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Land use controls, equine landscapes and the role of political culture in managing sprawl development.

Lynn Roche Phillips

University of Louisville

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LAND USE CONTROLS, EQUINE LANDSCAPES AND THE ROLE OF POLITICAL CULTURE IN MANAGING SPRAWL DEVELOPMENT

By

Lynn Roche Phillips
B.A., East Carolina University, 1981
M.A., East Carolina University, 1985

A Dissertation
Submitted to the Faculty of the College of Arts and Sciences Of the University of Louisville
In Partial Fulfillment of the Requirements For the Degree of

Doctor of Philosophy

Department of Urban and Public Affairs
University of Louisville
Louisville, Kentucky

May 2013
LAND USE CONTROLS, EQUINE LANDSCAPES AND THE ROLE OF POLITICAL CULTURE 
IN MANAGING SPRAWL DEVELOPMENT

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A Dissertation Approved on

February 12, 2013

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Craig Anthony Arnold

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Sumei Zhang

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Margath Walker
DEDICATION

"It is not the mountain we conquer, but ourselves."
-- Sir Edmund Hillary

This dissertation is dedicated

in loving memory of my father, Robert Thomas Roche;

also, to my brilliant and steadfast husband, Jonathan David Phillips

and strong and supportive mother, Letitia Ann Roche.

Your encouragement and love are unequivocal.
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Professor Hank Savitch taught so much and instilled so much strength in his students. Words cannot adequately express my deep respect and deeper appreciation for his time and effort invested in this journey.

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Lisa Walsh, formerly of the Marion County Planning Department and currently with the City of Ocala Planning Department, provided invaluable assistance throughout my study. City of Ocala Growth Management Director Tye Chighizola provided time, photos, and a meeting room for focus groups. Thank you, Florida friends!

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The ladies who share my early morning runs have been steadfast, loyal, and positive stalwarts who tolerated my scholarship through thousands of roadway miles. Special thanks to Patsey Ely Jacobs, Dr. Molly Tovar, Kim Downs, Julie O’Brien, and Su Troske. A champagne toast to all of you!
ABSTRACT

LAND USE CONTROLS, EQUINE LANDSCAPES AND THE ROLE OF POLITICAL CULTURE IN MANAGING SPRAWL DEVELOPMENT

Lynn Roche Phillips

February 12, 2013

This dissertation is a comparative analysis of the effectiveness of land development growth management programs at two communities that are thoroughbred horse centers – Ocala/Marion County, Florida and Lexington/Fayette County, Kentucky. The study period was 1970 to 2010. Marion County has had a state-mandated growth management program in place since 1985 and Fayette County has had an urban growth boundary since 1957. The agricultural use of the thoroughbred horse industry was selected because it is known to be highly sensitive to sprawl-type development and the long-term economic strength of each location is dependent upon a strong thoroughbred industry as it contributes more than $3 billion dollars a year to Florida and has a $2.4 billion economic impact on Fayette County, Kentucky.

The study evaluated the spatial extent of population growth using the US Census of Population. Using GIS, sprawl was quantified in several ways: through density gradients' regression analysis, and through measurement of the linear miles of built streets per square mile in each county. Fayette County was found to have sprawled less during the study period.

The next step involved investigation into the political culture to ascertain why stricter growth controls were implemented in one locale and not the other. Political
culture, defined as the attitudes, values, beliefs, and orientations that individuals within a society hold regarding their political system. Following Ingelhart (1990), political culture is operationalized through analysis of educational attainment and income levels. 

The role of the growth machine (Molotch, 1976) was also explored. In Florida, growth machine elites included developers and retirees, largely due to the economic model of retirement/second home development and tourism that has grown the Florida economy since the 1960s. Through participant-observer analysis, it is determined that the growth machine in Lexington seems to be the thoroughbred industry, which maximizes its interests through controlling the incursion of incompatible land uses onto the thoroughbred farms. Therefore, the growth machine may not always be interested in more development. In this case study, it is demonstrated that the growth machine is anti-development, in order to maximize its own profits.
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A. Introduction

Most Americans agree that sprawl is an unappealing development form, yet local governments across the country have the regulatory mechanisms and political culture in place which allow, and even encourage, sprawl because of the perceived benefits to tax rolls and alleged job creation and consumer choice. Although a relatively new development style, sprawl’s implications are well understood and include higher infrastructure costs, fragmented governance and consumption of prime farming lands (Burchell et al., 2005). Inasmuch as its definition is debated, sprawl is generally considered automobile-dependent, low density development that supports residential and/or commercial development, and results in unlimited outward extension of urban style development into undeveloped areas (Ewing, 1994). Between 1992 and 1997, more than 2.4 million hectares of farmland in the U.S. were lost to development; this represents a national loss rate of 0.8 hectares of farmland every minute (American Farmland Trust, 2010).

In efforts to combat sprawl, some governments use regulatory tools and growth management programs, such as agricultural zoning and urban containment policies, to keep urban development to land inside city boundaries. Statewide growth management
programs have been adopted in 13 states, and nearly 100 local governments have instituted urban containment strategies to curtail sprawl (Nelson and Dawkins, 2004). Although several states have growth management programs, most states do not have state-level agricultural zoning to provide long term land use protection for the farming community (Alterman, 1997). There is great disparity among places in their approaches to preventing sprawl. Given similar legislative authority and regulatory tools, there has been little systematic research to query why certain urban areas adopt zoning and growth management programs that firmly disallow sprawl, and others do not.

The ineffectiveness of a growth management program can be measured through sprawl, as by definition, it violates the urban/rural separation. There is a push-pull tension between growth management and the dynamic forces of sprawl; they represent opposing perspectives of the same issue (Figure 1.1). They are mutually reinforcing and complementary because managing urban growth and open space/farmland are two sides of the same coin (Bengston et al., 2004).

The push-pull tension between sprawl and growth management exists in negative and positive feedbacks; that is, as sprawl tends to expand, pressure to impose growth management mechanisms increases and a lack of growth management systems further enables greater amounts of sprawl-type growth. As the area of agricultural lands declines (and sprawl potentially expands), there is increasing pressure to preserve farmlands in the form of growth management; as growth management is established, agriculture tends to thrive under its protection. And as sprawl tends to exert pressure on agriculture, agriculture ultimately succumbs to land development, which enhances pressure for growth management programs.
The larger issue addressed is why some growth management programs are more successful than others. More specifically, this research focuses on: 1) the effectiveness of two specific growth management programs in containing urban development; 2) the relevance of those programs to the thoroughbred horse industry; and 3) the role of political culture of a locality in explaining reasons for the effectiveness of those growth management programs.

Studies have been conducted to define which US cities are the most sprawled (Fulton, Pendall et al, 2001) in an attempt to explain the spatial patterns of sprawl. Studies have been empirically based, with measurements of sprawl assessed on overall metropolitan population growth, expansion of metro area boundaries to incorporate additional land areas (presumably to accommodate the anticipated population growth), and before/after development density metrics. Density is usually expressed simply, as the ratio of the total population to its land area.
Ewing et al. (2004), using aggregate data at the metropolitan unit, conducted a comprehensive review of US cities and their urban expansion compared to population growth to ascertain whether growth promulgated higher or lower overall population densities at each locale. If the densities were lower, it was inferred that those population increases were likely the result of sprawl-type development. Sanchez and Mandl (2007) evaluated sprawl at a finer scale; this research looked at overall population densities by census tract in the state of Florida to determine whether the 1985 Growth Management Act promoted greater development densities.

There is also little research that seeks to understand the rationale of adopting growth management programs and their long-term effectiveness. Innes (1992) addressed the significance of local culture and processes of affected groups in the initial establishment and goals of growth management programs. Through a communicative planning process, she found that statewide growth management legislation is a product of consensual groups playing a role in local planning efforts, including developers and environmentalists. The question begs, however, as to why activist groups are successful in some locations and not others.

Several state growth management programs were put in place to protect rural agriculture and protect open space (DeGrove, 1992). This is because sprawl encroaches upon agricultural lands and farmers tend to disinvest in operations, sensing that their land will ultimately become less valuable as farmland and more valuable for suburban land uses (Ewing, 1994). Most crop farming operations in the path of sprawl ultimately succumb, however. Farmland preservation programs are often too late. It is only after the threat of suburban encroachment and ultimate decline of agricultural operations that
farmland preservation programs, including agricultural zoning, are pursued (Daniels and Bowers, 1997).

Although many crop farming operations may be able to coexist with suburban development, animal operations such as hog farms are often pressured to relocate or reduce operations, largely due to their negative effect on neighbors. Although the farms were not originally sited near population centers, suburban development can become uncomfortably close to agricultural operations so as to force an economic and political show-down between the competing land uses. And residential/suburban land uses outbid agricultural operations, meaning that the value of residential land uses is higher than farming uses, which leads to eventual sale of those farming lands for conversion to non-agricultural land uses.

But what if, contrary to economic bid rent theory, there was an agricultural operation that could outbid residential land uses? Is that possible? Thoroughbred horse breeding and training operations might present that exception to standard economic principles. Thoroughbred horses which race, have raced or are trained for track racing can be valued at millions of dollars apiece. This agricultural “crop” is likely to outbid traditional farming operations.

Thoroughbred horse operations cannot accommodate incompatible neighbors if encroached by suburbanization. These operations are hypersensitive toward and intolerant of sprawl and suburban land uses. Often originally sited in rural, remote locations, if a thoroughbred operation is encroached upon, it will usually be forced to cease operations due to the negative effects that incompatible, non-agricultural neighbors may have on its operations. Equine farm operators cannot tolerate their horses being
spooked, fed or potentially injured by curious neighbors or neighbors’ dogs (Owens, 2009), because the horses represent multi-million dollar investments. This is why most thoroughbred farms include double rows of fencing (each row of fencing is offset approximately ten feet) along farm boundaries/perimeters. If a horse is spooked and takes flight, it might break through fencing, injuring itself and possibly confronting vehicular traffic. Given the value of the product raised at these equine operations, this very expensive agricultural product - the thoroughbred horse - should outbid and out-compete land uses coincident with sprawl.

Among a handful of others, there are two main centers of thoroughbred operations in the United States: Ocala, Florida and Lexington, Kentucky. In fact, both locales claim to be the “Horse Capital of the World” (http://www.bloodhorse.com/horse-racing/articles/8798/kentucky-and-florida-in-horse-capital-battle). Lexington is the county seat of Fayette County in central Kentucky (Figure 1.2). The seven county region of central Kentucky (which includes Fayette County and Lexington) is also commonly known as the Inner Bluegrass. The Inner Bluegrass region has had an equine tradition since the 1700s and its history is steeped with raising horses, specifically thoroughbreds and standardbreds. The Bluegrass rural landscape includes a dense concentration of more than 450 thoroughbred horse farms although it is concentrated in Fayette County as there are 211 registered thoroughbred farms there (Kentucky Horse Council, 2010). The landscape is dotted with rolling pastures that include the iconic Calumet Farm and the Kentucky Horse Park. Fayette County is also home to the Keeneland race course, Fasig-Tipton horse sales, equine veterinary specialists, farriers, horse racing and breeding publications (including Blood Horse) and The Jockey Club. Horse-related economic
activities contribute $2.3 billion dollars annually to the Kentucky economy and employ nearly 194,300 persons within the state (American Horse Council, 2005). Equine farming operations are concentrated in northern Fayette County where the Maury and McAfee soils are located. These soils are deep, well-drained and high in calcium and phosphorus due to the karst geography of the central Bluegrass region. The minerals in the soil are taken up by the grassy vegetation and are said to build strong bones and fast horses. Horses raised in the Bluegrass have a natural advantage associated with the foraging grasses. There is no need for mineral supplements for horses, as long as they are pasture-fed (Penn, 2011).

Figure 1.2: Location of Lexington-Fayette County, Kentucky

Ocala, Florida, located in Marion County in north central Florida (Figure 1.3), also lays claim to title as “Horse Capital of the World” as it boasts more than 600 equine farms and numerous racing champions. Ocala is also home to the Florida Horse Park,
Ocala Breeders’ Sales, Horses In the Sun (H.I.T.S., a two-month long series of back-to-back horse shows), numerous training tracks, and the Southeastern Livestock Pavilion. Florida’s horse industry produces goods and services which value $3 billion dollars and employs more than 440,000 persons (American Horse Council, 2005). Ocala/Marion County is also blessed with fertile calcium and phosphorus-laden well drained soils that provide excellent foraging grasses for horses. The Blichton soil series tends to be favored for raising horses because of its suitability for pastureland (USDA, 1979).

The horse industry in Ocala is relatively new to this region. The first thoroughbreds were brought to the Ocala area in the 1940s and Ocala Stud, the oldest continuously-operating thoroughbred operation in Marion County, was established in 1956 (Johnson, 1993).

Figure 1.3: Location of Ocala-Marion County, Florida
Both places represent a high-yielding, non-crop agricultural product. Depending upon lineage, each horse may be worth up to $10 million at sale. Therefore, farm managers are especially protective against encroachment from incompatible development because of the tremendous value of their product and potential risks associated to that product’s well-being by insensitive adjoining land uses (Owens, 2009).

The fiscal contribution of the equine industry in each community and state is significant; some of the priciest agricultural products in the world are raised at these locations. At both locations, protection of these high-value agricultural landscapes through a local growth management planning program is expected to be a local priority. This is because of the fiscal investments involved, as well as the elites who are stakeholders in these equine operations.

Political economy theory suggests that land development and planning functions might be strongly influenced at each locale by those who stand to benefit financially from that development. Those players who promote new development are labeled “the growth machine” (Logan and Molotch, 1987). “Growth machine” players tend to be the elites of the community, which include large business owners, homebuilders and developers, attorneys who represent extremely wealthy interests, and others who have the fiscal means to influence political outcomes. In these two locations, however, members of this group of elites tend to be those who want just the opposite of the traditional growth machine; this subgroup of elites seeks to discourage new development. In fact, many thoroughbred farms are owned by some of the wealthiest people in the world. Darley, Gainsborough and Shadwell Farms, in the Lexington area, are owned separately by brothers who are royal family rulers of the constitutional monarchy of the United Arab
Emirates. Juddmonte Farms is owned by Prince Khalid Abdullah of Saudi Arabia. In Marion County, Charlotte Weber, heiress to the Campbell’s Soup fortune and owner of Live Oak Stud in Ocala, is among the local elites. Ocala’s Adena Springs South thoroughbred farm is owned by Frank Stronach, founder of Magna International, North America’s largest automobile parts manufacturer which supplies GM, Ford Motor Company and Chrysler, as well as Volkswagen, BMW and Toyota. Stronach also owns the very famous Adena Springs Farm, located in Bourbon County, Kentucky, just north of Lexington.

Growth machine elites’ power comes from their investments, which, in turn, benefit each locale in terms of job growth and tax ratables. In most examples, the growth machine involves attracting lucrative land deals from which elites benefit due to inflated land prices or spinoff benefits from land development deals. However, in the case of the thoroughbred industry, the elites’ investment is in each farm owners’ stock. Contrary to normative growth machine theory regarding land development schemes, members of the equine elite in the Ocala and Lexington area should seek to discourage development on and near their property in order to maintain the fiscal investments in their thoroughbreds and associated infrastructure. This seems to be the different scenario where elites are the largest landowners, seeking to cash in on any development proposals.

Land use planning tools are in use at both of these centers of the equine industry. Both Lexington-Fayette County and Ocala/Marion County have growth management programs in place, although they are different programs. Florida has had state-mandated growth management planning since 1985 (see DeGrove, 1992; Ben-Zadok, 2005; Chapin et al., 2007 for discussions of the evolution of Florida’s growth management program).
On the contrary, in the Commonwealth of Kentucky (which does not mandate planning in all), Lexington-Fayette County was the first city in the U.S. to adopt an urban growth boundary in 1958. Political economy theory suggests that both locales should have regulatory programs in place to protect the elites’ investments in thoroughbred farms (Molotch, 1976).

Lexington and Ocala also share common history in terms of land development. Both locales have experienced significant residential expansion since 1970, which presents greater risk to the vitality of the equine industry at each location. Both communities have experienced significant population growth and have made adjustments to their regulatory programs to accommodate that growth. In the case of Marion County, the State of Florida imposed land use planning standards in the mid-1980s. Lexington has had land use planning in place since the 1920s.

There is a marked difference between locations, however. Lexington-Fayette County has been a merged city-county government since 1972. Ocala and Marion County are still separate governing bodies with non-overlapping jurisdictional boundaries. Those land areas outside of the City of Ocala’s planning jurisdiction are under the control of Marion County, which has had uninterrupted countywide zoning since the 1990s. The City of Ocala has had an urban growth boundary in place since 1996 (Daniels, 2012). Lexington’s growth management program is self-imposed through adoption of the urban growth boundary; Marion County’s growth management is promoted through the top-down state-mandated Growth Management Act.
The effectiveness of a growth management program to protect against rural land encroachment is based on the type of regulatory mechanisms in place, as well as the forces of development/sprawl.

The rigidity and enforcement of the regulatory mechanisms will be influenced by the local political culture, which is defined as the norms, values and attitudes of a given locality. Complementing my own concept is Elazar, who sees political culture as "the particular pattern of orientation to political action in which each political system is embedded" (Elazar, 1984). Inglehart (1990) studied political culture and cultural values in dozens of countries; he explains political culture in terms of values that emphasize economic and physical security ("materialist") or values that emphasize self-expression, quality of life and other programs such as environmental protection ("postmaterialist").

The history of early settlement patterns, including the religious and ethical morés of those earliest settlers, can also influence and shape contemporary political and social culture including regulatory mechanisms to prevent (see Elazar, 1984; Sharkansky, 1969).

**B. Objectives of the Dissertation**

This research will also provide a deeper investigation of how two locales managed growth from 1970 through 2010. It will involve an investigation into the history of population growth and its spatial expression in Marion and Fayette Counties. It will also discuss the formation and adoption of land use regulatory tools at each locale, coincident with population growth and development pressures. It will seek to explore the underlying reasons why regulatory structures and growth management programs were
initially put in place by understanding the past and present social and political forces which have shaped the trends of development at each locale.

As each place has faced mounting pressures for residential land development over the past forty years, this research will evaluate the effectiveness of growth management programs to maintain contiguous, compact development and continuing viability of equine farming operations at each locale, including their resilience to encroachment from sprawl.

Of particular interest to this study is to understand the effectiveness of growth management programs in place at each locale, as well as the roles of local political culture in developing and effectuating effective growth management programs. Local culture is critically important in influencing local land use policy, including sprawl prevention (Nelson, 1992) and establishment of farmland preservation programs (Alterman, 1997). Investigation into the local culture and growth machine politics will be required, as well as inquiry into the makeup of the residents of each locale including educational attainment, income levels, voting trends and racial/ethnic composition.

In summary, this study seeks to explore the effectiveness of growth management from 1970 to 2010 in two locations with strong agricultural traditions. This will be done by quantifying sprawl and loss of agricultural lands over time, evaluating the institutional and regulatory frameworks that contributed to or suppressed sprawl, and seeking to understand the norms, attitudes and values that restrict or promote growth management effectiveness at each location.

**C. Significance and Contribution of this Research**
This research will make several contributions to the existing literature. First, it is a comparative analysis between two cities which jointly share an industry that requires rural land, not urban infrastructure (like streets, water and sewer service, for example), in order to thrive and profit. Accordingly, there have been few studies which evaluate uncommonly expensive agricultural landscapes – such as equine operations home to thoroughbred race horses - that defy conventional economic theory about bid rent and ultimate conversion to urban land uses. This research will also expound on the growth machine theory by explaining a different group of elites who act contrary to the behaviors of elites who are growth machine proponents.

Thirdly, this research will build on existing research by Ewing (2004) to quantify sprawl in empirical terms for comparison between two locations. This research will use a finer scale than other studies to measure sprawl, whereas other research uses aggregate data.

To date, there is very little research that deconstructs local/state political and cultural forces necessary for establishment and subsequent enforcement of growth management programs. Those which address political and cultural forces have not considered the phenomena associated with a high end agricultural product, like thoroughbred horses. This research will seek to understand the social and economic factors that shape political culture/values and explain why a particular growth management program is or is not effective in curtailing sprawl.

And finally, this research will address institutional, political, economic and social forces in the push/pull climate of sprawl. It will explain factors associated with political culture that either encourage sprawl or encourage farmland preservation, based on the
levels of sprawl/farm encroachment in each locale. Understanding existing and historical political culture within regimes that prevent/encourage sprawl will promote greater predictive abilities for planners and policy makers, which will promote greater economic efficiencies overall for taxpayers and their governments.
INTRODUCTION

The literature review addresses the theoretical framework of this research and identifies gaps within the body of previous work. Background and historical information on the horse industry and landscapes in Ocala and Lexington will be provided in Chapter 4, which describes each of the study sites.

A. Equine Landscapes

To date, there has been little research conducted on the equine sector as a distinctive land use, and even less research on the thoroughbred farm as an uncustomary rural land use.

Franklin and Evans (2008) defined “equine landscapes” as a term which incorporates the multiple facets of equestrianism and associated range of impacts and effects that it can have, on both people and place (p. 4). This research described how equestrian activities, including riding, training, farriers, veterinarians, and other associated activities surrounding the horse, take strongest hold in “the marginal farming districts around urban centres” (p. 12). Elgaker (2012) described competition for and influence of the equine sector in suburban areas in Sweden, as well as challenges
associated with public spaces for horseback riding (2012). It is recognized that equine landscapes are an atypical rural land use, and special planning and protection are required to enhance their continued vitality.

There is a body of research in the veterinary sciences about health concerns regarding collocated thoroughbred horse farm clusters, but very little research on the industry as a land use. Research on thoroughbred equine landscapes in Kentucky has focused solely on the economic and employment synergy around Lexington, Kentucky, as the center of thoroughbred breeding in the United States (Garkovich, et al., 2008) or on the tourism impacts (Davis, et al., 2013). The thoroughbred breeding industry in New South Wales, Australia, was studied from a water management perspective (McManus, 2008), but no studies have addressed the thoroughbred industry as a singular land use which garners special consideration.

The equine landscape, and the thoroughbred landscape in particular, require special attention from a land use perspective, and there has been no research to date which addresses this adequately. This is likely due to the limited locations across the world which host the thoroughbred industry; among those places operating within the legal framework of the United States, Lexington and Ocala are among four distinct concentrations that host the thoroughbred industry.

B. Sprawl

a. Impacts of sprawl

Sprawl is among the most widely debated topics in urban studies. Since first described by Clawson (1962), researchers have expressed considerable ambivalence about this land use pattern. It is beyond the scope of this study to critically review the
vast literature on the environmental, economic, social, cultural, and land use implications of urban and suburban sprawl. Rather, some key issues pervading the literature on impacts of sprawl are identified, with an emphasis on impacts on agricultural land use.

Some, particularly economists, laud sprawl as the physical manifestation of capitalism and free market choice by consumers. According to this view, sprawl exists because demands on the market allow it to exist and it provides important benefits in a free market economy (e.g., Black, 1996; Burchell et al., 1998; Bruegmann, 2005; Brueckner, 2000; Jackson, 1987, Gordon and Richardson, 1997). Audirac et al. (1990) argue that the desire for compact cities is the expression of nostalgic urban imagery that runs contrary to consumer preference. Kahn (2001) explored another possible benefit of sprawl: increased housing affordability and greater access to housing equality across racial lines.

But sprawl is also perceived as problematic for many reasons. It has been cited as a source of negative externalities and higher overall costs to the public, including inefficiencies and costs of providing infrastructure and services to small proportions of a city's population located in very low-density areas on the margins of cities (e.g., Anthony, 2004; Burchell et al., 1998; Downs, 1998; Ewing, 1994; Glaeser and Kahn, 2004; and Nelson et al., 2004). More specifically, sprawl has been identified as source or cause of:

• Decentralization of urban centers (Anthony, 2004; Nelson et al., 2004);

• Loss of environmentally sensitive and prime farming lands (American Farmland Trust, 1995; Burchell et al., 1998);

• Loss of sense of community (Putnam, 2000);
- Water and air quality degradation (Benfield et al., 1999; Environmental Protection Agency, 2000; Johnson, 2001);
- Increased travel and accessibility costs (American Farmland Trust, 1995; Burchell et al., 1998; Downs, 1998; Ewing, 1994; Glaeser and Kahn, 2004).

Single family houses on big lots outside of central cities tend to increase overall infrastructure costs, lengthen commute times, necessitate additional roads to ease traffic congestion (which often precipitates more sprawl-style development), and destroy wildlife habitat. Each of these has secondary environmental effects, such as increased automobile emissions, runoff from impervious surfaces, and construction impacts (Margules and Meyers, 1992).

The U.S. Department of Agriculture Natural Resources Conservation Service estimates that more than 12 million hectares of land (46,332 square miles) – an area equivalent to the size of Pennsylvania – were converted to developed land in the United States during the 15 year period between 1982 and 1997, with more than half of the newly developed land coming from agriculture and the remainder coming from forested lands (Natural Resources Conservation Service, 1999). Sprawl often consumes agricultural land because farmland is typically the least expensive land available for development. In economic models, development outbids agriculture because urban-type land uses tend to yield a higher rent value. The value of an acre of a field crop is considerably lower than the value of urban land uses.

As shown in the conceptual model of the previous chapter (Figure 1.1) a tension exists between sprawl, growth management and the need for farmland preservation. As
farmland is lost to sprawl, pressure is exerted to arrest sprawl through more aggressive growth management, which enhances greater farmland preservation.

b. Causes of sprawl

Sprawl tends to occur on undeveloped or agricultural land at the margins of cities as relatively “closely settled areas intermingled haphazardly with unused areas” (Clawson, 1962; p. 99). The factors behind the phenomenon of sprawl are less understood. Glaeser and Kahn (2004) argue that sprawl is caused mainly by the private automobile and truck, enabling dispersed development by eliminating individual dependence on or stake in public transportation. This is consistent with Gordon and Richardson (1997), who argue that sprawl is the physical manifestation of the market’s response to American consumer demand for low density housing. By contrast, Duany et al. (2000) believe that despite the mobility afforded by private vehicles, proper land use planning and city design could prevent sprawl, and that sprawl is therefore a result of poor urban design. Barnett (1995) also blames planning practice; he claims that outdated zoning regulations established in the 1920s, at the advent of widespread availability of the automobile, were not well thought-out. It was never intended that commercial strips along highways, inaccessible to those without automobiles, would be the principal form of business and retail development. Kuntsler (1993) attributes sprawl to the lack of creativity and imagination among Americans; greenfield development is easier and less expensive.

For Graves (2003), urban sprawl is linked to the lack or unequal distribution of public goods, such as parks and high quality schools, in urban areas and cites these as
both cause and effect of sprawl. That is, people leave or avoid urban centers to gain access to services and amenities, which serves to reinforce the spatial inequalities.

With respect to causes, Burchell et al., (1998) also argue that sprawl has two causes, including "no central ownership or planning" and "highly fragmented land-use governance." This is likely a result of decentralization and formal incorporation of residential enclaves built in rural areas per Rusk (1993). With respect to the two study sites, Lexington-Fayette County has been a merged urban county government since 1972 with a single planning framework, and Ocala and Marion County are separate units of government with separate sets of planning tools.

c. Defining Sprawl

Excepting some economic arguments extolling sprawl as an expression of market forces and public desires, the literature generally concurs on the negative effects of sprawl. However, defining sprawl is trickier. Sprawl is a form of urban growth that manifests on the periphery of cities often in previously nonurban areas on the metropolitan fringe (Torrens, 2006). It is often defined in terms of undesirable land use patterns, scattered or leapfrog development or continuous low-density development (Ewing, 1994) that can be residential or commercial.

Most agree that "sprawl is not just growth, but a specific and dysfunctional style of growth" (Ewing, 2004, p. 2). The inability to succinctly define sprawl has been linked to the statement used by US Supreme Court Justice Potter Stewart to describe his threshold test for pornography in Jacobellis v. Ohio (1964): it may be hard to define, but "I know it when I see it" (Ewing, 2004). Like Justice Stewart, urban scholars "know it
when they see it,” but unlike him, they have tried to provide operational definitions.

While these definitions differ in detail they all describe the same general phenomena.

In a 1999 (p. 1) report, the Sierra Club defined sprawl as:

“low density development beyond the edge of service and employment, which separates where people live from where they shop, work, recreate and educate – thus requiring cars to move between zones.” (1999, p. 1).

Similarly, The U.S. Department of Housing and Urban Development (USHUD, 1999, p. 33) defines sprawl as:

“a particular type of suburban development characterized by very low-density settlements, both residential and non-residential; dominance of movement by use of private automobiles, unlimited outward expansion of new subdivisions and leapfrog development of these subdivisions; and segregation of land uses by activity.”

Ewing (1997, p. 32) defines sprawl as the combination of three characteristics:

“a) leapfrog or scattered development; 2) commercial strip development; and 3) large expanses of low-density or single-use developments – as well as by such indicators as low accessibility and lack of functional open space.”

Burchell et al., (1998) provided a comprehensive literature synthesis on sprawl and ultimately determined that sprawl has three distinct characteristics with respect to spatial patterns, root causes, and consequences. The spatial signatures of sprawl include (Burchell et al., 1998):

- Low density development
- Unlimited outward expansion
• Spatially segregated residential, commercial, and other land uses
• Leapfrog development (noncontiguous expansion)
• Widespread commercial strip development.

It also has known consequences, including development that is “dependent upon access by motor vehicles,” and demonstrates both “great variance in local fiscal capability and reliance on filtering for low-income housing” (Burchell et al., 1998, Table 12). It also lacks centrality and concentration. Concentration is defined as “the degree to which development is located disproportionately in relatively few square miles of the total urban area rather than spread out evenly throughout (Galster et al., 2001, p. 690). Centrality is the degree to which residential or nonresidential development (or both) is located close to the central business district of an urban area (ibid, p. 694). Lack of centrality is often cited as a cause for longer travel distances and travel times; it is also seen as an inefficient arrangement of land use.

d. Measuring Sprawl

Even when agreement exists on the definition of sprawl, it is challenging to measure or assess it empirically. Remotely-sensed data have been used in several studies to quantify sprawl (e.g. Yeh, 2001; Martinuzzi et al., 2007; Jat et al., 2008). However, the general land use classifications (i.e., urban, forested, water, crops) that are used in remote sensing-based methods are inadequate for purposes of this study. Further, the spatial resolution of historical imagery -- much of it no finer than 30 by 30 m grid cells (322 square feet) -- is typically inadequate.
The US Department of Agriculture’s Natural Resources Inventory (NRI) has been used by researchers (e.g., Hasse and Lathrop, 2003) to quantify the loss of natural areas to urban development. The NRI land use/land cover digital database has been used in prior studies, but there are two problems associated with use of these data in this research. First, the earliest sets of NRI data are for 1987 and thus no data are available for the first 17 years of this study. Second, as with earlier remotely-sensed data, the scale of resolution is too coarse (30 m grid cells). A finer scale is more appropriate for the geographic areas involved; a 30-meter unit of measurement exceeds some residential and commercial structures, like barns and garages.

Population density gradients have also been used to represent sprawl. Mieszkowski and Mills (1993) used density gradients to determine the degree to which population is located from the centers of cities. In these graphs, the $x$ value represents distance of the centroid of each census tract to the city center and $y$ is population density per square mile by census tract. This methodology is effective in providing a snapshot notion of how spread out population density exists from the city center, which helps to demonstrate sprawl, and it is best applied in monocentric cities. This method requires a clear definition of the center of the city, and it is well-suited for GIS applications as measuring the centroid of each census tract is easily conducted with GIS.

