

An Exploration of Policy Options to Mitigate the Negative Effects of  
Sprawling Development: A Case Study of San Marcos, TX

by

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## **Abstract**

The purpose of this research is three-fold. First, this research explores policy strategies that can be used to mitigate the negative effects of sprawling development. Second, this research assesses the current policy framework with regard to mitigating the negative effects of sprawl in San Marcos, TX. Third, the results of the assessment are used to make policy recommendations to mitigate the effects of sprawl in San Marcos, TX.

A review of key literature on policy options to mitigate sprawling development was conducted. This literature review helped define the causes and effects of sprawling development in addition to providing a basis for the development of a conceptual framework, which utilized working hypotheses for inquiry into data sources regarding sprawl in San Marcos, TX.

A case study of the City of San Marcos was conducted using document analysis, structured interviews, and direct observation to explore policies that either supported or failed to support the working hypotheses. This research found that the City of San Marcos used only some of the policies identified in the conceptual framework. It should be noted, however, only some of the policies listed in the conceptual framework applied to the policies of the City of San Marcos, since this study focused specifically on mitigating the negative effects of sprawl. At the same time, some San Marcos policies appeared to perform similar functions and can be used interchangeably.

## **About the Author**

Cameron Freberg grew up in Needville, TX, a small town outside of Houston. He graduated from Texas State University in the spring of 2008 with a dual major in Communication Studies and Mass Communications with a focus in advertising. During his undergraduate career, Cameron was a member of the Student Association of Campus Activities. He is currently pursuing his Master's degree in Public Administration. Throughout college, he has worked for Texas State University-Residence Life. Cameron has also completed an internship with the Texas Department of Agriculture in the spring of 2008, where he worked in the marketing division.

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## Chapter 1- Introduction

Sprawling development can be detrimental to the character and identity of a city in addition to having negative effects on the social, economic, and environmental assets it provides. Sprawl refers to the expansive spatial growth of low-density development outside of core centers and city boundaries. Definitions for sprawl range greatly and lack consensus in the literature. Burchell et al. (1998) identify three key elements of sprawling development: “a significant consumption of exurban agricultural and other frail land” that is “commonly in areas with limited infrastructure or public services”, “development that is at a low-relative density that may be too costly to maintain,” and “a growth pattern that expands by leapfrogging outward from the solidly built up core in a metropolitan area”(12-13).

The Texas hill country possesses many unique characteristics that could be threatened if developmental sprawl enters certain areas. San Marcos, in particular, could be threatened because the city is located just between the two large metropolitan areas of Austin and San Antonio<sup>1</sup>. The city of San Marcos has experienced considerable growth in the past decade. According to the United States Census Bureau, the population for the city has grown from 34,733 people in 2000 to 44,849 in 2010. The number of housing units has also grown to 18,149, nearly a thirty percent increase from 2000. It is essential to accommodate growth appropriately so that it does not result in sprawling development. Sprawl can result in negative effects on the social, economical, and environmental aspects of an area.

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<sup>1</sup> For additional information on how Austin and San Antonio use policies for managing growth, see Texas State University Applied Research Projects Lewis (2007) and Schacherl (2008)

A study done by Smart Growth America revealed that Hays County had a relatively high degree of sprawl. The sprawl index formulated in this study used twenty-two variables to characterize four factors of sprawl in eighty-three large metropolitan areas in the United States<sup>2</sup>. The sprawl scores for each metropolitan area show (1) how each area spreads out housing, (2) how segregated residencies are from other places, (3) the strength of the city's center of activity, and (4) the connectivity of street networks (McCann and Ewing, 2003, 9). Lower scores indicate a higher degree of sprawl. Hays County received a score of 88.93 while the mean score was 100 (McCann and Ewing, 2003, 39). It is essential to control development in order to maintain the integrity of the unique character of San Marcos and fulfill the goals and desires of the community.

The San Marcos Community Outreach Survey, conducted between the months of November and December of 2006, explored of the attitudes of local citizens toward the city's services. By identifying the interests and needs of the public, the results of these kinds of surveys can be used to aid city officials in making decisions that are democratic in nature and responsive to the concerns of the community (Community Outreach Survey 2006). Managing growth was identified in the top five priorities as determined by the respondents of the survey.

The downtown master plan for San Marcos also reveals the community's desire to control sprawling development and preserve the unique character of the city. When the 2008 master plan was formulated, the citizens of San Marcos where asked what the city should be like in ten years. The citizens expressed that San

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<sup>2</sup> For more information on sprawl in Texas, see Jeffers (2003)



Marcos should be a “haven from urban sprawl” (San Marcos Downtown Master Plan, 18).

There are many available policy instruments that can reduce and manage growth to mitigate the negative consequences associated with sprawling development. Through the use of these policy instruments, it is possible to meet the goals and desires of the citizens and officials of the city of San Marcos. Williams (2000) explained the importance of local involvement in growth management decisions as opposed to higher levels of government. “Opponents (of higher levels of government making land-use decisions) contend that state involvement in planning constitutes an unwarranted degree of interference in the local land use decision making process” (21).

It is important that local governments and communities are involved in land-use and growth management decisions to combat policies from higher levels of government that may promote sprawling development. This study looks at policies that local governments can enact to mitigate the negative effects of sprawling development.

