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Sustainable Planning Perspectives: A Comparative Case Study of Planners in Montgomery County, Maryland and Centre County, Pennsylvania

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ABSTRACT

The purpose of this study is to investigate the perspectives urban planners have on sustainability and how they view their professional relationship with that concept. The investigator conducted semi-structured interviews with thirteen planners of various specializations and levels of government in Centre County, Pennsylvania and Montgomery County, Maryland. To assess how important sustainability is compared to other issues planners must contend with, the investigator asked the planners to prioritize a list of issues before the interviews. After the interviews, the investigator analyzed the rankings and interviews to identify common themes. The analysis produced three principal conclusions. First, the geographic location of the planners' work, the level of government in which they work, and the nature of their planning duties heavily influence the way they define and relate to sustainability. Second, the urban and regional planners unanimously support the concepts of livability, sustainable design, and economic sustainability. Third, the planners think that education on sustainability, both of the public and of the planners themselves, is crucial to sustainable urban and regional planning.

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I would like to thank Dr. Yarnal for all of his help and time that went into the creation of this work, as well as Dr. Downs and the entire Geography Department at Penn State for all the opportunities that have been made available to me. I would also like to dedicate this thesis to my family, John, Sheila, and Tyler Kendall, for without them none of this would have been possible.

Introduction

Urban and Regional Planners' Views of Sustainability

Urban and regional planners are responsible for creating long- and short-term plans that aim to shape the landscape, direct development, and alleviate local and regional social, economic, and environmental issues. Planners analyze data and identify community or project goals (American Planning Association, 2010). People in these types of positions can be in charge of implementing strategies to influence the growth and shape of an area through infrastructure, zoning, and building ordinances. The typical daily activities of an urban or regional planner can include discussing plans with developers, visiting development sites, reviewing permit requests, assessing environmental impact assessments, facilitating public charettes, and using GIS to predict future growth and determine where zoning should be adjusted. Many urban planners have specializations such as transportation, historical preservation, or environmental planning, and most positions require a graduate degree. The ability for planners to affect the way people live and interact with their surroundings makes them vital actors in the movement for more sustainable communities.

Although urban and regional planners are key players in the movement towards sustainability, as discussed in the next chapter, there has been very little research to learn what the planners themselves think about sustainability and their relationship to it. The wealth of literature on sustainable planning and sustainable urban development cannot be utilized to its fullest extent if the audience and users of such content; i.e. planners

working in the field, are not also fully understood. The needs of the planners, their attitudes and perspectives, are all crucial factors that should also be addressed in the literature, but so far have not been because they have not been studied. Thus, this research seeks to begin filling that gap.

Purpose and Research Questions

The purpose of this research was to determine how urban and regional planners define sustainability, what its relevance is to their positions as planners, and how they perceive their relationship to the concept. The built and natural environments influence the way people behave and interact with the world around them. Planning Departments play a key role in affecting how humans change their landscape, and can significantly influence how sustainable a community is.

Because of this potential influence on sustainability, the main research question is, therefore, what priority do planners in Centre County, Pennsylvania and Montgomery County, Maryland give to sustainability and sustainable planning? Do priorities differ between levels of government or between the two counties? Secondary questions are aimed at learning what the sample of urban planners in Centre County and Montgomery County thinks about sustainable urban planning techniques, how the size of the planning department affects its ability to be sustainable, and what solutions are available at different levels of planning and government?

Research was based on a case study of two counties, and interviews of thirteen planners within those counties. Expectations of probable outcomes included, but were not

limited to, planners feeling high level of influence by the public and local government, discussion of intergenerational equity, energy, smart growth, transportation, the challenge of funding sustainable planning, and the difficulty in defining and evaluating sustainability and sustainable planning.

Case Study

The create the bounds of this research, a case study comparing Centre County, Pennsylvania and Montgomery County, Maryland was used. The case study approach is used so that the specific qualities of each county and their effects on the planners (and vice-versa) can be analyzed. The geography of the region, the size, demographics, histories, etc. influence the planners' and only studying two counties at a time allows for comparative analysis of this effect. Semi-formal interviews were used to collect data for this research, and a case study of two counties was used in part to limit the number of people that could be selected as well.

Centre County, PA (Figure 1-1) and Montgomery County, MD (Figure 1-2) were chosen because of their familiarity, and because their differences allow for examination of the effects of certain characteristics such as population density, size, typical lifestyle choices, kind of planning organizational structure, and level of urbanity. These counties are similar in that the U.S. Census classifies both counties as containing metropolitan areas, and have similar demographic characteristics like level of education and household size.

The basic geography of each county is important background information to reference throughout the research because of its general, inherent impact on the planning for each area. Centre County is located in the geographic center of the state and is bounded by seven other counties (Centre County Planning and Community Development Office, 2008). The total area is 1,107.53 square miles, with a population of 144, 779, and density of 122.5 people per square mile (U.S. Census, 2008). Montgomery County is bounded by three other counties, by Washington D.C, and by the Potomac River, which defines the border with Virginia. The total area is 495.52 square miles, and the total population is 950,680 people as of 2008, with 1,760 people per square mile (U.S. Census, 2008). These differences in population and density are key factors in the kinds of decisions planners need to make in each county, as transportation services, housing, building density, agricultural pressure, etc usually depend on the number of users and how close together they are. For example, having a subway system in Montgomery County is possible because of the large, dense population, which creates the demand for such services.

Transportation modes and usage affect the level of sustainability in an area because of the significant amount of harmful emissions by automobiles as compared to alternative modes of public transportation. In Centre County, it takes workers an average of 20.3 minutes to get to work, and only 10.7 percent of workers work outside their county of residence. The mean travel time to work for residents of Montgomery County is 32.9 minutes; 40.2 percent of workers work outside their county of residence, putting added pressure on all transportation systems. In Centre County, 3.7 percent of workers use public transportation, as compared to 14.6 percent in Montgomery County (U.S.

Census, 2008). This difference can be attributed in part to the support for public transportation infrastructure of the greater Washington D.C. Metropolitan Area, which has a subway system with lines throughout Montgomery County. Later interviews revealed that both counties look to implement alternate transportation methods in the future.

Land usage, conservation and development vary by county as well. Over 92 percent of the land is considered undeveloped in Centre County (Centre County Planning and Community Development Office, 2008). Montgomery County has 49% of its land protected from development either through dedication to parkland or agricultural easements (Harrigan & von Hoffman, 2002). Interviewees suggested that the amount of undeveloped land affects the availability of outdoor recreation, which increases the desire for environmental protection and wilderness preservation, as well as the opportunity to do so.

The organizational structure of the county governments and their respective planning departments differ significantly between the two counties. In Centre County, the many townships and boroughs retain more autonomy over their planning and development than the municipalities of Montgomery County.

