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COMMUNITY PERCEPTIONS OF GOLF COURSE LANDSCAPES: LESSONS
LEARNED FROM ARLINGTON, TEXAS CASE STUDIES

by

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Presented to the Faculty of the Graduate School of the University of Texas at Arlington in
Partial Fulfillment of the Requirements for the Degree of

MASTER OF LANDSCAPE ARCHITECTURE

THE UNIVERSITY OF TEXAS AT ARLINGTON

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November 24, 2015

ABSTRACT

COMMUNITY PERCEPTIONS OF GOLF COURSE LANDSCAPES: LESSONS LEARNED FROM ARLINGTON, TEXAS CASE STUDIES

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The University of Texas at Arlington, 2015

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The purpose of this research is to study the resident perceptions of golf course landscapes in communities around golf courses within Arlington, Texas. It specifically focuses on the residents' perceptions evoked by the golf course landscapes as well as any impact to the residents' lives outside of actually playing golf. The study seeks to find connections between traditional golf course design and urban landscape around the edges of golf courses extending outward to the surrounding communities.

The physical relationships between golf courses with their surrounding communities vary. Especially in suburban settings, there is a strong connection between the course and the nearby residential development, creating a condition in which the golf course is an integral part of the character of the community and an essential part of community green and open space. However, residential development that does not have a direct connection to the golf course is still affected by the golf course landscape and the physical, functional and aesthetic relationships between them. By studying the resident perceptions in communities surrounding golf courses, valuable lessons can be learned and applied to future golf course design as well as the urban landscape surrounding these green and open spaces.

Much of the research on golf course design examines how the design affects the player or what impacts the design has on the environment (Hudson 2009; Hedges 2013). There are also studies concerning connections between golf and culture (Ibsen 2012). However, little research has been published that concerns how people feel about nearby courses and their landscapes. The attributes of golf course landscapes that affect the perceptions and lives of surrounding residents should be taken into account when designing a golf course's layout, landscaping and infrastructure.

This research follows qualitative research methods and through the use of interviews with those living around certain golf courses in Arlington, the study will give valuable insights into which attributes of a golf course's landscape are most affecting resident perception (Taylor and Bogdan 1998). Data were obtained through open ended interviews with residents of communities surrounding three golf courses in Arlington, Texas: Chester W. Ditto Golf Course, Rolling Hills Country Club and Meadowbrook Golf Course. Secondary sources were also used to obtain data to better understand the community dynamics of the area being studied. These data were then analyzed to determine commonly held themes and perceptions (Taylor and Bogdan 1998).

The study concludes that visual connections to a golf course landscape are highly important to residents living near a golf course in Arlington communities. In particular, physical elements of a golf course that are located within view of roadways and pedestrian pathways played a key part in affecting the perceptions of those residents that interact with the golf course landscape primarily in passing as a pedestrian or by vehicle. The primary physical aspects found to impact perception include the size, abundance and density of trees, quality and abundance of grass and other vegetation, presence and visibility of water, types of topography and overall maintenance of the site. By learning from these findings, future design of golf course landscapes and urban

design near golf courses can better enrich the lives of residents in those communities and increase the value the residents place on the golf course itself.

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CHAPTER 1
INTRODUCTION

1.1 Introduction

This research is to study the resident perceptions of golf course landscapes in communities around suburban golf courses. This chapter includes an overview of the purpose, research questions and objectives, terms and definitions, methods and limitations of the study. The purpose of this section is to provide clarity to the scope of this work and to provide the reader with a basic understanding of what is being studied, for what purpose and how the study is carried out.

1.2 Purpose

The purpose of this research is to study the resident perceptions of golf course landscapes in communities around suburban golf courses in the City of Arlington, Texas. Specifically for golf courses in growing suburban communities the value they seem to add exceed their initial purpose as recreational sport fields. Golf courses in suburban areas are an integral part of the communities surrounding them and the effects their landscapes have on surrounding residents should be taken into account. Golf courses are typically designed with the players in mind and the effects on the environment but more consideration to surrounding residents could be applied to these designs (Ibsen 2012; Hudson 2009; Hedges 2013). Specifically the attributes of a golf course landscape that are visible from the outside edges should be designed in such a way as to take into account local resident preferences and perceptions.

This study particularly focuses on three golf courses in communities in Arlington, Texas. The communities in this study vary in terms of economic status, development

type, demographics, physical relationship to the golf course edges and visual relationship between residences and the golf course landscapes. Data from these residents provide valuable insight into how golf course landscapes and urban design elements around golf courses affect community perception and reveal local preferences. Analysis of interview data highlights the strengths and weaknesses of golf course landscapes and urban design elements in the study sites of this research. The conclusions and lessons can be used to inform future golf course landscape design as well as urban design around suburban golf courses.

This study exposes opportunities and limitations in terms of the attitudes and perceptions communities have about nearby golf courses. In the urban framework, of the city of Arlington, it is valuable to determine how community members feel about the way space is being utilized, particularly the large amounts of space necessary for a golf course.

1.3 Research Objectives

The research objectives serve as guidelines for this study and allow other researchers to better understand the precise focus of the research. Listed below are the primary objectives this study hopes to accomplish and provide data and insight into.

- To study how residents perceive golf course landscapes in their communities within the City of Arlington, Texas.
- To evaluate golf courses as landscapes within the context of suburban communities specifically in Arlington, Texas.
- To contribute to design of golf course landscapes with emphasis on positively affecting community perceptions.

1.4 Research Questions

Research questions provide a framework to collect data and focus data collection in a way that allows the researcher to obtain meaningful results. The following are the primary areas of interest that drive the design of interview questions.

- What are the resident perceptions of golf course landscapes in the context of suburban communities in Arlington, Texas?
- How are golf course landscapes interacting with and responding to adjacent suburban communities in Arlington, Texas?
- How might resident perceptions inform future design of golf course landscapes within suburban communities?

1.5 Terms and Definitions

9-Hole Golf Course: A golf course with mostly par-4 holes plus a few par 3s and par 5s but only nine holes, rather than 18 holes, in length (Kelley 2015). See definition of 'par' below.

18-Hole Golf Course: Comprised of mostly par-4 holes with a mix of par-3 holes and par-5 holes is the standard golf course. When the generic term "golf course" is used, this is what is referred to (Kelley 2015). See definition of 'par' below.

Aesthetics: The branch of philosophy that deals with the nature and expression of beauty (Davies 1992).

Architecture: The art, profession or science of designing and constructing buildings, including any framework, system, and so forth (Graves 2002).

Community: Consisting of relationships among residents and between neighborhoods, businesses and agencies (City of Arlington HANA Neighborhood Action Plan 2015).

Course Length: A measurement of horizontal distance expressed in yards from the middle of the tee area to the center of the putting green, following the line of play planned by the architect (Muirhead 1994).

Executive Golf Course: An executive course might come with 18 holes or 9 holes, but will always be shorter- and, therefore, quicker to play- than a "regulation" golf course with the same number of holes.

Fairway: The area of the course between the tee and the green that is maintained to reward a well-hit shot, usually an area of closely mown turf (Muirhead 1994). The 'tee' is the starting area of each hole.

Golf Course: The whole area, within which play is permitted, comprised of holes played in a specific sequence (Muirhead 1994).

Green: The area of ground especially prepared for putting, into which the hole is cut (Muirhead 1994).

Hole: A general term describing the entire area between and including the tee and the green; also, the specific target in the ground that is 4.25 inches in diameter and at least four inches deep (Muirhead 1994).

Landforms: Serves as the base for all outdoor activity and may be thought of as both an artistic and utilitarian element in its design applications. At the site scale, landform may encompass mounds, berms, slopes, level areas, or elevation changes via steps and ramps, all of which may be generally categorized as "microlandforms" (Booth 1983).

Landscape: Organized so that its parts work together and are perceptually coherent. A landscape's visual image is congruent with its life and action (Lynch & Hack 1984).

Landscape Architecture: The art or profession of planning or changing the natural scenery of a place for a desired effect, for human use and enjoyment (Graves 2002).

Links Course: A seaside golf course constructed on naturally sand ground with undulations formed by wind and receding tides (Doak 1992).

Naturalness: That which is not produced or changed artificially (Davies 1992).

Originality: A first form from which other forms are made or developed (Ward-Thomas 1976).

Par: The estimated score standard for each hole of a golf course, based on the length of the hole and the number of strokes a scratch golfer would be expected to make for a given hole (Muirhead 1994).

Par-3 Golf Course: One on which all the holes are par-3 holes. A par-3 course will be shorter in length than an executive course, and faster still to play.

Perception: “Perception includes the esthetic experience, where the dialogue between perceiver and object is immediate, intense, and profound, seemingly detached from other consequences (Lynch and Hack pg.154).”

Playability: The degree to which a course is designed for every level of player including overall course length, par value, safety on and around the course, opportunities for strategic play, and operational flexibility and ease of maintenance (Pugh 2003; Seneviratne 2002).

Private Golf Course: Open only to golfers willing to pay a membership fee to join the club (Kelley 2015).

Public Golf Course: A golf course that is open to the general public (Kelley 2015).

Municipal Golf Course: Golf courses owned by government, usually cities (Kelley 2015).

Daily Fee Golf Course: Courses open to the public but privately owned, generally more upscale and more expensive than municipals.

Putt: A golf stroke made on a putting green to cause the ball to roll into or near the hole (Muirhead 1994).

Resident: For the purposes of this study a ‘resident’ is a person who resides within ½ mile of a study golf course site.

Scratch Golfer: A golfer who has no handicap (Davies 1992).

Semi-Private Golf Course: Both sells memberships and allows non-members to play (Kelley 2015).

Signature Hole: A hole of unusually or exceptionally dramatic or challenging design that creates a lasting and memorable impression and identity for a golf course; a hole of particular stylistic or thematic design that is associated with or peculiar to an individual golf course architect (Muirhead 1994).