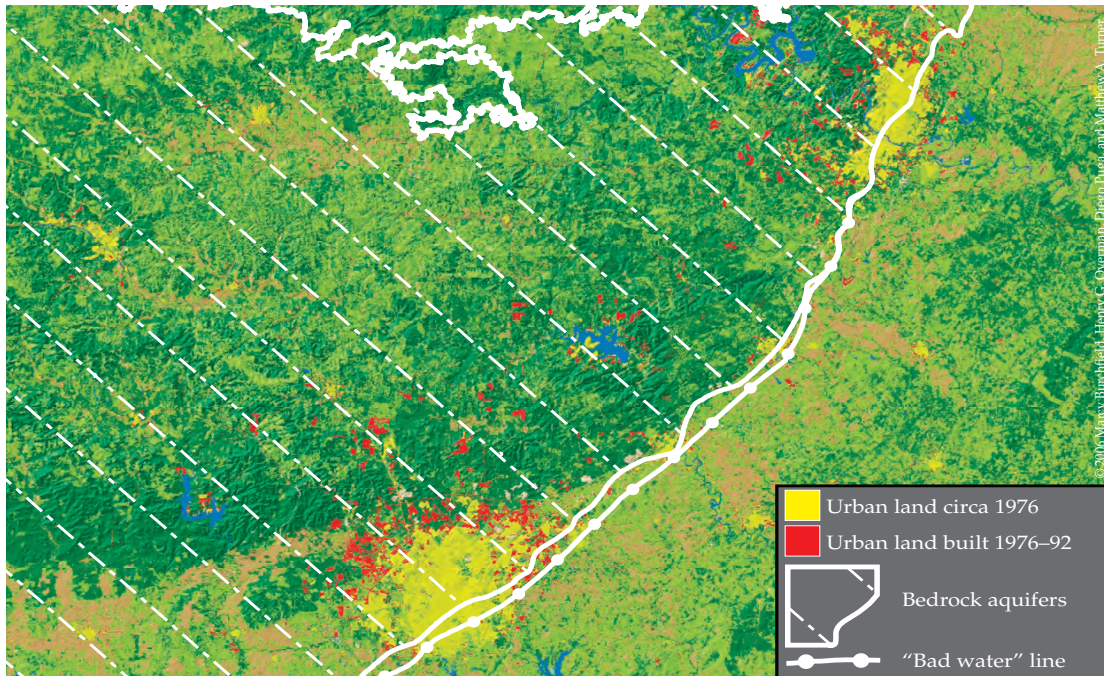
## **Research Purpose Statement**

The purpose of this research is three-fold. First, this research explores policy strategies that can be used to mitigate the negative effects of sprawling development. Second, this research assesses the current policy framework with regard to mitigating the negative effects of sprawl in San Marcos, TX. Third, the results of the assessment are used to make policy recommendations to mitigate the effects of sprawl in San Marcos, TX.

The strategic use of policies can help mitigate some of the negative effects of sprawl and direct growth in appropriate areas. Due to San Marcos' proximity to major urban areas, this town presents itself as an ideal subject for a case study of policies related to negative effects of sprawling development.

This study focuses primarily on the city level governance and the ability of cities to mitigate the negative effects of sprawling development, but also includes some aspects of county and regional governance. This study also examines how San Marcos, TX could mitigate the negative effects of sprawling development through policy implementation.

San Marcos is an appropriate case to analyze for sprawling development due to its proximity to two major metropolitan areas, Austin and San Antonio. There has been rapid development both north and south of San Marcos along the i-35 corridor. Figure 1.1 gives an overhead view of sprawl in this area. It should be noted that while all of the policy strategies examined might be used to mitigate the negative impacts of sprawling development, different policies accomplish the same goal and may be used interchangeably.



**Figure 1.1- Overhead Picture of Sprawling Development from Austin and San Antonio**  
 Source: Burchfield et al., “Causes of Sprawl: A Portrait From Space”

## Chapter Summaries

Chapter 2 discusses the causes and effects of sprawling development. Chapter 3 discusses the setting of this research in San Marcos, TX. The demographics of the city as well as growth trends and local government are also discussed. Chapter 4 is the literature review on policy instruments that can be used to mitigate the negative effects of sprawling development. The conceptual framework is also developed in this chapter. Chapter 5 presents the methodology of this research project and discusses the case study method as well as data collection. Chapter 6 presents the results of this study and analyzes the findings. Chapter 7 provides conclusions and recommendations for improving the policy framework to mitigate the negative effects of sprawling development in San Marcos, TX. This chapter also provides recommendations for future research

## **Chapter 2 – Sprawl Defined**

### **Chapter Purpose**

This chapter begins by defining sprawling development, then moves to a discussion of the general characteristics of sprawl, and then examines some of the causes and effects of sprawl.

### **Sprawl Defined**

As mentioned earlier, sprawl refers to the expansive spatial growth of low-density development outside of core centers and city boundaries. Definitions for sprawl range greatly and lack consensus in the literature. Burchell et al. (1998) identified three key elements of sprawling development: (1) “a significant consumption of exurban agricultural and other frail land,” which is “commonly in areas with limited infrastructure or public services,” (2) “development that is at a low-relative density that may be too costly to maintain,” and (3) “a growth pattern that expands by leapfrogging outward from the solidly built up core in a metropolitan area” (12-13).

According to Williams (2000, 2), our land-use and urban development patterns are merely extensions of trends set in motion over the previous 200 years from the days of land speculation. We have continued these trends in order to find larger parcels of land at a lower density. Burchell et al. (2004, 15) asserted that the biggest push for sprawling development came after World War II by the federal and state governments in order to promote the growth of the suburbs. With the baby

boom generation emerging and a higher demand for single-family housing, tax breaks for housing and highway extensions have allowed sprawling development to emerge over the past fifty years. Several factors, including the increased popularity of the automobile and a preference for suburban living, have dictated the housing patterns over the past fifty years. Many of these development trends ignored the needs of existing areas, and local authorities had little or no control over directing and managing growth. Burchell et al. (2000) noted, “in 1940, only 15% of the population resided in suburbs, but sixty years later around 60% of the population is classified as suburban”(16).<sup>3</sup>

Harvey and Clark (1965) identify three forms of sprawling development: low-density continuous development, ribbon development, and leapfrog development. Low-density continuous development is characterized by an extensive use of land, as opposed to a more appropriate basis on value of a higher density area. Ribbon development refers to areas of development, which are “compact within themselves, but extend axially and leave spaces undeveloped.” Leapfrog development, the third type of sprawl, is “the settlement of discontinuous” patches of land. This form requires the greatest capital expenditures to provide services and is the most heavily criticized among experts (2).

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<sup>3</sup> Suburban is defined as “metropolitan areas outside of central cities.” (Burchell et al. 2000, 16)

## **Factors Contributing to Sprawl**

Before examining the impacts and policy alternatives to mitigate those impacts, factors that encourage sprawling development are reviewed. The problem of sprawling development is primarily associated with two key factors: residential preference and market failures.