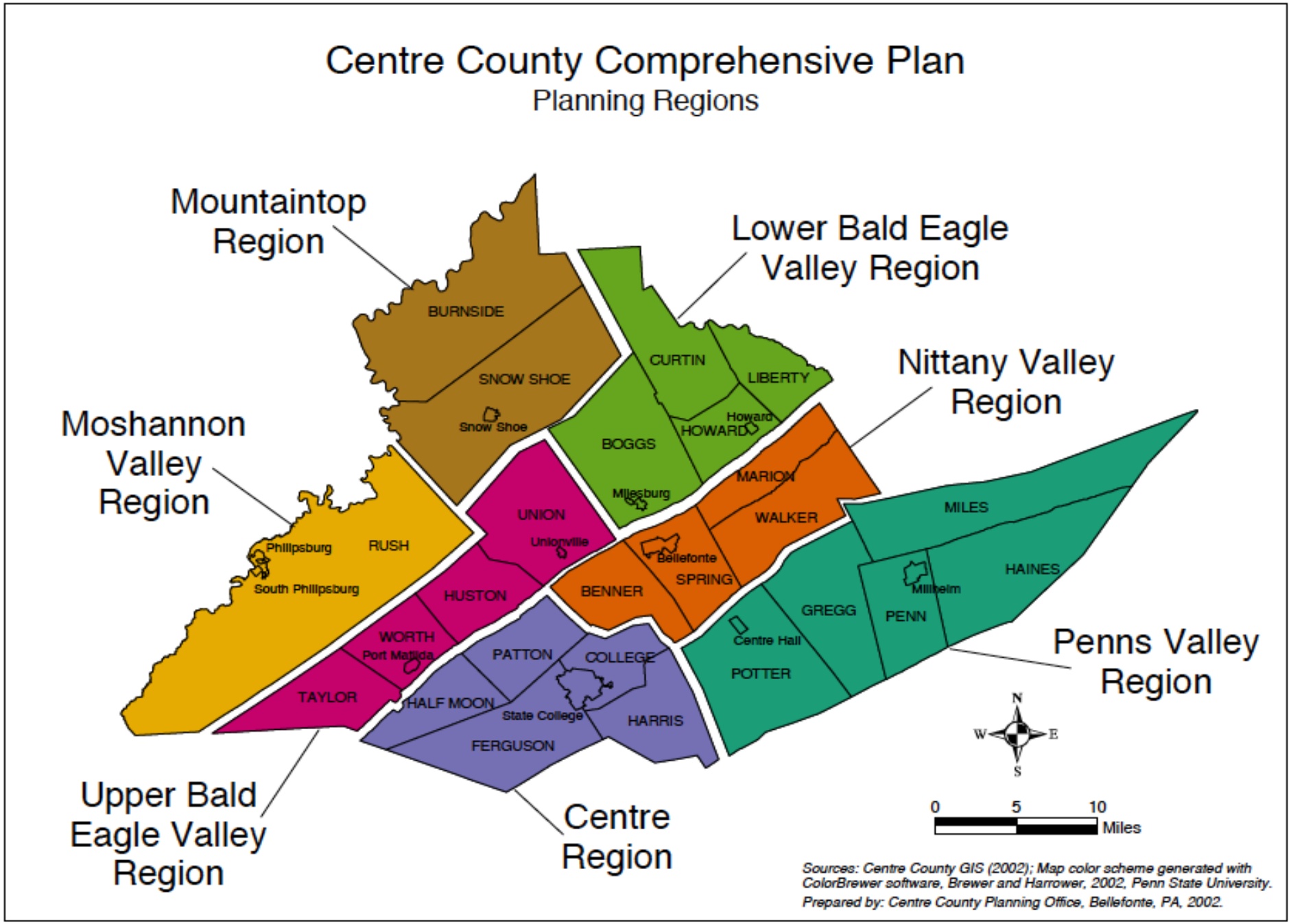

Figure 1-1 Centre County Map Sources: Centre County Planning and Community Development Office (2002)

There are also regional planning services for the Centre Region Council of Governments (COG), which is composed of State College Borough, Half Moon, Ferguson, Patton, College, and Harris townships (seen in purple in Figure 1-1) The Centre Region Planning Agency (CRPA) maintains a regional comprehensive plan, provides regional planning services to member municipalities, and promotes regional solutions. CRPA also provides local planning staff support to municipalities such as Harris Township (Centre Regional Planning Agency, n.d.).

In Montgomery County, significant planning power, such as ability to approve master plans and designate zoning goals, lies with the Maryland-National Capital Parks and Planning Commission (M-NCPPC). The M-NCPPC is a bi-county agency created to maintain the regional park system and to provide land-use planning for Prince George's and Montgomery Counties (The Maryland-National Captial Park and Planning Commission, n.d.). Appointees from each county serve on separate planning boards as well as on the commission. The Montgomery County Planning Board "works to maintain and improve quality of life in our community" by considering plans, providing development guidelines, and managing the county's park system (Montgomery County Planning Board, n.d.). There is also a county-wide Planning Department, which prepares the master plans for the Planning Board and County Council, reviews proposed development, and generally "provides recommendations, information, analysis and services to the Montgomery County Planning Board, the County Council, the County Executive, other government agencies and the general public" (Montgomery County Planning Department, n.d.).

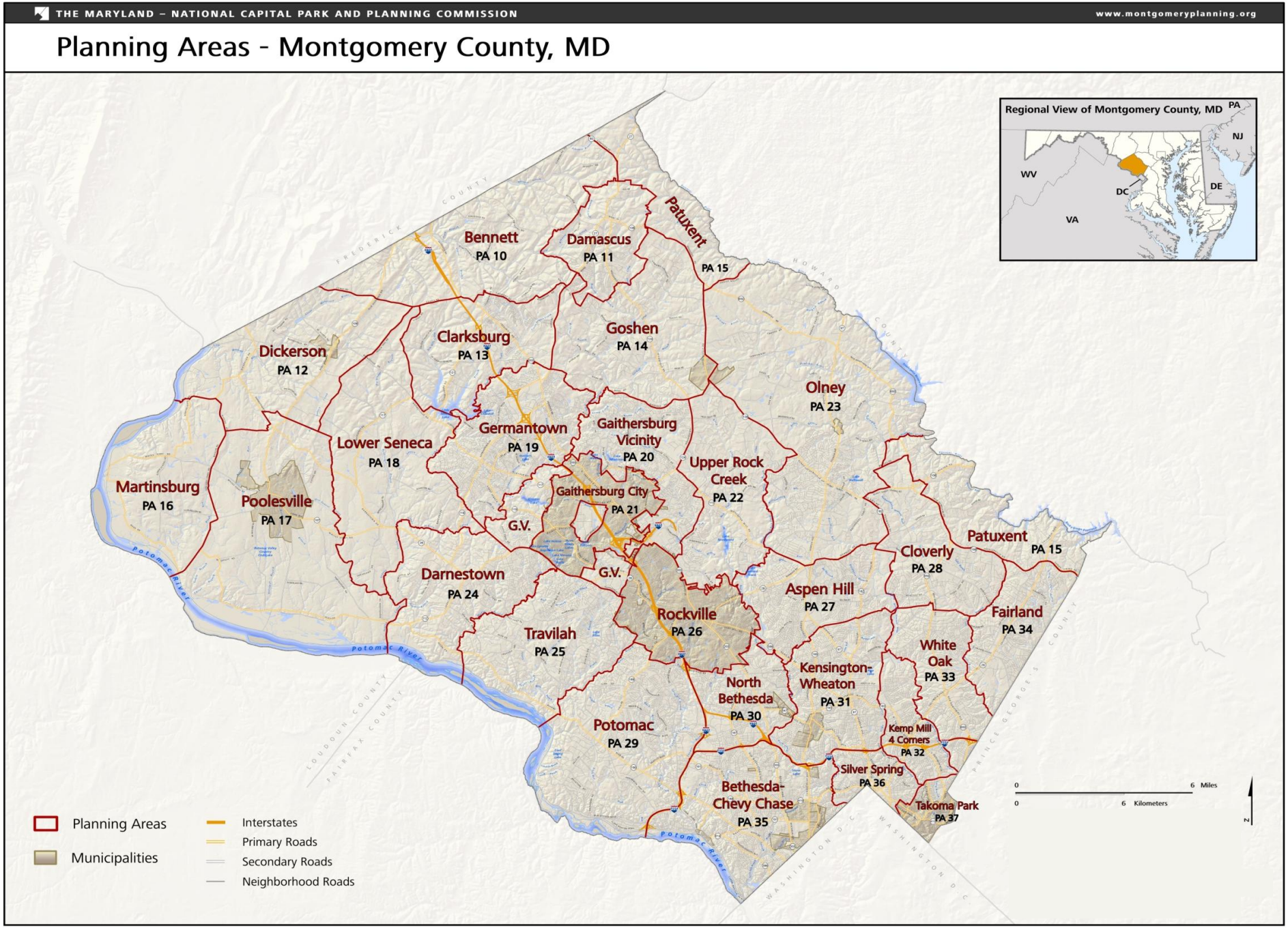

Figure 1-2 Montgomery County Map Source: Montgomery County Planning Department (2009)

The few incorporated municipalities in Montgomery County, which can be seen as the darkly shaded areas in Figure 1-2 (such as Rockville), must defer to county-wide development and zoning goals in some circumstances and work collaboratively with county and state planners on long-term plans, but do maintain their own separate master plans and development goals.

Planning structure plays an important role in what kinds of tools are used and what kinds of choices are made by planners. The bottom-up planning structure of Centre County produces different results than the top-down structure of Montgomery County. Planning departments for smaller areas, such as municipalities, have different priorities and responsibilities and even different types of planners than larger departments, which may have less direct communication with citizens, more specialized planners and technology, and more regionally based planning methods, according to the interviewees. These differences are all key factors of how sustainable an area may or may not be, as well as how individual planners define sustainability and associate themselves with it.

Thesis Structure

This thesis is composed of six chapters that examine the views that urban planners have on sustainability, particularly in Centre County and Montgomery County. Chapter 2 reviews some of the literature on sustainable urban planning. Chapter 3 describes the interview and other methods used to answer the research questions posed above. Chapter 4 analyzes the ranking exercise that each planner did. Chapter 5 explores the themes

emerging from the interviews. Chapter 6 summarizes the findings, draws conclusions from those findings, and identifies implications for policy and future research.

What is Sustainable Planning?

This section of the paper will provide a general idea of what sustainable planning is, as suggested by the literature, and what other works that ask similar questions to this thesis have found.

What is sustainability?