1.6 Methods

This research follows qualitative methods to assess resident perceptions of golf course landscapes within their communities (Taylor and Bogdan 1998). Data collected in this study are primary from open ended interviews with residents in communities near three golf courses in Arlington, Texas: Chester W. Ditto Golf Course, Meadowbrook Park Golf Course, and Rolling Hills Country Club (see figure 1.1). The research also benefits from on-site observations by the researcher as well as from secondary sources. These golf courses provide diversity in terms of research variables while remaining highly comparable due to the courses being located within the same city. These three sites are described briefly in the following paragraphs.

Chester W. Ditto Golf Course is a public golf course situated just north of I-30 in Arlington. The course is surrounded primarily by single-family detached and multi-family attached residential development. The edges of the course are primarily separated from residential development by major and minor roadways with notable exceptions at the north and northeast areas of the course. At these locations the residential development is directly adjacent to the golf course and the lots have visual and physical access to the golf course itself.

Meadowbrook Park Golf Course is also a public course and was opened in 1924 making it the oldest course in Arlington (Arlington History - History of Arlington 2015). The course has 9 holes making it significantly smaller than a typical 18-hole course. Single-family detached residential development surrounds the course and most lots are separated by minor roadways and buffering vegetation with the exception of homes in the south and southeast areas of the golf course.

Rolling Hills Country Club is a private country club located just north of I-30 and just southwest of Chester W. Ditto Golf Course in Arlington. The course underwent an 18

hole renovation in 2013 designed by Colligan Golf Design. Though the course shares part of its surrounding community with Chester W. Ditto Golf Course, the edge conditions and character of the adjacent communities are distinct. The course is primarily surrounded by single-family detached development that has lots connecting directly with the course itself. This condition makes the course much more secluded and less visible from the roadways with the exception of the southwest corner of the golf course where N Cooper Street and E Lamar Blvd run adjacent to the edges.

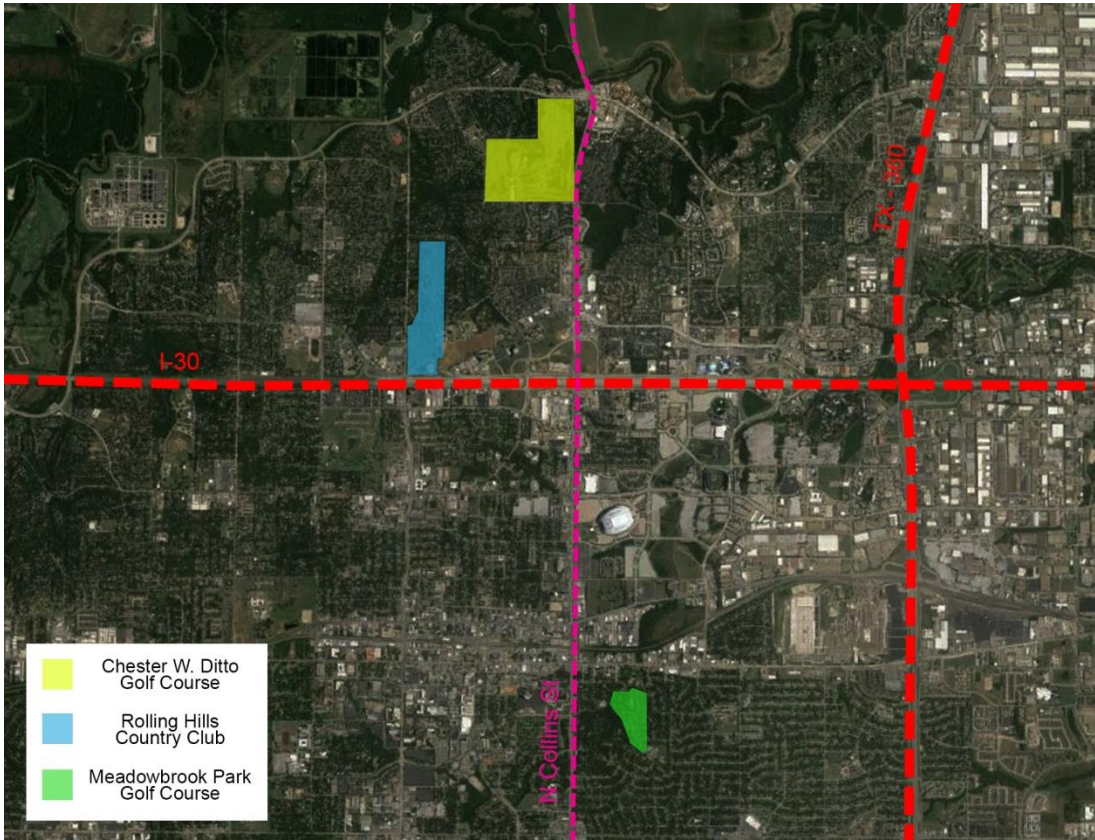


Figure 1.1 Location Map of Study Sites within Arlington, Texas

The study involves face to face interviews and telephone interviews with selected participants located within up to ½ mile (distance to be leisurely walking distance) of the three golf courses described above. The interviews will remain anonymous. The interviews are recorded by the researcher and transcribed after each interview is concluded. IRB approval is acquired (see appendix). Supporting data are also gathered from public sources focusing on demographic and economic data for the city of Arlington, Texas.

Subjects are recruited from residential areas within ½ mile from each selected golf course. If Home Owners Associations are involved within a community, the researcher consults the HOA prior to recruiting participants. When possible, a recruitment email is forwarded by the HOA to potential participants. When no community organization can be contacted, recruitment is made by sending emails, delivering recruitment letters to residences mailboxes, and/or soliciting information through online sites or posting at community gathering locations requesting a 15-20 minute interview appointment. Interviews are conducted in person or via phone. The researcher uses email to recruit participants in the case that a previous participant provides an email address from among their acquaintances. This method is commonly referred to as snowball sampling (Deming and Swaffield 2011; Goodman 1961). After identifying a starting point, the researcher then asks each person they interview for the names of other people who would be informed on the topic or suitable as a respondent (Deming and Swaffield, 2011). In this case the interviewee provides the names and emails of people that, instead of being well informed on the topic, fit the criteria of eligibility to be interviewed for this study.

1.7 Significance and Limitations

The research is significant because it studies and recognizes the value of golf course landscapes in growing suburban communities as recreational amenities beyond their boundaries and their primary purpose as active sports arenas.

The data collected in this study, and the analysis that comes from these data, are significant in similar locations and contexts as the three courses selected for this study. The courses and communities surrounding them, studied here fit into certain categories in terms of demographics, regional location, connections to community and other factors that make these locations unique. These factors should be considered when comparing the findings of this study to other golf courses and communities. A commonly held theme among resident perceptions in a community surrounding a golf course in Arlington, Texas might be found in another location.

Furthermore, it must be kept in mind that the interviews conducted in this study are with residents located within ½ mile of the edge of a golf course. This distance is considered by the researcher as leisurely walkable for a resident within suburban communities. This is a critical factor when considering the implications the findings from this study might have on residential development that is outside of that distance. The researcher makes every attempt to conduct an adequate number of interviews at each site in order to make sure the data collected show significant patterns. However, due to limits on time, the number of interviews conducted could be a limitation and it is possible that results would be different if significantly more interviews are conducted.

1.8 Chapter Summary

Golf course landscapes, especially within suburban settings, can have implications for residents that live around them. It is the purpose of this study to identify what the perceptions of these residents are concerning these golf course landscapes and

to analyze what these perceptions might mean in terms of golf course landscape design and urban landscape around golf courses. The research questions and objectives described in the sections above provide a framework and direction to follow when collecting data through interviews. These questions and objectives drive the methodology chosen for collecting and analyzing data and ultimately help inform the conclusions reached through this study. Chapter two describes the literature and the setting of this research topic supporting the validity and context of the study. Chapter three explains in detail the methodology adapted in this research. Chapter four explains the analysis and findings from the data collected in this research. Chapter five contains conclusions and discussion.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

Specifically for golf courses in suburban communities the value of golf courses seem to exceed their initial purpose as recreational sports fields. It is the purpose of this literature investigation to identify specific characteristics and variables of golf course landscape design, as well as to analyze what that means in terms of community perception and perceived value of golf course landscapes within a suburban setting. The following sections also briefly review other factors that might impact community perceptions of a golf course landscape.

2.2 Golf Courses in America

Golf courses in American suburban cities utilize relatively large areas of land and impact the communities surrounding them in many ways. It is important, then, to understand the current state of golf in America and the different factors and processes that affect a golf course in terms of design, ecology and daily maintenance.

2.2.1 Participation and Popularity

“In recent years golf has been put under a microscope for its loss of players and course closures (Ibsen 2012, p. 28).” The economic recession of 2008 seemed to undermine the popularity of golf by causing many courses to lose the player base they need to sustain themselves. According to the National Golf Foundation, 107 golf courses closed in 2010 and about 157 in 2011 (Ibsen 2012). Furthermore, during those two years participation dropped by around 1 million (Ibsen 2012). This decline in participation and popularity highlights a need to consider changes in golf course design as well as marketing.

In response to this need, there are programs and initiatives currently taking place that aim to 'save' golf and bring back the value of golf courses within our communities. The effectiveness of these efforts should result in attracting new players and former golfers back to the game. Rick Phelps, golf course architect and 2012 president of the American Society of Golf Course Architects states that in addition to programs aimed at attracting players to the game, the facilities themselves are equally important (Ibsen 2012). He suggests introducing more executive length or 3-hole courses as "bunny slopes" in an effort to make golf more accessible and attractive. (Ibsen 2012) This would provide access to golf while providing facilities that require a much smaller time and financial commitment to a single round of golf. The maintenance and land area of such facilities is also much smaller, allowing these types of courses more development options within urban areas.

Other efforts in recovering the popularity and success of golf courses are being made in the forms of donations and scholarship funds. For example, turf programs across the nation are aided by donations from superintendent chapters at the state and local levels. These turf programs include university facilities, research projects and turf school scholarships. Also, general education 'legacy' scholarships are made available to members' kids going to college (Jackson 2014). According to We Are Golf's national survey, \$3.9 billion dollars are donated for these types of programs as well as for environmental enhancement projects, Ronald McDonald House, Food Banks, Children's Home Societies and Toys for Tots (Jackson 2014). These efforts help to tie golf courses, and the game of golf in general, to the communities surrounding them.