### **Residential Preference**

Much of the research-based literature on residential preference suggests that individuals prefer low-density suburban living to high-density areas. A 1988 survey on residential preference showed that “70% of Americans preferred a rural or small town setting within thirty miles or more of a city over 50,000 in population” (Heimlich & Anderson, 2001, 17).

There are several push factors, which drive people to leave cities, and pull factors, which drive people to lower density areas, contributing to sprawling development in rural areas. Push factors include the social discomfort individuals feel when surrounded by people unlike themselves, poor environmental quality, and congestion. Pull factors that draw people to the countryside include greater privacy, better environmental quality, lower prices for land and housing, and an upgrade in social status through the ability to have a larger home or more land (Miller, 2004, 258). Heimlich and Anderson (2001) contended, “low density development in rural areas has allowed many people, including those who cannot afford city real-estate to buy single-family homes because of cheaper land costs” (17).

Recent trends have shown a substantial amount of growth at the metropolitan edge, where rural and suburban areas connect. Nearly 75% of all new residential development was built at or around the urban edge during the mid 1990s, with a majority being houses occupying one acre or more of land (ICMA, 2010, 4). A continuation of this form of development is sure to cause local governments at these fringes to face infrastructure challenges.

### **Market Failures**

The greatest amount of land that can accommodate low-density housing lies outside of existing urban areas. While cheaper land for developers and potential residents is available, there are market failures that lead to the excessive spatial spillover of urban residents into rural areas. Bator (1958) defined market failures as, “the failure of a more or less idealized system of price-market institutions to sustain desirable activities or to stop undesirable activities”(351). The invisible hand that allocates resources in a socially desirable manner fails to do so in the presence of a market failure. The effects of a market failure regarding growth result in growth exceeding socially desirable levels (Brueckner, 2001, 66).

Brueckner (2000) described three reasons for market failure that lead to excessive growth patterns. The first is “failure to account for the social value of open space.” The problem with factoring this value is that open-space benefits are often intangible and cannot be appropriately assessed. Second, markets often fail to account for “the social costs of freeway congestion.” The out of pocket expenses from a longer commute falls on the consumer while extra traffic congestion is levied

on others, leaving the commuter to discount these costs. Third, and most important for outlying areas, markets fail “to fully account for the infrastructure costs of new development”(164). New housing developments require additional infrastructure such as roads, water and sewers to accommodate growth. Homeowners pay for these costs through property taxes; unfortunately, these costs are borne by new homeowners as well as current residents, which allows buyers to invest more in housing. In turn, developers are able to pay higher prices for agricultural land, which results in more land conversion (166). These externalities fail to be accounted for by the market and, therefore, are not associated with a dollar value for the benefits that they provide. The failure of the invisible hand of the market to acknowledge these open-space benefits and provide proper guidance on where and how development should form can lead to too much land conversion in undesirable areas (164). Therefore, it is imperative that government intervention remedies the loss of these benefits through policy implementation.

## **Effects of Sprawl**

### **Environmental Costs of Sprawl**

Sprawling development consumes land. This land use is part of the reason farmland, open space, and natural areas seem to be disappearing quickly, especially in close proximity to urban areas. Burchell et al. (2005) predicted that from 2000 to 2025 a total of “18.8 million acres of farmland and other open space will be lost to development” under traditional sprawling development patterns (38).



## Farmland and Open Space

Sprawling development can have many negative effects on the environmental quality and function of land. Sprawl consumes a much larger portion of land than compact development, leading to a significant amount of conversion from open space and farmland, which provides both social and environmental benefits to urbanized land. Burchell et al. (2005) noted, “from 1982-1997, the United States population grew by 17%, while urbanized land grew by 47%”(38).

The value of farmland and open space must be considered in the costs of its conversion to more urban uses.<sup>4</sup> Many of the spaces being converted as a result of sprawling development are areas that provide habitats for wildlife and “perform functions such as pollination and decomposition.” Open spaces also serve natural environmental functions such as filtering pollutants from air and water and act as a moderator for the absorption of rain and flood prevention (Burchell et al., 2005, 40).

In addition, sprawl can “displace wetlands that are valuable both as habitat and in filtering and storing surface water” (Miller 2004, 260). Sprawling development segregates much of this open space and expands the demand for water, thus, reducing the amount of land available for agriculture purposes. The environmental and social benefits of agriculture are public goods. Burchell et al. (2005) defined public goods as, “goods that everyone wants, but few are willing to produce because the market does not provide a compensatory mechanism for producers”(42). When agricultural or open space land is converted to developed or urbanized uses, public benefits are lost and not easily replaced.

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<sup>4</sup> The economic value of farmlands and open spaces can be calculated in terms of how much it would cost to produce these public goods artificially (Burchell 2005, 43).

## **Infrastructure Costs**

There is a general consensus in the literature<sup>5</sup> that low-density sprawling development costs more than compact development. Higher land usage, residential construction costs, and road and utility costs were all much greater in a pattern of scattered, low-density development. A study by Clarion Associates evaluating the costs of sprawl that took place in New Jersey, Michigan, South Carolina, Kentucky, and Delaware also found that low-density development typically produced higher public capital and infrastructure operating costs. Overall, the studies showed that capital and operating costs for public infrastructure ranged from 5% to 63% less with planned development as opposed to sprawl (Heimlich & Anderson 2001, 27).

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<sup>5</sup> See Burchell et al. (2005); Harvey and Clark (1965); Heimlich and Anderson (2004); Porter (1997).

## Chapter 3: The Setting in San Marcos, TX

San Marcos is located in south-central Texas along the Interstate 35 corridor 26 miles south of Austin and 45 miles north of San Antonio. Seventy percent of the population of Texas and three of the largest cities in the United States (Houston, Dallas, and San Antonio) are located within 200 miles of San Marcos.



