

USERS' PERCEPTIONS OF OPEN SPACE BENEFITS IN MASTER PLANNED  
COMMUNITIES IN NORTH TEXAS

by

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Abstract

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This study examines the relationship between users and open spaces benefits in North Texas. Specifically, it probes the residents' perception of open spaces benefits in three master planned communities in North Texas.

The importance of open spaces is indisputable. They encourage the broad range of activity required by our pluralistic urban society with its racial and ethnic groups of all ages, conditions, and needs (Woolley, 2003). To encourage types of activity that help establish a positive pattern of use, landscape architects can develop the form and the character of the open space as a complete subsystem in communities. To help future landscape architects better develop open space, this thesis probes the benefits to the users of open spaces, what will attract them to it, and why they value it.

According to Mandelker (2010), master planned communities are an important form of development in suburban settings. When master planned communities are developed in suburban areas, developers typically set the environmentally sensitive land aside as open space in order to satisfy the land-usage requirements of permit-granting authorities and to provide amenities for future residents. As a result, master planned communities often provide open spaces that are of limited use and partially accessible. To address this problem, landscape architects could help create better-designed master

planned communities that reflect the wishes, desires, and needs of the residents.

Therefore, this thesis explores how well-developed open spaces improve residents' living experience in master planned communities.

This research uses qualitative research techniques discussed by Taylor and Bogdan in 1998. This involves making observations and conducting interviews to gather data from residents in three selected master planned communities in North Texas. These data collected from interviewees are used to measure residents' perceptions of and ways to improve open space in master planned communities. The majority of users interviewed in this research report that they perceive health, social, economic, and ecological benefits from the open space in their master planned communities. In addition, most of the users indicate that adding a diversity of uses to open space is the best way to improve them. Finally, because landscape architects can influence the residents' patterns of activity through the use of open space, these research findings expand the understanding of the role that landscape architects can play in improving the living experience in master planned communities.

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## Chapter 1

### Introduction

This chapter focuses on explaining the motivation of the research and expectations for this research. The research methods are also introduced in this chapter.

#### 1.1 Overview

This research examines residents' perception of open space in three master planned communities in North Texas, and helps landscape architects better develop successful master planned communities that satisfy residents' needs. Open spaces in master planned communities play a key role in balancing development with people's need for nature. An increasing number of Americans in the 21st century are choosing homes in master planned communities where open space is easily accessible and usable (Warrick and Alexander, 1998). Therefore, there is a need for well-planned and developed open space.

#### 1.2 Conventional Master Planned Development

Planned communities began in the 1900s, when developers started to plat rural land exclusively for residential purposes (Moudon, 1990). Between the years 1982 and 1992, over four million acres of farmland were converted into urban use (Walters and Brown, 2004). In addition, according to them, by 1999, 45.7 acres of land per hour were consumed by urbanization. As Mandelker (2010) says, planned communities are a dominant form of development in suburban settings, which includes master planned communities, cluster housing, and mixed use development. In fact, according to John Burns Real Estate Consulting (2014), 5.4% of new home sales in 2013 were in the top 50 master planned communities, 17 of which are in Texas.

However, because master planned community developers are private companies whose purpose is to make money, they transform rural land into places that are profitable

without always considering the residents' need for well-developed open space that encourages exercise/nature/outdoors. The conventional development in master planned communities, according to McMahon (2010), mostly ignores the unique physical, ecological, cultural, agricultural, and historical characteristics of landscapes and instead usually imposes a fixed land use program on them. This may be the unintended result, however, of the U.S. Government's requirement for developers to preserve the ecologically sensitive land and set it apart from development (Moudon, 1990). According to Kelly, developers cannot build houses on this ecologically sensitive land; this land can only be used for trails and parks. Because developers set this sensitive and unbuildable land aside as open space to satisfy the government's requirements, and because it costs extra money for them to develop trails and parks, most of these spaces have been unused and therefore become inaccessible. This means that many residents in these master planned communities have been surrounded by inaccessible open land, suggesting their need for nature and exercise has not been satisfied within their communities. However, in recent years, as developers have discovered that more homeowners are seeking to live in master planned communities with well-developed open space (Plat, 2011), they have also realized that it is more profitable to spend money on transforming the ecologically sensitive land into parks and trails to keep their residents happy. Furthermore, developers have recognized a subsequent need to consult qualified landscape architects on how to better develop open space. This suggests that to better satisfy the needs of residents, and therefore keep developers happy, landscape architects must better understand the qualities of well-developed open space that are desired and valued by its users.

### 1.3 History of Open Space in Master Planned Communities

It was Frederick Law Olmsted who began to design open spaces as an integral part of master planned communities. In 1868, Olmsted's firm designed a plan for Riverside, Illinois (see figure 1-1). Riverside was the first time a landscape architecture firm tried to design an entire community (Garvin, 2002, p. 16). This plan was designed by Olmsted & Vaux's company. This community was 1,600 acres in size and was located 9 miles west of Chicago. They were asked to create a community that was suitable for middle-class Chicagoans (Garvin, 2002). In this community, they designed a 30-foot setback from the street and no gates or fences around the houses. Also, there were trees between the houses and the streets. The front yards and tree-lined roadways became attractions and open spaces for the residents. In the middle of Riverside, Olmsted used the unbuildable area to create landscaped spaces for people to rest and recreate (Garvin, 2002).



Figure 1-1 Riverside, Illinois (Garvin, 2002)

Another master planned community that affected the design of open spaces in master planned communities is the 149-acre community of Radburn, which is located in Fair Lawn, New Jersey near New York City (Garvin, 2002 p. 20). It was designed by

Clarence Stein and Henry Wright. In their designed community, each subdivision was surrounded by streets, and people could park their cars and walk back to their homes. In the middle of each block was the large public open space (see figure 1-2). This space was called common open space. According to Garvin (p. 20), "Common open space is not public because those who do not hold it in common can be excluded. It is not private either, because it has to be shared with others." This space was owned by the residents and it provided places for people to get together and participate in various activities. This space was surrounded by houses, so it was separated from streets and traffic. It gave people a sense of safety and a recreational open space.



Figure 1-2 Radburn, NJ (Garvin, 2002)

In the 1950s, the open spaces in master planned communities were developed in conjunction with larger house sizes. In addition, the remaining open spaces in master planned communities were only the spaces between existing developments to meet the government's requirements. The communities were developed very quickly with little concern about the quality of the open spaces (Gerald & Kenneth, 1995, p. 168). Many

open spaces were transformed to streets and parking lots. The curvilinear tree-lined streets of earlier developments like Radburn were changed into straight broad streets so that traffic could move more efficiently. Commercial buildings like shopping centers were brought into master planned communities, and developers were more concerned about making money from the buildings than about the overall quality of the community.

Currently, there are two forms of open spaces in master planned communities. According to Gerald and Kenneth (1995), the first are activity areas in which users can participate in sports like softball, tennis, swimming, and soccer. These spaces are usually fenced and people seldom use them. The other spaces are the preserve areas that are sensitive and unsuitable for construction. Developers usually set these spaces aside to satisfy government regulations.

There are various ways to develop a contemporary master planned community. It does not have to be limited to the tree-lined streets, house setbacks, or common open spaces described earlier. A successful master planned community should provide places to satisfy its users' needs. According to Garvin (2002), open spaces in master planned communities should afford users diverse opportunities to gain their benefits.

#### 1.4 Statement of the Problem

The desire to develop the connection between humans and their natural environment is steadily increasing. According to Warrick and Alexander (1998), more residents are requesting more usable open space and a better connection with the nature around them. While more open space is being converted to meet the requirements for housing and other land uses in master planned communities, larger lot sizes and more houses alone cannot provide more livable communities in the 21st century. If the remaining open space is not accessible and usable, then users cannot get benefits from open spaces (Porterfield & Hall, 1995). Therefore, there is a growing need for landscape



architects to develop the remaining open space with parks and trails to improve the relationship between humans and nature (Woolley, 2003). Developers are making decisions on how to accommodate the growth of development while enhancing the natural resources to increase the satisfaction of their residents (Platt, 2011). Making the open spaces in communities more accessible and usable is an effective way to serve its residents.

### 1.5 Goals and Objectives

The goal of this research is to examine the relationship between users and open spaces in three master planned communities in North Texas. The users in this research include the residents of, and workers in three selected master planned communities. More specifically, this research investigates the users' perceptions of open space benefits in three master planned communities. In order to do so, the users of these master planned communities are interviewed and their responses are analyzed according to grounded theory (Taylor and Bogdan, 1998). The research conclusions show more opportunities and choice for landscape architects to develop the natural resources of open space to enhance the users' quality of life.

The purpose of this research is:

- To identify users' perception of open space benefits in master planned communities in North Texas. This is an examination of the benefits of open space in users' minds.
- To explore whether the open spaces in master planned communities meets their expectations. This is an examination of what open space benefits the users' gain in master planned communities and how it can be improved.

- To provide design guidance and recommendations for landscape architects in future development of open space to satisfy users' needs.

### 1.6 Research Questions

This research is informed by the following research questions. Analysis of these data may capture insight from interviewees and increase the understanding of users' perception of open space in master planned communities.

- Do users perceive the benefits of open space in master planned communities in North Texas?
- If there are benefits of open space, how can they be enhanced to serve its users better?
- What are the benefits that users would like to have in the open spaces of master planned communities in North Texas?
- How can this information help landscape architects improve the design of master planned communities in North Texas?

### 1.7 Research Methods

This research uses qualitative research methods, using in-depth interviews and passive observation to understand users' perceptions of the relationship between the design of open space and community development (Taylor and Bogdan, 1998). The process for the study includes:

- Review and summarize the literature to determine the users' desire for open space, the range of benefits of open space, and the landscape architect's role in developing open space.
- Select and study three master planned communities in North Texas. These three communities include open space that is considered a key feature of the community.

- Conduct passive observations in the three selected master planned communities to develop better knowledge of open space use.
- Interview the users of open space, such as community residents, and workers in master-planned communities. The open-ended questions are asked via face-to-face or email interview.
- Analyze the interview data to explore ways to enhance the benefits of open space in master planned community development.

### 1.8 Definitions of Terms

Experience: For the purposes of this study, experience is having contact with or participating in any activity within open spaces.

Master Planned Community: Master planned community typically is a residential and mixed-use community that include diverse residential product types and entertainment centers, recreational areas, schools, retails, and offices (Mandelker, 2010).

Open Spaces: “[These are] areas located within developments that are purposefully set aside to remain undeveloped, without building upon the land. Such areas are generally unprogrammed spaces that can be left with the natural existing landscape or enhanced with vegetation, trails, or seating for the use and enjoyment of people who live and work in the vicinity of the areas” (Gerstle, 2008, p. 5).

Perception: “[This is] the organization, identification, and interpretation of a sensation in order to form a mental representation” (Schacter, Gilbert, & Wegner, 2011, p. 127).

User needs: “[These are] amenities and experiences that people seek in enjoying public open spaces. Needs provide the basic level of support and function in open space; they are the prerequisite for having an enjoyable landscape experience and provide the basis for much design criteria” (Francis, 2003, p. 4).

Users: For the purposes of this study, users are the group of people who live in, visit, or work at a master planned community.

### 1.9 Delimitations of the Study

This research centers on users' perceptions of and experience with open space in master planned communities. Location is a delimitation of the study because this research is only conducted in North Texas due to the relatively short time frame of the study. Other regions may have different environments and perceived benefits, and therefore could result in different design recommendations.

In addition, because of the limitation of time, the collected data in this research are limited to only three communities. In each community, only a few of the users such as community residents and workers are interviewed; these may not be representative of all the possible users of open spaces.

Finally, for the purposes of this thesis, open spaces in a master planned community is limited to publicly accessible open spaces that provide recreation, ecological preservation, transportation, and amenities such as parks, playgrounds, streets, incidental spaces, and natural green space (Woolley, 2003).

### 1.10 Summary

Master planned communities can attract people by developing open spaces, and this trend has been increasing in recent years (Warrick and Alexander, 1998). This research mostly focuses on users' perceptions of open space benefits in master planned communities. According to Woolley (2003), there are health, social, economic, and ecological benefits of developing open spaces. Therefore, users' perceptions of open spaces should be considered when landscape architects are designing communities. For the purpose of helping with design implications for landscape architects, the relationship

between users' perceptions of open spaces in three master planned communities in North Texas is examined.

## Chapter 2

### Literature Review

#### 2.1 Introduction

This chapter reviews the literature related to the topic, examining what has been previously written. This section focuses on different topics that are relevant to the research such as the benefits of open spaces. Designing in harmony with nature focuses on the human context and the needs of the people who live there. Both designers and developers are concerned with satisfying the desires of residents in master planned communities. This review examines the open spaces that attract users in master planned communities. It also documents the communities that are chosen in this research.

#### 2.2 The Health Benefits of Open Spaces

Many studies have shown that nature can have a positive influence on physical and mental health (McMahon, 2010). The open spaces in master planned communities have a more natural environment as compared to an urban setting. These natural environments are important to users as they afford the opportunities for physical activity and mental restoration.

Physical activity reduces the risk of being overweight and of suffering from cardiovascular diseases such as high blood pressure, heart attacks, and stroke. In addition, physical activity also reduces the risk of many cancers, including colon and breast cancers (Dannenberg, Frumkin, & Jackson, 2011).

Physical activity can be divided into utilitarian and recreational categories. In utilitarian physical activity, the activity itself is not the goal; rather, it is a means to achieve the goal, such as walking to school each day. In recreational physical activity, the activity is the primary purpose, such as playing basketball or cycling on a trail for exercise (Dannenberg et al., 2011). Moreover, open spaces such as parks, lakes, and forests

attract many people to its environment to participate in diverse types of activities. The open spaces in master-planned communities can provide people a place to have fun and exercise, both through utilitarian and recreational activities.

In the urban city, people need to work at a high level of consciousness to survive. (Bentley, 2012). Every day, they need to focus on working, taking care of their children and elderly parents, and various other tasks associated with stressful urban lives. In addition, the crowds, traffic, noise, and pollution in urban areas sap the energy from the residents living there. According to Bentley (2012), when people's energy is low and when they are stressed beyond their physical and mental capacities, they suffer from a lack of directed attention. According to Kaplan (1995), directed attention is important for people to make decisions. However, the capacity for directed attention is limited. People need to rest to restore their directed attention. To do so, people may turn to natural settings. In fact, natural settings have four components that can restore directed attention. According to Kaplan (1995), these four components are being away, fascination, extent, and compatibility. It has also been confirmed by other researchers that natural settings can decrease fatigue and restore directed attention, and that it is faster to restore from fatigue of directed attention in a natural environment as compared to an urban setting (Herzog, Black, Fountaine, & Knotts, 1997).