For the purposes of this study 'sustainability' and 'sustainable planning' were purposefully undefined, in order to determine how interviewees defined the terms. There is no definitive answer to the question, "what is sustainable urban planning?" but the diverse and growing body of literature on the subject presents some agreements on what the components of sustainable planning are and how to define them (Jones & Jones, 2007; Berke & Manta Conroy, 2000). One such agreement is that the word and concept of sustainability and sustainable development are in themselves almost impossible to define due to their contextual and subjective nature. Using the word sustainability and trying to define it often unleashes more questions than it answers.

"Sustainability is a concept that is fairly abstract and broad, subject to a variety of understandings and meanings" according to Portney, 2003, 9. Generally, however, published definitions are some variation of the one used in the 1987 UN Brundtland report, "Our Common Future" (Berke & Manta Conroy, 2000). In that report the chair for the UN World Commission on Environment and Development wrote, "Sustainable development is development that meets the needs of the present without compromising

the ability of future generations to meet their own needs" (World Commission on Environment and Development, 1987). For example, in *Taking Sustainable Cities Seriously*, Portney, 2003, 9 writes, "[Sustainability] is more about finding ways to promote growth that are not at the expense of the environment, and that do not undermine future generations" and in *Manifesto for Sustainable Cities*, the authors wrote, "Sustainability centers on the insight that our anthropological lineage will most probably continue only if we start to place sustainability at the heart of our achievements" (Gaines & Jager, 2009, 19). Others use the definition from the UN Brundtland report, while also remarking on its inherent flaws, saying that,

> Sustainability means preserving existing resources for the benefit of future generations, but, in postindustrial cities, the notion of sustainability is paradoxical: the preservation of valued assets cannot succeed unless the assets … are adapted in ways that will make them relevant in a future economic and social environment (Kromer, 2010, 304).

Kromer, and others argue that trying to sustain the postindustrial lifestyle would be impossible because so many of its components are inherently unsustainable and become rapidly obsolete so quickly as to render most products and trends useless in the long run..

Rees, 1995, 345 argues that the mainstream literature produced by governments and academics fail to address the real issues and ask the right questions. The issues of what to preserve, how, and for whom are also vague and therefore subject for debate, which can lead to issues of injustice if the needs of one group are valued over another's needs. In addition, the difficulty in defining

sustainability leads to difficulty in creating standard indicators or evaluations (O'Toole, Wallis, & Mitchell, 2006).

Why Planning?

There is much literature on sustainable planning and sustainable development, and how planning and development are inherently suited to such thinking. In the last decade, sustainability became one of the most frequently used words by planners, developers and others (Kromer, 2010, 303-304). Many authors make the argument that because "urban planning is, by definition, an open ended process that binds the past and present with possible futures" it is inherently oriented towards sustainability, thus making it an important area of study (Gaines & Jager, 2009, 39). It is also an essential focus in the field of sustainability because the elements that planners work with — cities, buildings, and the surrounding environment in general — are typically among the most unsustainable elements of our society today. As reported by the EPA, 80 percent of Americans live in urban areas, and 40 percent of all energy consumption is by buildings (U.S. Environmental Protection Agency, 2010). The American Planning Association (APA) (2010, 2-4) wrote in their "Policy Guide for Sustainable Planning" that some of the indications that Americans are not living sustainably involve planning-related issues such as: overcrowding, environmentally and socially destructive development patterns, suburban sprawl, loss of agricultural land and open space, "depletion and degradation of water resources", loss of wetlands, traffic congestion, air pollution, and "disproportionate

exposure to environmental hazards by minorities and groups of lower socioeconomic status."

Rees (1997, 307) that cities exist and operate in a way completely contrary and "quasi-parasitic" to nature. There are many ways in which our built environment affects the way we live and encourages us to behave unsustainably, from building developments in floodplains to creating zoning laws that make it easier to site hazardous waste facilities closer to minorities. Many, including the APA believe that although this issue is complicated and wide-ranging, planners have the ability to implement sustainable thinking into their daily practices (American Planning Association, 2000).

What is Sustainable Planning?

"The challenge to planners during this transition is exceeded only by the scope of opportunity to participate in shaping the coming of age of humankind" (Rees, 1995, 350). With the basic understanding that sustainability has something to do with preserving a certain standard of living for future generations, and that planners are poised to change, the next step is to determine the basic methods or tools that planners should be using to be considered "sustainable". While there has been some general agreement on what the principles and guidelines of sustainable planning are, it has also been noted that the specific policies, such as those recommended by the Environmental Protection Agency (EPA) and American Planning Association are heavily dependent on geographic and socio-economic contexts. For example, "efforts to reduce the use of fossil fuels may take

very different form in an urban settlement compared to efforts in rural communities" (American Planning Association, 2000).

There have been many previous efforts to evaluate the literature on this subject. Naess (2001, 506) demonstrated that literature from developed nations emphasized five principles of sustainable planning:

1. Reduction in energy use and emissions,
2. Protection for ecosystems and agricultural areas from development,
3. Minimal use of "environmentally harmful construction materials,"
4. Replacement of wasteful systems with closed loop flows using more local resources, and
5. A livable environment for inhabitants, free of pollution and with enough green space to allow emotional connection to nature.

These themes are found throughout the literature, and formed my basis for comparison to the answers given by the interviewees, as well as my expectations.

The concept of sustainable planning appears in many contexts. For example, waste, design, environmental management, materials and land consumption, adaptability, and "the experiential aspects of place" were themes found in the November 2007 issue (Volume 83, Number 1) of the journal *Landscape and Urban Planning*. Jones and Jones (2007, 1) noted in the issue's introduction that, certain goals for future cities are beginning to reach some kind of consensus. When defining the principles for evaluating whether or not communities were sustainable or not, authors Berke and Manta Conroy (2000) wrote that harmony with nature, livable built environments, place-based economy,

equity, policies requiring that polluters pay, and responsible regionalism were all vital qualities of sustainable planning.

The importance of interdisciplinary work is another important element of sustainable planning because of the common goal of achieving balance among the "triple bottom line" or "three E's of sustainability" — environment, economy, and equity (Berke P. R., 2002; ASP; Doughty & Geoffrey, 2004). This element relates to the widespread belief in the importance of interdisciplinary work. Authors Gaines and Jager (2009, 39) wrote that:

> In order for planning for a sustainable future to be possible, the planners on any given project must themselves be duly broad in composition, ranging from sociologist and philosophers to traffic planners – so that anyone working on a project can simply cross the corridor if he needs a very different "second" opinion on how to best solve a problem.

Sustainable planning requires difficult interdisciplinary thinking and work, as well as "a more holistic and integrated approach" to planning, designing, and decision-making (Jones & Jones, 2007, 1). To tackle the three "E's" of sustainability, every sector of the community should be represented, and experience and expertise on all aspects of communities and planning will need to be involved, from environmental justice to alternative energies (American Planning Association, 2000).

Reducing and recycling, both of materials and pre-existing sites, is an important part of sustainable planning. Closed-loop systems and "cyclic resource usage" are incorporated into many conceptualizations of sustainable development (Doughty & Geoffrey, 2004). Most literature includes some discussion of the need to reduce resource

use during construction and operation, especially in the cases of fossil fuels, mined materials, and hazardous materials. Similarly, Brownfield[1] development is repeatedly included as one of the most important options that planners should use to become more sustainable because, encouraging brownfield development allows planners to fix mistakes made in the past, and to adjust use and development of those areas (Gaines & Jager, 2009, 49). The EPA, in its list of policies and programs, have several dedicated specifically to brownfields and many more to land revitalization in general (U.S. Environmental Protection Agency, 2010).

Another major theme in the literature is that sustainable communities are "livable built environments." As Jones and Jones (2007, 1) wrote in their introduction to a special issue of *Landscape and Urban Planning*,

> Our cities will be aesthetically pleasing, they will have good quality environments (visual, environmental, social, etc.), an appropriate mix of density of buildings… there will be more social equality and stronger sense of community, less reliance on energy, low material usage, and accessibility to a range of supportive service systems.

Practicing better design, providing better services, nurturing community spirit, fostering public participation, and creating more "livable" communities that balance the needs of the environment, the people, and the economy are themes present in every work discussing the foundations of sustainable development and planning.

[1] A brownfield is "a property whose expansion, redevelopment, or reuse may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant" (U.S. Environmental Protection Agency, 2010).

Related Work

Although there are not many published works that specifically examine sustainable development and planning from the individual planner's perspective, there are a few studies that are relevant to this research and provide support for the research questions. In "Are We Planning for Sustainable Development? An Evaluation of 30 Comprehensive Plans," Berke and Manta Conroy (2000) surveyed planning departments using explicitly sustainable language to see if they actually were implementing more sustainable practices. They concluded that they were not. Ironically, the most sustainable city that the authors surveyed did not specifically mention the concepts of sustainability in vision statements and other documents but did incorporate principles of sustainability in everyday practice. The authors reasoned that this result stems partly from the fact that using the language of sustainability may be politically unpopular in some places, but the actual principles are not. The authors also suggested that this lack of sustainability language allows individual planners to make significant differences because they can promote sustainability principles throughout the planning process even without the support of the local political establishment (Berke & Manta Conroy, 2000). This conclusion implies that the research presented in this thesis, i.e., the study of individual planners' perspectives, can make a difference to local sustainability.
In studying how planners relate to sustainability, where they feel pressure to do so, etc., better understanding of how to affect sustainable planning can take place.