Figure 3.1: San Marcos {Map}, 1881, Courtesy of the Texas General Land Office

### The Identity of San Marcos

San Marcos has a unique identity that stems from the many great assets that the city has to offer. The City of San Marcos is located at the edge of the Texas Hill Country, still retaining the identity of the “gateway to the Hill Country.” The historic downtown of San Marcos possesses many attributes that contribute the identity of

the city<sup>6</sup>. Much of the housing and buildings located near downtown San Marcos provide a unique historic presence and character to the city. Historic preservation accompanied by the architectural character of downtown helps to maintain the small-town community feeling in the city and is host to many businesses that are filled with activity.

San Marcos also has a unique environmental character and is the source for the San Marcos River, rising from the San Marcos Springs. The river is host to several activities to the patrons of San Marcos such as fishing, kayaking, scuba diving, and tubing. The San Marcos River and springs also contain a wide variety of species. Some of the endangered species located in the San Marcos River are the Fountain Darter, the San Marcos Salamander, and the San Marcos Gambusia. San Marcos is also part of the contributing and recharge zones for the Edwards Aquifer.

**Figure 3.2-San Marcos River <sup>7</sup>**



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<sup>6</sup>For more on the San Marcos downtown and the Main Street Program, see Schneider-Cowan (2007).

<sup>7</sup> Source: <http://www.txstate.edu/commonexperience/pastsitearchives/2007-2008/images/gallery2/15.jpg>

One of the groups responsible for keeping the environmentally unique atmosphere thriving is the San Marcos Greenbelt Alliance. The alliance is a non-profit volunteer organization that works with the city of San Marcos, Hays County, and other agencies to promote environmental stewardship and the protection of natural areas in the midst of development.

San Marcos is also home to Texas State University. The university has grown from a small teacher preparation institution to a major university. Texas State University hosts a student population of 32,572 students from around the globe. The campus in San Marcos occupies 457 acres, as well as 5,038 acres of additional recreational, instructional, and farm and ranch land. The campus includes 225 buildings. Some of them, such as Old Main, are as old as the university itself. Texas State University also has the unique distinction of being the only college in Texas to have graduated a United States President, Lyndon B. Johnson in 1930.<sup>8</sup>

### **Growth and Development in San Marcos**

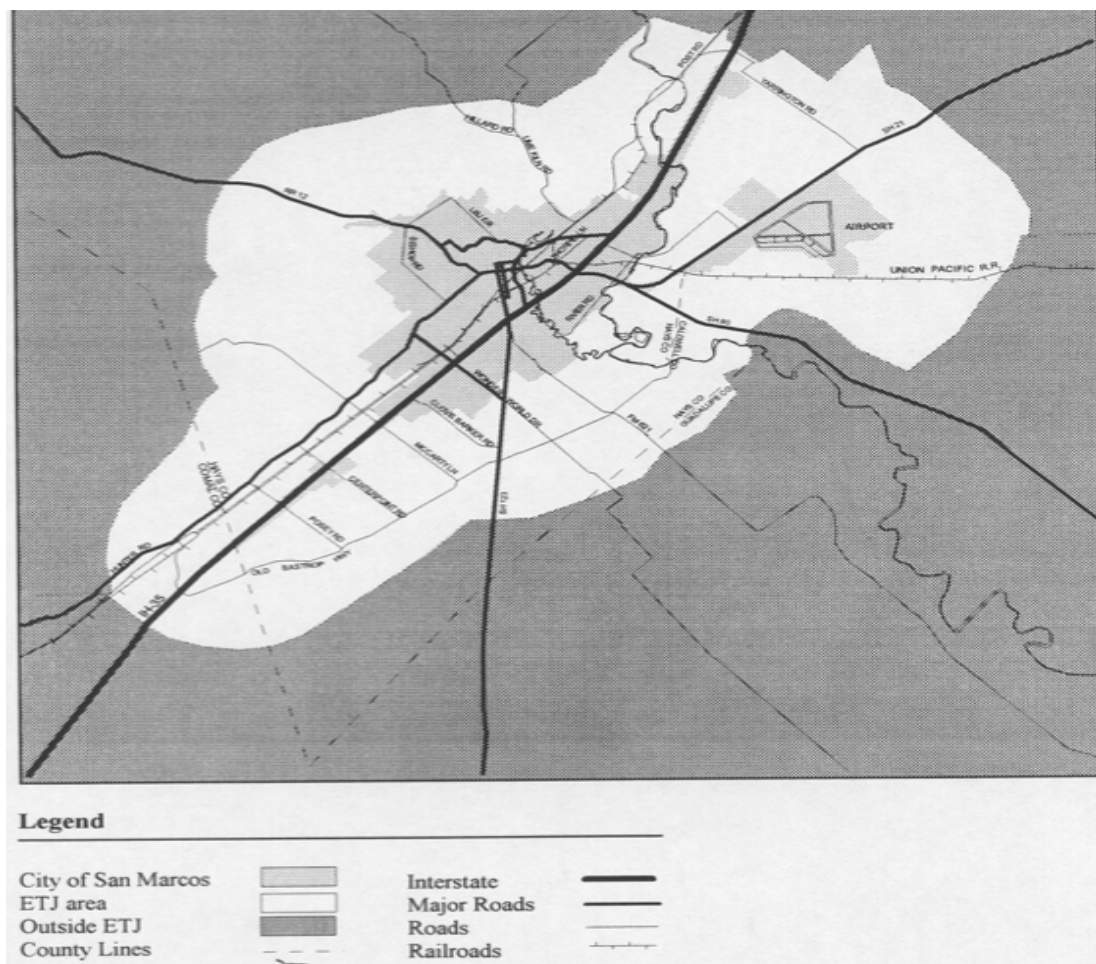
In order to properly plan for the future needs and desires of a community, it is essential to understand the existing conditions and trends that have shaped that community and how they will impact the future. Hays County has experienced tremendous growth over the past several decades after the construction of the interstate 35 corridor, with a population increase from 17,840 in 1950 to 97,589 in 2000. More recently, according to the United States Census Bureau, Hays County has experienced a 60.99% population increase from 97,589 in 2000 to 157,107 in 2010. This dramatic increase is a result from growth pressures in Austin and San Antonio

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<sup>8</sup> Retrieved from Txstate.edu

metro areas and an increase in enrollment at Texas State University. San Marcos has the benefit of being located along a major transportation route presenting an opportunity to fulfill the demand for office, retail, and residential space. The city of San Marcos has experienced considerable growth in the past decade as well. According to the United States Census Bureau, the population for the city has grown from 34,733 people in 2000 to 44,849 in 2010. The number of housing units has also grown to 18,149, a near thirty percent increase from 2000. Figures 3.3 and 3.4 give a comparison of the city boundaries and extra territorial jurisdiction in 1995 and 2010 (United States Census Bureau).

