...ensures a high quality of life that is sustainable for future generations.” Rockville recognizes the theme of biodiversity as an environmental issue, but only Gaithersburg adopts biodiversity into its master plan (2004b: 24, 40, 44, 66). Similarly, when it comes to the final theme of climate change, Rockville fails to address the issue in its master plan, while Gaithersburg (2004b: 46) mentions the theme just once in its assertion that “common greenhouse gases that contribute to climate change include carbon dioxide, methane, nitrous oxide, ozone hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulfur hexafluoride (SF6).”



Figure 3.9: The design for Kentlands Boulevard (Gaithersburg, 2008b)

Once again, the neighbourhood plans fare poorly in the final category of sustainable development. While certain themes are noticeably lacking from most of the neighbourhood plans, others, notably regional context and longevity, are more likely to be incorporated in all of the secondary plans. The Kentlands discusses regional context and longevity in its plan "...to balance local needs with the future needs of the entire neighborhood, the City as a whole, and beyond" (Gaithersburg, 1988: 27). King Farm recognizes both of these themes as an issue, but does not include them within its guiding principles for development. The plan for Rockville Town Center situates the development within its regional context, and makes several references to the long-term potential of the site (Rockville, 2001).

Olde Town Gaithersburg and Kentlands Boulevard attain similar results in this category. Each development addresses the same three themes: regional context, sustainability, and longevity. Olde Towne adopts two of these themes into its

policy context, while Kentlands Boulevard integrates all three. The Olde Towne Master Plan, for example, states that "...the consensus-driven, financially feasible plan will build a strong sustainable Olde Towne over the next 5 to 10 years" (Gaithersburg, 2005: 2), while Kentlands Boulevard strives to "encourage sustainable development strategies at every level – from site work to building technology to energy efficiency" (Gaithersburg, 2008b: 4.5).

Crown Farm has the strongest environmental policy of all the neighbourhood plans in the category of sustainable development. Of the seven themes, Crown Farm recognizes five as environmental issues, while including two into its plan. Yet, while the SDP for Crown Farm (Gaithersburg, 2006) acknowledges many of the credits for LEED-ND certification, it states that many of them are unattainable due to the project's status as a greenfield site.

3.3 TALKING WITH PRACTITIONERS

In the summer of June 2008, I interviewed 13 key stakeholders in Gaithersburg and Rockville, Maryland. The practitioners comprised four planners (three municipal and one consultant), one architect, three municipal councillors, two developers and two members of community associations (see Table 3.4). Interview questions addressed the framework set out in the larger research study, *Theory and Practice in Planning the Suburbs*. Questions specific to my research

study examined the implementation of new urbanist and/or smart growth principles, environmental concerns raised by the project, and efforts made to protect ecologically sensitive areas (see Appendix).

To assess the implementation of new urbanism and smart growth theory in practice, I examined the interview data according to the template of 18 environmental themes developed in phase one of the analysis (see Table 3.5). In evaluating practitioners' comments, the presence or absence of particular themes was not deemed significant due to the unequal distribution of stakeholders in the study. Rather, the template is useful for identifying which themes respondents raised during the interview process, and how they described the implementation of new urbanism and smart growth theory into policy. A discourse analysis of the interview data

enabled me to interpret the findings from my analysis of new urbanism and smart growth principles, along with the planning documents in Gaithersburg and Rockville. The results are analyzed below according to each of the three categories in the framework.

3.3.1 CONSERVING NATURAL RESOURCES

Municipal planners were generally eager to discuss how the planning and development process conserved environmentally sensitive areas. Other planners were more critical and suggested that new urbanism does not go far enough towards protecting critical open spaces. One municipal planner, in reference to the role of preservation in the Kentlands, identified that “there was some redesigning of the original plan to allow for wetlands...” but “at that time

Type of Practitioner	# Interviewed	Location and Details
Planners – Municipal	4	• 3 Gaithersburg planners • 1 Rockville planner
Planner – Consultant	1	• Involved in a Rockville project
Architect	1	• Based in Gaithersburg
Municipal Councillors	3	• 3 Gaithersburg councillors • 1 Rockville councillor
Developers	2	• 1 developer involved in a Gaithersburg project • 1 developer worked on a Rockville project
Members of Community Associations	2	• Both based in Gaithersburg • 1 a member of a homeowner's association • 1 a member of a non-profit organization
Total	13	

Table 3.4: Interviews With Practitioners

Theme	Planners - Municipal (4)	Planner - Consul- tant (1)	Architect (1)	Municipal Council- lors (3)	Develop- ers (2)	Members of CAs (2)
1. Natural resources						
i. Land conservation/ preservation/protection	✓		✓	✓	✓	✓
ii. Energy conservation				✓		
iii. Water conservation	✓		✓	✓	✓	✓
iv. Habitat protection						✓
v. Restoration of ecological functions	✓			✓		
vi. Renewable energy				✓		✓
2. Local sensitivity						
i. Topography	✓		✓	✓		✓
ii. Local climate						
iii. Air quality						
iv. Local food/agriculture	✓		✓	✓		✓
v. Local building materials/ green building	✓			✓	✓	✓
3. Sustainable development						
i. Regional context	✓	✓		✓		
ii. Smart growth/design	✓	✓	✓	✓	✓	✓
iii. Biodiversity						
iv. Green design	✓			✓		✓
v. Sustainability	✓	✓	✓	✓	✓	
vi. Longevity	✓			✓	✓	
vii. Climate change						

Table 3.4: Analysis of Practitioners

- ☒ Recognition of environmental principle adopted into policy
☐ Recognition of environmental issue

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" (MD04-B, 2008). These results are similar to what the literature says regarding environmental protection: in practice, new urbanist communities generally protect more natural resources than conventional suburbs, but they have a long way to go in terms of advancing the goals of environmental sustainability (Godschalk, 2004; Grant, 2006). While new urbanism and smart growth theory generally incorporates values of conservation and protection, other environmental principles, particularly in regards to sustainable development, are lacking in most of their core documents. When these principles are adopted into theory, they often reveal environmental rhetoric (Till, 2001), rather than genuine attention to ecological concerns.