2.2.2 Golf Course Design Principles

The design of golf courses can be traced back to The Old Course at St. Andrews and it has been argued that all golf courses built since have been in imitation of it at some

level (Ward-Thomas 1976). Originally, golf courses were not formally designed but instead followed natural features and utilized stakes to identify tees and greens (Johnson 2010; Hurdzan 2006). Since these beginnings, five basic design principles have emerged with regard to the design of golf courses: Playability, Strategy, Naturalness, Aesthetics, and Originality (Pugh 2003; Doak 1992).

Playability can be defined as the degree to which a course is designed for every level of player (Pugh 2003; Seneviratne 2002). Factors which determine the overall playability of a golf course include course length, par value, safety on and around the course, opportunities for strategic play and operational flexibility (Pugh 2003). A course can vary in difficulty and provide many differing challenges depending on the skill level of the golfer. For a golf course to be considered highly 'playable' it should be designed for a variety of skill levels. Bobby Jones defines playability well when he states that the first purpose of any golf course should be to give pleasure to the greatest number of players (Ward-Thomas 1976).

The strategy of a golf course can also be termed 'risk vs reward.' Strategic design of a golf course utilizes the basic elements of a golf course including bunkers, greens, fairways and water hazards to provide a challenge for the player. Strategy can be defined in a general sense as a plan of action intended to accomplish a specific goal (Davies 1992). Strategic design of a golf course, therefore, involves designing the course in such a way that strategy is needed to traverse the golf holes and different possible decisions offer varying possible rewards for the player.

Naturalness can be generally described as "that which is not produced or changed artificially (Pugh 2003; Davies 1992). Naturalness, as it concerns golf course design, is the degree to which a golf course is designed to flow with the natural landscape and utilize the property's natural assets (Pugh 2003; Doak 1992). Naturalness

of a golf course design can help connect the course to the local area and its culture. In maximizing the natural features of the land and in designing the course to appear as though it belongs in an area increases the aesthetic beauty of the landscape while also providing benefits to future maintenance and ecology.

Aesthetics is the branch of philosophy that deals with the nature and expression of beauty (Davies 1992). Tom Doak states that the beauty of the surroundings is one of the most attractive aspects of the game for the average golfer (Doak 1992). The aesthetics of a golf course also affect the residents living around a golf course. The landscape of such a golf course can be considered to act as a community landscape for the people living around the golf course since they are able to share in the visual connection to the golf course landscape.

Originality is defined as the first form from which other forms are made or developed (Ward-Thomas 1976). All golf courses imitate, in some fashion, the basic design elements of previously designed courses. However, different golf course designers tend to develop their own style of design that is repeated in their work and makes the courses they design recognizable as the work of a specific designer. For example, Arnold Palmer's course designs tend to have wide fairways and are long, while Ben Crenshaw designs medium length courses with large greens (Pugh 2003).

2.2.3 Maintenance and Environmental Impact

Other elements of golf courses that affect community perceptions, quality of golf courses and the communities that surround them include golf course maintenance, technologies and environmental impacts. Golf courses not only serve as a sports facility, but also as large green spaces within the urban fabric. They provide habitat, have potential for storm water management capabilities, and provide a physical and visual break from the hardscape in communities. In order for golf courses to provide wildlife

habitat, it has been suggested that key landscape features are needed (Hudson and Bird 2009). The results of one study show that golf course architects can improve habitat quality by: (1) increasing deciduous and coniferous tree cover; (2) increasing native vegetation within and surrounding water bodies; (3) reducing the amount of highly managed grass area; (4) ensuring large, undeveloped buffers are maintained; (5) ensuring sites are planned as large as possible (Hudson and Bird 2009). Factors such as these highlight the interesting dilemma of balancing habitat creation with usable space and efficiency of design. For example, planning sites to be larger in an effort to increase wildlife habitat also uses up space that could be developed for other purposes, such as residential development in a suburban community.

Research into golf course maintenance is important because the treatment of the landscape materials that make up a golf course affect the aesthetics of the landscape and impact the golf course economically as well. For example, in response to economic pressures and fallout from national golf participation rates, older courses are tending to convert formerly maintained turfgrass into natural areas with far less maintenance (Jackson 2013). Also, new golf courses are incorporating more natural areas into the course designs to lessen maintained turf acreage, reducing water use, labor, fertilizer and chemical inputs and lowering budget expenses (Jackson 2013). The ideal situation is to provide enough water to maintain quality conditions, but golf courses must also strive to reduce water usage, especially in the face of drought as is the case in North Texas. This is where smart practices and evolving technologies become extremely valuable in the effort to maintain visually appealing courses and a high quality experience for the players.

2.3 Perception

When considering the implications of a golf course landscape on surrounding residents, it is important to understand how perception influences a person's preferences

and attitudes. The following section explores the perceptions of humans concerning their surrounding environments. Primarily, special perception is influenced by visual features and characteristics of physical space (Wills 2008). To understand how to design these characteristics in such a way as to positively affect resident perceptions, one must understand perception itself.

Kevin Lynch uses the term “imageability” to describe those qualities of a city that make it understandable to its citizens (Lynch 1960). This highlights that physical attributes play a significant role in how people think about the spaces they occupy and view. Lynch and Hack point out that the perceived quality of a place has to do with the interaction between its physical form and the perceiver themselves (Lynch and Hack 1984). This perception is formed by the following categories of information: present stimulus information, present context information and stored stimulus information (Warr and Knapper 1968). It can also be described as being based in how a person perceives the world and the ways in which a person’s knowledge is obtained (Basso 1996). Thus, perception of golf course landscapes is partially dependent on the cultural, historical and personal experiences of those perceiving. Preferences determined from the perceptions of one study group in a particular area, in this case Arlington, may not always be consistent with the preferences of another group at a different location or from a different time period.

Figure 2.1 shows a transactional model of human and landscape relationships. This model shows the major elements in the process of perceiving and responding to environmental change (Zube and Sell 1986). “We should adopt a transactional view of perception wherein the unit of analysis is the person in the environment (Zube and Sell 1986, p. 163).” Perception here is a “function of the transactions between human and

environments (Zube and Sell 1986; Taylor 1982).” This view includes the following perceptual properties: (1) “conceptualizing the environment as surrounding the person, providing more information than can be used from central and peripheral sources and from multi-modal sensory experiences, having an ambience and symbolic meanings and (2) conceptualizing the human as an active participant with the environment, processing information and often experiencing the environment in the context of a social activity (Zube and Sell 1986).” The model suggests that information from other sources apart from the immediate surrounding environment can influence human perception.

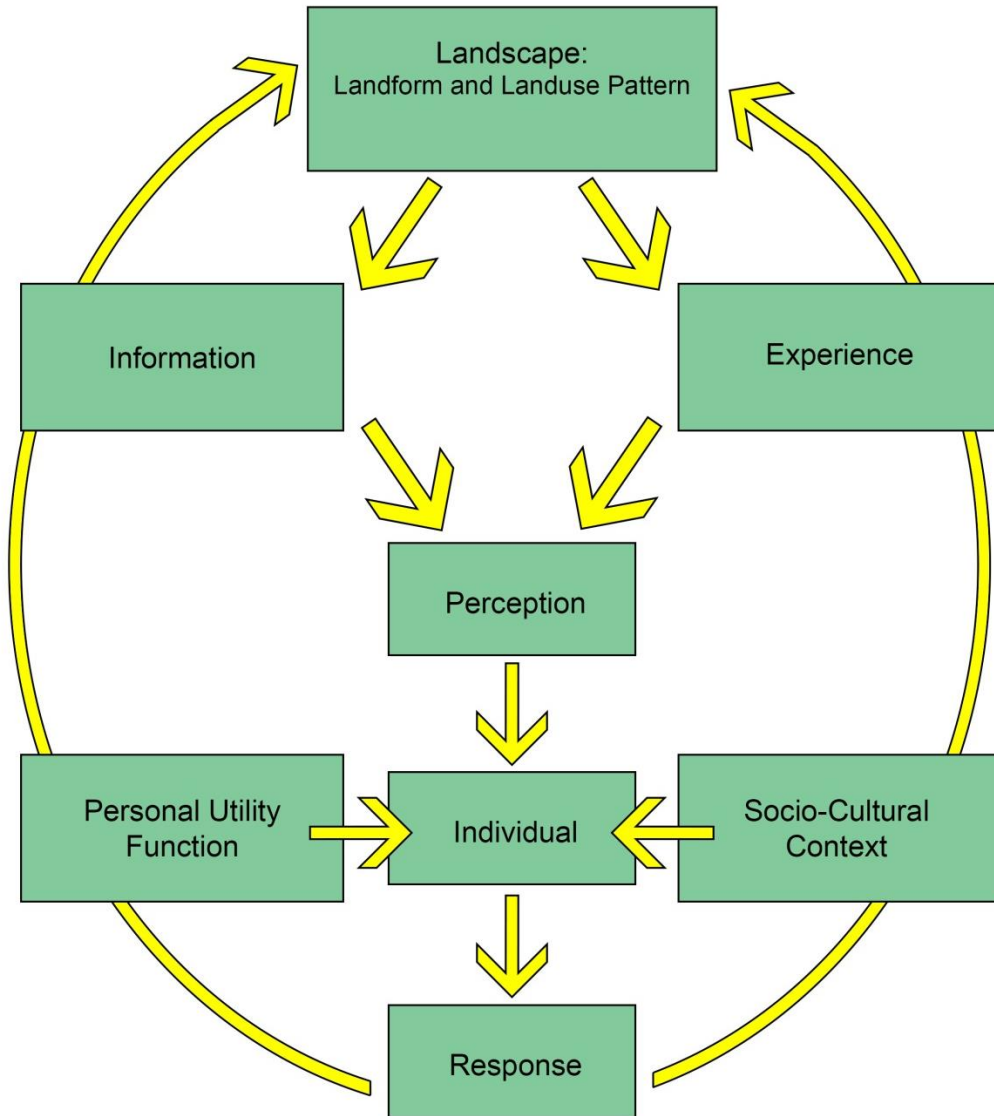


Figure 2.1 A Transactional Model of Human/Landscape Relationships (Zube and Sell 1986)

2.4 History of Arlington and its Golf Courses

The City of Arlington has an interesting and impactful history concerning the growth of its populace as well as the expansion of its parks and recreational facilities. A basic outline of the historical events that helped shape the city and the golf courses included in the research is reviewed in the following sections.