**Figure 3.3: Jurisdiction Map of the City of San Marcos. San Marcos Horizons Plan 1995.**





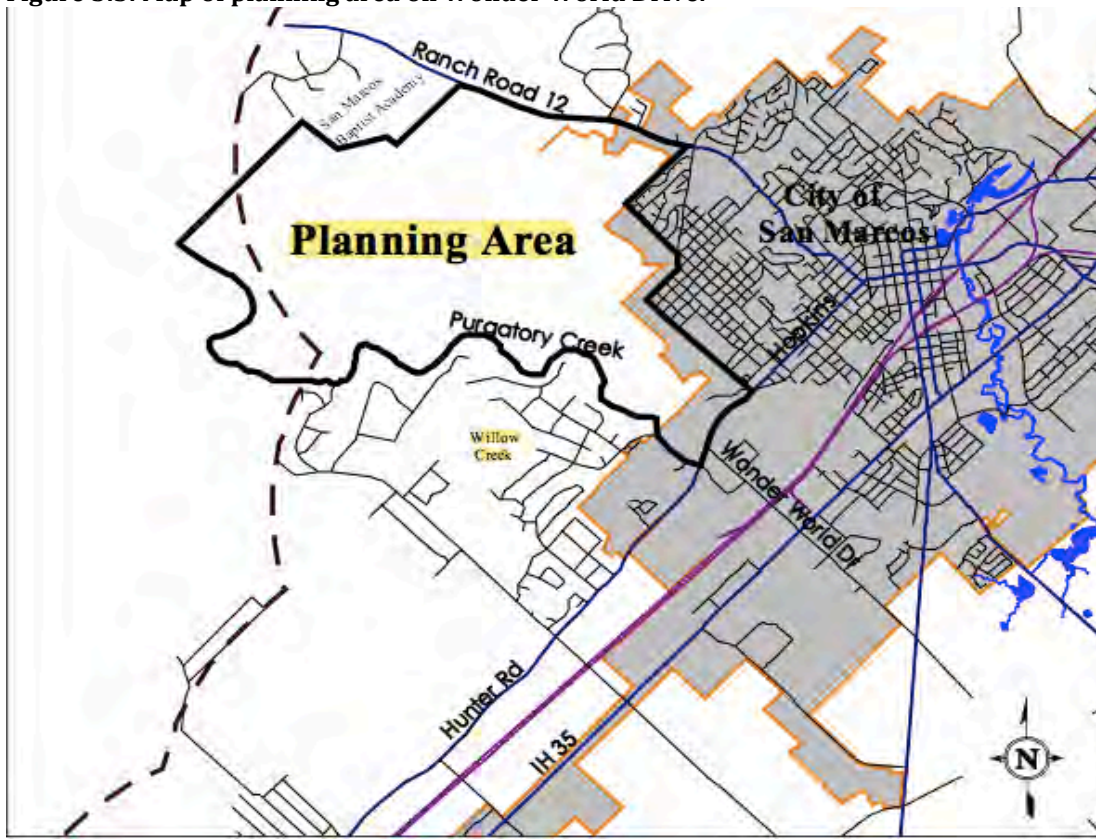
**Figure 3.4: Existing Park Inventory Map<sup>9</sup>**



The City of San Marcos also recently underwent the largest transportation project in its history. An extension of Wonder World Drive was added to directly connect Ranch Road 12 directly to Interstate 35. This extension is designed to relieve downtown and historical areas of heavy and through traffic. Figure 3.5 provides a map of the new development areas.

<sup>9</sup> This map is used to show the expansion of Extraterritorial Jurisdiction for the city. Its source is San Marcos Parks, Recreation, and Open Space Master Plan, 2010.

Figure 3.5: Map of planning area on Wonder World Drive. <sup>10</sup>



The City of San Marcos downtown master plan (2008) notes that, while many feel that this growth and development is a good thing, resulting in a larger tax base and attracting more business, others are worried about the town losing its unique character and environmental characteristics. The attraction of businesses near the I-35 corridor has residents worried about the future of downtown San Marcos and its viability as a destination. According to the Downtown Master Plan, “ample infill opportunities exist in the downtown area. Currently, surface parking lots, low-density industrial uses, and even some undeveloped lots account for a significant portion of the downtown.”

<sup>10</sup> Source: Wonder World Drive Land Use Plan



## **Local Government**

San Marcos is the county seat of Hays County and hosts a population of nearly 45,000 residents. The city is governed by a council-manager system consisting of six council members elected at-large for staggered three-year terms and a mayor elected at-large for a two-year term. According to Section 4.01 of the San Marcos Code of Ordinances, “The city council shall appoint a city manager who shall be the chief administrative and executive officer of the city, and shall be responsible to the city council for the administration of all the affairs of the city.” The San Marcos city council also has the responsibility of enacting policies, adopting ordinances and resolutions, establishing the annual budget for providing services to the public, and setting the city’s water, electric, wastewater, and tax rates. The city council provides for the administration and collecting of property taxes in accordance with state law.