Municipal councillors explained the trade-offs involved in protecting natural resources during the development process. For the Kentlands, a Gaithersburg councillor 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" (MD06, 2008). This comment indicates a tension between environmental concerns and the paradigm of growth inherent in municipal policies. Accordingly, a Rockville councillor revealed skepticism on the implementation of

environmental protection strategies: "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" (MD10, 2008).

Members of community associations demonstrated a strong awareness of environmental considerations in the development process, particularly in regards to conserving natural resources. One clarified that a lot of mature trees were protected in the Kentlands, along with the lakes, which were preserved for stormwater management (MD05, 2008). Another community association member in Gaithersburg discussed the potential of incorporating passive solar technology into the Kentlands. Finding a solar panel company to work with them, however, has proved difficult because only 25 percent of the homes have the right exposure (MD08, 2008). Their comments contribute to our understanding of the neighbourhood plans for the Kentlands.. While wetlands and some mature trees were preserved during development, the community failed to incorporate principles of energy conservation and renewable energy.

Developers provided further insight into how practitioners interpret the issue of environmental conservation and protection. Of the two developers interviewed, one described the environmental objections of new urbanist developments in general terms as "traffic, congestion, schools...and all the related environmental things that go along with traffic and congestion and schools" (MD02, 2008). The second devel-

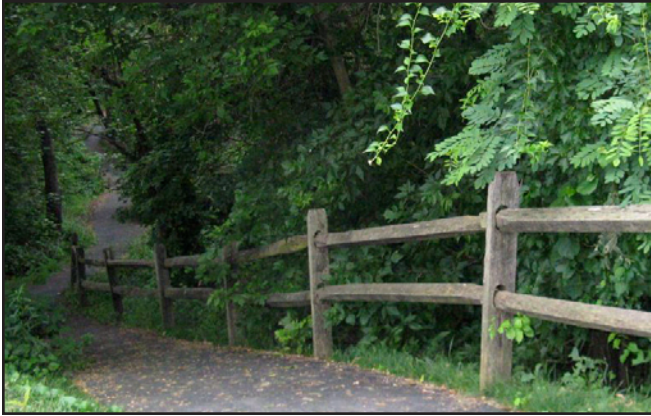


Figure 3.10: Walking trails and preserved open space in the Kentlands

oper, in contrast, demonstrated an awareness of environmental issues such as protection and stormwater management. His comments indicate a tension between the theory and practice of new urbanism. He stated that in the process of developing the Kentlands, "...there was a lot of greenfield and farm that was still consumed and developed on" (MD03, 2008). The developer emphasized how the company he works for is moving towards smaller scale infill projects, as opposed to large-scale greenfield developments like the Kentlands.

In terms of infill development, the planner working as a consultant helped illuminate the lack of environmental protection strategies inherent in neighbourhood plans. He stated quite bluntly that there were no issues raised regarding the environmental impacts of Rockville Town Center because "...forest preservation and streams [is] not a part of inner city redevelopment" (MD01, 2008). His comment suggests that practitioners view infill development as an environmentally-sensitive practice

in itself, thus negating the need to implement further environmental principles.

3.3.2 SENSITIVITY TO THE LOCAL ENVIRONMENT

For the second category of sensitivity to the local environment, municipal planners often referred directly to policy during the interview sessions. According to one Gaithersburg municipal planner, "...the agricultural preserve in the northwest part of the country was one of the first ag preserves in the nation" (MD04-B, 2008). Her statement reflects a sense of pride in the environmental policies at the state level. Another Gaithersburg planner, however, stated that "...one difficulty we do have is with some of the state's environmental regulations – they're really a one-size fits all type of regulation, and the state has varied climates and varied geographic areas..." (MD04-A, 2008). This comment indicates a tension between state policies and municipal plans, which must abide by state and county regulations. It helps explain the some of the difficulties entailed in implementing environmental practices at the municipal level.

Green building design or the use of local building materials was a common theme identified by almost all of the stakeholders as an environmentally-sensitive practice. Planners in Rockville discussed the emergence of green building design on the municipality's agenda, along with the incorporation of LEED certification standards. One planner for the city of Rockville

affirmed that LEED building standards are encouraged with each new development (MD10, 2008). Similarly, the planner working as a consultant asserted:

...there's also increasingly an environmentally sound design policy that is being enforced on developers and frankly, most of our clients are accepting this welcomingly and pushing it to the limits so that 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 so virtually everybody now, within the next year, will have at least a minimum certification level of LEED certification, a new optional method for improving projects and I think that's great (MD01, 2008).

Such comments indicate how practitioners interpret green building design: most declare its importance in the realm of environmental sensitivity. LEED standards have exerted a strong influence on municipal policies, which reflects the current popularity of green building strategies in the United States. Yet, while the theme has been adopted into new urbanism and smart growth theories, and the master plans for Gaithersburg and Rockville, green building design is not incorporated into the policy of neighbourhood plans.