Galster et al. (2001) provided a complex and highly-regarded sprawl index evaluating 13 US urbanized areas. This study characterized sprawl in eight dimensions: density, continuity, concentration, clustering, centrality, nuclearity, mixed use and proximity. Atlanta and Miami were the most sprawling cities and New York and Philadelphia ranked as the least sprawling. One drawback to this study was its use of
urbanized areas instead of metropolitan areas since most development characterized as sprawl will happen outside of urbanized areas. Ewing et al. (2004) criticized the complexity of Galster et al.'s (2001) methodology, and noted that it does not include a very important dimension of sprawl: the segregation of different land uses at the expense of accessibility (Ewing et al., 2004). However, few sprawl measurements directly address the latter because of challenges associated with identifying and categorizing differing land uses.

The Sierra Club also conducted a study that defined sprawl as “low-density development beyond the edge of service and employment, which separates where people live from where they shop, work, recreate and educate – thus requiring cars to move between zones” (Sierra Club, 1998). This study looked at larger cities (1 million or greater in population), as well as medium sized cities from 500,000 to 1,000,000 residents. It evaluated population shifts from city to suburb, increases in urban land area versus growth of population, time wasted in traffic, and loss of open space. Using Census of Population data, Atlanta, St. Louis and Washington, D.C. were the most sprawling larger (1 million or more population) cities, and Orlando, Austin and Las Vegas were the most sprawling among medium sized cities.

A number of studies concur that density measurements are the best method to operationalize sprawl. Density is usually expressed simply, as the ratio of total population to land area within specific urban areas. Lower density locales are identified as more sprawled than those with higher densities. Defining threshold densities to define sprawl is trickier. Fulton et al. (2001) used overall population density relative to urbanized area as a metric to determine which US cities are the most sprawled (neither
Ocala nor Lexington were included in this analysis). That study defined density as “the population of a metropolitan area divided by the amount of urbanized land that is in that metropolitan area” (p. 3). A problem with using US Census Bureau metropolitan areas, as in Fulton et al. (2001), is the definition of a Metropolitan area, as entire counties tend to be included in the definition. Rural lands within counties on the periphery of the metropolitan area will skew densities to lower values than what may actually exist within the metropolitan area.

Nelson (1999) used “urbanized area” to assess density. However, this is not satisfactory because the Census Bureau’s definition of “urbanized area” is already calculated to mean “more or less contiguous census tracts with a population density greater than 1,000 persons per square mile” (Lopez and Hynes, 2003). This study avoided defining a threshold density between low-density sprawl and rural land areas.

Downs (1999) used a density threshold for a sprawl index for 162 urbanized areas in the United States with populations greater than 150,000. Using census data, Downs evaluated population density, both inside and outside the central city, and developed several ratios comparing the “inside versus outside” population totals. He looked at central city populations compared against urbanized areas, as well as the numbers of different jurisdictions that control land use within a metropolitan area (per Burchell et al., 1998). This study also evaluated the ratio of center city residents against poor residents in the suburbs. The study showed older, industrialized Rust Belt cities tended to have higher sprawl indices because they have fewer residents living in their city centers and considerable governmental fragmentation. The least sprawled places were in the West: Phoenix, Tucson, Los Angeles, and San Diego. Downs’ work has been criticized because
it relies on political and, therefore, economically arbitrary boundaries of central cities to
define centeredness, and reliance on a density of 1,000 persons per square mile to
indicate urban areas (Ewing, et al., 2004).

Researchers have differed in defining threshold densities to distinguish between
urban and rural development (Table 2.1). As stated above, Downs' (1999) research
defined “urban” as 1000 persons per square mile, which is often a density found in
suburban areas. A 2001 New York Times report defined nonurban census tracts as those
with fewer than 350 persons per square mile and urban tracts to be those with densities of
at least 3,200 persons per square mile (see Vidler, 2001).

Lopez and Hynes (2003), in a study that addressed the comparative nature of
sprawl, developed a ratio that created a hierarchy of densities among census tracts within
a study area. This study did not attach labels such as urban or suburban; high-density
was defined as $\geq 3,500$ persons per square mile; low-density was defined as population
densities of $200$ to $3,500$ $\text{mi}^2$; and rural tracts were identified as having population
densities of $< 200$ $\text{mi}^2$. This study then developed a sprawl index by dividing the
percentage of high density tracts by the percentage of low-density tracts per unit of
measurement (county, urbanized area, MSA), transformed by constants to produce a final
score on a 0-100 scale. Lopez and Hynes (2003) defend their cut-offs for the high
density, low-density and rural based on the numbers of housing units that can be
accommodated per acre of land. Two hundred persons per square mile roughly
 correspond to one residential unit per acre and 3,500 persons per square mile correspond
to about 500 residential units per acre of residential land (Lopez and Hynes, 2003). The
resulting sprawl index implies that if the index is 100, all of the metro area population
lives entirely in low-density census tracts, signifying the highest level of sprawl. At 0, the metro area population lives entirely in high density census tracts. At 50, the population lives in an equal number of dense and low-density census tracts.

Table 2.1: Existing Research Defining Urban and Non-Urban Population Densities

| Research that Uses Population Density to Define Sprawl (measured in persons per square mile) |
|---|---|---|
| US Census Bureau, Downs (1999) and Nelson (1999) | 1000 ("urbanized area") | * |
| NY Times (2001) | 3,200 | * |
| Lopez and Hynes (2003) | >3,500 | 200-3,500 | <200 |
| Ewing et al. (2004) | 12,500 | 1500 ("low density suburban") | <100 (eliminated from analysis) |
| * = not addressed in analysis | |

Source: Compiled by author, 2012

Ewing et al. (2004) also created a sprawl index that incorporated four different factors, including a density threshold. It measured overall population density, mixture of land uses (such as offices, residences, commercial and industrial) near the city center, employment/job availability/job density near the core of the urban area, and a methodology that evaluated the concentration of built streets in an urban setting. Ewing et al.'s density calculation was mathematically complicated, but set thresholds of density: 1500 persons per square mile was established as a low suburban density and 12,500 persons per square mile was an urban density, because previous work had determined that density to be a threshold at which public mass transit can be supported. This study eliminated from analysis all tracts which had densities lower than 100 persons per square mile. There was no clearly-established population density criterion for sprawl, although this study compared 83 metro areas (cities with more than 500,000 persons) and developed density criteria for streets. It measured the street density index as linear mile street length in the urbanized portion of the metro area, the average block size in square
miles and the percentage of small blocks. Streets accompany the subdivision of land and a density of streets also provides information about the overall density of land uses, whether they are commercial or residential. Street density seems a valuable proxy for overall density of population, and as an easily definable measurement of sprawl. This also seems to be a more useful method of describing urban, suburban and rural intensities of settlement. Inasmuch as Ewing’s street density metric is well suited to sprawl analysis, using street block length seems redundant and unnecessary for this analysis.

C. The Role of Growth Management in Preventing Sprawl

a. Statewide Growth Management

Statewide growth management programs vary in their requirements and application. They have evolved through time to emphasize environmental concerns, infrastructure and service provision, sustainability, and social justice. Depending upon each state’s issues, growth management plans may differ. While they all seek similar goals of controlling the location of land use changes, the exact type of plan utilized depends upon the intended purpose of the state (Easley, 1992). And, as such, results from each state growth management program may vary. To effectively limit sprawl, a growth management program would ideally maintain and enhance higher population densities in urban cores, with gradual tapers in population density as distance from the center increases, and very low densities in surrounding rural areas. Florida has a statewide growth management program, which is discussed in greater detail in Chapter 4. The question in this research, however, is whether growth management has curtailed sprawl through increased population densities, and reduced farmland loss.
Research evaluating the effectiveness of growth management programs on farmland loss and increases in density shows mixed results. Nelson (1999) showed that between 1980 and 1990, Florida’s population grew 32 percent, and urban population densities declined 5.14 percent suggesting that much of the new growth must have been low density development.\(^1\)

Anthony (2004) evaluated changes in density over a 15-year period in 49 states, comparing states with growth management programs, like Florida, against other states that had no growth management programs in place. In the Anthony study, states with a growth management program experienced lower population density declines than states without growth management, although there was not a statistically significant difference between the two. This study used aggregate state-level data and found that from 1982 through 1997, Florida experienced a 63.12 percent increase in consumption of urban land, but overall population density decreased by 6.66 percent. Again, there was not a statistically significant difference between states like Florida (which have growth management programs in place) and those without statewide growth management plans.

Sanchez and Mandle (2007) found that Florida’s population density in urban areas increased slightly with the state growth management program, but there were also increases in low density population growth. In other words, the growth management program may have slowed the rate of low density development from taking place, and probably slightly increased development densities inside urban areas over the study period.

\(^1\) The Florida Growth Management Act became law in 1985, the midpoint of Nelson’s study period.
Other research regarding growth management’s effectiveness at curtailing farmland loss showed success. Healy and Rosenberg (1979) found that the Hawaii state growth management program has been “relatively, but not completely, effective in stopping the urbanization of agricultural lands …. and making urban expansion far more compact and orderly than it would have been without the law” (p. 186). Howell-Moroney (2007) argued that state growth management programs are only effective if paired with local programs, such as urban growth boundaries, building permit quotas, or even agricultural zoning.

Other studies show that growth management has little impact on compactness or density of land development. Carruthers (2002) evaluated five state growth management programs and found that Florida’s plan significantly increased the spatial extent of urban areas without increasing overall urban densities. Additionally, Yin and Sun (2007) found that between 1990 and 2000, state growth management programs resulted in a higher proportion of population living in high-density areas but a lower proportion of population living in low density areas. In other words, different studies with different methodologies reached varying and even conflicting results. This could be a result of additional local programs as cited above by Howell-Moroney (2007).

b. Urban Growth Boundaries

Urban growth boundaries (UGBs), a form of containment that limits urban-scale development to land areas inside a demarcated border, have also been studied. In the United States, Lexington, Kentucky, was the first city to adopt a UGB in 1958. It is also called the Urban Services Boundary (USB) and Urban Services Area Boundary (USAB)
and the three terms are used interchangeably in this document. Outside of the urban services boundary, sewer lines are not extended and the zoning in place restricts development to land uses in support of agriculture. Therefore, non-rural development must occur inside the USB.

Inasmuch as Lexington was the first city in the United States to adopt an UGB, Portland, Oregon has received the most attention from researchers. Other studies on UGBs have typically related to Portland, Oregon, as it is the largest city with an UGB in the US. Much of this Portland-centric research has focused on externalities, like higher housing costs, associated with the UGB (e.g., Nelson and Moore, 1993; Lang and Horburg, 1997; Phillips and Goodstein, 2000; Downs, 2002; Abbott and Margheim, 2008; and Jun, 2008). One of the primary criticisms of Portland’s UGB is that it was drawn so far out that it doesn’t really force more compact form.

Today, UGBs are used as a planning tool in more than 100 cities across the U.S. In fact, two state growth management programs -- the states of Washington and Oregon -- impose requirements for local governments to adopt UGBs to manage sprawl. In an attempt to find similarities between growth management programs that incorporate UGBs as a land use tool, Nelson and Dawkins (2004) created a four class typology for 75 U.S. cities with UGBs. This resulted in four distinct classes of UGB programs, including Weak Restrictive, Strong Restrictive, Weak Accommodating and Strong Accommodating. Those classified as Strong Accommodating were the most powerful and that typology included Portland, OR. Using principal components analysis, the research evaluated variables including (among other variables) intergovernmental coordination geography, complementary land use regulatory programs (like infill and
agricultural zoning) and other criteria (such as zoning enforcement programs). The purpose of their research was not to test the effectiveness of any particular UGB, but merely to find similarities between growth management programs that implement UGBs as a land use tool\(^2\). Among the criteria used to sift and categorize each growth management program included the ease with which boundaries could be adjusted. UGBs which have strict criteria for their expansion/adjustment were categorized as being “weak” and “restrictive,” which seems to run afoul of the purpose of an UGB as a tool to prevent sprawl. Like statewide growth management programs, UGBs are often put in place with differing goals, and comparison between UGBs (even after collapsing all UGBs into one of the four categories as done by Nelson and Dawkins (2004), seems ill-fated. For instance, in Lexington, any expansion of the UGB is considered contrary to the city’s goals; in Nelson and Dawkins’ work, this would have placed Lexington into a “weak” category, even though this is considered a strength of the growth management program.

Specific research evaluating the effectiveness of urban containment strategies in maintaining compact urban form has shown mixed results. Nelson (1992), in a case study of Portland, found that urban development was directed to the UGB, and resource lands were preserved. Woo and Guldman (2011), in an evaluation of 135 metropolitan areas found that urban containment mandated by state growth management programs tends to show the greatest effectiveness in demonstrating “tight” urban form. Pendall (1999) found that land use regulations which mandate low densities increase sprawl and urban

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\(^2\) Those classified as Strong Accommodating were the most effective; that typology included Portland, OR. Marion County, Florida’s UGB was classified as Strong Accommodating (the city of Ocala adopted an UGB in 1996) and Lexington, KY’s program was categorized as Weak Accommodating.
containment systems have limited cumulative effects. Similarly, in a study conducted to evaluate the effectiveness of urban growth boundaries in Switzerland, Gennaio, Herperger and Buergi (2009) found building density is greater inside the UGB than outside the UGB. However, in Beijing, Han et al. (2009) used Landsat images to measure the effectiveness of the urban construction boundary within the 6th Ring Road and found that it was not successful in limiting urban growth.

Nelson and Sanchez (2005) considered the effectiveness of urban containment in reducing exurban sprawl in 35 US metro areas. This research relied on Nelson and Dawkin’s (2004) prior statistical determination of four categories of UGBs described above. They concluded that containment of any type results in higher urbanized land population densities and less exurban land development. Cities with natural containment, like a water body or mountain range, tended to have higher statistical significance in reducing exurban sprawl. Further, the role of natural barriers highlights the effectiveness of geographical “red lines”—be they topographical or legal—in containing sprawl. A key conclusion of this study is that UGBs must work in concert with other regulations, such as infill and redevelopment, to be effective. This is consistent with other research that shows that farmland preservation—or protecting lands outside of the UGB—works best with any kind of growth management program. Also, the longer urban containment programs have been in place, the greater their effectiveness. This underscores the importance of an UGB: its usefulness and effectiveness are not lost over time.

Innes (1992) speaks to the significance of local culture and processes of affected groups in the initial establishment and goals of statewide growth management programs.

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3 Pendall (1999) also found that land use controls that transfer the costs of development away from the general public and onto builders and developers tend to reduce sprawl.
Through a communicative planning process, Innes sought to understand citizen involvement in state-implemented growth management in Florida, Vermont and New Jersey. She found that the growth management legislation was backed by wide public consensus, including developers and environmentalists. However, there may be pockets within these states where top-down control is less well received. Local culture is critically important in influencing local land use policy, including sprawl prevention (Nelson, 1992) and establishment of farmland preservation programs (Alterman, 1997).

**D. Farmland preservation on the urban fringe**

The research agrees that agricultural zoning must be in place to enhance the effectiveness of UGBs. Consistent with Nelson’s (1992) research, growth management programs are more effective when they include or are combined with agricultural zoning and other tools to regulate sprawl. Farmers tend to be unenthusiastic about agricultural zoning because it restricts the use of their land without compensation (Daniels, 1991). Bunce (1985) demonstrated that agricultural zoning around Toronto was simply a “holding pattern” for farmland purchased speculatively by land developers, not farmers, and held until the time was right for rezoning and farmland conversion.

Bengston et al. (2004) conducted a nationwide analysis of farmland protection policy instruments at all levels of government and showed that growth management and farmland preservation policies are mutually reinforcing and complementary because managing urban growth and open space represent the same development outcome. Farmland preservation is most effective in locales with a combined methodological approach toward land conservation, including differential tax rates for agricultural lands.
Florida and Kentucky have differential tax assessment programs: agricultural land is assessed at a rate that is among the lowest rates on the scale (Gilg, 1998).

Rose (1984) showed that farmland programs, including differential taxation programs, were present primarily where urban development pressures were greatest, not where soil quality might lend to higher agricultural productivity. Aggressive farmland preservation programs were executed where population growth pressures were greatest, not where farming might be most economical.

Buttel (1982) chronicled agricultural land conversion and found many larger farms are not sold intact, but rather are divided into smaller 10-15 acre “hobby farms.” Hobby farmers often purchase more land than they are willing to put to productive use, because these owners do not invest in farm equipment and labor necessary to have commercial volumes of farm products. Buttel also argued that hobby farms tend to drive up land prices beyond what can be paid for out of farm income, thereby making those hobby farms too expensive for reconsolidation into larger tracts once again.

Lapping (1980) was extremely critical of hobby farms, as well as rural subdivisions and ranchettes. He argued they promote impermanence syndrome. As commercial operations become defunct and are abandoned to urban uses, an area loses the critical mass of farming operators needed to maintain agricultural support services. Impermanence syndrome is a phenomenon that occurs as urban-type development encroaches onto farming operations; disinvestment in farming occurs until those agricultural lands eventually succumb to conversion.

To avoid this, Daniels (1991) advocated establishment of Purchase of Development Rights (PDR) programs to work in concert with growth management and
agricultural zoning to protect farmland. PDR programs, first started by the US Department of Agriculture to protect prime agricultural soils, involve the purchase of development rights associated with agricultural parcels, which thereafter secures the longevity of those parcels to agricultural land uses. The PDR provides permanence to agricultural lands, which then minimizes encroachment from hobby farms and incompatible land uses, and enhances security of adjoining farms and their operators, which provides a positive feedback cycle. Lexington-Fayette County has had a PDR program in place since 2001, as described in more detail in Chapter 4.

E. Political Culture

a. Definition of Political Culture

Studies cited earlier in this chapter indicate the importance of the local political climate and public attitudes to promote or manage farmland preservation, and land use management in general (e.g., Innes, 1992). These are elements of political culture, defined by Elazar (1984) as “the particular pattern of orientation to political action in which each political system is embedded” (p. 76). Simplified, political culture can be explained as the attitudes, values, beliefs and orientations that individuals in a society hold regarding their political system. Political culture is important because it defines the role of government, the kinds of people who participate in politics, and how “the art of government is practiced” (p. 85). Depending upon political culture, government is perceived differently, and therefore takes a different role. Government can behave as a marketplace wherein the needs of specific residents (with access to government officials) are served, or it can provide services to enhance the quality of life for all residents.
Clearly, the establishment and role of planning mechanisms, like growth management, feed off political culture because it helps define government’s role in society.

Political culture is a widely accepted tool to explain differences between people and places, especially as related to societal attitudes and systems of governance. Montesquieu (1748) surveyed, characterized and compared the varieties of human society, and studied the inter-functioning of institutions (Pocock, 1971). Alexis de Tocqueville (1835) used political culture to explain societal differences between France and the United States; he sought to understand why democracy worked in the U.S. Elazar (1984) constructed three broad typologies to understand the differences in behavior among the 50 United States. Putnam (1993) evaluated political culture in the context of 20 regional Italian governments to understand why northern and southern Italy, operating within identical institutional frameworks, experienced such stark contrasts in civic engagement and governance.

This study lends itself to exploration of political culture as a comparative tool. Understanding why sprawl is prevalent in some cities but not others requires consideration of political culture of each locale. Specifically, there two studies which form the foundation of political culture theory in this research: Inglehart (1997), and Logan and Molotch (1987). Elazar’s (1984) work is also relevant, but to a lesser degree. Each is discussed separately.

In Elazar’s (1984) analysis of U.S. political culture typologies, he found three distinct culture types: moral, individual and traditional political cultures. The geography of these political culture types is less important than understanding how they differ. In the moral political culture group, government (and its antecedent regulations) has a role
of serving the community for the good of the whole, potentially at the expense of individuals. Individual political culture is characterized by a strong sense that community and government (and their respective rules) should have very little involvement in the activities of the private individual. Traditional political culture maintains the historical social hierarchy of certain families and actors running the government; its role is to largely maintain the existing social order, which could mean maintaining the power of the elites. In the Elazar political culture order, both Ocala and Lexington fall into the same traditional political culture mix. This means that generally, government is dominated by powerful persons who seek to maintain their power, and government’s role is to maintain the role and benefit of existing elites within the community. Some may refer to this as the “Good Ole Boy” network. Yet individual property rights are strong and deeply respected in both communities. Arguably, the individual political culture type is also strong as Lexington and Ocala have strong anti-regulatory and pro-private property rights outlooks. Observable aspects of political culture used in this study are discussed in Chapter 6.

Inglehart (1990), in a global analysis of political culture that included 43 countries and several decades of survey data from the World Values Study, concluded that there are predictable patterns of cultural transformation in industrialized democratic societies: as people grow wealthier, they focus less on material goods (“stuff,” such as clothes, automobiles and homes) and develop an interest in nonmaterial goods. He refers to this as the “materialist/post-materialist” orientation. As nations become more post-materialist, there is greater emphasis on civic values, environmental protection and interpersonal relationships. Once fulfillment of personal necessities is accomplished,
values shift to quality of life, self-expression, participation in government, and decline in traditional norms. He cites as an example the radical student cohorts of the 1960s; they are now middle aged, in positions of influence and authority, and more able to affect public discourse and priorities.

Inferring from Inglehart’s theory, wealthier places should adopt more progressive public policies that address quality of life issues, including sprawl avoidance policies. Although not explicitly discussed in Inglehart’s work, advanced education should also figure into this model because of the positive correlation between education and wealth. As educational levels increase, wealth should increase, which in turn, should impact the progressiveness of public policy.

Logan and Molotch (1987) argued that the city is a “market commodity that can produce wealth and power for its owners” (p. 50). Although it is widely understood that cities are assemblies of land owners and their land, Logan and Molotch argue that the persons who seek to benefit from the city as a market commodity are the “growth machine.” The growth machine consists of persons who increase aggregate rents and trap related wealth for persons in the right position to benefit (p. 50); they are known as “elites.” In most communities, elites comprise politicians, local media representatives, leaders from local public utilities, wealthy landowners, business owners, builders and developers, and others who can profit from growth. Elites tend to have close relationships with elected leadership, and public policy is typically influenced by and in support of the elites.

b. Planning and Political Culture
A number of studies link planning practice and specific land use regulatory mechanisms with various aspects of political culture (though not necessarily engaging political culture *sensu* Elazar, Inglehart or Logan and Molotch).

Gilg (1998) states that planning policy begins within the context of the society in which it operates, and value systems are at the core of vision behind policy. Power is imposed from above by powerful groups or as a set of freedoms unwillingly surrendered for the common good to the state and its agency, the government, which governs by consent (Gilg, 1998, p.191).

In the United States, government was established after the Revolutionary War and creation of a modern constitution, based heavily on the freedom of the individual and the right to use private property (Jackson, 1986). There is no federal system of land use planning or land ethic across the U.S., although all 50 states have passed legislation to enable local governments to control land use decisions through zoning and other regulatory tools.

Zoning theoretically provides a tool for executing public policies such as growth management, but in practice, zoning proceeds on the basis of decisions regarding individual lots (Cullingworth, 1993). Long (2008) determined that rapid population growth can lead to changing land use regimes and the nature of that change depends on a variety of factors including the pre-existing institutional structure, cultural history and the power of local development interests.

Audirac et al. (1990) argue that the agency of planning practice can be connected to sprawl, specifically the desire to continue to grow within a low-taxation climate. As
more and more land is developed, ratables increase, thereby increasing the overall tax base of a community.

Political economists ascribe sprawl to be a manifestation of growth machines' and elites' effectiveness in manipulating public policy (see Logan and Molotch, 1987, Peterson, 1981; Vogel and Swanson, 1989; Vogel, 1992). Logan and Molotch (1987) observe that local decision-making processes and outcomes center on land development and institutions that benefit local landowners and business owners, known as the growth machine. This is a politically powerful, pro-growth coalition capable of influencing local decision-making to its own fiscal advantage.

Vogel and Swanson (1989) argue that places with growth management – including South Florida – may accommodate both pro-growth machine types and anti-growth coalitions because the term can be modified to serve local needs. Thus “management” can be read as “facilitation” in some cases, and “limitation” in others.

But why is sprawl more pervasive in some places than others? How does the principle of private property rights play into the planning culture at each location? Do conservative or liberal political views factor into the equation? Fulton et al. (2001) suggest that culture is relevant; specifically, they argue that the presence of immigrants fosters an increase in urban density. Others believe the propensity to sprawl may be a reflection of overall political and social culture, which is a vestige of historic immigration patterns from early settlement of the United States (see Elazar, 1984; Lieske, 1993). Arnold (2007) makes the case that local political culture affects both the content and scope of local land use regulations and the extent to which regulations are implemented via project-by-project decisions on rezonings, conditional use permits, variances,
subdivision approvals, etc. This research argues that the **culture** of private property rights is more potent than the **law** of private property rights.

**F. Summary**

The purpose of this chapter is to review existing studies that form the theoretical foundations of this dissertation, as well as other research that hovers around questions posed by this work. In summary, there is little research that exists on equine landscapes as a singular land use type, and no work that has been done on the thoroughbred industry in the United States as a land use requiring special planning attention. There have been several studies that define sprawl, and methodologies which quantify sprawl. The effectiveness of growth management programs to control sprawl has been mixed, largely because of the variance between growth management programs. Some studies conducted on Urban Growth Boundaries have shown them to be effective in harnessing new development.

Political culture, which is defined as the norms, attitudes and values of a population in a given locality equipped with an orientation to political action, (Elazar, 1984; p. 76) is similar in both study locations. Both sites seem to perceive government’s role as maintaining existing power relationships between elites and others. However, using Inglehart’s thesis, we would expect more progressive political orientations – and land use policies – where post-materialist attitudes persist.

Overall, this chapter provides context and a comprehensive review of the literature, which underscores the validity and importance of this study.
CHAPTER 3
RESEARCH QUESTIONS, HYPOTHESES AND METHODS

A. Questions

This research employs a case study approach to explore and explain the effectiveness of growth management from 1970 to 2010 in Lexington/Fayette County and Ocala-Marion County. Both locations are hosts to the thoroughbred industry, which is highly sensitive to incompatible land uses which often accompany sprawl. As a predicate to the basic objective, there is a need to operationalize and quantify sprawl at each location. This will create understanding of the spatial and temporal patterns of land use change at each place, including factors such as demographic changes and development of roadway networks over a 40-year period.

This research also seeks to understand forces that establish, protect and maintain growth management programs. It would appear that growth management mandated from the state may usurp local political forces that likely include elites and growth machines. Local growth management must be brought forward by local citizenry that, presumably, would include local growth proponents including the growth machine (Molotch, 1976).

Specifically, this dissertation will seek to ask the following questions:

a. what are the differences in development patterns between the two locations?
b. what have these localities done with reference to those land development patterns (such as agricultural zoning and growth management programs)?

c. what is the relative effectiveness of each locality’s land management program in managing sprawl and development patterns, and why is it either effective or ineffective?

d. What is the role of local political culture and institutions in the arena of land development, and controlling or promoting sprawl?

In addition to measuring sprawl at each site, the study involves a deeper evaluation of the reasons for sprawl or lack of sprawl with respect to growth management programs. This involves a case study investigation into: the methods of growth management in place (which are influenced by elites, culture and institutions at each site), regulatory schemes, anti-growth coalitions, and the history/tenure (and therefore, political power) of the equine industry in Marion County and Lexington-Fayette County.

B. Hypotheses

There are four research hypotheses listed below. Each hypothesis is discussed in detail later in the text.

1. It is hypothesized that Ocala/Marion County will be more sprawled than Lexington, mainly because the thoroughbred industry is newer in Ocala than Kentucky.

2. The Lexington UGB is more effective in managing sprawl than the state-mandated Florida growth management program.

3. The performance of the Lexington UGB will be influenced by the culture and institutions of the equine industry in the Lexington area.

4. The differences between the regulatory infrastructure -- and hence, and propensity to sprawl -- will be linked to the political culture of the areas under examination.
These hypotheses are interrelated, although first hypothesis relates to what is presumed key: it is hypothesized that Ocala/Marion County will be more sprawled than Lexington/Fayette because the equine industry is newer in Ocala than Lexington. The Marion County thoroughbred industry started with one farm in the late 1930 and gained momentum in the 1950s. It was still an immature economic activity when the land rush of the 1960s and 1970s came to central Florida, and croplands were converted to urban land uses. The thoroughbred industry had not established itself spatially, nor within the political arena, to have a voice in the land use development game.

By contrast, the Kentucky equine industry has centuries of rich history and its institutions have had a longer period to take root and wield power to become embedded within the political system. They are presumed to have amassed greater political influence than their equivalents in Florida.

Another rationale for this hypothesis relates to the system of growth management in place. Even though Florida adopted the GMA in 1985 on the heels of unprecedented in-migration and new residential development throughout the state of Florida, Ocala/Marion County will not have adopted the necessary regulatory mechanisms to protect the horse landscape. Bollens (1992) states that one of the primary reasons for the transference of growth policy authority from local to state government is the unwillingness or inability of local governments to deal adequately with growth issues that transcend municipal boundaries (p. 455). Researchers deLeon and deLeon (2002) speak about "slippage" between top down policy development, and local implementation. Florida's 1985 GMA awakened local government to the local and cumulative effects of development on natural resources management, and forced intergovernmental
coordination on resource protection, public infrastructure, and comprehensive planning. It was designed as a state-local conjoint relationship in which local governments were required to adopt goals consistent with those of the state. Noncompliance was penalty-based and inconsistencies such as “unacceptable infrastructure standards, or sprawl or housing considerations were the common reasons for noncompliance” (Bollens, 1992, p. 458). It is hypothesized that Marion County will have behaved like other Florida counties to accommodate all forms of development, regardless of its impacts.

Also, in Ocala, the impact of sprawl development may not have created a significant change in the appearance of the landscape yet. Long (2011) demonstrated that new land use laws are imposed after a significant change to the landscape has occurred and a free public amenity is lost; the community tends to develop a new approach, intending to implement the new imagined future (p. 14). Marion County’s landscape still largely remains rural and has a bucolic appearance with tidy fences, sprawling live oak trees, and grazing horses in paddocks. It is not yet perceived that this free, public amenity is lost or threatened, thereby creating a tipping point which might precipitate regulatory action. This is also related to the values associated with the political culture.

\textit{The second hypothesis is that the Lexington UGB has been more effective in managing sprawl than the state-mandated Florida growth management program.} Anthony (2004) tested the overall density of states with growth management programs against those without growth management programs. Locales with growth management programs in place did not have statistically significant higher densities. However, Nelson and Dawkins (2004), plus Anthony’s (2004) research showed that urban containment programs deter sprawl most effectively when they are coupled with other
land use controls including infill requirements, agricultural zoning and/or conservation easements programs. As Lexington’s UGB has been in place since the late 1950s and agricultural zoning outside of the UGB has been in place since before then, it is predicted that the UGB will prove to be demonstrably better at maintaining urban compactness, higher overall densities and reduced sprawled development outside of the UGB.

The third hypothesis is that the performance of the Lexington UGB will be influenced by the institutional makeup of the equine industry in the Lexington area.