Methods

This chapter outlines why certain methods were used, how participants were selected, and how research was conducted. The chapter also includes sections describing how interviews were developed, documented, and later analyzed.

Method Selection

The method selected for this research was semi-structured interviews because it is flexible and has the potential to provide great insights into the perceptions and motivations of individuals. Interviews made it possible to conduct follow-ups to unanticipated answers, and allowed interviewees more freedom in their responses (Cohen, 2006, n.pg.). Participating in interviews granted better understanding of the complicated governmental structures and planning bureaucracies in both counties. In a few cases, interviewees were able to suggest helpful sources of information.

Subject Selection

Participants for this study came from the different levels of planning within the two counties (also interviewed, including one specialist and one planner representing a specific township, as well as several planners from other townships.). Both Centre County and Montgomery County have planning commissions or departments at the

county, regional, and municipal level. Subjects were chosen from all levels in an effort to keep the two samples as symmetrical as possible. Initial contact was made through email after receiving IRB approval from Penn State (#32055).

Table 3-1 Locations and Departments of Interviewees

Centre County, PA	Montgomery County, MD
Benner Township/ University Park Planning	Gaithersburg
College Township	Rockville
State College	Takoma Park
Centre Regional Planning Agency; Transportation	Montgomery County Planning Department (M-NCPPC, Planning Board; Strategic Planning
Centre Regional Planning Agency; Regional	(M-NCPPC), North Central Transit Corridor, Regional
Centre Regional Planning Agency, General	Montgomery County Planning Department (M-NCPPC); General
Centre County Planning and Community Development Office	

To study how kind of planning jurisdiction influences the perception of individual planners to affect sustainability in their area, it was crucial to interview planners at all different levels of government in both counties. Moreover, the larger the area under study, the more specialized the planning positions are, which may limit the overall knowledge or awareness of the total planning operations. Consequently, individuals from planning commissions, boards, and departments from several different specializations were interviewed in an effort to maintain an inclusive and representative subject pool in both counties. Additionally, because local governments employ 68 percent of urban

planners (Bureau of Labor Statistics, 2010), more interviewees were chosen from that level to reflect that proportion.

In Centre County, each city, borough, or township has a unique character and structure, and because the municipal level of government has more power over planning in Pennsylvania, more interviews at the municipal level were conducted there. In addition, a planner from the county planning commission was interviewed, which guides planning in the county as a whole. Several members from the Centre Region Council of Governments were also interviewed, including one specialist and one planner representing a specific township, as well as several planners from other townships.

In Montgomery County, members of both the county planning board and county planning department were interviewed.

Figure 3-1 Community Based Planning Sectors Source: Montgomery County Planning Department (2010)

A planner of one of the five regional sections (Figure 3-1), and one planner from each of three incorporated municipalities in the County (Figure 1-2) were interviewed as well.

Interview Organization

Each participant received a list of 10 items of issues relevant to planning to rank a few days before the interview (see Table 4-1 and Chapter 4). Interviews lasted 30 to 55 minutes. All but two interviews, which took place over the phone, were conducted in person and audio recorded. The phone interviews were not audio recorded. The interviews were semi-structured with pre-determined questions; however, as the conversation progressed, interesting threads or points were probed.

The interviews started with a statement of the subjects' name and job description, and a review of their rankings (see Chapter 4). There was some discussion of the overall rankings, the challenges in ranking the material, and the items they thought were missing from the material. Then I asked interviewees why they ranked sustainability the way they did, and how they and/or their office defined sustainability. The rest of the questions related mostly to what they thought they had the ability to do in their professional lives to "be more sustainable," as well as to the motivations for any sustainability actions they did take.

I followed the list of pre-determined questions loosely, making alterations as needed during the interview.

Table 3-2 Interview Questions

- Describe your job, and what your role is.
- I notice that sustainability falls at number X on your list; why would did you give it this ranking?
- What does the word sustainability mean to you? Define it (personally, professionally)
- How is sustainability different from environmental protection or conservation or pollution control?
- What kind of tools, decisions, or other actions can you use to be more sustainable, regardless of available public funds or of public response?
- Given that these categories are not independent and that sustainability is often tied up in other categories, in which areas of your job does sustainability take a higher priority (for instance, in transportation or zoning decisions)?
- What areas/aspects of your position do you feel the most pressure to be sustainable?
- From whom do you feel the most pressure to be sustainable?
- What is the biggest factor preventing you from making more sustainable decisions in your job?
- Have you noticed any change in the priority level of sustainability since you started in this kind of position?
- Would your answers be different if you had this job at a different level of government?
- In the areas of population growth and housing, what do you think is sustainable, and how does that come into play here

Questions asked differed slightly according to the individual's expertise and because interviewees' answers varied depending on the type of office they worked in and the type of people they worked with. During the interviews, I tried to remain as neutral and unbiased as possible, asking questions without making suggestions. This desire for

neutrality sometimes hindered my ability to ask about specific types of policies and planning tools for fear of biasing interviewees' answers.

Analysis

Notes were taken during the interviews in addition to audio recordings. These materials were later used to organize and tabulate data such as the rankings. Each interview was analyzed subjectively from a general perspective in addition to county-specific patterns. Dominant themes that emerged from the analysis were also compared across levels of government and by location.

Recapitulation

The goal of the semi-structured interviews was to explore the perspectives that planners in Centre County and Montgomery County have on sustainability and their professional relationship to sustainability. General themes were drawn from the interviews (see Chapter 5). Analysis of each group of planners by county was also performed to look for effects of geography and demographics. The following two chapters review the results of the analysis.

Rankings

Before each interview, participants were given a list of items to rank according to their priorities and responsibilities as a planner. These ranking items (Table 4-1) were chosen based on some of the typical concerns or fields of interest of a planner. Pollution control, environmental protection, and conservation were included in an effort to discern the nuances of the planners' definitions on sustainability and their perspectives on their professional relationship with the environment.

Table 4-1 List of Items for Interviewees to rank

Pollution Control
Transportation
Zoning
Sustainability
Population Growth
Construction
Conservation
Economic Development
Infrastructure
Environmental Protection

Analyzing the rankings was more difficult than anticipated because three of the interviewees did not feel comfortable ranking those items because, for instance, their position did not include some of those items, or they "were required by code to look at all of these at once." However, the rankings remaining ten interviewees who did complete them were averaged. A table for each county was created separately for comparative purposes.

Patterns in the data do appear, although, because each individual serves a different constituency and position, the planners all prioritized items slightly differently. The effect of this variety can be seen most clearly in the rankings of subjects with specific jobs, such as a transportation planner or campus planning advisor (the latter of which was excluded from the averages due to the extreme difference in objectives for that position, but included in the table for comparative purposes). While the answers from each planner reflect their particular circumstances, trends in the data can be found.

General

In total, 10 of the 13 interviewees completed usable rankings. Averages were taken of all ten rankings, with the exception of population growth, which took an average of nine items because one interviewee's ranking reclassified population growth as land use. With a few exceptions (noted as gray-shaded cells), the rankings were generally consistent. Population growth, pollution control, and construction were listed lowest in priority, and infrastructure and zoning were the highest. Sustainability finished in the upper middle of the rankings, with an average ranking of 3.7 out of 9 and a range from 2 to 6.

Centre County

Of the seven participants located in Centre County, six were able to rank the ten items (Table 4-2). On average, the interviewees from Centre County ranked transportation, sustainability, and infrastructure highest. Population growth was consistently ranked lowest, and with the exception of one planner whose position inherently required slightly different goals and priorities, construction and pollution control were also ranked very low by all planners. Those planners representing smaller municipalities had a high incidence of similar rankings. For example, planners from State College Borough, College Township, and the COG regional liaison for Harris Township all ranked sustainability second, and College Township, Benner Township, and College Township ranked conservation in the middle.

The interviewee for Benner Township was also involved with space analysis and planning for University Park, the main campus of Penn State University. According to this participant, the rankings for the campus position are so different because the University has vastly different opportunities, especially in terms of sustainability, because of the lack of the kind of legislative oversight that municipalities must deal with.