Other stakeholders interpreted green building design in divergent ways. A Gaithersburg planner discussed the theme with regards to the following "...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, with vinyl siding or something like that" (MD04-A, 2008). In contrast, a municipal councillor in Gaithersburg described 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" (MD06, 2008). The architectural standards imposed on the Kentlands were thus relaxed in development of Lakelands, and the builders were allowed to use more synthetic building materials. This illustrates a sense of skepticism from stakeholders on the viability of green building strategies, particularly regarding the maintenance costs of natural building materials.

Topography was also identified by interview respondents as an important facet of new urbanism implemented into development practices. A community association member, for example, identified one of the principles of new urbanism as "...the fact that you work with the topography you're given, as opposed to just laying everything flat" (MD08, 2008). The architect interviewed stated, "when we have charrettes – you always look at the grading and the easiest way is just to follow it – how light can you lay on the ground." Yet, despite the fact that practitioners identified topography as an important environmental consideration, the theme was only incorporated into two neighbourhood plans: the Kentlands and King Farm.

The themes of air quality and local climate barely arose during the interview sessions. Local food and agriculture did enter into some of the discussions; one respondent declared local food as a major principle that should be incorporated into the design of suburban neighbourhoods because "...food's becoming an issue – the high prices of food, distance traveled" (MD07, 2008). Yet, this priority was not adopted into policy by any of the neighbourhood plans. Local food is, however, explicitly discussed in four of the six new urbanism and smart growth documents, with an emphasis towards the most recent ones. The reasons for this lack of implementation into neighbourhood plans are further discussed in section four below.

3.3.3 SUSTAINABLE DEVELOPMENT

Gas prices were a hot topic for all the practitioners. In the summer of 2008, energy prices spiked just prior to the mortgage meltdown in the United States. Municipal planners discussed the impact of "...changing energy prices and how that's really going to affect suburbs" (MD09, 2008). The planner working at a consulting firm similarly discussed the impact of energy prices: "we're a crisis oriented society and we've been waiting for the Arabs to raise the oil price high enough so that we can begin thinking about optional ways to move around" (MD01, 2008). Developers, likewise, referred to the impact of gas prices in response to a discussion about what the future of the suburbs might

entail. One identified that the desire to move back to the city is growing due to "...gas and environmental concerns" (MD02, 2008). The other similarly 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" (MD03, 2008).

Gas prices were also seen as having a major influence for members of community associations: "the key concern is, particularly in light of the recent serious hike in gasoline prices – sprawl is not sustainable" (MD05, 2008). To some extent, the comments demonstrate how gas prices have legitimized environmental concerns. The high cost of gasoline offers a utilitarian purpose for decreasing energy use in suburban developments. Understanding the tension between economic and environmental interests, as described by practitioners, helps us understand why environmental principles generally lack successful implementation in practice.

Practitioners often referred to all three pillars (social, environmental and economic) in describing sustainable practices. One developer held that the future focus of the company is on "...infill, more sustainable neighbourhoods – not necessarily projects, but neighbourhoods – sustainable from infill and being close to transit, to materials used, to social sustainability, economic sustainability...compact, mixed-use real neighbourhoods" (MD03, 2008). Other interview respondents used the terms green de-

sign and smart growth when discussing issues of sustainability. The planner working as a consultant, identified that “...there is an environmental crisis...[thus] how we grow needs to be accomplished in a smart way” (MD01, 2008). Such comments suggest that the theme of sustainability is incorporated quite selectively into the practice of new urbanism, which may result from the vague definitions of sustainability offered by new urbanism and smart growth theory. Environmental, economic and social concerns are used interchangeably by the movements to describe sustainability, indicating that the term lacks a coherent definition both in theory and practice. The integration of rhetoric which claims that development is ‘green’ and ‘smart’ reflects the current popularity of these terms in the United States.

Practitioners were also aware of the importance of a regional context, as well as long-term policies in regards to environmental issues. According to one planner: “I think that, in fact, more and more often, Chesapeake Bay and back areas and tributaries that have runoff into the Bay are going to be protected” (MD01, 2008). His statement identifies the importance of regional policies, such as the *Chesapeake 2000* agreement, which are in place to protect regional resources; these policies are well documented in the master plans of both Gaithersburg and Rockville.

The themes of biodiversity and climate change did not enter into the discussions with practitioners. These themes were generally lacking

from new urbanism and smart growth theory and neighbourhood plans as well, although they are selectively incorporated into master plans.



Figure 3.11: Sustainable development in King Farm?

4. THEORY VERSUS PRACTICE ———

“Suburbia will come to be regarded as the greatest misallocation of resources in the history of the world. It has a tragic destiny”
– James Howard Kunstler (2005: n.p.)

At the outset, I stated that this project was concerned with the future of suburbia. Through an examination of the environmental premises guiding new suburban developments, I arrived at three major research findings: neighbourhood plans incorporate environmental principles selectively, sustainable communities are defined as ‘green’ and ‘smart’, and new urbanism and smart growth express an anthropocentric view of the environment. This section summarizes the results of my research study and their implications within the realm of planning. After a discussion of my major findings as they pertain to the relationship of theory and practice, I proceed to make recommenda-

tions for further research, and comment on future visions of suburbia.

4.1 THE GAPS IN NEIGHBOURHOOD PLANS

The first major finding of this research study is that **neighbourhood plans incorporate environmental principles selectively**. My analysis demonstrates that environmental themes present in new urbanism and smart growth documents, and in the master plans of Gaithersburg and Rockville, are significantly lacking among the six neighbourhood plans.