UGBs represent lines on a map, but these lines are not permanently affixed to a single location; they can be adjusted to accommodate development needs as necessary. In fact, Portland, OR, adjusts its UGB as needed, primarily to minimize the impact of the constricted land supply on housing affordability (Lang and Hornburg, 1997). This is the goal or intended legal issue associated with expanding the UGB in Portland, but arguably, the decision to adjust -- or not adjust -- the perimeter of the UGB represents the expression of the local political culture. Maintaining the UGB line is a policy action that is upheld by the socio-economic and cultural ethic of that place. As Long (2011) showed, long-standing rural culture is slow to adapt to new regulatory changes; as Lexington’s horse industry has been in place for centuries, it will use its status to secure an economic position through a regulatory system that ensures its continued success.

The final hypothesis is that the differences between the regulatory infrastructure -- and hence, and propensity to sprawl -- is due to the varying nature of political culture at each place. Elazar (1984) argues that political culture differs from place to place based on historical patterns of immigration and engrained ethics instilled through generations in people. Based on Elazar’s three subcultures within the United States,
Ocala and Lexington are both in the “traditionalist” model. The prevailing idea behind this subculture is that government is a marketplace to facilitate growing personal wealth, and politics tend to organize around dominant families who perceive social connections and prestige more important than political party affiliation. Since Ocala is a relative newcomer to the industry, the institutions associated with the horse industry will not have become deeply embedded into the traditionalist political culture. Instead, political power and access will be restricted to those who seek to use government for their own financial advantage. This could mean those in the equine industry seeking to promote farmland preservation are likely using government for their own financial advantage, just as the opposite is true for those seeking to promote land development.

This speaks to the demographics and influence of the populace; Inglehart (1990) describes post-materialism as a determinant of political culture and likelihood to adopt progressive policies. Rosdil (2010) explains the underlying forces of progressive ideologies within municipal economic development policies through social and economic variables, including educational attainment and median income levels. As Lexington/Fayette County is home to the University of Kentucky, it is postulated that the university’s presence will shape local culture. Overall educational attainment is higher in Lexington than in Marion County, and therefore, development policies and programs will be more progressive and more effective in managing sprawl. Deconstructing the demographic makeup which shapes political culture will advance understanding of government’s approach to managing the tension between additional urban development—which enhances the tax base—and rural land preservation. Contrasting the political
culture between locations may also shed light on the tipping point at which urban development is no longer encouraged in favor of agricultural land protection.

C. Methods

This dissertation asks questions which are answered through both qualitative and quantitative analysis. The research evaluates changes in development patterns, specifically development that can be defined as sprawl from 1970 to 2010, which can be measured quantitatively. It also seeks to explain the political culture at each study location, a phenomenon best studied with qualitative methods. The research is broken into tasks accomplished with mapping, statistical analysis, input from focus groups, media content analysis, discussion of partisan voting patterns, personal interviews and participant observation. ArcMap, an ESRI Geographic Information Systems (GIS) software package, was used for mapping and statistical analysis, and Microsoft Excel was used for other statistical analyses.

The dependent variable is each community’s success in limiting sprawl at each location. The definition of sprawl is per Ewing (1994), and is defined as undesirable land use patterns, scattered or leapfrog development, or continuous low-density development that tends to be low-density, residential or commercial. Independent variables include population changes, regulatory mechanisms, income levels, educational attainment and political culture.

D. Analysis of Demographic Changes

a. The Data
The first step is to understand the population shifts that took place in each county through the study period. In addition to quantifying changing demographics, it was important to understand the spatial distribution of those demographic changes across the landscape. The US Census of Population provided digital data on the social and economic characteristics of the population at each location for 1970, 1980, 1990, 2000 and 2010 so that population changes could be mapped. These data were gathered at the census tract level (or, in the case of Marion County for 1970, at the county subdivision level).

Because the US Census Bureau does not maintain digital, geo-referenced records for historical data before 1990, the National Historical Geographic Information System (NHGIS) was the source for data (www.nhgis.org). The NHGIS provides historical records of aggregate census data and GIS-compatible boundary files for United States counties between 1800 and the present (nhgis.org). Data included population totals, educational attainment, race, median and mean household income levels (depending upon which metric was asked in any individual census year), and overall density per square mile. Average population densities per census tract were calculated through ArcMap by dividing the census population of each census tract by that tract’s area (in square miles). It is also worth noting that census tract boundaries almost always shift from census year to census year, based on population changes, so it was not possible to delineate/map density changes through time using the same boundaries. Thus, each decennial census provided a different spatial arrangement of population density because of the geographic changes in the total numbers and boundaries of each census tract.

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4 It is possible that apparent spatial changes in population density may simply reflect shifts in the numbers of census tracts, and their boundaries.
Nelson (1999) states that a common measure of farmland preservation involves simple comparison of the amount of land in farms during the study period. Secondary data gathered from the Census of Agriculture regarding “acreages in agriculture” were analyzed to compute which site lost the most acreage from agricultural use to other uses, in both absolute and relative terms, during each 40-year period. Those rates of change were quantified using simple statistics. It is noted that the loss of agricultural lands to another land use category could have involved a shift from farmland to forested land. However, given the history of population growth and land development at each study location, it is most likely that fewer acres in agricultural land are likely to have been converted to urban-type development.

b. Approaches to Analysis

Density gradients (per Mieszkowski and Mills, 1993) were created for each decade at each place, for a total of ten density gradients. An assumption for development of the density gradients is that all population is uniformly distributed across each census tract. The method for measuring distance for the density gradients involved ArcMap. The GIS system identified the geographic centroid of each census tract and then determined the straight-line distance between the centroid of each census tract and “center” of each county’s major city. In Lexington/Fayette County, the city center was defined as the intersection of Main Street and Limestone Street. In Ocala, the intersection of Silver Springs Drive and Pine Avenue was defined as the center point from which distances were measured. Average population density per square mile per census tract was the y axis, and the distance from the “centers” of each city (in miles) was the x axis. The $R^2$ described the amount of population density within each census tract.
that could be explained by distance to the city center. An exponential model was most suitable. This provided a model to illustrate the geographical spreading of population density around each county’s major city. Both communities are monocentric, so the density gradient is appropriate.

Each density gradient was expressed using an exponential regression model per Mieszkowski and Mills (1993). This way, the $R^2$ from decade to decade and from county to county could be compared. Population densities at the city centers in each county are compared, as well as the predicted loss in population density for each from the city center into the rural areas.

E. Measuring sprawl

a. The Data

Operationalizing sprawl was modeled after Ewing et al. (2004), although slightly modified. Ewing calculated a density metric for streets, and specifically sought to measure block length and calculate the ratio of shorter blocks to longer blocks. This seemed to be a less suitable method to measure urban compactness. Instead, the author decided to modify (and simplify) Ewing’s technique to density of streets per square mile, with the results grouped into five categories of street concentrations. Greater concentrations of streets per square mile should indicate more intensive urban development; concentrations of streets located outside of urban areas could be labeled as sprawl. Very dense street networks and block lengths were expected inside of Ocala and Lexington; clusters of large segments of street length outside the urban areas were sprawl.
Measuring sprawl involved data which included accurate representations of street networks at both the beginning and end of the study period. The data had to be in a format for GIS applications, and needed to include all public and private road networks. However, geo-referenced and accurate information on the street networks in the two study counties was unavailable for the five, 10-year intervals of the study period. Over the 40-year study period, each state updated its county roadway maps, but those updates were not synchronized between the counties; that is, it was not possible to find sets of maps done for Marion County and Fayette County in the same sets of years.

The United States Geological Survey (U.S.G.S) 1:24,000, 7.5 minute quadrangle topographic sheets for 2010 were used as base maps for both counties. Digital aerial photography from 1973 (Fayette County) and 1974 (Marion County) were geo-referenced, and overlaid onto the 2010 U.S.G.S. grid system. By comparing/contrasting each of the new 1973/1974 aerial information against the 2010 data using GIS, a new data layer was created for each county to show the new roads contrasted against the old road system. The U.S.G.S. maps, which are developed from aerial imagery, provide a consistent map scale and new land use/roads information since the most recent publication of that map are highlighted to show changes. These maps provide a reliable and easily manipulated data set to begin assessing development changes.

Inasmuch as it would have been ideal to have street network for each county in each decade, but the data were unavailable. The best that could be gathered demonstrate a baseline for each location in the 1970s, contrasted against the 2010 U.S.G.S. quad sheets. This created an easily understood “before and after” tool to view street network change in each county.
b. Approaches to Analysis

The first step was to measure the overall length of streets for each county to develop a hierarchy of street lengths for each census tract (length of streets was divided by the area of the census tract). Next, a one-square mile grid was digitally laid across the imagery (using the Spatial Analyst toolbox and Fishnet function of ArcMap) to determine the total length of streets within each square mile block. Two sets of street length/density maps were created for each county—a 1970s-era street length/density map, as well as the 2010 street network. Street lengths were measured in one direction.

Using GIS, five separate classifications of street length were created; the smallest category was zero (no streets within a square mile) and the largest classification was greater than 25 linear miles; that is, all square mile grids which had more than 25 linear miles of roadway were included in that category. There were three intervening classifications between the highest and the lowest to demonstrate the length of streets within each square mile grid. The cut-offs for each of the three intervening categories was computed automatically by ArcGIS’s statistical computing power. Using ArcGIS, the number of square miles in each street length category was totaled. The mean value of street length was calculated, as well as the maximum and minimum lengths of street by per square mile in each county.

Finally, in order to measure whether street density is an appropriate measure of sprawl, another index was developed. This measured the average street length (in miles) per square mile per 1000 persons within each county. This provided a per capita quotient of street length density to glean whether the area is dense with population (for which a dense street network might be necessary) or not.
The two counties were compared to determine which had more streets per 1000 persons. The mean values of roadway lengths per census tract for each county and each year were calculated, as well as the standard deviations. In order to assess whether there were statistically significant differences between the two locations (because Marion County is so much larger than Fayette County), a t-test was conducted to determine whether the means are statistically different from each other, based on an acceptable level of confidence.

The above methods facilitated analysis of sprawl within each location. The next phase of the research involved deconstruction of the political motivation and rationale behind the push to allow sprawled development, or on the contrary, to control sprawl and farmland preservation.

**F. Political culture**

Culture is not easily quantified like population or street density, or even categorized like soil types or land cover; it is observed. Understanding why each place experienced particular patterns of development is rooted in understanding the political culture at that locale. This is defined as the attitudes, values and norms associated with a place. Political culture shapes how regulation is imposed, the institutions and political forces in place, and the outcomes associated with effectuating these forces.

**a. The Data**

Data on political culture were gathered through both qualitative and quantitative methods. In this research, qualitative methods included personal interviews, focus
groups, media content analysis, partisan voting patterns, and participant observation. My nine years of experience as a member of the Lexington-Fayette Urban County Planning Commission provide an insider’s look into the political culture of Lexington.

Quantitative analysis was also conducted to understand socio-economic differences between each place. Educational attainment and median/mean household were chosen as key variables to understand the social and economic conditions at each place. Finding a consistent variable between the 40 years of study to measure educational attainment was challenging. Initially, the plan was to include the percentage of residents with high school diplomas and baccalaureate degrees as measures of educational attainment, but the available data did not provide this information in a consistent format. In the 1970 and 1980 Censuses of Population, respondents were queried as to the highest levels of education attained. However, when charted, the data became divergent. That is, when the numbers of high school respondents rose, the numbers of persons with college education declined, and vice versa, as the responses seemed to have been mutually exclusive even though it is common knowledge that a high school diploma (or its equivalent) is required for admission to college. The divergence of the data seemed to confuse the issue of educational attainment, and because of that, a different variable was used. The most consistent variable for the 1970 and 1980 censuses, as contrasted with the 1990, 2000 and 2010 data, was “how many years of college” had been attained. Later census years specifically queried respondents about degrees awarded. The earliest two decades of census data did not ask about degrees attained, but rather asked about how many years of college had been completed. As such, for 1970 and 1980, “four years of college” served as a proxy for the baccalaureate degree.
(even though it is understood that it may take longer than four years to get a baccalaureate degree). For 1990, 2000 and 2010, the equivalent variable measured was “bachelor’s degree” awarded. Although similar, it is understood that these are not identical variables measuring exactly the same thing. But this was the best measure of educational attainment possible for this study, given the five census decades for which the format and questions of the census changed.

A variable which describes income level was also captured, but there was also variation in how that census question was asked in the five decades of censuses. In 1970, the census recorded “mean family income” but in 1980 and subsequent years, “median household income” was the variable listed. In order to standardize these variables, they were measured against the national mean family income (in 1970) and the national median household income for every other study decade. These were represented as an index against the national levels to be able to standardize against regional variations between Florida and Kentucky. For instance, if the 1970 Marion County census tract number 43 recorded an average annual family income of $6,000 and the national mean family income was $8,000 for that year, Marion County census tract number 43’s income level was standardized against the national mean family income and indexed to be 0.75.

If in 1980, the US median household income level was $14,000 and the median household income in Fayette County census tract 27 was $15,000, census tract 27 was indexed to be 1.07, representing 107% of the national income level for that year. This method provided a baseline for the differences between median and mean household and family income levels, respectively.
The research involved an inventory of existing regulations and land use policies which guide land development decisions in each county. In other words, regulatory tools and policies like zoning ordinances, subdivision regulations, Comprehensive Plans, and any existing small area plans were reviewed to elucidate assessment of the existing regulatory climate in place at each locale. In addition, information was gathered about the existence and robustness of each locale’s farmland preservation program, as well as transfer of development (TDR) rights and purchase of development rights (PDR) programs.

Site visits and interviews were conducted with key stakeholders at each location. The Institutional Review Board (IRB) of the Office of Research Integrity at the University of Kentucky issued an Exemption Certificate after approving the research protocol, which is included in the appendix of this document (see Exemption Certification for Protocol No. 11-0590-X4B).

There were two interviews, respectively, with thoroughbred farm managers in Lexington and Ocala, to get a sense of the development pressure in each location. The purpose was to determine whether there is pressure to sell/convert their farms from equine operations to urban-type development, or reduce fiscal investment (impermanence syndrome). The names of those interviewed, the dates of each interview, and farm names and locations are provided in Table 3.2. Interviews with key members of the Florida and Kentucky Thoroughbred Owners Association also helped to inform the role of the equine/farming industry as part of the political culture and, if appropriate, the elites at each site.
Meetings were also held with local planning officials in Marion County and Fayette County to understand the pace/tempo of development, as well as the process for development approval (such as whether public hearings are held prior to new subdivision approval, Comprehensive Plan amendments, etc.). Meetings with the Lexington-Fayette County Planning Department were initiated in May 2010 and were ongoing monthly as the author is a member of the Lexington-Fayette Urban County Planning Commission.

Table 3.1: Interviews with Thoroughbred Farm Managers, Industry Representatives and Local Government Representatives

<table>
<thead>
<tr>
<th>Interviewee</th>
<th>Farm/Local Gov’t</th>
<th>Location</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mark Roberts</td>
<td>Adena Springs South</td>
<td>Williston, FL</td>
<td>June 10, 2010</td>
</tr>
<tr>
<td>David O’Farrell</td>
<td>Ocala Stud</td>
<td>Ocala, FL</td>
<td>June 9, 2010</td>
</tr>
<tr>
<td>L. Mike Owens</td>
<td>Cobra Farm</td>
<td>Lexington, KY</td>
<td>April 3, 2009</td>
</tr>
<tr>
<td>Frank Penn</td>
<td>Pennbrooke Farm</td>
<td>Lexington, KY</td>
<td>November 13, 2011</td>
</tr>
<tr>
<td>David Switzer</td>
<td>Kentucky Thoroughbred Owners Association</td>
<td>September 9, 2011</td>
<td></td>
</tr>
<tr>
<td>Richard Hancock</td>
<td>Florida Thoroughbred Owners Association</td>
<td>June 9, 2010</td>
<td></td>
</tr>
<tr>
<td>Tye Chighizola, AICP</td>
<td>City of Ocala Growth Management</td>
<td>June 9, 2010</td>
<td></td>
</tr>
<tr>
<td>Lisa Walsh</td>
<td>Marion County Planning Department</td>
<td>August 2, 2011</td>
<td></td>
</tr>
<tr>
<td>Chris King, AICP</td>
<td>Lexington-Fayette Urban County Planning Dept</td>
<td>May 23, 2010</td>
<td></td>
</tr>
</tbody>
</table>

In order to learn more about existing ideas on land development, political climate, and public attitudes about farmland conversion to urban land uses, two sets of focus groups meetings were held. The organization and conduct of the focus groups generally followed the principles and protocols described by Cameron (2000) and Myers and Macnaghten (1998). The focus group meetings were approved under the IRB Exemption Certification for research protocol cited earlier.

Two focus groups on two consecutive days were held at each location; in Ocala, focus group meetings were held at the Ocala Growth Management Office on Monday and Tuesday, August 8 and 9, 2011. Both locations were offered a focus group time/place
which met midday over lunch, as well as in the early evening. In Lexington, they were held on Monday and Tuesday, September 12 and 13, 2011. Each attendee was asked to sign in, and fill out a questionnaire that asked about where he/she lives, his/her profession, his/her involvement with agriculture, land ownership status, and income level. Identical questionnaires were provided at each focus group meetings; a copy of that questionnaire/sign in sheet is provided in Figure 3.2. Consistent with Cameron (2000), the focus group meetings were audiotaped. Specific questions posed to participants, as well as their responses, are described in Chapter 6.

The voting history in key races, as well as makeup of each jurisdiction’s elected officials are also offered. The principal source for this evaluation was Barone’s (2012) Almanac of American Politics, which describes voting patterns of elected officials and key ballot issues. This will inform political culture and the conservative or progressive nature of the populace.

Media content analysis was conducted in the Lexington Herald-Leader and the Ocala Star-Banner, which are print newspapers for each location, to help with understanding the political culture of each place.

Finally, as a member of the Lexington-Fayette Planning Commission since 2003, I provide personal, participant-observer anecdotes from my understanding of the political culture in Lexington/Fayette County. This is not an ethnography of Lexington, but is modeled after participant observation methods used by Vidich and Bensman (1958) who lived in a small town for three years during development of a community study of a small town in upstate New York, and Gans (1962), who sought to understand Italian-American migrants living in slums in the West End of Boston. Engaging the planning process as a
13-year Lexington resident, coupled with 9 years of service as Mayor-appointed Planning Commissioner provided unparalleled understanding of the political culture of Lexington-Fayette County. This personal experience provided understanding of development and preservation stakeholders; a history of clashes between these stakeholder groups; a unique understanding of the makeup of those engaged in the political process; and a knowledge of how government is practiced by staff and elected leaders.

Figure 3.2: Questionnaire provided to Focus Group attendees, Lexington
G. Summary

This chapter elucidates the research question, research hypotheses, data sources and methods which address the dissertation’s essential questions, as well as the literature’s support of those data and methods. Each of the study areas is described in detail in Chapter 4, and the result of the sprawl analysis is included in Chapter 5. Chapter 6 is a description of the findings regarding political culture.
CHAPTER 4
DESCRIPTION OF STUDY AREAS

“One would suppose that over the past half century the encroachment of industry and a burgeoning population would have reduced this equine paradise to a bland suburbia.” Thomas D. Clark, 1980 quote from The Horse World of the Bluegrass

A. Growth Management Programs: History

Growth management is a public policy tool to confront the reasonable development needs of a community, region or state, and to accommodate those needs in a manner that preserves public goods, minimizes adverse interactions between land uses while maximizing positive ones, improves the equitable distribution of the benefits of growth, minimizes fiscal burdens and enhances quality of life (Nelson and Dawkins, 2004). Managing development by at least partly confining it to land areas within urban boundaries is not a new concept. Many ancient cities, including Jericho and Rome, were encircled by city walls that served as defensive barriers and helped maintain farming areas for food production. Thousands of years later, in response to urban crowding and squalid and unhealthy living conditions associated with Britain’s industrialization, Ebenezer Howard’s Garden Cities of To-Morrow (1898) proposed compact and condensed urban development to support 30,000 people on 1,000 acre sites surrounded

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by agricultural greenbelts of 5,000 acres (Hall, 2002). This greenbelt idea is a form of urban growth management.

In the U. S., contemporary growth management rose from post-World War II decentralization and suburban expansion associated with the automobile. Unlike European nations with federal directives for planning, growth management in the United States has been undertaken by state and local governments. Approximately 75 cities across the United States utilize urban containment strategies (Nelson and Dawkins, 2004). Thirteen states have adopted top-down, state growth management programs, including Florida. Kentucky has no statewide growth management program.

**a. Florida’s Growth Management Program**

During the 1970s, Florida’s population increased from 6.7 million to almost 10 million, and there was considerable concern about protection of environmentally sensitive natural resources and long-term water supplies (Pelham, 2007). Florida was slow and unresponsive to urbanization pressures in the 1970s and 1980s in south Florida; this is because the legislature was dominated by rural interests through the 1990s (Rubino and Starnes, 2008). There was great reluctance to take legislative action against land development in Florida because those parts of the state that were experiencing the greatest pressures were not well represented in the legislature. However, in 1972, Florida became the second state to adopt a statewide growth management program.

It was generally perceived that the 1972 growth management legislation was ineffective at controlling the negative impacts of growth, so Florida’s law was retooled and readopted in 1985 as the Growth Management Act (GMA) (Holcombe, 2007). It is
considered a *state dominant* program as categorized by Gale (1992) because it forces all units of government to conduct planning. The 1985 GMA included a cluster of growth management bills adopted by the Florida legislature in 1984, 1985 and 1986 that enacted the states planning program. Chief among this legislation was the Omnibus Growth Management Act of 1985, but the Florida legislature also adopted the 1984 Florida State and Regional Planning Act, which required the preparation of a state plan, and the 1986 Glitch Bill, which further clarified the 1985 bill (Chapin et al., 2007).

The GMA does not require urban growth boundaries although several large municipalities in southern Florida have adopted UGBs. DeGrove (1992) and Chapin (2007) prepared volumes on growth management programs in Florida. Uniquely qualified as the former Secretary of the Florida Department of Community Affairs (DCA) – the implementation agency within state government - DeGrove provided a thorough history of the program, including its requirement for planning and resource protection. Chapin (2007) discussed Florida’s program in particular, and provides several before-after studies of how the GMA impacted land development patterns.

Florida’s GMA mandates local planning and sets out requirements for specific purposes: consistency, concurrency, and compact development. Some claim that the 1985 Florida GMA “represents the high water mark for the profession of planning” (Chapin et al., 2004) as it forces the Comprehensive Plan to be at the center of all regional and local land use decisions. Florida’s program requires state oversight of local planning efforts, mandates consistency between formerly disconnected local plans, and establishes infrastructure concurrency (i.e., specifying that certain urban services are in place prior to development; Chapin et al., 2004). Florida’s program initially was based
on development of comprehensive planning documents, and then morphed to become a program that pushed communities toward compact and contiguous urban forms. These policy shifts transitioned from “managing growth to managing the location of growth” (DeGrove and Turner, 1998), including a desire for compact development. Compact development policies were introduced in 1996 and 1999 (Florida Statutes, chapter 163.2511-3245, 1999). The earlier version was intended to protect sensitive ecosystems and maintain a healthy and clean environment and the 1999 version addressed sprawl (Florida Statutes, chapter 163.2511-3245, 1999).

Within Florida, a key provision states that comprehensive plans must be consistent with the State Comprehensive Plan as well as other governments’ plans within that region. The consistency concept is the backbone of all state planning and growth management systems (DeGrove, 1993). In addition to consistency, Florida’s GMA is also marked by an emphasis on concurrency, defined as assurance that infrastructure is in place prior to development approval, and compactness, intended to promote urban infill and redevelopment and to enhance compact growth (Ben-Zadok, 2005). These legislative amendments were made from 1990 through 2003, and were intended to curb sprawl and encroachment of development into environmentally sensitive areas. There is no mandate for urban containment programs in the GMA, but several cities, including Miami and Fort Lauderdale, have adopted UGBs to limit urban areal expansion.

The GMA initially required all governments to create and implement comprehensive plans which focused on protection of agricultural lands and natural resources, recreation, housing and capital improvements (Ben-Zadok, 2005). The Florida Department of Community Affairs (DCA) implemented the GMA by creating a checklist
of criteria to review local plans. In 1986, the GMA was amended to include the Glitch Bill, which clarified the consistency requirement and intergovernmental planning arrangements in a new Rule 9J-5. This was the structural framework for implementing the GMA; consistency required coordination, compliance, and continuity among state, regional and local plans. It also granted the state ultimate authority to intervene in land development decisions, which had previously been reserved exclusively to localities. DCA reviewed every Florida localities’ plans between 1988 and 1993 and ensured their compliance with 9J-5; Marion County’s plan was approved by DCA and adopted by the County Commissioners in 1992 (Daniels, 2012).

In addition to consistency, the Glitch Bill also mandated statewide concurrency regulations. Concurrency required local governments to evaluate capital improvement programs into their comprehensive planning programs and assuring adequate infrastructure was in place in advance of new development. It directly linked a new project’s approval to the provision of adequate public facilities. “The requirement to deliver facilities is brought to the forefront of land use planning (regulation) rather than reserved for the later development stage (enforcement)” (Ben-Zadok, 2005). Concurrency invoked impact fees/exactions as a pre-requisite to development approval, but localities soon realized that the public facilities development costs far exceeded any proceeds exacted from developers for new project approval. Schools were especially difficult, as well as new roadways. The rules had to be adjusted to allow communities to exempt projects from this legal requirement, which morphed into more of an emphasis on allowing new development without adequate capacity in roads and schools as long as the
new development did not contribute to problems associated with sprawl. But as new roads were built to accommodate new development, sprawl resulted (Chapin et al., 2007).

In response, three compact development amendments were incorporated into the GMA in the 1990s. These were aimed to enhance compact growth and economic development by focusing on transport and urban-suburban sprawl and directing growth and economic activity to urban areas (Ben-Zadok, 2005). In 1993, a rule was adopted which allowed infrastructure to be in place no later than the time of issuing a certificate of occupancy or its functional equivalent instead of at the time of building permit issuance. This allowed developers more time and allowed a “pay-and-go” system in which developers could pay the prescribed fee, whether or not facilities were in place. This eased state-local negotiation and enforcement.

A 1999 amendment specifically addressed sprawl as a problem that should be resolved via compact urban economic development. It blamed sprawl as a by-product of poor transport planning. Concurrency actually fostered greater amounts of driving and longer commuting times for Floridians; problems were especially pronounced in Miami-Dade and Broward Counties (RuBino and Starnes, 2004). But despite the general sprawl trend, population growth did lead to some improvement in compact development. Statewide, overall population density per square mile increased from 239 in 1990, to 267 in 1996, and 303 persons in 2001 (Ben-Zadok, 2005). In the urban counties, density per square mile increased from 991 to 1176 in Miami-Dade and 1039 to 1365 in Broward County from 1990 to 2001 (University of Florida, Bureau of Economic and Business Research, 2002).
Throughout the dynamic period of enactment and enforcement of the GMA and prior to the onset of the sub-prime mortgage crisis nationwide, most Floridians still supported the ideas associated with it, but had diminishing support for state intervention in growth management (Chapin et al., 2007). This is likely due to the problems associated with executing the GMA through time. Although the Chapin et al. (2007) research does not specifically address this question, the results could imply that there is greater support for local control of growth versus a state-mandated program.

In June 2011, Governor Rick Scott signed into law HB 7207; this, in effect, defunded the Division of Community Assistance. Key personnel were terminated, and remaining staff were folded into the Division of Economic Opportunity. Governor Scott cited the DCA as a “jobs killer” and “unnecessary” in a depressed economy. Implementation of the GMA was passed onto local governments, and concurrency, amendments and compactness were all considered “optional” if funding were available (The Florida Times-Union; accessed 6/11/2011).

This action by Governor Scott is consistent with the traditional political culture typology assigned by Elazar. This allows local powerbrokers to have a greater voice in executing the GMA.

**b. Urban Growth Boundaries**

As policymakers and the public perceive that other land-use planning policies have failed to curb sprawl, they have become increasingly interested in tools that create artificial boundaries to limit the extent of urban development outside of city limits. Over the past three decades, the concept of “urban containment” – that is, creating
geographically defined boundaries that limit urban growth – has emerged as one of the nation’s best, yet controversial, policies associated with metropolitan development and expansion (Pendall and Martin, 2002). Urban containment choreographs and directs land uses inside a predetermined boundary to achieve a clear separation between urban and rural land uses. Approximately 75 cities across the United States utilize urban containment strategies, also called Urban Growth Boundaries (UGBs), for managing urban land uses. Urban Services Area (USA) is another term which means the same thing; this term refers to the land areas inside of the USB.

UGBs have been successful in refocusing development toward center city revitalization (Nelson et al., 2004), preserving prime farmland (Nelson, 1992), and creating contiguous urban form (Weitz and Moore, 1998). In certain locales, they also provide an open space public amenity for areas outside of the boundary. Portland, OR is the largest metropolitan area in the US that has an UGB. Since 1990, urban containment policies have been adopted as statewide growth management planning tools in Washington and Tennessee, and in many local communities. Many California cities have adopted UGBs on their own, without state requirements for urban containment (Pendall and Martin, 2002).

Lexington, KY was the first city in the country to adopt an UGB in 1957. Although initially developed in response to sewerage needs, the Lexington USB has had the dual effect of maintaining compact growth and minimizing encroachment into rural areas. It has been a cornerstone to the city planning program and since 2001, infill and redevelopment of land inside the USB has been encouraged by city leadership.
B. The History of Land Development at the Study Sites

Marion County, Florida and Fayette County, Kentucky share similar, although different development histories that have resulted in the effectiveness of growth management at each location. This section of the dissertation investigates the development history, the history of the thoroughbred industry at each location, and the regulatory climate which leads to the current state of farmland preservation in the Ocala and Lexington communities.

At the turn of the 20th century, Florida had just over 500,000 residents; today, it is home to more than 19 million inhabitants. Between 1900 and 1970, Florida grew by six million residents. Since 1970, however, the State of Florida’s population has tripled.

The beginnings of Florida’s growth occurred immediately before the Depression as newcomers parceled out South Florida swamplands and shilled bargain real estate in Yankee newspapers (Booth, 2007). Seminole lands were seized and many of those natives were sent with the Cherokees to Oklahoma (Colburn and deHaven-Smith, 2010, p. 46) and the Everglades. Henry Flagler built a north-south train line along the east coast, which opened access to beach areas along the Atlantic. During World War II, the US government built 172 major military bases to meet the demands of the U.S. Navy and Air Force. Eventually, the federal government constructed the Space Center at Cape Canaveral. Agriculture thrived as the temperate climate and predictable rains helped grow a citrus crop unrivaled in the country. Florida’s livability grew with technological advancements including new pesticides to abate the enormous insect problem and air conditioning, which became widely available in the late 1950s. Cubans arrived en masse when Fidel Castro took control of Cuba in 1959. Tourists came in droves to take
advantage of Florida’s mild winters. In the 1970s and 1980s, age-restricted retirement communities emerged and the real estate and construction industries exploded to accommodate incoming residents. In fact, some argue that the economy of the Sunshine State, which has been based on tourism, real estate development and new home construction for the past 60 years, is unsustainable and provides no lasting value to the economy (Mormino, 2005). Ocala became home to Lockheed’s support offices, employing more than 1,000 engineers, and E-ONE, Inc, and emergency vehicle manufacturer.

