A Community That Is Like Family: Conservation Subdivision Residents' Perceptions of their Neighborhood

Jamie Elizabeth Lucius

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A community that is like family: Conservation subdivision residents' perceptions of their neighborhood

By

Jamie Elizabeth Lucius

A Thesis
Submitted to the Faculty of Mississippi State University in Partial Fulfillment of the Requirements for the Degree of Master of Landscape Architecture in Landscape Architecture in the Department of Landscape Architecture

Mississippi State, Mississippi

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A community that is like family: Conservation subdivision residents' perceptions of their neighborhood

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Conservation subdivisions offer an alternative to large-lot residential developments along the urban fringe. These developments pride themselves on protecting ecologically sensitive land and providing an improved quality of life for residents. As suggested by Randall Arendt (1996), these goals are achieved by clustering homes on one portion of the site, while “half or more of the buildable land area is designated as undivided, permanent open space.” In order to gain information about the priorities and motivations of conservation subdivision residents in the Southeast United States, a survey was administered to homeowners within five conservation subdivisions. The results from this study revealed that open space, improved quality of life, and a strengthened community were important in each community. Additionally, homeowner satisfaction is prevalent among conservation subdivision residents. Lastly, demographic characteristics of these communities were analyzed. Recommendations are made for landscape architects and planning professionals for the future development of conservation subdivisions.
DEDICATION

To my husband, Cory, without your patience, encouragement, support, and love, this endeavor would not have come to fruition.

To my parents, Jerry and Ann Jobe, without you, my education would not be possible. I am inspired by your unconditional love, motivation, wisdom, selflessness and friendship.

To my baby boy, Lyndon, may you grow to appreciate education and lovely things in our environment.

“No matter what you've done for yourself or for humanity, if you can't look back on having given love and attention to your own family, what have you really accomplished?” [Elbert Hubbard]
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CHAPTER I
INTRODUCTION

As the human population continues to grow, further urbanization is expected, and our land development trends should be closely scrutinized. Land development has been identified as the major issue affecting water quality (Allan, 2004), destruction of wildlife habitat (Beatley, 2000), terrestrial and aquatic ecosystems (Milder & Clark, 2011), and forest ecosystems in the Southern United States (Wear & Greis, 2002). Song and Zenou suggested in 2006 that over the past century, land patterns have followed a low-density development design that continues to move further away from the core of urbanized areas. This type of development supports sprawl and the removal of vegetation and critical elements of the landscape (Arendt, 2004).

The removal of mature trees, waterway buffers, and wetlands has encouraged scattered patches and disconnected corridors, thus compromising and endangering our natural resources and essential green infrastructure (Dramstad, Olson, & Forman, 1996; Smith & Hellmund, 2006). Benedict and McMahon (2002) described green infrastructure as “an interconnected network of green space that conserves natural ecosystem values and functions and provides associated benefits to human populations,” and they further discussed the theory that it is the “ecological framework needed for environmental, social and economic sustainability.” Furthermore, Walmsley (2006) viewed green infrastructure as fundamental in the continued growth and health of a community. In an effort to make
Green infrastructure is an integral part of local, regional, and state design strategies and policies, Green Infrastructure Work Group was formed in 1999 by The Conservation Fund and the USDA Forest Service. Green Infrastructure Work Group describes green infrastructure as follows:

Green infrastructure is strategically planned and managed networks of natural lands, working landscapes and other open spaces that conserve ecosystem values and functions and provide associated benefits to human populations. The foundation of green infrastructure networks are their natural elements – woodlands, wetlands, rivers, grasslands – that work together as a whole to sustain ecological values and functions. Healthy functioning natural or restored ecological systems are essential to ensure the availability of the network’s ecological services. Additional elements and functions can then be added to the network, depending on the desires and needs of the designers – working lands, trails and other recreational features, cultural and historic sites. These all can be incorporated into green infrastructure networks that contribute to the health and quality of life for America’s communities.

The concern for land preservation and conservation is not a groundbreaking concept. Ebenezer Howard founded the Garden City Movement in 1898, and several designers followed suit slightly altering Howard’s ideals and principles (Crouch, 2001). These cities were to be well-planned towns with cautious land zoning that would enhance quality of life while offering spans of green-space and public gardens (Arendt, 1999). Howard (1965) envisioned these towns as a refuge for all citizens and a haven for good. However, in Bohl and Lejeune’s 2009 book, they suggested that architect and author, Trystan Edwards, wrote the most critical review of the Garden City Movement to date. In Edwards’ 1913 publication, he expressed his feelings that this movement married the shortcomings of urban and rural living—in other words, Garden cities did not possess the solitude of country living or culture of city dwelling. Arendt (2006) has suggested the theories of the Garden City Movement began to diminish by the late 1920s because the outlines of the concept lost some clarity over the last century.
Other significant ideas on ecological planning have come from Ian McHarg’s 1969 book, *Design with Nature*, which has greatly influenced others and has conveyed the idea of ecological planning (Wu, 2008). In Arendt’s 2006 publication, “Cultivating Natural and Cultural Landscapes through Conservation Design,” Arendt suggested that many of McHarg’s ideas have provided the foundation for the conservation-planning concept. Very similar to conservation subdivision design, McHarg set forth instructions that can be followed to ensure appropriate land uses in order to avoid development of ecologically sensitive lands. Additionally, William H. Whyte (1964) identified and expressed the need to link open space throughout neighborhoods, ultimately creating an interconnected network of greenways and conservation lands.

The main purpose of this study is to determine the motivations for buying a property within a conservation subdivision. To assess this motivation, a survey will be administered to homeowners within five conservation subdivisions in the Southeast United States. Using the results, the researcher will offer conclusions and recommendations for the enhancement of future design of conservation neighborhoods.

1.1 Goals and Objectives

The main goal of this study will be to determine homeowner’s priorities, motivations, and satisfaction of buying into a conservation subdivision. The demographics and survey results from each community will be statistically analyzed in order to determine trends, and to then make comparisons. Four objectives have been defined to meet this goal:

1. Conduct a literature review to determine the current trends and potential future for conservation subdivision development.
2. Develop and administer a survey to homeowners within five different conservation subdivisions to determine homeowner priorities, motivations, and satisfaction of their neighborhood current practices.

3. Analyze the data to identify homeowner priorities, motivations, and level of satisfaction of their neighborhoods’ current practices.

4. Make conclusions and recommendations based on relevant literature and survey responses for consideration for future development of conservation subdivision.
CHAPTER II
LITERATURE REVIEW

2.1 Introduction to Literature

During the past fifty years, our earth’s environment has been altered more than any other time in the history of mankind (Arthus-Bertrand, 2010). In order to understand the importance of land preservation in the United States, one must comprehend how history has shaped today’s landscape. In the process of human population growth, our once dense, lush backdrop of vegetation has been fragmented and replaced with scattered patches and disconnected corridors in the landscape (Dramstad, Olson, & Forman, 1996). The continued fragmentation has led to numerous environmental, social, and health issues such as poor air and water quality (Frank, 2000; Otto et al., 2002), loss of open public spaces (Power, 2001), loss of a sense of community (Brown, Burton, & Sweaney, 1998), and lastly, physical and mental health issues (Handy, Boarnet, Ewing, & Killingsworth, 2002; Weich et al., 2002). Needless to say, our environmental trends are alarming (Beatley, 2000).

According to the 2010 Census, the resident population of the Unites States was 308,745,538, an increase of 9.7 percent since the previous 2000 Census. More staggering, the 2010 United States Census Bureau predicts a resident population increase to 392 million by 2050. As the human population continues to rise, urbanization is inevitable,
and land planners are presented with lack of previous land planning strategies, fragmented land uses, and auto dependent cities.

Writer and historian, James Trustlow Adams, coined the term “The American Dream” in *The Epic of America* (1931). In this book, he described his vision of a society that experienced a fulfilled lifestyle, which excelled on individual achievement. Hostetler and Drake expanded the idea of the American dream with the concept of a land full of equality where opportunities open for those with the ability and ambition:

> It is not a dream of motor cars and high wages merely, but a dream of social order in which each man and each woman shall be able to attain to the fullest stature of which they are innately capable, and be recognized by others for what they are, regardless of the fortuitous circumstances of birth or position (Hostetler & Drake, 2009).

Adams could not have predicted that his book would soon take on an entirely different meaning. It seems the American dream has digressed into a humble goal for most Americans. Conservation, land preservation, and the protection of natural resources are expensive, and for some people, uninteresting (Rifkin, 2005). According to Messner and Rosenfeld (1994), the American Dream stands as a cultural philosophy. It appears that the land-use concerns the United States faces are produced by deeply embedded desire to achieve the American Dream. Hostetler and Noiseux (2010) stated that the “relative tranquility of low density housing developments among the fragments of formerly cohesive forests comes at ever-farther distances from the urban areas where the employment opportunities that finance the suburban American Dream exist.”

Additionally, Miller (2012) asserted that “though the intention of development in the U.S. may be to make the American Dream, a reality, the problems associated with sprawl are now undermining that dream.” As the human population continues to grow, developable
land is becoming limited—thus encouraging people to move further and further out to find their “American dream”—a process known as sprawl.

Yann Arthus-Bertrand, an aerial photographer, travels the globe to photograph the earth from above. He has shown through his creative abilities the colossal and amazing wonders our earth has to offer; likewise, this photographer depicts the ruin and destruction it has endured. Arthus-Bertrand, whose projects bind together ecology and humanism, best states the human impact on the environment through the introduction of his spectacular movie, *Home*:

> Our life is tied to the wellbeing of our planet. We depend on water, forests, deserts, and oceans. Fishing, breeding, and farming are still the world's foremost human occupations. And what binds us together is far greater than what divides us. We all share the same need for the earth's gifts. The same wish to rise above ourselves, and become better. And yet we carry on raising walls to keep us apart.

> Today our greatest battle is to protect the natural offerings of our planet. In less than 50 years we've altered it more thoroughly than in the entire history of mankind. Half of the world's forests have vanished. Water resources are running low. Intensive farming is depleting soils. Our energy sources are not sustainable. The climate is changing. We are endangering ourselves. We're only trying to improve our lives. But the wealth gaps are growing wider. We haven't yet understood that we're going at a much faster pace than the planet can sustain. We know that solutions are available today. We all have the power to change this trend for the better. So what are we waiting for? (Arthus-Bertrand, 2009).

> Our land has drastically changed since the evolution of humankind (Beatley, 2000). The most noteworthy aspect affecting forest ecosystems in the Southern United States is unremitting fragmentation (Wear & Greis, 2002). Additionally, urbanization, next to agriculture, is the leading cause of wildlife habitat loss and endangerment in the United States (Czech et al., 2000). With the continued development of obtainable research and data, we are challenged with the ability to make conscious decisions to obliterate or to preserve our surrounding environment. Protecting watersheds, as well as
wildlife habitats, and preserving land offer many options by which man may improve life and the environment.

Pejchar, Morgan, Caldwell, Palmer, and Daily (2007) provided a definition of conservation subdivisions that clearly distinguishes them from other open space development: “Conservation development relies on scientific assessments of the ecological importance of a property’s assets to identify what parts of a property should be protected and restored and how the remainder should be developed.” In the last twenty years, the number of land trusts, the amount of private-land conservation, and the voter support for public spending on open-space protection in the United States have grown significantly (Milder & Clark, 2011).

According to Milder (2007) and Milder and Clark (2011) in their collaborative article, “Conservation Development Practices, Extent, and Land-Use Effects in the United States,” there are four conservation development techniques used in the United States: conservation buyer projects, conservation and limited development projects, conservation subdivisions, and conservation-oriented planned development projects. Those involved in conservation buyer projects and conservation/limited development projects develop properties with conservation as the main objective. Conservation subdivisions and conservation-oriented planned development projects focus on development in an ecologically-responsible manner. Table 2.1 provides an overview of conservation buyer projects, conservation/limited development projects, conservation subdivisions, and conservation oriented planned development projects.
Table 2.1  Summary of conservation development techniques practiced in the United States

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<td>Single-family residential</td>
<td>Rural, exurban, and suburban</td>
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<td>Conservation-oriented Planned Development Projects</td>
<td>Varies (can be maximum or reduced density)</td>
<td>Developers</td>
<td>Mixed use</td>
<td>Suburban and urban</td>
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<tr>
<td>Conservation Subdivision</td>
<td>Typically developed at maximum density</td>
<td>Developers and planners</td>
<td>Single-family residential</td>
<td>Suburban</td>
</tr>
</tbody>
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(Anella & Wright 2004; Merenlender, Huntsinger, Guthey, & Fairfax, 2004; Rissman et al., 2007; Milder, 2007; Milder & Clark, 2011).

2.2  Conservation Buyer Projects

In a conservation buyer project, a land trust will purchase the land, develop a conservation easement, and resell the property to a conservation buyer. In these reserved home site projects, Milder and Clark (2011) suggested that at the landowner’s consent, future development is restricted to minimized housing by donating or selling a conservation easement. As per Milder (2007), the conservation buyer now protects the conservation easement, and the sale allows the land trust to regain most, if not all, of its development costs. Rissman et al. (2007) indicated numerous land trusts use this process as a means of preserving land that is either low priority or too expensive to protect outright, and a recent study verified that conservation buyer projects are very common.
Main, Roka, and Noss (1998) pointed out that since this type of development is a voluntary incentive-based approach that depends on private ownership to meet conservation goals. This technique typically costs less than a full fee title acquisition. Milder (2007) found that land owners who wish to own and live on their land find this method quite profitable because the sale or donation of the conservation easement provides direct revenue or tax deductions, reduces future property tax and estate tax liability, and allows continued farming or forestry. Additionally, Wright (1993) discovered that conservation easements assist landowners in meeting many personal goals, such as, maintaining the land for agriculture, contributing to environmental open space and wildlife preservation, and lastly, potentially passing the land down to future generations. In spite of the many benefits to the private buyer, Merenlender et al. (2004) contended that conservation buyer projects are not always a beneficial way to ecologically conserve because the conservation easement divides the land title between the landowner and easement holder (Merenlender et al., 2004). Mayo (2000) explained that the landowner is to maintain ecologically sensitive practices on the property while the easement holder is held responsible for overseeing and enforcing the easement specifications agreed upon. However, Merenlender claimed that routine monitoring does not occur, and it is likely that the landowner will not enforce the easement specifications.

2.3 Conservation and Limited Development Projects

Milder (2005) suggested that conservation and limited development projects contain very little development and that land trusts, landowners, or developers seeking to encourage conservation typically manage these projects. Additionally, in 2007, Milder found that despite the fact that conservation and limited development projects have little
to no development, they offer a sizeable profit. Ultimately, the revenue from limited
development finances land conservation. Gustanski & Squires (2000) discovered that as
of 1996, conservation and limited development projects accounted for about two percent
of projects undertaken by land trust; however, about twelve percent of land trusts engage
in conservation and limited development projects. Additionally, Milder (2007) pointed
out that over the past several years an increase has occurred in the number of
conservation and limited development projects conducted by private landowners,
developers, and investors.