Within the core documents of new urbanism and smart growth, the 18 environmental themes are present to varying degrees, with emphasis on the most recent documents: the LEED-ND pilot, and the CNU *Canons*. The master plans of Rockville and Gaithersburg also recognize and adopt the vast majority of environmental principles into their municipal policies. When it comes to the neighbourhood plans, however, we can see a dramatic decrease, both in the recognition of environmental issues, and the plan’s adoption of environmental principles into policy. Of the six neighbourhoods analyzed in the study, only the Kentlands (Gaithersburg, 1988-1997) and Crown Farm (2006) adopt more than one quarter of the 18 environmental themes into their community plans (seven and



Figure 4.1: The vision for Crown Farm (Gaithersburg, 2008d)

ten principles, respectively). Both are greenfield projects located in Gaithersburg, Maryland. The remaining greenfield development, King Farm, along with the three infill projects analyzed all fare poorly in their adoption of environmental principles.

The Kentlands has the reputation of being an environmentally-sensitive development, particularly for its time. A Gaithersburg architect noted that the original owners of the property, the Kents, "...requested that [the developer] would be environmentally sound – the Kents, interestingly enough, they had that in mind in the 70s and 80s, at a time when it wasn't really fashionable" (MD07, 2008). Another interview respondent agreed that when the Kentlands was built in the late 80s, "...Maryland even in general, was kind of an anomaly for having this idea of protecting streams and protecting trees" (MD09, 2008). The Kentlands was developed over a nine-year time span, and approved by the city of Gaithersburg through a series of seven schematic development plans. While many of the environmental themes beyond issues of conservation and stormwater management were not included in the initial schematic plans, subsequent plans deal more explicitly with issues of topography and habitat protection. Yet, when compared with the 1996 principles espoused in the *Charter of the New Urbanism*, the Kentlands lacks attention to environmental concerns such as energy efficiency, renewable energy, local climate, and local food/agriculture. Further, most of the themes in the sustainable development category – notably biodiversity, sustainability,

and climate change – are absent in both the *Charter* and the neighbourhood plan for the Kentlands. A Gaithersburg planner provided insight into this finding; she stated that the city's environmental guidelines, established over the past ten years, are much stricter now than when the Kentlands was built (MD04-A, 2008). Accordingly, another planner in the city clarified "if you were to build Kentlands today, you'd actually have a smaller area to build in because we would require a larger stream valley buffer, we would require more wetlands protection and things like that..." (MD09, 2008). While the Kentlands may have been environmentally sensitive for its time, the community only integrated selected ecological principles.

Of all the neighbourhood plans I analyzed, Crown Farm yields the most successful results, incorporating ten of the 18 environmental themes into its plan. Since Crown Farm is a pilot project of LEED-ND, we can see how some of the environmental principles in LEED-ND were applied to the plan. Yet, issues of local climate, biodiversity, and climate change are noticeably lacking from the plan for Crown Farm, even as they are present within LEED for Neighbourhood Development and the 2003 Master Plan for Gaithersburg. Even Crown Farm, which fared better than the other five communities included in the analysis, fails to address critical environment issues. This suggests the limitations of the LEED-ND pilot; while Crown Farm protects critical areas and makes progress in the realm of integrating sustainability principles, it consumes some of the last greenfield land avail-

able in the city of Gaithersburg. As one Gaithersburg planner clarified, the Crown Farm property is being developed because the land is vacant, and the former farm on its property is no longer a working farm (MD04-B, 2008). Such results question how environmentally sensitive a development can be when it utilizes some of the last greenfield land in the city.

King Farm only fares well on a select few of the environmental themes. The plan for King Farm (Rockville, 1996) extensively addresses issues of land conservation, stormwater management, and topography; this is well documented in the literature (Seigel, 1999: 32). King Farm, however, fails to address most environmental principles examined. A Rockville planner explains that the community was approved before the city's environmental guidelines were in place. Thus, King Farm has less open space (about 20-22%) in comparison to Fallsgrove, another neotraditional development, which has about 33-34% open space (MD11, 2008). Such results indicate the importance of establishing environmental regulations prior to development, as Gordon and Tamminga (2002) argue.

All three of the infill developments included in the analysis – Rockville Town Center, Gaithersburg Olde Towne, and Kentlands Boulevard – further exhibit selective attention to environmental principles. While the master plans for Rockville and Gaithersburg make repeated references to all three categories of environmental themes, the neighbourhood plans fail to incorporate them. This might be explained by the

perception that infill projects are already more environmentally-sensitive than greenfield projects, as they reuse land already developed for human use. A planner who worked as a consultant on Rockville Town Center made that argument by saying that preservation is not an issue for infill development (MD01, 2008). Yet, the three infill projects examined fail to address key environmental issues which are not limited to greenfield development, including renewable energy, local climate, air quality, biodiversity, and climate change. While new urbanism and smart growth are emphasizing infill over greenfield development, neighbourhood plans still do not go far enough towards incorporating environmental principles.