### 2.3 The Social Benefits of Open Spaces

The most obvious social benefits of open spaces in master planned communities, according to Woolley (2003), derive from the places they provide for people to participate in various activities, such as community events or sports. According to Kearney (2006), the more people use open spaces, the greater the chances they will interact with each other. This interaction among users has possible benefits such as increasing their quality of life and fostering a healthy sense of community (McAuley et al., 2000; Kearney, 2006).

### *2.3.1 Increased Interaction*

According to Hayward (1989), many users go to open spaces because of other people who may also be there, rather than for the landscape or recreational opportunities open spaces may provide. Therefore, increased social benefits is a motivating factor for users to go to open spaces. In addition, according to Woolly (2003), there are two types of activities users can do in open spaces: passive and active activities. Passive activities include watching people or wildlife, reading, or resting. When people are sitting or watching others, they have increased opportunity to interact with other users in their environment. For example, when adults bring their children to playgrounds, and while they are watching their kids, they might discuss the activities or interests of their children with other parents (Day, 2000). These passive activities provide users opportunities to be in contact with others and make friends. On the other hand, active activities include playing basketball, football, and other games. When users participate in these types of activities together, there are more opportunities for them to communicate with each other. Participating in community activities encourages people to learn each other's names and to share daily experiences, which are critical to community building. Consequently, open spaces in the design of master planned communities can help people overcome social alienation and build strong interpersonal connections (Woolley, 2003).

### *2.3.2 Fostering a Sense of Community*

Many people who move to master planned communities want to connect with nature. According to Carol (1986), nature has been viewed as an important counterforce to cities, and interacting with nature is often seen as being psychologically refreshing. The people who have moved to master planned communities can enjoy both the reinvigorating contact with nature and the economic convenience of a city. In addition, living in a master planned community offers more to residents than just a nice house. As



the relationships with neighbors have become increasingly complex and important, people have shown a desire to know more people than just their immediate neighbors. That is, the residents of master planned communities expect to develop a small town community feeling based on shared values and concerns. According to Warrick and Alexander (1998), developers of master planned communities need to carefully consider ways to meet this increasing need for a sense of community.

According to Worley (2010), open spaces can help residents to foster a sense of community in master planned communities. Open spaces in master planned communities provide physical places for people to get together, and more importantly, for people to have the opportunity to better know their neighbors and create sense of community (Kim & Kaplan, 2004). Kweon, Wiley, and Sullivan (1998) examined the relationship between exposure to open spaces, social ties, and sense of community. Their analysis indicates that people who have greater exposure to open spaces increase their interactivity, which in turn increases their sense of community.

#### 2.4 The Economic Benefits of Open Spaces

According to Kelly and Zieper (2006), much of the available open space in the United States is rapidly being shaped by urban and suburban development. Therefore, the public is increasingly interested in having a say in how the remaining open spaces are used. In addition, there is a growing need to foster the connection between residents and open spaces in master planned communities because many residents are willing to pay more for living in areas with well-developed open spaces (Woolley, 2003). As many developers have realized the importance of open space, they have started to pay more attention to the open spaces in their communities in order to satisfy the demands of their residents. This has led to their master planned communities becoming more profitable

(Woolley, 2003). The research on the economic impacts of open spaces is discussed below.

#### *2.4.1 Open Spaces Attract Employees*

Partly due to new technologies and services, people no longer have to only work in traditional industrial centers. Many employees are searching for new locations suitable for both work and leisure. Also, they have an increased demand for more developed open spaces and a higher quality of life. Therefore, employers are increasingly concerned with providing well-developed open spaces to attract a higher caliber of employee (Kelly and Zieper, 2000).

#### *2.4.2 The Impact on Property Value*

According to Warrick and Alexander (1998), people are looking for communities that provide them not only with a place to live but also with nature, social activities, and places for entertainment. Open spaces in master planned communities can provide residents with places for activities, where they can enjoy nature and socialize with other people. Because of this, it is known by most developers that providing open spaces has become a valuable marketing tool. In fact, according to Woolley (2003), studies about the economic impact of open spaces have indicated that the value of land adjacent to open spaces is higher than the value of land further from it. According to Danzer's 1987 study (as cited in Woolley, 2003), the value of the land near West Chicago Park increased after the park was built. In addition, Kelly and Zieper (2000) report that a three-mile greenbelt around Lake Merritt in Oakland, California added approximately \$41 million to the surrounding property values.

## 2.5 The Ecological Benefits

Adding open space to master planned communities offers a variety of ecological benefits. Preserving open spaces can reduce stormwater runoff and improve the air and water quality. Open spaces can also provide environment for wildlife.

### *2.5.1 Reduction of Stormwater Runoff*

The preservation of open space can lessen the amount of paved areas. Paved areas like roads, parking lots, buildings, and other space can affect the amount of runoff both above and below ground, which can affect the ultimate condition of nearby lakes, rivers, and streams (McMahon, 2010).

According to McMahon (2010), the natural areas in master planned communities store rainwater and decrease stormwater runoff. The ground covered by plants can keep more water than paved area due to less impervious surfaces. The trees in open spaces also reduce stormwater runoff. The leaves on the trees can catch rainwater and let it evaporate into the air. This reduces the water directly added to the soil. Also, tree roots absorb water from the soil, keeping the soil dry and improving its ability to absorb more water. Trees can hold the soil in place and prevent soil erosion (McMahon, 2010).

In addition, there are several benefits of reducing stormwater runoff (McMahon, 2010). When more water is held in the soil, less water directly drains into surrounding rivers and streams. This can lower the water level of rivers and streams, which improves their capacity to hold water and therefore their ability to handle flooding and overflow. Because water flows over impervious surfaces faster during the rainy season, stormwater can quickly and easily flood the land around rivers and streams in communities with more paved areas.

Finally, McMahon (2010) states that open spaces can also improve water quality. The infiltration of stormwater into the aquifer is part of the natural water cycle. The soil

absorbs water into the land and takes it to the aquifer. Stormwater runoff, however, can strip pesticides and other chemicals from the soil, which can cause potential harm to the aquatic life in the surrounding areas.

#### *2.5.2 Improved Air Quality*

During the summertime, the heat island effect increases energy use and accelerates the generation of smog in urban areas. The lack of plants and the low absorption of solar radiation are the main reasons for the heat island effect (Akbari, Pomerantz, & Taha, 2001). According to Douglas (2002, p. 32), "Trees use solar radiation to transpire water - depending on the type and size of the tree, up to 100 gallons per day, which provides the cooling equivalent of five window air conditioners running for 20 hours." This means that the trees in open spaces can cool the surrounding air during periods of hot weather and reduce energy use. Spronken-Smith and Oke (1998) indicate that there is a "cool park effect" in open spaces. According to their research, the temperatures of open spaces are lower than their surrounding built environments in the day time. The trees in open spaces provide the shade and evaporative cooling, which contribute to the lower temperatures (Spronken-Smith & Oke, 1998).

Trees also absorb pollutants and purify the air. Some experts suggest that a built environment devoid of trees and other air purifiers is contributing to a rise in childhood asthma and other respiratory diseases (Edward, 2010). According to Woolley (2003), some elements such as heavy metals can be absorbed by leaves, and these elements are removed when the leaves fall. Therefore, the air quality is improved when these elements are removed. In fact, according to research by McPherson et al. (1997), the trees in Chicago can remove an estimated 5,575 metric tons of pollutants from the air, saving the city an estimated \$9.2 million in cleansing.

### *2.5.3 Environment for Wildlife*

According to Elliott (2000), wildlife is very important to American people. In addition, Woolley (2003) explains that the open spaces for wildlife habitats impact users in two ways. The first way is by providing opportunities to enrich diversity and improve the living environment. Open space in master planned communities can be designed to provide a living environment for wildlife habitats and develop a livable environment for people (Peebles, 2005). There are a variety of animals in open spaces, such as mallards, snow geese, mourning doves, and black bass (Dawson, 1955). The grass, trees, and shrubs in open space can provide a living environment for these types of wildlife. The second way open space impacts users is by providing opportunities for them to have experiences with nature. The wildlife in open spaces helps to satisfy people's needs for interacting with their natural environment through touch, sight, smells, and sounds. According to Woolley (2003), people feel happier when they have more opportunities to access the natural environment (Woolley, 2003). The interaction with nature in open spaces can bring physical and mental benefits, as discussed in Section 2.2.

### *2.6 The Location of Open Space*

Open spaces in master planned communities should be located around visually prominent places so that people can be aware of them during their daily routines. Just like commercial space, open spaces should be visible throughout communities and be accessible to most people. Most of the prominent locations in a community are designed for commercial use. However, these prominent locations and their surrounding open spaces can also be designed into landscaped areas. These spaces can become community focal points and activity centers. Also, these spaces can be part of the commercial areas and support them.

Living in proximity to open spaces is related to recreational physical activity. According to Porterfield and Hall (1995), at least one neighborhood park should be within walking distance of all residents. Proximity to parks is related to park use and recreational activity in most studies (Kaczynski and Henderson 2007; Saelens and Handy 2008). In one study of park users, for example, people living within a quarter of a mile of a park were the biggest group of frequent users (43 percent); those who lived more than one mile away made up just 13 percent of the frequent users (Cohen et al., 2007). This information has been used by some park advocates to set a goal of having every child live within a ten-minute walk of a park. Finally, although this does not mean open spaces must be located internally to a community, they should be visible and accessible to most families so as to encourage its use (Porterfield and Hall, 1995).

The location of open spaces should encourage its use by people. People cannot get the enjoyment that open spaces offer if it is difficult to get to their location. Porterfield and Hall (1995) suggest that open spaces between different land uses can offer a good transition, such as open spaces between office areas and residential areas. People from offices can have lunch there and residents can enjoy their time there in the evenings. Both groups can use the open spaces equally.

However, some open spaces are gated and separated from their surrounding communities. According to Porterfield and Hall (1995), developers may use walls or fences to define the space. The developers may have thought that separating the open spaces would be an effective way to control access to them and therefore keep them safe. However, this defeats the purpose of open spaces and their ability to create connections with their communities. Porterfield and Hall (1995) identify ways to use landscaping to keep open spaces safe instead of using chain link fences, such as using plants to define the domain.

Finally, the linkages between open spaces are also important. Creating or enhancing these linkages provides a way to expand the use of open spaces and increase their accessibility to more residents (Porterfield and Hall, 1995). The linkages among open spaces can expand exposure to parks and increase their usability. These linkages can be natural or designed, and they should be easily accessible.

## 2.7 Open Spaces in Master Planned Communities

There are different types of open spaces in master planned communities, and they provide different uses to people in these communities. Some people use them as places for spiritual enrichment, and others use them for recreation, such as playing football, running, or jogging. Open spaces provide a place for people to escape from their daily lives and provide a way for them to connect with nature. People need designed open spaces as well as natural open spaces. Parks, playgrounds, trails, and forests are the key elements in the design of open spaces in master planned communities.

### *2.7.1 Leisure and Recreation Spaces*

In master planned communities, two types of open spaces should be understood: leisure and recreation spaces. According to Porterfield and Hall (1995), "leisure is time and experienced-based, while recreation is activity and space-based." According to these authors, it is important to separate these two types of uses and their accompanying spaces. Because leisure spaces are more aesthetically based and recreation spaces are more functionally based, Porterfield and Hall caution that the number of courts or activity fields of a community is not an adequate measure of the amount of leisure space provided. Therefore, developers must consider and balance the needs of leisure and recreation as they are designing open spaces.

### *2.7.2 Connection Between Residents and Open Spaces*

Many families do not have enough extra leisure and recreation time to fully enjoy the open spaces in their master planned communities. In addition, it may be inconvenient and/or uncomfortable for many residents to use larger open spaces such as district-sized and larger parks whether because of distance or safety concerns (Porterfield and Hall, 1995). Thus, it has become increasingly important to reconnect residents with the open spaces in their communities. These open spaces should be easier to access, be full of familiar faces, and be easily monitored. According to Porterfield and Hall, more useable open space creates a sense of pride and ownership for its community.

### *2.7.3 Movement Between Open Spaces*

Community planning should utilize open spaces and green areas to define elements' edges, for example, of areas or districts, to provide a sense of movement and transition between them (Porterfield and Hall, 1995). Open spaces can be internal to community or can be an external green belt on the edge. By carefully creating the delineation of open spaces in a master planned community, developers can enhance the sense of being in distinct locations.

## **2.8 Current Trends in Master Planned Communities**

### *2.8.1 From Golf Courses to Open Space*

Golf courses were important amenities in community development in the 20th century. During the 1950s, the golf course community became increasingly popular (Mulvihill, 2001). According to Mulvihill (2001), during the 1980s, nearly 35 percent of new golf courses were connected with a real estate component. According to research from the National Golf Foundation (as cited in Mulvihill), this percentage later grew to where approximately half of all golf course construction was real estate related. This indicates that there is an abundance of golf course communities from which to choose to live in,



and the golf course itself had become a focal point for many developers who were bending towards perceived market needs. However, although a considerable number of golf course communities were developed, the use of golf courses did not increase accordingly. According to Warrick and Alexander (1998), a 1994 study by American LIVES indicated that only 39.5 percent of people living in a sample golf course community indicated that the golf course was “very” or “extremely” important, meaning that more than half of the residents considered the golf course more of a luxury than an essential item. In fact, golf courses can only be used by a limited number of people in a limited time. Sometime these areas are unused. Community residents from the 1990s became more concerned with a wide variety of open space, and they became more willing to pay more to enjoy usable open space in their communities.

#### *2.8.2 Multi-use Amenities to Provide More Value*

Residents in master planned communities hope the amenities there can serve more functions than just single use, such as provided by a golf course. They think that they can get more value from the multi-use amenities. When features and amenities can serve more than one purpose, their users are provided with more benefits (Warrick and Alexander, 1998). Therefore, master planned communities can be more competitive in the marketplace if developers or builders create more space with flexible and diverse functions, providing more value to consumers. Open spaces are the places that can serve diverse purposes. They provide the place for people to play ball games, rest, meet, and picnic. These activities are more important to consumers now.