Milder, Lassoie, and Bedford (2007) confirmed that the preservation efforts of
conservation and limited development projects show more promising efforts than any
other conservation developments. However, this technique aspires to produce little
development, and a careful balance between raising enough money to fund conservation
while limiting the development (as not to counter the conservation goals) can prove
challenging. With that said, there is the threat of the project introducing some of the risks
it initially aimed to avoid. Often a comparison between the project outcome and a
conventional development is necessary to assess the conservation effectiveness (Salafsky
& Margoluis, 1999; Theobald & Hobbs, 2002).

2.4 Conservation-Oriented Planned Development Projects

According to Heid (2004), conservation-oriented planned development projects,
also referred to as master-planned communities, are large-scale projects ranging in size
from a few hundred to more than 50,000 square meters. Milder (2005) maintained that
these large developments are often intended to become independent communities with
various housing types, commercial and retail space, as well as recreational and open
space. Additionally, Milder (2005) noted, conservation-oriented planned development projects tend to be popular in the Southern and Western United States where there are large areas of land to develop—the larger amount of land that is set aside, the more significant and holistic the conservation efforts will be.

One of the most obvious benefits of this technique is large-scale conservation—the vast tracts of land allow for additional protection of open space, wildlife habitats, and natural resources. According to Beyer (2010), other recognized benefits include increased walkability and connectivity to nearby amenities. In spite of these positive attributes, a project of this scale can create opposition among surrounding residents inhabiting low-density development (Beyer, 2010). Furthermore, conservation-oriented planned development projects are typically constructed so that the developer can attain financial incentives; therefore, the project sites are not selected for conservation value and rarely are ecologically sensitive resources protected (Milder & Clark, 2011).

2.5 Conservation Subdivisions

The apprehension about land preservation and protection of critical landscapes are not a recent concern. According to Bowman and Thompson (2009), conservationists and land planners have been researching and discussing this topic for over 100 years. Howard (1902) and Perry (1929) encouraged open space in communities and neighborhoods in order to benefit residents. William Whyte (1964) backed cluster housing to allow for a more thorough interconnected network of suburban open space. Today, clustering subdivision residents into designated areas has become a well-known and widely accepted tool of conservation subdivision design (Bowman, Thompson, & Colletti, 2009).
The loss of natural resources and lack of land planning have initiated a debate among urban planners, developers, and citizen groups about the environmental and social consequences of suburban development (Bowman et al., 2009). According to Wu’s 2006 publication, “Environmental Amenities, Urban Sprawl, and Community Characteristics,” “sprawl” is a widely discussed complex issue, and a solid definition is difficult to produce. However, most observers agree that sprawl is a “fragmented pattern of land development.” In 2005, Daniels & Lapping felt sprawl’s land use pattern contributed to “automobile dependence, consumption of imported oil, air pollution from vehicle miles traveled, increased public service costs, and water pollution from on-site septic systems and increased storm water runoff from the paving of open space with roads and parking lots.” Additionally, they felt that sprawl necessitates the removal of vegetated patches, thus decreasing wildlife connectivity, buffers to protect water bodies, and ultimately decreasing the value of surrounding land and natural resources. Earlier in 1999, Downs pointed out that low-density residential developments are specifically categorized as sprawl. Interesting enough, Vogt and Marans (2003) suggested that a well-accepted practice in residential design is the development of a single family home in neighborhoods accessible only through automobile use. According to Dudley and Stolton (2003), education will play a key role in solving many crucial environmental issues we are facing today. Moreover, an increase of education will also lead to a more thorough knowledge of best management practices and smart planning, hopefully increasing the demand for ecological development.

This debate led to the interest in and the awareness of an alternative style of subdivision—conservation subdivision design (Bowman et al., 2009). Conservation and
developmental growth are usually seen as two different ideas with little similarities; however, smart conservation identifies the difference between land conservation and land use (Walmsley, 2006). Walmsley goes on to discuss that Smart conservation also attempts to establish critical areas of land based on its ecological function that should ultimately be protected.

Carter observed in his 2009 article published in *Landscape and Urban Planning* that Conservation subdivisions became popular in 1996 with the release of Randall Arendt’s book, *Conservation Design for Subdivisions: A Practical Guide to Creating Open Space Network*. In this book, Arendt reported that this type of development protects land by clustering homes on one, or a few areas of the site, while “half or more of the buildable land area is designated as undivided, permanent open space.” Although conservation development, particularly conservation subdivisions, attempts to protect and conserve natural resources, Vogt and Marans (2004) stated that these developments have been scrutinized as “well-designed sprawl” because they typically border larger cities and ultimately fragment and impair natural resources.

Arendt (1996) asserted that conservation subdivisions are fundamental in mediating between ecology and land development and in time will notably change the urban fringe one sees today. A recent study conducted by Milder and Clark (2011) suggested that this change has not yet occurred, partially due to the economic recession that began in 2008; however, the authors do believe that the benefits of conservation subdivisions are evident because of their location in the suburbs where ecosystems are fragmented.
Conservation subdivisions offer various advantages to wildlife, water quality, and the surrounding community. Arendt (1996) pointed out that this type of design has the ability to reconnect people to the land and aid in developing a healthy land ethic. However, in spite of apparently successful aspects of conservation subdivisions, there are issues of concern associated with implementation of a conservation subdivision. First, Kaplan and Austin (2004) agreed that homeowners occupying these developments vary in their level of comprehension of conservation efforts. Therefore, many homeowners are not conscious of appropriate management skills to maintain the conserved area and may not actively participate in environmentally-sensitive decisions. Second, Carter (2009) asserted that in some cases zoning and subdivisions codes do not allow for this type of development. In the event the developments are permissible, city officials can make the process troublesome, thus overshadowing the benefits to the developer. Third Austin and Kaplan (2003) believed that because of deficit in education, long-term management of the open space is a challenge; however, transfer of development rights or Homeowners Association fees can be used to cover maintenance cost. Lastly, a study conducted by Allen, Mooreman, Peterson, Hess, and Moore (2012) found that those most critical to conservation subdivision implementation—developers, city officials, and realtors—were resistant because they stand “to lose the most if claims about customer preferences and construction cost savings prove false.”

2.6 Conservation Subdivisions - Water Quality Preservation

According to the World Bank (2002), an increase in the human population has changed the way humans live and work, ultimately affecting water usage and water quality. Cunningham et al. (2009) indicated that the effects of urbanization have become
ever present as evidence suggests that impervious surface cover pollutants can significantly degrade water quality and ecosystems. Additionally, Cunningham et al. (2009) claimed that impervious surface cover is easily measured in an urban project. This type of covering prohibits proper infiltration of precipitation as it speeds rainwater runoff from the land to nearby streams. During this process, water moves so rapidly that the aquatic plants are not capable of absorbing many of the pollutants before they enter our watershed. In comparison, vegetated lands with minimal impervious cover are capable of capturing more contaminants and pollutants before they enter our drinking water.

Dudley and Stolton (2003) emphasized that even though water is classically known as a renewable resource and covers approximately 80 percent of our earth, an adequate supply of clean water is now a major concern. Additionally, the authors indicated that more than fifty percent of the United States’ wetlands that recharge and purify ground water have been destroyed by urbanization. In 2002, at the World Summit on Sustainable Development in Johannesburg, South Africa, over eighty percent of the participating decision-makers identified water as a key issue to be addressed by Heads of State from countries throughout the world, as suggested by the World Bank (2002). The Food and Agriculture Organization of the United Nations (2001) stated:

Much of the world’s drinking water comes from catchments that are or would naturally be forested. There appears to be a clear link between forests and the quality of water coming out of a catchment, a much more sporadic link between forests and the quantity of water available and a variable link between forests depending on type and age and the constancy of flow. Forests therefore often provide the basis for integrated management of water resources, although precise effects vary from place to place and have been the subject of dispute amongst hydrologists. Knowledge of the type and age of trees, soil conditions and user needs can help determine what kind of forest management policies will be most beneficial.
According to the United Nations Human Settlement Programme (2003), the interaction between forested areas and watersheds is multifaceted. The loss of forests has been blamed for many weather disasters such as widespread flooding and prolonged drought. The World Water Council (2000) declared that vast losses of life and economic deficiency result each year from rain-induced natural disasters in developed and developing countries. Additionally, because of poor watershed protection, many people die yearly due to unclean drinking water, as suggested by the United Nations Human Settlement Programme (2003).

Land preservation provides many ecosystem services and plays a key role in protecting the quality of water (Dudley & Stolton, 2003). South Carolina Coastal Conservation League et al. (1995) conducted a study in South Carolina and found that a standard low-density development consumes eight times more land and produces forty three percent more run off than that of a high-density development. Another study performed by the City of Olympia (1994) in Washington evaluated the amount of impervious surface coverage in a conventional development design. The study closely observed conservation development and found that a twenty percent reduction in future impervious cover would prevent six hundred acres of impervious coverage over the next twenty years. In terms of the overall watershed, it is evident that those watersheds with less impervious surface coverage offer better water quality than those with higher impervious surface coverage. In addition, there appears to be a connection between the relationship of impervious surface coverage, infiltration depth, and stormwater runoff as development increases. According to the United States Environmental Protection Agency
(2003), decreased water quality is a direct result of increased stormwater runoff from impervious surface coverage.

2.7 Conservation Subdivisions - Wildlife Habitat Preservation

In today’s bustling society, major vehicle thoroughfares are no place for wildlife. Strips of roadways running north, south, east, and west pose difficulties for migrating wildlife. Ng, Dole, Sauvajot, Riley, and Valone (2003) pointed out that wildlife underpasses and overpasses have been implemented in some areas to aid in migration from one side of a busy highway to another, ultimately increasing small mammal and human/vehicle safety. Additionally, the authors contended that as professionals continue to educate themselves on this information, a continual increase of wildlife travel corridors will occur to balance urbanization and wildlife populations.

Dramstad, Olson, and Forman (1996) argued that as our landscape becomes more fragmented, thus creating more patches, additional travel corridors or “stepping stones” will serve as wildlife connectivity. Fleury & Brown (1997) wrote about habitat corridors in terms of continuity and of categorization into three widths (ranging from largest to smallest, respectively): Regional, Sub-Regional, and Local. Furthermore, Gilbert, Gonzalez, and Evans-Freke (1998) proposed that regardless of shape or size, wildlife corridors linking urban sites and patches will aid in higher levels of biodiversity and species richness. Mason, Moorman, Hess, and Sinclair (2007) agreed that species richness is maintained or, at the minimum, managed with travel corridors. Additionally, the reduction of isolated patches and the increase of corridor travel-ways provide more wildlife migration, ultimately increasing species populations (Gilbert et al., 1998). According to Arendt (1996), conservation subdivisions have the potential to serve as the
necessary link needed between urbanization and the continual movement of wildlife. Hostetler and Drake (2009) articulated that depending on the design of the subdivision, numerous wildlife corridors in various shapes and sizes can be created, further encouraging colonization and migration.

According to Hostetler and Drake (2009), with increases in urbanization, wildlife corridors have become an important topic for land preservation. Moreover, the authors observed that the design and construction of the open space are highly important and that an adequate amount of various sized patches maintain a healthy species number. Conover (2002) agreed and felt that if adequate space is not maintained, an increase in certain unwanted edge species will occur, ultimately leading to human/wildlife conflict. In addition, McKinney (2002) found that the quantity of native plants directly affects species richness, and the introduction of exotic plant species has proven to provide undesirable nesting and food resources.

According to Hostetler and Drake (2009), conservation subdivisions do provide numerous opportunities for wildlife development; however, their success is ultimately dependent on the understanding of contractors, landscape architects, biologists, developers, engineers, and residents. Nevertheless, the authors felt that conservation subdivisions are “the perfect tool to satisfy the demands of residential development while simultaneously conserving biodiversity and providing wildlife viewing opportunities.”

2.8 Conservation Subdivisions - Greenway Connectivity

The discussion of an interconnected greenway system is not a revolutionary theory. William H. Whyte (1964) identified and expressed the need to link open space throughout neighborhoods, ultimately creating an interconnected network of greenways
and conservation lands. According to Arendt (2004), many conservationists and planners have long had a dream of creating a greenway system of open space that would, over time, unite to form one linked landscape.

Both Ahern (1995) and Arendt (2004) discussed the idea that a greenway can take on a wide shape versus a long linear shape. Ahern believed that “the focus on linear greenway elements should not cause less concern for other non-linear areas with equally important landscape planning issues.” Arendt echoed this same sentiment in his 2004 publication as he argued for a broader meaning for “greenways” than just linear fragments of land. He believed that large non-linear expanses of the landscape will ultimately aid in uniting linear pieces – thus creating a “linked landscape.”

In the last twenty years, multiple definitions of greenway systems have surfaced. Ndubisi et al. (1995) described them as “networks of linked landscape elements that provide ecological, recreational, and cultural benefits to the community” while others such as Linehan et al. (1995) placed importance on protecting “adequate interior habitat to ensure the viability of wide-ranging fragmentation-sensitive species,” while suggesting the space could “go on to provide recreational opportunities, help control community development patterns, and guide overall growth management efforts.” More recently, Hellmund and Smith (2006) described a greenway as an element that is designed and managed for numerous purposes including both ecological and social benefits.

According to Arendt (2004), until recently, neighborhood design has followed a traditional “wall to wall house lot” development, a practice that forces developers to provide nothing more than house lots and streets. Arendt indicated that this “wall to wall” theory supports numerous lots on one acre with large expanses of manicured lawn, thus
encouraging the removal of vegetation. The most significant difference in the aforementioned theory and conservation subdivision land planning is the amount of ecologically sensitive land protected. Typically, as more land conservation occurs, the number of units per acre increases. Arendt continued by pointing out that thirty percent of land conservation calls for three plus units per acre while seventy five percent conservation calls for four plus units per acre. The density of the developments usually does not vary, as conservation subdivisions are “density neutral.”

Walmsley (2006) observed that the term, “green infrastructure,” implies a powerfully built, controlled environment—one that does not happen haphazardly. He further claimed that a vast amount of effort and resources is spent on the built infrastructure, while our green infrastructure continues its demise. Conservation subdivisions lend themselves to this type of land preservation and control. Arendt (2004) reported that the potential for this type of infrastructure and development is still feasible through a statewide effort and smart conservation planning.

2.9 Conservation Subdivision Economics

Homeowners are willing to pay additionally for homes that are located near or connect to open space, parks, greenways, forests, trails and wetlands. Patrick Phillips, president of the Economics Research Associates, in 1991 stated that the “percentage of residents who would pay more to live in a neighborhood near a park or greenway increased from 16 to 48 percent from 1980 to 1990.” Additionally, in Sherer’s 2006 publication for The Trust for Public Land, Sherer stated:

In a 2001 survey conducted for the National Association of Realtors by Public Opinion Strategies, 50 percent of respondents said they would be willing to pay 10 percent more for a house located near a park or other protected open space. In
the same survey, 57 percent of respondents said that if they were in the market to buy a new home, they would be more likely to select one neighborhood over another if it was close to parks and open space.