Overall, my research indicates that environmental planning for the case study communities is occurring to some degree at the regional level. Regional policies, particularly the agriculture preserve implemented in Maryland in the 1970s, and the protection surrounding Chesapeake Bay, all seem to be in place. The master plans for Gaithersburg and Rockville similarly incorporate the majority of environmental themes into their guiding policies. Yet, we find a lack of environmental awareness inherent in the neighbourhood plans. Such results question the relationship between master and secondary plans. While environmental policies are included in master plans or present in environmental guidelines for the region, they are not included within neighbourhood plans. Planners should be concerned that the secondary plans implement environmen-

tal principles on such a selective basis. While much of the literature identifies that planning needs to happen at the regional level in order to be effective at the neighbourhood level (Gordon & Tamminga, 2002), the reverse is also true: environmental principles need to be implemented at the neighbourhood level. Simply identifying the need for conservation and protection in secondary plans is a start, but is not enough to change settlement patterns and halt the degradation of the environment. Gordon and Tamminga (2002) reached similar conclusions in their analysis of secondary plans for new urbanism communities in Markham, Ontario; the plans succeeded in environmental protection strategies, but failed to successfully promote ecological restoration.

This finding coincides with critiques of new urbanism and smart growth in the literature: the movements create attractive, mixed-use communities, but do not go far enough towards implementing a vision of sustainability (Godschalk, 2004; Grant, 2006). A developer illuminates this finding: “I don’t know how I feel about the term new urbanism and everything – I think it’s just a lot of theory and people...in my mind; it hasn’t been implemented very well” (MD03, 2008).

4.2 GREEN AND SMART COMMUNITIES

My second major finding is that the **documents and plans define sustainable communities as ‘green’ and ‘smart’**. The three most recent documents of new urbanism and smart growth



Figure 4.2: Public space in Rockville Town Center

(*Getting to Smart Growth II*, LEED-ND, and the CNU *Canons*) frequently discuss sustainability in terms of ‘green’ and ‘smart’ design, treating the terms as synonyms. The CNU *Canons* (2008b: 5), for example, recommends that “green streets integrate sustainable drainage with the role of the street as defined public space.” This trend is reflected in the master plans of Rockville and Gaithersburg, which frequently adopt the terms ‘green’ and ‘smart’ in their policies. Most of the stakeholders interviewed similarly defined sustainable communities in terms of green building design and LEED certification standards. For example, a Rockville planner identified that “...the city has adopted a sustainability strategy in looking at creating a green building code over the next year or so” (MD11, 2008). Overall, the findings parallel those in the literature: Zimmerman (2001: 22) notes, “in the United States, sustainable development is often manifest in the push for so-called green design technologies – those that reduce the environmental impact of buildings by cutting energy and water use and by using recycled and renewable materials.”



Figure 4.3: Back lanes in the Kentlands

Some interview respondents were critical of the rhetoric inherent in describing communities as ‘green’ and ‘smart.’ One Gaithersburg planner said: “it’s very easy to make fun of it, to say, well what’s so smart about that anyway? How can you call this smart when everybody’s still driving cars, everybody still has a garage?” (MD09, 2008). Similarly, a Rockville councillor stated, “every time you bring up the environment, they say ‘oh, well, they get LEED certified – we’ll have enough grass, and enough green, and enough drainage, and enough this, and well have a stormwater pond management system and there will be a lot of...’ what I call facelift things...” (MD10, 2008). In this way, the practitioners revealed skepticism regarding their city’s commitment to green principles. Green building design may be a necessary step towards environmentally sensitive communities, but it is not sufficient. As Halligan (2008: 136) asks, how ‘smart’ can a development be if it increases pollution and congestion, and reduces the overall quality of life for its residents?

Sustainability is currently a hot topic in the United States, and climate change has emerged

on the CNU’s agenda, but my analysis sees it as simplified rhetoric, rather than a genuine attention to ecological principles. On the subject of rhetoric, Bailey (1983) writes that manifestos provide generalizations on the nature of reality. Such documents assume “...that the context will be accepted as the relevant one” and then proceed to offer a simplistic solution to a complex issue (Bailey, 1983: 128). This pattern is apparent in the core documents of new urbanism and smart growth, particularly in the case of the CNU. New urbanism advocates respecting the environment, yet ultimately aims to maintain the status quo (Zimmerman, 2001). The rhetoric indicates that the goals of sustainable development have yet to be actualized in the realm of practice (Grant, 2006). Simply defining sustainability as ‘green’ and ‘smart’ fails to address the complexity of environmental issues, particularly when it comes to the nature of climate change.

Al Gore’s 2006 film, *An Inconvenient Truth*, played a critical role in shaping American perceptions of climate change, alerting the country to the realities of the environmental crisis of global warming (Paramount Classics, 2006). In 2007, Al Gore published a book on the subject, entitled *An Inconvenient Truth: The Crisis of Global Warming*. The CNU has responded directly to Al Gore’s influence in a six-minute video, *A Convenient Remedy to the Inconvenient Truth*, which describes the role of urban design in combating climate change (CNU, 2008a). Yet, the CNU’s ability to deal with an issue of this magnitude appears simplistic. The video

shows that “the traditional urban neighborhood, whether it’s in the city, suburb or town” (CNU, 2008a: n.p.), can reduce carbon emissions by 50% or more by being more walkable and transit-oriented, while offering a mix of uses. The video appeals to its audience by discussing the impact of rising gas prices in the United States and asserting that new urbanism is “efficient compared to a one-size-fits-all neighborhood” (CNU, 2008a: n.p.). In the process, the CNU is making the simple assertion that better design practices can resolve climate change, hence failing to account for the complexity of the issue in regards to the current political and economic context of the United States.