Kentucky, on the other hand, has not experienced Florida’s rapid and extreme growth. But it has experienced spurts of intense growth. As the foreign and domestic automobile industry sought to create new assembly plants closer to markets and outside Detroit, Kentucky was able to become home to new plants in Louisville and Georgetown. Kentuckians also enjoyed spillover benefits from a new Toyota plant just across the Ohio River in Evansville. Spinoff manufacturers in support of the auto industry sprang up around the Ford and Toyota plants and Lexington has become more densely settled as industrial giants IBM and Lexmark helped grow the region’s economy. Also, the University of Kentucky grew through the decades to include a medical and dental school, a teaching hospital and a top-tier pharmacy program.

Lexington and Ocala also share common history in terms of land development. Both locales have experienced significant residential expansion since 1970, which presents greater risk to the vitality of the equine industry at each location. As population pressures have increased, both locales have made regulatory adjustments to their land use planning programs to accommodate that population growth. In Florida, the state

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legislature forced local governments to study the impacts of new residential and commercial development on the state’s natural resources. In Lexington, tension exists to accommodate increasing population growth inside the city while maintaining the horse farm landscape outside the city limits. And as the thoroughbred industry suffers an economic crisis during today’s global recession, pressure grows to convert horse farms to a different land use. And if local and state governments do not protect the thoroughbred industry from incompatible land use encroachment, there are many other states which would very much like to attract equine interests to their own locations (Wall, 2010).

C. The History of the Thoroughbred Industry in Lexington and Ocala

a. Lexington-Fayette County

Lexington, Kentucky, located in Fayette County in central Kentucky (See Figure 4.1) is situated in the heart of the Inner Bluegrass region, which is known for its karst landscape and calcium- and phosphorus- fortified soils. The Inner Bluegrass extends for 30-mile radius beyond Lexington and encompasses approximately 2,800 square miles (Hollingsworth, K.,1976). Fayette County, comprising about 285 square miles, is at the center of the Inner Bluegrass.

Lexington was founded in 1775 at a natural spring that fed into Elkhorn Creek. The party of frontiersmen was led by William and Francis McConnell. As stated earlier, the region is karst, and soils within Fayette County are rich in phosphorus and calcium, which makes strong bones in animals raised on its grasses. Thoroughbreds factor prominently in Lexington’s centuries-old history and the region is currently known for its iconic horse farm landscape.
The rural Bluegrass landscape includes a dense concentration of more than 450 thoroughbred horse farms (Slayman, 2007), and there are about 211 thoroughbred farms in Fayette County (Figure 4.2). As such, there is a professionalized class of horse people in the region, on whom the farm owners rely upon to run the daily business of the farms: from horse care, breeding, training, and racing, to managing the labor, the accounts, and the property (Garkovich et al. 2009; Hollingsworth 2004; Nutt et al. 2011; Wall 2010). The Kentucky horse industry around Lexington has been studied as an economic cluster, and a recent economic impact analysis measuring the effect of agriculture on the Fayette County economy stated that it generates $2.4 billion annually. Also, there are approximately 18,196 jobs (one in every 9 jobs in Fayette County) directly attributed to the equine cluster, $1.32 billion in additional income, profits and dividends, $66 million in state income and sales taxes, and $7 million in occupational license taxes for Fayette County (Davis, Garkovich, et al., 2013). Support services for the equine industry include transportation services, tourism, professional services like insurance, equine health
services, professional associations, and specialized farm-related construction services\cite{ibid,2013}. Lexington also serves as an international equine sales facility, as Keeneland and Fasig-Tipton hold several sales throughout the year.

Figure 4.2: Horse Farms of Fayette County, 2011 (each horse head icon represents one thoroughbred farm)
Lexington’s association with the thoroughbred horse extends to its iconography. White (and frequently black-painted) horizontal planked fences, coupled with steepled barns, contribute to Lexington’s identity. In fact, the iconography extends to local street names: the Bluegrass Airport is located along a circumferential four-lane highway called Man-O’-War Boulevard. Local developments, including subdivisions and commercial centers, have names like Pimlico Parkway, Gainesway and Turfland Mall. Jockey silks decorate local restaurant and pub walls, and city parks have names like “Thoroughbred Park” and “Isaac Murphy Gardens.” The identity of the city is intertwined with the thoroughbred industry.

While other states have may have more horses, according to the 2007 Census of Agriculture, the value of horses sold in Kentucky is more than 5.6 times greater than the next ranked state (Garkovich et al., 2009) (see Table 4.1). The thoroughbred sector dominates, and the breeding-sales component of the industry is considered among the strongest in the world. In 2006, 72 of the top 100 Thoroughbred stallions in the world

<table>
<thead>
<tr>
<th>State</th>
<th>Farms w/Horses</th>
<th>Rank</th>
<th># of Horses</th>
<th>Rank</th>
<th>Horses Sold</th>
<th>Rank</th>
<th>Value of mules, burros Sold (in $1000s)</th>
<th>Rank</th>
</tr>
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<tbody>
<tr>
<td>Kentucky</td>
<td>22,242</td>
<td>4</td>
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<td>3</td>
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<td>13,816</td>
<td>7</td>
<td>120,614</td>
<td>7</td>
<td>16,111</td>
<td>7</td>
<td>167,784</td>
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<tr>
<td>Missouri</td>
<td>24,495</td>
<td>3</td>
<td>149,165</td>
<td>5</td>
<td>21,073</td>
<td>4</td>
<td>21,369</td>
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<td>20,659</td>
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<td>31,212</td>
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<td>180,723</td>
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<td>56,506</td>
<td>1</td>
<td>117,744</td>
<td>3</td>
</tr>
</tbody>
</table>

Source: 2007 US Census of Agriculture

For a fuller discussion of the iconography of thoroughbred and Lexington, see Schein, 1997.
as ranked by *The Blood Horse* stood in Kentucky (Garkovich et al., 2009). Infrastructure in support of these operations includes sales facilities, mare management, equine veterinarians, bloodstock agents, and surface as well as air transportation services.

In addition, The Jockey Club, an organization which is the breed registry for thoroughbred horses in the United States, Canada and Puerto Rico, is situated in Lexington. Lexington also has Keeneland race track, which is the site of multiple Grade 1 stakes races whose winners qualify for internationally renowned events, like the Breeders Cup races. Lexington is known for its breeding; every January through June, the Bluegrass landscape is dotted with mares and their foals (Figure 4.3). Many of these foals are sold as yearlings at the Keeneland September sales (see Figures 4.4 and 4.5). These are not inexpensive riding ponies. In 2010, Lexington-area thoroughbred farms sold 1,128 horses for an average price of $91,000 per horse (Nutt et al., 2011). And in 2007, Fayette County led the nation in equine sales with more than $410 million sold (Davis, Garkovich, et al, 2013).

Figure 4.3: Lexington is Known for its Broodmare Operations as Witnessed by These Foals and Their Mamas

Photos by Mike Owens, 2012
Figure 4.4: Sale Topper for Keeneland 2012 2-Year Old Sales: colt of Majestic Warrior, owned by the Steinbrenner Family of Kinsman Farm in Ocala, Florida

Source: Reprinted with permission from Keeneland.com (accessed 4/29/2012)

Figure 4.5: Sale Topper for Keeneland 2008 September Yearling Sale; a $9,000,000 colt.

Source: Reprinted with permission from Keeneland.com (accessed 9/21/2008)
The history and tradition of equine breeding operations in Lexington run deep. There have been many volumes written on the legacy of the thoroughbred industry and its connection to Kentucky (see Wall, 2012; Denbo et al., 1980; Hollingsworth, K, 2009; Cassidy, 2007; Hollingsworth, R., 2004). As early as 1783, Fayette County tax rolls showed there were “9,607 horses, 56 stallions, 2,522 slaves and nine taverns” (Hollingsworth, K., 1976). These early horses were brought from England and were probably Arabian. Today’s contemporary thoroughbred is a descendent of the Arabian breed, and all of today’s thoroughbreds descended from one of three “foundation sires” – the first three stallions who sired progeny from which today’s thoroughbreds came. Those three foundation sires/ancestors were Matchem, Herod and Eclipse, foaled in 1748, 1758 and 1764, respectively. It is suspected that these sires were likely owned by the Duke of Cumberland and came from England via Virginia.

As time passed, more good horses came to the area from England, and the Lexington newspaper advertised availability of such studs for breeding. Wealthier settlers to the area sought to emulate the gentry of the English countryside and became “obsessed with horses of good pedigree, or “blooded” horses (ibid). Eventually, Dr. Elisha Warfield ascended to become the premier breeder and racer of horses. He eventually bred the great stallion, Lexington, which became a foundation stallion for the region.

The city of Lexington also was a site of early horse racing. It was said that horse racing was typically used to settle disputes between residents, and quarter-mile dash races often happened on town thoroughfares. Public safety was a paramount concern, and the Lexington town trustees restricted “jockeys racing their horses through the streets” to the Commons, located in the northeastern area of Lexington’s log cabin settlement.
The first advertised horse race occurred in 1789 for the second Thursday in October, with the first purse race beginning at 1pm, and subsequent races occurring every 15 minutes thereafter, in the Commons area (Kentucke Gazette, August 22, 1789). Surrounding communities, like Georgetown, Bardstown and Versailles, hosted similar quarter-mile dash races.

In 1797, horsemen met at a Lexington tavern and established rules for these Kentucky race meetings; this became the first Kentucky Jockey Club (Hollingsworth, K., 1976). Statesman Henry Clay became a member of this Jockey Club. A circular course was laid out in a wooded area west of downtown Lexington near the current site of Keeneland. One circuit around the course was a mile long.

Kentucky’s pre-eminence as a horse capital wavered during the Civil War period, especially as most jockeys, trainers and groomsman were African-American. But eventually Kentucky emerged as a genteel and quintessentially Southern state known for its rich tradition of horse breeding and racing (Wall, 2012). During its heyday, investors from northeastern states bought vast acreages in the Bluegrass in order to mingle with thoroughbred gentry. They included well-known and super-rich men like Joseph Widener, who had inherited wealth made by his father’s Philadelphia-based investments in the tram system, as well as the steel and tobacco industries; James Cox Brady, whose father had diverse business interests in railroad and tram lines in New York; William M. Wright, owner of the Calumet Baking Powder Company based in Chicago; James R. Keene, Wall Street broker, financial speculator and advisor to the likes of J.P. Morgan; Pierre and George Lorillard, tobacco barons; and Arthur Hancock whose family owned a large stock farm in Virginia (Roberts, 2011). These wealthy men bought farms that had
suffered from under-investment during and after the Civil War, and they invested heavily in transforming them into state-of-the-art facilities that featured the latest modern equine innovations. They favored landscapes with an aesthetic that combined the English ideal of the country squire with a more Southern plantation look. These farms included large houses, exquisite gardens, and vast acreages that previously had supported beef and dairy cattle, tobacco, and hay. Each farm was laid out with miles of fencing, which required near-constant maintenance to upkeep their white, pristine appearance. Today, Lexington's horse farms are owned by some of the world's wealthiest people, and the rural landscape has remained largely unchanged from how it looked around the turn of the 20th century.

Most farms in the Lexington area are stud farms or broodmare farms as Lexington is commonly referred to as the "factory floor" of the thoroughbred industry (Fayette Alliance, 2007). The mean farm size is 369 acres with 59 horses, and the median is 175 acres with 32 horses (Nutt et al., 2011). The mean number of fulltime employees is 13.3 persons per farm, and the median number of employees per farm was just under 4 (ibid). Almost three-quarters of thoroughbred farms have seasonal employees, who help principally during foaling season.

**b. Ocala/Marion County**

Each center serves a different role: Lexington is where thoroughbreds are bred, and Ocala is where yearlings are broken and trained to race, and sold off for a career at the track. Many farms have tracks as the sandy soils are free of bedrock, which makes establishment of a track fairly inexpensive and easy.
Ocala, the county seat of Marion County, is located in central Florida about 80 miles northeast of Orlando and about 35 miles south-southeast of Gainesville (Figure 4.6). It consists of 1,663 square miles and its landscape is covered by flat to rolling hammock grasslands with sprawling live oak shade trees (covered in Spanish moss), pines and palm trees. Prime agricultural soils dominant in Marion County include the Blichton, Fellowship-Hague-Zuber association, which, like the soils of the Bluegrass region are rich in phosphorus and calcium (USDA, 2012). Many farmers believe it is the soil that creates a grass that builds strong bone structure, health and endurance in their horses.

Figure 4.6: Marion County, Florida Location Map

Source: Map created by author, 2012
Climate is often cited as one of the contributing factors associated with thoroughbred farming in Florida (Tym and Anderson, 1967). Mild winters allow horses to be outside throughout the year, which facilitates exercising and training horses. Tracks are rarely frozen and earlier foaling closer to January 1 is easily accommodated (all thoroughbreds, regardless of their birth month and date, “age up” each January 1st so a birthdate closer to the first day of the year provides advantages, especially for two- and three-year olds as their bodies and minds are still quite immature).

Ocala, Florida also claims to be “the horse capital of the world” as it boasts more than 450 thoroughbred farms and a multitude of racing champions (Marion County Farm Bureau, 2012) (see Figure 4.7). Most of the county’s farms are located in the northwestern quadrant of the county, where the best soils are located.

Figure 4.7: Marion County Horse Farms, 2009 (each horse head icon represents one farm)
Contrary to Fayette County, Marion County also is home to other horse operations besides thoroughbreds. There are approximately 500 other equine operations that host Paso Finos, Tennessee Walkers, Morgans, Warm Bloods, Saddlebreds, American Quarter Horses and other breeds of horses (Figure 4.8). Ocala is also home to the Florida Horse Park, Ocala Breeders’ Sales, the New England Shire Centre, Live Oak Plantation and the Southeastern Livestock Pavilion (Hancock, 2010). Postime Farms and the City of Ocala jointly host H.I.T.S., or “Horses in the Sun,” which is an annual two-month-long dressage/jumper event that brings riders and equine tourists to the area. There are many hobby farms in Marion County which cater to sporting horse enthusiasts. This is evidenced by driving Marion County rural roads and seeing the horse jumps, amateur riding arenas, barrels, and the like on privately-owned residential property.

Figure 4.8: Marion County Is Home To Varieties Other Than Thoroughbreds, Including Miniature Horses And The South American Paso Fino.
Like Lexington, Ocala is surrounded by horse industry support service professionals including veterinarians, farriers, tack shops, riding stables and industry professional associations. Goods and services associated with Florida’s horse industry are valued at $3 billion and it employs more than 440,000 persons (American Horse Council, 2005). The Marion County area is also home to dozens of training tracks. Mean farm size in Marion County is 92 acres, with the median farm size being 27 acres (Marion County Farm Bureau, 2010). Compared to Lexington’s 369 acre mean farm size, Marion County has a greater number, although smaller farms.

The thoroughbred horse industry in Ocala is relatively new, especially compared to Lexington. Carl Rose, originally from Indiana, was an asphalt road construction supervisor in the Marion County area. He experimented with using ubiquitous Marion County limestone in roadway construction and understood its benefits in raising strong horses. He established a thoroughbred farm along State Highway 200 in 1943 called Rosemere (Cook, 2008). The following year, one of his horses won at Miami’s Tropical Park and Florida-bred thoroughbreds were immediately discovered. Soon afterward,
Oklahoma-based oil drilling entrepreneur Bonnie M. Heath set up his own farm and produced Florida’s first Kentucky Derby winner, Needles, who also won the Belmont Stakes in 1956 (Cook, 2008). Needles’ wins provided the Florida thoroughbred industry with much greater respect and credibility.

It is said that Needles sold more real estate in Marion County than any realtor (Johnson, 1993; p. 161). There were 22 thoroughbred farms in the entire state early in 1956, three of which were in Marion County (Tym and Anderson, 1967). By 1958, there were 30 thoroughbred farms in the Ocala area and in 1966, the number was up to 75 farms. One of the three earliest farms was Shady Lane Farm, owned by Douglas and Margaret Stewart, tool and die magnates from Marion County, Indiana. They wintered in Marion County, Florida, and spent summers in the northern Marion County. Concerned about possible encroachment from nearby development, Stewart constructed his farm buildings from a special fireproof fireboard because he was “already beginning to fear the encroachment of big industry on the horse farms in Ocala, something that had steered him clear of Lexington, Kentucky” (Johnson, 1993; p. 164).

Several farms located in south Ocala around Rosemere, including Dickey Stables. Dickey Stables was the new name of the old Joseph Waldo plantation, which housed one of the last pre-Civil War plantation homes still standing (Cook, 2008). Termites and neglect required the home to be destroyed, and the owner’s poor health precipitated the farm to be sold to a 9-person syndicate from Maryland. They renamed the place “Ocala Stud” and appointed Joseph O’Farrell as farm manager (Figure 4.9). O’Farrell ultimately became a legendary horseman as well as spokesman for the Florida Thoroughbred industry. He became president of the Florida Breeders Sales Association.
and was a charter member in the Ocala Breeders Sales Company (Cook, 2008). A bell on site is rung every time a thoroughbred from Florida wins a graded race.

Needles became the first champion to stand stud outside of Kentucky. He stood stud at a 572-acre farm west of Ocala. Suddenly, tourists were coming to Ocala to see this great horse (Johnson, 1993). By the end of 1957, there were 21 thoroughbred farms in Marion County. At that time, early 8,500 acres were being used for training and breeding thoroughbreds. Several Kentucky horse farmers, including Tom M. Daniels, moved their operations from Lexington to Ocala for three reasons: Lexington was being too industrialized, Marion County limestone grew such excellent bone, and training could be conducted year-round. Others followed, and by 1961, there were 52 thoroughbred operations in Marion County (ibid).

Incompatible land uses and high land values have forced closure of many of the early thoroughbred farms. The land which housed Ocala’s first thoroughbred operation, Rosemere Farm, was developed in the 1970s and is now the site of Ocala’s Paddock Mall.
and Central Florida Community College (Figure 4.10). Ocala Stud, less than one mile south of the mall, is planning to sell and relocate to a site about five miles north of the City of Ocala as the city is extending water and sewer lines along the Ocala Stud perimeter, with the intent on the farmland being incorporated and developed. The farm at which Needles stood stud is being turned into a massive housing subdivision called Heathbrooke, which, according to the former Ocala Star-Banner newspaper editor, is “a travesty of the original intent” (Cook, 2005).

Figure 4.10: Paddock Mall Is Located On The Site Of The Former Rosemere Farm In South Ocala.

It appears that equine operations within the Ocala urban area are succumbing to urban development, although horse farms located to the northwest of the city seem to be out of the path of Ocala’s urban growth. Even though these farms are situated well outside of Ocala, they may not be fully immune to urban encroachment as many residential subdivisions are also located in the northwestern quadrant of the county.

A 2001 study by the newspaper USA Today claimed that Ocala, Florida was the most sprawled urban area in the United States, based on its low population density. The February 2001 study evaluated levels of sprawl in 271 U.S. metropolitan areas using a
development density index. This was in response to a series of “Smart Growth”
legislative initiatives across several states intended to curb sprawl, among other things.

The USA Today study considered the percentage of a metropolitan area’s population that lives in urbanized areas, based on a density of 1,000 persons per square mile. The study also evaluated changes in the percentage of the metropolitan population living in urbanized areas between 1990 and 1999. In this study, metropolitan areas were ranked against each other on each of those two factors, with the lowest score being 2, and the highest possible score being 542. Ocala was assigned a score of 536; other Florida cities listed were Miami-Ft. Lauderdale at 69 and Orlando at 290. Lexington, on the other hand, was not listed, although the article states that Portland, which has had an Urban Growth Boundary in place since 1973, had a sprawl index score of 221.

The article’s explanation for Ocala’s “worst sprawl” ranking is because it is situated “in the cross hairs of sprawl in different directions” including Gainesville to the north, Daytona Beach to the east and Orlando to the south.

D. Implementation of Growth Management Programs at Study Sites

a. Lexington-Fayette Urban County

Kentucky has a very weak planning tradition. Kentucky Revised Statutes Chapter 100 (KRS-100), the state enabling legislation for planning and zoning activities, does not mandate cities and counties within Kentucky to adopt planning regulations but establishes requirements if they choose to do so. Like most state enabling legislation, KRS-100 provides legislation pertaining to zoning, subdivision regulations, transfers of development rights and special provisions for public utility districts, but these legislative
provisions mostly apply only if the local unit of government affirmatively chooses to exercise planning, or planning and zoning powers. There is no state mandate for growth management whatsoever.

As stated above, in spite of a lack of mandate for planning in Kentucky, Lexington adopted a USB in 1957. The original USB included 67 square miles, and has been expanded once -- in 1996 -- to a total of 85 square miles (Figure 4.11). It is known as the Urban Service Area (USA), Urban Services Boundary (USB), or Urban Growth Boundary (UGB). Those lands situated outside the USB are known as the Rural Service Area (RSA). Today, approximately 30 percent of the county’s land area is included inside of the USB and 70 percent is located in the RSA. Land inside the RSA is designated rural and zoned for rural, agricultural land uses. To date, the USB has not encroached on surrounding smaller towns or the rural landscape. However, it extends to the southern county boundary where Fayette County adjoins Jessamine County (LFUCG, 2007).

No sewer extensions are allowed outside of the UGB, and all development must be served with a septic system, which may or may not be approved given the karst topography. The USB has facilitated compact urban development, and rural agricultural lands have remained largely undeveloped. The impact of the planning boundary can be seen clearly from overhead as there is a distinct difference in development densities inside the UGB contrasted with the RSA (Figure 4.12).
Figure 4.11: Lexington’s Urban Services Boundary

Source: 2007 Lexington-Fayette County Comprehensive Plan Update

Figure 4.12: Lexington’s Urban Services Boundary creates a stark contrast in development density inside and outside the USA.

Source: Photograph used by permission from the Lexington-Fayette County Planning Department, 2012
The purpose of the Lexington-Fayette urban services boundary was “to separate urban intensity uses from horse farms and other rural activities, reduce sprawl development along major roadways, provide for better cost control of government infrastructure and services, reduce impacts on fragile environments and maintain the central focus of downtown” (LFUCG, 2001). However, inasmuch as it serves as a de facto urban containment strategy, Lexington’s initial adoption of the UGB on August 21, 1958 was actually intended to accommodate long range sewer service provision. In 1957, city leadership contracted with Ladislas Segoe Consulting Engineers to develop a master plan supplement to the 1950 Comprehensive Plan in order to address a whopping 40 percent population growth from 1950 to 1958 and the ancillary economic expansion associated with that influx of residents. It cited the most pressing problem as “sewerage of growing residential areas” (City-County Planning and Zoning Commission of Lexington and Fayette County, Kentucky, 1958; p. 5). It recommended delineating a boundary around the city which would define where city sewer service will be provided, based on the topographic conditions, existing settlement patterns and the cost of providing sewerage (ibid), discouraging individual septic tank installations within the “urban service area,” and requiring “2-3 acre home sites outside of the Urban Service Area where individual septic tanks are to be used for the disposal of sanitary waste” (ibid).

The net effect of this boundary has been protection of the equine industry and provision of a land use buffer between the horse industry and urban/suburban development. While seeking to gain efficiency within the city’s developed urban core, the effect was protection to rural areas by promising that no public wastewater treatment
hookups would be allowed outside of the USB. Although the Segoe report recommended “2-3 acre home sites,” city leaders eventually adopted a 10-acre minimum lot size for areas outside of the USB served by septic tanks in 1964 based on Health Department recommendations regarding septic tank placement.

Maintenance of the USB and coordinated planning became simpler when the City of Lexington and Fayette County merged governments on January 1, 1974\(^2\). Although there had been a joint planning commission, merger of the governments ensured long term coordination of land use planning across Fayette County.

A major expansion of the USB occurred in 1996 when 5,330 acres, known as the “Expansion Area (EA),” were added to the USAB (Figure 4.13). The decision to expand the USAB was extremely contentious and politically divisive; this is discussed in detail in Chapter 6. The newly-added land areas consisted of approximately 8.3 mi\(^2\), representing an increase of 2.9 percent of the total land area within the city. Decisions to include certain areas into the USAB were based on a number of criteria, including willingness of the property owner to convert land into urban uses. Ironically, much of the new EA land had previously been horse farm operations that were no longer profitable due to land use incompatibility associated with encroaching suburban development. Inasmuch as this was the primary reason for the farms’ economic decline, the boundary was expanded outward to encroach on different horse farms, which were deeper in the hinterland rural area.

There was a *quid pro quo* for having added farmland and prime agricultural soils into the USB. Horse and general agriculture farmers organized and demanded that the minimum lot size for areas outside the USB be increased from 10 to 40 acres for development. Additionally, the horse farm coalition insisted on adoption of a long term program for rural land conservation in the RSA. The Rural Land Management Plan was adopted in 1999 and by 2001, the Urban-County Council and the Kentucky General Assembly had approved and funded a Purchase of Development Rights (PDR) program that set a target goal to acquire conservation easements on about 40 percent of the rural lands outside of the USB. Today, the PDR program has acquired easements on 45 percent of its goal of 50,000 acres of rural lands (Figure 4.14). "The 40-acre rule," as it is known locally, has suspended suburban low density development outside of the USB.
This, in combination with the PDR program, should serve as effective encroachment control for the equine industry.

On April 26, 2011, in anticipation of an update to the Comprehensive Plan (as mandated by law to be conducted every five years), Lexington Mayor Jim Gray announced that there would be no expansion of the USB for the “foreseeable future.” He stated that the community recognizes that “building our brand and our economy means that first we preserve what is special and unique about Lexington – our Bluegrass landscape” (Lexington Herald-Leader, 2011). Instead, Mayor Gray encouraged building the urban core, downtown and restoring neighborhoods and commercial areas that had weakened as a result of the recession. An urban infill program, which promotes dense development in areas well served by infrastructure, has been in place since 2002 (King, 2011).
Lexington’s growth management program includes an urban growth boundary, large lot zoning outside of the USB, zoning restrictions in the RSA which prohibit non-agricultural rural uses, and urban infill. City officials acknowledge that the horse farm landscape is special, and it gives Lexington a global brand. This brand is also recognized
by residents and business leaders in Lexington (Davis, et al., 2013) As such, city leaders recently took action to prevent further encroachment onto it (discussed in Chapter 6).

b. Ocala/Marion County

Marion County has jurisdiction for all unincorporated areas outside its five municipalities, although a joint planning agreement has been established with the City of Ocala. Consistent with the powers granted in the Florida Statutes, Marion County adopted zoning in 1960 for all land lying within a five mile radius of the City of Ocala’s municipal boundaries, and for all lands within 500 feet of the center lines of certain primary roads. This presented as a jagged and linear pattern of zoning. By 1962, as new growth pressures emerged, numerous other roads were added to those areas already zoned by the county and the land areas controlled by zoning fanned vastly beyond the urban boundaries of Ocala (Daniels, 2012).

In 1973, an ordinance adopting the 1962 Marion County Zoning Regulations, as amended, created a countywide zoning ordinance which affected all areas of the county not included in the limits of incorporated municipalities. Shortly after the countywide zoning ordinance was adopted, its validity was challenged by J. O. Townley [Townley v. Marion County 343 So.2d 1312(1977)]. The key question was whether the County had the constitutional authority to enact zoning regulations without special law being enacted. In the 1920s, cities needed to have authorization for zoning approved by special acts of the state legislature but in 1939, the legislature finally approved a general enabling act for municipal zoning (RuBino and Starnes, 2008). Townley argued that there was no special legislation enacted, and consistent with the statutes, the Marion County Board of
Commissioners had not zoned in accordance with the general statute’s requirements, including “public health, safety, comfort, good order, appearance, convenience, etc.” The trial court sided with the plaintiff and the zoning was ruled unconstitutional and thrown out. Four years later, the appellate court, led by Acting Chief Judge Rawls, overturned the lower court’s ruling and countywide zoning was readopted by the County Commissioners in March 1982 (www.leagle.com; accessed 6/29/2012).

According to the Ocala Star-Banner, as a result of Townley’s suit, a grand jury investigated zoning irregularities that ultimately led to the indictment of four Marion County Commissioners in 1976. The commissioners were part of an investment group called “the Marion Ten,” which developed a subdivision called Huntington. As commissioners, they had a clear conflict of interest when they approved the construction of new roads through their own development, and also made several decisions outside of regular meetings (Ocala Star-Banner, 2012).

As stated earlier, all city and county governments in Florida have been required to develop Comprehensive Plans since 1985. Marion County adopted its plan in 1992. The plan has had many revisions since then, including two Evaluation and Appraisal Reports, one in 1998 and the other in 2010 (Marion County, 2012). Per the Florida GMA, Marion County processes large and small scale Comprehensive Plan amendments. They also provided analyses of “Developments of Regional Impact” (DRIs) including On Top of the World, Spruce Creek South, Spruce Creek Golf and Country Club, the Villages of Marion and Stonecrest (ibid). DRIs are defined as a development that may have multiple-county impacts on health, safety or welfare of citizens. Exclusions were
provided for industrial facilities, hotel or motel development, mines for minerals and multi-screen movie theaters (Section 380.0651(3)).

Marion County seems to express strong support for its horse farms in the Comprehensive Plan. It has a specific policy providing for and encouraging the conservation of "locally important farm lands [sic] and prime farmlands as defined by the USDA Soil Conservation Service" and encourages the use of techniques such as "clustering of development to protect agricultural lands, transfer of development rights and density bonuses" (Policy 2.11, 2008 Comprehensive Plan). Although it does not explicitly address the thoroughbred farms, per se, it seeks to avoid encroachment onto the farms. Policy 2.13(a) addresses "land development patterns that make for compact urban areas, or containment of existing urban areas with controlled expansion." Policy 3.9 states that Marion County will "develop criteria to recognize parcels eligible for Transfer of Development Rights programs to preserve locally important and prime farmlands, regardless of whether they are located in the Farmland Preservation Area" (See Figure 4.15).

The Marion County Zoning Ordinance also has accommodations for sensitive natural resource areas through application of Environmentally Sensitive Overlay Zones. Development densities within the environmentally sensitive areas are determined by distance from the natural feature itself; setbacks mandate a minimum distance from the natural feature and as the distance increases, the units/acre are entitled to increase. The maximum allowable development density in environmentally sensitive zones is four units per acre, which is slightly larger than a 10,000 square foot lot. This impacts development densities in the eastern fourth of the county as it contains the Ocala National Forest.
Inasmuch as the Ocala National Forest is federally-owned land, there are pockets of privately owned land within its boundaries where this environmentally-sensitive development density applies. There is also a greenway which traverses a southwesterly to northeasterly direction. Development densities are restricted in this area, too.

Intended to protect farmland, development densities in agricultural areas are much stricter than in environmentally sensitive areas. The Marion County Zoning Ordinance has three agricultural zoning districts and 1288 square miles, or 77.5 percent of Marion County, is zoned agricultural (Figure 4.16). The minimum lot size in all zoning districts is ten acres. The districts are: A-1 General Agriculture, A-2 Improved Agriculture, and A-3 Residential Agricultural Estate. The A-1 General Agriculture district is “intended to preserve agriculture as the primary use” ((Marion County, Land Development Code 5:26)
and has a minimum of 10 acres per dwelling unit unless the lot qualifies as a lot of record. This district serves general agriculture, including large equine operations and cattle farming.