A city planning and zoning commission has also been established for San Marcos, TX. The commission consists of nine members who are appointed by the city council for staggered three-year terms. The commission acts as an advisory body to the city council on matters pertaining to the physical growth and development of the city, in addition to submitting recommendations on changes to the land development code and desired capital improvement projects.<sup>11</sup>

The City of San Marcos also has a Development Services Department, which is part of the Planning Division. Their role is to manage the growth and development of the community by carrying out policies adopted by the city council, while also

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<sup>11</sup> Sec 7.01 & 7.02 San Marcos, TX Code of Ordinances

providing expertise in regards to city planning. The Planning Division has three components to their mission regarding the future of San Marcos: (1) “to properly manage the growth and development of the community by carrying out adopted Council policies, and providing professional expertise in the area of city planning,” (2) “to continue our commitment to providing high quality customer service to the various groups we serve, including builders, developers, land owners, neighborhood groups, city commissions, outside agencies and the citizens of the community,” and (3) “to enhance the tax base and livability of the community by encouraging high quality growth and development.”<sup>12</sup>

The growth and development within San Marcos is guided by the city’s master plan. The city council aims to assure that city ordinances governing growth and development are consistent with the goals and policies contained in the master plan. The master plan is adopted by ordinance, and while the plan may contain land use maps, they do not constitute zoning.<sup>13</sup> Given their mission to properly manage growth and development, it can be assumed that the city would ideally like to mitigate the negative effects of sprawling development and actively take steps to manage or control sprawl. Therefore, the type of policies that San Marcos uses to mitigate the consequences of sprawl is appropriate for examination. The next chapter examines literature on different sprawl mitigation instruments and forms the basis for conceptual framework.

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<sup>12</sup> City of San Marcos Website  
<http://www.sanmarcostx.gov/departments/planning/developmentservices.html>

<sup>13</sup> Sec 7.03 San Marcos, TX Code of Ordinances

## **Chapter 4 – Literature Review**

### **Chapter Purpose**

The purpose of this chapter is to review the scholarly literature on the policy options that can be used to mitigate the negative effects of sprawling development. Furthermore, the information revealed in this literature review serves as the foundation for the working hypotheses that are developed in the unfolding conceptual framework.

### **Controlling Sprawl**

This section examines the different policy instruments local governments can use to mitigate the negative effects of sprawling development. The policy instruments discussed in this section are the basis of the conceptual framework designed to explore ways to mitigate the negative effects of sprawling development. Vedung (1998) defined public policy instruments as, “the set of techniques by which government authorities wield their power in attempting to ensure support and effect or prevent social change”(21). Certain land use policies and controls may control sprawl while others might actually promote it. Most public policies that contribute to sprawl emerge at the federal or state level, such as highway spending or income tax deductions for home mortgage interest payments; however, local governments also have policy tools that give them the ability to control land-use and density.

Williams (2000) explained the importance of local involvement in growth management decisions, as opposed to higher levels of government:

“Opponents (of higher levels of government making land-use decisions) contend that state involvement in planning constitutes an unwarranted degree of interference in the local land use decision making process. It invites outside actors that include regional and state planning officials, environmental activists, and state courts that do not hesitate to insert their own political agendas into a process that some feel is better left to those who will have to live with the consequences.” (Williams 2000, 21)

Therefore, it is important that local governments and communities are involved in land-use and growth management decisions to combat policies from higher levels of government that may promote sprawling development.

In areas experiencing rapid growth, public revenues “do not always come in fast enough or in the proper form to cover growing public costs” (Ducker & Owens 2000, 35). This can make it difficult for local communities to adjust to this growth if not handled properly. Pendall (1999) argued, “local governments can affect their development density and patterns by adopting land use controls and policies”(555). A strategic use of policies can help to mitigate some of these issues and direct growth in appropriate areas. Bengston et al. (2004, 274) provided three broad categories of public policy instruments for managing growth and protecting open space: incentive-based policies, regulatory policies, and public ownership and management of land.<sup>14</sup>

Working hypotheses were developed around these three types of policy instruments and formed the foundation for the conceptual framework for exploring different techniques in which San Marcos can mitigate the negative effects of sprawling development.

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<sup>14</sup> Information campaigns are a fourth type of policy instrument used to influence people through a transfer of knowledge but have not widely been used by the public sector for growth management (Bengston et al., 2004, 274).

## **Incentive Based Policy Instruments**

Using incentives and disincentives to regulate and manage growth can change the behavior of both landowners, experiencing financial pressures to sell land, and developers, looking to build on new land. These differ from regulatory-based approaches in that they are not an obligation. They simply try to direct growth by enticing parties to act in an organized fashion. Incentive-based policies do not require a mandatory course of action. Instead, they provide incentives, whether financial or otherwise, to take certain actions. Some examples of incentive-based policies that can be used to manage growth and mitigate the negative effects of sprawling development are impact fees for developers, tax incentives, and infill development incentives.

Due to the ability of incentive-based policy instruments to manage growth and protect open space, the following hypothesis was developed to assess the incentive-based policies San Marcos, TX uses to mitigate the negative effects of sprawling development.

### ***Working Hypothesis 1 (WH1):***

***San Marcos uses appropriate incentive-based policy instruments to mitigate the negative effects of sprawl.***

## **Impact Fees**

Development impact fees can be used to offset the infrastructure costs brought on by new development in an area. Generally, infrastructure costs are levied through taxes on the inhabitants of the new properties, as well as all previous

residents of an area. Impact fees mitigate these costs by requiring the developer to pay for infrastructure costs upon development (Brueckner 2000, 167). Exactions, “a condition of permission for development that requires infrastructure to be provided at the developer’s expense,” are placed on developers as a way to ensure that infrastructure costs fall on those who will use the newly developed infrastructure (Ducker & Owens 2000, 35). Impact fees are a way of shifting the costs associated with development from the public sector to the private sector. Bauman and Ethier (1987, 52) asserted that governments in areas experiencing rapid growth are poorly equipped to meet rising demand for more services associated with new development. Furthermore, while meeting this challenge, these governments must also maintain existing public facilities.

Impact fees can be an effective way to encourage more efficient development patterns by manipulating the way in which new infrastructure is financed (Bengston et al. 2004, 276). Jurisdictions can discourage development in areas lacking infrastructure by charging higher impact fees and offering lower fees in areas already equipped with sufficient public services (Nelson & Duncan, 1995). Porter (1997) explained why impact fees have advantages over traditional property taxes to pay for expansion of infrastructure. First, impact fees “require new development to absorb at least some of the costs of services and facilities, thus relieving the tax burden on current residents and businesses.” Second, impact fees are also collected at the time of development, which immediately covers some of the costs of new infrastructure, as opposed to levying taxes a year or more later. Third, impact fees

also provide a way of “pooling funds from individual projects to pay for facilities in other locations” (136).