Table 4-2 Centre County Planner Rankings

Centre County Planner Rankings									
Items	**Average Ranking**	**COG transportation**	**COG General**	**State College**	**College**	**COG regional**	**Benner**	**/ UP**	**Centre County Planning**
Pollution Control	7.8	4	10	7	8	8	10	10	
Transportation	3.3	1	2	3	4	4	6	7	
Zoning	4.2	7	3	5	3	6	1	8	1
Sustainability	3.7	6	5	2	2	2	5	2	
Population growth	9.3	10	8	10	10	10	8	1	10
Construction	8	3	9	9	9	9	9	3	10
Conservation	6.2	8	7	8	5	5	4	6	2
Economic Development	4.5	9	4	1	7	3	3	9	
Infrastructure	3.7	2	1	4	1	7	7	4	
Environmental Protection	4.3	5	6	6	6	1	2	5	1

Gray cells are noticeably different from other rankings; red cells were excluded from the average because they were ineligible or incomplete

Montgomery County

Fewer of the Montgomery County interviewees felt comfortable with the ranking exercise, so only four of the six rankings could be used in this analysis; however, interesting patterns can still be seen in Table 4-3. With the exception of the interviewee who reclassified population growth as land use noted earlier, the planners in Montgomery County consistently ranked population growth as the lowest priority or concern. Pollution control was also ranked very low by all of the planners, as was construction by all but one planner. Zoning was listed as a top priority by all the interviewees, and infrastructure was ranked within the top three by all but one planner. Sustainability was ranked third or fourth by all planners as well, typically close to environmental protection.

Table 4-3 Montgomery County Planner Rankings

Montgomery County Planner Rankings							
Items	**Average Ranking**	**MC Planning Department**	**M-NCPPC General**	**M-NCPPC regional**	**Rockville**	**Takoma Park**	**Gaithersburg**
Pollution Control	8.8	9	10	8	8	n/a	2
Transportation	6.5	7	9	5	5	10	2
Zoning	1.5	2	1	2	1	10	1
Sustainability	3.8	3	4	4	4	1	3
Population growth	9	1 (reclassified as land use)	8	9	10	10	
Construction	6.5	10	7	7	2	9	
Conservation	6.5	4	6	10	6	10	
Economic Development	6.5	6	5	6	9	1	
Infrastructure	3.5	8	2	1	3	1	
Environmental Protection	4.5	5	3	3	7		

Gray cells are noticeably different from other rankings; red cells were excluded from the average because they were ineligible or incomplete

Recapitulation

This chapter presents the ranking data taken from 10 of the 13 interview participants. Clear themes emerged from the rankings, which matched well within each county. Conclusions based on these data can be found in Chapter Five. The following chapter discusses the information gained from the interviews and explores themes found in those data.

Interview Results

This section analyzes the conversations with the individual planners. Instead of addressing each question individually, each section represents a question or group of similar questions and lays out the themes found within the interviews for each set of questions. Each section discusses themes for the answers in general, as well as any noticeable pattern among planners in the same type of topical area or level of government. The following sections are in the same order that corresponds to the questions they represent. Table 5-1 shows the themes discussed in each section.

Table 5-1 Sections and Themes

Why Did You Rank Sustainability So High (or Low)?
- Position
- Place
- Values and Expectations

How Do You Define Sustainability?
- What it Isn't
- Planner Position
- Recycling and Resource Conservation
- Community and Livability

How Can You Be More Sustainable?
- Geographical Context
- Basic Planning Techniques
- Interdisciplinary Collaboration
- Place Making Activities
- Better Design
- LEED
- Transit Planning
- Master Plans
- Housing
- Minor Themes

When, and to Whom, is Sustainability Most Important?
- Economic Development
- Minor Themes
- Who Wants to be More sustainable?
- Local Government
- Public Demand

What is Preventing You From Being More Sustainable?
- Centre County
- Montgomery County

How do Population Growth, and Housing Affect Sustainable Planning?
- Centre County
- Montgomery County
- Housing

The Importance of Education in Sustainability
- Planner Education
- Public Education

How has the Importance of Sustainability Changed?

Why Did You Rank Sustainability So High (or Low)?

As noted in Chapter Four, most interviewees ranked sustainability, on a scale of 1 to 10, between 3 and 4 on average with a range from 2 to 6. A few common reasons for ranking within this range appear in the planners' explanations of their rankings. The kind of position the planners were in, the level of government they worked in, and their geographical place were all factors that influenced how high or low planners ranked sustainability.

Position

Several people mentioned that sustainability might rank higher if they worked in a different kind of planning, such as development-oriented or environmental planning. These positions dictate achieving specific goals, which translates into a feeling of obligation to meet those goals and to prioritize some things above others. For example, for the transportation planner, sustainability is not as much of a priority because other predetermined goals take precedence and available funding. However, each planner made a point of emphasizing that all elements of the job are interconnected, and that sustainability could, and should, be integrated into every category. One planner explained that sustainability is a worthy goal, but one has to ensure a basis for sustainability first, such as strong economic development.

Place

The level of the planners' jurisdiction also affected the way they ranked sustainability. The town and municipality planners seemed to feel pressure to deliver economically more than other planners because "municipal management means … providing all services that residents desire and expect." Several of the interviewees for smaller municipalities also emphasized, for example, the "need to be able to do enough that satisfies clients without overreaching costs … keeping budget and services balanced" because staying within the budget was often a top priority — even a source of pride.

Values and Expectations

Although supporting government and legislation was not as much of a factor as I had expected, place was important because of any history of sustainability, priorities, and values is embodied in each area. For instance, if there were projects currently underway that could be considered particularly sustainable, such as the new building codes in one municipality in Montgomery County, sustainability was ranked higher because it was "at the forefront" of the planners' minds. In another example, a planner for Penn State University Park ranked sustainability a '2,' saying that the campus had a "big opportunity to be sustainable" because of its unique level of autonomy. Several planners from Montgomery County also noted that their municipalities have a history of valuing the environment and sustainability in previous plans, proposals, and mission statements.

How Do You Define Sustainability?

As discussed in Chapter Two, the definition of sustainability varies widely, so an important part of the interview was establishing what the interviewees thought sustainability meant, as well as understanding how their positions may influence their definitions of sustainability. The planners were asked to clarify how sustainability was different from several other terms, and how they would define sustainability. Several themes regarding what components should be included in a definition of sustainability, such as resource use and livability, were found.

What It Isn't

When asked to clarify what the difference between pollution controls, environmental protection, conservation, and sustainability were, the majority answered that these concepts are interrelated. The consensus was that conservation means protection of resources, pollution control is addressing or fixing a specific problem, and environmental protection is a very general term and more of a legislative tool. All participants said that sustainability includes all three elements, but should also involve other factors such as energy issues. Two interviewees from Centre County noted that these concepts are all tools to control the way society behaves and interacts with their environment, although one planner mentioned that sustainability in planning attempts to change people's day-to-day behaviors more than the other concepts do because, for example, sustainability requires more individual daily lifestyle changes, where

environmental protection usually takes place on a larger, more regulatory level at a larger scale.

Position

One major pattern throughout all the answers is, again, that the type of planning position and day-to-day responsibilities of the interviewee heavily influenced the way they defined sustainability. For example, a planner whose particular job included many site visits and reviews defined sustainability in terms of site design and construction; another subject who was trying to become LEED[2] certified said that sustainability implies good design and long-lasting LEED certified construction.

Recycling and Resource Conservation

Many participants cited recycling and resource conservation as being part of their definition of sustainability. Several implied a sense of the finiteness of resources in their definitions, using phrases such as "It is not using everything up," and that we should encourage "less virgin consumption." Similarly, to most of the planners, sustainability means maximizing the use of existing resources. One interviewee noted that the influences of easy capital and "go-go development" were obstacles to being more

[2]Leadership in Energy and Environmental Design (LEED) is a green building certification system developed by the U.S Green Building Council to provide third-party verification that a building was built to certain standards regarding design, construction, operations and maintenance (U.S. Green Building Council, 2010).

sustainable in previous years. Now, however, using the entire capacity of a road before expanding it or building a new one, for example, is defined as more sustainable, as is directing growth to where there is already infrastructure existing. Good design was also mentioned in several definitions of sustainability, such as "how the plans are being designed and built," as well as how buildings themselves are designed, which effects which materials are used and in what way.

Community and Livability

The majority of the participants from the municipalities, such as Takoma Park and State College, also emphasized the importance of community and livability in their definitions. For instance, according to the interviewees, sustainability is: "not just environmental, [it] leads people to come together"; "recognizing the positive attributes of the area of the community, doing what we can to maintain/ sustain those attributes"; "encouraging people to walk and buy local" and "encouraging people to engage in community activities like gardening… strong communities are part of sustainability"; and "planning for neighborhoods that are better integrated with businesses and personal practices."

How Can You Be More Sustainable?