#### *2.8.3 Soft Amenities to Meet Lifestyle Change*

Knowing whether the open space design put in master planned communities is suitable for their clientele is important for designers and developers. Making an incorrect decision will incur increased and unwanted expenses in development and maintenance,

and will decrease market competitiveness. These mistakes were highlighted in golf course communities. Many developers put in golf courses in the 1980s as a response to market demands, but by the 1990s, as these demands faded, the golf courses had become a financial drag to many of these master planned communities. Whereas the American LIVES study of indicated that 39.5 percent of master planned community residents had a strong preference for golf courses, the same study reported that 77.72 percent had a strong preference for lots of natural and open space, 56.39 percent had a strong preference for gardens with native plants and walking paths, and 52.99 percent had a strong preference for wilderness areas (Warrick and Alexander, 1998). Warrick and Alexander also state that this same study reported that while only 25.68 percent of respondents reported a strong preference for a nature interpretive center, this type of facility could easily serve the needs of schoolchildren or be changed into a garden. According to Warrick and Alexander, a nature interpretive center or a walking/biking path are examples of soft amenities with soft programming features that can easily serve the various needs of diverse groups of residents and “learn with the community over time” (p. 15). For example, walking/biking paths could be used by mothers with strollers, joggers, children on their way to school, rollerbladers, and many others.

## 2.9 Summary

Chapter Two reviews the literature about the health, social, economic, and ecological benefits brought about by open spaces in master planned communities. In addition, this chapter introduces the issue of accessibility to open space, and the current trends of open spaces in master planned communities. The following section focuses on the research methods.

## Chapter 3

### Research Methods

#### 3.1 Introduction

This chapter focuses on research methods. Qualitative research methods are used in this study to investigate the research questions listed in Chapter One, and to understand the connection between users and open spaces.

The methods of data inquiry and in-depth interviews that are adopted for this research are informed by Introduction to Qualitative Research Methods (Taylor and Bogdan, 1998). Different kinds of perspectives and information are collected. Then the research data are analyzed and summarized in order to gain the users' perception of open space in master planned communities. This chapter also introduces site selection, data gathering methods, and data analysis approaches.

#### 3.2 Research Procedure

This research uses qualitative research methods, including secondary data, interviews with users and passive observations. The first step is to collect secondary data about three selected sites. These data are collected from the Internet and community documents provided by the managers of the master planned communities. Obtaining approval from the Institutional Review Board (IRB) is the second step of the research procedure (see Appendix A). This is done for the protection of the informants. After obtaining IRB approval, informants from the three selected master planned communities are randomly chosen to be interviewed. A face-to-face interview with the selected informants is done to examine their perceptions about the open spaces in their master planned communities. The interviews will be conducted according to IRB standards. The informants are free to discuss their perceptions of and experiences with the open spaces in their community. Each interview lasts approximately thirty minutes.

The third step is to conduct passive observation in the selected master planned communities. In this step, the researcher observes users' behavior in the open spaces in the selected master planned communities. These data are used to help the researcher better understand the informants' perceptions of open spaces.

The last step is to review the literature in chapter two and compare to the findings from collected data. These steps help the researcher to identify the users' perceptions of open space benefits in their master planned communities and to develop the answers for research questions.

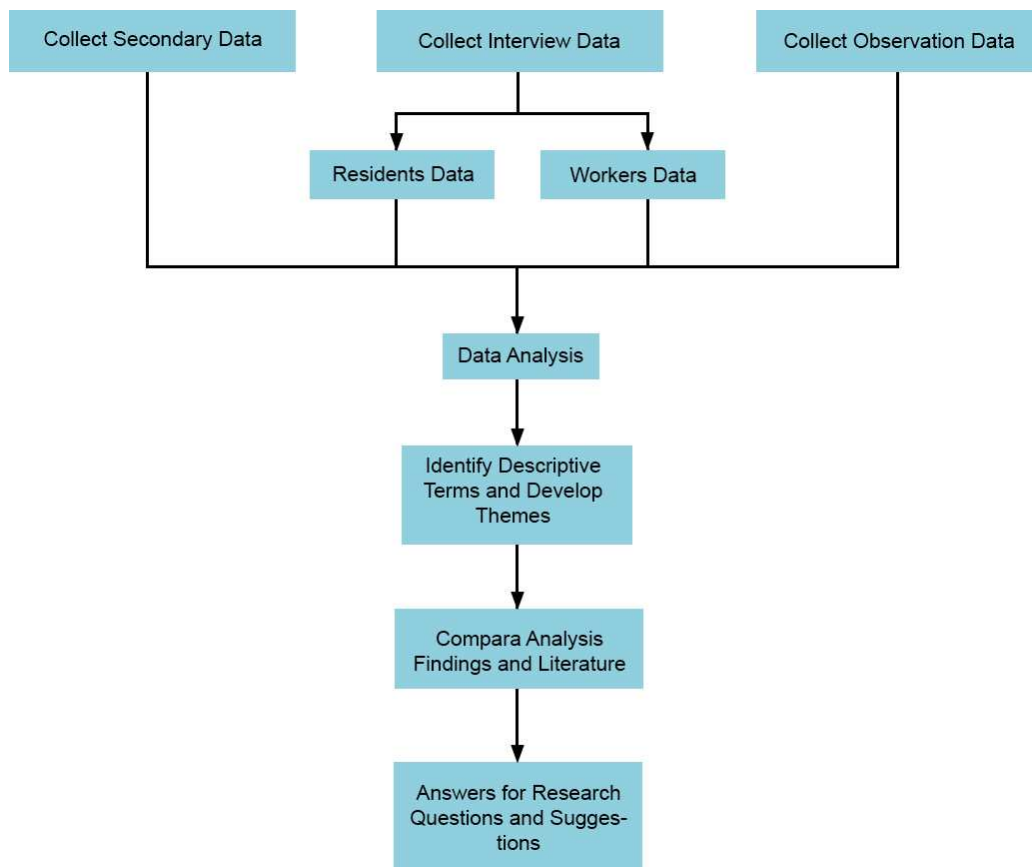


Figure 3-1 Research Methods

### 3.3 Research Methods

#### 3.3.1 Site Selection

Sites are selected to meet the goals of this study, which are to explore the connection between open spaces and users in master planned communities. Selected sites are chosen from lists of master planned communities that can be researched on the internet. In this study, three master planned communities are selected. Research from these three communities examines the nature of the relationship between open space in master planned communities and the life of their users, and, if such a relationship exists, how open space may improve the quality of life of users in master planned communities. Ideally, the selected communities should have roughly the same design concepts that impact the lives of people. However, sites with exactly the same qualities are rare. Therefore, in this research, the sites are selected with certain, nearly identical characteristics, trying to reduce the impacts from other factors. The master planned communities should meet the following requirements:

- They must have been built for at least ten years;
- They must have open spaces serving different users;
- They must have open spaces with similar design concepts and quality of surrounding properties;
- They must be in North Texas.

The three selected master planned communities for this research are Heritage Lakes and The Lakes in Frisco, and Wellington in Flower Mound.

#### 3.3.2 Interview Techniques

In order to understand the nature of the relationship between open space and people in master planned communities, the informants chosen are grouped into two categories: residents of, and workers in the community. These key informants are chosen

because they represent the potential users of the open space in these communities, and therefore they directly relate to the topic of this research. Because people are not always willing to answer research questions, the snowballing method is used to develop the pool of informants (Taylor and Bogdan, 1998). In order to reduce the drawbacks of the snowball technique (Taylor and Bogdan, 1998), the two previously mentioned categories of informants are included in this research.

Because of the limitations of time, not all the people using the site can be interviewed. Three informants from each of the previously mentioned categories are interviewed. The interview questions are open-ended about their perceptions of the value of open space in their master planned community. The questions are thematically related to the topic of the interview and they interact dynamically (Kvale, 1996).

#### *3.3.3 Passive Observations*

To better understand the relationship between open space and users in master planned communities, onsite observations are conducted for secondary data. Passive observations can be used to better understand the descriptions and perceptions discussed by the informants. Also, this approach can further examine and extend the findings.

### **3.4 Data Collection Methods**

#### *3.4.1 Interview Participants*

Twenty people are interviewed for this research. In order to capture rich insights from the informants, two categories of people are interviewed for this research. These categories are comprised of two types of users of open space: residents of, and workers in the selected master planned communities. Even though these informants are chosen randomly, female participants should be included, since female participants may have different perceptions relative to open space in master planned communities. All interview

dialogs are recorded electronically. The interview recordings and emails are deleted after they are transcribed onto paper.

#### *3.4.2 Interview Questions*

Before starting the interview questions, a basic overview of the study is explained to the informants. Each interview lasts approximately 15-30 minutes, and field notes and an electronic recorder are used to record the interview. The interview questions are divided into two parts. The first portion concerns basic information about the informants' life in their community:

- How long have you lived in this community?
- Are you aware of the open space in this community?
- Do you use the open space in this community?

The second portion concerns their perception of open space in their community:

- Did the open spaces in this community influence your decision to live, visit, or work here?
- What are the health benefits of open spaces in this community?
- What are the social benefits of open spaces in this community?
- What are the economic benefits of open spaces in this community?
- What are the ecological benefits of open spaces in this community?
- How do you feel about the accessibility to open spaces in this community?
- What are the activities you most often do in the open spaces in this community?
- What do you most and least value about the open spaces in this community?

- And, how do you think the open spaces in this community can be improved?

### 3.4.3 Onsite Passive Observations

In order to record the activities and uses of open spaces in master planned communities, this research uses passive observations of the three selected sites. The dates of the passive observations are both weekdays and weekends (see Table 3-1). Pictures and notes are used to record the observation data. Time, weather, activities, and locations are recorded in the observation notes (see Table 3-2).

Table 3-1 Observation Schedule

Heritage Lakes	2014-3-5 Wednesday	4:00-5:00 pm
	2014-3-7 Friday	10:00-11:30 am
	2014-3-22 Saturday	10:00-11:30 am
The Lakes	2014-3-5 Wednesday	5:00-6:00 pm
	2014-3-7 Friday	2:00-3:30 pm
	2014-3-22 Saturday	12:00-2:00 pm
Wellington	2014-3-19 Wednesday	4:00-5:00 pm
	2014-3-22 Saturday	4:00-5:00 pm

Table 3-2 Observation Form

Site Name		
Date:	Time:	Weather:
Location:		
Activities:		



### 3.5 Data Analysis Procedures

In order to explore the patterns within the data and to capture and understand the relationships between users and open space, secondary data, interview data, and passive observation data are collected in this research. The secondary data are used to understand the history, context, and design amenities of the three selected master planned communities. The interview data analysis is divided into three steps. In the first step, the interview data are transcribed. In the second step, the transcribed data are coded into categories using grounded theory (Taylor & Bogdan, 1998). In the third step, a frequency analysis is used to determine the relative level of importance of the categories as perceived by the informants in this research. The data from the passive observations are compared with the interview results to support the findings and fill in any possible gaps of information that the informants may not discuss. Finally, these data are analyzed to identify the common descriptive terms of the benefits of open space in master planned communities as perceived by the informants. This analysis leads to suggestions for improvements to open spaces to benefit users, developers, and landscape architects.

### 3.6 Limitations of the Study

Two of the selected master planned communities in this study, Heritage Lakes and The Lakes, have the same developer and the same managers. This may result in very similar responses from the informants in these two communities.

In addition, due to privacy restrictions in the selected master planned communities, the timing for the passive observations is limited to the hours of 10 AM until 6 PM. The users's behaviors before or after these times are not recorded and may be different than their behaviors during these times.

### 3.7 Summary

Chapter Three introduces the research methods. In this research, three master planned communities located in North Texas are selected to be studied. Secondary data, interview data, and passive observation data are collected. These data are analyzed to better understand the users' perceptions of the benefits of open spaces in master planned communities. The findings are compared with the data in the literature review to answer the research questions posed by this thesis.

## Chapter 4

### Analysis and Findings

#### 4.1 Introduction

This chapter focuses on analysis of the collected data. The data are collected after obtaining the approval from IRB. The data can be grouped into three categories: secondary data, interview data, and passive observation data. Secondary data are collected from the managers of the master planned communities and from Internet research in order to understand the history, context, and design amenities of the three selected master planned communities. Interview data are collected on site at the master planned communities in order to understand the users' perceptions of the benefits of open spaces. The informants include residents and workers in the selected master planned communities. The observation data are collected on site by passive observation in the three selected master planned communities in order to supplement and better understand the interview data.

In section 4.2, the secondary data of the three selected master planned communities are introduced. In section 4.3, the interview data are analyzed. From these data, the users' perceptions of the benefits of open spaces are summarized, and their visions for improvements to their existing open spaces are discussed. These findings are compared with the data in the literature review. Finally, in section 4.4, the passive observation data are analyzed and compared with the interview data.

#### 4.2 Selected Master Planned Communities

##### *4.2.1 Heritage Lakes*

Heritage Lakes is a master planned community in Frisco, Texas. Located in the southwestern part of the city, the community is intended to provide a place where people can live, rest, and play. The developers are trying to create an excellent environment for

its residents, including comprehensive planning, management, and community infrastructure. Construction started in 1992, and by 1999 all of the houses in the community had been sold. The project was developed by Blackard Global Inc., an international real estate development firm founded by Jeffery D. Blackard. The Heritage Lakes community is about 200 acres. There are 615 homes in this community. The community amenities include a clubhouse, a nine-hole par 3 golf course, a swimming pool, a lazy river, croquet courts, and water falls (Blackard Global Incorporation, 2013). Residents in Heritage Lakes can participate in many types of outdoor activities in its open spaces, including golf, water sports, fishing, hiking, and biking. The major open spaces are the golf course and lakes in the middle of this community. The golf course is not fenced, and it is open to all community members. There are benches along the lakes and people can rest and enjoy the scenery. The lakes are well decorated with fountains set in, and there are different varieties of wildlife living in the lakes such as fish, ducks, herons, and egrets.



Figure 4-1 Heritage Lakes, Frisco, Texas (Source: Google Maps, 2014a)

#### *4.2.2 The Lakes (Lakes on Legacy Drive)*

The Lakes is a master planned community that is part of The Lakes on Legacy Drive. The Lakes is a master planned community located in southwest Frisco, Texas. The first home was constructed here in 1999. Its master developer is also Blackard Global Inc. The Lakes is designed as a luxury, gated community, and includes about 200 homes on approximately 100 acres of land. In The Lakes, there are extensive lakes, water falls, an outdoor theater, a trail system, and a professional tennis center (Blackard Global Incorporation, 2013). The major open spaces in The Lakes are the lakes in the middle of the community. There are different types of amenities along the lakes, such as trails, benches, and wooden decks, allowing residents the opportunity to participate in the natural environment of the community.