LEED-ND similarly offers a simplistic solution to the issue of climate change. The Beijing Olympic Village, for example, achieved a level of Gold certification in LEED-ND’s pilot program, but is described as an example of poor urban design (Steuteville, 2008). Further, critics argue that “to define ‘sustainability’ mainly as energy, water, or waste efficiency is to ignore the qualities that make satisfying urbanism;” instead “sustainability...demands attention to place – scale, form, resilience, and context” (Steuteville, 2008: 3). This suggests that despite LEED-ND’s inclusion of the neighbourhood context into its certification system, the benchmark for sustainability offers only selective attention to the complexities of environmental issues.

In order for environmental issues to truly be recognized by policy, the environment cannot

be simply a trend; rather, ecological principles need to be incorporated into planning practice. As planners, we must be cautious of simplifying such complex issues into trendy terms and solutions. We also need to be aware of the role that values play in the relationship between theory and practice, which I examine in the following section.

4.3 ENVIRONMENTAL VALUES

The third major finding of my research study is that **new urbanism and smart growth express an anthropocentric view of the environment.**

An anthropocentric view of the environment entails that the environment is of value principally for human use and enjoyment, rather than as a means in itself. This is reflected in how the core documents of new urbanism and smart growth discuss the environment. The movements claim that mixed-use, transit-oriented communities have always been sensitive to environmental issues, but only in the recent documents (LEED-ND and the CNU *Canons*) are the current state of the environment and climate change explicitly addressed. For the most part, the documents discuss the environment as it pertains to human use. The LEED-ND summary (CNU et al., 2007: n.p.), for example, states that “our society faces one of its greatest challenges ever: to shape our human environment so that it can fit within the limits of nature’s ability to cope, while creating vibrant, enriching places where people want to live, work, and play.” The document emphasizes the

environment in terms of human utility, rather than as a resource valuable in and of itself. Environmental values generally remain a secondary or even tertiary priority in new urbanism and smart growth theory.

Overall, my findings reflect what the literature says: values of biodiversity and restoration have been largely ignored in planning policy (Tamminga, 1996). In contrast to an anthropocentric view of the environment, a biocentric view entails that the environment is valuable in and of itself (see Table 4.1). Such a framework suggests that the planning profession needs to move from anthropocentric to biocentric values in order to truly address ecological concerns. Grant (1994: 4-5) argues that “two fundamental premises ground the idea of sustainable development: the first imperative protects ecological support systems; the second provides for human development and quality of life. Traditionally, development has been widely interpreted to mean economic growth and industrialization.” According to Grant (1994), the paradigm of growth dominates the planning agenda in a capitalist society. The term ‘smart growth’ thus

offers a simple solution to the dichotomy of no-growth versus pro-growth. It continues to operate, however, within the values espoused by a capitalist framework, where growth is viewed as essential to a strong economy.

The interview respondents generally adopted this anthropocentric view of the environment, although with a healthy dose of skepticism. A Gaithersburg councillor said, “I do believe in green space. I believe in parks and I believe in preserving things, but not at the expense of quality of life” (MD06, 2008). A community association member described that lakes in the Kentlands have “...always been preserved from day one; that’s always been part of the plan – that the runoff from the paved area has a place to go” (MD05, 2008). His comment identifies environment preservation as valuable for its utilitarian function: serving as drainage for the community.

Planners recognized that sprawl is environmentally destructive, but simplified the solution in order to coincide with economic values and growth so that “smart growth really implies

Anthropocentric Values Consumptive/Utilitarian: value in genetic resources of direct use to humans Transformative: values that enhance or ennoble the human condition (aesthetic, recreational, educational, and so on)
Biocentric Values Intrinsic: value apart from human use, as an inherent right Instrumental: value relative to the ecosystem itself

Table 4.1: Values of Biodiversity and Restoration (Tamminga, 1996: 245)

concentrating new growth in more urbanized areas, where there's a mix of uses, there's public transportation, where people can come and use less energy everyday in their life because they are in an area that is high density" (MD01, 2008). According to one municipal councillor in Gaithersburg, "to be right upfront about it, sprawl is the worst thing that ever happened to the environment" (MD06, 2008). The councillor advocated higher densities in accordance with smart growth principles to preserve larger areas of open space. Such comments further support the values inherent in new urbanism and smart growth theory; simple design solutions are advocated in response to complex environmental issues.

Other stakeholders identified inevitable compromises between environmental concerns and the economy. A Gaithersburg councillor argued, "...if you listen to the no-growers and the non-growers and the environmentalists, you should never cut a tree down. And therefore we would never build a thing – anything in our lifetime" (MD06, 2008). A developer similarly discussed the debate over growth: "there are a lot of no growth people, obviously, and there are a lot of pro-growth people. There has been a big disconnect and divide between the two" (MD03, 2008). Such findings are supported by the literature: Till (2001) describes two ways in which nature is represented by new urbanism. First, "the neotraditional environment is depicted as a 'natural' utopian setting where families grow and become rooted in place" and second, new urbanism represents nature "...as a design

element and resource" (Till, 2001: 25). According to both of these perspectives, new urbanism reflects the general rhetoric and values of environmentalism in the United States. In regards to the movements of new urbanism and environmentalism, Till (2001: 228) writes, "not surprisingly, individuals and groups in both selectively use ideas about nature and environment, and about sustainable development, to achieve their goals in the present and future."