Lastly, Mohamed (2006) found that residents in conservation subdivisions would pay more for amenities and less for additional lot size. In spite of this willingness to pay, studies have found multiple items that ultimately influence overall results of the aforementioned data. Additional importance found in these studies include the quality of the housing structures (Bourassa, Hoesli, & Sun, 2004), proximity to amenities (Bolitzer & Netusil, 2000), socioeconomic status of neighborhoods (Brigham, 1965), neighborhood vacancy rates (Dowall & Landis, 1982), average household income (Phillips & Goodstein, 2000), the reputation of the local school district (Brasington, 1999), gender (Cho, Newman, & Bowker, 2005), age (Lorenzo, Blanche, Qi, & Guidry, 2000), number of children (Jim & Chen, 2006), and proximity to railroad tracks (Strand & Vagnes, 2001). Interesting enough, a recent study conducted by Bowman, Thompson, and Tyndall (2012) found that home-buyers, although lacking in knowledge about conservation subdivision design, were attracted to low impact designs and conservation subdivisions, but were not willing to pay more for homes in a conservation subdivision until appropriate education was provided.

In 1990, Jeff Lacy examined rates of sales, days on the market, number of sales, and rates of house appreciation. From his examination, he found that clustered subdivisions with open space appreciate at a much higher rate than standard subdivisions. Rayman Mohamed (2006) performed a similar study for lots in conservation subdivisions versus standard subdivisions. He found that lots in conservation subdivisions sell in half the amount of time than lots in standard subdivisions. A study conducted by Bowman et
al. (2009) illustrated significant potential for conservation subdivision design, residents’ willingness to pay additionally, a consistent marketability for this development, and the ability to increase economic returns for developers and cities.

2.10 Gaps in the Literature

For the purpose of this study, the Census Regions and Divisions of the United States will define the Southern region. The studies discussed below are not a complete list of research on conservation subdivisions in the United States, but played a role in shaping the concept of this study.

To date, four studies have taken place observing conservation subdivisions in the Midwest. Maureen Austin (2004) conducted a study in Michigan, in which she interviewed residents of thirteen conservation subdivision communities. This study aimed to gain understanding of residents’ perceptions of open space in conservation subdivisions. Austin found that “in general, residents were eager to talk about their neighborhood and were pleased with their decision to live there.”

A second study conducted in the Midwest by Bowman, Thompson, and Tyndall (2012a) queried developers, city staff, and residents in Ames, Iowa, to examine their perceptions of low-impact and conservation subdivision design. Their results found that residents are concerned “about the potential negative environmental effects of subdivision development in Ames.” Additionally, they found that only 39% of residents were familiar with conservation subdivision design, but after learning the goals and viewing photos of conservation subdivisions, residents indicated interest in buying a conservation subdivision home.
Next, Bowman, Tyndall, Thompson, Kliebenstein, and Colletti (2012b) conducted a case study in the Midwest by examining consumer value for conservation and low-impact design features while also estimating residents’ willingness to pay for conservation and low impact design features in a residential neighborhood. The authors reported that most of the respondents indicated some willingness to pay additionally for streams with forest buffer, pervious pavers, and rain gardens. Additionally, they found that “responses for conservation subdivision design (CSD) features demonstrated a wider spectrum of values, with lower overall willingness to pay in contrast to higher maximum payment values.”

Lastly, an earlier study performed by Bowman et al. (2009) examined the economics of conservation subdivision design versus conventional subdivision design and concluded that open space in subdivisions could increase returns to developers and cities, as well as increase species richness and improve water quality.

In 2006, Rayman Mohamed completed a study of conservation subdivision economics that addressed pricing and market issues related to conservation subdivisions versus conventional subdivisions. This study occurred in South Kingstown, Rhode Island, and concluded that conservation subdivisions could provide higher profits to developers and could sell in half the amount of time than lots in conventional subdivisions.

Allen, Moorman, Peterson, Hess, and Moore conducted a mixed method study in 2012 that observed four conservation subdivisions. The neighborhoods were located in North Carolina. Allen et al. wanted to identify the barriers of implementation and how these successful subdivisions overcame the barriers. The authors concluded that “respondents rated the lack of incentives for developers as the top barrier to
implementing conservation subdivisions.” The second barrier to implementation was “the perception that homes in conservation subdivisions are more expensive to build” than those in standard subdivisions. The third highest rated barrier was “lack of interest from elected officials to change zoning regulations.”

A second study performed by Carter (2009) observed how conservation subdivision design can be encouraged and implemented to reduce traditional development impacts in the state of Georgia. Carter found zoning and subdivision codes, developer risk aversion, and lack of education in developers and realtors to cause barriers to implementation, just to name a few.

In spite of the aforementioned research, to date, little is available on conservation subdivisions in the Southern region of the United States, particularly from a homeowner viewpoint. While the amount of research on residential open space and its effects on improved quality of life, watershed health, wildlife habitat, and strengthened community bond is vast, this literature includes only one element of conservation design—preserving open space. Moreover, numerous of these studies make no mention of conservation subdivisions, just conservation space.

With scarce data on conservation subdivisions and homeowner priorities, especially in the Southern region, it is a natural progression to research and attempt to determine the motivation for buying into a conservation subdivision. Unlike other studies previously conducted, this research will focus on home ownership rather than political barriers. This data is an important step in advancing the knowledge and enhancing the studies about conservation subdivisions and their homeowners.
3.1 Conservation Subdivision Homeowner Survey

In order to gain information about the priorities and motivations of conservation subdivision residents, a survey was administered to homeowners within five conservation subdivision locations in the Southeast United States. The survey was conducted in an effort to meet Objective Two previously outlined in this study: “Develop and administer a survey to homeowners within five different conservation subdivisions to determine homeowner priorities, motivations, and satisfaction of their neighborhood current practices.” The following sections discuss the process for the design and administration of this survey.

3.2 Research Context and Participants

There is a lack of research that focuses on conservation subdivision homeowner buying motives and current practices, particularly in the Southern region of the United States. In order to determine the motivation for buying into a conservation subdivision, “purposeful sampling” was used to select the five conservation subdivisions in the Southern region as the target area for this survey. Creswell (2008) describes this process as selecting a specific population because of certain traits they possess. For the purpose
of this study, the Census Regions and Divisions of the United States (Figure 3.1) define the Southern region. The five locations chosen are listed below:

1. Chimney Rock - Flower Mound, Texas
2. The Park at Wolf Branch Oaks - Sorrento, Florida
3. RiverCamps on Crooked Creek - Panama City Beach, Florida
4. Beech Creek Preserve - Athens, Georgia
5. Serenbe - Chattahoochee Hills, Georgia

Figure 3.1 Census Regions and Divisions of the United States defined by the United States Census Bureau used to define the Southern region for this study.

Note: 1=Chimney Rock, 2=The Park at Wolf Branch Oaks, 3=RiverCamps on Crooked Creek, 4=Beech Creek Preserve, 5=Serenbe (Census Regions and Divisions map retrieved from http://www.census.gov/geo/www/maps/CP_MapProducts.htm)
Because of the “green” movement, many neighborhoods claim to practice sustainable practices when in fact they do not (Hostetler & Noiseux, 2010). According to landchoices.org, a conservation subdivision is sometimes referred to as a “natural neighborhood.” These developments should preserve 50 percent or more of buildable land (Manecke, 2010). The unifying goal of these five neighborhoods, and all conservation subdivisions, is sustainable growth that incorporates a land sensitivity and responsibility to common space, plant communities, animals, and humans (Arendt, 1996). Chimney Rock (Figure 3.2) and The Park at Wolf Branch Oaks (Figure 3.3) were suggested after contacting Randall Arendt, site designer, via email because of their notable conservation subdivision designs. The researcher chose RiverCamps (Figure 3.4) where two-thirds of the subdivision was committed to nature, Beech Creek Preserve (Figure 3.5) where fifty-seven percent of the parcel was protected green space, and Serenbe (Figure 3.6) where seventy percent of preserved (“RiverCamps Luxury Preserve Living Community,” 2012; “Beech Creek Preserve History,” n.d.; “Neighborhood Plan,” 2008). All of the subdivisions were ultimately chosen because they are defined as conservation subdivisions—where ecologically sensitive land is protected by clustering homes on a few areas of the site, while “half or more of the buildable land area is designated as undivided, permanent open space” (Arendt, 1996).
Figure 3.2 Chimney Rock site plan
(Provided by Randall Arendt via e-mail)

Figure 3.3 The Park at Wolf Branch Oaks site plan
(Provided by Randall Arendt via e-mail)
Figure 3.4  RiverCamps on Crooked Creek site plan
(Adapted from www.rivercamps.org, 2012)

Figure 3.5  Beech Creek Preserve Site Plan
(Adapted from www.beechcreekpreserve.com, n.d.)
Figure 3.6  Serenbe site plan

(Adapted from www.serenbecommunity.com, 2008)
3.3 Questionnaire Design and Distribution

In an effort to maximize response rates, the researcher followed the principles of Dillman’s Tailored Design Method for the design and implementation of the survey. The elements used in the design of the survey consisted of:

1. Including a brief one-page cover letter providing a general overview of the study and guaranteeing respondents’ confidentiality.
2. Keeping the questionnaire simple to avoid confusion.
4. Sending two follow-up mailings including a reminder/final notification and an additional copy of the questionnaire.

According to Dillman (2007), cover letters motivate participants to respond in postal mail questionnaires. In this survey, three cover letters were formatted, one for each mailing of the survey, which is described in detail in Table 3.2. Each of the one page letters included the date, importance of responding, a statement of voluntary response, a thank you for consideration or participation, and the researcher’s contact information, as suggested by Dillman (2007). The cover letters used in this study are available in Appendix A.

The residential survey (Appendix B) consisted of thirty total questions—twenty-six Likert scale and four open-ended questions. The six sections of the survey, Open Space, Quality of Life, Resource Management, Property Value, Homeowner Satisfaction, and Demographics, aid in reaching a conclusion about the specific motives for buying a home in a conservation subdivision. The participants in this survey could be contacted a total of three times depending on the speed of their response.
### Table 3.2 Summary of Important Dates Throughout the Study

<table>
<thead>
<tr>
<th>DATE</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>June 10</td>
<td>Initial Contact - The survey population was contacted with an initial cover letter and copy of the survey.</td>
</tr>
<tr>
<td>July 8</td>
<td>Second Attempt - Four weeks later, if a response was not received, respondents were notified a second time via postal mail and provided a cover letter and a second copy of the survey.</td>
</tr>
<tr>
<td>July 29</td>
<td>Third Attempt - Approximately three weeks after the second attempt, if a response had not been received, a third and final contact was made which entailed a cover letter stating the importance of their response and a third copy of the survey. This letter also notified potential participants of the survey closing date.</td>
</tr>
</tbody>
</table>

### 3.4 Data Collection and Analysis

Descriptive statistics helped simplify the data and attempted to prove or disprove the following set of null hypotheses (Agresti & Finlay, 2008):

- The conservation design is not a motivating factor for homebuyers in Conservation Subdivisions.
- Homeowners in Conservation Subdivisions do not experience an increase in quality of life.
- Homeowners in Conservation Subdivisions are not likely to conserve resources on their property.
- Homeowners in Conservation Subdivisions are not aware of their subdivision’s financial incentives.
- Homeowners in Conservation Subdivisions are not satisfied living in their subdivision.
- There is no relationship between the demographic variables and home ownership in a conservation subdivision.

Descriptive column graphs were created to compare the percentage of each response received in twenty-eight of thirty questions. These twenty-eight questions asked
participants to indicate their level of agreement or disagreement on a five-point scale ranging from “strongly agree” to “strongly disagree.” Two of the thirty questions were open-ended that allowed participants to answer with multiple variables; therefore, reporting the number of responses instead of a percentage graphically portrayed a more accurate representation of the sample population.

3.5 Response Rate

A goal response rate of 60% (n=150) was determined prior to survey implementation. This goal response was set according to two standards in order to ensure statistically significant results. Dillman and Salant (1994) imply that a response rate received below 70% is considered low, and potential non-response bias is present. Additionally, Agresti and Finlay (2008) consider results insignificant if there is considerable non-response over 20%.
CHAPTER IV

RESULTS

This chapter presents the most relevant results from the survey. These results were selected and analyzed to fulfill Objective Three previously outlined in this study: “Analyze the data to identify homeowner priorities, motivations, and level of satisfaction of their neighborhoods’ current practices.” The chapter is divided into six sections determined by the content of the survey data. The sections include: Open Space, Quality of Life, Resource Management, Property Value, Homeowner Satisfaction, and Demographics.

4.1 Open Space

The null hypothesis formulated to aid in constructing Section One – Open Space questions states: “The conservation design is not a motivating factor for homebuyers in conservation subdivisions.” This section of the survey entailed five close-ended questions that required participants to mark one box that best represented their level of agreement or disagreement with the statement. Because of the lack of respondents, it is difficult to prove or disprove the null hypothesis.

Question One was formed to determine whether the sample population was aware they resided in a conservation subdivision (Figure 4.1). Of the respondents, one person left this question blank, a fact which brought the number of respondents to 54. Of the
respondents, 93% (52% agree and 41% strongly agree) agree that 50% of land in their subdivision had been set aside for conservation. However, four respondents (7%) disagree with this statement.

Figure 4.1  Respondent Perceptions Regarding the Following Statement: “At least 50 percent of land in my subdivision has been set aside for conservation.”

n=54. Mean=4.4

Again, on question two, the majority of the respondents were aware of their subdivisions’ role in nature preservation (Figure 4.2). Of the sample population, 93% (58% agree and 35% strongly agree) were aware that nature preservation plays a key role in their neighborhood. Of the respondents, 2% of the population seem neutral on this subject while 6% disagree that nature preservation is an important aspect in their subdivision. It cannot be determined whether this 6% are aware of nature preservation, or if these participants feel their subdivision does not put importance on this issue.
n=55. Mean=4.5
Note: Totals do not equal 100 because of rounding off.

Question three asks respondents to which level they agree or disagree that natural trails are an important aspect in their neighborhood Figure 4.3. Of the sample population, 66% agree (44% agree, 22% strongly agree), 11% feel neutral, and 24% disagree (11% disagree, and 13% strongly disagree).
Figure 4.3  Respondent Perceptions Regarding the Following Statement: “Nature trails are an important aspect of my neighborhood.”

n=55. Mean=3.7
Note: Totals do not equal 100 because of rounding off.

Question four (Figure 4.4) aims to uncover whether respondents agree or disagree that wildlife habitat preservation is an important aspect of their neighborhood. Of the 55 respondents, 73% agree to some extent (33% agree and 40% strongly agree), 18% feel neutral, and 9% (7% disagree and 2% strongly disagree) disagree to some extent.
Figure 4.4  Respondent Perceptions Regarding the Following Statement: “Wildlife habitat preservation is an important aspect of my neighborhood.”

n=55. Mean=3.9

In closing Section One, participants were asked to what level they agree or disagree that conservation subdivisions demonstrate how development can accommodate the need for housing with minimal impact on nature. Of the respondents, 91% agree to some extent (42% agree and 49% strongly agree), 7% feel neutral, and 2% disagree (Figure 4.5).
Figure 4.5  Respondent Perceptions Regarding the Following Statement:
“Conservation subdivisions demonstrate how development can accommodate the need for housing with minimal impact on nature.”

n=55. Mean=4.3

4.2  Quality of Life

The null hypothesis formulated to outline Section Two – Quality of Life states:
“Homeowners in conservation subdivisions do not experience an increase in quality of life.” This section of the survey consisted of four close-ended questions that required participants to mark one box that best represented their level of agreement or disagreement with the statement. Clearly, by the responses received, one can assume the residents have been and are currently experiencing an improved quality of life. However, we cannot conclude that all conservation subdivision homeowners experience an increased quality of life from a sample size of 55. Therefore, we neither prove nor disprove the null hypothesis.