The Lakes is a smaller master planned community than Heritage Lakes. They have the same developer and management company, so the management conditions are similar. However, the open spaces in these three communities are different. Heritage Lakes is larger and provides more types of open spaces, such as playgrounds and a golf course. The Lakes is more confined but provides for more luxury living, so there are fewer open spaces but they have more detail, such as lakes with wooden decks.

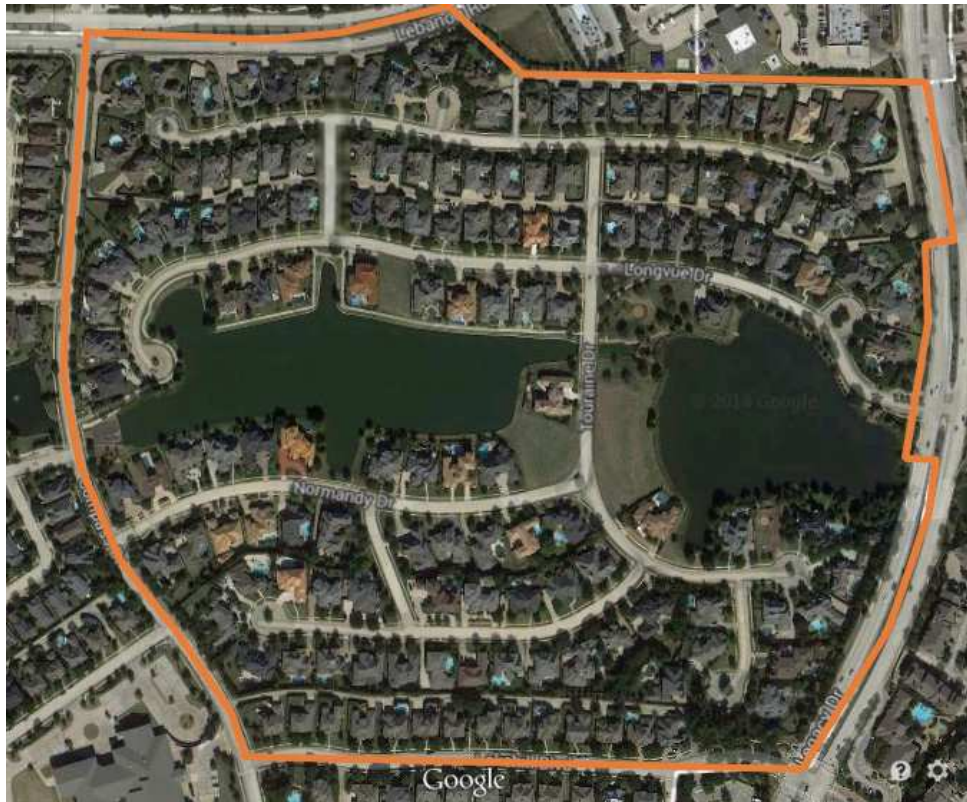


Figure 4-2 The Lakes, Frisco, Texas (Source: Google Maps, 2014b)

#### 4.2.3 Wellington

Wellington is a master planned community in Flower Mound, Texas. It is located between Dallas and Fort Worth, near DFW airport (Wellington Amenities, n.d.). Wellington was built in early 1995, and it provides over 2,000 homes on about 750 acres of land. There are various amenities in this master planned community, including swimming pools, tennis courts, golf courts, playgrounds, and walking trails. In addition, there is a community center and a common area (Wellington, n.d.). The main open spaces in this community are the three lakes, the spaces around them, and the trail system.

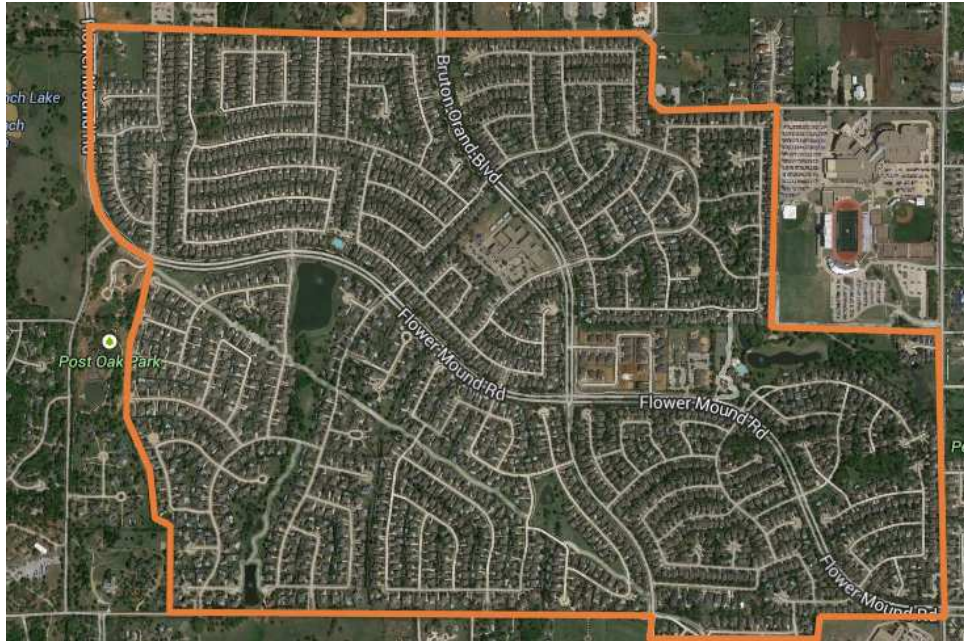


Figure 4-3 Wellington, Flower Mound, Texas (Source: Google Maps, 2014c)

#### 4.3 Analysis of Interview Data

The interview data collected play an important role in understanding the users' perceptions of the benefits of open spaces in master planned communities. In this section, the researcher analyzes the transcriptions of the interviews and summarizes the users' perceptions of the benefits of open spaces. The informants are divided into two groups: the residents and the workers in the three selected master planned communities. Twenty informants are interviewed for this research: seventeen are residents in their communities, and three are workers.

##### *4.3.1 Residents' Data Analysis and Findings:*

These analyses are revealed from the residents' data. The residents are the largest group of users of open spaces in master planned communities. They see and use the open spaces every day. In addition, the residents of master planned communities



may directly benefit from the open spaces. Therefore, their perceptions are the most important data in this research.

#### 4.3.1.1 The Relationships Between Residents and Open Spaces (Part A)

1. How long have you lived or worked in this community;
2. Are you aware of the open space in this community;
3. Do you use the open space in this community?

The questions in Part A are asked to elucidate the informants' history with their respective master planned communities, and their general experiences with the open spaces therein. All of the resident informants must be living in their master planned community; however, they may have been living there for a different number of years (see Table 4-1). Visitors to the community are not interviewed for this study. Visitors are defined as any person who has been visiting or living in their master planned community for less than one year. Visitors are not interviewed as a part of this study because they may not have significant experience with the open spaces in their communities.

Table 4-1 Residents' Years in Master Planned Communities

Informant Number	Years Lived	Community
Informant 1	1	Heritage Lakes
Informant 2	9	Heritage Lakes
Informant 3	10	Heritage Lakes
Informant 4	9	Heritage Lakes
Informant 5	1	Heritage Lakes
Informant 6	5	Heritage Lakes
Informant 7	1	The Lakes
Informant 8	2.5	The Lakes
Informant 9	2	The Lakes
Informant 10	3	Wellington
Informant 11	15	Wellington
Informant 12	15	Wellington
Informant 13	12	Wellington
Informant 14	6	Wellington
Informant 15	15	Wellington
Informant 16	9	Wellington
Informant 17	10	Wellington



In addition, in response to questions 2 and 3, all of the resident informants answered that they are aware of and use the open spaces in their communities. Therefore, all of these informants' perceptions of the benefits of open spaces are found to be relevant to the purposes of this study. However, the uses of and perceived benefits of the open spaces are different among the informants. These differences are explored in the second part of the interview questions.

#### 4.3.1.2 Residents' Perceptions of Open Spaces in their Community (Part B)

The questions in the second part are asked to examine the resident informants' perceptions of the benefits and accessibility of the open spaces in their master planned communities. In addition, these questions explore the range of activities in which the informants participate in these open spaces.

1. Did the open space in this community influence your decision to live, visit, or work here?

In response to question one, all of the resident informants except Informant 7 reported that the open spaces in their master planned communities influenced their decisions to live there. The open spaces provide them an opportunity to improve their lives.

- In Heritage Lakes, all of the informants responded that when they were looking for houses, the open spaces were the key elements to attract them to buy. According to Informant 5, "That was something that I looked into when I saw the open space and the facility, so we can just from our house walk and exercise, be outdoors." The informants reported they would not live in a master planned community without any open spaces. The open spaces in their community provide them a way to connect with nature and gain the benefits of open spaces. According to Informant 2, "I

like the view, I just like...having the ability to be outside and walk around and exercise and do various things..."

- In the Lakes, two of three informants were looking for a place that could provide a walkable environment. According to Informant 9, "when we were looking for homes, we were looking for walk areas that we could walk at the lake, that's what we wanted, we wanted somewhere where we could walk around and see." However, there was one informant who said that the open spaces were not the primary reason to live at this master planned community. According to Informant 7 "My fiancé lived here. That's the only reason." The relationships with family are also important.
- In Wellington, all informants indicated that open spaces in their master planned communities influenced their decision to live there. The open spaces in their communities provide opportunities to enhance their qualities of lives. The open spaces provide the benefits to connect with nature and have activities in a nature setting rather than urban area. According to Informant 14, "It just adds to the quality of life being able to walk, run, play ball versus just a confined space." In addition, Informant 13 said, "That's why we like this particular part of the town because we can look out our window and actually see trees and not be surrounded by other suburban housing, highways, that sort of thing. It makes it a happier place to live."

## 2. What are the health benefits of open spaces in this community?

In response to question two, all the resident informants indicated awareness of the health benefits derived from their master planned communities. The health benefits

can be physical and/or mental health benefits. However, the health benefits of open spaces in a master planned community are something that cannot be precisely measured. The informants have different opinions about the health benefits of open spaces.

- In Heritage Lakes, the open spaces are considered important to provide healthy lives. They provide opportunities for active recreation such as sports and walking. As Informant 2 said, "I think it promotes exercise and just more walking around, walking around the lake outside." In addition, Informant 4 discussed the heart benefits of open spaces: "Cardio fitness from walking, cardio fitness from playing golf, general fitness playing with my grandkids in the playground." The open spaces are also considered by these residents to be integral to mental health. The open spaces in master planned communities provide them a location to escape from their daily urban lives. Experiences with nature, such as visiting lakes and walking in the sun, can help people relax themselves. According to Informant 5, "It's anti-stress...(when) we see open space, we always go for the open space. So, it's part of our culture to be in the open space, to be outdoors. So we definitely think it's anti-stress..." Also, Informant 1 believes that the open spaces can contribute to children's growth: "The children, they grow up healthier, they play outside, they learn about nature, they interact with the birds and the ducks and the pets."
- In The Lakes, all the residents are happy to use the open spaces in their community for exercising. They believe that physical activities can help their health. According to Informant 9, "It exercise - it gets me to get out and gets my pet out." In addition, Informant 8 said "For us, it means we

walk our dog three miles a day.” This means that for residents of the Lakes, having outdoor time with their animals is an important health benefit of open spaces.

- In Wellington, five of the eight informants mentioned that exercise is the most important health benefit in their community. As Informant 14 said, “More exercise, more outdoor enjoyment versus just sitting inside.” The other informants indicated that the open spaces in their master planned community help them relax from their busy lives. According to Informant 13, “It’s easier to relax. It’s a lot calmer. So it’s just easier to live here, it’s less stressful.”

### 3. What are the social benefits of open spaces in this community?

In response to question three, the most cited social benefits of open spaces in master planned communities are as important places for residents to meet new people and make new social connections. Making new social connections is connected with the health benefit. The residents in the community play and have events together, so they have the opportunity to know each other and foster a healthy sense of community.

- In Heritage Lakes, three residents believed that open spaces in their community provide them with places to meet with people. As Informant 5 said, “You meet new people, you interact with the community. You have a chance to meet new people when you’re walking around...” and at that time he showed this researcher the way he makes friends with others in open spaces. He talked to another man at the interview site and asked his name to make friends with him. In addition, two other informants indicated that most of their community events are outdoor-based and provide a place to get to know much of their community because of the

various people who attend them. When residents communicate in the open spaces, they can develop their relationships with others in their community and create a sense of place. According to Informant 1, " Well, you get to know and connect to your community 'cause you meet at the park, you meet at the clubhouse, you get to know the neighbors, you get to know what they do, what you do."

- In The Lakes, all of the residents reported that the open spaces in their community provided them places to meet people. Informant 8 said, "It's an excellent opportunity to gather and meet your neighbors." However, as Informant 9 indicated, "You get to at least know your neighbors a little bit. It's a very private community. I rarely see people out..." She later gave the researcher an example; the community had a party but only 15 people came.
- In Wellington, seven of the eight informants agreed that open spaces provided them opportunities to have activities with family, friends, and neighbors. For these residents, it is easier to meet people when they are doing activities together. Informant 13 said, "Oh, there's more people actually outside rather than just inside their homes, so we tend to socialize more. I know more of my neighbors here than I do in other communities. We spend more time outside and just makes us happier and more happy to be around each other."

#### 4. What are the economic benefits of open spaces in this community?

In response to question four, all residents indicated that there are economic benefits generated from the open spaces in their master planned communities. The primary economic benefit is the increase in property value. Other residents also

mentioned other economic benefits of open spaces, such as job opportunities and the free use of a community amenity.

- In Heritage Lakes, all of the resident informants stated that the open spaces in their master planned community provided them with economic benefits. Four of the informants reported that they believed the open spaces in their community raised their property values. According to Informant 6, the open spaces “help the property value because I mean not a lot of places have golf courses in your own community, you can play for free. With the dues that you pay definitely benefit the economic.” In addition, one informant stated that the open spaces in the community saved money by not having to join a health club.
- In The Lakes, all the resident informants agree that the open spaces provide economic benefits for their community. The open spaces attract people and raise property values.
- In Wellington, four of eight resident informants indicated that the open spaces in their master planned community add value to their home prices. According to Informant 14, “Well, my kids have access to the parks, they have access to the basketball and swimming and then that allows them to be able to do things and then it adds to the overall value of the home prices by having the extra space.”