Figure 4.16 Marion County Agricultural Zoning Districts

The A-2 Improved Agriculture district is “intended to provide for general farming and animal husbandry with accessory uses, involving substantial improvement and development, and for which certain restrictive zoning is necessary to minimize conflicts and protect the character of the area” (Marion County, Land Development Code 5:29). Approximately 0.6 percent of Marion County falls into this zoning classification. This zoning district seems to accommodate the small hobby farm which may house some livestock, including cattle and/or a horse.
The A-3 Residential Agricultural Estate zoning classification is different from these categories. According to the Zoning Ordinance, this district is “intended to provide areas whose present and prospective use is animal husbandry with attendant agricultural and accessory uses, providing a rural or farm atmosphere in which single family home ownership may be combined with small parcel development and where the growing of supplemental food supplies for families will be encouraged. It is also intended to permit a reasonable use of the property while protecting prime agricultural or natural areas from urban encroachment and prevent rapid expansion of demands on public facilities such as schools, roads, water, and sewer lines” (Marion County, Land Development Code 5:32).

As expected, allowable uses within these three hierarchical zoning classifications tend toward greater intensity. The A-1 zone is strict about agriculture-related land uses but the A-2 zone allows for private airports, riding academies and small-scale poultry raising (limited to 25 fowl). The A-3 zone allows less restrictive uses, including motorized vehicle racetracks/facilities, golf courses, bed and breakfasts, and guesthouses. The minimum lot size on these zoning districts is ten acres for new developments and there are many parcels containing ten acres or more located outside of Ocala, Dunnellon and Belleview (Figure 4.17). Note that many of these tracts are located in the northwestern quadrant of the county where the densest concentrations of horse farms exist. Comparison of Figures 4.16 and 4.17 shows that there is considerable overlap.
Mini-farms/ranchettes that have arisen from the higher homestead tax credit allowance adopted by the State of Florida 1999 Legislature have "nibbled" away at larger scale horse operations. Although those agricultural lands are still being utilized for agricultural purposes technically, many of these small tract owners are using the land for hobby purposes.

In December 2004, Marion County adopted a Farmland Preservation Ordinance that allows for Transfer of Development Rights (TDRs). At the time of adoption of the ordinance, the goal was to have 5,000 acres conserved by 2015. This represents approximately 0.05 percent of the county's total land area. To date, there are 1,240 acres of agricultural land protected through the TDR program and applications for 1,958 acres more (Marion County Planning Department, 2011). Most of the development rights are transferred to areas inside of Ocala's USB; this prevents further encroachment on farmlands in the rural unincorporated areas. The receiving areas for TDR are known as
Urban Reserve areas (Figure 4.18). A quick glance at the receiving areas for TDRs indicates a desire for compact, clustered development, although the receiving areas intersect with some of the farm operations to the northwest of Ocala.

E. Political Culture, Elazar and the History of Land Use

Elazar (1984) argued that political culture defines the role of government, the kinds of people who participate in politics, and how governance is executed. He explained contrasting ideas about American political order through analysis of historical migration and settlement patterns of European immigrants, and relic cultural norms of their descendants who established the systems of government. The three political cultures are individualistic, moralistic, and traditionalistic. Elazar's maps indicate the areas
surrounding both Lexington-Fayette County and Marion County combine the traditionalistic and individualistic political culture types. It is acknowledged, however, that Elazar's typologies are gross approximations for political leanings at the state level, and not specific to substate units of government. However, it could be argued, that the local units of government operate within the framework of the state typology as local governments often follow the lead of powerful figures in their state legislatures.

The traditionalistic “accepts government as an actor with a positive role in the community, but it tries to limit that role to securing the continued maintenance of the existing social order” (ibid, p. 99). According to Elazar, the traditionalistic perspective prefers government’s role to be custodial, maintaining existing class systems, rather than one which initiates wholesale change.

The individualistic political culture type views government solely as a utilitarian tool to handle those functions demanded by the people it is created to serve (ibid, p. 94). Government’s role is to enhance the economy, and to encourage private initiative and widespread access to the marketplace. In this system, political patronage is commonplace as it is the primary responsibility of the officeholder to serve him/herself, as well as those who have supported him directly (ibid, p. 95). Because of the obvious advantages afforded to key players within the marketplace, the general public views government as corrupt, as favors are exchanged back and forth between officeholders and the public in a quid pro quo system which does not initiate new programs unless those new programs stand to benefit the officeholder or his/her constituency.

As the study sites in Kentucky and Florida share the same political culture, there should be consistencies between each community’s political culture; both Marion
County, FL and Fayette County, KY should have similar beliefs about the role of government, the demand for sprawl as a response to the free market, and the necessity for/against land use control. According to Elazar, neither culture type supports initiatives on matters of government, unless government representatives or their constituency stand to benefit. Both culture types – and communities, in the context of this research -- tend to use government as a means to respond to the marketplace, and there is little traction to initiate programs unless it stands to benefit officeholders or the governing elite. In both cultures, those who have had power tend to continue to maintain power; government is a privilege for the elite and is perceived dirty by those who engage in it. Given Elazar’s theory, both locales should have *laissez-faire* attitudes because the political elites would stand to benefit from government’s inaction/action in land development matters.

Exploration into the histories of settlement in this area is warranted to validate Elazar’s model. During the Civil War, Florida was a slave-holding state, and in Lexington, there were several wealthy Lexingtonians who kept slaves for farm labor. The resulting land ownership patterns among “landed gentry”\(^3\) helped to form the systems in place and institutions at each locale. Kentucky bluebloods, as they were called, would have been the landowners and the political elite in the Lexington area.

In Lexington-Fayette County, the political elites are the landed gentry from ages ago; their land is rural, and outside the USB. Furthermore, because the equine industry is so well established, the elite landed gentry are the current thoroughbred farm owners. The landed gentry do not want encroachment and therefore, use government to maintain

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\(^3\) See Wall, 2010 for a full description of the role of genteel southern attitudes in Lexington to recruit capital investment in Bluegrass breeding operations in the early 1900s.
their own interests and power. And in the case of Lexington, this means curtailing sprawl-type development and minimizing encroachment.

In Ocala-Marion County, the rapid development of the state of Florida probably helped shape political culture. Mormino (2005) held that the culture of Florida is based on continuous economic expansion and population growth. He states that in Florida, population growth is the primary engine of the Florida economy – an economy built mostly on low-wage jobs related to tourism, retail, and agriculture, as well as a steady stream of newcomers who support construction and real estate activity. Florida is addicted to continued population growth (Mormino, 2005).

Meindl (2011) reaffirmed Mormino and described Florida’s ideology as resembling a Ponzi scheme; leadership is addicted to the ideology of growth. In a study that evaluated long-term water availability for Florida’s future continued population growth, Meindl argued that Florida will face considerable water challenges that will slowly erode overall quality of life, yet, the Florida powerful still exalt continued population growth and “the principle of a thousand new people moving to the Sunshine State each day.” Booth (2004) alleges that growth has become the magic formula for curing all political and economic problems; growth is the panacea, but also the source of environmental and carrying capacity problems. And as the Florida legislature in 2011, gutted the agency which manages the GMA, it still has a “growth is inevitable” mentality (Meindl, 2011).

Many of the original landowners and agriculturalists probably have sold their land to accommodate the wave of post-World War II in-migration. There is no established landed gentry in Ocala any longer, and the thoroughbred industry has not had the
centuries of history within the political arena to wield power. The political elites are still the developers and large landowners who stand to benefit from sale and development. In Ocala/Marion County, adoption and enforcement of regulations pertaining to land use control are unlikely. It is perceived that the free market will drive land use decisions, and coincidentally, the ultimate fate of the thoroughbred farms, too.

The GMA will not slow this process, either. In May of 2011, the Florida legislature restructured its budget, and de-funded/abolished the state Department of Community Assistance, the agency within state government which oversees implementation of the GMA. Established in 1986, it “irritated some of Florida’s most powerful people, including developers, lawyers, the Florida Chamber of Commerce, the Florida Farm Bureau, and a coalition of the state’s biggest landowners” (St. Petersburg Times, 5/22/2011 “Florida’s Department of Community Affairs on Verge of Abolishment”). Former DCA Director Tom Pelham stated that DCA instituted rules that big landowners didn’t like, “rules the DCA said were necessary to protect rural land from being overrun by sprawl” (ibid). The GMA does not have an agency that enforces it, which means that, in effect, it is no longer in force. Presumably, if a local government chooses to enforce the GMA, the law still exists. But as local governments in Florida and across the nation are responding to the housing market crash of 2008, there are few extra resources at the local level to pick up additional responsibilities previously managed by the state.

F. Other Measurements of Political Culture
Long (2008) indicates that a belief in private property rights, and the elevation of these above other criteria, is a key element of the political culture affecting land use planning. Arnold (2007) also posits that the super-dominance of the political culture and private property rights is core feature of the land use regulatory system in the U.S., affecting actual land use and growth management controls in practice, not just planning goals. Both Kentucky and Florida generally have cultures that place high priority on private property rights. Political climate is likely a factor that influences the culture toward specific types of planning regulation.

Colburn (2007) explains the political climate in Florida: most people do not have deep roots in the state as many communities sprang into existence within living memory. Florida is a state without an income tax, with both a culture that is anti-government and favors low taxation, and very dynamic social, cultural and demographic environments, including changing racial, ethnic and age diversity. Southern Florida tends to have greater socio-economic diversity and larger urban populations; central and northern Florida tend to be more rural and less diverse.

Although nuanced, the trend in both Kentucky and Florida politics has been toward voting Republican (Barone and McCutcheon, 2011). In presidential races, however, Florida is a toss-up. It has voted Republican in four of the past seven elections, has a Republican governor, but voted Democratic in the 2012 election. Florida is a changing political landscape. In fact, many may remember how Florida’s vote (and the US Supreme Court) determined the 2000 Bush/Gore election. Florida’s senior US Senator is a Democrat, and its junior Senator is a Republican affiliated with the libertarian Tea Party. But Florida is a very large state; is Marion County also “red?”
According to Barone and McCutcheon (2012), the area around Ocala and The Villages is Republican, and most of the votes cast by the legislators seem to be along party lines (p. 379). There are four congressional districts that bisect Marion County: the 3rd, 5th, 6th and 11th. The 5th District is represented by a black Democratic female; the remaining congressional Districts’ representatives are Republican white males.

Fayette County is wholly within the 6th congressional district, and in the 2012 elections, it elected a freshman Republican congressman who, at the time of this writing, had just been sworn in on Capitol Hill and had not yet cast a vote. Experts believe this freshman Republic beat his Democratic incumbent (who had served eight years) due to that Democrat’s stance on limiting greenhouse gas emissions, which is politically risky in coal mining Kentucky, and aligning the incumbent Democratic to the very unpopular U.S. president.

Kentucky has an Independent/Republican junior senator who has been affiliated with Libertarians and the Tea Party, and a Republican senior senator. Florida elected a Republican governor in 2010, and Kentucky has a blue-dog Democratic governor who was elected in 2007.

As stated above, Florida’s political landscape is changing and highly nuanced. Surprisingly, the state cast enough electoral votes in the 2012 election for that state to go Democratic. However, locally, Ocala/Marion County tends to be very conservative and is home to many Tea Party activists (Heinbockel, 2011). Strong personal property rights ethics hold firm among elected officials in Marion County (ibid). There are only five County Commissioners elected in Marion County and the chair of the Commissioners is chosen by the Commissioners. County Commissioner races are non-partisan.
The Commonwealth of Kentucky has voted Republican in presidential races since 2000, but Lexington-Fayette County tends to vote for Democratic presidential candidates. Lexington voters in 2010 elected construction executive Jim Gray as mayor, making it the third-largest US city with an openly gay chief executive (Barone, 2011). Lexington is perceived to be more progressive than other Kentucky municipalities, and has a reputation as being wealthy, arrogant and different from the rest of Kentucky (Copeland, 2011).

**G. SUMMARY**

This section described the history of the two study areas, the institutions that helped shape each locale’s thoroughbred industry, and land use regulatory framework in place to protect the horse farm landscape. Chapter 5 discusses the results of the sprawl analysis, and Chapter 6 analyzes political culture and the effectiveness and/or ineffectiveness of growth management programs in Marion County and Fayette County.
CHAPTER 5
ANALYSIS OF SPRAWL IN STUDY LOCATIONS

This chapter describes the levels of sprawl in each study site. Several methods were used. One study site has experienced greater levels of sprawl during the study period, and has been less able to manage its growth in a compact and contiguous way. Supporting documentation includes overall population changes, farmland losses, density gradients and road density analyses.

A. Analysis of Development Patterns and Quantifying Sprawl

Both locations experienced significant population growth during the study period. Population totals by census year are included in Figure 5.1 and Table 5.1.

In 1970, Marion County had only 39.5 percent the population of Lexington/Fayette County, but by 2010, it had 12 percent more residents. Marion County experienced 380 percent population increase from 1970 to 2010, whereas Fayette County’s population grew 69.6 percent during the same period. In 1960 (prior to the beginning of the study period), Ocala/Marion County’s total population was only 39.1 percent of the Lexington/Fayette County’s. But by the end of the study period, Marion County’s population had grown to surpass Fayette County’s population by 12 percent.
Figure 5.1: Population Growth by County, 1970 to 2010

Table 5.1: Population Growth by County, 1970 to 2010

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Fayette</td>
<td>174323</td>
<td>204165</td>
<td>225366</td>
<td>260512</td>
<td>295803</td>
</tr>
<tr>
<td>Marion</td>
<td>69030</td>
<td>122488</td>
<td>194833</td>
<td>258916</td>
<td>331298</td>
</tr>
</tbody>
</table>

Source: United States Census of Population

But when did much of the population growth occur? Can it be isolated to a particular decade or series of decades? Figure 5.2 shows the percentage change in population growth from 1960 to 2010. Both counties experienced population growth every decade, but it is clear that much of Marion County’s growth occurred between 1970 and 1990. Each decade experienced 77.4 and 59.1 percent population increases, respectively, and while Fayette County had double-digit growth each decade, it had considerably less robust growth than Marion County. Marion County’s population grew by nearly a third from 1990 to 2000, and once again from 2000 to 2010.
In addition to understanding the rates of population growth, it is also critical to determine where population change happened in each county. Through GIS methods, all census tract boundaries through time were consolidated onto one map to demonstrate the spatial distribution of population growth over the study period. Marion County is discussed first. Figure 5.3 shows population changes by census tract in Ocala/Marion County.

In Marion County, significant population growth occurred in the southern half of the county, especially along the Interstate 75 corridor. The greatest changes in population occurred immediately southeast of Ocala where nine census tracts experienced
population growth rates of 39 to 102 percent from 1970 to 2010. It is worth restating that in the context of the equine industry, most of the better agricultural soils are located in the northwestern part of the county, which didn’t experience as much population change as other parts of the county. Other areas of additional population growth occurred immediately north of Ocala near the intersection of US 301/441 and W. Anthony Road. There also appeared to be sizeable growth along the north side of Florida 200/SW College Road corridor near its intersection with SW 99th Street. This is where “On Top of the World” development was developed on 12,972 acres (20.2 square miles) in 1981 and where Bonnie Heath Farm was converted from equine agriculture to residential. Also, the area along US 200 immediately east of the Interstate 75 corridor experienced significant growth; this is where the mall is located (aptly called “Paddock Mall” as it is
the former Rosemere thoroughbred farm, Ocala's first thoroughbred farm). It also appears that The Villages, a master-planned, age-restricted retirement community located primarily in Sumter County (immediately south of Marion County) is spilling over into Marion County. According to its website (www.thevillages.com), development from The Villages has also crept into Lake County, which is immediately east of Sumter County, to the south-southeast of Marion County.

Figure 5.4 shows overall population change in Fayette County during the study period. Fayette County's growth seems to have been more contiguous to the Lexington urban area.

One census tract experienced 141 percent population growth during the study period. This tract includes the Hartland neighborhood located off Tates Creek Road, southeast of the city center. Hartland was developed in the 1980s by the late W.T. Young, a peanut-butter and warehousing magnate from Lexington who also owned Overbrook Farm, adjacent to Hartland. Both Hartland and Overbrook have been consistently located inside the USB since its adoption in 1958. Other areas of higher population growth occurred in the Masterson Station area (northwest of the city), the airport area (due west of Lexington) and in census tracts in the southern part of the county, adjacent to the Jessamine County line. All land incorporated within the Urban Service Boundary Expansion Area in 1996 ("bumping out" of USB by 5,330 acres) between Richmond and Winchester Roads experienced wholesale land use change from farmland to urban uses. These areas experienced population growth starting from 13- to 42-fold increases during the study period.
B. Farmland Acreage Changes

There were significant losses in overall farmland acreages at each location during the study period. However, instead of using 1970 as the benchmark year for the start of the study period, the data commence in 1969 due to the five-year cycle of the Census of Agriculture. Data are provided for Kentucky and Florida, as well as each study county.

It is worth noting the differences in overall size of the two states under investigation, as well as the two study counties. The total area of Florida, excluding inland waters, is 54,153 square miles; Kentucky is 39,669 square miles, also removing inland waters from the total acreage (www.city-data.com/states/location-size-and-extent.html). In other words, Kentucky is 73.2 percent as big as Florida. Coincidentally, raw acreages may be deceiving, unless expressed as rates of farmland loss.
Figure 5.5 indicates (in raw acreages) that the state of Florida, as a whole, lost more farmland during the study period than Kentucky. This could be attributed to the differences in size of the two states. However, when this is standardized for the differences in size, Florida seems to have lost farmland at a much greater rate than Kentucky. From 1969 to 2002, Kentucky lost 13.3 percent of its farmland whereas Florida lost 25.7 percent. Given Florida’s overall growth in population, it is assumed that much of the farmland was lost to new residential and commercial development to accommodate those migrating to the state. From 1970 to 2000, Florida’s population grew 135.4 percent and Kentucky’s population grew by 25.6 percent.

Figure 5.5: Farmland Acreages from 1969 to 2002

<table>
<thead>
<tr>
<th>Total Farmland in Kentucky and Florida, 1969 to 2002</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acres of Farmland</td>
</tr>
<tr>
<td>16,000,000</td>
</tr>
<tr>
<td>14,000,000</td>
</tr>
<tr>
<td>12,000,000</td>
</tr>
<tr>
<td>10,000,000</td>
</tr>
<tr>
<td>8,000,000</td>
</tr>
<tr>
<td>6,000,000</td>
</tr>
<tr>
<td>4,000,000</td>
</tr>
<tr>
<td>2,000,000</td>
</tr>
<tr>
<td>0</td>
</tr>
</tbody>
</table>

Source: Compiled by author from US Census of Agriculture, 2007

Were the two study counties impacted by the tremendous losses in farmland acreage during the study period? Or did the farmland conversion happen elsewhere in each state? A closer inspection of the comparative rates of farmland loss shows that Marion and Fayette Counties’ rates of agricultural land conversion actually outpaced the rate of each of their states, respectively. From 1969 to 2002, Marion County lost 43.6
percent of all its farmland (compared to Florida’s overall loss of 25.7 percent) and Fayette County lost 26.6 percent (compared to Kentucky’s loss of farmland at 13.3 percent). Figure 5.6 shows a comparison of farmland loss in each county through time.

From 1969 to 2002, Marion County lost close to half of its farmland, and Fayette County lost more than one-fourth of its agricultural land. However, the timing of farmland loss in these two counties is noteworthy. Marion County lost a considerable amount of farmland between 1969 and 1974, whereas Fayette County’s acreages remained reasonably intact with little farmland conversion until 1997. After 1997, farmland acreages decreased. This coincides with the 1996 Urban Services Boundary expansion which incorporated 5,330 farm acres into the city limits to be developed later for urban uses.
C. Population Density

As population grew in each county, did those increases in population manifest in greater overall densities? Or was population settlement dispersed across the county, thereby reflecting no sizeable change in overall population densities? Per Ewing (1994), population density — or a lack of density — is a measurement of sprawl. Figure 5.7 shows average population densities across the study areas.

Figure 5.7: Population Density Changes During the Study Period

<table>
<thead>
<tr>
<th>Year</th>
<th>Marion</th>
<th>Fayette</th>
</tr>
</thead>
<tbody>
<tr>
<td>1970</td>
<td>38</td>
<td>611</td>
</tr>
<tr>
<td>1980</td>
<td>74</td>
<td>715</td>
</tr>
<tr>
<td>1990</td>
<td>114</td>
<td>789</td>
</tr>
<tr>
<td>2000</td>
<td>156</td>
<td>913</td>
</tr>
<tr>
<td>2010</td>
<td>199</td>
<td>1036</td>
</tr>
</tbody>
</table>

Source: US Census of Population, 2010

Both study counties experienced significant changes in overall population density, measured as population per square mile. Marion County started in 1970 with a very low overall population density of 38 persons per square mile; many would consider this to be a rural density. Fayette County, on the other hand, started with an average density of 611
persons per square mile. Through the study period, Marion County's population density grew 528 percent, but its overall density was only 199.23 in 2010 compared to Fayette County's 1,036 persons per square mile. Fayette County's 2010 density was more than five times that of Marion County for the same period.

Marion County's overall population density was quite low, and stayed below 200 persons/square mile through the 40 year study period\(^1\). As stated above, its 1970 average population density was 6 percent of Fayette County's, and by 2010, its density is still only 19.2 percent of Lexington's average. Marion County became relatively a more densely inhabited place, but is still much less dense than Lexington. Through the study period, Fayette County's average population density grew nearly 59 percent and Marion County's density grew more than five-fold. Although Marion County experienced significant population density increases, its overall density is still low. This may be attributable to Marion County's larger size and greater amounts of land upon which to experience population growth and development. However, this could also be the result of little planning and zoning until the 1980s, whereas Lexington has had an aggressive planning program since the late 1950s.

Understanding the spatial pattern of population density is important, too. Figure 5.8 displays the geography of population density through the study period for Marion County. Much of the population density changes seem to have occurred in a southeasterly-to-northwesterly direction, following the corridor of I-75. Also, it is clear that encroaching development from The Villages in Sumter and Lake Counties is impacting population density along the central sector of the southern Marion County border. Other than the interstate, there does not seem to be a discernible pattern behind

\(^1\) Per Table 2.1, Marion County's very low population density would be classified as "rural."
the increased population densities in Marion County. Densities seem to have increased in most census tracts in the county except for the extreme eastern flank, which is partially occupied by the Ocala National Forest. Most areas of increasing density appear to be contiguous to other densely populated census tracts. Pockets of higher density occur in 2010 Marion County along the US 200 corridor in the southwestern quadrant of the county which is experiencing rapid urbanization.

Figure 5.8: Spatial Distribution of Population Density Changes, Marion County

The spatial distribution of population density changes in Fayette County are shown in Figure 5.9. Increased density changes through the study period seem to occur initially inside and adjacent to New Circle Road. In 1980, it is clear that population
density along the southern county border adjoining Jessamine County seemed to have been developed first; that density then crept to the northeast and northwest along Military Pike and the Beaumont/Palomar areas, which were platted and developed in the mid-1980s. By 2000, it is clear that the 40-acre minimum lot size requirement for areas outside the Urban Services Boundary has impacted development densities; the lowest densities are located in census tracts outside the USB.²

Figure 5.9: Spatial Distribution of Population Density Changes, Fayette County

² Per Lopez and Hynes (2003), a comparative density hierarchy was established for both counties for each of the study years in order to assess the level of sprawl that had occurred at each locale. The resulting maps and analysis closely approximated the population densities shifts as shown in Figures 5.8 and 5.9. This analysis did not result in new or different information, and as such, was not included in the final analysis of sprawl. Those techniques which proved fruitful are included in this discussion.
As population grew at each location, the numbers of Census Bureau geographic units also increased. Marion County started 1970 with seven county subdivisions; by 2010, it had 61 census tracts. The changing numbers of census tracts for each study site is provided in Figure 5.10. The number of census tracts affects the first method of sprawl analysis, density gradients.

Figure 5.10: Differences in Numbers of Census Tracts for Two Study Counties, 1970 to 2010

![Numbers of Census Tracts by Decade, 1970 to 2010](source: Census of Population, 2010)

**D. Density Gradients**

Density gradients graphically demonstrate where population density occurs around the center of a municipality and how that density tapers with distance from the city center. This technique is appropriate for Ocala and Lexington as both are monocentric urban areas without geographic constraints to urban development, such as mountains, a coastline or a bisecting river. Closer-in densities of population (i.e., a steeper decline in density with distance from the center) should indicate a tighter urban
form; if significant densities exist substantial distances from the city center, this is indicative of sprawl.

In the density gradient, the distance (in miles) from the city center is the $x$ axis and the mean population density per square mile by census tract represents the $y$ axis. As stated earlier, the $n$ of each county represents the number of geographic units used by the census bureau. City centers had to be defined to accurately represent the distance of each census tract from the urban core and in Fayette County, the city center was delineated as the intersection of Main and Limestone Streets in downtown Lexington. For Marion County, the center of Ocala was identified as the intersection of W. Silver Springs Blvd (US 40) and N. Pine Ave. (US 301, US 27, FL 25, and US 441). These represent the peak land value intersections (CBD) typically used in urban geography to define central urban points.

The centroids of each census tract were calculated with ArcMap, as well as the distance of each tract’s centroid (in miles) from the CBD locations identified as the centers of each respective city. These data were used to develop density gradients for each county; five graphs were presented to represent each decade.

The reader is reminded of the differences in the overall sizes of each county, which results in impacts the $x$ axis for distance from the city center. Because Fayette County is smaller, the centroid of the census tract located at the greatest distance from the CBD is slightly more than ten miles away. In Marion County, the centroid of the farthest census tract is about 27 miles from downtown Ocala.

Following Mieszkowski and Mills (1993), sets of density gradients for Marion and Fayette Counties are estimated and presented. Figure 5.11 includes density gradients
for 1970, 1980, 1990, 2000 and 2010 for Marion County. Similarly, density gradients for the study period for Fayette County are shown in Figure 5.12. The regression equation is shown on each diagram and the $r^2$ value explains how much variation in population density can be explained by distance from the center of the city. An exponential model is used. As expected, population density is negatively correlated with distance from the center of each city.

For Fayette County, it should be noted that during the 40-year study period, overall densities are one order of magnitude greater than the average population density per square mile found in Marion County. In Fayette County, the most densely populated census tract in 1970 has more than 12,000 persons; in Marion County during that same year, the most densely settled census tract had less than 1,200 persons per square mile. Fayette County began the study period with greater overall population densities, and the highest population density remained around 12,000 persons per square mile through the study period.
Figure 5.11: 1970-2010 Density Gradients, Marion County
Figure 5.12: 1970-2010 Density Gradients, Fayette County

Fayette County: 1970

\[ y = 14029e^{-0.638x} \]

\[ R^2 = 0.7142 \]

Miles from City Center

Fayette County: 1980

\[ y = 11752e^{-0.32} \]

\[ R^2 = 0.4876 \]

Fayette County: 1990

\[ y = 8862.7e^{-0.417x} \]

\[ R^2 = 0.3368 \]

Fayette County: 2000

\[ y = 7716.9e^{-0.318x} \]

\[ R^2 = 0.2493 \]

Fayette County: 2010

\[ y = 9119e^{-0.354x} \]

\[ R^2 = 0.3261 \]
Table 5.2 summarizes the results of the years of density gradients. The regression model is $y = Ae^{Bx}$ where $y$ = population density, $A$ represents density at the city center, and $B$ represents percentage change in population density with each mile of distance from the city center.

For both counties, R-square declined over time. This is consistent with the expectation that the explanatory power of the monocentric model declines when new sub-centers emerge. The R-square for Marion County is consistently stronger than for Fayette County, with 90 percent of the variation in population density attributed to distance from the CBD in 1970, and more than 57 percent throughout the remainder of the study period. In comparison, for most of the time (1980 – 2010), the R-square is lower than 50 percent for Fayette County. This is because of the effect of the USB on population density. It apparently forms a barrier on the landscape to prevent to population incursion to the hinterlands of the RSA, and it is clear from the 1970-2010 density gradients that the USB boundary extends about eight miles from the city center.

By contrast, there is no artificial impediment (like a USB) to spatial expansion of development in Marion County, and there is evidence that the rural areas of Marion County are slowly filling with low-density development. Fayette County’s USB fosters densification, and this is why the explanatory power of the R-square is weaker in Fayette County than in Marion County.

As for $A$ (the population density at the CBD), in 1970, Fayette County’s theoretical center city population density (14,029) was 17.5 times what was found in Marion County for the same period. This is consistent with the greater age/longevity of Fayette County, which already had a very well developed urban core in 1970.
Throughout the study period, the core area of Fayette County was consistently denser than Marion County. It is interesting that Fayette County experienced density decline at the city center through the study period. This is likely due to white flight and suburbanization trends. Population density decline for Fayette County between 1990 and 2000 could be explained by the 1996 expansion of the USB, which incorporated 5,330 acres into the city limits. And as pressure against another USB expansion grew from 2000 and 2010 and Lexington’s planning focused on infill, density increased between 2000 and 2010.

Table 5.2: Summary Table of Density Gradients for Marion and Fayette Counties, 1970 through 2010

<table>
<thead>
<tr>
<th>YEAR</th>
<th>MARION</th>
<th>FAYETTE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A</td>
<td>B</td>
</tr>
<tr>
<td>1970</td>
<td>797.44</td>
<td>-20.75%</td>
</tr>
<tr>
<td>1980</td>
<td>1826.7</td>
<td>-15.15%</td>
</tr>
<tr>
<td>1990</td>
<td>1305.1</td>
<td>-15.86%</td>
</tr>
<tr>
<td>2000</td>
<td>1721.6</td>
<td>-15.48%</td>
</tr>
<tr>
<td>2010</td>
<td>2138.1</td>
<td>-15.38%</td>
</tr>
</tbody>
</table>

Source: Compiled by author, 2013

It is interesting that in Marion County, without a restriction on urban growth, the B value (the sensitivity of population density towards distance to the CBD) remained fairly constant around 15 percent. And it is noteworthy that by 2010, the theoretical city center population density in Marion County was almost triple the 1970 values, yet the decline in density remained fairly static. This suggests that Marion County has greater amounts of lower density development scattered across the county. By contrast, population density in Fayette County is more sensitive toward distance to the CBD, likely because of the numbers of jobs in downtown Lexington, and this sensitivity declined over
time due to the finite supply of land inside the USB, which creates an artificial limit on land upon which to build development.

In 1970 Fayette County, population seems to have been tightly clustered around the urban core as population density is predicted to fall off by 47.05 percent for each mile away from the core. This holds true until the suburbanization occurred between 1980 and 1990 when population seemed to have been more spread out. It is also evident that the USB factored more strongly into theoretical population densities in Fayette County. By 2010, only 32.61 percent of the variation in population density can be attributed to distance from the city center. This is because Lexington-Fayette County has had an infill policy to encourage population growth inside the existing USB. And population falls off only 33.51 percent for each mile away from the city center because population density is increasing within the confines of the USB.

In summary, the density gradients presented reinforce that Fayette County began the study period with higher densities and more compact development patterns than Marion County. Fayette County’s population densities were 17.5 times higher as high as those of Marion County during the same period, even though Marion County’s 2010 total population was 331,298 versus Fayette County’s 295,803. It is clear that the USB in Fayette County created a barrier to more sprawled, less dense development and “forced” higher densities closer to the CBD. Also, as the explosion of Marion County’s population growth and development has taken place within the past generation, the normative decline in density with distance from the CBD as witnessed in older, monocentric cities without USBs, does not exist in Ocala/Marion County.
E. Street Density and “Sprawliness”

Street density is an indicator of sprawl. Sparse, discontinuous, curvilinear networks creating long, large blocks have come to be associated with the concept of sprawl, while their antithesis is associated with compact development patterns (Ewing, 2004). The definition of sprawl includes automobile dependency, so concentrations of street networks located outside of urban boundaries are classified as sprawl.