In response to question six (Figure 4.6) that asked respondents whether creating and maintaining a strong community bond was an important aspect of their
neighborhood, 88% of respondents agree to some extent that it is important. Of the 55 respondents, 11% feel neutral on the subject, and 2% disagree.

Figure 4.6    Respondent Perceptions Regarding the Following Statement: “Creating and maintaining a strong community bond is an important aspect of my neighborhood.”

n=55. Mean=4.2
Note: Totals do not equal 100 because of rounding off.

In response to uncovering whether access to open space plays an important role in the individuals neighborhood, 95% of the sample population agree to some extent that open space is important. Of the 55 respondents, 2% feel neutral and 4% disagree that open space plays a significant role in their subdivision. It should be noted that of the 4% (2 responses) who disagree, both reside in Chimney Rock. See Figure 4.7 for a full analysis.
Figure 4.7  Respondent Perceptions Regarding the Following Statement: “Access to open green space is an important aspect of my neighborhood.”

n=55. Mean=4.4
Note: Totals do not equal 100 because of rounding off.

Question eight (Figure 4.8) aims to uncover whether respondents agree or disagree that walkability is an important aspect of their neighborhood. Of the 55 respondents, 89% agree to some extent (56% agree and 33% strongly agree), 4% feel neutral, and 7% disagree with the statement. As the researcher will discuss later, the open ended questions clarify this issue with one of the subdivisions lacking trails altogether and having narrow streets with no sidewalks—allowing for minimal walkability.
Figure 4.8  Respondent Perceptions Regarding the Following Statement: “Walkability is a key component of my neighborhood.”

n=55. Mean=4.4

Question nine states: “The Sustainable Table describes sustainable agriculture as a way of raising food that is healthy for consumers and animals, does not harm the environment, is humane for workers, provides a fair wage to the farmer, and supports and enhances rural communities. Based on this definition, to what level do you agree or disagree with the following statement: Sustainable agriculture is an important aspect of my neighborhood.” In response to this question, 48% of the sample population (n=54) agree to some extent, 13% feel neutral, and 39% disagree with this statement. To the researcher’s knowledge, there is currently only one neighborhood, Serenbe, which has a working 100-member community supported agriculture program in place. Expectedly, every respondent from Serenbe agrees to some extent with this statement. Likewise, at least one respondent from every subdivision agrees with this statement. As for the 13% who feel neutral on the subject, one has to assume because the definition was provided
that the respondents were aware of the terminology, and the 13% may be unaware if their neighborhood has an agricultural plan in place.

![Chart: Respondent Perceptions Regarding the Following Statement: “Sustainable agriculture is an important aspect of my neighborhood.”](image)

Figure 4.9 Respondent Perceptions Regarding the Following Statement: “Sustainable agriculture is an important aspect of my neighborhood.”

n=54. Mean=3.3

4.3 Resource Management

The null hypothesis formulated to aid in constructing Section Three – Resource Management states: “Homeowners in conservation subdivisions are not likely to conserve resources.” This section of the survey contained eight close-ended questions that required participants to mark one box that best represented their level of agreement or disagreement with the statement. Based on the response trends, one can conclude that resource management is of some importance to these homeowners.

Question ten states: “Harvested Rainwater describes harvested rainwater as rainwater that is captured from the roofs of buildings on residential property. This water can be used for indoor needs at a residence, irrigation, or both, in whole or in part. Based
on this definition, to what level do you agree or disagree with the following statement: Harvesting rainwater is an important aspect of a sustainable home.” In response to this question, 58% of the sample population (n=55) agree to some extent, 31% feel neutral, and 11% disagree with this statement. As for the 31% who feel neutral on the subject, one has to assume because the definition was provided that the respondent was aware of the terminology. See Figure 4.10 for a full comparison.

Figure 4.10  Respondent Perceptions Regarding the Following Statement: “Harvesting rainwater is an important aspect of a sustainable home.”

n=55. Mean=3.7

Question eleven aims to determine whether participants agree or disagree that a large tree canopy captures more rainwater than on open lawn (Figure 4.11). Of the respondents, 65% of the sample population (n=54) agree to some extent, 35% feel neutral, and no respondent disagrees with the statement.
Figure 4.11  Respondent Perceptions Regarding the Following Statement: “A large tree can capture more rainwater than an open lawn.”

n=54. Mean=3.8

Question twelve (Figure 4.12) aims to uncover whether respondents agree or disagree that after mowing, fresh lawn clippings return valuable nutrients to the lawn. Of the sample population (n=55), 80% agree to some extent (31% agree and 49% strongly agree), 20% feel neutral, and no one disagrees.
Figure 4.12  Respondent Perceptions Regarding the Following Statement: “After mowing, fresh clippings return valuable nutrients to the lawn.”

n=55. Mean=4.1

In response to question thirteen that asks respondents whether organic lawn care is of personal importance (Figure 4.13), 53% of respondents agree to some extent that it is important. Of the 55 respondents, 35% feel neutral on the subject, and 13% disagree.
Figure 4.13  Respondent Perceptions Regarding the Following Statement: “It is important to me that lawn care be organic.”

n=55. Mean=3.6
Note: Totals do not equal 100 because of rounding off.

Question fourteen (Figure 4.14) aims to uncover whether respondents feel implementing native plants into the landscape is an important part of maintaining plant diversity. Of the 54 respondents, 93% agree to some extent (61% agree and 32% strongly agree), 7% feel neutral, and no respondent disagrees with the statement.
Figure 4.14  
Respondent Perceptions Regarding the Following Statement: 
“Implementing native plants into the landscape is an important part of maintaining plant diversity.”

n=54. Mean=4.5  
Note: Totals do not equal 100 because of rounding off.

Question fifteen asks respondents whether a lawn care company provides the majority of maintenance on their property (Figure 4.15). Of the sample population (n=53), 41% of respondents agree to some extent (26% agree and 15% strongly agree), 6% feel neutral, and 53% disagree to some extent (21% disagree and 32% strongly disagree).
Figure 4.15  Respondent Perceptions Regarding the Following Statement: “A lawn care company provides the majority of maintenance on my property.”

n=53. Mean=2.8

Question sixteen (Figure 4.16) asks respondents whether they agree or disagree that large expanses of land are appropriate in a home landscape. Of the sample population (n=55), 28% agree to some extent (4% agree and 24% strongly agree), 13% of the participants feel neutral on the issue, and 60% disagree to some extent (38% disagree and 22% strongly disagree).
Figure 4.16  Respondent Perceptions Regarding the Following Statement: “Large expanses of lawn are appropriate in home landscapes.”

n=55. Mean=2.5
Note: Totals do not equal 100 because of rounding off.

Finally, participants were asked to what level they agree or disagree that maintenance of their property is difficult (Figure 4.17). Of the respondents, 22% agree to some extent (2% agree and 20% strongly agree), 24% feel neutral, and 55% disagree to some extent (33% disagree and 22% strongly disagree).
n=55. Mean=2.5
Note: Totals do not equal 100 because of rounding off.

4.4 Property Value

The null hypothesis formulated to aid in constructing Section Four – Property Value states: “Homeowners in conservation subdivisions are not aware of their subdivision’s financial incentives.” This section of the survey contained four close-ended questions that required participants to mark one box that best represented their level of agreement or disagreement with the statement. The responses from this section were more inconclusive than from any other. Although most participants seemed conscious of the financial incentives of a conservation subdivision, many respondents consistently marked “neutral” throughout this series of questions. This vagueness leads to the uncertainty about whether the sample population who responded “neutral” is in fact aware of the financial implications.
In response to whether the respondent agrees or disagrees that a wooded lot increases property value, 80% of the sample population agree to some extent (38% agree and 42% strongly agree), 15% feel neutral and 6% of the respondents disagree with this statement. See Figure 4.18 for a detailed comparison.

![Figure 4.18](image)

**Figure 4.18**  Respondent Perceptions Regarding the Following Statement: “A wooded lot increases property value.”

n=55. Mean=4.1
Note: Totals do not equal 100 because of rounding off.

When asked whether respondents agree or disagree that conservation subdivision homes are on the market for a shorter period of time than those in standard subdivisions, the largest percentage of the sample population (48%) feel neutral on the issue, while 37% agree (2% agree and 35% strongly agree), and 15% disagree (13% disagree and 2% agree). As previously discussed, with the largest percentage of the population feeling neutral, one has to question the participant’s knowledge on this issue. See Figure 4.19 for a comparison.
Figure 4.19  Respondent Perceptions Regarding the Following Statement:
“Conservation subdivision homes are on the market shorter periods of time than those in standard subdivisions.”

n=54. Mean=3.2

As shown in Figure 4.20, question twenty asks respondents whether they agree or disagree that conservation subdivision homes sell at higher rates than those in standard subdivisions. Of the sample population (n=53), 43% agree to some extent (9% agree and 34% strongly agree), 42% feel neutral and 15% disagree with the statement.
Respondent Perceptions Regarding the Following Statement:
“Conservation subdivision homes sell at higher rates than those in standard subdivisions.”

n=53. Mean=3.4
Note: Totals do not equal 100 because of rounding off.

Question twenty-one (Figure 4.21) aims to uncover whether respondents agree or disagree that conservation subdivision homes appreciate at a greater rate than those in standard subdivisions. Of the 55 respondents, 40% agree (5% agree and 35% strongly agree), 47% feel neutral, and 13% disagree (11% disagree and 2% strongly disagree).
Figure 4.21  Respondent Perceptions Regarding the Following Statement:
“Conservation subdivision homes appreciate at a greater rate than those in standard subdivisions.”

n=55. Mean=3.3

4.5 Homeowner Satisfaction

To uncover whether the homeowners are satisfied living in their subdivisions, Section Five – Homeowner Satisfaction was created. This section contains four questions—one Likert, one close-ended, and two open-ended. The null hypothesis formed to guide this section states: Homeowners in conservation subdivisions are not satisfied living in their subdivision. One can clearly conclude from the sample population responses, the majority of people who participated in this study are extremely satisfied.

Question twenty-two asks respondents to rank on a scale of 1-4 the most motivational factors in their home buying decision. Of the choices given, 77% chose improved quality of life as most important; 44% of the population ranked conservation as second most important; 60% ranked property value as their third priority; and 44% ranked proximity to work, school, or religious gathering place of least importance. For
the first priority, improved quality of life was the clear choice of most respondents. As for the second priority, although conservation was highly ranked, the statistics are a bit ambiguous with most of the percentages ranging closely together. For the third priority, property value was obviously chosen by most respondents. Lastly, even though proximity to work, school, or religious gathering place was chosen by a large percentage of respondents, there was no definitive choice. See Figure 4.22 for a detail of percentages.

![Participant Responses to the Following Question: “On a scale of 1-4, rank the most motivational factors in order of their influence on your home buying decision (1 being most favored and 4 being least favored): Improved Quality of Life, Conservation, Proximity to work, school, or religious gathering place, and Property Value.”](image)

**Figure 4.22** Participant Responses to the Following Question: “On a scale of 1-4, rank the following motivational factors in order of their influence on your home buying decision (1 being most favored and 4 being least favored): Improved Quality of Life, Conservation, Proximity to work, school, or religious gathering place, and Property Value.”

n=52

Question twenty-three asks respondents to mark one box that describes whether they are satisfied to some extent or dissatisfied to some extent with their neighborhood. An enormous 96% of the sample population (n-54) is satisfied to some extent (76% very
satisfied and 20% somewhat satisfied). Of the 54 respondents, 2% feel neutral on the issue, and another 2% feel somewhat dissatisfied. For a visual breakdown of overall satisfaction, see Figure 4.23.

![Figure 4.23](image)

Figure 4.23   Respondent Level of Satisfaction with their Conservation Neighborhood. n=54. Mean=4.7

Question twenty-four (Figure 4.24) is an open-ended question that asks respondents what they liked most about living in their subdivision. This question, answered by 50 of the 55 respondents, paints a very clear picture and aids in understanding other survey responses. In providing feedback about their most valued aspects, 30 respondents spoke about open space. The main assets discussed were open space (30 responses), strong sense of community (19 responses), and improved quality of life (16 responses). The three other categories mentioned were diversity (8 responses), wildlife (8 responses), and sustainability (6 responses). See Table 4.3 for comments from respondents illustrating these points.
Figure 4.24  Participant Responses to the Following Open-Ended Question: “Please describe what you like most about living in your subdivision.”

n=50  
Note: A response number was used instead of a response percentage to allow multiple answers for one respondent.
Table 4.3   Open-Ended Responses to Question Twenty-Four

<table>
<thead>
<tr>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>“The one acre lot size. We have lived in areas with two to four acre lot sizes which place the homes too far apart for neighbor interaction. Two to four acres is just too small for any sustainable agriculture in our area other than heirloom gardens.”</td>
</tr>
<tr>
<td>“The amount of common grounds – 15 acre park and conservation acres add to the attractiveness of the community.”</td>
</tr>
<tr>
<td>“Community – great neighbors. Way different than a typical ‘neighborhood.’ Everything at one place, i.e. Walking, jogging, biking paths, fitness center, large pool, fishing, kayaks, all without ever leaving the development.”</td>
</tr>
<tr>
<td>“That the bamboo forest behind our home is protected and I never have to worry about it being cleared for a subdivision. Also, seeing deer, rabbits, fox, birds, and snakes – daily!”</td>
</tr>
<tr>
<td>“A strong sense of community fostered by architecture and the landscape. Additionally, I love that our community attracts diverse populations (cultural, social, etc.) that all agree that living here is better than living in a “standard” subdivision.”</td>
</tr>
<tr>
<td>“Living in a neighborhood where people, animals, and the environment are respected and appreciated, where there is easy access to trails, streams, waterfalls, and the night sky. People here differ from one another in many ways, but concern for the environment is a value we all hold.”</td>
</tr>
<tr>
<td>“Sense of Community. Diversity of backgrounds and interests. Diversity of age. Bottom up and top down planning and implementing. Serenbe Institute founded through property and transfer fees (3% on land and 1% on house) focusing on arts, culture, education, the environment, and healthy living. Being part of the new city of Chattahoochie Hills as well as Serenbe. Open spaces. All Earth Craft homes and covenants for sustainability.”</td>
</tr>
<tr>
<td>“We have a small efficient house—geothermally heated and cooled—on a small lot with no lawn grass. Our street is lined with edible landscaping (blueberries, figs, herbs); an organic farm is across the street from which we get weekly shares, and we walk the streets and paths in the community greeting friends and neighbors every day.”</td>
</tr>
<tr>
<td>“Amazing strong community bones. There is a remarkable support system in Serenbe. We have an outstanding organic garden with more than 100 CSA members. There is a professional summer theater, artists in residence program, photography center, mix of all ages, and strong well attended interfaith fellowship, book club, yoga, meditation etc. Peaceful rural living.”</td>
</tr>
</tbody>
</table>

Note: Select Responses to the survey question stating: “Please describe what you like most about living in your subdivision.” Minor spelling or grammatical errors have been edited for the sake of clarity.
Question twenty-five (Figure 4.25) is an open-ended question that asks respondents what they like least about living in their subdivision. This question, answered by 41 of the 55 respondents, aids the researcher in understanding the specified conservation subdivision homeowner dislikes. The most common complaint among the residents (13 responses) in this study is the distance and proximity to daily support amenities. Other dilemmas discussed were lack of privacy (3 responses), lack of education on sustainability (3 responses), difficult maintenance (4 responses), narrow roads (5 responses), and Homeowner’s Association restrictions (5 responses). See Table 4.4 for comments from respondents illustrating these points.