##### 5. What are the ecological benefits of open spaces in this community?

In response to question five, all of the resident informants indicated that the open spaces in their master planned communities created ecological benefits for them. The ecological benefits reported can be divided into two basic categories. The first category of ecological benefits is improved living conditions, such as improved air quality or

reduced noise pollution. The second category of ecological benefits concerns being close to wildlife. Many of the informants reported that the habitat created by open spaces provides them with opportunities to interact with wildlife like birds and ducks.

- In Heritage Lakes, all of the resident informants perceived the open spaces in their community to have a positive impact on the reduction of air pollution. For example, according to Informant 2, "Since it's not so congested with homes and cars and it's probably--it's probably a little bit healthier of an area I would say." Also, since there is no automobile traffic in the open spaces of this community, Informant 1 suggested that the open spaces reduce the noise pollution there. In addition to the perception of improved quality of environment, open spaces are also perceived to have a significant impact on wildlife by providing habitats. For example, as Informant 6 said, "I guess the place for all the ducks, and all the birds, and I mean nobody messes with them and everybody releases the fish, so I think that it's a good positive influence." Finally, the open spaces in this community provide an ecological experience that urban living does not. According to Informant 3, "And if not for the open spaces that you talk about, the golf course and the water specifically, my kids would be completely urbanized and not be used to seeing squirrels and rabbits and ducks and geese, skunks, and armadillos and snakes and all that stuff. "
- In The Lakes, all of the resident informants agreed that there are ecological benefits of open spaces in their community; however, they all centered on interaction with wildlife and how that made them feel. For example, Informant 9 reported that "...we see a lot of birds a lot of ducks.

There's a bobcat who lives in this area here. So that to me just I feel like I'm out of the middle of the city and into a private area."

- In Wellington, all of the resident informants indicated that trees are preserved in open spaces, and that they believe the trees in open spaces improve air quality. As Informant 11 said, "I do know the value of plants and trees and the cleansing of the air by the trees and so forth, so I'd say that way is better than concrete."

6. How do you feel about the accessibility to open spaces in this community?

In response to question six, all of the resident informants indicated the open spaces in their master planned communities were easily accessible. However, as all three communities are gated, all of the informants acknowledged that only residents, visitors, and workers in the community have access to the open spaces.

- In Heritage Lakes, all of informants believed that the open spaces are surrounding their houses and they are nearby. The users can walk to the open spaces instead of driving a car. The open spaces are open to them anytime. As Informant 6 said, "... it's always open normally and you can fish anytime you want to, you can play golf anytime you want to..."
- In The Lakes, two informants reported that the open spaces are part of their master planned community, and the open spaces users do not need to secure access permission. There are no obstacles between their houses and open spaces. According to Informant 8, "This community if you live within it, it's gated and it's fenced around, but if you live in it, it's very accessible. There are no restraints or restrictions to any portion of, you know, property where the open space area to keep you from going and enjoying it."



- In Wellington, all of the informants indicated that the open spaces in their master planned community are accessible. Though Wellington is a large master planned community, the informants reported that they still walk to the open spaces therein. As informant 13 said, "It's easy to get out and about just to the open spaces, you don't have to drive to a park miles away. You just walk there, there's lots of water. I've seen people fishing nearby. It's very easy to get to, it's very convenient."

7. What are the activities you most often do in the open spaces in this community?

In response to question seven, the resident informants divided their responses between active recreation, such as jogging, riding bikes, fishing, and golfing, and passive recreation, such as going on family outings or simply watching other people.

- In Heritage Lakes, four of the six informants said that walking or jogging are their favorite activities in their master planned community. The other activities they reported they enjoy participating in are golfing and fishing. These activities are related to the key features and amenities provided by their community.
- In The Lakes, all three informants reported that they walk around the lake. They also reported that they hold social activities in their open spaces, like community events. For example, Informant 9 said, "...we've had like a community party here last summer, we had a barbecue with the whole community was invited...During Christmas, they did Christmas caroling up on the amphitheater."
- In Wellington, seven of eight informants reported that they use the trails to walk, run, or cycle. According to them, these are some ways for them

to enjoy the benefits of the open spaces in their master planned community. As Informant 13 said, “I tried to jog at least three or four times a week just in the – around the parks and the wooded areas around here. And that actually encourages me to run more often than I would if I was living in a more urban environment.” Finally two informants said that feeding the ducks is the activity they most often do in their open spaces.

8. What do you most and least value about the open spaces in this community?

In response to question eight, all of the resident informants suggested that they love the open spaces in their communities. They cited various elements that they most value about the open spaces. It was difficult for the resident informants to cite the elements that they do not value. However, the perceptions they provided about the elements they value the least are important for further development.

- In Heritage Lakes, all of the informants reported that they are satisfied with the open spaces and enjoy the benefits they provide. According to Informant 5, “You know, the most it’s everything that I told you. I mean to be here right now in the sun, outside your house, breathing fresh air.” The residents can have contact with the nature in their open spaces. Also, according to Informant 1, “Well, mostly I value the open space...for bringing up children and families and for relaxing. But, there isn’t anything – I mean there is nothing negative. Actually it’s more valuable, I value it more.” In addition, the informants also reported that they value the easy accessibility of the open spaces in their master planned community. The residents can enjoy the benefits of their open spaces anytime they want.

Although all informants reported that they like the open spaces in their community, they did respond that what they least value is the community fees. They need to pay a significant amount to their HOA (Home Owner Association) to maintain the open spaces.

- In The Lakes, all of the informants reported that they most value the beautiful environment of the open spaces. Also, this environment can provide shelter for wildlife; as Informant 7 said, “I most value the fact that there can be some wildlife and I just don’t like to see buildings everywhere.” Also, he said, “...cause it makes me feel like our world is not getting too busy and too crowded. So that makes me feel good.” The open spaces in this master planned community help the residents escape from an urban life.

The aspect least valued about the open spaces in this community is the cost of maintenance. Informant 9 said, “I feel like if we had a playground, maybe not so much water. We don’t have playground for little kids and I wish there was more community involvement.” This suggests that for this resident, because there is so much water, there is not enough space for other important activities, such as a playground. Therefore, the open spaces of a community should be able to provide diverse functions to satisfy the desires of the residents.

- In Wellington, four of the informants indicated that the open spaces in their community provided room for them to exercise, and are safe and accessible. As Informant 10 said, “The most is having – just having activity to do and just feeling like you’re not just in the city and it’s all concrete and just a nice place to go after work.” Also, three of the

informants said the open spaces in their master planned community help them to release the pressure from the stressful lives. For example, Informant 13 said, “The lifestyle obviously. It really has made living here a lot better, just it’s more it really eases the stress when I get home from work to be able to unwind and relax in this neighborhood with open spaces and accessible parts and greenery.”

The aspect least valued about open spaces in Wellington is the management of the environment. Two informants reported that when some trees are cut down in their open spaces, they are often not replaced with new trees. Because new trees are not being planted, the residents are losing areas for shade and wildlife.

9. How do you think the open spaces in this community can be improved?

In response to question nine, all of the resident informants like the open spaces in their community, and most of them reported that continued maintenance is the best way to improve the open spaces. In addition, the informants suggested that they would like more open spaces that could provide for various functions. The informants like the spaces in which they can engage so they can foster a healthy sense of community and develop a healthy lifestyle.

- In Heritage Lakes, all six informants reported that they value the open spaces in their master planned community. However, four of the six informants indicated that the best way to improve the open spaces is with improved maintenance. Also, making the open spaces more usable for diverse functions is another area cited for improvement. For example, according to Informant 2, “I would say, in this community not having as much water – so much water. Instead, it would be more land because it’s

nice to see all the water here, but it would better if there is a larger park like a baseball field or something like that instead of the water.”

- In the Lakes, all three informants indicated that the open spaces in their community are beautiful, but the open spaces should be more usable. For the residents of this master planned community, the lake and vacant land is not so useful to them. According to Informant 7, “...there should be more open space. When they plan communities, they should plan for more places like that, you know, just around corners would be nice.”
- In Wellington, five of the informants indicated that it would be better to have longer trails and more playground areas. As Informant 11 said, “We need more walking paths and more bike paths to get the bikers off the streets.” Two informants reported that better maintaining the open spaces and adding more trees are ways to improve the open spaces. Finally, Informant 13 said “I don’t really like those, like the ponds you can see right over there just for having a fountain in the middle of the town. But again, it does encourage lot of kids and families to play and fish and play with their dogs over there. I see them there every day, so it really just makes it a happy tightly built community. So I would like to see more of it whenever possible.”

#### *4.3.2 Workers’ Data Analysis and Findings:*

These analyses are revealed from the workers’ data. Workers are defined as the people who are responsible for the management or maintenance of their master planned communities, or those who are employed by the HOA of their master planned community. The workers are another important group of users of open spaces in master planned communities. Even though there are fewer workers than residents, they also come and

use the open spaces in their master planned communities almost every day. In addition, because some of workers also maintain the open spaces, they may perceive the benefits of open spaces differently than the residents do. Therefore, these data are an important supplement to users' perceptions of open spaces benefits.

#### 4.3.2.1 The Relationships Between Workers and Open Spaces (Part A)

1. How long have you lived or worked in this community;
2. Are you aware of the open space in this community;
3. Do you use the open space in this community?

The questions in Part A are asked to elucidate the informants' history with their respective master planned communities, and their general experiences with the open spaces therein. All of the worker informants must have been working in their master planned community for at least one year; however, they do not have to be living there (see Table 4-2). In fact, two of the worker informants are not living in their community.

Table 4-2 Informants Type and Years in Master Planned Communities

Informant Number	Years Worked	Type	Community
Informant 18	6	Worker (Management)	Heritage Lakes and The Lakes
Informant 19	14	Worker (HOA - Employee)	Heritage Lakes
Informant 20	1	Worker (Maintenance)	Heritage Lakes

Finally, all of the worker informants are aware of and use the open spaces in their communities. They maintain the open spaces or use them after work.

#### 4.3.2.2 Workers' Perception of Open Spaces in their Community (Part B)

The questions in the second part are asked to examine the worker informants' perceptions of the benefits and accessibility of the open spaces in their master planned

communities. In addition, these questions explore the range of activities in which the informants participate in these open spaces.

1. Did the open space in this community influence your decision to live, visit, or work here?

In response to question one, two of the worker informants indicated that the open spaces in their master planned communities influenced their decisions to work there. As Informant 20 said, "Because with it being so big, people are more happy and they feel like, you know they can almost like do whatever they want in a way. So they feel more happy and at ease." This suggests that some workers are internally motivated to choose jobs that allow them to be around happy people. However, not all the workers have their job there because of the open spaces. According to Informant 18, "Well, this is our client, Heritage Lakes HOA is our client and so, they were the management company. I have an interest in this property because it's our client and so, but I don't live here and we were selected by them for an interviewing and engagement process." This suggests that some workers are externally motivated when choosing their occupation, meaning they work in the places their jobs demand.

2. What are the health benefits of open spaces in this community?

In response to question two, all the worker informants are aware of the health benefits provided by the open spaces in their master planned communities. These open spaces provide more opportunities to exercise, and they are safe for their users. For example, Informant 18 indicated that, "So, it's more of just the appearance of feeling safe in your community knowing that you have these things readily available to you and that you can go out and enjoy the playground with your children. You can walk your dog around the lake. You can throw rocks in the lake. You can come into this clubhouse and

not – knowing that this is part of your investment in the addition to the home in which they live in.”

3. What are the social benefits of open spaces in this community?

In response to question three, all three of the worker informants agreed that the open spaces in their master planned communities provide them space to meet friends and have activities together. Also, Informant 18 suggested that the open spaces in their communities help users to enhance a sense of community: “So, it’s a sense of community and just allowing people to get together and then obviously if you see people out and about walking around or having a picnic then it leads other people to maybe come up and visit with them communicate with them because they know that’s a neighbor that just lives down the street you know.”

4. What are the economic benefits of open spaces in this community?

In response to question four, all of the worker informants reported that the open spaces in their master planned communities add value to the home prices. The worker informants suggested that focusing on maintenance is a way to provide value to their communities. The maintenance services keep the conditions of open spaces good, which helps master planned communities stay attractive to potential home buyers. According to Informant 18, “And so, when they see those amenities they want to make sure that they’re well-maintained and that they are attractive and so, when somebody like yourself comes into the community that’s never been here, you look around and you think, wow, this is a nice place to live.”

5. What are the ecological benefits of open spaces in this community?

In response to question five, two of the worker informants indicated that the open spaces in their master planned communities have ecological benefits such as plants and wildlife. For example, according to Informant 19, “There’s wildlife and that’s, you know,



you get to appreciate what that brings. You know there's also the fish in the lakes and, you know, you can appreciate what that does for the neighborhood."

6. How do you feel about the accessibility to open spaces in this community?

In response to question six, all the worker informants indicated that there are various ways to access the open spaces in their master planned communities. According to them, the open spaces are easily accessible due to the proximity of housing near them. Informant 19 reported that "I think it's very accessible because the latest neighborhoods plans the homes sitting around what they call little pocket parks and those are just wide open spaces where there'll be benches and maybe a trash can." However, the open spaces are private and reserved for the residents and their guests. According to Informant 18, "Well, it's accessible to all homeowners that pay into the homeowners association, but it's not readily available to people that do not live here. So, homeowners will have guests and they'll have out of town family members and people that – kids that come home from college and stuff like that that may stay for a period of time, but it's not open to the public."

7. What are the activities you most often do in the open spaces in this community?

In response to question seven, two of the worker informants said they exercise after work. According to Informant 20, "Running. Running is the big one and it's big, big one. And there's different like some areas have hills, so that's a good thing as well." Finally, Informant 20 discussed the social events hosted in the open spaces: "There is about I'd say twenty events that are budgeted and paid for by the HOA every year that are held within this facility that, you know, we encourage homeowners to participate. And so, that's another opportunity for them to engage with their fellow neighbor."

8. What do you most and least value about the open spaces in this community?

In response to question eight, all of the worker informants indicated that the open spaces in their master planned communities provide them places to escape from the busy city. As Informant 18 said, "But, you know, honestly I value all the open space here because it's just kind of a freedom you know...When you're in that midtown Manhattan, open space is not an option, you're kind of closed in. And here, you're just able to breathe and take it in and enjoy and see the big sunsets."