Another key element of the interviews was learning what these planners considered sustainable practices to be, and what they believed they could use to affect the

level of sustainability in their area. In every interview, the participants were asked, "What kind of tools, decisions, or other actions can you use to be more sustainable?" Several general themes, as well as commonalities among planners in the same location or level of government, appeared in their responses.

Geographical Context

One important consideration pointed out by several planners in both counties is that sustainable planning has to be considered within the geographical context of the area under question. For example, in Takoma Park, because the area already has significant existing infrastructure and multiple transportation options, according to the interviewee, sustainability means less emphasis on conserving land within an urban area, and instead more intense emphasis on preserving the land outside the city boundaries from suburban development and increasing use of the available public transit. Interviewees stressed that although in some contexts some ideas, such as increasing the amount of impervious surfaces, would be considered unsustainable, in other settings, such as building more sidewalks to promote walking, that same idea might be appropriate. Holistic, regional, long-term planning was considered by many of the planners to be an important aspect of sustainable planning, although many of them did not work on those types of plans in their current positions.

Basic Planning Techniques

There were a few basic elements of planning that the majority of the planners brought up in their answers to this question. Most of the interviewees talked at some point about the difference between what they as planners could do to require certain changes or behaviors and what they could do to encourage more sustainable practices by the community, individuals, and developers. Often at the municipal level, more emphasis was placed on the ability to give professional judgment and advice rather than to require change through ordinances. Almost all interviewees mentioned incentivizing better building and project design as a crucial way to influence actions such as energy efficiency and density. Another common idea was that municipalities often run demonstration projects or pilot programs, such as a green roofs in State College, to show the public how or why a certain idea might be worth wider implementation. They also noted that in addition to drafting plans, passing ordinances, such as a night-light ordinance to cut light pollution, is a useful way to improve the level of livability and sustainability of an area. One planner specifically described how ordinances, such as historic preservation and reforesting ordinances, could affect how sustainable they considered their practices to be. Although such ordinances may not use sustainability in their language directly, the effects of policies emphasizing more sustainable practices like preserving existing buildings and restoring tree canopy meet the overall goal to become more sustainable.

Interdisciplinary Collaboration

Collaboration with other departments, both within the same government and with surrounding areas, was another recurring theme, especially among the interviewees from the larger planning departments. Suggestions and recommendations from other departments and specialists, such as environmental departments, departments of public work, and greenway planners and transit planners, were specified as being important factors in planning processes. Centre County and Montgomery County also included local transportation service providers in discussions about routes, improved service provision, and expansion. This concept of collaboration and support was especially important to the two regional planners for Montgomery County and Centre County because they work with the municipalities and the other sectors or regions.

Place Making Activities

According to several interviewees, planners should pay close attention to "place-making activities" and community development in order for the public to be more accepting and supportive of the kinds of changes planners wish to make. One planner described "a whole school of thought that says places must look nice if people want to walk and be there." Another planner defined sustainability as defining the positive attributes of a community and preserving those qualities to attract more people to the area. In essence, planners think that community development, such as improving sewage and water facilities, installing more bike and hike trails, and building interconnected,

walkable neighborhoods that convey a sense of place and community, can promote livability and encourage more sustainable behaviors, like walking.

Better Design

Creating a sense of place is closely connected to the design of specific sites, which was another theme expressed by many of the participants. The ability of a good site plan and design to promote sustainability was mentioned at some point by almost all of the planners; one interviewee also included the benefit of using GIS technology for this purpose. For example, one participant said that a site plan "can help push for certain items." Several other planners discussed those items that a site plan could influence, such as what locally supplied materials to use, how to manage water on the site, what kind and how much vegetation or landscaping to include, "how pedestrians are going to move around the site," and what other kinds of mitigation techniques to require, such as sound barriers along highways in residential areas. One interviewee explained that the sustainable design of a facility such as a bridge or highway could use materials more closely resembling those found in the bottom of a streambed to accommodate storm water runoff, and that water could then be retained and filtered by surrounding natural wetland landscaping. A good site plan, according to the interviewees, can control or influence many of the aspects that make a project unsustainable or not.

LEED

While discussing site plans and good design, over half of the interviewees specifically included LEED in their answers to this question. In many municipalities, buildings over a certain square footage either are required to be LEED certified or soon will be. In other places, municipalities are implementing their own green building codes that borrowed some of the LEED standards for buildings and site planning. A few planners were in the process of becoming LEED certified themselves, or had LEED certified people on their staff. One interviewee also credited LEED for being a key factor in the rising level of awareness of sustainability. One planner noted that the systematic organization of LEED readily lends itself to planning applications.

Transit Planning

More than half of all the interviewees also explicitly included transit planning as a tool they could use to be more sustainable. Planners in both counties said they are working closely with their respective public transportation service providers and also are working on putting in more and better bike lanes. In Montgomery County, the subway system connected to Washington DC and Virginia was described as important to keep in mind while planning because easy, walkable access to Metro stations is crucial, as is development and density along the two proposed transit lines. It was also mentioned by two planners that some plans encourage fewer parking spaces in areas served well by public transportation in an effort to increase ridership and reduce the impact of impervious surfaces. Participants from both counties said that working with the local

transit providers to enhance services, such as building better bus stops or sidewalks to stations, is very important. Centre County planners particularly emphasized the close collaboration with the Centre Area Transportation Authority (CATA) on land-development discussions and new-service implementation. The transportation planner from the Centre Region Council of Governments said that more sustainable transportation practices include making more choices available, and trying to minimize the impact of development by keeping how people are mobile in mind. It was also mentioned that there are transit planners who work to define underserved groups of people or areas that should be receiving better public transportation options. Another planner described one effort to look into providing park-and-ride lots for residents living in more rural areas to decrease the need for people to drive into the urbanized areas, which not only is an emission problem, but also increases the need for parking spaces in densely developed areas.

Master Plans

All but one of the planners in Montgomery County prepared, reviewed, or otherwise worked on the master plans for their areas and said that master planning is an important way for a community to incorporate more sustainable planning and practices. The participant from the Montgomery County Planning Department said that the county master plans can set specific policies to incentivize sustainability in development projects, such as those that require more density, on-site energy generation, underground and structured parking, mixed use, mixed-income targets, and easy access to public

transportation. Master plans for Montgomery County also include a specific line item for sustainability, which is described as having "more teeth" than other tools such as zoning ordinances. Master plans were also cited as crucial for sustainability in that they are usually created with long-term perspectives, making them inherently more sustainability-oriented. Only a few interviewees in Centre County mentioned master planning as an option that should be developed at the regional level. However, no one from the county included master planning in answers to this question.

Housing

Several Centre County participants also brought up the importance of housing to creating a more sustainable community. The lack of affordable, low-income housing in the developed areas means that much of the workforce commutes long distances to work every day, emitting lots of greenhouse gases and requiring many parking spaces.

Minor Themes

Several minor themes that entail specific policies were found in both counties. The majority of planners in both counties mentioned agricultural preservation, smart growth, and storm water management, but they were referring to specific policies already in place. Both counties have similar agricultural preservation programs in which the county buys development rights in order to keep development out. In both counties, restricting growth to areas already supported by infrastructure and promoting higher

density over suburban sprawl were said to be general planning goals. One planner in Centre County specifically described a regional growth boundary, and others in Montgomery County explained that smart growth principles are very important. The participants from Montgomery County specifically mentioned the recently passed, strict statewide storm water management regulations that are affecting much of the planning in that county, and are viewed positively from a sustainability perspective. In Centre County, several planners mentioned the importance of storm water management, as well as septic and sewage systems, to sustainability and general consumer well being.

In Which Sectors, and to Whom, is Sustainability Most Important?

To find out the sectors in which sustainability is most important, I asked the interviewees to describe in which items from the rankings list sustainability is a priority (Table 4-1). I also asked them from whom they felt the most pressure to be more sustainable. One major and several minor themes emerged from their answers.

Economic Development

Economic development was cited as one of the sectors in which many of the planners felt pressure to be sustainable. This demand was explained as the need to, "Have a thriving economy for a community to succeed" and "Do more with less money." Interviewees mentioned that encouraging businesses to locate in their areas is important

for economic sustainability, and that supporting locally owned stores that recycle money within the area is very popular with residents.

Minor Themes

Among minor themes, most of the planners in both counties indicated pressures to include more sustainable initiatives in both transportation and zoning. As in other sections, alternative energy and energy efficiency were only mentioned in passing by a few interviewees as being important to sustainability.

There were also two minor themes from each county. All of the local-level planners in Montgomery County said that construction is a main area of their jobs that is most important in terms of sustainability. Several of the planners from Centre County said that they feel the most pressure to be sustainable in the area of environmental protection, including ground water protection and protection of open spaces, although this is sometimes a problem because of tensions between property owners, developers, and the business community, according to one interviewee. Water quality was noted as especially important by one Centre County planner who said that the impact of local agriculture on the Chesapeake Bay watershed is a big concern, and is regulated in part by the federal government.