Since impact fees are an effective way to reduce the costs of sprawl, concerning incentive-based policies, the first sub-working hypothesis of WH1 is:

***Sub-hypothesis 1a (WH1a):***

***San Marcos uses impact fees to mitigate the negative effects of sprawl.***

**Tax Policies**

Bengston et al. (2004) argued, “tax policies have a powerful influence on land use and may be an important tool for growth management”(276). Taxes are a way to provide financial incentives to manipulate growth patterns and retain social and environmental goods in a community. Use-value taxation and a split-rate property tax can be used to decrease landowner burden and promote compact development.

Since tax policies are an effective way to implement incentives-based policies, the second sub hypothesis is:

***Sub-hypothesis 1b (WH1b):***

***San Marcos uses appropriate tax policies to mitigate the negative effects of sprawl.***

**Use-Value Taxation**

The use of use-value taxation, or preferential assessment taxation, allows land to be assessed at its current use value, as opposed to its highest market value. Tax assessors typically evaluate the value of property on its highest or best use.

Under this assessment property owners should receive the highest value return for the use of their land; however, this is not always the case. Landowners often cannot afford to pay taxes on certain parcels of land at its highest or “best-use” value. Under a use-value taxation system, owners of open spaces worthy of protection are taxed on the land’s current use, making the ability to retain the land more financially viable.<sup>15</sup>

Anderson (2000) argued, the “use-value of agricultural land near urban areas is intended as a means to provide property tax relief to landowners, retain open space at the urban fringe, and retard urban sprawl”(22). The American Farmland Trust (1997) found that in Washington State, which is receiving significant growth pressure, more than eleven million acres of farmland and open space are enrolled in current use-value taxation, resulting in a lower tax burden for the landowners. For tax purposes, the value of land usually includes the underlying development rights, which the landowner may not be currently receiving any additional benefits from (ICMA 2010, 9). Many landowners cannot afford to pay taxes on land that is taxed on the development value, making the notion of selling for development purposes much more attractive even when selling is not in the best interest of the landowner or the community. When land is sold off for development purposes the positive externalities associated with it are also lost.

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<sup>15</sup> While permitting use-value taxation may be an effective policy instrument for controlling development patterns, it does have some fiscal drawbacks. Local governments, counties, and school districts may receive diminished property tax revenue under use-value taxation than they would with a full value assessment (Anderson 2000, 22).



Since use-value taxation, related to tax policies under the incentives based policies, is related to the sprawling development, the first sub-sub-hypothesis is:

***Sub-sub-hypothesis 1b<sub>1</sub> (WH1b<sub>1</sub>):***

***San Marcos utilizes use-value taxation to mitigate the negative effects of sprawl***

**Split-Rate Tax**

Split-rate tax policies divide property taxes into two parts. The first part is assessed on the building value and improvements. The second part is assessed on the value of the land. This split reduces taxes on the building, providing an incentive for maintaining or improving properties. Property improvements can increase the value of the land, thus reducing land speculation and further encouraging infill development (ICMA 2010, 21; Bengston et al. 2004, 277). A split rate tax has been particularly successful in Pennsylvania. Nearly twenty cities have adopted it, with most seeing an increase in building permit issuance. This trend suggests that a split-rate tax encourages infill development and leads to a revitalization of downtown areas and areas suited with infrastructure. Hartzok (1997, 205) noted that these Pennsylvania cities that had adopted a split-rate property tax had lowered taxes on building, which encouraged improvements and renovations. They also raised taxes on land values, which discourages land speculation and promotes infill development.

Since split-rate tax policies, related to tax policies under the incentives based policies, is related to the sprawling development, the second sub-sub-hypothesis is:

***Sub-sub-hypothesis 1b<sub>2</sub> (WH1b<sub>2</sub>):***

***San Marcos uses a split-rate tax to mitigate the negative effects of sprawl***

**Infill Development Incentives**

Infill development involves developing land that is underused, skipped over, or abandoned (Schmitz 2003, 40). Promoting infill development can be used to mitigate urban sprawl by directing more development toward existing developed areas, where underused lots or vacancies exist (Porter 1997, 44). The make up of some current policies may actually encourage development on the outskirts of towns or developed areas by making infill and redevelopment more expensive. Land use policies and regulations can ensure there are incentives for infill and brownfield development (ICMA 2010, 20). Several of the other strategies listed here can promote infill development, such as zoning and property tax breaks. Infill development focuses on reutilizing areas that are already developed and have service infrastructure, thus reducing sprawl. Incentives for infill development can include “subsidized land costs, tax exemptions or reductions, or infrastructure improvements” (Porter 1997, 44).

One of the keys to managing growth in a town is to draw in development without allowing it to destroy the qualities and character of the town. Downtowns, or “main-streets,” can be revitalized to share a unique characteristic while steering large-scale developments to areas that are appropriate to benefit the entire community (Porter 1997, 199). Infill redevelopment can be difficult to achieve in some instances. Farris (2001) argued, “an optimal infill site is located in a receptive

neighborhood with well-maintained properties, good land price, adequate utilities, no major land problems, appropriate zoning, and potential development profitability compared to alternative sites”(2). This is not a common combination in most areas. However, using infill development can be a way to respond positively to growth opportunities without collapsing under developmental pressures. The smart growth initiative of Austin, TX promoted infill development by designating desired development zones and waiving development fees in those areas (Bengston et al. 2004, 277).

Because infill development incentives can help revitalize the existing infrastructure in San Marcos, retain its unique downtown character, and reduce sprawling development, the third sub-hypothesis of WH1 is:

***Sub-hypothesis 1c (WH1c):***

***San Marcos uses infill development incentives to mitigate the negative effects of sprawl.***

## **Regulatory Policies**

Regulatory policies are defined by their coercive nature. Mandatory regulatory policies are often associated with some form of negative consequence if not adhered to. An authoritative relationship is formed between the government and those under regulation. Local governments have traditionally managed development through the use of regulatory policies such as zoning ordinances, improvement plans, and development regulations. The defining element in

regulation is that it is obligatory, unlike incentive-based strategies, which are voluntary in nature (Bengston et al. 2004, 274).