However, according to Informant 18, the aspect least valued about the open spaces deals with vandalism and theft. According to Informant 18, "There is an aspect to homeowner's association of vandalism and theft, right? So because it is open and available to people, it's easy to abuse and vandalize or to steal from. And so, that's the negative side of having a facility like this where it's available to a thousand people and most people are very respectful of it because they pay into it, but some people are not."

9. How do you think the open spaces in this community can be improved?

In response to question nine, two of the three worker informants indicated that there should be more details than just trees and grass in the open spaces in their master planned community. However, Informant 18 said that maintenance and budgeting is another way to improve the open space. According to Informant 18, "Well, I think improvement would basically be maintenance just to make sure that everything is budgeted annually and as things come our they're addressed quickly. So, the expectation is that whatever the problem is, management, somebody like myself, is going to come in and work to correct it immediately and the funds are going to be available and there's going to be a budget that holds me accountable to making sure it gets addressed properly."

#### 4.4 Passive Observations

Observations are conducted in the three selected master planned communities using field notes and pictures taken by camera. The information such as date, time, weather, location, and activities are recorded in the field notes. The activities the users do in open spaces are related to the four possible benefits of open spaces: health, social, economic, and ecological. For example, when users are running on a trail, they are getting a health benefit, when users are having a community event, they are getting a social benefit, and when users are feeding ducks, they are getting an ecological benefit. However, economic events are not measurable with passive observations. Therefore, these passive observations focus on the types of activities done in various types of open spaces.

##### *4.4.1 Heritage Lakes Observation*

As mentioned in 4.1, the open spaces' amenities in Heritage Lakes are the lakes, golf courses, trails, playgrounds, and some open spaces on the edges (shown from figure 4-4 to 4-7).



Figure 4-4 Golf Course and Lakes in Heritage Lakes



Figure 4-5 Trail Around Lakes in Heritage Lakes



Figure 4-6 Playground in Heritage Lakes



Figure 4-7 Open Spaces on the Edge

In the morning on the weekdays, there are only a few people using the open spaces in Heritage Lakes. Most of the users are elderly people living there. They usually

exercise on the trail system, such as by running, jogging, and walking their dogs. In the afternoon, parents take their children to the playground. The children play together in the playground, and some parents sit and talk with each other while they are watching their children. Also, a few people play golf on the golf course. During the weekend, more people come to open spaces with their family members and/or friends. Most of them use the trail and playground. While they are walking along the lakes, some users bring their children to see the ducks and let their children have interaction with animals. The open spaces on the edge of Heritage Lakes are seldom used.

#### *4.4.2 The Lakes Observation*

The main open spaces in The Lakes are the lake in the middle of the community, the outdoor theater, the waterfall, and the trail around the lakes (shown from figure 4-8 to 4-11).



Figure 4-8 Lakes in The Lakes





Figure 4-9 Waterfall in The Lakes



Figure 4-10 Outdoor Theater in The Lakes

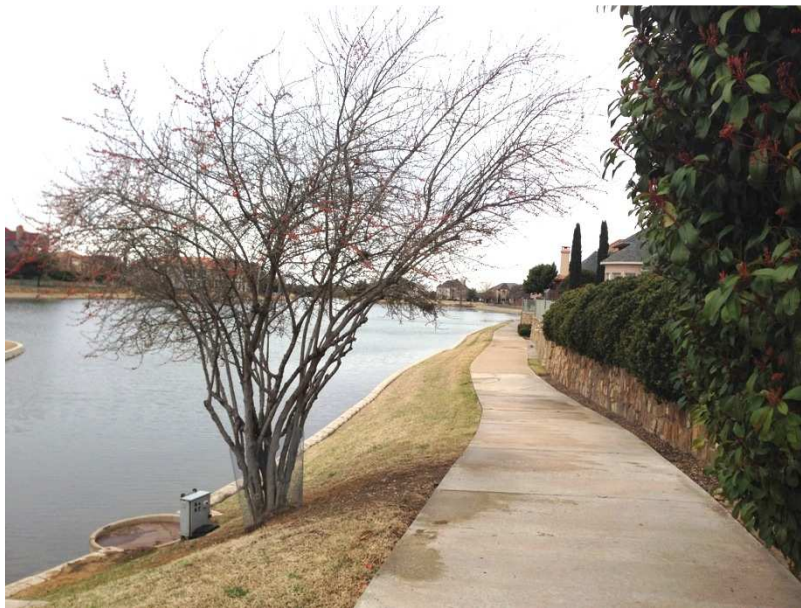


Figure 4-11 Trails Around Lakes in The Lakes

The Lakes is a quiet community, meaning only a few people use the open spaces in this community, especially during the weekdays. This may be because of the



lack of amenities provided by this community. For example, they have a trail system but no playgrounds or basketball courts. During the weekend, there are more children playing on the streets. They play in groups and walk along the lake. Most of the users run or walk with their dogs on trails. During the observation of this community, some of the children climbed the stone seats of the outdoor theater, but the outdoor theater is empty most of the time. Nobody used the vacant open spaces, such the hill beside the waterfall.

#### *4.4.3 Wellington Observation*

The main open spaces in Wellington are the lakes, playgrounds, walking trails, and open spaces beside the lakes (shown from figure 4-12 to 4-15).



Figure 4-12 Lakes in Wellington



Figure 4-13 Playground in Wellington



Figure 4-14 Walking Trails in Wellington





Figure 4-15 Open spaces Beside Lakes in Wellington

In Wellington, most users go to lakes to enjoy the environment. Parents bring their children to the lakes and children fish in groups. There are also many users jogging, running, or cycling on the walking trails. This is the only community in which cycling was observed. Most of the users come in groups with their spouses, children, or pets. Even though it is a large master planned community, most people walk to the open spaces. In addition, there are more users during the weekend. This community seemed to be the

busiest of the three communities studied. This may be because it is the largest of the three, has a more extensive trail system, and/or has the most amenities offered, such as basketball courts.

From the passive observations made in these master planned communities, it is noticed that the majority of users walk, run or cycle on the trails. Many of the users go to the lakes and enjoy the environment there. They play games or exercise with their families or friends. Many of the children play on the playground. There are more users during weekends than weekdays.

Because of the limit of time, these observations were conducted in March, 2014. The weather during the observations was still somewhat cold and windy. Most users do not actively participate in outdoor recreation during cold and windy weather. In addition, some amenities such as the swimming pools were closed because of the weather. The weather is considered a limitation that influences how and when open space is used.

#### 4.5 Summary of Emerging Themes

Twenty informants were interviewed for this research. Seventeen of the informants are residents and three are workers. The analysis of secondary data, interviews, and passive observations are used to identify descriptive words that are common to the informants. From analysis of these common descriptive words, the emerging themes for this research are revealed.

The descriptive words from each informant are listed in Tables 4-3, 4-4, 4-5, and 4-6. Table 4-3 lists the descriptive words from Heritage Lake resident informants, Table 4-4 from The Lakes, Table 4-5 from Wellington, and Table 4-6 lists the descriptive words from the worker informants. Frequency analysis is used to identify the most common descriptive words and phrases from these four Tables, which helps elucidate the emerging themes for this research. These common descriptive words and emerging

themes are important to this thesis as they respond to the research questions concerning the users' perception of open spaces benefits in master planned communities in North Texas.

Table 4-3 Heritage Lakes Informants' Descriptive Terms

		Informant 1	Informant 2	Informant 3	Informant 4	Informant 5	Informant 6
1	Did the open spaces in this community influence your decision to live, visit, or work here	Yes	Yes	Yes	Yes	Yes	Yes
2	What are the health benefits of open spaces in this community	Growth up Happier, interact with animals	Exercise, walk	Exercise	Exercise	Anti-stress	Exercise
3	What are the social benefits of open spaces in this community	Meet people, make friends	Meet people	Meet people	Meet people	Meet people	Meet people
4	What are the economic benefits of open spaces in this community	Raise property value	Raise property value	No comment	Raise property value	Save money on using other amenity	Raise property value
5	What are the ecological benefits of open spaces in this community	Clear air, no noise	Clear air, habitat for wildlife	Habitat for wildlife, interaction with nature and animals	Habitat for wildlife	Preserve nature (environment and wildlife)	Habitat for wildlife
6	How do you feel about the accessibility to open spaces in this community	Easy, walk	Easy, walk	Easy	Easy, walk	Easy, walk	Easy, walk
7	What are the activities you most often do in the open spaces in this community	Golf, basketball, soccer, fish	Running, walk, golf	Walk	Golf, walk	Jogging, talk with others	Golf and fish
8	What do you most value about the open spaces in this community	Relax with family and kids	View, openness	Easy access		Interact with nature, easy access	Place for exercise
	Least value	Nothing negative	Cost to maintain	Nothing negative	Nothing negative	Nothing negative	Nothing negative
9	How do you think the open spaces in this community can be improved	House close to the lakes, more picnic area	Something instead of so much water, like more baseball field	Maintenance	Maintenance	More trees	Maintenance

Table 4-4 The Lakes Informants' Descriptive Terms

		Informant 7	Informant 8	Informant 9
1	Did the open spaces in this community influence your decision to live, visit, or work here	No	Yes	Yes
2	What are the health benefits of open spaces in this community	Exercise	Exercise, walk	Exercise
3	What are the social benefits of open spaces in this community	Meet people, kids make friends	Meet people	Meet people
4	What are the economic benefits of open spaces in this community	Raise property value	No comment	Raise property value
5	What are the ecological benefits of open spaces in this community	Habitat for wildlife	Habitat for wildlife	Habitat for wildlife
6	How do you feel about the accessibility to open spaces in this community	Easy, walk	Easy, walk	Easy
7	What are the activities you most often do in the open spaces in this community	Walk	Walk	Community events
8	What do you most value about the open spaces in this community	Not busy or crowded, environment with wildlife	Interact with nature and wildlife	Beauty of environment
	Least value	Nothing negative	Cost to maintain	Need more open spaces that can engage people
9	How do you think the open spaces in this community can be improved	More trees	More open spaces can be used (no amphitheater)	Maintenance



Table 4-5 Wellington Informants' Descriptive Terms

		Informant 10	Informant 11	Informant 12	Informant 13	Informant 14	Informant 15	Informant 16	Informant 17
1	Did the open spaces in this community influence your decision to live, visit, or work here	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
2	What are the health benefits of open spaces in this community	Exercise and interact with nature	Exercise	Exercise	Better air, less noise, less stress	Anti-stress	Exercise, fresh air	Interact with nature, less stress	Exercise
3	What are the social benefits of open spaces in this community	Meet people, family	Meet people	Meet people, friends	Meet people	Meet people	No comment	Meet people	Meet people, people play together
4	What are the economic benefits of open spaces in this community	Raise property value and save money on activities	Raise property value	Raise property value	Invest in outdoor activities	Save money on using other amenities, raise property value	City improve with more people moving in	No comment	No comment
5	What are the ecological benefits of open spaces in this community	More trees	Clean air	Improve air quality	Better air, less waste to run off, less noise pollution	More trees, less noise	Cotain ecosystem	More trees, water	Preserve trees
6	How do you feel about the accessibility to open spaces in this community	Easy, walk	Easy, walk	Easy	Easy, walk	Easy, walk	Easy, walk	Easy, walk	Easy, walk
7	What are the activities you most often do in the open spaces in this community	Walk, feed ducks, play on playground	Walk	Walk	Jog	Run, walk, play balls with kids	Walk, run, bike	Feed ducks and fly kites	Run and walk
8	What do you most value about the open spaces in this community	Relax away from city	Aesthetics, exercise	Exercise	Ease stress, accessible, nature environment	Easy access	Place for exercise and interact with nature	Places to hang out	Safe place for kids to walk and ride bicycles
	Least value	Nothing negative	Nothing negative	Nothing negative	Fewer trees, trees cut down	Less privacy	Nothing negative	Nothing negative	Trees cut down
9	How do you think the open spaces in this community can be improved	More playground, more trees	More walking path, more bike path	More trees, maintenance	More tree, more open spaces, not so many ponds	Maintenance	More receiving areas, like picnic tables	More ponds and trails around ponds	More trees, lengthen the trails

Table 4-6 Workers' Descriptive Terms

		Informant 18	Informant 19	Informant 20
1	Did the open spaces in this community influence your decision to live, visit, or work here	No	Yes	Yes
2	What are the health benefits of open spaces in this community	Exercise	Exercise, walk	Exercise
3	What are the social benefits of open spaces in this community	Meet people, kids make friends	Meet people	Meet diverse types of people
4	What are the economic benefits of open spaces in this community	Raise property value	Raise property value	Cost to maintain
5	What are the ecological benefits of open spaces in this community	Fresh air, additional to home itself	More trees, habitat for wildlife	Better soil
6	How do you feel about the accessibility to open spaces in this community	Easy, walk	Easy, walk	Easy, more entry ways
7	What are the activities you most often do in the open spaces in this community	Social events	Walk	Running
8	What do you most value about the open spaces in this community	Easy access, meet people	Interact with nature, release pressure	More money
	Least value	Cost to maintain	Nothing negative	More are to be maintained
9	How do you think the open spaces in this community can be improved	Maintenance	Plant more flowers, maintenance	Add more detail

#### 4.5.1 Open Space Benefits

According to the descriptive words from the resident and worker informants in the three selected communities, open spaces in master planned communities are a major consideration when deciding where to live. Almost ninety percent of the informants reported that the open spaces in their community influenced their decision to live there. According to these informants, the open spaces in their master planned communities provide them with a different and more relaxed style of living as compared to life in an urban city environment. The informants believe they are provided with health, social, economic, and ecological benefits from open spaces.

Physical exercise is the most important health benefit of open spaces as perceived by the informants in this study. Seventy-five percent of all informants described the health benefits of open spaces as opportunities for exercise such as running, jogging, playing golf, cycling, and fishing. In addition, twenty-five percent of the informants suggested that open spaces provide opportunities for improving mental health, for example, by releasing stress or affording their children with places to grow up happier (see pie chart 4-16). From the passive observations, it is noted that there are many users participating in different kinds of exercises in open spaces.