2.3.1 Brief History of Arlington, Texas

The Rev. Hayter, a land surveyor in 1876 when the Texas and Pacific Railway Company came through the area that is now Arlington) purchased the land for the original town site. This event was set in motion by the approval by the United States Congress for a transcontinental railroad including Texas. In return for his assistance in directing the rail line through the area, the engineers offered to name the station Hayterville. Rev. Hayter declined the offer objecting that his name was not usually pronounced correctly. Instead, Rev. Hayter named the town site Arlington in honor of General Robert E. Lee's home in Virginia. The naming of the town has also been attributed to the first postmaster, James Ditto Sr. (Arlington History – History of Arlington 2015).

In 1877 Arlington, Texas was officially recognized by the US Postal Service. The area was rich in natural springs, making it suitable land for farming. In 1891 the City drilled a well at the intersection of Main and Center streets which provided mineral-laced water that was believed to have medicinal qualities. The well and the belief concerning the water drove the development of a market for the water. The well was finally capped in 1951 due to increase in traffic and growth and was paved over. By 1917 the Arlington Military Academy became Grubbs Vocational College and the name was changed to North Texas Agricultural College by 1923 until it was again changed to Arlington State College in 1949. In 1967 the college was re-opened as the University of Texas at

Arlington. The university had 25,000 students and was a driving force for local economy and the North Texas Region (Arlington History – History of Arlington 2015).

Meadowbrook Park was opened in 1924 and contained the city's first golf course and swimming pool. By 1930 the population was almost 3,700 and cotton farming began to decline as the main force of Arlington's economy. O.S. Gray founded a pecan nursery in 1932 and developed five varieties of pecan trees which continued to contribute to the local economy into the late 20th century. Throughout the 1930's gambling and horse racing brought people and business to Arlington and a racetrack known as the Arlington Downs was built to accommodate 11,000 spectators. During the 1920's Fred and Mary Browning purchased the Top O' Hill Terrace featuring a casino, tea garden, hidden rooms and an escape tunnel. The establishment was used by politicians, businessmen and entertainers (Arlington History – History of Arlington 2015).

With the improvements to roads and the ever increasing availability of automobiles, the interurban rail line servicing Arlington ceased operation in 1938. The city's first car dealership was established in 1917 and interstate traffic carried travelers through the center of Arlington, promoting the economic growth of the city. Tom Vandergriff was the longest serving mayor in Arlington's history and was instrumental in bringing a General Motors assembly plant to the area in 1953. Following this, a new turnpike, lake and amusement park projects were implemented. Lake Arlington was created by constructing a dam on Village Creek and filled to capacity in 26 days, leading to its nickname the "Miracle Lake." In 1961 Six Flags Over Texas was opened and was the first of many theme parks named "Six Flags" to be opened in various states (Arlington History – History of Arlington 2015).

By 1980 Arlington was home to 160,000 residents and by 1990 was the 61st largest city in the United States with a population over 250,000. During this time the city

expanded to the north of I-30 as well as south past I-20. In 2004 a vote was passed for a tax hike to help pay for a new stadium for the Dallas Cowboys, known now as AT&T stadium located a half mile from Ranger's Stadium. Arlington has become a destination for entertainment as well as for its parks and recreation and its residents continue to drive the growth and change of the city through improvements to the downtown area among other projects (Arlington History – History of Arlington 2015).

2.3.2 A History of Study Golf Courses

An inquiry into the history and urban context of each golf course is necessary to better understand the golf course study sites. Chester W. Ditto Golf Course was founded in 1982 and is named after a life-long Arlington citizen. Chester W. Ditto was employed by his father in Fort Worth and was a Mason and a Shriner as well as a member of the Fort Worth Rotary. Mr. Ditto played golf at what is now known as Meadowbrook Golf Course in Arlington which is another of the study sites in this research. After Mr. Ditto passed away in 1967, the City of Arlington acquired 164 acres of land from his widow, Alberta Ditto, on December 31, 1968. Chester W. Ditto Golf Course was dedicated and opened in September of 1982 (Arlington Golf 2015).

Rolling Hills Country Club began in 1954 as local golfing families in the area banded together to acquire the necessary land to build a golf course. Originally it was a 9-hole course that was completed in 1955. By 1962 the course was enlarged to 18 holes. In May of 2001 the course moved into a new clubhouse with updated facilities and amenities. The course has been redesigned by Colligan Golf in 2013 (Rolling Hills Country Club – Golf – Arlington, Texas 2015).

Meadowbrook Golf Course is the oldest golf course in Arlington. The City of Arlington purchased 52 acres of land for \$5,000 in 1923 and Meadowbrook Park and Meadowbrook Park Golf Course were officially in 1924. The course was, and continues

to be, a 9-hole golf course. In the 1930's a small woodbine sandstone structure was implemented and part of that structure still serves as part of the maintenance facility on site. At one time Meadowbrook Park contained the only softball diamond in the city and the ninth hole of the golf course intersected with it. During evening summer hours golfers would often yield to the softball players and play a short ninth hole instead (Meadowbrook Park – History of Arlington 2015).

2.5 Summary

When considering the affects a golf course landscape has on residents in surrounding communities, it is important to understand what factors historically drive golf course design. The current state of golf in America and the impact golf courses have on the environment should also be considered. Furthermore, in studying resident perceptions this research seeks to understand perception itself and how it is applied to the human experience of environment. Since the data and findings in this research are specific to the local study sites, the history of the City of Arlington plays a role in better understanding the residents that live there as well as how the urban environment developed over time with these golf courses.

CHAPTER 3

RESEARCH METHODS

3.1 Introduction

This chapter includes a description of the methods in which this research addresses the research questions outlined in chapter one. This research follows qualitative methods and data is primarily collected through face to face interviews with residents located within one eighth miles of a golf course included in this study. Supporting data are also collected that concern demographic and economic conditions of communities included in this study. After data collection is complete, data obtained through open-ended interviews are content analyzed in the form of qualitative summaries that highlight patterns of perceptions and determine how elements of golf course design affect perceived value. The following sections provide detailed information regarding study area selections, data research design and analysis methods.

3.2 Study Area Selection

The three golf courses selected for this study are: Chester W. Ditto Golf Course, Meadowbrook Park Golf Course, and Rolling Hills Country Club. These courses determine which communities the research interviews are conducted in. The residences to be included are located within 1/2 miles of the edges of each golf course. While interviews are conducted at random throughout this area, a major distinction is made between residences directly adjacent to golf course edges and residences that are not. Details of an interviewee's residence location and relationship to golf course are included in analysis summaries.

These golf courses are selected primarily due to their comparable locations and the differing qualities of both the courses themselves and the communities surrounding them. Chester W. Ditto Golf Course is a public course at a reasonable price that is kept

in fairly high quality conditions. The course notably utilizes native and adapted low maintenance plantings. Meadowbrook Park Golf Course is also a public course yet at a lower price than Ditto. This course also contains half as many holes as the other two courses. Though the course quality is far from poor, it is distinctly less than the qualities of Ditto and Rolling Hills. Rolling Hills Country Club is the only course of the three that is private. This course has the highest quality of the three and was also recently renovated in 2013.