Street density was measured for the study counties’ 1970s-era street networks, as well as the road systems in place in both counties in 2010. As stated in Chapter 3, earlier data for each county were limited; the closest years of data available were 1974 for Marion County and 1973 for Fayette County. These two years are used as baselines.

To account for the size differences between the two counties, a standardized measure of roadway density was used: roadway length per square mile, which is defined as the overall street density. This measure was used to avoid a bias against Marion County’s overall street lengths due to its larger size. In addition to measuring roadway density per square mile, the proportions of street densities were categorized into five classifications.

Figure 5.13 shows the street density changes in Marion County from 1974 to 2010. The darker shades indicate greater density of roads. The map shows areas of denser urban settlement, including the urban areas. In 1974, Marion County had road network densities in which up to 25.86 linear miles of roads per square mile.
Figure 5.13: Linear Miles of Streets per Square Mile in Marion County: 1974 and 2010

1974 and 2010 Marion County Road Density
Linear Mileage of Streets by Square Mile

1974
- marion_streets74
  - Municipalities
  - 0.00 - 1.37
  - 1.38 - 3.55
  - 3.56 - 7.28
  - 7.29 - 12.51
  - 12.52 - 25.86

2010
- Streets
  - Municipalities
  - 0.00 - 1.37
  - 1.38 - 3.55
  - 3.56 - 7.28
  - 7.29 - 12.51
  - 12.52 - 26.60

Source: Maps prepared by author, 2011
Using Ewing’s (2004) technique, the overall proportions of each classification of street density per square mile across the county were computed (see Table 5.3). In Marion County, the numbers of square miles around the county that were vacant of development and had very few roads decreased through time. In 1974, 59.6 percent of the county had a very low street density index. As development occurred through time, only 37.7 percent of the county remained in a very low street density as roads were built to accommodate population growth. Every other category of roadway density per square mile grew through the study period. The densest road length/square mile classification, which represented 12.52 to 25.86 miles per square mile of land, grew from 1.4 percent in 1974 to 5.9 percent in 2010 (a more than four-fold increase). This represents overall densification of population through time.

Table 5.3: Roadway Density Classifications, Marion County

<table>
<thead>
<tr>
<th>Marion County Roadway Density/Square Mile Proportion of Square Mile Grids in each Density Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Road Miles Per Square Mile</td>
</tr>
<tr>
<td>-----------------------------</td>
</tr>
<tr>
<td>0.00 - 1.37</td>
</tr>
<tr>
<td>1.38 - 3.55</td>
</tr>
<tr>
<td>3.56 - 7.28</td>
</tr>
<tr>
<td>7.29 - 12.51</td>
</tr>
<tr>
<td>12.52 - 26.6</td>
</tr>
</tbody>
</table>

Source: Calculated by author, 2012

In Marion County, the areas that experienced the greatest road density changes were along the I-75 corridor, as well as south of Ocala. Development spillover from Lake and Sumter Counties to the south is evident along the southern Marion County border, as the map indicates a greater roadway density in those areas. However, none of
these areas are located within a municipal boundary. Some infill and increased
development density happened within the city limits of Ocala, but much of the increased
road density was scattered around the county, likely in support of new residential
subdivisions and ancillary commercial development.

Fayette County’s changes in roadway length per square mile density are presented
in Figure 5.14. Visual examination of the maps suggests an overall densification of areas
inside the USB, spreading outward from the downtown core. Street lengths per square
mile increased greatly in the southwestern areas of the county, which adjoin Jessamine
County. Per Ewing, the distribution of roadway density classes is presented in Table 5.4.
From 1973 to 2010, the number of square mile grids in the county which had 0-1.37 miles of road length decreased from 42.3 percent to 36.7 percent, representing 5.6 percent loss. Street density increased. Inversely, the proportion of square mile grids with the densest roadway classification (12.52 miles/square mile to almost 25 linear miles per square mile) grew from 5.8 to 14.8 percent, representing a 2.55 fold increase in street density. With the exception of two grids, all of the roadway densification occurred within the USB; the exceptions include the airport region immediately west of Lexington and the I-64/I-75 interstate split immediately north of the city. A greater proportion of a denser roadway network reflects a tighter street system inside the urban area.
Table 5.4: Roadway Density Classifications, Fayette County

<table>
<thead>
<tr>
<th>Roadway Lengths/Square Mile Density Classifications, Fayette County</th>
<th>1973</th>
<th>2010</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Road Miles Per Square Mile</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.00 – 1.37</td>
<td>42.3%</td>
<td>36.7%</td>
</tr>
<tr>
<td>1.38 – 3.55</td>
<td>37.9%</td>
<td>28.2%</td>
</tr>
<tr>
<td>3.56 – 7.28</td>
<td>9.4%</td>
<td>10.2%</td>
</tr>
<tr>
<td>7.29 – 12.51</td>
<td>4.4%</td>
<td>9.9%</td>
</tr>
<tr>
<td>12.52 – 26.6</td>
<td>5.8%</td>
<td>14.8%</td>
</tr>
</tbody>
</table>

Source: Calculated by author, 2012

a. Statistical Analysis Of Streets Density

Table 5.5 shows a comparison of roadway densities in the two student counties. In the 1970s data, the average density of roads per census tract for Fayette County was 12.58 miles of streets per square mile, compared to Marion County’s 3.96 miles of roadway, which means Fayette County had 3.1 times the street density of Marion County at that time. This has several implications. First, it is likely reflective Fayette’s overall higher population density at the beginning of the study period. But it could also be just an anomaly of the data. Census tract street density means are strongly influenced by high values in very dense tracts, but the mean value is also influenced by the numbers of cases – or, in this case, census tracts -- from which to calculate a mean. There were 42 census tracts in Fayette County during the 1970s era, and only 7 county subdivisions in Marion County. The averages could be skewed due to the few numbers of cases in the Ocala area, but the higher Fayette street density is likely due to the overall denser development patterns, especially as compared to very rural 1974 Marion County.
Table 5.5: Descriptive Statistics And Testing Of Means Between Counties' Road Densities, 1970's Era

<table>
<thead>
<tr>
<th>Road lengths/square mile 1970's era data</th>
<th>Marion</th>
<th>Fayette</th>
</tr>
</thead>
<tbody>
<tr>
<td>Census tract mean</td>
<td>3.96 miles/mi²</td>
<td>12.58 miles/mi²</td>
</tr>
<tr>
<td>Standard deviation</td>
<td>4.64</td>
<td>6.67</td>
</tr>
<tr>
<td>N (geographic units)</td>
<td>7</td>
<td>42</td>
</tr>
</tbody>
</table>

Source: Calculated by author, 2012

To test whether the difference between these two averages was statistically significant, a Student’s $t$-test was performed (see Table 5.6). The $t$-test is used to test the difference between the means, especially when there are very few cases to provide strong predictive capabilities. The calculated $t$-value was 3.2753, which is statistically significant at 0.0020 level of confidence. In other words, there is a statistically significant difference in the roadway network densities in 1970; Fayette County’s roadway network is denser, even accounting for its smaller size compared to Marion County. The higher Fayette street length per square mile density likely corresponds to the higher overall population density.

Table 5.6: T-test results, 1970’s-era data

| ROAD DENSITY/SQ MILE/CENSUS TRACT DIFFERENCE BETWEEN THE MEANS TEST RESULTS, 1970s |
|----------------------------------------|-------------------------------|
| t-value                                | 3.2753                        |
| standard error                         | 2.632                         |
| p-value                                | 0.0020                        |

Source: Calculated by author, 2012

By 2010, did Marion County’s roadway system density catch up to Fayette’s? By the end of the study period in 2010, Marion’s average road density per census tract had grown from 3.96 linear miles of streets per square mile in 1974 to 8.59 miles/square mile in 2010 (see Table 5.7). This represents 217 percent growth in roadway density from 1974 to 2010 for Marion County.

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On the other hand, Fayette County's mean roadway density per census tract shifted from 12.58 to 14.31 miles of road per square mile, representing a 13 percent increase in roadway density during the study period. Although these differences of 8.59 miles/square miles/census tract in Marion County versus 14.31 miles/square mile/census tract may not seem different given the two counties' populations, a Student's t-test was conducted and the t-value of 5.7829 was statistically significant at the .0001 level of confidence (Table 5.8). In other words, there is a statistically significant difference between the means of the census tracts' street density for Marion and Fayette Counties in 2010. Fayette County's street density seems to indicate greater compactness. This implies that Fayette County roadways were not built in the sparse, sprawling way that likely occurred in Marion County. In other words, the data suggest that the roadway of Marion County is more sprawled than in Fayette County. As witnessed with the 1970s data, the census tract street density means could be skewed by the numbers of census tracts, or influenced by outliers with very dense or very sparse street network systems.

Table 5.7: Descriptive statistics and means between counties’ census tract road densities, 2010

<table>
<thead>
<tr>
<th>Census tract mean</th>
<th>Standard deviation</th>
<th>N (geographic units)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marion</td>
<td>8.59 miles/mi²</td>
<td>61</td>
</tr>
<tr>
<td>Fayette</td>
<td>14.31 miles/mi²</td>
<td>82</td>
</tr>
</tbody>
</table>

Source: Calculated by author, 2012

Table 5.8: T-test results, 2010

<table>
<thead>
<tr>
<th>Road Density/Sq Mile/Census Tract Difference Between The Means T-Test Results, 2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>t-value</td>
</tr>
<tr>
<td>standard error</td>
</tr>
<tr>
<td>p-value</td>
</tr>
</tbody>
</table>

Source: Calculated by author, 2012
The two study counties are different in terms of their geography and population. Another method of analysis of the roads density is to measure the density of roads by the numbers of thousands of residents in each census tract. The average street density per square mile in each of the counties was calculated, as well as the road density per 1,000 persons (Table 5.9).

**Table 5.9: Average Road Network Density per square mile for each county, and per 1,000 persons**

<table>
<thead>
<tr>
<th></th>
<th>Marion</th>
<th>Fayette</th>
</tr>
</thead>
<tbody>
<tr>
<td>1970's County mean</td>
<td>2.02 miles/mi²</td>
<td>3.51 miles/mi²</td>
</tr>
<tr>
<td></td>
<td>0.0292 mi/mi²/1000</td>
<td>0.0202 mi/mi²/1000</td>
</tr>
<tr>
<td>2010 County mean</td>
<td>18.35 miles/mi²</td>
<td>5.56 miles/mi²</td>
</tr>
<tr>
<td></td>
<td>0.0554 mi/mi²/1000</td>
<td>0.2154 mi/mi²/1000</td>
</tr>
</tbody>
</table>

Source: Calculated by author, 2012

In the 1970’s data, the whole county mean for Marion County was 2.02 miles of roadway per square mile, and for Fayette County, it was 3.51 miles of street per square mile. This computed to 0.0292 linear miles of road per square mile/1000 population in Marion County and 0.0202 linear miles per square mile for every 1000 persons in Fayette County. Although these numbers may seem very close, Fayette County’s 1970 roadway density per capita was almost 50 percent greater than Marion County.

By 2010, the differences between the two counties became more pronounced. Marion County had 18.35 linear miles of streets per 1,000 residents and Fayette County had 5.56 linear miles per 1,000 persons, representing a 3.3 fold denser roadway network in Fayette County than Marion County. Again, to accommodate the size variation between the two counties, computing it per square mile translated into 0.0554 miles of road per square mile per 1000 persons in Marion County, and 0.2154 miles/square
mile/1000 persons in Fayette County. Fayette County’s 2010 roadway network was 3.98 times more dense per square mile per 1000 persons as Marion County.

**F. Summary and Implications**

The preceding discussion indicates that Marion County started with a much more rural development density, but grew through time to become more populous than Fayette County. Population grew by 77.4 percent from 1960 to 1970, and every decade thereafter experienced population growth equal to or exceeding 28 percent. Fayette County experienced a 32.2 percent population growth from 1960 to 1970, but its growth thereafter ranged from 13.5 percent to 17.1 percent. Marion County started with a very low overall population density of 38 persons per square mile, compared to Fayette County’s 611 persons/square mile. By 2010, Marion County’s population density increased 520 percent to 199 persons per square mile. Fayette County’s population density grew 69.5 percent to 1036 persons/square mile.

From 1969 through 2002, Florida lost 25.7 percent of its agricultural lands; Kentucky lost 13.3 percent. At closer look, the two study counties lost a proportionally larger amount of farmland during the study period than their respective states. Marion County lost 43.6 percent of all its farmland and Fayette County lost 26.6 percent. Farmland loss in both locations is attributed to urban conversion of agricultural lands.

The density gradient analysis suggests that although Marion County’s population growth resulted in increased population densities per census tract, these population densities were lower than Fayette County’s throughout the study period. In 1970, each mile of distance farther away from the theoretical center of the CBD resulted in a
population density loss of 50 persons per square mile; this adjusted to only 77.6 persons per square mile in 2010. The density gradients’ regression coefficients for Marion County shifted from 59.17 in 1970 to 42.2 in 2010. This means that distance to the city center mattered less through time as almost 60 percent of population density could be explained by proximity to the city center in 1970, but only 42.2 percent of the 2010 population density could be explained through distance from the city center. On the other hand, Fayette County began the study period with a sixteen-fold greater overall population density. The density gradients demonstrate that in 1970, 50.6 percent of the variation in population density can be explained by distance from the center of the CBD; by 2010 only 20.5 percent of the population density can be explained by distance from the city center. Overall population densities within each density gradient graph show higher densities, thereby indicating greater compactness of development. Marion County’s population densities tend to be an order of magnitude lower than Fayette County’s through the study period, thereby indicating greater propensity to sprawl. Fayette County’s “tighter” development and population density patterns are likely the result of the USB and an aggressive infill program.

Finally, the street density analyses ultimately suggest that Marion County is more sprawled. In 1970, Marion County had 0.0292 linear miles of streets per square mile/1000 persons population; Fayette County had 0.201 linear miles of roads per square mile per 1000 population. But by 2010, Marion County had a street network density of 18.35 miles per 1000 persons, while Fayette had 5.56 miles/1000 persons. When adjusted for the size of each county, Marion County has 0.0554 linear miles of street per
square mile per 1000 population. Fayette County has 3.98 times greater street density with 0.2154 linear miles per square mile per 1000 persons of population.

It is concluded through the evidence provided that Fayette County has experienced less sprawled development than Marion County during the study period. The analyses indicate that Fayette County has had overall higher population densities, greater compactness of development as indicated on the density gradients, and a denser street network per square mile per 1000 persons, which Ewing (2004) indicates as a tighter, compact and contiguous development pattern. Therefore, it is concluded that Marion County is more sprawled than Fayette County. The following chapter will seek to understand the reasons why Fayette County has promoted more compact development patterns and Marion County has been allowed to sprawl.
CHAPTER 6
DIFFERENCES BETWEEN THE LOCALES: DEFINING POLITICAL CULTURE

A. Introduction

The study areas have been described, with discussion of their growth pressures, public and private institutions, and regulatory infrastructure to accommodate land use changes during the 40-year study period. Next, empirical differences in development patterns at each study site were analyzed through scrutiny of the street density within each county. This analysis, coupled with an understanding of existing tools in place including the Florida GMA, has determined that Marion County became more sprawled from 1970 to 2010 than Fayette County, and that that sprawl presents a greater encroachment threat to the thoroughbred industry there. By contrast, Fayette County managed development in a more contiguous and compact method, probably due to the USB’s existence since the late 1950s.

Both localities had zoning controls and land use regulatory infrastructures in place, but there were different outcomes at each location. The next step is to understand why Fayette County did not abandon and, in fact, enforced its growth management program, and why Marion County experienced such sprawled development. This answer is rooted in political culture, which is defined as the attitudes, values, beliefs and norms
associated with a place. Inasmuch as these two communities share similarities, there are distinct differences in terms of their approaches to land use planning and growth management.

Political culture is used as an explanatory variable to describe the differences in growth management effectiveness between Marion and Fayette Counties. It has been used to understand nuanced differences in values and approaches to governance between different populations as evidenced by Elazar (1984), Lane (1962), Gans (1962), and Vidich and Bensman (1958).

Explanation of the political culture within the two study counties is explored through statistical comparison of educational attainment and income levels as a means to operationalize and test Inglehart’s post-materialist theory. Inglehart suggests that once nations that have satisfied their materialist needs for security and wealth, there is an intergenerational shift away from materialism, toward less tangible values. The post-materialist orientation places greater emphasis on civic values, quality of life, environmental protection and self-expression. Educational attainment and mean/median income levels are proxy measurements of post-materialism at each locale.

Feedback from focus groups and personal interviews are presented to explore the membership of the growth machine at each locale, as well as consideration of Elazar’s concepts regarding the traditional political culture typology, which is often vernacularized as the “Good Ole Boy” network. Local media, including two blogs, are evaluated for the tone of discourse at each location.
This research also includes first-hand information about the political culture of the Lexington-Fayette community. As a resident of Lexington since 2000 and member of the Lexington-Fayette Urban County Planning Commission since February 2003, the author has an intimate understanding of the ideology, norms and practices associated with land use planning and growth management in Lexington/Fayette County. This understanding is contrasted against what has been learned from Ocala/Marion County.

B. Median Household Income and Educational Attainment: Post-Materialism

Inglehart (1990) suggested that progressive public policies are typically the result of post-materialistic places. That is, post-materialist locales have high levels of life satisfaction, high levels of interpersonal trust and trust of government, less emphasis on economic growth, and greater emphasis on environmental protection. Societies with materialist values tend to have lower values of interpersonal trust among people of their own nationality, and emphasize economic and physical security. Median household incomes (an indication of economic security) and overall educational attainment were examined as an indication of the degree of post-materialism. In general, lower incomes and education levels are assumed to represent a position closer to the materialist end of the (assumed) materialist-post materialist continuum, and higher incomes and correspondingly high educational levels are presumed to be more closely correlated with the post-materialist culture type. Educational attainment and median income levels are interrelated; generally speaking, higher education levels are associated with higher income levels.

Using the decennial Census of Population, the median household income level for each study county was analyzed for each decade within the 40-year period. In 1970, the
census did not include a variable identified as “median household income,” but instead included “mean family income.” This variable was used for both counties for the 1970 data set so there would not be differences between the data. The 1980, 1990, 2000, and 2010 data are consistently “median household income” as reported by the US Census of Population.

As seen in Figure 6.1, Fayette County consistently had higher income levels than Marion County for every decade. To account for regional differences between the economies of Florida and Kentucky (and the two study counties may be subject to geographic disparities within their respective states), these income data were standardized against national income levels for the same period. As stated in the Methodology chapter, income levels were measured as a percentage of the national level to standardize against regional variations. In fact, Marion County’s income levels ranged from 51 percent of the national average in 1980 to its highest level in 2010 of 80.1 percent of the national average. By contrast, Fayette County’s income levels more closely followed the national trend. Fayette County’s lowest level (compared to the nation) was in 1980, when it was at 76 percent of the national median income level. However, in 1990 and 2010. Fayette County’s median household income levels were higher than the national average. In 1990, Fayette County was less than one percent higher than the national average, but by 2010, it was 10 percent higher than the national level.

Although the two counties’ income data for each year seem quite different, a t-test was conducted to measure whether there is a statistically significant difference between the means of these two places. This is because the income levels for each decade are
based on averaging of data provided by census tract within the study counties (see Table 6.1). Because the 1970 data were based on a countywide mean value (data were not available by census tract but only by the county total), no t-test was conducted for the

Figure 6.1: Income Levels for Study Counties, 1970-2010

![Income Levels, 1970 to 2010](chart)

Source: Compiled by the author from the Census of Population

1970 income levels.

The t-tests reveal that there is a statistically significant difference between the two counties’ income levels for 1980, 1990, 2000 and 2010. The higher t-values and very low p-values (consistently less than 0.01), indicate statistical significance. As such, it can be stated that Fayette County’s higher income levels are statistically significantly different than those for Marion County from 1980 through 2010.
### Table 6.1: Testing the Difference Between the Means for Income Levels by Census Tract, 1970 to 2010

<table>
<thead>
<tr>
<th>Year</th>
<th>FC mean</th>
<th>FC SD</th>
<th>FC N</th>
<th>MC mean</th>
<th>MC SD</th>
<th>MC N</th>
<th>t-val</th>
<th>Std. error</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>1970</td>
<td>9597</td>
<td>42</td>
<td>6595</td>
<td>7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1980</td>
<td>16059</td>
<td>6703</td>
<td>52</td>
<td>10724</td>
<td>4060</td>
<td>27</td>
<td>3.7841</td>
<td>1409.84</td>
<td>0.0003</td>
</tr>
<tr>
<td>1990</td>
<td>29970</td>
<td>12632</td>
<td>55</td>
<td>22293</td>
<td>6984</td>
<td>46</td>
<td>3.6768</td>
<td>2087.98</td>
<td>0.0004</td>
</tr>
<tr>
<td>2000</td>
<td>40828</td>
<td>20208</td>
<td>61</td>
<td>32515</td>
<td>7328</td>
<td>46</td>
<td>2.6588</td>
<td>3126.63</td>
<td>0.0091</td>
</tr>
<tr>
<td>2010</td>
<td>54583</td>
<td>29919</td>
<td>82</td>
<td>39722</td>
<td>9657</td>
<td>61</td>
<td>3.7925</td>
<td>3918.48</td>
<td>0.0002</td>
</tr>
</tbody>
</table>

**LEGEND:**
- FC = Fayette County
- SD = Standard Deviation
- MC = Marion County
- N = Number of census tracts/county subdivisions
- Note: no T-test was conducted for 1970 because there were no income levels available by census tract nor county subdivision

A similar statistical analysis was conducted for educational attainment. The Census of Population tabulates educational attainment in raw numbers of people; that is, the Census queries respondents regarding their highest levels of educational attainment and totals the number of responses. As such, these data were reworked to reflect a proportion of the overall population of each county which had at least four years of college education. Figure 6.2 shows the results of that tabulation, which is the percentage of population in each county that has at least four years of college education.

---

**Figure 6.2:** Proportion of College Educated Population in Fayette and Marion Counties, 1970 to 2010

![Proportion of College Educated Population](source: Compiled by the author from U.S. Census of Population)
At the beginning of the study period, Fayette County had almost twice the proportion of residents with at least four years of college as compared to Marion County. In 1970, about 4.1 percent of the Fayette County population had four years of college, as compared to Marion County’s 2.1 percent. The greatest disparity existed in 1980 when Marion County’s number was 40.8 percent that of Fayette County’s. The differences between the two counties for most census years remain fairly steady; Marion County has almost half of the proportion of residents with at least four years of college education as Fayette County. However, it should be noted that Marion County’s 2010 educational attainment levels are higher than Fayette County’s in 1970; this could imply that Marion County is on the trajectory to becoming more post-materialist.

To test whether the differences between the two counties was statistically significant, a t-test was conducted (see Table 6.2). These tests were conducted using the proportion of college educated persons by census tracts as the unit of analysis. In every decade studied except for 1970, there is a statistically significant difference in the means of the proportions of each county’s population with at least four years of college. The difference between the means was not significant in 1970, probably because there were so few cases, or county subdivisions (which served as the n’s in the analysis), to be statistically significant. From 1980 to 2010, Fayette County’s population tends to have statistically significantly higher proportions of the population with at least four years of college education.
Table 6.2: Testing the Difference Between the Means for Proportion of Population with Four Years of College Education, 1970 to 2010

<table>
<thead>
<tr>
<th>Year</th>
<th>FC mean</th>
<th>FC SD</th>
<th>FC N</th>
<th>MC mean</th>
<th>MC SD</th>
<th>MC N</th>
<th>t-val</th>
<th>Std. error</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>1970</td>
<td>0.041</td>
<td>0.034</td>
<td>42</td>
<td>0.021</td>
<td>0.012</td>
<td>7</td>
<td>1.5288</td>
<td>0.013</td>
<td>0.1330</td>
</tr>
<tr>
<td>1980</td>
<td>0.137</td>
<td>0.087</td>
<td>52</td>
<td>0.056</td>
<td>0.035</td>
<td>27</td>
<td>4.6353</td>
<td>0.017</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>1990</td>
<td>0.111</td>
<td>0.063</td>
<td>55</td>
<td>0.051</td>
<td>0.032</td>
<td>46</td>
<td>5.8552</td>
<td>0.010</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>2000</td>
<td>0.122</td>
<td>0.067</td>
<td>61</td>
<td>0.063</td>
<td>0.034</td>
<td>46</td>
<td>5.4614</td>
<td>0.011</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>2010</td>
<td>0.143</td>
<td>0.075</td>
<td>82</td>
<td>0.077</td>
<td>0.039</td>
<td>61</td>
<td>6.2677</td>
<td>0.011</td>
<td>&lt;0.0001</td>
</tr>
</tbody>
</table>

LEGEND:
FC = Fayette County  SD = Standard Deviation
MC = Marion County  N = Number of census tracts/county subdivisions

There are statistically significant differences in these two counties in 1980, 1990, 2000 and 2010. The t-tests showed there is a statistically significant difference between the means for Fayette and Marion Counties’ proportion of their populations with at least four years of college, and average median household income levels, for every year except 1970. Fayette Countians had higher educational levels, on average, and higher median household income levels.

In summary, it appears that Fayette County may be more post-materialist (per Inglehart) than Marion County as Lexingtonians make more money and have higher educational levels than the residents of Marion County. As such, it would be expected that Fayette County would have comparatively more progressive policies than its Florida counterpart, and therefore more progressive planning tools. However, in 2010, Marion County seems to be at similar income and educational attainment levels, comparatively, to Fayette County in the 1970s. Again, this raises the possibility that Marion County is progressing along a more post-materialist trajectory. Is it plausible that Marion County will contemplate more progressive policies in forty years?
C. Focus Group Results

Two sets of focus group meetings were held in Ocala and Lexington on August 8 and 9, 2011 and September 12 and 13, 2011, respectively. Both were held on consecutive Monday/Tuesdays. In each location, one meeting was held in the evening from 5:30 until 7:00 and on the following day during lunch, from 11:30am until 1:00. The Ocala meetings resulted in 11 attendees; 16 persons came to the Lexington meetings. Each meeting was audiotaped.

The following is a description of each location’s focus group attendees, their ages, educational attainment, profession and personal ideologies (see Table 6.3).

Overall, there were more attendees at the Fayette County focus group meetings (16) than at those held in Ocala (11 attendees). This may have been due to the researcher’s personal acquaintances with those invited. In Ocala, the researcher was a stranger, and although both sets of participants were sent personal invitations, the response was greater in Lexington.

Table 6.3: Description of focus group attendees in Lexington and Ocala

<table>
<thead>
<tr>
<th>Fayette County/Lexington</th>
<th>Marion County/Ocala</th>
</tr>
</thead>
<tbody>
<tr>
<td>Men</td>
<td>10</td>
</tr>
<tr>
<td>Women</td>
<td>6</td>
</tr>
<tr>
<td>30-40 years old</td>
<td>4</td>
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<tr>
<td>40-50 years old</td>
<td>2</td>
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<tr>
<td>50-60 years old</td>
<td>5</td>
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<tr>
<td>60+ years</td>
<td>5</td>
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<tr>
<td>Some college educ</td>
<td>2</td>
</tr>
<tr>
<td>Bachelors degree</td>
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<tr>
<td>Graduate degree</td>
<td>6</td>
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<tr>
<td>Attorneys</td>
<td>4</td>
</tr>
<tr>
<td>Homebuilder/Developer</td>
<td>3</td>
</tr>
<tr>
<td>Employed in horse industry</td>
<td>6</td>
</tr>
</tbody>
</table>
Ocala residents were older than the Lexington participants as 25 percent of Lexingtononians represented were younger than 40 years old whereas no participants in Ocala were younger than 40. In addition, of Lexington participants, 62.5 percent were over 60 years old as compared to Ocala’s 73 percent being older than 50. This may also be attributable to the higher average age of Floridians compared to the average Kentuckian. Lexingtonian participants had more advanced degrees (37.5 percent compared to Ocala’s 23.3 percent) and on average, have lived in Lexington longer than the average Ocala resident. The equine sector was fairly represented at both meetings; there were proportionally more persons from Ocala who claimed to be employed in the horse industry including two hobby horse farm owners. Three developers/homebuilders came to the Lexington meetings; only one came in Ocala.

When asked about ideologies (undefined by the researcher and intended to be interpreted loosely by the participants), one Lexingtonian failed to respond and three Ocala residents marked more than one category. Both locales featured four participants
who self-identified as “liberal;” six Lexingtonians described him/herself as
“conservative.” Five participants from Ocala described themselves as “conservative.”
Both locations had five respondents who identified their political ideologies as “it’s complicated” and both locations witnessed at least one person who self-identified as
“independent.”

Although the ages, professions and personal ideologies may have seemed similar
between the focus groups, there were contrasting sentiments expressed at each.
Comments in brackets [ ] below within quotes are explanatory notes added by the author.
One of the first questions asked at each focus group meeting was whether participants
“perceive local residents to be more strongly in favor of individual property rights or in
favor of the collective benefits of restricting individual property rights”.

In Marion County, this question was immediately answered:
JR: “I’d say pretty well split. We have a large Tea Party\(^3\) movement, we have a lot of
independent-type people, but a lot of the horse people who’ve moved in, I think, do
understand the collective benefits of property rights control.”
DS: “But thanks to our highly not-progressive governor, Rick Scott, I think the
Commission is steered by the Tea Party.”

In Lexington, the same question was answered:
TJ: “Lexington is different. Compared to Scott and Jessamine Counties, we
understand that in order to protect what makes us unique, there has to be personal
sacrifices [sic] in order to manage the collective benefits.”

\(^3\) According to the New York Times, the Tea Party movement has an agenda that is not well-defined, but it is anti-government, anti-spending, anti-immigration and anti-compromise politics.
MM: “It’s the landscapes that are spectacular. It’s just that simple. If you take away the fences, barns, etc., it’s a lot of beautiful farmland that has been here forever. And the public in Lexington understands the need to conserve this landscape.”

It appears that the Lexington focus group attendees recognize the significance of the world class landscape there and the need for its stewardship. In Marion County, Tea Party and libertarian ideals regarding land use control seem to be more prominent among existing residents, although there is an acknowledgement that a new mindset may be forthcoming with migrants relocating to the area.

When asked if their community is “sprawled” (leaving it up to the participants to define what is meant by sprawl), there were mixed responses. In Lexington, respondents differed on their views whether Lexington is sprawled.

MO: “We have had uncontrolled growth over the years.”

MC1: “Before IBM came in the 1950s, we were not sprawled. But now we are.”

MC2: “There is sprawl inside the Urban Services Boundary, but no sprawl at all outside of it. We have protected the rural areas very well.”

In Ocala, the same question was posed:

SW immediately handed over a bumper sticker (Figure 6.3). The fact that this participant came to the meeting prepared, with a bumper sticker that summarized her feelings about sprawl in her community, revealed her concerns about patterns of development in Ocala.

Figure 6.3: Bumper sticker provided by Ocala focus group participant.
JR: And what I see here is the county commission supporting more things out of the city and, except for the Magna [Frank Stronach, owner of Adena Springs South thoroughbred farm] project, which, I think, they're trying to concentrate and combine their forces, but I believe that we're letting our downtown die by allowing other things outside the city right now."