Figure 4.4: Landscaping and signage in the Kentlands

Such results question how good growth is for environmental concerns such as conservation, energy and water use, habitat protection, ecological restoration, air quality, local food, biodiversity, longevity, and climate change. Based on my findings, I am unconvinced that economic growth can be reconciled with true ecological concerns through the practice of smart growth, which prioritizes the economy over environmental considerations. In order to address the environmental impacts of suburban sprawl, some authors identify the need to adopt an ecological perspective, which entails that a func-

tioning economy cannot exist without the presence of a healthy ecosphere (Rees, 1995; Ewing, 1997; Wright, 2004). Accordingly, it is important for planners to examine the environmental values that underpin their practice.



Figure 4.5: Smart growth in Olde Towne Gaithersburg?

4.4 RECOMMENDATIONS FOR FURTHER RESEARCH

Throughout this report, I have analyzed the environmental values inherent in the theory of new urbanism and smart growth, and examined how such values translate into practice, as documented by master and secondary plans in Gaithersburg and Rockville, Maryland, and interpreted by interviews with practitioners. Overall, my results indicate that while the environment is currently a hot topic on the agenda of new urbanism and smart growth, neighbourhood plans selectively adopt environmental principles, sustainable communities are narrowly defined as ‘green’ and ‘smart,’ and overall, the movements reflect an anthropocen-

tric view of the environment. This study contributes to literature on the implementation of environmental principles into new urbanism and smart growth practice. The scope of this study has its limitations, however, which future research might address.

My research focused on the municipalities of Gaithersburg and Rockville, Maryland, and in particular, six case study communities: the Kentlands, King Farm, Rockville Town Center, Olde Towne Gaithersburg, Crown Farm, and Kentlands Boulevard. Additional research is necessary to establish how environmental regulations and sustainability strategies, such as those adopted by the city of Rockville, influence the case study communities. As my study occurs within the context of a larger research project, *Theory and Practice in Planning the Suburbs*, a comparison to the Canadian data on new urbanism and smart growth is a logical next step. Further research is necessary to discern whether the same trends are occurring elsewhere in the United States and Canada, as well as within the European context of new urbanism.

Additional research on the subject matter might assess the environmental impacts of new urbanism and smart growth communities through specific performance indicators, and in doing so, suggest how the environmental agenda of the movements might evolve. Specific recommendations for how complex environmental concerns can be better incorporated into municipal policies, particularly neighbourhood

plans, would be an invaluable contribution to narrow the theory-practice gap. Finally, it would be worthwhile to conduct a best practices examination of environmental policy. Since the term sustainability is laden with ambiguities and competing definitions, as planners, we need to clarify our perception of what sustainable communities look like in practice.

4.5 A GREENER FUTURE?

Christopher Leinberger (2008: 71) suggests that the future of suburbia is bleak: "...today, the pendulum is swinging back toward urban living, and there are many reasons to believe this swing will continue. As it does, many low-density suburbs and McMansion subdivisions, including some that are lovely and affluent today, may become what inner cities became in the 1960s and '70s – slums characterized by poverty, crime, and decay." According to such theories, the environment will continue to play a major role in the future of new urbanism and smart growth. Many newspaper articles in the United States and Canada similarly documented the impact of rising gas prices on the suburbs during the summer of 2008. One article from the *Globe and Mail* stated: "evidence that the suburbs are under siege as oil prices skyrocket is easy to find" (Gray, 2008: n.p.). Another article from *USA Today* announced, "Gas prices drive push to reinvent America's suburbs" (El Nasser, 2008).

The impact of gas prices on the suburbs was a frequent topic of discussion in the interview

sessions held during June of 2008. According to one community association member, "it's top of mind – when people are going to be paying five dollars a gallon, they're going to have to consider what's a necessity and what's extra" (MD08, 2008). A planner identified how increased environmental awareness is driven by the cost of gas: "...it's not going to be planners like myself calling for it, I think it's going to be gasoline hitting \$10 a gallon at some point in the future" (MD09, 2008). These comments are interesting to examine within the current economic and political context of the United States. When the interviews were held, gas prices were almost four dollars a gallon; the highest recorded average price for gasoline was \$4.11 per gallon on July 17, 2008 (AAA, 2008). In December of 2008, average gas prices are hovering around \$1.82 a gallon in the United States (AAA, 2008), a significant drop from the summertime and the lowest that gas prices have been in almost two years (CNN, 2008b). This price drop has been attributed to a decreased demand for oil and gas amidst the current economic crisis in the United States (CNN, 2008a). But what do such trends mean when planning for environmental sustainability?

The fluctuation of gas prices is subject to factors that planners have no control over, such as market demand and the availability of oil. Although interview respondents identified how the increasing cost of energy prices is driving the move towards new urbanism developments and inner city revitalization, the price of gas is likely to continue to fluctuate. Planning can-

not depend upon such variations of the market, but instead needs to adopt a long-term view of energy concerns. Scientific consensus has been reached that climate change is occurring (IPCC, 2007), yet my study illustrates that while climate change has entered into new urbanism and smart growth discourse, many planning documents have yet to incorporate specific policies for dealing with climate change issues.



Figure 4.6: A changing political context in American suburbs

The political context of the United States has changed since I conducted the interviews. Amidst the current economic crisis and new Democratic leadership, evidence suggests that the environment will continue to play a major role in the collective consciousness. As one Gaithersburg councillor said: "...environmentalism is now popular with both political parties, so it's something people work together on, rather than something that one party favours and one doesn't. Of course, the real question is, why did that change? But, I'm not sure about that" (MD12, 2008). Many practitioners referred to a growing environmental conscious-

ness, a "paradigm shift" occurring across North America wherein "the idea of city dwelling, which was a negative word 20 years ago, has become quite in and will remain so for the foreseeable future" (MD01, 2008).