Figure 3.1 Chester W. Ditto Golf Course Resident Selection Area

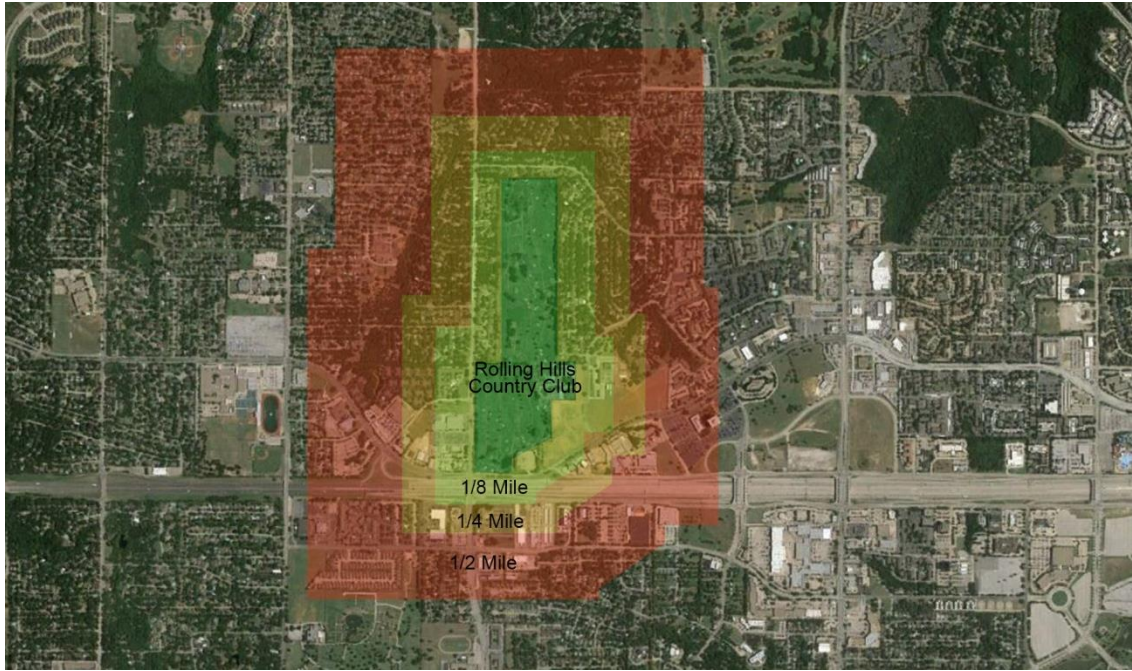


Figure 3.2 Rolling Hills Country Club Resident Selection Area

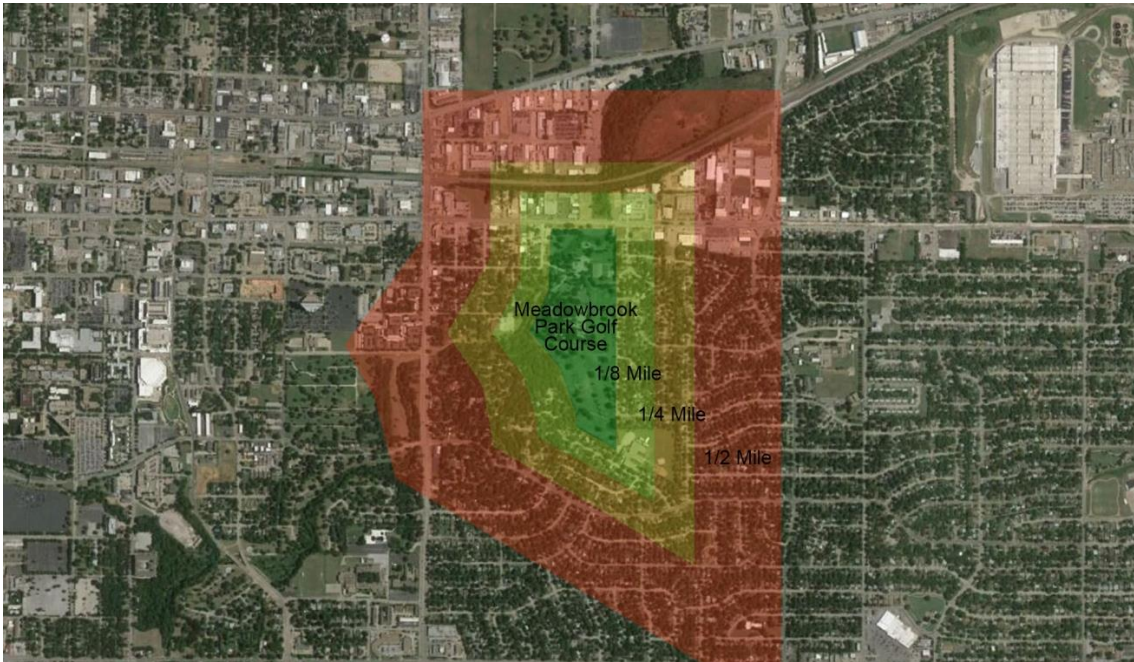


Figure 3.3 Meadowbrook Park Golf Course Resident Selection Area

3.3 Research Design

Data are collected primarily from face to face and over the phone open-ended interviews with residents within the outlined study areas. Questions are designed to elicit responses that are relevant to the research questions outlined in chapter one. However, because the questions are open-ended there are data collected that are unexpected and either relevant to the research questions or not. Each question is selected and ordered to first give the respondent a chance to give their initial impressions of the golf course landscape followed by soliciting responses regarding specific physical characteristics and relationships between the golf course landscape and the resident. The respondent is then given a final opportunity to add any other thoughts that they may have at the end of the interview.

3.4 Data Collection Methods

Before each interview basic research information is explained to the respondents and the respondent is requested to sign an informed consent document or give their verbal consent over the phone for the interview and to give permission to include their responses in this study. The respondent is made aware that their participation is voluntary and they can refuse to continue participating at any time. The participant is also made aware that their responses are kept confidential and transcriptions are kept at the UT Arlington Architecture building for at least three years following the end of the research.

3.4.1 Interview Questions

The following are the basic questions to be asked of each participant. The interviews are open-ended, therefore follow-up questions and comments will be made on a case-by-case basis for the purposes of clarifying and understanding responses.

- 1) What do you think about the golf course landscape in this community?

- 2) Do you feel that you benefit from or enjoy the golf course landscape in any way? If so, how? If not, why not?
- 3) What sort of access do you have to the golf course landscape?
- 4) Could you describe any other interaction you have as a resident with the golf course landscape?
- 5) If you could change anything about the golf course landscape then what would you do?
- 6) Do you have any other thoughts on this subject?

Each interview lasts approximately 15-20 minutes and is recorded and transcribed after the interview by the researcher. For each study area up to 10 interviews are conducted. "Open-Coding procedures are used to analyze interview transcripts (Strauss and Corbin 1990). This is a flexible process of making comparisons between individuals' responses and narratives and permits line-by-line analysis of phrases or words, examination of sentences or paragraphs, or inspection of an entire interview to isolate and compare dominant themes (Cheng 2013).

3.5 Interview Procedure

This study examines public perceptions and perceived value by asking interviewees about how they feel about a nearby golf course. The first step in this study is to obtain permission from the Institutional Review Board (IRB) for the protection of human subjects. Informed consent forms must also be presented to respondents prior to interviews or read aloud over the phone. The second step is to identify key informants through community contacts, through attending community meetings and the posting of flyers throughout neighborhood and golf courses. Interview appointments are then scheduled with selected participants.

After the participant is informed of the interview procedures and their confidentiality and has given their written or verbal consent, the interview begins. The interview from this point on is recorded using a mobile device app and later transcribed. The recordings are then deleted as was informed to the participant.

Throughout the interview the principle investigator attempts to ask the questions in as close to the same way for each participant in order to reduce bias introduced through differences in soliciting statements. Participants are given the opportunity to fully expand on their responses and in many cases are asked follow up questions to clarify and elaborate their responses. The goal is to collect as many thoughts about the participant's feelings and attitudes toward the subject matter as possible.

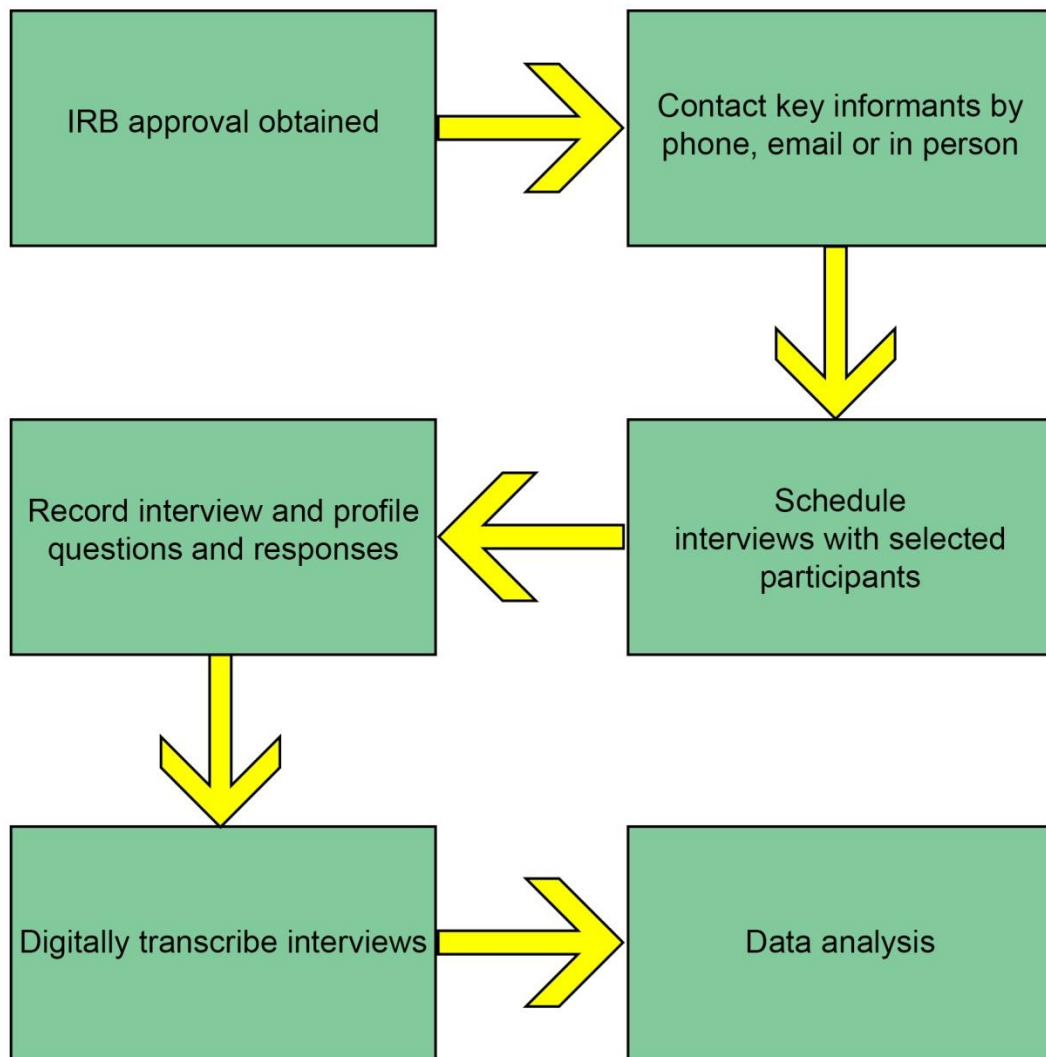


Figure 3.4 Interview Procedure

3.6 Data Analysis

Data is analyzed through qualitative data analysis methods and coding procedures (Taylor and Bogdan 1998). In particular, the “grounded theory approach” is used for “discovering theories, concepts, hypotheses, and propositions directly from the

data rather than from a priori assumptions, other research, or existing theoretical frameworks” (Taylor and Bogdan 136-137; Glaser and Strauss 1967). In the grounded theory approach, researchers do not necessarily seek to prove their theories but instead seek to demonstrate plausible support for their theories (Taylor and Bogdan 1998). “Glaser and Strauss (1967) argue that key criteria in evaluating theories are whether they ‘fit’ and ‘work’ (Taylor and Bogdan 137).

As data are collected, the researcher is constantly analyzing and making sense of what is being said. The researcher constantly looks for emerging themes and developing concepts (Taylor and Bogdan 1998). This aids in the researcher becoming familiar with the data so that once all data is collected, the researcher has already begun familiarizing themselves with the data. Once the data are collected the researcher uses coding procedures to begin constructing typologies. These typologies are used to aid in the developing of concepts and theory (Taylor and Bogdan 1998).