MS: "And we're trying to keep away from sprawl, that was what the growth plan was about, and yet that's not being followed. That's what we're trying to do in the south end, is keep the sprawl from the south end."

JR: "...We have created urban sprawl. And it wasn't the developers, it wasn't the planners, it was usually the people that were there [at the public hearings for the rezonings and subdivision plat approvals]. We go in there for a high-density land use, six-eight units to the acre, or four units to the acre--which is medium density in the county. What happens is the neighborhood shows up en masse. And they only want to see, built next door to them, exactly what they live in right now. If it's one-acre tracts, they don't want to see half-acre lots; they don't want to see quarter-acre lots. And it's the same, over and over again. The densities...in the future, I think you're going to see much higher densities, much smaller lots, in the city and the county before it's all over with. Some of the newer communities, little enclaves, are really turning out to be neat little subdivisions."

In Lexington, there seems to be disagreement over what constitutes sprawl; "uncontrolled growth" is considered sprawl, but another participant believes that the lack of development outside of the Urban Services Boundary implies a lack of sprawl in
Lexington. In Ocala, one of the participants came prepared to discuss sprawl, and had a bumper sticker available to describe her feelings about land development patterns. Others seem to believe that any development that is located outside of the urban boundaries is sprawl. So with the acknowledgement that new development is located outside of the city limits, participants suggested that developers try to create compact development (that has less of an impact on surrounding lands), but the public which comes to public hearings argues in favor of larger lot sizes. There is concern that density will devalue property, and landowners are interested in favoring a style of development which mimics their own large-lot residential style in order to retain their property values. In spite of planners’ and developers’ attempts to create compact new development outside of urban areas, impacted neighbors force duplication of the same, land-consumptive style of development in order to protect their own investments.

When asked how they would define sprawl, Ocala residents responded:

DS: “Suburbia. Little lots of houses, maybe a quarter acre, and that’s what I see if any roads go through the south end, through the greenway, that’s exactly what I see.”

MS: “It’s gas stations and Jiffy Marts on every corner.”

SH: “I live outside of a small community, Bellevue, and I see it losing its distinctiveness by the sprawl from the Villages to the south of Ocala. From what’s coming in, it’s not going to have character. Bellevue is just going to be swallowed up.”

In Lexington, respondents defined sprawl as:

RR: “Sprawl is leap-frog development in which there’s subdivision after subdivision.”

BS: Sprawl is what is happening in Jessamine County [adjacent to Fayette County], which recommended future land use of 6,700 acres on 1-acre lots. Sprawl is when the
city will annex seven miles away to get Brannon Crossing [a new Jessamine County shopping center near the Fayette/Jessamine County line]. Sprawl is happening around Lexington, outside of Fayette County.”

MM: “The high price of land prevents sprawl in Lexington. If land values were cheaper in Fayette County, there might be sprawl but there is no sprawl because of such high land costs.”

Both communities acknowledge sprawl exists, although it appears to be outside forces that are creating and perpetuating sprawl. Fayette County is able to point to Jessamine County as allowing sprawl to happen, and Ocala residents state that unwanted development which will alter the character of quaint Marion County rural communities is coming northward from the south. Both communities place the blame elsewhere.

When asked about each county’s history with implementing its comprehensive plan and accommodating or resisting new development, respondents in Ocala stated:

CR: “I feel better about it now than I have in the past [in 2011, Governor Scott defunded the Division of Community Assistance, the state agency that manages the Growth Management Act] mainly because I think that local governments will assert more control over development. In the past, the whole DCA and the mandate, it was such an animosity, and a lack of planning, it was all about doing this, meeting this criteria, trying to make a square peg fit in a round hole, and it’s [sic] always was kind of awkward and never really had a chance to do a lot of planning, per se. I think, if you allow the local governments, they want to do that [sic]. They want to have more say in it. I’m optimistic.”

In response, another Ocala attendee said:
MS: “Do you remember the pictures of Patty Hearst in the bank? That’s how I feel. Seriously.”

The researcher asked these persons why they had such contrasting views [comfortable about growth management implementation being turned over to the local government, versus fear of lack of state oversight over the process].

CR: “The power brokers are the developers here. And we are gagged from doing anything about it.”

This implies that the elites in the Ocala area are the developers who stand to benefit from growth management being executed at the local level. This is consistent with the growth machine theory as locals are able to form a coalition to harness local governments towards the end of increasing the demand for land.

Attendees at the Lexington meetings, when asked about the county’s history with implementing its comprehensive plan and regulatory infrastructure to manage development, stated:

BS: “The 1996 Comprehensive Plan and Expansion Area organized rural forces. Since then, the Fayette Alliance [a rural land conservation organization comprised of stakeholders from the horse industry, downtown developers and neighborhood groups] has become a major political player with significant resources. They have helped educate leaders that the rural land is the important land in the county, and any expansion of the Urban Services Boundary will be hard fought over.”

MC1: “Our Comp Plan needs to be proactive and visionary, instead of reactive. We need a better vision, with greater attention to green infrastructure, stormwater and design standards. We need a land bank program to make our infill program work.
MC2 stated: “Draw a line around the land you want to keep; with the USB in place, this means that developers only have 16,000 acres to play with in Fayette County. We need to get to the ‘end game’ and decide, from a long range, what land is worth saving.” [MC2 was referring to those rural lands that are outside of parks and not protected under the Purchase of Development Rights program; MC2 estimates that only 16,000 acres – 25 square miles of land – are all that is available for development in perpetuity in Fayette County.]

In Lexington, the Comprehensive Plan update process (as required every five years by statute) seems to be the driving force for expansion of the Urban Services Boundary. One participant perceives the Comprehensive Plan process to be futile if no additional raw lands are incorporated with each update. Others perceive the Comprehensive Plan process to be an opportunity to address environmental concerns (such as storm water management), architectural design and other urban issues that extend beyond availability of land upon which new construction can take place.

Focus group participants were asked if the horse industry has traction in land use decisions in each county. Ocala residents responded:

DH: “No, they don’t. In fact, some of the major farms have sold off to developers. Ocala Stud has sold a big piece of its land to Trinity Catholic school. They’re moving to the north side of the county to get away from the path of development.”

CJM: “Yes, but that’s where a family’s investment is—in their land. When you are looking at land values by the square foot, it’s senseless to try to hold on to it. It’s more cost-effective to move somewhere else.”
DS: “Our horses sell for so much less on average (than in Lexington). And we don’t have the stud values…you can’t make as good a living as a horse farmer in Ocala as you can in Lexington. So the horse farmers don’t have a say in land development decisions, unless they’re the ones who are doing the selling.”

JR: “If you were a big landowner, a big business person or a horse farm guy, you were elite. But now, it’s the retirees that have a lot of power. They cast a lot of votes for the county commission. They seat the county commission. And the school board, for that matter.”

Ocala residents believe that all landowners are part of the development industry because of the ubiquitous nature of undeveloped and underinvested farmland in Marion County and that land’s potential development value. Farmers are not engaged in local planning activities unless they are contemplating sale of their land. However, Ocala residents perceive retirees to have a growing voice and increasing power within the community. This could imply greater NIMBYism or slow-growth attitudes among the Ocala population in the future. Of course, it could also mean the sale of large agricultural parcels to create new retirement communities for this powerful lobby.

In Lexington, by contrast, respondents said:

MR: “The Fayette Alliance shows up at Planning Commission meetings whenever we discuss the Comprehensive Plan or a zoning change. This organization – it is kind of neat -- was formed by the thoroughbred owners, who partnered with downtown developers and Fayette County neighborhood association board members. They have a voice on every zoning inside of the USB and prevent land use changes outside of the USB, including Zoning Ordinance text changes and Conditional Use Permits. They are
unlikely bedfellows – the downtown developers and the horse farm managers/owners, but they have a voice in land use decisions. Horse farmers do have a voice, through the Fayette Alliance.”

MO: “The Bluegrass Conservancy, a private land conservation organization that accepts donated land conservation easements, was founded by horse people. Horses are our “specialty” in Lexington, but 50 percent of the land is not in equine use – it’s in general agriculture.”

The Fayette Alliance represents regime politics (Stone, 1989) as disparate groups coalesced around a common theme: minimizing sprawl in the rural areas and focusing development to lands inside the USB. There is no equivalent organization to the Fayette Alliance in Marion County, nor is there a single agency whose mission is to acquire rural farmlands.

Private land acquisition and conservation easement efforts in Marion County and Florida, in general, have targeted sensitive aquatic systems. Soils and farming landscapes have not been a focus of private preservation efforts, although the County has identified 5,000 acres where farmland should be preserved, and has targeted these areas to be “sending areas” under the Transfer of Development Rights program.

Asked about the long-term prospects of the equine industry, Lexington respondents answered:

RR: “Our community will be resilient; we want to keep our landscape in perpetuity. And the progressiveness of our government has helped us keep development contiguous and cohesive.”
SH: “We need to continue to fund the PDR (Purchase of Development Rights) program to preserve farms. And it’s all about how we promote what the city has spent on this investment, and how we need to protect our investment.”

RW: We need to attach ourselves with the rural landscape better. We need to promote the characters and stories associated with our rural landscape. And we need to do a better job promoting civic education of planning issues.”

MM: We need regional planning - across county lines - in order to maintain the greater Bluegrass region and those areas outside of Fayette County.

When asked the same question about the horse industry, Ocala respondents stated:

DH: I think most people will tell you that they really like to see the horse farms. And, they will tell you that they want to continue to see the horse farms. But, if you ask where they buy their groceries, they say it sure would be convenient to have a Publix [a national grocery chain] closer, or in the neighborhood. And, I think they know that all of those things need to be there. The one thing we have in Marion County is a farmland preservation area – no development will go there. Basically, as a land developer and a land owner, we bought into it; it was not a problem at all. It just showed us where we could go and develop and where we cannot develop. So the Publix will have to go elsewhere.”

CJM: “They [the horse farm owners/managers] don’t push their voice. The economic power is with the retirees, and the developers that cater to them are the power.”

GS: The Ocala mall used to be Carl Moses’ [Rosemere] farm. That’s going to happen, and that’s what growth management was supposed to protect us against. The Villages is creeping up from the south, will absorb Belleview and change the character of the
southern end of the county. And that’s where our equine greenway and horse park are located.”

CJM: “Development of the horse park here will help. And it’s all about competition for state money. If we can use the horse park to educate about the economic impact of the horse industry in Florida, we can do a better job saving it.”

Lexington and Ocala have contrasting views about the long-term viability of the equine industry through better planning. Ocala residents have witnessed land use change, and the farmland preservation area is their best hope to preserve the rural landscape for the equine industry. The Transfer of Development Rights, implemented due to a lack of funding for a Purchase of Development Rights (PDR) program (which would purchase, fee simple, and retire the development rights), targets 5,000 acres of prime soils for preservation. Lexington, on the other hand, has the PDR program, and hopes for greater long term investment in that program to purchase the development rights of high quality soils upon which sizable agriculture operations exist. After its first ten years, the PDR program has acquired more than half of its goal of 50,000 acres preserved.

a. Interpretation of Focus Group Results

Both sets of focus groups stated that sprawl is occurring/has occurred in each community, but there seems to be a strong contrast between the two locales. In Marion County, there is growing frustration with policymakers accommodating too much new development, and in Fayette County, focus group members expressed frustration with the volumes of land located outside the urban services boundary (and not available to be developed). In Fayette County, there was also discussion about the need for additional
development regulations, such as design standards and storm water management infrastructure, to enhance new construction's appeal to the general public.

Per Elazar's criteria for defining political culture, it appears that the role of government in each location is different, too. The role of government in Marion County seems to avail for supplemental land to become available for urban development. This is accomplished through frequent Comprehensive Plan amendments for land use changes per the GMA, in order to facilitate new development, even though existing land inventories have not been exhausted. This is because the economy of Marion County has been rooted in revenues associated with new construction and the jobs that it brings, specifically to accommodate the swelling population (Mormino, 2005). Marxian economics analysts would consider cultural attitudes toward land in Marion County to be geared more toward exchange value, which addresses the financial worth and compensatory value of property if sold (see also Logan and Molotch, 1987).

In Fayette County, it seems the role of government is to protect the public asset found in the equine landscapes around Lexington through no expansion of the USB line in Fayette County, and continued investment in the Purchase of Development Rights program (which seeks to provide long term discouragement of urban-style development in the rural agricultural areas of Fayette County). One of the Lexington developers expressed frustration regarding too much land being located outside of the urban services boundary, which requires lower density development (40-acre minimum lot size) in an attempt to preserve the equine landscape. Fayette Countians have a greater perception of the farmlands in terms of their use value, which is the inherent worth associated with the land's utility as high quality cropland. Lexington focus group members speak about land
in terms of its thoroughbred heritage and contribution to racing stock, not its monetary value on the marketplace. The focus group member who argued that too much land is unavailable for development outside of the USB has a conflicting perception of that land; he considers the exchange value of land versus the more common perception of the use value of the rural farmlands.

Elazar also defined political culture through knowing who participates in government. Who is the growth machine in each locale? In Marion County, it seems that the equine industry does not have a voice in planning-related decisions. Newcomer retirees tend to facilitate land developers’ petitions for new development and they attend public hearings to argue against higher density development which could compromise their property values. This is because the economy of Florida is mired in unsustainable land development and unbridled growth. In Fayette County, the Fayette Alliance, formed in 2006, is a land use advocacy group formed out of a threat to the rural lands. And the Fayette Alliance tends to attend most meetings and stay abreast of land use changes in the county. This would suggest that the horse industry is part of the elites in Fayette County.

Marion Countians also suggested that developers have a greater voice in government, in support of relaxing market restrictions to accommodate land development.

Elazar also said that political culture tends to be evident in how “the art of government is practiced.” In Fayette County, there is an urging of local government to engage in regional planning activities to preserve farms outside of Fayette County. In Marion County, local government had been forced to coordinate with the state Division of Community Assistance for Comprehensive Plan amendments to accommodate new development, and there seemed to have been some animosity about the state’s becoming
involved in local decisions. Since the DCA has been abolished, some focus group members expressed fear of what that might mean (Patty Hearst reference), suggesting that the local government will succumb to pro-development, growth machine forces without the oversight of the state. Growth machine proponents will have arguably less bureaucratic red tape to obfuscate and add time to development proposals.

D. The role of Elites at each Location

Logan and Molotch (1987) suggested that the urban land development process is directed by elites in each location; elites are those individuals with money and political influence who stand to profit personally from development decisions. It is interesting to know who the elites are – or are perceived to be – at each study site, and how those elites are not engaged in the land development process. Both study locations have impressive rosters of celebrities/elites, and it is interesting to note whether those elites are immersed in local development activities.

Today, farms owners in the Lexington area comprise a “who’s who” list of internationally renowned persons, including Kentucky Derby winner breeders and trainers, and Arab royalty. As the industry has such a longer tradition in Fayette County, and the farms have changed hands for decades to subsequent generations of equine farmers (due to the perceived use value), large rural landowners have political clout. Farms known for producing good bloodstock have been transferred to other super rich people, as royal siblings of the United Arab Emirates own two major thoroughbred operations in Fayette County, and the Saudi crown prince owns another (Figure 6.4). This is just a sample of the extreme wealth in the region; several of the world’s super rich
have assets in Fayette County. Most of these owners are absentee farmers, with on-site farm management tending daily operations. However, in some cases, farm managers are engaged as participants in community land use planning activities.

One Fayette County farm, Donamire, is an enigma: it is owned by Don and Mira Ball, founders of Ball Homes, LLC. Donamire encompasses 650 acres at the corner of Yarnallton Pike and Old Frankfort Pike, which is arguably one of the most scenic and fertile tracts of land in Fayette County. Ball Homes, LLC, on the other hand, is a land development and homebuilding corporation with offices in Louisville, Lexington and Knoxville. Don and Mira Ball made their millions from residential land development (although they are not considered super rich), and both are political elites in the Bluegrass community. Mrs. Ball served on the Board of Directors of Louisville Gas and Electric Company, Kentucky Utilities and was Chair of the Board of Trustees for the University of Kentucky from 2007 to 2011. Mr. and Mrs. Ball are also among the region's most generous philanthropists, as they often host fund-raising events at their farm for non-

Figure 6.4: Sheik Mohammed and his wife, HRH Princess Haya Bint Al Hussein, at the 2009 Keeneland September Sales

Source: Lexington Herald-Leader, 2009
profit charities. But on the other hand, Mr. Don Ball is one of Kentucky’s largest political donors (Campaignmoney.com, 2008) and he used his political influence to lobby Kentucky legislators against expanded gambling at race tracks (Paulick, 2009). Some suggest that Donamire Farm and its owners do not depend on a healthy thoroughbred industry to survive. The farm was funded through the thousands of homes sold through their Ball Homes, LLC (ibid, 2009). It has been suggested that if the thoroughbred industry does fail in Lexington, farm land will be sold cheaply for residential development, from which Don and Mira Ball stand to profit. The Ball family represents a duality in the Bluegrass farmland preservation/farmland encroachment conundrum.

Compared to the Lexington area, there are fewer super-rich in Marion County although many would be considered *nouveau riche*, or newly-acquired family wealth. Celebrity thoroughbred farm owners in the Ocala area include Charlotte Weber, heiress to the Campbell’s Soup fortune and owner of Live Oak Plantation, which is a stallion, broodmare and cattle operation. The late George Steinbrenner owned Kinsman Stud, and news reports suggest that his daughter, Jessica, has taken over the farm operations after his passing. Donald R. Dizney, an Eastern Kentucky University graduate and owner/chairman of United Medical Corporation, is owner of 547-acre Double Diamond Farm which has had multiple Grade 1 stakes winning horses. Leonard H. Lavin, founder of the Alberto-Culver Company (maker of Alberto VO5, among other products) owns Glen Hill Farm. Eugene Melnyk, a Ukrainian-Canadian businessman who patented time-released pharmaceutical products and owner of Biovail Corporation, is a breeder and thoroughbred racing enthusiast who owns Winding Oaks Farm. None of these farm owners nor their managers are engaged in the land development process.
In 2004, celebrity John Travolta moved into a “fly-in” home, complete with small air traffic control tower, in rural northeast Marion County; this was not in support of his passion for horses, but rather, flying. Travolta bought the property from Arthur Jones, an eccentric millionaire who invented Nautilus exercise equipment and collected exotic African animals, like elephants. Jones needed very large planes to bring in very large animals and built a long runway to support jets. Jumbolair, Travolta’s home, includes a 1.4 mile runway adjacent to his mansion where he is able to land his Boeing 707, Gulfstream jet and helicopter. He chose Ocala due to its rural nature as he was allegedly chased out of his “fly-in mansion” near Daytona, FL because neighbors sued him, saying his planes were too big and noisy for the neighborhood (Ocala Star-Banner, 2004).

A parallel to the Ball family exists in Marion County. Austrian-Canadian billionaire Frank Stronach, owner of Magna Industries (an automotive parts company), owns Adena Springs South, a 3800-acre, multiple-parceled farm north of Ocala with breeding and training operations. The original Adena Springs is a 2000-acre farm located in Bourbon County, immediately north of Lexington, Kentucky. Stronach is also owner of Gulfstream Park and Santa Anita Park, thoroughbred racetracks near North Miami, FL and Los Angeles, CA, respectively.

Stronach races and breeds horses, but is also a member of the local development community, like Don and Mira Ball. Stronach recently decided to purchase land and add “land developer” to his resume. In 2010, he bought nearly 200 acres north of Ocala at the site of an abandoned limestone quarry where he intends to build a gated, upscale waterfront residential golf-course community. Like Don and Mira Ball, super-rich landowners who become engaged in local land use issues know the best of both worlds —
land development and thoroughbred horse farms. They have access to politicians and decision-makers, and recognize that the horse farms must be free of residential encroachment in order to maintain the value of the assets stabled there.

The horse industry elites tend to be represented in land development issues in Fayette County by their farm managers or by the Fayette Alliance. As stated earlier, there is no equivalent organization in Marion County. In both communities, however, there are large thoroughbred farm owners who also dabble in land development. Frank Stronach is actively developing agricultural land in Marion County and Don and Mira Ball are building homes on land inside the USB in Fayette County.

**E. Political culture in print**

Both Lexington/Fayette County and Ocala/Marion County have a variety of political views and attitudes, and both have strong proponents for the types of land development associated with sprawl, and for growth management, environmental protection, and farmland preservation. However, media content analysis suggests that a limited government, strongly pro-development political culture is dominant at the Florida site, while the political culture at the Kentucky site is friendlier to land use planning and established limits to development.

For example, a 2010 editorial in the (Ocala) Star-Banner decried the “hijacking” of Marion County’s comprehensive plan and questioned developer-friendly data manipulation by county officials (Bowers, 2010, Appendix A). After a review of a Comprehensive Plan revision, Marion County officials “tweaked” the numbers, inflating the anticipated need for new development. The editorial states:
“After what at best can be described as much data manipulation, the county ‘calculated’ a 2035 demand for 81,752 residential units and an existing supply of 171,000 units. It adjusted the supply down to 106,000 units, including the addition of about 10,000 new units that were transmitted. But it also claimed that it will need an additional 19,500 units by 2035.” (Bowers, 2010)

Moreover, the EAR (the first draft of the Comprehensive Plan revision reviewed by the DCA) also calculated a "need" for an additional 440 acres of commercial/industrial land over the next 25 years. But the transmittal (what was submitted and approved after the revisions) “added 4,381 acres, a 10-fold increase over the identified ‘need’” (ibid). The article elaborates:

“Some of the goals of the comp [sic] plan are: prevent urban sprawl, promote infill and redevelopment, encourage and support energy efficient land use forms, and support and protect agricultural lands. But the policies and objectives in the EAR-based amendments often are inconsistent with these goals. Some amendments transmitted do just the opposite of the stated goals. The Irvine Regional Activity Center and the Interstate 75/County Road 326 Employment Activity Center are, in fact, poster children for promoting urban sprawl and over-allocating rural land to urban uses” (ibid).

DailyMarion.com blogger Bruce Seaman lamented in April 2012 about the County’s approval of a new development inside the farmland preservation area intended to allow development rights to be transferred from this area to other parts of Marion County. He states:

“Do you know the I-75 interchange at CR 318? It’s the one with the Petro Truck Stop and the always tasty and satisfying Iron Skillet buffet. That’s Irvine."
Now imagine 900,000 sq. feet of office space, 100,000 sq. feet of retail space, a 200 room hotel, and 258 new residences mixed from apartments to town homes to single family, all shoe-horned into a 150 acre strip running from east of Jim’s Barbecue on 318 south along the interstate, nearly halfway to the CR 316 bridge...the proposed complex is wholly inappropriate for Irvine.”

He goes on to state:

“For starters, the project is in the “Farmland Preservation Area.” While the county staff found that the proposal was within the allowed use variances for the Farmland Preservation Area, it raises the question, ‘What the hell? Really?’ Using the CR 318 frontage for retail may make some sense as far as zoning, and less sense commercially, but dropping a whole new town into this site passes as ‘Farmland Preservation’ use? C’mon.”

By contrast, Fayette County editorials recognize the value of the equine industry to the overall economic health of the region and urge continued funding of the PDR program, as well as protection of the Urban Services Boundary. In response to a suggestion by an urban-county council candidate that the USB be expanded to accommodate a future (although unplanned) possible industrial park, Fayette Alliance executive director Knox Van Nagell wrote an editorial for the local newspaper:

“We agree that our community should energetically pursue manufacturing and other job-creating opportunities, but that should be done on the 429 acres of land zoned for economic development, and the 12,000-plus acres of underutilized land inside the city.”
It continues, “the Lexington rural area is the foundation of a $3 billion agricultural economy that is a pillar of international commerce, local economic activity, brand identity and local iconography.

Because of this role, we strongly support the Purchase of Development Rights program and the Rural Land Management Plan that govern how to use and protect our precious farmland.” (Lexington Herald-Leader, 9/26/2011)

The very existence of the Fayette Alliance speaks to the Lexington area’s political culture. The Alliance is “a coalition of citizens dedicated to achieving sustainable growth in Lexington-Fayette County through land use advocacy, education, and promotion.” (FayetteAlliance.com, accessed 5/12/2012)

F. Participant-Observer Reflections on Lexington-Fayette County

As stated above, the author has been a mayor-appointed member of the Lexington-Fayette Urban County Planning Commission since February 2003. This experience provides a unique perspective on the nuances of political culture in Fayette County, especially with respect to growth management principles. The following includes observations from an informed participant, and is not intended to be an ethnography of the Lexington populace.

Within central Kentucky, Lexington-Fayette County is anomalous, especially contrasted with other communities in the region. Lexington was the first community in the state to develop a merged city/county government (in 1972/3), and its planning model is considerably more progressive than its neighboring governments. Lexingtonians are perceived by others in the region as being very uppity, as its population is better educated
and more cosmopolitan than the typical conservative central Kentuckian. Even though most residents do not rub elbows with the super-rich thoroughbred farm owners, Lexingtonians are pleased when the Sheik of Dubai comes to town for the September Keeneland yearling sale because they know that he is coming to Lexington as a result of the rural area’s equine landscape and its supporting infrastructure. Average Lexington residents support strict enforcement of the UGB to maintain the rural ambience which sets Lexington apart from other mid-sized cities in the Midwest. In fact, Fayette Alliance contracted with the Matrix Group to conduct a survey which showed that only 16 percent of all Lexingtonians would support expanding the USB (see Appendix for data sheet). This sentiment is routinely expressed in the newspapers, and was played out during the 2007 Comprehensive Plan update process. The following vignette highlights the land use planning sensibilities of Fayette County residents.

a. “Reserve Area” USB Expansion

During the Comprehensive Plan update process (which began in 2005 and concluded with adoption of the Comprehensive Plan in 2007), there were five public hearings held in the Lexington community from January to November 2006 to elicit public input on the goals and objectives of the plan. In total, approximately 300 persons spoke at this series of meetings, and all but five speakers expressed concern about holding the USB line at its current location. Citizens expressed an appreciation for the “park-like setting” that the rural lands around Fayette County provide, and that within a 15 minute car ride in any direction, Lexingtonians can be “out in the country.” The only persons who explicitly addressed preservation of the horse farms were members of an
advocacy group called Save Our Irreplaceable Lands (S.O.I.L.), a loosely organized
group of six or so general agriculture landowners who epitomize the use value ethic,
specifically with respect to the rich agricultural soils in the county. Among the five
persons who spoke in favor of expanding the boundary, two were homebuilders, two
were attorneys who represent land development interests, and one was Mrs. Mira Ball,
co-owner of Ball Homes and Donamire Farms.

Most members of the 11-person Planning Commission -- which, at the time,
cluded one general agriculture farmer and a small-scale broodmare horse farm owner --
were strongly opposed to expansion of the USB, but the Planning Department staff,
presured by the land development and homebuilding communities and the then-Mayor,
pushed for an USB expansion. At the 11th hour of the Comp Plan approval process (in
November of 2006) during the Planning Commission public hearing to endorse the
Comprehensive Plan, the Planning Director presented a proposal for approximately 7,000
acres of “reserve areas” to be added incrementally to the USB in the ensuing months,
after some undetermined but critical threshold had been met for lands already inside the
USB. In other words, the “reserve lands” would automatically be adjusted into the USB
on an as-needed basis, with no public hearing or public discourse. The lands considered
for this reserve area were located along Interstate 75, approximately four miles beyond
the existing USB, and on land without designated prime agricultural soils.

Members of the Planning Commission were taken aback. It was felt that this new
proposal should have been vetted at the series of public hearings held in earlier months.
Horse farmers immediately mobilized and formed the Fayette Alliance. An attorney was
hired as Executive Director, and her full-time job was to fight expansion of the USB.
Ultimately, there was no expansion of the USB and the Comprehensive Plan was adopted in January of 2007.

Since adoption of the 2007 Comprehensive Plan, the sub-prime mortgage lending crisis provoked a national housing market crash in 2008. This precluded the need to consider an expansion to the USB during the 2012 Comp Plan update process. The Mayor, in 2011, held a press conference to announce that there would be no extension of the USB during the 2011-2012 Comprehensive Plan update process. As the USB expansion was taken off the table early in the process, the Fayette Alliance has relaxed its concern regarding immediate loss of farmland. As such, it has continued to promote urban infill, including initiating and funding a study to inventory existing underutilized property inside the USB, as well as a market study evaluating future housing needs for the aging Fayette County population. As stated earlier, there is no equivalent Fayette Alliance organization in Marion County, Florida.

b. PDR, the Rural Service Area Plan and the 40-acre Rule

The horse farm industry was also responsible for establishment of the PDR program, the 40-acre rule and development of a Rural (as opposed to Urban) Service Area Long Range Plan. The key player was Don Robinson, owner of Winter Quarter Farm in very rural southern Fayette County. Winter Quarter Farm, a broodmare operation comprising 276 acres along Military Pike, foaled 2010 Horse of the Year Zenyatta. Robinson also raised 2009 Kentucky Derby contender, Storm Treasure. Immediately to the east of Winter Quarter is Shadwell Farm, owned by one of the Al Maktoum brothers from the United Arab Emirates.
Robinson was raised at Winter Quarter Farm, as his father was also a thoroughbred horseman. The Robinson family epitomizes the use value perception of the land. In 1997, the LFUC Planning Commission approved a 15 lot, 10-acre lot size residential subdivision directly across Winter Quarter Farm at Military Pike and James Lane. Using the “Right to Farm” law, Robinson filed lawsuit against the Urban County Government, and sought financial damages because he claimed that the suburban encroachment less than 70 feet from his farm would impede his ability to raise thoroughbreds. He argued that they are worth millions of dollars apiece, and as their curator, Robinson cannot risk possible attack by a neighbor dog, spooked by blowing trash, or fed inappropriate snacks by nearby residents.

The Urban County Council, in response to the lawsuit, immediately imposed a moratorium on 10-acre lot divisions in areas outside the USB. While negotiating an out-of-court settlement, the County agreed to use some of its Tobacco Master Settlement Agreement money and establish a Purchase of Development Rights (PDR) program. Additional requirements included expanding the minimum lot size in rural areas outside the USB to be 40-acres, up from the 10-acre minimum that had been in place since the mid-1960s. Robinson also pushed for the development of a plan to control land use in the rural areas. The County, through adoption of Ordinance No. 4-200, formed the Rural Land Management Board (RLMB) and appropriated $1,250,000 for the PDR program. The 13-member RLMB board is empowered to “review applications from rural landowners who want to sell conservation easements on their property, to purchase conservation easements in eligible land, and to perform other related duties” (LFUCG,
1999). The RLMB manages the PDR program and oversees its Rural Land Management Plan, which protects rural lands from urban encroachment.

As an aside, Robinson was appointed to the Urban County Planning Commission in 1998, and served as its chair from 2004 through 2006. Robinson still is active with the Fayette Alliance, the RLMB and raising future Kentucky Derby race contenders.

c. World Equestrian Games and a Sprawl-Free Equine Landscape

In 2007, then-Governor Ernie Fletcher announced that Lexington and Fayette County had been selected as the site for the 2010 Fédération Equestre Internationale (FEI) World Equestrian Games (WEG), an Olympics-like series of events for equestrian athletes. It is held every four years, half way between each summer Olympic games and spans 17 days. This was the first time in the 20-year history that the WEG was held in the United States. Athletes from 57 countries were represented, and equine athletes came from around the world to acclimate to the Kentucky temperatures.