Who Wants To Be More Sustainable?

The planners identified several broad groups of people as sources of pressure to be more sustainable. One group is the people that the planners work and collaborate with, such as developers, architects, environmental committees, and other planners. Four of the five planners from Montgomery County specified internal pressure, especially from younger, more recently trained planners who are able to offer more technical expertise. Two municipal planners in Montgomery County also noted that the environmental committees or commissions from within their local government are quite aggressive in pushing sustainability as a high priority in planning.

Local Government

Almost all of the interviewees noted that the local county and municipal governments are increasingly prioritizing sustainability in their own agendas, which consequently affects planning. All of the participants from Montgomery County said that either there are new positions being created within the government dedicated to sustainability, or that the leadership is making it a priority. In one case, sustainability is a plank in an elected official's platform.

Public Demand

Public demand for sustainability was recognized as an important, although not particularly strong source of pressure by most of the planners. The majority of comments

stated that citizens generally approve of being more sustainable and like to see more green space and other features that make the developed areas more attractive, but that only a few are very vocal. In Centre County, however, several interviewees did note that the level of awareness and expectation for more sustainability could be attributed to the highly educated population, the proximity to Penn State University, and the high number of environmental groups in the area.

What is Preventing You from Being More Sustainable?

Because every interviewee implied that more could be done to make their respective areas more sustainable, they were asked what kinds of things were preventing them from being making more sustainable choices or from implementing more strategies to increase the level of sustainability. The answers here were more geographically dependent, so I discuss the themes by county.

Centre County

Centre County planners considered funding and resistance to higher density development the two biggest problems working against sustainability. A few planners mentioned the difficulties presented by having such a large student population in the area. One reason is that the students do not participate in any of the planning or development processes; another is that the amount of student housing required, and the off-campus behavior of students, discourages permanent residents from living in the downtown areas.

Interestingly, the county planner said that their biggest difficulty is that they do not have the authority to make the kinds of decisions that affect sustainability, and that they are limited to making recommendations to municipal officials.

Montgomery County

In Montgomery County, two of the three participants from countywide planning departments said that the biggest single factor preventing them from making the county more sustainable is the outdated zoning ordinance. Although they are being rewritten, the zoning laws have not been updated since 1952, are "(t)oo archaic for mixed-use development," and are not flexible enough to provide the incentive-based zoning that the county needs. According to both planners, zoning is important for project review and currently prevents more context-sensitive design.

Almost all of the participants representing Montgomery County municipalities said that funding is the biggest issue. Two said that lack of public education make implementation very difficult.

How do Population Growth and Housing Affect Sustainable Planning?

Planning requires thinking ahead, anticipating the needs of a changing population. This means that population growth, negative or positive, and housing for that population are important areas of concern for planners. They are also important concerns from a sustainability stand point because population size influences resource and service

demand, and housing uses valuable space and resources as well. This question was added after the first few interviews because several planners brought up the need for and the impact of housing. I asked most of the interviewees how they felt about how these issues relate to sustainability, and several themes, again differing by place, were found.

Centre County

In Centre County, none of the interviewees that answered this question said that population growth was a concern because the growth in Centre County is rather slow but stable, around 1% according to one participant. However, one planner did note that even though the population is not growing, the "extreme growth in terms of quality of life", i.e. the increase in affluence, is unsustainable and a major concern.

Montgomery County

Although they all ranked population growth at the very bottom, most of the Montgomery County planners did express concern about the level of population growth and the city's or county's ability to keep up with it. The challenge felt by several planners was how to grow, in an "environmentally effective" or sustainable way. The exception was on municipal planner who felt that many of the population-dependent services, such as provision of education, is all handled at the county level, so population growth is not a concern beyond the general need for more economic growth.

Housing

Housing is important in terms of weatherization and retrofitting, which is significant because those types of programs currently receive considerable government funding. Housing is also important because the lack of affordable, low-income housing, mentioned as an issue by several planners in both counties, means that whoever is excluded will be commuting into the area. One planner in Centre County explained that this is a major sustainability issue both environmentally and socially due to the number of commuters and because places where low-cost housing is available do not have good infrastructure. Another one of the planners in Centre County considered this to be a particularly serious issue because the "lack of low-cost housing means a not well-rounded community." Planners from both counties also said that the current style of housing desired most by constituents, specifically detached, single-family homes, not only make providing low-income housing difficult, but also makes housing inherently unsustainable because of the land and resource requirements of such housing stock.

How Important is Education to Sustainability?

Throughout all of the interviews, regardless of the question, education was specifically stated as crucial to sustainability. Because of the flexibility provided by using a semi-formal interview structure, I was able to follow-up on this trend during the interviews.

Planner Education

Many expressed the point that educating planners and the people they work with is vital. One participant discussed the benefit of having experts and keynote speakers brought in to talk about sustainability issues, to tell planning department staff how planning could be changed to accommodate sustainability, or to discuss how some aspects of design could be improved to further sustainability. Others explained that sustainability is becoming more widely accepted because of better education of developers and architects, who are increasingly striving for LEED standards. Several interviewees expressed the opinion that making their community more sustainable is part educational and part planning. They also thought that educating people about the necessity of reducing consumption, containing growth, and supporting efforts such as increasing public transportation and green spaces is important even though it might be more expensive to taxpayers.

Public Education

Municipal planners, who work more closely with citizens, regarded public education as particularly crucial. One planner explained that sometimes it is difficult for residents to understand the long-term benefits of certain practices they may think are unnecessary, such as installing a bench along a sidewalk to encourage more people to walk. Such place-making activities were mentioned as critical for helping areas to become more sustainable. Several of the interviewees working at the municipal level cited the importance of public information sessions, although they noted that it is

sometimes challenging to get people to attend such meetings. One planner in Centre County explained that public education about the planning process is also important, because people often expected the municipal governments to have much more power over development than they actually do. Another planner from Montgomery County said that they thought one of the biggest challenges for local level planners is that they often have to "educate those people who are actually doing the work," that is, those people affected by the policies, such as contractors. The need for education makes it more important to implement changes incrementally instead of all at once.

How has the Importance of Sustainability Changed?

Sustainability was said to be increasing in importance, especially in the last several years. When asked if the topic of sustainability was becoming more prevalent, all of the interviewees emphatically responded yes, starting less than ten years ago, and especially in the last three to five years. The planners credited this move towards sustainability to changing priorities, advocacy for change by colleagues in environmental resource and landscape architecture, the LEED certification system, and increased awareness by architects, politicians, planners, and the public, although the development community is still focused essentially on short-term benefits. In some cases, employment opportunities and council committees are being created to focus on sustainability.

Recapitulation

This chapter revealed the themes that emerged from the semi-structured interviews. The eight categories of questions produced themes on how important sustainability is to these planners, what it means to them, and how their relationship to the concept of sustainability manifests itself in the form of practical applications and outside pressures. Although the particular circumstances of each planner influenced the language they used and specific examples they gave, themes were still consistent throughout all of the interviews. In several instances, common answers among planners in the same county or same level of government across locations were observed as well.

The following chapter discusses the information presented in Chapters Four and Five. This analysis will explore the connections between the rankings and the answers to the interview questions, as well as conclusions and implications for future research.

Conclusions

This chapter first summarizes the thesis, reviewing the methods and results of the research. Following the summary is a discussion of the conclusions drawn from the study, as well as of pre-research expectations that were not met. Lastly, the chapter considers possibilities for future research.

Summary

The purpose of this research was to determine how urban and regional planners define sustainability, what its relevance is to their positions as planners, and how they perceive their relationship to the concept. The research also assessed ways in which planners apply sustainable ideals and where they felt the pressure to do so.

The rankings revealed that infrastructure and zoning were generally the most important issues to the planners; that sustainability was on average the third or fourth most important issue, and that population growth, pollution control and construction were consistently of less importance to them. These results also showed that there were differences in rankings by county.

The first interview question, "Why did you rank sustainability so high (or low)?" produced answers that reflect a common pattern for the answers to all questions: geographic area, specific type of planning position, and level of government are important influences on how planners prioritize sustainability.

For the second section, "How do you define sustainability?" answers varied widely, as did the ways in which the planners thought they could influence the level of sustainability in their planning areas. The type of position or specialization of each planner was especially influential in determining the kinds of answers the interviewees gave. The two components most often included in the answers were that sustainability had something to do with recycling and resource use, as well as with livability and community.

When the interviewees were asked, "How can you be more sustainable?" geographical context proved to be a determining factor. Still, several other major and minor themes emerged. Commonly mentioned concepts and terms included: the difference between requirement versus encouragement; ordinances; LEED certification; inter-departmental collaboration; place-making/ community development; site plan design; transit planning; agricultural preservation; and water management. There were also county-specific themes, such as master plans in Montgomery County and housing in Centre County.