In this research, the kind of typology used is that which is based on the researcher’s own classification system relating to what was frequently spoken of during interviews. This method of classification can help “make conceptual linkages between seemingly different phenomena” (Taylor and Bogdan 144). The data are deconstructed and organized based on this classification system. This leads the researcher to further identify and confirm common themes among the different words and phrases interviewees use.

Once the data have been sorted and analyzed based on the typology system created by the researcher, concepts and propositions are formed to move “from description to interpretation and theory (Taylor and Bogdan 144). The concepts formed aim to describe the phenomena in ways that may not be apparent through descriptions of the specific instances alone. Themes that have been noted are compared to see if there

are concepts that unite them through underlying similarities between them (Taylor and Bogdan 1998).

Propositions are then determined which are grounded in the data. These propositions are either right or wrong even if the researcher is not able to necessarily prove them. The propositions are generalizations that are the result of identifying themes, constructing typologies and forming concepts (Taylor and Bogdan 1998).

3.7 Bias and Error

The research methods described here are subject to error by the researcher. Bias and error can be introduced through the construction of interviews as well as the conducting of these interviews. Data collection is limited by the academic schedule of the researcher and the academic calendar of the University. The number of interviews are limited due to the difficulty by the researcher in scheduling interviews with research participants. Data are limited to the three golf courses described and their surrounding residential neighborhoods. Due to this limitation, conclusions and propositions are limited to describing the phenomena occurring at these sites in particular and should not be assumed to be true for other locations.

3.8 Chapter Summary

The data collection and analysis processes used in this research aim to identify themes and form concepts and propositions regarding resident perceptions of golf course landscapes at the three study sites indicated in this chapter. Grounded theory is used to analyze the interviews to determine these concepts and propositions. The ultimate goal in using these procedures is to allow data to be collected as efficiently and responsibly as possible as well as to use the data to best inform the conclusions drawn in this research.

CHAPTER 4
ANALYSIS AND FINDINGS

4.1 Introduction

This research analysis is based on face to face and telephone interviews conducted at each of three selected sites in Arlington, TX: Chester W. Ditto Golf Course, Rolling Hills Country Club and Meadowbrook Park Golf Course. These interviews are conducted to determine residents' perceptions of the golf course landscapes in their communities to better understand how design of these sites affect their surrounding communities. When referring to data collected from interviews the following labeling system are used to protect the participants' confidentiality:

- Each participant is given a code. For example (1A)
- The number in each code is specific to that participant for a particular study site
- The letter corresponds to a study site.
 - (#A) Refers to a participant from the study site around Chester W. Ditto Golf Course
 - (#B) Refers to a participant from the study site around Rolling Hills Country Club
 - (#C) Refers to a participant from the study site around Meadowbrook Park Golf Course

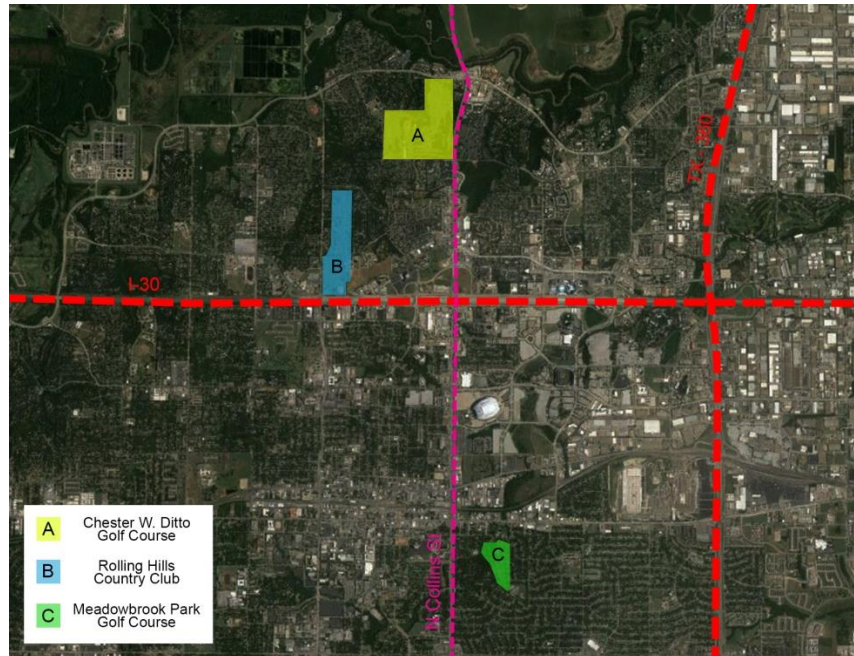


Figure 4.1 Study Site Label Designations

In the case of this study the researcher was able to schedule interviews with 5 participants from each study site for a total of 15 interviews. The following sections describe the analysis of the interviews including the emerging themes and categories determined by the researcher in response to the data.

4.2 Respondents' Profiles

Research participants' profile data are broken down into the following categories:

- Frequency of which respondent plays golf at the study golf course
- Relative distance from the edge of study golf course
- Presence of visual or physical connection to study golf course
- Duration of current residency

This profile data is used to further understand responses and aids in the forming of themes and concepts. The following charts indicate the number of participants that fall into each profile category.

Frequency of which respondent plays golf at the study golf course			
	A	B	C
Never	3	3	3
Has before but not regularly	1	2	0
1-5 times per year	1	0	0
6-10 times per year	0	0	0
11+ times per year	0	0	2

Table 4.2 Frequency of Golf Rounds Played

Table 4.2 shows the frequency of which a respondent plays golf at the golf course in question. Three out of five respondents at each golf course stated that they do not ever play golf at the golf course while only at Meadowbrook Park Golf Course (C) are there any respondents that play regularly. Overall the frequency that residents interviewed in this study actually play golf at the golf course they live near is quite low.

Relative distance from the edge of study golf course			
	A	B	C
Next to	2	3	0
1/8 mile	1	1	2
1/4 mile	2	1	3
1/2 mile	0	0	0

Table 4.3 Distance from Edge of Study Golf Course

Table 4.3 shows the approximate distance that each resident lives from the edge of each study golf course. While about half of the respondents from Ditto Golf Course (A) and Rolling Hills Country Club (B) live right next to the golf course, zero respondents were interviewed who lived directly next to Meadowbrook Park Golf Course.

Presence of visual or physical connection to the study golf course			
	A	B	C
Yes	3	3	1
No	2	2	4

Table 4.4 Presence of Access to Study Golf Course

Table 4.4 describes the presence (or lack of) visual and physical connection each resident has with the golf course nearby. While the respondents were split fairly equally at Ditto Golf Course and Rolling Hills Golf Course between having these connections and not having them, all but one respondent at Meadowbrook Park Golf Course stated that their resident lacked a physical or visual connection to the golf course.

Duration of current residency			
	A	B	C
1-5 years	0	0	0
6-10 years	0	0	2
11-15 years	3	2	2
16-20 years	1	2	1
21+ years	1	1	0

Table 4.5 Duration of Residency Information

Table 4.5 shows the approximate duration each respondent has lived at their current residence. The trend at all three golf courses is that most residents have lived there for over 10 years and in some cases over 20 years. Only in two cases at Meadowbrook Park Golf Course did respondents state that they have lived at their current residence for less than 10 years.

4.3 Data Analysis and Findings

This section presents a summary of research participants responses to interview questions categorized by the researcher based on common themes. Figures 4.6 – 4.10 represent these categories and supporting statements by respondents. The purpose of the categorization is to sort the data for analysis to identify similarities and repeating phenomena. These similarities and categories are then summarized by the researcher and presented in narrative form to create the basis for developing concepts and theoretical propositions.

4.3.1 Overall Perception

The first in-depth interview question seeks to allow the participant to share their initial thoughts and feeling about the golf course landscape without being prompted to a more specific question. This question often leads the researcher to ask more pointed follow up questions and also tends to set the tone for the remaining questions.

Q1: What do you think about the golf course landscape in your community?
 - In what ways do you benefit from or enjoy the golf course landscape?

Open Space / Green Space	<p>"It offers open green space..." (1A) "Well I do enjoy having the nice big green space and the gentle hills" (2A)</p>
Trees / Other Vegetation	<p>"It has a lot of trees and shade." (1C)</p>
Topography	<p>"It seems to be really open and has a lot of sloped areas" (3B) "It has a lot of nice trees and hills..." (4B) "...it's flat except for the greens." (1C)</p>
Comparison to alternative land use	<p>"Aesthetically it's a whole lot better than having more houses and apartment buildings..." (3A) "Well I don't have to look at a neighbor from my backyard" (4A)</p>
Maintenance	<p>"It isn't as well kept and expensive as other courses I've seen..." (5C) "...they could mow the tall grass more." (2C)</p>
Asset to the community	<p>"I guess it is a good thing to have it nearby." (5A) "Yeah it's a nice place to have in the neighborhood." (4C)</p>
Infrastructure / Facilities	<p>"They put the Men's and Women's Restrooms on septic system. Then they removed the old framework and put in the new framework in public view." (1B)</p>
Golf specific characteristics	<p>"The old design had sand traps and different greens. The remodel removed them and now it is too monotonous. (1B)</p>
General positive descriptions	<p>"I think it's pretty and soothing to have that view. So I enjoy it." (2A) "It is pretty attractive. It looks fine. Looks nice." (3A)</p>
General negative descriptions	<p>"...could use some improvements." (2C)</p>

Figure 4.6 Categories of Responses for Question 1

4.3.2 Physical and Design Characteristics of the Golf Course Landscape

The following question seeks to lead the respondent to remark on specific characteristics of the golf course landscape. The characteristics themselves are not presented to the respondent unless that respondent shows signs of having trouble describing characteristics of the golf course landscape.

Q2: What physical characteristics (or design characteristics) of the golf course landscape are most appealing to you?
 - Why? (Feel free to elaborate on what are least appealing as well.)