Figure 4.25  Participant Responses to the Following Open-Ended Question: “Please describe what you like least about living in your subdivision.” n=41

Note: A response number was used instead of a response percentage to allow multiple answers for one respondent.
Table 4.4  Open-Ended Responses to Question Twenty-Five

<table>
<thead>
<tr>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>“There is some disagreement between neighbors on the value of the conservation easement and the way it should be maintained (or not). There is no close by grocery story, so the location is somewhat inconvenient to services. The master plan called for connecting the neighborhood to a nearby trail network, but that has not been done. So, in order to leave the neighborhood, a car is required.”</td>
</tr>
<tr>
<td>“The open/conservation is not used for agriculture and this is a wasteful use of land. Only recreational use is fishing at a pond . . . .”</td>
</tr>
<tr>
<td>“I wish there was more education about our common space and the impact we can/cannot have living so closely to it”</td>
</tr>
<tr>
<td>“Good orientation to sustainable living when we moved in 4.5 years ago. Need consistent on going education for sustainable community. Better maintenance of grounds, trails, and irrigation system etc. No quality public education (hopefully will change in 2013 with our charter school). Improved communication is probably the biggest need. Developer is visible in community, but not always responsive.”</td>
</tr>
</tbody>
</table>

Note: Select Responses to the survey question stating: “Please describe what you like least about living in your subdivision.” Minor spelling or grammatical errors have been edited for the sake of clarity.

4.6  Demographics

The null hypothesis formulated to aid in constructing Section Six – Demographics states: There is no relationship between the demographic variables and home ownership in a conservation subdivision. Again, because of the low response rate, we cannot verify or refute this null hypothesis. However, based on the response trends, one can conclude the participants in this study are mostly educated Caucasians, of the age 50 and older with no children under the age of 18 living in the house.

One person left question twenty-six blank, which brought our number of respondents to 54. Of the 54 respondents, 33% were identified as 60 or older, 26% between the ages of 50-59, 17% as 30-39 years of age, 2% were identified as both 26-29 and 40-49 years of age, and no one between the ages of 18 and 25 was identified in this
study. The majority of the population (59%) falls into the age group of 50 or older. Figure 4.26 illustrates the breakdown in age range.

Figure 4.26  Participant Responses to the Following Open-Ended Question: “What is your age?”

n=54

Question twenty-seven asks, “What is your race?” Of the 51 responses received, four people did not answer the question. The race of the respondent was obtained through an open-ended question; however, because of the variety of responses received, they have been coded according to the United States Census (2010). Of the 51 respondents, 98% answered White and 2% answered Black. Figure 4.27 visually represents these percentages.
The sample population was queried about the number of children living in the house under the age of eighteen. From the sample population, two people did not respond to the question: “How many people in this house are under the age of 18?” The lack of two people responding brought the sample population for this question to n=53. This inquiry was made to assist future developers in understanding their client and meeting consumer demands. Illustrated in Figure 4.28, the largest percentage of the respondents (51%) had zero children. The second largest group had two children (21%), the third largest group had one child (19%) and the fourth and fifth category had three (8%) and four (2%) children, respectively.
Participant Responses to the Following Open-Ended Question: “How many people in this house are under the age of 18?”

n=53
Note: Totals do not equal 100 because of rounding off.

Question twenty-nine asks, “What is your highest level of education?” Of the sample population, 54 successfully completed this question. As shown in Figure 4.29, the majority of the respondents, 31%, indicated that their highest level of education was a Bachelor’s Degree, while 28% received a Master’s Degree, 19% obtained a Doctorate Degree, and 13% received a Professional Degree. Nearly all (91%) of the respondents are educated with a Bachelor Degree or higher.
Figure 4.29  Participant Responses to the Following Open-Ended Question: “What is your highest level of education?”

n=54
Note: Totals do not equal 100 because of rounding off.

The respondents were given a close-ended question probing them on their yearly income (Figure 4.30). The majority of the sample population (n=54) preferred not to disclose this information. The second largest percent is categorized at more than $300,000 yearly (22%). The second largest income group that was reported earned $100,000 to $124,999 yearly.
Figure 4.30  Participant Responses to the Following Open-Ended Question: “What is your yearly household income?”

n=54
CHAPTER V
DISCUSSION

This chapter discusses the most relevant results from the survey, incorporating supporting and rebutting evidence from the literature into the discussion. These results are discussed to fulfill Objective Four previously outlined in this study: “Make conclusions and recommendations based on relevant literature and survey responses for consideration for future development of conservation subdivisions.” This chapter is divided into seven sections for ease of the reader. The sections include: Response Rate and Frequency, Open Space, Quality of Life, Resource Management, Property Value, Homeowner Satisfaction, and Demographics.

5.1 Response Rate and Frequency

In order to determine the motivation for buying into a conservation subdivision, “purposeful sampling” was used to select the 251 conservation subdivision homeowners in the Southern region of the United States. Creswell (2008) described this process as selecting a specific population because of certain traits they possess. Of the 251 surveys that were mailed, 9 were returned because of change of address, and 5 individuals opted-out of the survey via e-mail (2 of the 5 individuals were unaware they resided in a conservation subdivision)—bringing the new survey population to 242. Of the 242 potential respondents, 55 successfully completed and returned the questionnaire. The
individual response rate for each subdivision is as follows: 18% (n=10) lived in Chimney Rock; 25% (n=14) in the Park at Wolf Branch Oaks; 16% (n=9) resided in RiverCamps; 2% (n=1) in Beech Creek Preserve; and 38% (n=21) dwelled in Serenbe. Please note, these totals do not equal 100% because of rounding. The overall response rate for this project was 22% (55/251). However, after modification for the 9 returned surveys and the 5 non-participatory individuals, the total response rate for this study is 23% (55/237).

Although Dillman’s Tailored Design Method was followed to increase response rates, a response rate of 23% (n=55) was achieved which is considered low according to Dillman’s method (Dillman, 2007). Additionally, according to Agresti and Finlay (2008), non-response bias is present because of the large number of potential residents (77%) that did not respond since it is possible that their opinions differ from the 23% observed.

Since a low number of responses were received, the sample population was observed as a whole because when observed as individual subdivisions, the response rates were too low to arrive at any defensible conclusions.

The largest percentage of surveys was returned (62%) from the first mailing. As suggested by Dillman (2007), a second and third letter with replacement questionnaires were sent. The second largest percentage was returned from the second mailing (31%), and the third largest percentage was returned in the third mailing (7%). Table 5.5 illustrates the response frequency to the survey over its eight-week duration.
Table 5.5  Response Frequency throughout the Study

<table>
<thead>
<tr>
<th>Mailing</th>
<th>Date</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>First</td>
<td>June 10</td>
<td>34</td>
<td>62%</td>
</tr>
<tr>
<td>Second</td>
<td>July 8</td>
<td>17</td>
<td>31%</td>
</tr>
<tr>
<td>Third</td>
<td>July 29</td>
<td>4</td>
<td>7%</td>
</tr>
<tr>
<td>Total</td>
<td>July 29</td>
<td>55</td>
<td>100%</td>
</tr>
</tbody>
</table>

5.2 Open Space and Improved Quality of Life

The open space within a conservation subdivision aims to protect ecologically sensitive land while, if possible, offering natural amenities to the respective conservation subdivision homeowners. Randall Arendt described two types of conservation areas in his 2004 publication, “Linked Landscapes Creating Greenway Corridors through Conservation Subdivision Design Strategies in the Northeastern and Central United States:”

Primary conservation areas including lands with severe environmental constraints making them essentially unfit for development, such as wetlands, floodplains, and slopes exceeding 25%.

Secondary conservation areas encompassing lands with locally significant or noteworthy features that constitute much of the community’s resource base and which frequently contribute to its special character, such as stream valleys, moderately steep slopes, mature or diverse hedgerows and woodlands, vernal pools (essential to the life cycle of various woodland amphibian species), wildlife habitats and travel corridors, fields and pastures with soils rated prime or of statewide importance or situated within in the public viewshed as seen from existing public roads, historic structures and archaeological sites (including ruins and cellarholes), stone walls, noteworthy rock formations, established trails, etc.

This study suggests that the role of open green space is multi-faceted, and the responses to the open-ended questions further suggest a connection between open space, sense of community, and improved quality of life (Table 5.6). Residents expressed that the open space in their conservation subdivision plays many important roles. When the
participants were asked what they like most about living in their subdivision, the most common answer received was open space, followed by a strong sense of community and an improved quality of life. In discussing these aspects, they continually appear as intertwined, and many respondents feel they are directly related to each other. For example, many residents seem to feel that the open space allows for interaction opportunities, thus causing a strong sense of community—ultimately leading to an improved quality of life. These findings are consistent with Austin (2004) where three of fifteen residents in their study “felt neighborhood ties were strengthened by the shared common areas and pathways. These paths, they believed, provided a space or setting for residents to meet and chat with one another.” Similar to Austin’s finding, the participants of this study often reported open space features and increased social interaction. For example, in response to the open-ended question—“Please describe what you like most about living in your subdivision,” one participant responded, “I like the close-knit community. We are out-of-the-way, which forces us to depend on each other. We have great friends here, and it is a great place to raise kids.” Additionally, in response to this same question, another participant responded, “I love the green spaces in Serenbe where my kids can play. We enjoy walking to the general store, school, restaurants, and shops. The community is like family—we care and love each other, and spend most of our time together.”
Table 5.6 Open Ended Responses from the Study that Support the Connection between Open Space, Sense of Community, and Improved Quality of Life

<table>
<thead>
<tr>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>“Large lots; wildlife; quiet; Most of all: type of neighbors.”</td>
</tr>
<tr>
<td>“Internal walkable access to neighbors, amenities, physical beauty – land, water, sunsets, sounds, open space, trails, and wildlife.”</td>
</tr>
<tr>
<td>“Green space and good neighbors.”</td>
</tr>
<tr>
<td>“Walkable community; sense of fellowship.”</td>
</tr>
<tr>
<td>“Seclusion, open space, quiet, community aspect of the area.”</td>
</tr>
<tr>
<td>“It’s an amazing and beautiful place; thoughtfully designed and executed; wonderful sense of community.”</td>
</tr>
<tr>
<td>“Ease of access to the outdoor spaces; community bond; slow pace.”</td>
</tr>
<tr>
<td>“Large yards overlooking green space and community layout.”</td>
</tr>
<tr>
<td>“The ‘organic’ nature of the community draws people who care about sustainability. People who center their concerns on the quality of life are very easy to live with.”</td>
</tr>
<tr>
<td>“Peaceful, healthy, improved quality of life.”</td>
</tr>
<tr>
<td>“Quality of life – reduced exposure to pollutants such as insecticides and other chemicals.”</td>
</tr>
<tr>
<td>“The neighborhood is peaceful and beautiful. The serenity is what brought us out of the city.”</td>
</tr>
<tr>
<td>“We have a small efficient house—geothermally heated and cooled—on a small lot with no lawn grass. Our street is lined with edible landscaping (blueberries, figs, herbs); an organic farm is across the street from which we get weekly shares, and we walk the streets and paths in the community greeting friends and neighbors every day.”</td>
</tr>
<tr>
<td>“Open common areas with mature trees; park in center of neighborhood allows for neighbor interaction.”</td>
</tr>
<tr>
<td>“Living in a neighborhood where people, animals, and the environment are respected and appreciated, where there is easy access to trails, streams, waterfalls, and the night sky.”</td>
</tr>
<tr>
<td>“The people”</td>
</tr>
<tr>
<td>“The strong sense of community; rural yet close to a city; the arts venues offered.”</td>
</tr>
<tr>
<td>“Sense of community; large green spaces; walking trails”</td>
</tr>
<tr>
<td>“A strong sense of community fostered by architecture and the landscape.”</td>
</tr>
<tr>
<td>“Community – great neighbors. Way different than a typical ‘neighborhood.’ Everything at one place, i.e. Walking, jogging, biking paths, fitness center, large pool, fishing, kayaks, all without ever leaving the development.”</td>
</tr>
</tbody>
</table>
Table 5.6 Continued

| “Sense of Community. Diversity of backgrounds and interests. Diversity of age. Bottom up and top down planning and implementing. Serenbe Institute founded through property and transfer fees (3% on land and 1% on house) focusing on arts, culture, education, the environment, and healthy living. Being part of the new city of Chattahoochie Hills as well as Serenbe. Open spaces. All Earth Craft homes and covenants for sustainability.” |
| “Amazing strong community bones. There is a remarkable support system in Serenbe. We have an outstanding organic garden with more than 100 CSA members. There is a professional summer theater, artists in residence program, photography center, mix of all ages, and strong well attended interfaith fellowship, book club, yoga, meditation etc. Peaceful rural living.” |

Note: Select Responses to the survey question stating: “Please describe what you like most about living in your subdivision.” Minor spelling or grammatical errors have been edited for the sake of clarity.

Not surprisingly, results from this study suggest that residents continually express that open space (Figure 5.1) and an improved quality of life (Figure 5.2) are of personal importance. With participants responding that their favorite aspects of their subdivision are “ease of access to the outdoor spaces,” “community bond,” and “living in a neighborhood where people, animals, and the environment are respected and appreciated,” conservation subdivisions appear to provide residents with natural elements that play a meaningful role in their day-to-day life. The finding that open space is important to homeowners is consistent with results by Vogt and Marans (2004) who conducted interviews of residents living in open space neighborhoods. The authors chose the open space neighborhoods based on several criteria: “They were developed after 1990, had a presence of natural areas and open space within the neighborhood, were at least 25 housing units in size, and located in townships where growth was significant.” Vogt and Marans (2004) found in these neighborhoods that “natural and openness
features were some of the top rated items by the importance these homeowners placed in home and neighborhood choices.”

Figure 5.1  Conservation Subdivision Resident Perceptions of Open Space.