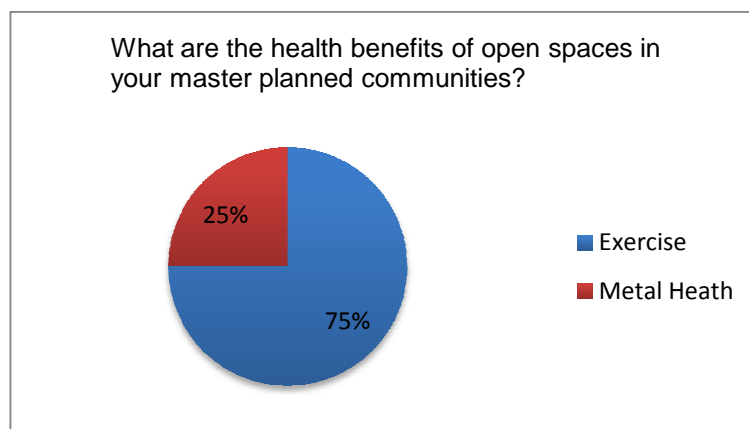


Figure 4-16 Health Benefits Pie Chart

Furthermore, nineteen of the twenty informants reported that the most important social benefit of open spaces comes from providing them places to meet and interact with other people. According to these informants, they can play with friends and family, host or participate in community events, and make new friends in the open spaces in their communities.

An increase in property value is the most important economic benefit of open spaces according to the informants in this study. Half of the informants indicated that the open spaces raise the property value in their master planned communities. In addition, twenty percent of the informants reported they could save money by freely using the open spaces in their communities instead of, for example, joining a gym with monthly dues. Finally, fifteen percent of the informants noted that the workers who manage the open spaces in their communities are paid to do so (see pie chart 4-17).

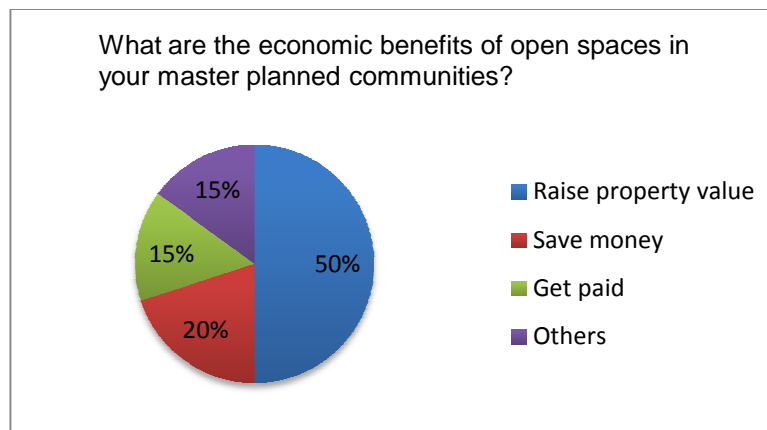


Figure 4-17 Economic Benefits Pie Chart

Sixty-five percent of the informants in this study reported that the open spaces in their master planned communities provide them opportunities to improve their living environment, for example, by increasing the amount of fresh air, reducing noise pollution, and preserving trees. Thirty-five percent of the informants also noted that open spaces

provide the living habitat for wildlife, creating opportunities for the informants to interact with the wildlife, for example, by feeding ducks (see pie chart 4-18).

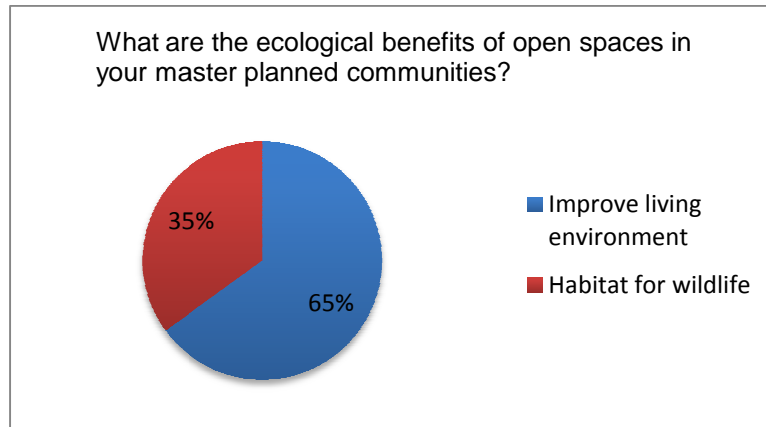


Figure 4-18 Ecological Benefits Pie Chart

These data indicate that the informants perceive that the open spaces in their master planned communities provide a variety of benefits for them. Landscape architects who design open spaces for master planned communities should consider these different types of benefits in order to provide more opportunities to attract a variety of users. For example, for the health benefits, trails are important for all types of exercise, and playgrounds are important for children. Adding trails and playgrounds is also an economic benefit for users who do not have to leave their communities for recreation. For the social benefits, focal points that encourage both passive and active activities can foster a healthy sense of community. Finally, adding preserved nature areas for wildlife can provide an ecological benefit.

#### *4.5.2 Accessibility and Activities*

All informants indicated that the open spaces in their master planned communities were easily accessible. According to them, there are not any obstacles between them and the open spaces in their communities. In addition, the informants reported that they could use their open spaces whenever they wanted to. All of the

informants noted that they walk, not drive, to the open spaces in their communities. According to them, parks, playgrounds, and ball fields are all within a walkable distance and near their houses, with streets connecting all of these places together.

According to this research, running, jogging, and walking are the primary activities done in the open spaces, and these activities are mostly done using trail systems. In fact, seventy-five percent of the informants reported that they most often run, jog, or walk in the open spaces in their master planned communities (see Figure 4-19). Other activities reported by the informants in this research are playing ball games, interacting with animals, and participating in social events. Therefore, there is an emerging need to design well developed trail systems that connect different open spaces in master planned communities. These open spaces may contain the trail systems, ball fields, preserved areas, and open areas in master planned communities. Landscape architects should provide different types of open spaces so users can have more opportunities to participate in the variety of activities they most enjoy.

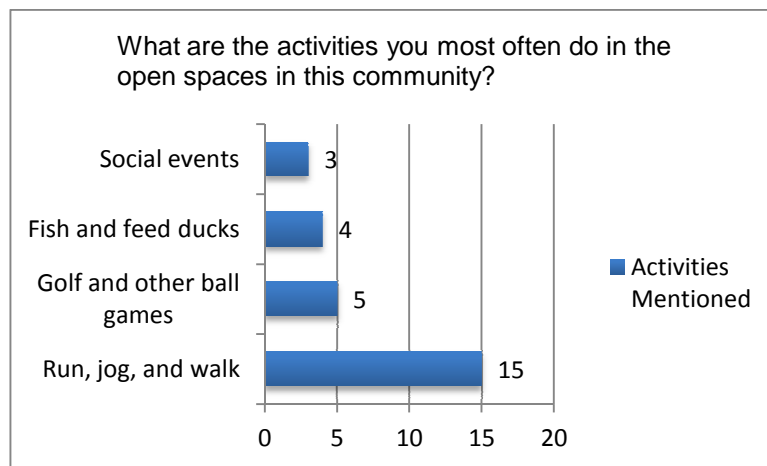


Figure 4-19 Activities Pie Chart

#### 4.5.3 Open Spaces Improvement

The informants in this research reported that they appreciate the open spaces in their master planned communities, and they noted the various elements of the open spaces that they value the most (see Figure 4-20). However, only one informant discussed the economic benefit as the most valued element of open spaces. This suggests that while users gain economic benefits from the open spaces in their master planned communities, it is generally not their primary consideration when deciding where to live.

In addition, sixty percent of the informants in this research reported nothing negative about the open spaces in their master planned communities. However, twenty percent of the informants did note that they are not happy with the cost to maintain these open spaces. Finally, fifteen percent of the informants indicated that they are unhappy with the insufficient number of trees in their community and the lack of privacy afforded by the open spaces in their communities.

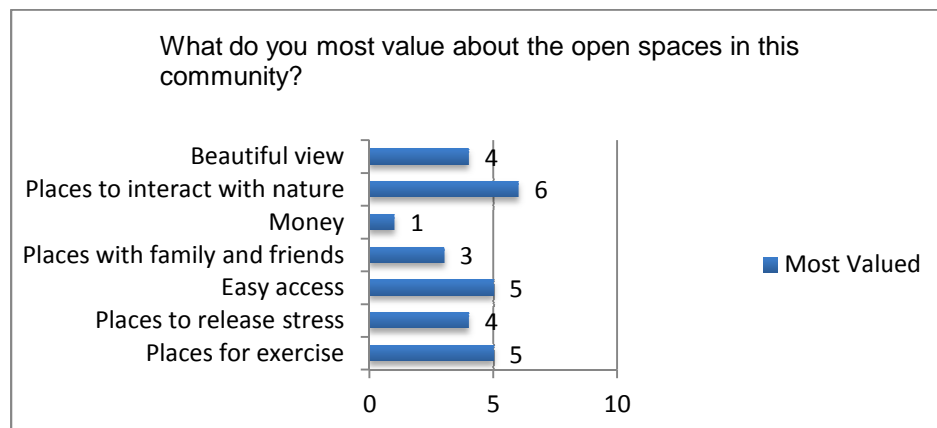


Figure 4-20 Perceived Value of Open Space Pie Chart

The informants in this research indicated that there are three ways to improve the open spaces in their master planned communities. The first reported way to improve open spaces is with continued or improved maintenance. In fact, forty percent of the

informants reported that keeping the open spaces under good conditions is the best way to improve them. However, as discussed above, because the informants reported that they prefer to save money on maintenance, landscape architects should design open spaces that are relatively easy to maintain, or ones that can sustain themselves without special care. The second reported way to improve open spaces is to add more details to them. Forty percent of the informants in this research indicated that they would like more trees or more flowers in the open spaces in their master planned communities. The third reported way to improve open spaces is to add more amenities to them. For example, thirty percent of the informants reported that it would be good to have more amenities such as picnic areas, ball fields, and trails in their communities. This suggests that too much wide-open space, too many vacant lots, or vast lakes can be perceived as a waste of open spaces, and users may not be able to gain much benefit from them.

#### 4.6 Summary

The findings in this chapter indicate the informants' are perceptive of the benefits of open spaces in their master planned communities. The informants reported that they gain health, social, economic, and ecological benefits from the open spaces in their communities, and they are satisfied with them. In addition, the informants reported that the open spaces in their communities are accessible, which helps them more easily gain the benefits of the open spaces. Finally, these findings reveal three ways to improve open spaces: increased maintenance, added detail, and added amenities. These findings are useful for landscape architects to improve open spaces in the future.



## Chapter 5

### Conclusions

#### 5.1 Introduction

The objective of this research is to investigate the users' perceptions of open spaces benefits in three selected master planned communities in North Texas. Open spaces in master planned communities provide many benefits and opportunities to users. It is important to understand users' perceptions of open spaces benefits to help developer and landscape architects respond to the users' need. According to the literature review, the benefits can be divided into four categories: health, social, economic, and ecological benefits. In this thesis, the researcher uses qualitative research methods to address the research questions. There are three types of data acquired in this research: secondary, interview, and passive observation data. The analyses and findings from these data are used to identify the common descriptive words of open spaces benefits in master planned communities. The understanding of users' perceptions of open spaces benefits in master planned communities can help landscape architects better design master planned communities that may be more profitable for their developers.

#### 5.2 Summary of Findings

In order to understand the users' perception of open spaces benefits in master planned communities, this section uses the findings from secondary data, individual face-to-face interviews, and passive observations to answer the research questions. The common descriptive words and emerging themes generated from these data help the researcher answer these questions.

##### *5.2.1 Do users perceive the benefits of open space in master planned communities?*

This question investigates the influence of open spaces benefits in master planned communities. In fact, considering the data in this study, users do perceive the

benefits of open spaces in three master planned communities. According to the responses from the interview data, the open spaces present in their master planned communities were a key consideration when the informants were deciding where to live. In addition, there are four benefits of open spaces in master planned communities. According to the informants' perception, one benefit is a health benefit. According to them, open spaces provide places for users to participate in physical exercise, such as running, jogging, playing golf, or fishing. In addition, open spaces help them relax from the stress and pressure of busy urban lives. Another perceived benefit is a social benefit. The informants in this research perceive that open spaces provide them opportunities to meet new people and make new friends. For example, during social functions, they can know more people. Another perceived benefit is an economic benefit. Most of the informants in this research reported that open spaces raise their property values, help them save money on fitness facilities, and provide employment opportunities for workers involved in maintenance. The final benefit discussed in this research is an ecological benefit. According to the informants' perceptions, open spaces improve the living environment, for example, by improving air quality and reducing noise pollution. In addition, open spaces provide a habitat for wildlife, and human interaction with wildlife is perceived as a benefit.

#### *5.2.2 If there are benefits of open spaces, how can they be enhanced to serve its user better?*

This research also develops ways to improve open spaces in master planned communities, so that users can derive their benefits more easily. As described in Section 4.5.3, the three identified ways to improve open spaces are by improving maintenance, adding more details, and adding a variety of amenities to satisfy diverse user demands.

The interviews and passive observations in this research reveal that the informants value the open spaces in their communities, so the primary way to enhance them is with vigilant maintenance that keeps open spaces in good condition and ready for users. In addition, although the informants in this research reported that there are trees and grass in the open spaces in their communities, some of them suggested it is not enough. These informants indicated they wanted more trees to provide shade, and seasonal flowers or ornamental trees to create a more enjoyable environment. Finally, the informants in this research noted that they prefer the places where they can engage in group activities. For them, large vacant lots and vast lakes are a waste of open spaces. Even though these types of open spaces can create a beautiful scene in master planned communities, without a variety of amenities such as trails and playgrounds, the opportunity to fully use and enjoy the benefits of open spaces is lost.

#### *5.2.3 What are the benefits that users would like to have in the open spaces of master planned communities?*

This question examines the users' expectations of the benefits of open spaces. According to the interview and observation data, the informants in this research prefer the opportunities of health, social, and ecological benefits. Economic benefits are one of the benefits that the informants gained, but these are not the primary benefits that the informants expected. Different benefits require different types of open spaces to serve users, so it is important for landscape architects to consider ways to provide a diversity of open space types and ways to better integrate open spaces in master planned community.