Open Space / Green Space	<p>"Yeah well I like how it's open and they keep it pretty green." (5A) "The most appealing characteristic is that I have 100 acres of golf course in my backyard." (1B)</p>
Trees / Other Vegetation	<p>"Most appealing I'd say is the trees. They have some old trees that I like." (1C) "I enjoy the greenery and trees..." (2C)</p>
Topography	<p>"Yeah I like the way it seems to have open sloped land." (3B)</p>
Water	<p>"The ponds because I like the wildlife like ducks and turtles." (1A)</p>
Grass	<p>"I guess most appealing to me is just the open spaces and the grass of the fairway." (4A) "It has a lot of nice grassy areas." (2B)</p>
Wildlife	<p>"The ponds because I like the wildlife like ducks and turtles." (1A)</p>
Maintenance	<p>"...some of the characteristics and areas that aren't mowed and are a little bit tall, those don't particularly appeal to me." (2A)</p>
Clubhouse / Facilities	<p>"The clubhouse sits back off of Brown Blvd a little bit it's not obtrusive at all." (3A)</p>
Views to golf course	<p>"It can be very pretty to see passing by." (3B) "But the most appealing is just having a wide open view to the course from our yard." (5B)</p>

Figure 4.7 Categories of Responses for Question 2

4.3.3 Interactions with the Golf Course Landscape

The third interview question seeks to identify yet unknown interactions the respondent may have with the golf course landscape in their community. This question is intentionally vague as to allow the respondent to comment on aspects of the golf course landscape that have not been prompted by the researcher.

Q3: Could you describe any other interaction you have as a resident with the golf course landscape?
 - Do you have access to the golf course landscape? (Please elaborate about the physical and visual access you may have and how you feel about it.)

Passing by vehicle	<p>"I drive by it all the time..." (5A) "Well like I said I see it when I'm going by..." (2B)</p>
Passing as pedestrian	<p>"I walk by it on the sidewalk. Used to walk our dog there." (1A) "...the kids and I walk along the street by it." (2C)</p>
Directly accessing course	<p>"At times we have gone out when the golf course is closed and there are no players on it and enjoyed taking a little walk on it." (2A)</p>
Viewing the course	<p>"We just like to look out at it and watch the golfers sometimes." (4B)</p>
Golf balls hit into property	<p>"Golf balls get hit into our yard and bounce off the house sometimes so I guess that is a drawback." (5B)</p>
Fences / Barriers	<p>"Yes our yard runs right out into the course we don't have a fence or anything." (4B) "Yes we have a small fence about four feet high." (5B)</p>
General negative responses	<p>"Not that I can think of. I don't use it." (3B) "As a resident? No nothing I just go to play golf there." (3C)</p>

Figure 4.8 Categories of Responses for Question 3

4.3.4 Desired Change in the Golf Course Landscape

The fourth question aims to challenge the respondent to come up with ways they would improve the golf course landscape. However it was found that several respondents would rather choose to not change anything at all.

Q4: If you could change anything about the golf course landscape what would it be?

Trees and other vegetation	<p>"I would like there to be more green shrubs and trees." (1A) "More trees. I think it has less trees than it used to so yeah I'd say just adding more trees would be good." (3B)</p>
Water	<p>"I don't know more water?" (4A) "Maybe just more water around the course." (4B)</p>
Maintenance	<p>"I would make the greens bigger and have nicer grass on them. Other than that though I like it out there." (3C) "I would make it have better grass conditions and maintenance." (5C)</p>
Topography	<p>"I mean more hills would be nice..." (2A)</p>
Visual screening of facilities	<p>"I would want more trees and plant more shrubs around the outhouses." (1B)</p>
Cost	<p>"But it's a small course and cheap so I wouldn't want that to change." (1C)</p>
General negative responses	<p>"I wouldn't change anything." (4C)</p>

Figure 4.9 Categories of Responses for Question 4

4.3.5 Unsolicited Responses

The final interview question leaves the respondent open to comment on any aspect of the subject they choose to. This question aims to learn how golf course landscapes might impact residents' lives in ways that the previous interview questions did not illicit.

Q5: Do you have any other thoughts on this subject?

Upcoming renovations	"Well the upcoming redesign is a concern. The maintenance building might be too near the residences." (1A)
Public course as an asset	"I think it's important to have the nice municipal golf course in North Arlington. I'm glad we have it." (2A)
Property damage	"Property damage is a bit of an issue. Our house gets pounded and we've had broken windows. Almost every car we have has golf ball dents in it." (4A)
Proximity to golf course	"Yeah just that it's nice to have a course nearby so you don't have to drive far and take much time out of the day to get a round in." (3C)
Time involved in using course	"A lot of people don't play because they don't have time so when it's close like this it's great." (3C)

Figure 4.10 Categories of Responses for Question 5

4.3.6 Summary of Responses

In response to question 1 participants almost unanimously commented positively on the golf course landscapes with two exceptions. Each participant framed their response differently and made comments falling into the categories listed in section 4.3.1. An overarching theme emerged in that most of the responses related to the trees, grass and vegetation of the golf course landscapes. This may indicate that the primary thought evoked by a golf course landscape is connected to the natural and designed flora on the study site. In many cases general positive descriptions were used to describe the respondents' feelings toward the golf course landscape such as "I enjoy it" (2A) and "I think it is very nice and natural" (3C). The general feeling described by participants indicates that they tend to enjoy the presence of a golf course in their community even though many participants do not regularly play golf there.

Question 2 is aimed at evoking a more specific response to the various design characteristics of the golf course landscapes. Responses to this question again tended to focus on the natural elements of the golf course landscape such as the trees, vegetation and water. There was also a focus on the openness of the golf course landscape, the expansive green space and the views that these elements provide. The quality of the maintenance and upkeep of the course was also mentioned and, in the case of Chester W. Ditto Golf Course and Rolling Hills Country Club, was typically praised. The size and density of trees at the golf courses seemed to elicit the most positive responses from interviews.

Questions 3 seeks to determine other interactions the residents have with the golf course landscapes not previously mentioned. In several cases the respondents chose not to add any further comments on their interaction with the golf course landscapes. These responses typically came from residents that lived far enough away

from the course to not have a direct physical or visual connection to the golf course landscape. Other interactions described by the residents included walking and driving past the golf course. In one case the resident states that “at times we have gone out when the golf course is closed and there are no players on it and enjoyed taking a little walk on it” (2A). Overall the interactions the residents have with the golf course landscape were generally limited to viewing it in passing or from their residence.

Question 4 challenges the respondent to indicate their desired changes for the golf course landscapes. In response, several participants stated that they would not change anything. It was suggested by others that increasing the quantity of trees and water would be preferable. Maintenance related to the grass quality and trimming of trees was also an issue that several respondents wished to see addressed. In one case specific to Rolling Hills Golf Course it was indicated that certain facilities were an eye sore and they wished vegetative screening measures would be implemented.

Question 5 simply allows the respondent to add any further thoughts on the subject that were not covered in the previous questions. Most respondents felt that their previous responses were adequate and chose not to add any further comments. In a few cases it was added that the golf course in the residents’ communities was an asset and that they were glad to have it nearby. Participant 2A states “I think it’s important to have the nice municipal golf course in North Arlington. I’m glad we have it.” Property damage was mentioned as well by residents living right next to the golf courses. Golf balls coming into their yards was an issue that was seen as a negative but also accepted as part of living on a golf course. One respondent that mentioned this preferred to deal with the damage rather than have a net or other type of screen put in place that would affect the views onto the course.

4.4 Descriptive Summaries of Findings

The following sections contain narratives written by the researcher informed by the responses from interviews and analysis of data described previously. The goal for these narratives is to make hypotheses and draw conclusions about the impact the study site golf course landscapes are having on their surrounding resident populations and what this information might tell about how to inform future golf course design.

4.4.1 Chester W. Ditto Golf Course

Ditto Golf Course received praise for its wildlife, open greenspace and overall quality of vegetation such as the finely kept grass and the overall quality of its trees. There seems to be a strong connection to the golf course landscape with those residents living directly adjacent to it. It seems to be a soothing and enjoyable amenity for the residents to have nearby even though most of the interviewed participants do not regularly golf there. The somewhat vague comments concerning the “openness” and the overall “open” qualities can be interpreted to point towards a common theme that the golf course landscape’s presence elicits somewhat non-specific feelings of natural beauty of a type particular to golf courses within the urban fabric of the community. Many respondents’ only interaction with the course is through viewing it in passing as a pedestrian or in a vehicle, so these residents’ perceptions are assumed to be formed without looking onto and studying the landscape intently, but rather they get a very small snapshot of what is going on in the landscape as they pass by. This immediate reaction to stimuli on the edges of the golf course landscape can help to inform future design. Placing importance on the ability of the landscape to evoke a rapid visual reaction with people in-passing could be a focal point. The size, clustering and maintenance of trees and vegetation on the edges of the golf course seem to play a large part in these quick perceptions. The apparent presence of water also seems to impact this perception to a

degree. The residents appear to have a general, perhaps fantastical, view of what the golf course landscape at Ditto is actually like, formed by the short interactions they have with the golf course landscape.

Those residents that do live adjacent to the golf course have a noticeably different set of preferences and concerns. The property damage caused by golf balls flying and bouncing onto their properties is a notable concern. However it should be mentioned that the residents describing this also added a disclaimer in that they feel it is an integral part of living next to a golf course. They do wish there were measures in place to alleviate the property damage but they are not willing to compromise their own views to the golf course landscape to achieve it. Barriers described by these residence were small and did not block their views onto the golf course, however they do define their properties to maintain privacy in that regard.

4.4.2 Rolling Hills Country Club

Rolling Hills Country Club recently went under renovations and several respondents made note of these changes in particular to their perceptions of the golf course landscape. There were concerns that too many trees had been taken out and not replaced as well as a complaint that infrastructure facilities were too obvious and there was a need for screening. However, true to its name, several respondents tended to reference the undulating nature of this golf course landscape as a positive attribute. The residents valued that differentiation from the surrounding urban landscape. The respondents that lived adjacent to the course seemed to utilize their views of the golf course landscape as a relaxing activity and also had more direct access to the golf course landscape itself, even if they did not choose to directly access it. As with Ditto Golf Course, the views from these residents' backyards were not obstructed by tall fences indicating that these views are an attractive attribute of residences adjacent to the

golf course. Residents that did not live adjacent to the course mentioned that their interactions typically were limited to viewing it in passing, as it was with Ditto Golf Course.