Note: 1 = Strongly Disagree, 5 = Strongly Agree.
Despite the positive commentary on the “tranquility” and “solitude,” there were a few complaints associated with the open space, particularly the lack of privacy (Table 5.8). This finding is similar to a finding by Reichert and Liang (2007) who found homeowners prefer “private openness.” Reichert and Liang explained this as “they appear to prefer to own a two-acre parcel of land that allows for some degree of openness or separation between houses, rather than have access to a large common open space.” In spite of this, the residents in this study appear to utilize and place a level of importance on the space (Table 5.7).
Table 5.7  Open Ended Responses Verifying the Level of Importance on Open Space

| “Space. Open space that will never be developed. Quiet.” |
| “A lot of common property.” |
| “Open space and park like setting. Houses built by a variety of builders giving diversity to architecture of subdivision.” |
| “Open spaces that do not crowd people together.” |
| “Solitude. Our neighborhood has large lots and plenty of space.” |
| “We use the trails and water a lot, which is important.” |
| “The amount of common grounds – 15 acre park and conservation acres add to the attractiveness of the community.” |
| “The one acre lot size. We have lived in areas with two to four acre lot sizes which place the homes too far apart for neighbor interaction. Two to four acres is just too small for any sustainable agriculture in our area other than heirloom gardens.” |
| “That the bamboo forest behind our home is protected and I never have to worry about it being cleared for a subdivision. Also, seeing deer, rabbits, fox, birds, and snakes – daily!” |
| “Easy access to trails, water, and nature; many encounters with wildlife.” |
| “Our home backs us to the open space, and it is wonderful . . . .” |
| “Proximity to water and nature.” |
| “The park conservation area in the center of our subdivision. The walking paths around the park area. The quiet atmosphere.” |
| “The ability to walk on trails and streets with little traffic. Scenic vistas, wildlife . . . .” |
| “The open space conservation areas.” |
| “In front of our home, there is a large conservation park area where conservation is obvious.” |
| “It is in the country; I see the stars at night and less haze and pollution in the day. We are surrounded by nature and aware of its rhythms. I am out of the city, a nice change after thirty years and yet, not isolated.” |
| “The open space makes living here feel like we have more property.” |

Note: Select Responses to the survey question stating: “Please describe what you like most about living in your subdivision.” Minor spelling or grammatical errors have been edited for the sake of clarity.
Table 5.8  Open Ended Responses Verifying the Complaints of Open Space

<table>
<thead>
<tr>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>“Because it is 80% green, the housing is low lot line and dense, which means you don’t have much of your own property or expanse around the house, but you are surrounded by it peripherally. I love solitude, and that is compromised.”</td>
</tr>
<tr>
<td>“The open/conservation is not used for agriculture and this is a wasteful use of land. Only recreational use is fishing at a pond . . .”</td>
</tr>
<tr>
<td>“There is some disagreement between neighbors on the value of the conservation easement and the way it should be maintained (or not). There is no close by grocery store, so the location is somewhat inconvenient to services. The master plan called for connecting the neighborhood to a nearby trail network, but that has not been done. So, in order to leave the neighborhood, a car is required.”</td>
</tr>
<tr>
<td>“Too many weeds are blown into my yard from the conservation area. Wildlife, although appreciated, cause problems (i.e. rabbits, moles, armadillos). Also, small pets are at risk because of circulating hawks.”</td>
</tr>
<tr>
<td>“Lack of privacy . . .”</td>
</tr>
<tr>
<td>“I wish there was more education about our common space and the impact we can/cannot have living so closely to it.”</td>
</tr>
<tr>
<td>“Sometimes too small.”</td>
</tr>
<tr>
<td>“Close noisy neighbors”</td>
</tr>
<tr>
<td>“People in the community want to form a strong bond and are always trying to get into our personal lives/business. I live in the woods for a reason!”</td>
</tr>
<tr>
<td>“Everybody knows all your business.”</td>
</tr>
<tr>
<td>“Very open lots.”</td>
</tr>
<tr>
<td>“The lack of privacy. Houses close together are fine; we lived in a row house for decades. Houses ten feet apart have windows looking into their neighbor’s windows. This is a great place for young families because kids can roam safely, but it is miles to the nearest town.”</td>
</tr>
</tbody>
</table>

Note: Select Responses to the survey question stating: “Please describe what you like least about living in your subdivision.” Minor spelling or grammatical errors have been edited for the sake of clarity.

5.3  Resource Management

Information from this section, specifically, can help identify home trends that are changing the urban fringe. Milder and Clark (2011) suggested that conservation subdivision homeowners sometimes participate in unhealthy land management and protection patterns that can ultimately lower the potential benefits of conservation.
development. Responses from this study suggest that residents are knowledgeable about healthy land management patterns and show an overall concern for the preserved ecologically sensitive land (Figure 5.3). While results suggest that homeowners understand sustainable resource management patterns, it is possible that the residents do not implement them.

It is an interesting concept to consider how much of the resource management is practiced because of cultural and social norms. Nassauer, Wang, and Dayrell (2009) found that neighborhood norms dramatically influence individuals to match the surrounding norm of their neighbors. Notably, when broad and neighborhood norms conflict, neighborhood norms had a more powerful effect on individual preferences. For example, in Nassauer, Wang, and Dayrell’s study, they found a link between neighborhood practices and resident preferences. In other words, the study discovered neighborhood residents generally preferred the practices that were in place when they moved in. If this pendulum swings both ways, conservation subdivisions with holistic practices may be capable of swaying homeowners to practice ecologically sensitive landscape approaches.
In spite of the largest portion of respondents finding ecologically sensitive resource management practices important, there were two open-ended responses that commented on the negative aspects of resource management (Table 5.9). As suggested by Mohamed (2006), this type of development has not been widely adopted, and the public may have little knowledge of their sustainable goals. Perhaps some residents lack general knowledge of sustainable goals because the residents may have no point of comparison for ecologically sensitive resource management practices.
Of particular interest, when asked about implementation of native plant use to maintain plant diversity, 93% of the sample population promotes the use of native plants. It is possible that some homeowners perceive their plant selection as native species, when, in fact, they are not. The large percentage of homeowners who believe native plant species implementation is important is in contrast to Milder and Clark (2011) who reported that homeowners in conservation subdivisions are likely to implement non-native plants—ultimately limiting the value of potential ecological benefits. As previously discussed, Nassauer, Wang, and Dayrell (2009) found that neighborhood norms dramatically influence individuals to match the surrounding norm of their neighbors. Their results suggested that techniques such as introducing native plant species in the residential design are better implemented at the scale of neighborhoods because they are more likely to be practiced by individual homeowners.

Table 5.9  Open Ended Responses Verifying the Complaints of Resource Management

<table>
<thead>
<tr>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>“I would like to see more of our neighbors use organic methods in their yards since all the rain run off goes into a pond that empties into Lake Grapevine . . .”</td>
</tr>
<tr>
<td>“Too expensive to maintain my yard and the subdivision.”</td>
</tr>
</tbody>
</table>

Note: Select Responses to the survey question stating: “Please describe what you like least about living in your subdivision.” Minor spelling or grammatical errors have been edited for the sake of clarity.

5.4  Property Value

The property value section of the survey provides the most ambiguous results of all sections (Figure 5.4). With most of the respondents choosing “neutral” to almost every question in this section, it can be assumed that the residents of the selected conservation subdivisions may not be aware of the financial benefits. Furthermore, of all the open-
ended responses received, none of them mention property value. It should be noted that it is possible the recession has most likely shaped residents’ views of their home. Unfortunately, with the downturn in 2008, most residential structures experienced some type of depreciation. With that said, it would justify the homeowners’ impartial feelings.

Figure 5.4 Conservation Subdivision Resident Perceptions of Property Value.

Note: 1 = Strongly Disagree, 5 = Strongly Agree.

In spite of the neutral consensus among residents, one question in the Property Value section of the survey received a clear answer. When asked whether respondents agree or disagree that a wooded lot increases property value, 80% of the respondents agree to some extent. Perhaps this belief is determined by residents’ deep appreciation for the open natural space within their community. Benotto (2002) discussed that mature trees and open space have shown to be advantageous to a neighborhood by integrating
community “stability” and “vitality,” as well as improving overall economic value. Additionally, the National Arbor Day Foundation indicates, landscaping with mature trees can increase property values as much as twenty percent.

This section of the survey enhances the theory suggested by Bowman et al (2012a) who found there is a lack of knowledge among residents about conservation subdivision designs, even for those residing in a conservation development. Perhaps this deficit affects the residents’ understanding of financial benefits.

It appears there is a blurred vision of conservation subdivision financial incentives in other research. Reichert and Liang (2007) conducted a study that compared an open space neighborhood with a conventional subdivision. The researchers found that although numerous findings report shorter periods on the market, premium price, and greater appreciation rates, their results did not mimic this accepted data. In fact, they discovered “that neither the average housing price nor appreciation rates differ in a significant way by subdivision type (i.e., conservation or traditional).” Additionally, many studies have found a willingness of buyers to pay additionally larger prices for a home located in a conservation subdivision. However, Bowman et al. (2012a) conducted a study and found the participants were not willing to pay more for a home within a conservation subdivision although mature trees and views of open natural space were rated as important influential factors in home purchasing. Conducting a similar study, Bowman et al. (2012a) administered a series of surveys to residents, developers, and city staff to determine whether a greater knowledge influenced willingness to pay. Their data concluded that improved education about conservation subdivision design led to increased willingness to pay additionally.
Lastly, Mohamed (2006) found homeowners preferred conservation subdivision amenities to larger lots. However, he found that because conservation subdivisions have not been widely implemented, the public has little knowledge of the many financial incentives. He goes on to say that he feels the public may have no way to assess this type of development because of the shortage in the public domain.

5.5 Homeowner Satisfaction

When asked about homeowner satisfaction, 96% of the respondents expressed satisfaction with their neighborhood (76% very satisfied and 20% somewhat satisfied). The level of homeowner satisfaction is evident in the open-ended questions where the majority of respondents had more positive than negative comments, as the open-ended responses previously discussed confirm. This level of satisfaction is consistent with a similar study conducted by Austin (2004) in Hamburg Township, Michigan, that found 70% of homeowners residing in “open space communities” had positive things to say about their subdivision. In general, the respondents in this study were eager to discuss their neighborhood and indicated they were extremely pleased with their decision to buy a property within a conservation subdivision. In fact, when asked what they liked least about their subdivision, many respondents had little, if any, complaints. Overall, in both studies, the respondents reported that they enjoy living in their subdivision and remain positive about their experience.

The first question in this series asks respondents to rank on a scale of one to four the most motivational factors in their home buying decision. For the purpose of clarity, four points were given to the first place choice; three points were given to the second place choice; two points were given to the third place choice; and one point was given to

83
the fourth place choice. The sum of each category was then determined and the motivational factor with the highest score placed first; the second highest score placed second and so on. The sample population’s most motivational factors in order of their influence on their home buying decision are shown in Figure 5.5.

![Figure 5.5](image)

**Figure 5.5** Homeowner motivational factors in order of their influence on the home buying decision are as follows: Improved Quality of Life, Conservation, Property Value, and Proximity to Amenities.

Apart from the intensively discussed threads throughout the sample population responses (appreciation of open space, increased quality of life, and increased sense of community), three other themes arise, as shown in Figure 4.24. Eight respondents mention diversity as one of their favorite aspects of the community stating: “People here differ from one another in many ways, but concern for the environment is a value we all hold.” Additionally, another eight respondents discuss the joy of daily observing wildlife
in their habitat. Currently, no programs that actively protect wildlife exist in the selected neighborhoods; however, the presence of wildlife seems to be prevalent. Lastly, six respondents discuss their satisfaction with living in a sustainable community.

When asked what the respondent likes least about their subdivision, three respondents mentioned they felt the community bond was too strong, and they did not have enough privacy. Another three residents mentioned that they desire more education about the open space and how they could potentially impact the space living so closely. Four respondents (all located in Chimney Rock) stated difficult maintenance as an issue in their subdivision. The respondents who stated difficult maintenance in the open-ended question further elaborated by saying “too costly” and “too many weeds.” Narrow roads were another issue cited as a problem by five respondents (all located in Chimney Rock). It should be noted that Chimney Rock currently has no sidewalks or trail connectivity in place. The respondents in this category felt the streets in their neighborhood were not wide enough to provide walkability; thus, safe mobility around the neighborhood is limited. Lastly, five respondents (all located in The Park at Wolf Branch Oaks) discussed the restrictions and costs of the Homeowner’s Association (HOA). The five respondents feel the HOA “disregards and mismanages members’ money,” and possesses a “lack of commitment to funding community improvements and functions.”

With “Quality of Life” ranked as the first most influential factor, one can assume that the homeowners value their quality of life over conservation, property value, or their proximity to work, school, or religious gathering place. Whether the homeowner had a pre-conceived notion of the increased quality of life within this type of development, or whether it was instilled after the home purchase is unknown. Nonetheless, this result
indicates to designers, planners, developers, and realtors that regardless of the conservation practices within the community, financial benefits, or the proximity to support amenities, the design and land planning of the subdivision should remain in the forefront of priorities.

Lastly, it is expected that “Proximity to Work, School, or Religious Gathering Place” is of least importance considering it is the number one complaint of conservation subdivision residents (Table 5.10). This data is in contrast to the results of the National Association of Realtors (2001), who cited “proximity to work” as one of the most important factors to those who recently purchased a home in a conventional subdivision. Although, one participant, when asked what he like least about his subdivision, stated: “What I don’t like is insignificant in the scheme of things. There are very few good restaurants!” From this statement, one can assume that while this homeowner desires more options in amenities, the tradeoffs of living in a conservation subdivision are worth the inconvenience.
Table 5.10  Resident Responses Regarding Negative Aspects of Conservation Subdivision Design

<table>
<thead>
<tr>
<th>Response</th>
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<tbody>
<tr>
<td>“The master plan should be revised to integrate five to six years of experience that include successes and failures.”</td>
</tr>
<tr>
<td>“Poor access to good schools.”</td>
</tr>
<tr>
<td>“Long distance from shopping and services.”</td>
</tr>
<tr>
<td>“The lack of urban amenities and privacy…..”</td>
</tr>
<tr>
<td>“The development is too far from support amenities.”</td>
</tr>
<tr>
<td>“Distance from cultural and culinary amenities.”</td>
</tr>
<tr>
<td>“Distance from commercial support amenities.”</td>
</tr>
<tr>
<td>“It’s not close to work or amenities like shopping or restaurants.”</td>
</tr>
<tr>
<td>“Far from shopping.”</td>
</tr>
<tr>
<td>“HOA and lack of commitment to funding community improvements and functions.”</td>
</tr>
<tr>
<td>“The HOA restrictions and cost . . . .”</td>
</tr>
<tr>
<td>“The lack of parking spaces.”</td>
</tr>
<tr>
<td>“People in the community want to form a strong bond and are always trying to get into our personal lives/business. . . .”</td>
</tr>
<tr>
<td>“Good orientation to sustainable living when we moved in 4.5 years ago. Need consistent on going education for sustainable community. Better maintenance of grounds, trails, and irrigation system, etc. No quality public education (hopefully will change in 2013 with our charter school). Improved communication is probably the biggest need. Developer is visible in community, but not always responsive.”</td>
</tr>
<tr>
<td>“Not enough people in the neighborhood share our view on conservation and sustainability.”</td>
</tr>
<tr>
<td>“No matter where you go, there will be some ‘crabby’ people who just don’t get it.”</td>
</tr>
</tbody>
</table>

Note: Select Responses to the survey question stating: “Please describe what you like least about living in your subdivision.” Minor spelling or grammatical errors have been edited for the sake of clarity.