Whether the future of suburbia will indeed be greener, or the trend back towards the inner city will continue, planners need to heed the lessons of the past and remain cautious of the environment being merely a trend. Examining the environmental premises of new urbanism and smart growth has led me to conclude that environmental issues are ripe with complexities and result in many compromises between economic and social issues; hence, it is exceedingly difficult to successfully implement theory into practice.

While much of the literature has evaluated new urbanism and smart growth, this research makes a useful contribution to assessing the environmental claims of the movements. Through an analysis of new urbanism and smart growth theory, a review of planning documents from Gaithersburg and Rockville, Maryland, and interviews with 13 practitioners, this research has explored the implementation of environmental principles in practice. The first contribution to the literature is the finding that neighbourhood plans selectively adopt environmental principles into their policies. While such principles are present in master plans and regional planning efforts to varying degrees, planners need to consider how to implement environmental policies at the neighbourhood level for both greenfield and infill developments.

The study shows that the new urbanism and smart growth movements adopt the terms ‘green,’ ‘smart,’ and ‘sustainable’ as rhetoric, simplifying the complexity of environmental issues in the process. Many practitioners, however, revealed a level of skepticism regarding their city’s policy commitment to green principles.

Finally, this research concludes that new urbanism and smart growth adopt an anthropocentric view of the environment. Their most current documents explicitly address a range of environmental issues, yet treat the environment as an object of human use; they do not value the environment in and of itself. Planners must remain critical of adopting simple and trendy design solutions to complex environmental issues, and reevaluate the values which guide their practice.

On the one hand, one of the most significant planning challenges in the near future will undoubtedly be the impact of the economic crisis in the United States, which has the potential to trump environmental issues in planning discourse and practice. On the other hand, such changes in the political and economic context of North America might be transformed into an opportunity to adopt a more holistic understanding of ecological issues, rather than the selective attention exemplified by new urbanism and smart growth. Instead of promoting ‘green’ and ‘smart’ communities, planners might move beyond simple rhetoric to consider how the suburbs can remain resilient in the face of climate change. In this way, planners face the increasingly complex task of fostering commu-

nities that conserve natural resources, are sensitive to the local environment, and incorporate the values of sustainable development, from the regional level to local neighbourhoods.



Figure 4.7: A greener future?

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APPENDIX

INTERVIEW GUIDE FOR THEORY AND PRACTICE IN PLANNING THE SUBURBS

Thirteen semi-structured interviews, ranging from 40 to 90 minutes in length, were conducted in person between June 23 and June 27, 2008. The interviews were recorded and transcribed.

We are trying to understand current trends in planning the suburbs of US cities. We're hoping that you can help us learn more about those trends here in [community].

What is your role in planning or designing the suburbs here?

How would you characterize the rate of growth here in [community] compared with other parts of the US?

How would you say that suburban development patterns here compare to trends in the rest of the US?

General questions

What is your role in planning or designing the suburbs here?

How would you characterize the rate of growth here in [community] compared with other parts of the US?

How do suburban development patterns and characteristics here compare to trends in the rest of the US?

How have ideas about smart growth influenced policies and regulations here?

How would you describe the relationship between new urbanism and smart growth?

How would you describe the relationship between gated developments and smart growth?

What are the challenges you see to implementing smart growth ideas in suburban development here?

How has open space planning in your community been informed by environmental values?

For new urbanism community (ies) explore:

Which new urbanism communities are you familiar with here?

How did each project come about?

Why did it locate where it is?

Who was the driving force behind it?

What role did you and your colleagues play in designing or planning the project?

What were the challenges to making the development(s) happen?

What objections were raised about the environmental impacts of the project?

How did local planning authorities respond to the project?

Where did support or resistance come from?

Does the municipal plan support this kind of development?

Do municipal authorities promote this kind of development?

What do you see as the benefits of this kind of development?

Is the development consistent with metropolitan smart growth objectives? If so, which ones?

How accessible and connected are open spaces to members of the community in the new urbanism communities?

To what extent do the open space designations protect ecologically sensitive areas?

What challenges do you have in designing and maintaining open spaces in these communities?

What are the disadvantages of new urbanism style development?

How has the local market responded to the projects?

Are developers following up on the projects with other similar ventures?

What do you see as the future of these kinds of projects in this area?

For gated community (ies) explore:

Which gated communities are you familiar with here?

How did each project come about?

Why did it locate where it is?

Who was the driving force behind it?

What role did you and your colleagues play in designing or planning the project?

What were the challenges to making the development(s) happen?

What objections were raised about the environmental impacts of the project?

How did municipal planning authorities respond to the project?

Where did support or resistance come from?

Does the municipal plan support this kind of development?

Do municipal authorities promote this kind of development?

What do you see as the benefits of this kind of development?

Is the development consistent with metropolitan smart growth objectives? If so, which ones?

What are the disadvantages of this kind of development?

How has the local market responded to the project?

Are developers following up on the project with other similar ventures?

What do you see as the future of gated projects in this area?

What other new development trends are appearing in the suburbs here?

How common is ground-oriented condominium development here?

What are the issues related to condominium developments?

How common are private roads in new suburban areas here?

What are the issues related to development on private streets?

Planners often prefer new urbanism communities to gated developments, but gated and private communities seem to be proliferating. How do you explain this difference?

What other development forms offer the potential to address smart growth objectives?

What is the implementation potential of these other forms?

What do you see as the key concerns for the future of American suburbs?

Thank you for your help.