The site for the WEG was the Kentucky Horse Park in rural northern Fayette County where the bucolic and undisturbed nature of the rural horse farm landscape was enjoyed by nearly 500,000 visitors from across the world. This event had a $201.5 million impact on the Bluegrass region (Lexington Herald-Leader, 2011).

The decision to select Lexington as the 2010 site was made among board members of the FEI. The city was among a list of other possible host cities including Rome, The Hague, Stockholm and Aachen, Germany. The selection criteria were never made public. However, it is understood that Lexington would not have been selected to
host this event if its rural landscape were not intact, and it did not have the Kentucky Horse Park as a stage.

Lexington's hosting of the WEG underscored the need to preserve the rural landscape around Fayette County. It also reminded the public and elected leaders about the global significance of the Fayette County thoroughbred landscape and its role as Lexington's global brand, and the need to protect it from being despoiled.

d. The Anti-Growth Machine

Contrary to the growth machine theory, Lexington elites -- the horse farm community -- are concerned with land preservation in order to protect and enhance their fiscal investments. In contrast to Marion County, the Lexington horse farming community is part of the elites who could be described as the anti-growth machine. The horse farming community in Lexington is politically active and engaged in the planning process and land development decisions through the Fayette Alliance. Key members of the horse farming community were also responsible for increasing the minimum rural lot size, outside the USB of Fayette County, from 10 acres to 40 acres. Those same stakeholders helped formulate a Rural Land Management Plan, and lobbied for and helped write the PDR program, which purchases development rights and conservation easements on the county’s prime agricultural soils. The collective actions of the Lexington horse farming community were intended to prevent urban-style development from occurring near their farms, and threatening their investments. They want urban development to remain inside the urban area so they may continue farming without the threat of incompatible land uses. This enhances the value of their farms, and enhances
the marketability of their land to prospective clients who wish to breed and board their thoroughbreds there.

Contrary to conventional ideas about the actors involved in the growth machine, Lexington’s elites are actively engaged to ensure that growth happens away from their land, recognizing that their economic prosperity is enhanced if their land assets are left untouched. The continued value and viability of their farms rests on securing the long term future of agriculture in the surrounding landscape. Their emphasis is on the use value of their rural farmland, not the exchange value. This coalition has also shifted attention away from rural lands into a pro-growth alliance to enhance infill development within the USB.\(^4\)

This non-encroachment ideal is best achieved with the assistance of government, either through land use planning tools or establishment of the PDR program. And as market forces are unlikely to trump the value of a thoroughbred farm, a growth management program enforced by the government enhances the security of an investment, especially when it is a paddock full of multi-million dollar thoroughbreds.

**G. Historical Contingencies**

Lexington and Ocala evolved over different time periods and historical contingencies factor into the existing political culture at each site. Historical contingency is a biological evolution term that suggests certain life forms assumed particular evolutionary paths based on historical events that are often random. In other words, existing conditions are based on fragile, and often unpredictable actions that helped to

shape today’s outcomes. Certain historical events helped shape each of these communities’ land development patterns, political culture, and growth control options (Arnold, 2013).

Lexington was established early on as a thoroughbred center, and as time passed, that specialization sharpened as more equine related persons and establishments grew in association with the thoroughbred racing industry. And Lexington’s thoroughbred industry had political traction in advance of the suburbanization that most U.S. cities experienced in the 1970s. Lexington began to experience growth pressures at time before the pro-development growth machinery had a chance to fully emerge and mobilize and before many of the horse farms were lost to a new form of development called sprawl. Ocala, on the other hand, began its horse industry much later than Lexington. Suburbanization pressures and the Florida pro-urban development growth machine gained traction about the same time that the thoroughbred industry was maturing and flourishing in Ocala. Ocala’s emergence occurred after the suburban sprawl development model had become the national trend. Through time, developers had become powerful in Florida and population pressures to build new housing trumped growth controls.

This may suggest that it is already too late for communities without growth control mechanisms to consider adopting them. This may not be the case. Marion County still has considerable volumes of land that are worth managing against sprawl. However, there is little initiative within the elected officials to adopt such regulatory tools. It will take external forces with political capital, like the Fayette Alliance, to push for growth control. Water availability in Florida may provide that pressure; as long term water resources planning reaches a crisis stage in Florida, pro-growth control advocates may be
able to use regime politics to “piggy back” on the momentum of this initiative, and develop a coalition (like the Fayette Alliance) with other growth control proponents.

H. Summary

This chapter explored the differences in political culture at each location. It was found that Lexingtonians have higher average educational attainment levels, and higher average annual salaries as compared to Marion County residents, suggesting that Fayette Countians are more post-materialistic than their counterparts in Florida per Inglehart (1997). This may explain the more progressive land use policies in place in Fayette County, such as the UGB and 40-acre minimum lot size.

The focus group results suggest that in Marion County, land developers are the elites and are very much entrenched in the growth machine there. This seems to be driven by the retirees who live there, who, according to focus group participants, tend toward smaller government. As such, one would expect the elected leadership to be laissez faire in terms of land development, with a strong belief in the role of the market in deciding land development activities.

By contrast, the growth machine in Fayette County includes the Fayette Alliance and members of the horse community. The Fayette Alliance is an example of regime politics as it is a coalition made of downtown developers, neighborhood association presidents, and general and equine farmers. And because the thoroughbred industry has significant length of tenure in central Kentucky, and many of the farms include land that has been a part of the Kentucky blueblood tradition, the needs and desires of those large landholders – who happen to be horse farmers – are incorporated into the planning model.
and government decisions. And the horse farming community, although part of the elites
and growth machine, tends to be more anti-growth in order to protect their investments
and direct incompatible land uses away from their farms, land and horse interests.
CHAPTER 7
SUMMARY AND CONCLUSIONS

A. Summary and Applicability

This dissertation evaluates the effectiveness of two different growth management programs in the context of a very expensive agricultural land use that is hypersensitive to incompatible land uses and encroachment from sprawl. The growth management program in effect in Marion County, Florida was implemented by the state in 1985 and executed by local governments with strong state oversight and monitoring. In Kentucky, Lexington's Urban Services Boundary was implemented in the late 1950s to accommodate and economize long term wastewater demands; however, the lack of sewer service provision outside of this boundary proved effective in minimizing incompatible land uses in the agricultural landscape. The ineffectiveness of the growth management programs was measured through quantification of sprawl, as by definition, it violates the rural/urban separation. After determining the Urban Services Boundary more effective, the research explored factors which created the political culture for that government to have enforced the growth management program so effectively through a 40-year period of population growth and suburbanization.

The locally-based growth management program – the Urban Services Boundary -- was more effective in protecting the thoroughbred industry, which is a $2.3 billion industry that employs 194,000 persons across the state. However, understanding why
that Urban Services Boundary was implemented and rigorously enforced is a key research question.

Elazar’s (1984) analysis of political culture around the United States suggested that the dominant perspective in Lexington and Ocala would be traditionalistic and individualistic; that is, there would be a very strong private property ethic at both locations, and also a propensity to support existing power structures and large landowners. Inglehart (1997) found that progressive forms of governance emanate from communities that have satisfied their basic needs for food, material wealth and possessions, and are able to focus on non-tangible issues like quality of life and environmental preservation. These post-materialist governments would be more likely to have progressive land use planning programs that aggressively prevent sprawl.

Lexington is, in fact, different from Ocala in terms of educational attainment and income. Lexingtonians have higher average levels of education and tend to make more money than the residents of Ocala. This supports the research hypothesis that Lexington would manage sprawl better than Marion County.

However, the longevity and tenure of the thoroughbred industry also plays into political culture. As Lexington has had centuries of history with the thoroughbred, key players from that industry have become influential in land use management issues. Consistent with the growth machine theory (Logan and Molotch, 1987), the Marion County scenario involved land developers and homebuilders as key participants in the sprawling development that has faced the county, as well as the rest of the state of Florida. However, in Lexington, growth machine elites include large landowners who
own thoroughbred farms; some are among the world’s wealthiest, which would suggest their support in promoting growth and sprawling land development. However, those elites who would ordinarily support growth and development are opposed to growth outside of the urban area; their political strength and savvy have strengthened the effectiveness of the Urban Services Boundary. They also helped establish larger minimum lot sizes in the rural area, as well as a Purchase of Development Rights program.

Marion County, Florida, on the other hand, has had a shorter history with the thoroughbred industry. And as Florida’s economy has been built on an unsustainable model of unbridled growth and tourism, Marion County has become defenseless to the ethic of continued land development at all costs. The thoroughbred industry has never had the concentration in Ocala that it has in Lexington, but other equine interests including the Paso Fino and warmblood, have established themselves in Marion County. Show horse enthusiasts have also relocated to Marion County and many homes are collocated on land that is also used as paddocks for horses. Agricultural land uses are more fragmented in Marion County, with greater diversity of equine breeds and a lack of cohesion among horse enthusiasts. As such, there has been no collective action among equine operators to lobby government for more progressive land use planning policies.

**B. Policy Recommendations**

In the contexts studied, this research suggests that locally-based growth management programs are more effective than top-down programs, likely due to buy-in from the populace. Urban growth boundaries are effective if rigorously enforced and
supported by larger minimum lot sizes in rural areas, conservation easement acquisition programs and long term plans for management of rural areas. The coalition of stakeholders in Fayette County, which included equine operators, downtown developers and neighborhood association representatives, included members of the elites. And their goal was aligned with minimizing sprawl in the rural area, and concentrating development inside urban areas.

Sprawl does not know political boundaries; it is a spatial phenomenon that crosses county lines. However, the thoroughbred industry is linked to the physical geography of the landscape. It is essential that there must be regional cooperation and targeted approaches to minimizing encroachment onto the agricultural landscape, especially given the fiscal difficulties and economic uncertainties facing the thoroughbred industry. There are many other jurisdictions, including other countries around the globe, which also have prime agricultural soils and calcium- and phosphorus-rich grasses. Those places would love to lure the thoroughbred industry away from the Horse Capitals of Ocala and Lexington. Unless the thoroughbred industry is provided adequate protection against the threat of land use incompatibilities, the industry could relocate elsewhere. In fact, it may be as easy as relocating a stallion or two away from a thoroughbred center to a distant location; breeding operations will relocate there, as will the broodmares and all the ancillary services that help raise healthy yearlings that are auctioned off. In a globalized world and a highly globalized thoroughbred industry, this threat is real. Regional cooperation to protect the industry must occur to maintain its integrity. Governments must conduct regional land use planning.
This research quantified sprawl using several different methodologies. Defining the density of street networks proved most efficient. This method is not complex and could be appropriate to other jurisdictions through use of GIS. Understanding the spatial extent of development should influence a locality’s revenues and expenses. Concentrated and compact development has inherent efficiencies.

This dissertation focused on two centers of highly specialized agricultural production; it could be applied to other “boutique” agricultural products, such as vineyards and wine production. It could also be used to evaluate other Horse Capitals of the World to surmise the long term viability of this land use in a globalizing world.

C. Future Research

This research asked answered several questions, but also created new sets of questions that should be explored in future research. First, there are many different models of growth management. It would be useful to study other models to ascertain the differences and effectiveness of each in managing sprawled development. Second, only two centers of thoroughbred operations were evaluated. Others, including a concentration near Saratoga Springs, NY, New Orleans, LA, and Los Angeles, CA should be reviewed to determine the long term suitability of the equine industry there. Third, this research found that progressive land use planning programs are associated with higher levels of education and income. A comparative analysis with other similar places with an educated and wealthy populace would be appropriate.
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APPENDIX

IRB Approval: Granted 8/3/2011 by the University of Kentucky Office of Research Integrity and accepted by the University of Louisville

UK

KENTUCKY

MEMO: Lynn Phillips,
Geography
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0027
PI phone #: (859)257-4140

FROM: Institutional Review Board
c/o Office of Research Integrity

SUBJECT: Exemption Certification for Protocol No. 11-0590-X4B

DATE: August 3, 2011

On August 1, 2011, it was determined that your project entitled, Land Use Controls, Equine Landscapes and the Role of Political Culture in Growth Management, meets federal criteria to qualify as an exempt study.

Because the study has been certified as exempt, you will not be required to complete continuation or final review reports. However, it is your responsibility to notify the IRB prior to making any changes to the study. Please note that changes made to an exempt protocol may disqualify it from exempt status and may require an expedited or full review.

The Office of Research Integrity will hold your exemption application for six years. Before the end of the sixth year, you will be notified that your file will be closed and the application destroyed. If your project is still ongoing, you will need to contact the Office of Research Integrity upon receipt of that letter and follow the instructions for completing a new exemption application. It is, therefore, important that you keep your address current with the Office of Research Integrity.

For information describing investigator responsibilities after obtaining IRB approval, download and read the document "PI Guidance to Responsibilities, Qualifications, Records and Documentation of Human Subjects Research" from the Office of Research Integrity's Guidance and Policy Documents web page [http://www.research.uky.edu/ori/human/ri/guidance.html]. Additional information regarding IRB review, federal regulations, and institutional policies may be found through ORI's web site [http://www.research.uky.edu/ori]. If you have questions, need additional information, or would like a paper copy of the above mentioned document, contact the Office of Research Integrity at (859) 257-9428.
The hijacking of Marion County's comp plan

Some proposed amendments blatantly inconsistent with goals of comprehensive land-use plan

By Peter M. Bowers
Special to the Star-Banner

Published: Sunday, October 17, 2010 at 6:30 a.m.

Last Modified: Saturday, October 16, 2010 at 12:55 p.m.

Marion County is in the final phases of a 10-year review of its comprehensive land-use plan, which is both the road map and the rules of the road for the development of the county for the next 25 years. The Florida Department of Community Affairs oversees the local comp plan. Its job is to see to it that the goals, objectives, policies and amendments of a comp plan are consistent with Florida statutes and internally consistent, that they compliment each other or at least don't conflict.

As part of this review process, an Evaluation and Appraisal Report (EAR) was done analyzing the current comp plan, identifying problems and offering solutions to those problems. On the whole, the EAR identified the key problems and offered reasonable solutions: two key areas being urban sprawl and economic development.

The county then rewrote its comp plan, officially known as the EAR-based amendments. The rewrite was finished at the beginning of August, approved unanimously by the County Commission and sent to the DCA for review.

But something happened along the way from the EAR to the transmittal to DCA. The special interests and their agents got the EAR-based amendments so twisted around that they barely resemble the original report. The heart of the redirection is in the general area of avoiding or weakening restrictions on where and when future urban growth should be promoted and the form(s) that this should take.

A needs analysis, an urban growth boundary and a set of goals provide the building blocks of the revised comp plan. The needs analysis calculates the projected growth in population, the supply of vacant housing lots and vacant commercial acreage that will be needed to accommodate this growth, and the amount of existing vacant lot and acreage supply available as well.

The urban growth boundary creates an area or areas appropriate for compact, contiguous development to meet the projected 10-year population demand.

The standard methodology for projecting growth in Florida is the BEBR Median Demand Methodology. But the county discovered that using it would effectively eliminate the need
for any new residential supply for the next 25 years. So it pursued a second methodology using building permits as the data point, with the aim of increasing the demand side and decreasing the supply side of the equation so that a "need" for new units would be created.

After what at best can be described as much data manipulation, the county "calculated" a 2035 demand for 81,752 residential units and an existing supply of 171,000 units. It adjusted the supply down to 106,000 units, including the addition of about 10,000 new units that were transmitted. But it also claimed that it will need an additional 19,500 units by 2035.

It remains to be seen if the DCA will find the county's building permit methodology professionally acceptable, which is the required standard.

The EAR also calculated a "need" for an additional 440 acres of commercial/industrial land over the next 25 years. But the transmittal added 4,381 acres, a 10-fold increase over the identified "need."

State statutes require two interim planning periods during any long-range planning horizon: one has to be at least a five-year look and the other at least a 10-year. But this would have made it impossible to create the "need" for new units — both residential and commercial — desired by the commissioners for 2015 much less 2010. As a result, the county conveniently ignored this requirement and only looked to the questionable cumulative 25-year demand and way beyond it in the case of commercial/industrial acreage.

Some of the goals of the comp plan are: prevent urban sprawl, promote infill and redevelopment, encourage and support energy efficient land use forms, and support and protect agricultural lands. But the policies and objectives in the EAR-based amendments often are inconsistent with these goals. Some amendments transmitted do just the opposite of the stated goals. The Irvine Regional Activity Center and the Interstate 75/County Road 326 Employment Activity Center are, in fact, poster children for promoting urban sprawl and over-allocating rural land to urban uses.

The clear winners in this game of "let's fudge the comp plan" are a few clients of my good friends, land use attorneys Jimmy Gooding III and Steven Gray, and land use changers like Kirk Boone, Scott Seaman and John Rudnianyn. These are just citizens lobbying county government to work in their individual interest. Everyone is entitled to do this.

But shame on the five county commissioners for making them winners at the expense of the rest of the residents of Marion County and allowing the county's transmitted EAR-based amendments to be twisted to serve the interests of a few instead of the interests of the many.

This week, the DCA is supposed to respond to the county's transmittal. Let's see if the it calls the county on its failure to implement the recommendations contained in the EAR, to use a professionally acceptable needs analysis methodology, to draw an urban growth boundary consistent with Florida law and to create an internally consistent comp plan.
Peter Bowers lives in northwest Marion County and is a member of the Northwest Coalition for Balanced Growth.

Do you know the I-75 interchange at CR 318? It's the one with the Petro Truck Stop and the always tasty and satisfying Iron Skillet buffet. That's Irvine.

Now imagine 900,000 sq. feet of office space, 100,000 sq. feet of retail space, a 200 room hotel, and 258 new residences mixed from apartments to town homes to single family, all shoe-horned into a 150 acre strip running from east of Jim's Barbecue on 318 south along the interstate, nearly halfway to the CR 316 bridge. The colored graphic above is an early version of the project at 450 acres, but it does reveal what this could become. The red and lavender color is the major portion of the 150 acres.

The centerpiece is a mammoth R & D office space that exploits a geographical position between Gainesville and Ocala. By the way, someone should point out that this is not Raleigh-Durham, NC, Dallas-Fort Worth, TX, or Tampa-St. Pete. It's Gainesville-Ocala, FL: two nice small cities with little in common besides I-75.

The centerpiece of the Irvine area presently is the Petro Truck Stop, perfectly suited to its location and a genuine destination for hungry truckers – and they know good food. The proposed complex is wholly inappropriate for Irvine.

For starters, the project is in the "Farmland Preservation Area" (see the blue blip in the map graphic). While the county staff found that the proposal was within allowed use variance for the Farmland Preservation Area, it raises the question, "What the hell? Really?" Using the CR 318 frontage for retail may make some sense as far as zoning, and less sense commercially, but dropping a whole new town into this site passes as "Farmland Preservation" use? C'mon.

Here are some valid points cited in opposition. The proposed project:

- expects to double the traffic flow, causing a wide range of problems,
- has no supporting infrastructure,
- impacts a fragile water system (see nearly dry Orange Lake)
• expands the county water utility inevitably into a whole new area,
• has no anchor client, and no sign of support or interest from UF,
• relocates jobs that will be primarily for non-residents,
• is totally contrary to the comprehensive plan,
• is inappropriate since other areas are development priorities,
• is simply a gambit to get a land use waiver, increasing property value,
• clearly constitutes "urban sprawl," and
• lacks commercial viability since a property on the southwest corner of the interchange was approved for a 200 room hotel years ago and it was never built; in fact, nothing has been built there in many years for that very reason.

Commissioners Amsden and Bryant did not believe that this was the right place for this project and didn't believe that the developer had adequately allowed for the project's impact. For instance, the project's planning never considered traffic flows within the interchange and the need for upgrades like traffic lights to manage the increased flow there. These commissioners believed the county would end up footing a major bill and coping with a range of headaches in a quiet, rural location that should simply be left alone. Further, lacking a client partner makes the venture too speculative.

On the other hand, Commissioners Zalak, McClain and Stone were giddy in their approval. It does not seem unreasonable to expect commissioners to be discerning, but being so devoted to the lie that 'any development is a good development' suggests their immaturity and gullibility despite years of experience, or else their duplicity in winking at a scam. That's how appallingly bad this is.

Zalak hoped for traffic congestion because it would mean people were going to their jobs. No, really; he actually said that. Urban crawl plus urban sprawl equals success. Or jobs. Regardless, Mr. Zalak apparently believes that a good Farmland Preservation Area is one that gets developed into something useful like urban sprawl.

By Knox Van Nagell  editorial, Lexington Herald Leader 9/26/2011
Farmland preservation makes area more attractive to workers and businesses
The Fayette Alliance, Kentucky Thoroughbred Association and Fayette County Farm Bureau would like to make three points:
First: For Lexington to become a great American city, we must balance a vibrant downtown, healthy, well-designed neighborhoods, affordable housing, farmland preservation and environmental initiatives with development of our resources to accommodate growth. In this time of recession and uncertainty, quality of life is our biggest calling card for economic development and job creation, as 70 percent of workers pick city first and job second in today's technology age.
Cities with the strongest economies have a defined "sense of self" and brand that can recruit and retain the best and the brightest. Manufacturing plants on our farms would jeopardize the value and integrity of our acclaimed Bluegrass brand that has proved essential to drawing everyone from doctors and young creatives to corporations to Lexington.
Second: Our rural area is the foundation of a $3 billion agricultural economy that is a pillar of international commerce and local economic activity. Because of this role, we strongly support the Purchase of Development Rights program and the Rural Land Management Plan that govern how to use and protect our precious farmland. The rural plan was adopted about 10 years ago, after a cross-section of our community — including leaders from the homebuilding, real estate, business, neighborhood, equine and...
agriculture sectors — met for two years to determine how best to manage and promote our irreplaceable Bluegrass farmland and its economic, natural and cultural resources. Their work led to our nationally acclaimed PDR program, the 40-acre minimum rule in the rural area, one of the largest National Historic Districts in the United States and countless other land-use initiatives.

Like Toyota and Lexmark, our equine and general agriculture industries are major economic drivers that, too, have a factory floor — our finite Bluegrass soils and farmland. Any sound business plan manages and leverages its facilities for purposes of economic growth; our farms are no different. Here are some key facts about what our farms mean to our local economy:

- Our Rural Services Area supports more than 21,000 local jobs, including farm laborers, suppliers, tour guides, lawyers, vets, animal science researchers and sales agents. Vet payroll alone contributes over $17 million a year to our local government.
- Keeneland and Fasig-Tipton are the largest Thoroughbred sales agencies in the world. Last year, they attracted investors from 49 countries and sold over a billion dollars of Thoroughbreds.
- The Thoroughbred industry has stabilized. The average and gross sales prices have increased 20 to 40 percent from previous years. While projected foal crops are down, Lexington remains the epicenter of an international industry. More Thoroughbreds are bred, foaled and raised in Kentucky than in all other states combined.
- Kentucky is also the largest beef-producing state east of the Mississippi. The Bluegrass Stockyards is the second-largest stockyard in the United States. Last year, the stockyards sold roughly $144 million in cattle at its Lexington facility and $350 million throughout its statewide network.
- With grocery prices, transportation costs and populations reaching record highs, farmers are growing more food to satisfy demand, with crop receipts totaling more than $14 million. Food could become an incredibly powerful industry soon with improved processing, distribution and marketing systems.
- Tourism is huge here. The 2010 Alltech-FEI World Equestrian Games had a $201 million statewide economic impact and jumpstarted a growing and documented sport-horse industry. Nearly 2 million tourists came last year to visit the Horse Park and Fayette County farms. Tourism generates $15 million in local tax receipts annually. The Horse Park is home to 35 national equine operations that contribute more than $260 million to our local economy.
- And the last point: Fayette County farms pay their way. They cost the city only 93 cents in police, fire and other services for every dollar of revenue they generate, unlike more intensive land uses. From an infrastructure standpoint, farmland is a key component to sustainable city planning.

We agree that our community should energetically pursue manufacturing and other job-creating opportunities, but that should be done on the 429 acres of land zoned for economic development, and the 12,000-plus acres of underutilized land inside the city.

In light of our $500 million water-quality problems, this approach will ensure that the infrastructure needed for factories and other manufacturing uses will be where our city can most efficiently and sustainably support them — inside the Urban Services Area. This growth boundary has served our community incredibly well since 1958 when it was established, and we should protect it.
Coalition Calls on Council to “Hold the Line” Against Expanding Development Boundary

MAY 15, 2012

STAFF

Lexington, KY - The Fayette Alliance today called on the Lexington Fayette Urban County Council to “hold the line” on expanding the city’s Urban Services Area and Rural Activity Centers.

The Council votes on Thursday on whether to adopt Goals and Objectives for the 2012 Comprehensive Plan adopted by the city Planning Commission last September. (Click here to read in full.)

In a letter to Vice Mayor Linda Gorton and Council members, Fayette Alliance Executive Director Knox van Nagell said, “As they stand now, the Goals & Objectives specify no expansion of the Urban Service Boundary or Rural Activity Centers into more farmland for development. This measure will preserve our precious Bluegrass landscape in Fayette County, while also encouraging innovative development on roughly 12,000 acres of under-used, vacant, and blighted land inside our current city limits.”

In a position statement released today, the Alliance, “a coalition of citizens dedicated to achieving sustainable growth in Lexington-Fayette County through land use advocacy, education, and promotion,” argues that Lexington-Fayette should be balanced, responsible and sustainable in its approach to growth and development.

The statement cites the costly EPA mandated cleanup of the city’s existing sewer systems, arguing against “biting off more than we can chew” by expanding the Urban Service Area and increasing the demand for storm and sanitary sewage capacity.
Originally projected at approximately $300 million, the cost of bringing the city into compliance with the Federal Clean Water Act is now officially estimated to exceed $500 million—"which does not account for an expansion of the Urban Services Area or Rural Activity Centers," the statement notes.

Plenty of raw land that could be developed for economic growth exists within the Urban Services Area, the statement said, citing data provided by a 2009 LFUCG Housing Market Study, 2009 as well as the city's Division of Planning, 2012.

“Overall, we have roughly 12,000 acres of vacant or underutilized land inside the Urban Services Area, which include:

- 50 million square feet of commercial space
- 100 million square feet of industrial/research space
- 1500 acres of VACANT employment sector land
- 429 acres of VACANT manufacturing land
- UK Coldstream Park: 335 acres of land, 112,000+ square feet of office space.

Moreover, we have over 8,000 acres of economic development land in the ‘BEAM’ region between Lexington and Louisville,” a reference to the Bluegrass Economic Advancement Movement launched jointly by Lexington Mayors Jim Gray and Greg Fischer.

The Alliance statement concludes, “Expanding the Urban Services Area and Rural Activity Centers at this time, defies reason. Such language in the Goals and Objectives opens up the entire rural area for development, driving market forces away from needed investment inside the city. Under this scenario, we all lose. We cannot solve our problems with the same thinking we used when we created them.”

Survey Data results: Included in a mailer dated November 8, 2012
The Matrix Group (www.TMGRESEARCH.com)
THE QUESTION
HOW DOES LEXINGTON GROW?

In March of this year, the Matrix Group (www.tmgresearch.com) conducted an objective and independent survey, gauging Lexingtonians' opinions on growth issues facing our community.

76% AGREE
Lexington can become the model for sustainable growth by creating a dynamic city that is balanced with, and connected to, our unique, productive Bluegrass farmland.

THE TOP 3 ISSUES FACING FAYETTE COUNTY

FAVORITE
OVER 12,000 ACRES OF VACANT & UNDERUTILIZED LAND ARE AVAILABLE INSIDE OUR GROWTH BOUNDARY

TOP PRIORITIES

$PRAWL IS EXPENSIVE
For every dollar of revenue it generates, it costs Lexington at least $3.50 in services over time.

REFERENCES

GROWING OUR CITY, PROMOTING OUR FARMS
CURRICULUM VITAE

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education
Dissertation: Land Use Controls, Equine Landscapes and the Role of Political Culture in Managing Sprawl Development. [committee: H. V. Savitch (chair), C. A. “Tony” Arnold, Sumei Zhang and Margath Walker]

employment
2010 to present. Lecturer, Department of Geography, University of Kentucky.
2009 to 2010. Part-Time Instructor, Department of Geography, University of Kentucky.
2007 to 2009. Lecturer, Department of Geography, University of Kentucky.
2006 to 2007. Visiting Assistant Professor, Department of Geography, University of Kentucky.
2001 to 2006. Adjunct Part-Time Instructor, Department of Geography, University of Kentucky.
2002 to 2004. Adjunct Part-Time Instructor, Lexington Community College (Bluegrass Community and Technical College), Lexington, Kentucky.
1982 to 1983. Graduate Teaching Assistant and Research Assistant, Department of Geography and Planning, East Carolina University.

current affiliations
Member, Lexington-Fayette Urban County Planning Commission (since Feb 03)
Member, Kentucky Chapter of the American Planning Association
Member, American Institute of Certified Planners (AICP # 021507)
Member, Southeastern Division of the Association of American Geographers.

grants and awards
2011. College of Arts and Sciences Summer Research Grant, University of Kentucky. $2,000.
2011. The German Academic Exchange Service (Deutscher Akademischer Austausch Dienst), travel scholarships for ten students and two faculty to visit Germany during Spring Break 2011, University of Kentucky-University of Louisville joint grant. €5000.
2009. Outstanding Geography Instructor of the Year, Department of Geography, University of Kentucky.
2008. Outstanding Geography Instructor of the Year, Department of Geography, University of Kentucky.
2004. Outstanding Geography Instructor of the Year, Department of Geography, University of Kentucky.

Publication, refereed articles
Estuarine Shoreline Buffer Zone Establishment. Coastal Water Resources. American Water
Establishment. Coastal Water Resources. American Water Resources Association,
Bethesda, MD. W. Lyke and T. Hobin, editors. P. 344-35

service
2011 to 2012. External Relations Committee Member, Department of Geography,
University of Kentucky.
2011. Spring Break Field Course in Germany, Department of Geography, University of
Kentucky and School of Urban and Public Affairs, University of Louisville.
2006 to 2012. Undergraduate Committee Member, Department of Geography, University of
Kentucky.
2009 to 2012. Semple Day Committee, Department of Geography, University of Kentucky.
2009 to 2010. Service Learning Committee, University of Kentucky.
2010. Environmental Sciences Major Program Director Search Committee. Member,
College of Arts and Sciences, University of Kentucky.
2009 to 2012. Faculty Teaching Assistant Mentoring Program, Department of Geography,
University of Kentucky.

teaching and course development
University of Kentucky.
Lands and People of the Non-Western World (GEO160)
Environmental Management and Policy (GEO235)
Introduction to Urban Planning (GEO285)
Field Course in Germany (GEO406)
Urban Planning and Sustainability(GEO485G)

Lexington Community College.
Lands and People of the Non-Western World (GEO160)
World Regional Geography (GEO152)

advising and mentoring
2006 to present. Internship Coordinator, Department of Geography, University of
Kentucky.
2010 to present. Faculty Mentor, Sigma Chapter of Gamma Theta Upsilon (international
geography honor society).
2012. Faculty Mentor to Elizabeth Rebmann, 2012 winner of the Sullivan Award for the
University of Kentucky.
Senior in Geography, University of Kentucky.
2009 to 2010. Juror, Capstone Project for Gaines Center for the Humanities Scholar Raven Newberry, Junior in Geography, University of Kentucky.