5.6 Demographics

The sample population was limited to homeowners within the conservation subdivisions of Chimney Rock, The Park at Wolf Branch Oaks, RiverCamps, Beech Creek Preserve, and Serenbe (Figure 3.1). Although this selected population limits the ability to detect statistical significance or to make broad generalizations, it does provide
an illustrative analysis of the demographic dynamics within the selected southern conservation subdivisions. Based on the response trends, one can conclude the participants in this study are mostly educated (91% have attained a Bachelor’s degree or above), Caucasians (94%), earning more than $300,000 yearly income (22%), of the age 50 or older (59%) with no children under the age of 18 living in the house (51%).

The five selected cities are similar in terms of race (mostly Caucasian) and median years of age (all within 30-40 years of age). However, the median level of educational attainment among residents in Flower Mound, Texas, and Chattahoochee Hills, Georgia, is a completed Bachelor’s degree; whereas, the residents of Athens, Georgia, are equally split between a completed Bachelor’s degree and a completed high school diploma. The median level of educational attainment among residents in Panama City Beach, Florida, is that of a high school diploma, while the residents of Sorrento, Florida, average less than a high school diploma. Another key difference in these cities is that the five selected subdivisions are located in cities that have a median income ranging from $32,000 to $110,000 (United State Census Bureau, 2010). The sample population for each subdivision is representative of overall demographic characteristics of the conservation subdivision’s respective state in terms of race. However, respondents were characterized by higher income, education, and age than that of respective statewide demographic characteristics. With that said, these results may well apply to other cities in the Southern region of the United States with similar demographics.

Numerous significant relationships between demographic variables and the home buying decision are present. It is interesting to note that a study conducted by Vogt and Marans (2004) found a direct link between higher income and the amount of significance
placed on natural and open space features. In line with their research, the largest percentage of reported yearly income for this study was more than $300,000, and 95% of the sample population agree to some extent that access to open space is important (Figure 4.7). Vogt and Marans (2004) also found that older respondents, 60 years or older, placed greater importance on social factors than did younger respondents. Again, similar to their finding, a large portion (59%) of the sample population for this study is 50 years or older in age. When asked whether creating and maintaining a strong community bond was important, 88% of the sample population agreed.

It is interesting to note the similarities of demographic characteristics in this study. In reference to the lack of diversity, it is possible that the large portion of the sample population that did not respond varies greatly from this set of respondents in demographic characteristics. With that said, residents mention that the subdivision’s not being “age restricted so there is a diversity of people and families” and its representing a “diversity of age” as things they like most about the subdivision. However, there appears to be little variety in age, race, education level, and income per year. One respondent indicated this connection saying, “I dislike that our community is not economically diverse,” when asked what they like least about their subdivision. Diversity can be described various ways. Some participants indicated that the subdivision is diverse in other ways stating, “Our community attracts diverse populations (cultural, social, etc.) that all agree that living here is better than living in a standard subdivision.” Others remark “People here differ from one another in many ways, but concern for the environment is a value we all hold.” Either way, more variety in housing options and land uses should be encouraged to attract a diverse mix of individuals. Since the homeowners...
find these subdivisions provide an increased quality of life, planners should try to provide this opportunity to a wider range of people across demographic characteristics.
CHAPTER VI

CONCLUSIONS

This chapter presents the overall conclusions of this research. Additionally, based on the results, this chapter makes recommendations for the future development of conservation subdivisions, suggests potential research opportunities, and discusses the limitations of this research.

6.1 Landscape Architecture and Planning Professionals Implications

The most relevant finding is the result that the homeowners are most influenced to purchase within a conservation subdivision because they experience, or anticipated the experience of an increased quality of life. This should be of particular interest to landscape architects and planning professionals. In spite of the numerous beneficial aspects of conservation subdivisions, the open-ended responses suggest that the character of the neighborhood and open space may be the cause of increased social interaction. For example, in response to the open-ended question—“Please describe what you like most about living in your subdivision,” one participant responded, “the park in center of neighborhood allows for neighbor interaction.” Apparently, this increased interaction initiated many relationships within the community, thus increasing their quality of life. This finding indicates that regardless of all other features, residential planners should focus their attention on how the community will interact. This finding is consistent with
Austin (2004) where residents reported they felt shared common areas resulted in an increased social interaction.

Of additional interest to landscape architects and professional planners should be the lack of diversity in the demographic characteristics. Since the residents of conservation subdivisions expressed a deep appreciation for the open space within their neighborhood and an improved quality of life, a wider range of demographic characteristics could further enhance the social and cultural diversity of the community. With that said, planners should encourage more diversity in terms of age, income per year, and race by offering a variety of land uses and housing options. While it is a possibility that only wealthy, educated, white individuals of the age 50 or older are interested in this type of development, the housing options are limited to single family detached (except Serenbe).

Demographic similarities may be an unintended consequence of conservation subdivisions. Because of the amount of land preserved as permanent open space and the amenities implemented into the neighborhood, the developers can demand a higher premium for the residential housing, thus eliminating a wide range of potential homeowners. There are a few ways that planners could increase the demographic diversity in future conservation subdivisions. One way to increase economic diversity is by offering mixed income housing within the community to ensure diversity of housing choices for all income levels. For example, landscape architects and professional planners could propose multi-family residential housing in addition to the traditional single-family detached dwellings. This would open the door of opportunity for many more individuals, and would most likely solve the issue of demographic similarity within the subdivision.
Next, providing density bonuses and adapting inclusionary zoning would help increase residential economic diversity, most likely affecting other demographic characteristics as well.

6.2 Recommendations

Based on the results of this study, the following four recommendations are offered for the future development of conservation subdivisions:

6.2.1 Administer an Owner’s Manual Early in the Home-buying Process

Although Bowman et al. (2012a) found that homeowners have concerns associated with the potential negative environmental side effects of residential development, they found that there is limited education of conservation subdivision design in the public and for homeowners residing in a conservation subdivision. Through this study, it is evident that residents desire to have more knowledge pertaining to their role in an open space neighborhood (Table 6.11). Although the majority of the focus group does not specifically express a desire for more knowledge pertaining to their conservation subdivision, it is unfortunate that more actions have not been taken to increase the homeowner’s understanding of conservation subdivision theories and concepts. Obviously, the residents seem to recognize that their subdivision possesses unique qualities in the way the neighborhood is organized and planned. Similar to Austin’s (2004) belief, this recognition “this recognition could be used to an advantage with proper planning and guidance.” For example, to give homeowners a better idea of conservation subdivision design, an owner’s manual stating the environmental and social theories and practices of the neighborhood could be administered to potential residents
early on in the home-buying process. A clearer understanding of this type of design may further encourage this type of development. Additionally, as stated by Austin (2004), “Land use planners may find residents are more willing stewards of local natural areas with an understanding that the environmental and social benefits of living in an open space community are intended outcomes of this planning process.”

Table 6.11 Open Ended Responses Verifying the Desire for Further Conservation Subdivision Design Education

| “Good orientation to sustainable living when we moved in 4.5 years ago. Need consistent on going education for sustainable community. Better maintenance of grounds, trails, and irrigation system etc. No quality public education (hopefully will change in 2013 with our charter school). Improved communication is probably the biggest need. Developer is visible in community, but not always responsive.” |
| “Not enough people in the neighborhood share our view on conservation and sustainability.” |
| “I wish there was more education about our common space and the impact we can/cannot have living so closely to it.” |
| “No matter where you go, there will be some ‘crabby’ people who just don’t get it.” |

Note: Select Responses to the survey questions stating: “Please describe what you like least about living in your subdivision.” Minor spelling or grammatical errors have been edited for the sake of clarity.

Planners and developers could work more collaboratively with homeowners to increase sustainable practices and offer comprehensive education programs for homeowners. Additionally, for ease of the homeowner, a program could be implemented to foster long term care and maintenance of the preserved space. Further understanding of this type of residential development and its implications can progress toward curbing the impact of sprawl.
6.2.2 Implement Edible Landscapes and Community Gardens

Arendt (2010) proposed that a beneficial conservation subdivision amenity to place in the preserved open space is a community garden. In spite of this trend, only one neighborhood in this study, Serenbe, has a working 100-member community supported agriculture program in place. As anticipated, all respondents from Serenbe place some level of personal importance on sustainable agriculture. Additionally, throughout this study, a few respondents mention the desire to participate or the satisfaction of participating in a community garden. Furthermore, edible landscape plants and a community garden could increase social interaction among homeowners, ultimately fostering a further sense of community and quality of life. For example, East Lake Commons, a cohousing community located in Atlanta, Georgia, owns and manages Gaia Gardens. This five-acre farm produces certified organic crops that are sold via a Community Supported Agriculture program in Atlanta.

6.2.3 Provide More Variety in Housing Options

While a few respondents comment on the diversity in architecture, there seems to be little diversity in housing options. Being the exception, Serenbe does offer live/work units, townhomes, “cottages,” or small single-family homes located on zero-lot-lines, and “estates” situated on ¼ acre and accompanied by a barn. The remaining conservation subdivisions offer single-family detached housing. As suggested by Mohamed in 2006, conservation subdivision homes carry a premium cost. Additionally, the results of this study indicate that wealthy individuals tend to inhabit this type of development. Perhaps a wider range of housing options would bring lower and middle class families into the community—further enhancing rich diversity and culture.
6.2.4 Reduce the Excessive Driving Distance to Amenities

The largest need that land planners and developers need to address is the proximity to amenities, as the distance from amenities was the most common complaint among the 55 respondents (Table 6.12). When responding to the question about their least favorite thing about their subdivision, participants made the following comments: “It’s not close to work or amenities like shopping or restaurants”; “the development is too far from support amenities.” Conservation subdivisions pride themselves on protecting ecologically sensitive land, increasing biodiversity, and providing an improved quality of life for residents. While this study suggests these benefits do occur residents consistently rely on an automobile because conservation subdivisions are classically located on the urban fringe. Most conservation subdivisions cannot support many, much less all, of the weekly amenities needed for neighborhood residents.

Table 6.12 Complaints Concerning the Distance to Support Amenities

<table>
<thead>
<tr>
<th>“Poor access to good schools.”</th>
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</thead>
<tbody>
<tr>
<td>“Long distance from shopping and services”</td>
</tr>
<tr>
<td>“The lack of urban amenities and privacy . . . .”</td>
</tr>
<tr>
<td>“It’s not close to work or amenities like shopping or restaurants”</td>
</tr>
<tr>
<td>“Far from shopping”</td>
</tr>
<tr>
<td>“Distance from commercial support amenities.”</td>
</tr>
<tr>
<td>“The development is too far from support amenities.”</td>
</tr>
<tr>
<td>“Distance from cultural and culinary amenities.”</td>
</tr>
</tbody>
</table>

Note: Select Responses to the survey questions stating: “Please describe what you like least about living in your subdivision.” Minor spelling or grammatical errors have been edited for the sake of clarity.
6.3 Future Research

Based on the results of this study, the following four research studies are suggested:

6.3.1 Research of Serenbe Resident Level of Satisfaction with Local Amenities

Serenbe provides on site art studios, a local food market, a full-scale salon and spa, clothing boutiques, financial planning, specialty gift shops, a restaurant serving organic ingredients from the Serenbe garden, a second restaurant featuring a full bar and wine list, and a bakery. Additionally, The Serenbe Institute for Art, Culture, & the Environment is located on site. According to www.serenbeinstitute.com, The Institute’s mission is to “cultivate the community’s creative, intellectual and ecological qualities through programs and projects that promote our social, spiritual and aesthetic curiosity.”

Lastly, Serenbe offers private education for children ages three to twelve years of age. The Children’s House is a Montessori learning environment located in central Serenbe. Additionally, the Fulton County Board of Education just approved a charter school that is set to open August 2013. According to www.serenbe.com, the public school will “educate grades K-5, with a grade added each year to eventually reach the goal of K-8.”

With Serenbe boasting these many amenities, one would assume the residents would have no complaints concerning cultural and commercial amenities. However, the results of this study indicate that of the 21 respondents, 10 expressed that they were displeased with the long commute to urban amenities, particularly the lack of “shopping” and “good restaurants.” Further research conducted in the Serenbe community would be helpful to determine what the resident’s like and dislike. With the numerous services
offered, and almost 50% expressing some level of dissatisfaction, one has to inquire what the residents desire. This research could shape the amenities of future similar communities and increase resident’s quality of life.

6.3.2 Research of Amenity Implementation into Conservation Subdivision Design

According to the mailing list received from each town’s records, the subdivision and number of residents in the neighborhood population are as follows:

- Chimney Rock - 42 residents
- The Park at Wolf Branch Oaks - 96 residents
- Beech Creek Preserve - 7 residents
- RiverCamps - 19 residents
- Serenbe - 102 residents

Although Serenbe does boast the largest neighborhood population, the population of The Park at Wolf Branch Oaks is comparable. To date, research indicates that none of the subdivisions in this study, other than Serenbe, feature additional commercial support amenities. Further research on whether these services impact the resident’s quality of life would be interesting. This would allow developers to assess how greatly cultural amenities impact residential design. For instance, the open-ended results of this study indicate that overall, the homeowners in Serenbe had more positive than negative comments than that of other subdivision homeowners. Additionally, implementation of these services would decrease the amount of dependence on automobile transportation, further supporting sustainable land practices. Although smaller communities could not support many of these facilities, perhaps they could support a food cooperative, grocery
delivery, or other small neighborhood services. This study could be accomplished by examining two sets of sample populations—one set located in a conservation subdivision with amenities planned into the community, and another set located in a conservation subdivision without amenities planned into the community.

6.3.3 Research of Realtors and Developers Perceptions

Through this study, the eagerness of select respondents have shown increasing support for conservation development, particularly conservation subdivisions. As suggested by Mohamed (2006), in spite of their beneficial assets, conservation subdivisions remain rare. As executed by Bowman et al. (2012b), a closer examination of implementation obstacles and perceived risks of realtors and developers, in the Southern region of the United States would help to understand the continued resistance of this approach. One can assume that the lack of familiarity with and knowledge about conservation subdivisions among these groups may limit the implementation of this development approach. To complete this study, one could examine realtors and developers and ultimately propose ideas to overcome obstacles of conservation subdivision design in the Southern region of the United States.