#### *5.2.4 How can this information help landscape architects improve the design of master planned communities?*

The findings and themes generated from the informants' perceptions of open space benefits in master planned communities provide important design direction to landscape architects. The findings reveal the positive influence of open spaces for users. If open spaces are well maintained and offer a variety of amenities to satisfy diverse needs, users could have a better experience with and derive more benefits from the open spaces in master planned communities. Landscape architects can consider the influence of open spaces and integrate their benefits in their designs, for example, by designing open spaces to be both beautiful and usable, and by providing a diversity of types of open spaces, such as activity areas, trails, scenic areas, and wildlife habitats, in order to realize all the potential benefits that open spaces can provide in master planned communities. In addition, this research discusses the informants' expectations of open spaces, such as being able to offer a variety of activities at a low maintenance cost. Therefore, besides simply adding more open spaces to a master planned community, landscape architects can also employ ecological design strategies, such as smart growth and the use of drought-tolerant plants, to develop master planned communities in the future. Understanding user expectations can help landscape architects improve their designs and create more a successful environment for people to live.

#### **5.3 Conclusions**

This research shows that there are similarities between the descriptions from the literature review and the research data. Both the literature review (for example Woolley, 2003) and this research data indicate that open spaces are important in the development of master planned communities. This research also indicates that the informants perceive health, social, economic, and ecological benefits of open spaces in their master planned

communities. The open spaces provide benefits for users to have better quality of life. Landscape architects should consider the ways to integrate the health, social, economic, and ecological benefits in the design of open spaces. In addition, if the open spaces are accessible and usable, users can gain the benefits more easily.

There are many design concepts to improve the open spaces in master planned communities. This research suggests three ways to improve the open spaces, which are continued or improved maintenance, adding more details, and adding more amenities. These three ways can help landscape architects to develop successful master planned communities.

While the informants in this research report that they derive the four types of benefits of open spaces, there are conflicts with the economic benefits. The informants indicate that although they prefer low maintenance costs, they still expect a high quality of open space that can increase their property values. Therefore, landscape architects should work to design diverse, useful, and beautiful open spaces that do not require intensive maintenance in order to keep those costs as low as possible.

#### 5.4 Relevance to the Profession of Landscape Architecture

Landscape architects play an important role in providing professional decisions for projects involving open space in master planned communities. They plan, design, or provide management advice for clients.

As discussed in Chapter One, there is a growing need to connect human and nature environments in master planned communities. This research uses qualitative research methods to examine the relationship between users and open spaces in master planned communities in North Texas. Understanding users' perceptions of the benefits of open spaces in master planned communities can help landscape architects design more enjoyable living environments while providing a range of benefits for people in master

planned communities. In addition, this understanding provides opportunities for landscape architects to satisfy the users' expectations, and it also informs landscape architects about the development of master planned communities. This is useful for landscape architects to create a balance between users and developers.

### 5.5 Future Research

With the findings of users' perceptions of the benefits of open spaces in master planned communities, there are still several issues that require future research. Landscape architects need to play a leading role in the development of open spaces in master planned communities. To do so, they should better understand users' needs and the influence of the benefits of open spaces in master planned communities. Therefore, future researches can work to provide landscape architects directions and suggestions to design more successful open spaces. Several recommendations for future research are listed below:

- Compare the residents' and managers' perceptions of economic benefits of open spaces in master planned communities.
- Examine users' perceptions of plants selection.
- Evaluate the educational opportunities of open spaces for users.
- Study users' needs for diverse amenities in open spaces.
- Analyze successful and unsuccessful open spaces case studies to better understand users' needs.
- Investigate the types of open spaces, in terms of character and amenities that are most likely to enhance property values.

Appendix A  
IRB Approval Documentation



Office of Research Administration  
Regulatory Services  
817-272-3723  
regulatoryservices@uta.edu  
<http://www.uta.edu/research/administration>

**Institutional Review Board  
Notification of Exemption**

February 25, 2014

Shulin Liang  
Dr. James Richards  
School of Architecture

Protocol Number: 2014-0398

Protocol Title: *USERS' PERCEPTIONS OF OPEN SPACE BENEFITS IN MASTER PLANNED COMMUNITIES IN NORTH TEXAS*

**EXEMPTION DETERMINATION**

The UT Arlington Institutional Review Board (IRB) Chair, or designee, has reviewed the above referenced study and found that it qualified for exemption under the federal guidelines for the protection of human subjects as referenced at Title 45CFR Part 46.101(b)(2).

- (2) Research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures or observation of public behavior, unless: (i) information obtained is recorded in such a manner that human subjects can be identified, either directly or through identifiers linked to the subject; and (ii) any disclosure of the human subjects' responses outside the research could reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects' financial standing, employability, or reputation.

You are therefore authorized to begin the research as of **February 25, 2014**.

Pursuant to Title 45 CFR 46.103(b)(4)(iii), investigators are required to, "promptly report to the IRB any proposed changes in the research activity, and to ensure that such changes in approved research, during the period for which IRB approval has already been given, are **not initiated without prior IRB review and approval** except when necessary to eliminate apparent immediate hazards to the subject." Please be advised that as the principal investigator, you are required to report local adverse (unanticipated) events to the Office of Research Administration; Regulatory Services within 24 hours of the occurrence or upon acknowledgement of the occurrence. All investigators and key personnel identified in the protocol must have documented Human Subject Protection (HSP) Training on file with this office. Completion certificates are valid for 2 years from completion date.





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The UT Arlington Office of Research Administration; Regulatory Services appreciates your continuing commitment to the protection of human subjects in research. Should you have questions, or need to report completion of study procedures, please contact Robin Dickey at 817-272-9329 or [robind@uta.edu](mailto:robind@uta.edu). You may also contact Regulatory Services at 817-272-3723 or [regulatoryservices@uta.edu](mailto:regulatoryservices@uta.edu).



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<http://www.uta.edu/research/administration>

March 17, 2014

Shulin Liang  
Dr. James Richards  
School of Architecture  
Box 19108

**IRB No.:** 2014-0398

**Title:** *USERS' PERCEPTIONS OF OPEN SPACE BENEFITS IN  
MASTER PLANNED COMMUNITIES IN NORTH TEXAS*

#### **EXEMPT MINOR MODIFICATION APPROVAL MEMO**

The UT Arlington Institutional Review Board (UTA IRB) Chair (or designee) reviewed and approved the modification(s) to this exempt protocol on **March 17, 2014** in accordance with Title 45 CFR 46.101(b). Therefore, you are authorized to conduct your research. The modification(s), indicated below, was/were deemed minor and appropriate for exempt determination/acknowledgment review.

- ☐ Add an additional recruitment site. Recruitment/consenting/data collection procedures remain the same

Pursuant to Title 45 CFR 46.103(b) (4) (iii), investigators are required to, “promptly report to the IRB any proposed changes in the research activity, and ensure that such changes in approved research, during the period for which IRB approval has already been given, **are not initiated without IRB review and approval** except when necessary to eliminate apparent immediate hazards to the subject.”

The modification approval will additionally be presented to the convened board on April 8, 2014 for full IRB acknowledgment [45 CFR 46.110(c)]. All investigators and key personnel identified in the protocol must have documented Human Subjects Protection (HSP) training on file with the UT Arlington Office of Research Administration; Regulatory Services.

The UT Arlington Office of Research Administration appreciates your continuing commitment to the protection of human research subjects. Should you have questions or require further assistance, please contact Robin Dickey at [robind@uta.edu](mailto:robind@uta.edu) or you may contact the Office of Regulatory Services at 817-272-3723.

**UT Arlington**  
**Informed Consent Document**

**PRINCIPAL INVESTIGATOR**

Shulin Liang, School of Architecture, Program in Landscape Architecture, Email Address: [Shulin.liang@mavs.uta.edu](mailto:Shulin.liang@mavs.uta.edu), Phone: 817-501-9160.

**FACULTY ADVISOR**

James P. Richards, School of Architecture, Program in Landscape Architecture, Email Address: [jrichard@uta.edu](mailto:jrichard@uta.edu) Phone: 817-999-1522 Office: ARCH 203.

**TITLE OF PROJECT**

USERS' PERCEPTIONS OF OPEN SPACE BENEFITS IN MASTER PLANNED COMMUNITIES IN NORTH TEXAS

**INTRODUCTION**

You are being asked to participate in a research study about users' perceptions of open space benefits in master planned communities in north Texas. Your participation is voluntary. Refusal to participate or discontinuing your participation at any time will involve no penalty or loss of benefits to which you are otherwise entitled. Please ask questions if there is anything you do not understand.

**PURPOSE**

The specific purpose(s) of this research study is/are as follows:

1. To summarize users' perception of open space benefits in master planned communities. This is an examination of the benefits of open space in users' minds.
2. To explore if open spaces in master planned communities meet their expectations. This is an examination what open space benefits the users' gain in master planned communities and how it can be improved.
3. To provide design guidance and recommendations for landscape architects in future development of open space to satisfy users' needs.

**DURATION**

Each interview lasts approximately 15-30 minutes

**NUMBER OF PARTICIPANTS**

The number of anticipated participants in this research study is up to 30.

IRB Approval Date:

**FEB 25 2014**

IRB Expiration Date:

1

## UT Arlington Informed Consent Document

### PROCEDURES

The procedures which will involve you as a research participant include:

I will ask you to read and sign the informed consent form. I will ask for your permission to electronically record the interview. After permission is granted, I will ask twelve questions to you. Each interview is expected to take approximately 15 – 30 minutes. I will not attach any names or any other personally identifiable information to the interview transcriptions. The interview questions are divided into two parts. The first portion concerns basic information about the informants' life in your community. The second portion concerns their perception of open space in your community. The interview will be audio recorded. After the interview, the tape will be transcribed, which means they will be typed exactly as they were recorded, word-for-word, by the researcher. The tape will be destroyed after transcription.

### POSSIBLE BENEFITS

This research will contribute to further knowledge about users' perceptions of open space benefits in master planned communities in north Texas, and help landscape architects in future development of open space to satisfy users' needs.

### POSSIBLE RISKS/DISCOMFORTS

There are no perceived risks or discomforts for participating in this research study. Should you experience any discomfort please inform the researcher, you have the right to quit any study procedures at any time at no consequence.

### COMPENSATION

No compensation will be offered for participation in this study.

### ALTERNATIVE PROCEDURES

There are no alternative procedures offered for this study. However, you can elect not to participate in the study or quit at any time at no consequence.

### VOLUNTARY PARTICIPATION

Participation in this research study is voluntary. You have the right to decline participation in any or all study procedures or quit at any time at no consequence.

### CONFIDENTIALITY

Every attempt will be made to see that your study results are kept confidential. A copy of this signed consent form and all data collected, including transcriptions from this study

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IRB Expiration Date:

## UT Arlington Informed Consent Document

will be stored at office ARCH 322 in Architecture Building for at least three (3) years after the end of this research. The results of this study may be published and/or presented at meetings without naming you as a participant. Additional research studies could evolve from the information you have provided, but your information will not be linked to you in anyway; it will be anonymous. Although your rights and privacy will be maintained, the Secretary of the Department of Health and Human Services, the UTA Institutional Review Board (IRB), and personnel particular to this research have access to the study records. Your records will be kept completely confidential according to current legal requirements. They will not be revealed unless required by law, or as noted above. The IRB at UTA has reviewed and approved this study and the information within this consent form. If in the unlikely event it becomes necessary for the Institutional Review Board to review your research records, the University of Texas at Arlington will protect the confidentiality of those records to the extent permitted by law.

### CONTACT FOR QUESTIONS

Questions about this research study may be directed to Shulin Liang, Email Address: [Shulin.liang@mavs.uta.edu](mailto:Shulin.liang@mavs.uta.edu), Phone: 817-501-9160. Faculty Advisor: James P. Richards, School of Architecture, Program in Landscape Architecture, Email Address: [jrichard@uta.edu](mailto:jrichard@uta.edu) Phone: 817-999-1522 Office: ARCH 203. Any questions you may have about your rights as a research participant or a research-related injury may be directed to the Office of Research Administration; Regulatory Services at 817-272-2105 or [regulatoryservices@uta.edu](mailto:regulatoryservices@uta.edu).

**As a representative of this study, I have explained the purpose, the procedures, the benefits, and the risks that are involved in this research study:**

	<b>Date</b>
--	-------------

### CONSENT

By signing below, you confirm that you are 18 years of age or older and have read or had this document read to you. You have been informed about this study's purpose, procedures, possible benefits and risks, and you have received a copy of this form. You have been given the opportunity to ask questions before you sign, and you have been told that you can ask other questions at any time.

You voluntarily agree to participate in this study. By signing this form, you are not waiving any of your legal rights. Refusal to participate will involve no penalty or loss of

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benefits to which you are otherwise entitled. You may discontinue participation at any time without penalty or loss of benefits, to which you are otherwise entitled.

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**SIGNATURE OF VOLUNTEER**

**DATE**

IRB Approval Date: **FEB 25 2014**

4

IRB Expiration Date:

## Appendix B

### Email to Managers for Requesting Research

To whom it may concern,

Hello. My name is Shulin. I am a masters student at UTA, in the School of Landscape Architecture. I am doing my master's thesis about user's perceptions of open space benefits in master planned communities. To do so, I would like to interview residents and workers in your community about the open spaces you have there. Each interview will take only a short time. I would be very grateful if you would give me your permission to interview people in your community. I am happy to share my questions with you in advance if you would like to see them. Please let me know at your earliest convenience if you have any questions or concerns about my research, and please let me know if I may start my research in your community.

Thank you so much,

Shulin Liang

**Shulin Liang**

shulin.liang@mavs.uta.edu

University of Texas at Arlington, School of Architecture

Program in Landscape Architecture

817-501-9160.



Appendix C  
Interview Questions

The interview questions are divided into two parts. The first portion concerns basic information about the informants' life in their community:

1. How long have you lived in this community;
2. Are you aware of the open space in this community;
3. Do you use the open space in this community;

The second portion concerns their perception of open space in their community:

1. Did the open spaces in this community influence your decision to live, visit, or work here;
2. What are the health benefits of open spaces in this community;
3. What are the social benefits of open spaces in this community;
4. What are the economic benefits of open spaces in this community;
5. What are the ecological benefits of open spaces in this community;
6. How do you feel about the accessibility to open spaces in this community;
7. What are the activities you most often do in the open spaces in this community;
8. What do you most and least value about the open spaces in this community;
9. And, how do you think the open spaces in this community can be improved?

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### Biographical Information

Shulin Liang was born in Guangzhou, China. He received his bachelor's degree of Landscape Architecture from South China Agricultural University in 2011. After deciding to study abroad, Mr. Liang came to the United States in 2011 to study at the University of Texas at Arlington. He studied in the Program of Landscape Architecture for three years for the purposes of obtaining his master's degree.

Mr. Liang interned at Arlington Parks & Recreation during 2013. He is interested in construction design and urban planning. He hopes to create a more livable environment for people.