A series of questions asked in what category planners thought sustainability was the highest priority, and from whom they felt the most pressure to increase their sustainability efforts. The planners thought that sustainability was most important when considering economic development. The consensus view was that the source for the most pressure to be sustainable came not from the public or higher levels of government, but from the planners and their colleagues.

Planners were also asked what they thought was preventing them from taking more sustainable actions. The answers varied by county, and included answers such as demographics and outdated zoning ordinances.

During the course of the interviews, questions were added regarding how population growth and housing availability affect sustainability, and how important education is to sustainability. The answers about population growth varied by county, but the consensus were that housing construction and availability are very important to economic, environmental, and social sustainability. Education was determined to be incredibly important to sustainability, and that planner education as well as public education should be areas of emphasis.

Lastly, when asked whether they thought sustainability was becoming a more widely discussed and desired characteristic of urban and regional planning, all the interviewees said that they thought sustainability has become an important aspect of planning, especially in the last few years.

Conclusions

The themes that emerged from the rankings and interviews lead to the following conclusions:

- Geographic location, level of government, and job description heavily influence the way urban and regional planners define and relate to sustainability
- The concepts of livability, sustainable design, and economic sustainability are concepts universally embraced by urban and regional planners

- Education, both of the public and of the planners, is crucial to sustainable urban and regional planning policy and practices

Throughout the interviews, it became increasingly clear that certain defining characteristics — geographic location (Montgomery or Centre County), level of government (municipal, regional, or county), and type of position (transportation, community development, etc.) — influenced the way interviewees answered questions. Almost all the themes described in Chapter Five could be broken down by these three characteristics. Geographic context and level of government appear to define the community values and goals that the planners cater to, as well as the historical tendencies and precedents in each planning department. The type of area, such as rural vs. urban or high population density vs. low population density did not seem to affect the answers outside of specific ways to be more sustainable. For example, smaller planning departments, regardless of location, have different needs and relationships with the communities and citizens than planners in larger departments do, and therefore tend to rank sustainability and to view education and economics differently from planners and planning departments that do not have to deal so much with the day-to-day issues of regular citizens. The actual places the planners were working in also mattered because of the histories and traditions of sustainable planning in each areas, the kinds of traits each municipality or even department prided themselves, such as adding tree canopy or maintaining a balanced budget. Planning cultures were never explicitly mentioned, but were embedded in every answer the interviewees gave. Similar explanations can be made for the position the interviewees held. Each job description comes with goals and

duties that need to be satisfied before sustainability can be discussed. This conclusion begs the question, how can planners be made to feel more flexible in their jobs so they can seek more sustainable paths?

In many of the answers, regardless of question, the planners included ideas livability, sustainable design, and economic sustainability. Sense of place, of community, and of a place worth sustaining were very important concepts to all of the planners, and were brought up repeatedly. Similarly, good design, which incorporates efficiency, cost reduction, and resource conservation, was discussed often as one of the best ways to becoming more sustainable. Perhaps it was for this reason that most of the planners admired the progress that LEED standards help them make. One planner commented that the standards-based framework readily lent itself to the organized field of urban planning. Other third-party guidelines could make keeping up-to-date with the most sustainable planning practices easier for local planners.

One of the biggest problems for planners is that they have limited funds to work with, and local governments almost always give top priority to the budget. However, economic constraint did not always receive a negative connotation in the interviews; in some ways it appeared to serve as a motivation to conserve resources and space as well as money in order to "do more with less." Some kinds of planning spend money, while other kinds save it, but in any case, budget was relevant to everything the interviewees were trying to accomplish, and could sometimes make or break plans, especially in the public's eyes.

Because the most pressure to be more sustainable was said to come from internal sources within their respective planning department rather than from the public or local

government, every planners' level of education and enthusiasm for sustainable planning has a significant impact. Individuals were influenced by the type of training they received, where and how they learned their careers, and where they were working currently. Because of the variability among all the interviews, and the influences planners seemed to exert on each other, one can conclude that an individual planner and their educational background can make a significant difference in the department that he or she is in, with this power having an inverse relationship with the size of the planning department. Additionally, informing the public of why such changes and at some times expenses are necessary is vital to the promotion of more sustainable planning, as it will increase the pressure to do so, and remove the occasional resistance to the implementation of such measures. Thus, informal and post-degree education is very important for both planners and citizens in order to incorporate the most effective and efficient policies and planning techniques.

Expectations That Were Not Met

While formulating the research questions, and before beginning the interviews, I developed expectations about the kinds of answers I would get from the planners. Several of these expectations were not met.

As described in Chapter Two, most definitions of sustainability include some aspect of intergenerational justice, but few planners interviewed mentioned future generations when describing their definitions of sustainability. Some did note the need to

plan for the benefit of future residents, e.g., planning aimed at maintaining the attractive qualities of the community or region over time.

Interestingly, only a few interviewees mentioned energy. On the one hand, conserving resources and reducing materials were discussed much more often, which could be a result of listing these topics on the rankings list and not listing energy efficiency. On the other hand, storm water runoff and the amount of impervious surface included in plans came up often in the interviews but was not on the rankings list. Although buildings (which are notorious for their energy consumption) were of great importance to all planners, no one mentioned energy efficiency or conservation explicitly as a priority. In the end, only two planners, both from Centre County, discussed the potential for planners to influence energy production or consumption.

When I began this research, I also expected that the public and the government would play large roles in how sustainable planners feel they should be. However, this was not the case: almost all of the planners said that those two bodies had little effect on their views of sustainability when compared to the internal influences of other planners.

Future Research

Based on the literature review in Chapter Two and the results and conclusions made in this chapter, there are several opportunities for future research in a diversity of fields such as education, planning, and public policy. The results suggest that research into public education about sustainability and adaptability are important to support the kinds of changes that planners want and need to make. Furthermore, finding effective

ways to educate the planners themselves about more sustainable options available to them is crucial.

Surprisingly, none of the planners discussed the difficulties inherent in evaluating sustainability. However, because of the wide range in definitions for sustainability, and the variety of principles and concepts included in the planners' perspectives of what sustainably means, there needs to be research on ways to help planners, policy makers, and the public easily identify and evaluate sustainability. This research would not only provide standards on which to evaluate how sustainable a planning department or plan is, but would also give more support to sustainable planning practices that may be confusing or unpopular.

There is also a need to expand on this research and do further studies on the way planners perceive sustainability. Urban and regional planning provides some of the best ways to tackle the issue of sustainability on a scale that can have lasting impacts. Understanding the ways in which our planners perceive sustainability and sustainable planning is crucial to improving our communities and our lives

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Academic Vita

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Education

The Pennsylvania State University, University Park, PA
Schreyer's Honors College
College of Earth and Mineral Sciences
Bachelor of Arts in Geography
Minor in Environmental Inquiry, with a concentration in Human Settlements
Expected Graduation - 2010

Conferences Attended:

- Power Shift 2007 (independent)
- Climate Change Debate - hosted by Intelligence Squared, New York City
- Power Shift 2009
- Power Shift Pennsylvania 2009

International Education:

- Bulgaria – Experienced several cities and villages to research urban planning and environmental sustainability in the Eastern European setting
- Germany and Paris, France – Traveled to many German cities and Paris to research sustainability in the built environment, with a specific interest in urban design and public transit

Awards

- *EMSAGE Laureate (2010)*
- *Udall Memorial Scholarship Nominee (2009)*
- *Balmat Family Scholarship (2009)*
- *Carnahan W J Alumni Scholarship 2008-2010*
- *Academic Excellence Scholarship 2007-2008*
- *Geography Student Scholarship 2008*
- *EMS Student Scholarship 2008-2010*
- *AP scholar (2006)*
- *Top Achievement Award (2004)*
- *Scholar Athlete Award (2004)*
- *Dean's List - All Semester's Attended*

Experience

Geography Department, Penn State University — 2009 - present
Research Assistant, (10 hrs/wk, while school is in session)
Record and analyze historical records

Environmental Credit Corp — 2009 - present
Intern, (10 hrs/wk, while school is in session)
Research, map, and report on potential project locations

Activities

PowerShift Pennsylvania Conference	2009
Keystone Environmental Youth Coalition	2009 - ongoing
Campus Consciousness Tour	2009 - 2010
Eco-Action	2009 - present
National PowerShift 2009	2008 - present
Gamma Theta Upsilon (Honors Geography Fraternity)	2009 - 2010
Schreyer's Honors College Member	2007 - graduation
National Society of Collegiate Scholars Member	2007 - lifetime
Atlas THON (philanthropic group)	2007 - present
College of Earth and Mineral Sciences Student Council	2008 - 2009
National Honors Society President	2006 – 2007