4.4.3 Meadowbrook Park Golf Course

The participants near Meadowbrook Park Golf Course seemed to refer to the natural feel of the course in a slightly different way than those at the other two sites. These respondents felt that the course, while perhaps not quite as well maintained and meticulously crafted, has a certain appeal as an older and more established greenspace. The size of the trees were complemented and the theme seemed to be that the course held a place in residents' minds as a sort of natural oasis that is more wild perhaps than the previously described golf courses. The maintenance and overall quality of the golf course elements were mentioned as characteristics that could use improving. These descriptions came primarily from those that had played the course before or knew someone that has. As with the previous sites, experiencing the golf course landscape in passing was also a primary theme among residents that lived nearby, although they did not seem to have as much direct access to the landscape as Rolling Hills. Meadowbrook Park that is adjacent to this golf course, and was founded at the same time, may play a part in affecting the perceptions of the nearby residents. Further inquiries would be necessary to find out how this aspect might impact the perception of the course itself.

4.5 Summary

This chapter reviews the data collected and the findings through analysis. While several themes were found to be common between all three study sites, there were notable differences in the types of responses at each golf course as well. The residents near each golf course had their own collective views of the golf course landscapes revealing a different character for each one. Chapter five includes the conclusion and final discussions of this research.

CHAPTER 5

CONCLUSION

5.1 Introduction

This study ultimately seeks to enhance the way golf courses are designed especially in places where they are surrounded by residential communities in urban areas. This section first summarizes findings from the research based on the research questions set at the beginning of the research. Section 5.3 describes the importance of this research and section 5.4 includes a conclusion and discussion about the findings. In section 5.5 there is presented a list of topics for future study related to this topic.

5.2 Summary of Findings

The findings of this research show that specific physical elements of a golf course and their relationships with the surrounding urban landscape have impacts on the resident perceptions in those communities. The most prevalent of these elements include trees, grass and other vegetation, water, topography and overall maintenance of the site. These elements that are visible from the outside edges of the golf course and from surrounding residences are shown to make impressions and affect perception of the residents interviewed. Furthermore the open and green characteristics of the overall landscapes were commonly mentioned as having made an impression on residents at the study sites. These characteristics are all able to be manipulated by a designer and so golf course designs and layouts can be carried out in such a way as to take into account the resident perceptions and preferences of the surrounding residential communities.

The residents that are within walking distance from the golf course landscapes studied seem to interact with the golf course landscapes in two major ways in Arlington, Texas. Residents that have a visual or physical connection to the golf course landscape

interact with the landscape by viewing it from their property. These residents show more detailed knowledge of the elements in the golf course landscape and are more likely to have specific preferences related to design characteristics as well as to desire changes in the golf course landscapes. Alternatively, residents interact with the golf course landscapes through viewing in passing by vehicle or as a pedestrian. In these cases, residents show a more generalized knowledge of the design characteristics and have less specific preferences. The residents that interact with the golf course landscape only in this fashion tended to have an idealized image of the golf course landscape in their minds and did not focus quite so much on specific design elements. Instead, these residents focused on the bigger picture and the overall feel of the landscapes. Because of this, the edge characteristics are important because they most affect these resident perceptions as they view the golf course landscapes in passing.

The resident perceptions studied in this research can inform the future design of golf courses by showing the types of elements that residents focus on when interacting with the golf course landscape. Physical elements near the edges of the golf courses such as trees, grass and other vegetation, water and topography are of the most importance when considering effects on nearby resident perceptions. This information can be used to help identify what the resident preferences are in an area to better design a golf course responding to the surrounding community.

5.3 Importance of Findings

A common theme among responses from interviews suggests that these golf courses are in some ways positively impacting the lives of the residents or at least their idea about their own neighborhood. For example, respondent 2A states “I think it’s important to have the nice municipal golf course in North Arlington. I’m glad we have it. Rolling hills I know is very close. But a lot of people just can’t afford to be country club

members so it's nice to have a municipal golf course so hopefully it will stay that way.” The golf course landscapes provide a public greenspace for the community. While they cannot be accessed physically in the same way as a public park would be, they nonetheless provide a visual break from the surrounding urban landscape. Residents have a general positive attitude toward the presence of these golf course landscapes. Similar sentiments were expressed at each of the three golf courses. When these types of responses are compared to the number of the respondents that actually play golf at the golf course, we can see that viewing the golf course landscape as an asset is not necessarily directly linked to playing golf at that golf course. These golf courses are providing more to their community than just a location to play golf.

5.4 Conclusion and Discussion

Residents at the three golf courses studied in this research overwhelmingly show commonalities in their perceptions that relate to specific design characteristics. These characteristics (or themes drawn from this research) include the size, abundance and density of trees, presence of water, quality and maintenance of grass and other vegetation and the types of topography located on the site. While there were other less common themes, these were the aspects of the golf course landscapes that stood out as having the most effect on the most residents that live within ½ mile of each golf course.

Each golf course also elicited slightly different categories of responses. Chester W. Ditto golf course seemed to be viewed as an asset to the community yet perhaps too flat. Conversely, Rolling Hills Country Club was viewed as a site that has pleasing topographical change. Meadowbrook Park Golf Course differed in that it was viewed as being less well-groomed but also as having a more natural and wild feel than other golf courses. These differences show that it is important to study a specific site when looking

for commonly held perceptions and preferences and not to make assumptions based on findings at different sites.

The specific relationship that a resident has with the golf course landscape also affects their perception and interaction with the golf course landscape. Residents that lived directly on the edge of the golf courses inclined to have more detailed and specific perceptions about the physical characteristics of the landscape. They also tended to have more ideas about what elements they would like to see changed and what characteristics concerned them. Residents that live further away from the edge of the golf courses have a tendency to interact with the golf course landscapes primarily through passing by vehicle or as a pedestrian. This changed their perceptions as indicated by their responses. Their responses were more generalized and somewhat limited. These respondents often did not wish to describe any desired changes or were very general in their responses.

This research shows that within the three sites studied here there emerged several common themes regarding resident perceptions. While these themes may be specific to the areas studied, it is important to note that similarly common themes would likely be found at other golf course sites. Application of the methodology used in this research could aid golf course designers at other sites by allowing them to study the resident perceptions and preferences specific to their location. Such studies could be conducted prior to the design of a new golf course to identify the nearby resident preferences especially in urban communities. In this way designers can shape golf course landscapes in a way that best fulfills the desires of nearby residents.

5.4.1 Design Approach

Overwhelmingly the responses from research participants inclined to focus on the natural vegetation and green space provided by the golf course landscapes studied in

Arlington. Furthermore, their comments also lead the researcher to believe that the edge conditions, and those conditions which are easily visible from adjacent roadways, play the largest role in affecting the perceptions of residents. There seems to be an emphasis in golf course design and layout on views from certain holes outwards toward created scenery and/or scenery from the surrounding city and landscape. What this study suggests is that views into the golf course landscape from the outside city and neighborhoods are especially important when it comes to the perceptions of residents. The presence of trees, water and plant material are specifically cited by residents as sources of their enjoyment as well as design characteristics that they wish to see more of.

5.4.2 Ecological Impact

Although it was not the primary purpose of this study it is realized through this research that golf courses are a significant part of urban ecology and they must be treated as such. The golf course landscapes in this study not only provide visual enjoyment for the surrounding residents but also physical habitat for wildlife, a relief from the surrounding hardscape, a reduction of the Urban Heat Island Effect and provide unique opportunities and benefits for storm water management (Winguth and Kelp 2013). It is especially significant to benefit from their presence to improve environmental conditions in an urban context.

5.5 Significance to Landscape Architecture

It is important for landscape architects to consider all user groups that are impacted by a development. This is true for the Landscape Architect who endeavors to design a golf course as well as working on projects within the urban fabric around a golf course. The categories of interest and concern described by the research participants tell a story about how this land use is viewed by residents and how it affects their lives.

The data and analysis provided in this study can aid a Landscape Architect in understanding how these factors might impact their designs of golf courses and other projects, particularly in these Arlington study areas as well as sites with demographic and physical similarities.

5.6 Suggestions for Future Research

The findings of this study suggest there are other areas of research related to this topic that should be addressed:

- The ecological impact of golf courses on the site and the surrounding areas is a topic that has room for future research, particularly for specific sites in Arlington.
- Future studies of resident perceptions of golf course landscapes could focus on new sites or future development sites. The impact of a golf course landscape that is planned, but not yet realized, could show significantly different areas of concern for residents.
- Studies specifically comparing golf courses as public space to traditional public parks would offer additional insight into how golf courses are serving the communities surrounding them.

5.7 Concluding Remarks

The information gathered in this study should aid designers when considering the future impact of golf course development on resident perceptions in the nearby neighborhoods. Special care should be taken by designers to implement design characteristics that take these perceptions into account. It is not enough to design a golf course purely for the golfers that directly use it because a large quantity of land has much impact on the urban fabric of its surroundings as well as the communities within walking distance.

APPENDIX A
IRB APPROVAL LETTER



**Institutional Review Board
Notification of Exemption**

March 18, 2015

Jon-Michael Clothier
Dr. Taner Ozdil
School of Architecture

Protocol Number: 2015-0555

Protocol Title: *COMMUNITY PERCEPTIONS OF GOLF COURSE LANDSCAPES: LESSONS
LEARNED FROM ARLINGTON, TEXAS CASE STUDIES*

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 **March 18, 2015**.

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.

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 Alyson Stearns at astearns@uta.edu. You may also contact Regulatory Services at 817-272-3723 or regulatoryservices@uta.edu.

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BIOGRAPHICAL INFORMATION

Jon-Michael obtained a Bachelor of Arts in Horticulture with an emphasis on Landscape Design in 2012 from Texas A&M University. He then received a Master of Landscape Architecture in 2015 at The University of Texas at Arlington. His primary interests include urban design, site planning and landscape design. He plans to work in the Dallas-Fort Worth area for the foreseeable future.