6.3.4 Case study of Successes and Failures of Conservation Subdivision Design

One respondent suggests, “The master plan should be revised to integrate five to six years of experience that include successes and failures.” A case study comparing successes and failures of conservation subdivisions across the Southern region of the United States may help designers hone in on this type of development and ultimately change the isolated feeling the residents express in this study.
6.4 Limitations of Study

Several limitations surfaced during this study. First, despite following a method to increase the response rate, only 23% of those contacted responded. Although some of the data analyzed appears to coincide with previous studies, the results are debatable because of the small sample population. Second, understanding where these residents are originally from and whether their subdivision is a retirement location (based on the age of the majority of the sample population—50+) may aid in further understanding the data and homeowner practices. Third, separating the information and evaluating each subdivision based on its specific characteristics may be beneficial; however, with only 55 responses, this would not yield statistically significant results. Fourth, although there are similarities in the subdivision locations for this study, they differ significantly. Observing a more similar population with comparable geographic locations to a metropolitan area most likely may yield results that are more noteworthy. Lastly, visiting each community and conducting face-to-face interviews with the residents could have yielded results that are more significant. Although the open-ended comments provided a great deal of clarity, an interview process could have increased the homeowner’s participation. Additionally, evaluating each subdivision’s design and the respective homeowner’s responses could further the discussion on conservation subdivision design and homeowner satisfaction.

6.5 Conclusions

These results should prove helpful for land and urban planners, developers, and homebuyers. Despite the limitations associated with a small selective sample, the evidence from this study suggests that residents in conservation subdivisions take pleasure in nature preservation, sustainable living, and access to open space; experience
an improved quality of life; and find satisfaction living in their neighborhood. This assumption is reached by evaluating a visual illustration of the questions with the highest Likert scores (Figure 6.1). Results from this study indicate that residents feel neutral on sustainable agriculture, lawn maintenance, and conservation subdivision economics (Figure 6.2).

Figure 6.1 Six Highest Rated Statements in the Residential Survey.

Note: 1 = Strongly Disagree, 5 = Strongly Agree.
Conservation subdivisions are somewhat rare in spite of their many environmental, social, and economic benefits (Allen et al., 2012). The potential of conservation subdivision development does not match public awareness, education, and training. Conservation subdivisions have been successful in preserving ecologically sensitive land; however, their effectiveness in achieving biodiversity is questioned.

Bowman et al. (2009) believed that numerous areas (both urban and rural) run the risk of losing fundamental natural resources. Although conservation subdivisions require the city to grow outward, this type of residential development can minimize the loss of natural resources while simultaneously allowing for orderly growth along the urban
fringe (Vogt & Marans, 2004). However, if the lack of education continues in the public
domain and in conservation subdivisions, negligent environmental practices will ensue.

Finally, conservation subdivision design is a fairly new form of planning and
development. As suggested by Mohamed (2006), this type of development has not been
widely adopted, and the public may have little knowledge of their goals because the
residents may have no point of comparison. This study suggests that if conservation
subdivisions grow in popularity, there is a need for further examination of conservation
subdivisions in the Southern region of the United States in order to continue improving
the design of such neighborhoods.
REFERENCES


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APPENDIX A

SURVEY COVER LETTERS
June 10, 2012

Dear Respondent,

I am a graduate student currently pursuing a Masters degree through the Department of Landscape Architecture at Mississippi State University. I am currently working on a research project with Professors Timothy Schauwecker, Robert Brzuszek, and Michael Seymour.

The main purpose of this study is to determine the motivation for buying into a conservation subdivision. In order to accomplish this goal, we have designed a questionnaire that will be administered to homeowners within five conservation subdivisions in the Southeast United States.

The survey is designed to query information about your motives of buying a home in a conservation subdivision. This study is an important step in advancing knowledge about conservation subdivisions and their homeowners.

I understand that your time is valuable, so the survey has been condensed to thirty concise questions, and should take no longer than ten to fifteen minutes to complete. Thank you in advance for your consideration in contributing to the success of this study.

This request is for a voluntary response. If a response is not received by July 1, 2012, I will follow up with a second attempt. By completing and returning the enclosed survey, you are consenting to participate in this study. If you decide to participate, your completion of the research procedures indicates your consent. Please keep this form for your records.

If you do not wish to participate, please email me at jeh175@msstate.edu to be removed from this study. For questions regarding your rights as a participant in human subjects research, please contact the Mississippi State Office of Regulatory Compliance & Safety at 662. 325.3994. If you have questions or comments about this study, please contact Jamie Lucius or Timothy Schauwecker.

Sincerely,

Jamie Lucius
Graduate Student
Department of Landscape Architecture
Mississippi State University
E-mail: jeh175@msstate.edu

Tim Schauwecker
Graduate Advisor
Assistant Professor of Landscape Architecture Department of Landscape Architecture
Mississippi State University
E-mail: tjs2@msstate.edu
July 8, 2011

Dear Respondent,

I am a graduate student currently pursuing a Masters degree through the Department of Landscape Architecture at Mississippi State University. I am currently working on a research project with Professors Timothy Schauwecker, Robert Brzuszek, and Michael Seymour.

The main purpose of this study is to determine the motivation for buying into a conservation subdivision. In order to accomplish this goal, we have designed a questionnaire that will be administered to homeowners within five conservation subdivisions in the Southeast United States.

The survey is comprised of concise questions designed to query information about your motives of buying a home in a conservation subdivision. This study is an important step in advancing knowledge about conservation subdivisions and their homeowners.

We realize that your time is valuable and ask that you dedicate five to ten minutes towards the success of this study. Your responses will be kept confidential throughout this inquiry, and the analyzed results will be available upon request at the conclusion of the survey. Thank you in advance for your consideration in participating.

This request is for a voluntary response. If a response is not received by July 22, 2012, a third and final attempt will be made to obtain your response. By completing and returning the enclosed survey, you are consenting to participate in this study. If you decide to participate, your completion of the research procedures indicates your consent. Please keep this form for your records.

If you do not wish to participate, please email me at jeh175@msstate.edu to be removed from this study. For questions regarding your rights as a participant in human subjects research, please contact the Mississippi State Office of Regulatory Compliance & Safety at 662.325.3994. If you have questions or comments about this study, please contact Jamie Lucius or Timothy Schauwecker.

Sincerely,

Jamie Lucius  
Graduate Student  
Department of Landscape Architecture  
Mississippi State University  
E-mail: jeh175@msstate.edu

Timothy J. Schauwecker  
Graduate Advisor  
Assistant Professor of Landscape Architecture  
Department of Landscape Architecture  
Mississippi State University  
E-mail: tjs2@msstate.edu
July 29, 2011

Dear Respondent,

During the past few weeks, I have sent mail questionnaires requesting your participation in a survey on the motivation for buying into a conservation subdivision. This study is being conducted as a part of my Master’s thesis. You are receiving this letter because you have not yet participated, and this will be the final request, as the survey will close on Monday, August 6, 2012.

I am a graduate student currently pursuing a Masters degree through the Department of Landscape Architecture at Mississippi State University. I am currently working on a research project with Professors Timothy Schauwecker, Robert Brzuszek, and Michael Seymour. The main purpose of this study is to determine the motivation for buying into a conservation subdivision. In order to accomplish this goal, we have designed a questionnaire that will be administered to homeowners within five conservation subdivisions in the Southeast United States.

We realize that your time is valuable and ask that you dedicate five to ten minutes towards the success of this study. Your responses will be kept confidential throughout this inquiry, and the analyzed results will be available upon request at the conclusion of the survey.

I hope that you will consider providing your responses to a constantly growing topic within our industry. This study is an important step in advancing knowledge about conservation subdivisions and their homeowners.

This request is for a voluntary response. By completing and returning the enclosed survey, you are consenting to participate in this study. If you decide to participate, your completion of the research procedures indicates your consent. Please keep this form for your records.

This is the final attempt to request your response as the survey is scheduled to close on August 6, 2012. For questions regarding your rights as a participant in human subjects research, please contact the Mississippi State Office of Regulatory Compliance & Safety at 662.325.3994. If you have questions or comments about this study, please contact Jamie Lucius or Timothy Schauwecker.

Sincerely,

Jamie Lucius
Graduate Student
Department of Landscape Architecture
Mississippi State University E-mail: jeh175@msstate.edu

Timothy J. Schauwecker
Graduate Advisor
Assistant Professor of Landscape Architecture
Department of Landscape Architecture
Mississippi State University E-mail: tjs2@msstate.edu
APPENDIX B

CONSERVATION SUBDIVISION HOMEOWNER SURVEY
### SECTION ONE – OPEN SPACE
For each of the following, mark ☐ one box that best represents your level of agreement or disagreement with the statement.

1. At least 50 percent of land in my subdivision has been set aside for conservation.
   - [ ] Strongly Agree  
   - [ ] Agree  
   - [ ] Neutral  
   - [ ] Disagree  
   - [ ] Strongly Disagree

2. Nature preservation is an important aspect of my neighborhood.
   - [ ] Strongly Agree  
   - [ ] Agree  
   - [ ] Neutral  
   - [ ] Disagree  
   - [ ] Strongly Disagree

3. Nature trails are an important part of my neighborhood.
   - [ ] Strongly Agree  
   - [ ] Agree  
   - [ ] Neutral  
   - [ ] Disagree  
   - [ ] Strongly Disagree

4. Wildlife habitat preservation is an important aspect of my neighborhood.
   - [ ] Strongly Agree  
   - [ ] Agree  
   - [ ] Neutral  
   - [ ] Disagree  
   - [ ] Strongly Disagree

5. Conservation subdivisions demonstrate how development can accommodate the need for housing with minimal impact on nature.
   - [ ] Strongly Agree  
   - [ ] Agree  
   - [ ] Neutral  
   - [ ] Disagree  
   - [ ] Strongly Disagree

### SECTION TWO – QUALITY OF LIFE
For each of the following, mark ☐ one box that best represents your level of agreement or disagreement with the statement.

6. Creating and maintaining a strong community bond is an important aspect of my neighborhood.
   - [ ] Strongly Agree  
   - [ ] Agree  
   - [ ] Neutral  
   - [ ] Disagree  
   - [ ] Strongly Disagree

7. Access to open green space is an important aspect of my neighborhood.
   - [ ] Strongly Agree  
   - [ ] Agree  
   - [ ] Neutral  
   - [ ] Disagree  
   - [ ] Strongly Disagree

8. Walkability is a key component of my neighborhood.
   - [ ] Strongly Agree  
   - [ ] Agree  
   - [ ] Neutral  
   - [ ] Disagree  
   - [ ] Strongly Disagree

9. *The Sustainable Table* describes sustainable agriculture as a way of raising food that is healthy for consumers and animals, does not harm the environment, is humane for workers, respects animals, provides a fair wage to the farmer, and supports and enhances rural communities. Based on this definition, to what level do you agree or disagree with the following statement? "Sustainable agriculture is an important aspect of my neighborhood."
   - [ ] Strongly Agree  
   - [ ] Agree  
   - [ ] Neutral  
   - [ ] Disagree  
   - [ ] Strongly Disagree

### SECTION THREE – RESOURCE MANAGEMENT
For each of the following, mark ☐ one box that best represents your level of agreement or disagreement with the statement.

10. *Harvested Rainwater* describes harvested rainwater as rainwater that is captured from the roofs of buildings on residential property. This water can be used for indoor needs at a residence, irrigation, or both, in whole or in part. Based on this definition, to what level do you agree or disagree with the following statement? “Harvesting rainwater is an important aspect of a sustainable home.”
    - [ ] Strongly Agree  
    - [ ] Agree  
    - [ ] Neutral  
    - [ ] Disagree  
    - [ ] Strongly Disagree
11. A large tree can capture more rainwater than an open lawn.
   - [ ] Strongly Agree  [ ] Agree  [ ] Neutral  [ ] Disagree  [ ] Strongly Disagree

12. After mowing, fresh clippings return valuable nutrients to the lawn.
   - [ ] Strongly Agree  [ ] Agree  [ ] Neutral  [ ] Disagree  [ ] Strongly Disagree

13. It is important to me that lawn care be organic.
   - [ ] Strongly Agree  [ ] Agree  [ ] Neutral  [ ] Disagree  [ ] Strongly Disagree

14. Implementing native plants into the landscape is an important part of maintaining plant diversity.
   - [ ] Strongly Agree  [ ] Agree  [ ] Neutral  [ ] Disagree  [ ] Strongly Disagree

15. A lawn care company provides the majority of maintenance on my property.
   - [ ] Strongly Agree  [ ] Agree  [ ] Neutral  [ ] Disagree  [ ] Strongly Disagree

16. Large expanses of lawn are appropriate in home landscapes.
   - [ ] Strongly Agree  [ ] Agree  [ ] Neutral  [ ] Disagree  [ ] Strongly Disagree

17. Maintenance of my property is difficult.
   - [ ] Strongly Agree  [ ] Agree  [ ] Neutral  [ ] Disagree  [ ] Strongly Disagree

SECTION FOUR – PROPERTY VALUE
For each of the following, mark ☐ one box that best represents your level of agreement or disagreement with the statement.

18. A wooded lot increases property value.
   - [ ] Strongly Agree  [ ] Agree  [ ] Neutral  [ ] Disagree  [ ] Strongly Disagree

19. Conservation subdivision homes are on the market shorter periods of time than those in standard subdivisions.
   - [ ] Strongly Agree  [ ] Agree  [ ] Neutral  [ ] Disagree  [ ] Strongly Disagree

20. Conservation subdivision homes sell at higher rates than those in standard subdivisions.
   - [ ] Strongly Agree  [ ] Agree  [ ] Neutral  [ ] Disagree  [ ] Strongly Disagree

21. Conservation subdivision homes appreciate at a greater rate than those in standard subdivisions.
   - [ ] Strongly Agree  [ ] Agree  [ ] Neutral  [ ] Disagree  [ ] Strongly Disagree

SECTION FIVE – HOMEOWNER SATISFACTION
22. On a scale of 1-4, rank the following motivational factors in order of their influence on your home buying decision. (1 being most favored and 4 being least favored). Use each number only once.
   - [ ] Improved Quality of Life
   - [ ] Conservation
   - [ ] Proximity to work, school, or religious gathering place
   - [ ] Property Value
23. Mark one box that best represents your overall satisfaction with your neighborhood.
☐ Very Satisfied  ☐ Somewhat Satisfied  ☐ Neutral  ☐ Somewhat Dissatisfied  ☐ Very Dissatisfied

24. Please describe what you like most about living in your subdivision. If more space is needed, please continue on back or attach additional information.

25. Please describe what you like least about living in your subdivision. If more space is needed, please continue on back or attach additional information.

SECTION SIX – DEMOGRAPHICS

26. What is your age? Mark ☐ One box:
☐ 18-25  ☐ 26-29  ☐ 30-39  ☐ 40-49  ☐ 50-59  ☐ 60 or older

27. What is your race?

28. How many people that live in this house are under the age of 18?

29. What is your highest level of education? Mark ☐ One box:
☐ High school graduate or GED  ☐ One or more years of college, no degree  ☐ Associate degree
☐ Bachelor’s degree  ☐ Master’s degree  ☐ Professional degree  ☐ Doctorate degree  ☐ Other

30. What is your yearly household income? Mark ☐ One box:
☐ 0 to 19,999  ☐ 20,000 to 39,999  ☐ 40,000 to 59,999  ☐ 60,000 to 79,999
☐ 80,000 to 99,999  ☐ 100,000 to 124,999  ☐ 125,000 to 149,999  ☐ 150,000 to 199,999
☐ 200,000 to 299,999  ☐ More than 300,000  ☐ I prefer not to say