As a result of the findings in the literature, the following working hypothesis was developed to assess the regulatory policies that are in use to mitigate the negative effects of sprawling development in San Marcos, TX. If San Marcos is adequately prepared to mitigate the negative effects of sprawling development, one would expect:

***Working Hypothesis 2 (WH2):***

***San Marcos uses appropriate regulatory-based policy instruments to mitigate the negative effects of sprawl.***

## **Rate of Growth Controls**

Policy instruments that are designed to allow a certain pace of growth, based on an area's readiness for that growth, can eliminate unforeseen development complications and help a community grow in a more properly suited manner (Ducker & Owens 2000, 34). Rate of growth controls not only define how fast an area can grow but also define what areas are suited for growth and are prepared to take on more infrastructure. Development moratoria and public facilities ordinances are common examples of growth controls.

## **Development Moratoria**

Issuing a moratorium on development puts a suspension on issuing building permits in an area. This method allows local areas that are not prepared for growth

to have more time to devise a proper growth management strategy. Moratoria are usually developed when planning and management programs, which could have anticipated and accommodated growth, are not in place before the arrival of rapid development (Ducker & Owens 2000, 36). Porter (1997, 80) provided examples of several areas that have enacted moratoria to deal with growth issues. For example, during the 1980's Nashua, New Hampshire enacted a one-year moratorium on commercial development to prepare plans for the expansion of growth along a major highway. While problems may worsen, becoming more difficult and expensive to fix without a moratorium in place, in some cases, implementing a moratorium might not be the best policy decision in areas that are trying to attract growth.

### **Adequate Public Facility Ordinances**

This approach to controlling the rate of development focuses on the availability of services and facilities in an area. Bengston et al. (2004) argued that “adequate public facility ordinances,” also known as concurrency criterion, require that development in areas can only be approved after it is “demonstrated that adequate public facilities are available in an area or will at least be available at the time when the impacts of the new development occur”(275). Local governments generally implement these ordinances, but several states have included Adequate Public Facilities Regulations in their growth management programs. To assess whether proper public facilities are in place, Ducker & Owens (2000) stated, “the community measures the impacts of a project against its standards for public

facilities”(38). Having these standards in place can funnel growth into geographic areas that are more capable of handling development. They can also regulate the timing of development to prevent the community’s growth from outpacing the government’s ability to provide the necessary public facilities to serve that growth.

Based on the findings in the research, rate-of-growth presents itself as the first sub-hypothesis of WH2:

***Sub-hypothesis 2a (WH2a):***

***San Marcos uses “rate-of-growth” controls such as development moratoria and adequate public facility ordinances to mitigate the negative effects of sprawl.***

## **Zoning**

Local governments have many options when it comes to using zoning ordinances to regulate growth patterns.<sup>16</sup> Zoning is a core technique in growth management and is the most widely used form of land-use regulation. Zoning ordinances include “written requirements and standards that define the permitted uses of land and buildings, the height and size of buildings, the size of yards and lots around buildings, the supply of parking spaces, size and type of signs and fences, and other characteristics of development”(Porter 1997, 24). The fundamental purpose of such ordinances is the separation of incompatible uses of land. For areas that would like to reduce sprawl and promote compact development, discouraging low-density zoning can help a municipality reach their goals and direct growth (Pendall 1999, 555).

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<sup>16</sup> Granted by *Texas Local Government Code §211.003*

## **Agricultural Zoning**

Coughlin (1991) argued, “agricultural zoning is the method most commonly used in the United States for preventing the conversion of agricultural land to non-agricultural uses”(183). This is a much less costly alternative to protecting working lands than the direct acquisition of land by local governments. Agricultural zoning comes in two basic forms: exclusive and non-exclusive. Exclusive agricultural zoning prohibits the construction of any non-agriculture related dwellings in an area. This is the more extreme case and is rarely used. Non-exclusive agricultural zoning allows a limited amount of non-agriculture development in an agricultural area (Coughlin 1991, 183). Both methods of agricultural zoning can be used to control growth by directing it away from areas that should remain undeveloped. Non-exclusive zoning is a more attractive approach for most areas due to its flexibility.

The two principal ways of enacting non-exclusive agricultural zoning are through either large minimum lot sizes and area based allocation. Area based allocation allows a certain number of dwellings to be erected based upon the total acreage of the parcel (Coughlin 1991, 183). Agricultural zoning programs must be designed in a way that will both protect agricultural lands and be defensible against legal challenges.<sup>17</sup> This tool, however, cannot be used as the sole instrument in directing growth. Many farmers might not be supportive of zoning strictly for agricultural uses because the restrictions are not compensated for financially. Also, with a growing decline in second or third generation farming, many farmers look at

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<sup>17</sup> The long-term effectiveness of agricultural zoning is greatly enhanced by growth management programs that include other policies such as development incentives in areas that have public infrastructure and expedited approval processes (Coughlin 1991, 191).

their land as an “insurance policy or a retirement fund” (Daniels 1991, 421). Local governments can establish these zoning ordinances to both direct growth while at the same time protecting environmentally sensitive areas and areas with unique characteristics (ICMA, 2010, 15).

### **Cluster Zoning**

Bengston et al. (2004) maintained that cluster zoning has been an approach used at the local level for decades for “protecting open space, reducing the cost of development, and in some cases keeping land such as farmland and forest in existing use”(278). Cluster zoning ordinances can either allow or require development to be concentrated together at high densities in order to leave open space on a parcel of land, as well as reducing the costs of new infrastructure. Freilich (2003) noted, “the most effective clustering ordinances are those that are mandatory” and that “when clustering and open space preservation are optional, few developers take advantage of the approach”(695). The undeveloped land may then be retained by the developer or purchased through local government or a land trust.

In some instances developers have been permitted to construct more housing on the parcel, providing an incentive to create cluster developments (Porter 1997, 105). While zoning measures are traditionally used to separate conflicting land uses and avoid negative externalities, building at higher densities produces positive externalities such as open space, parks, and affordable housing (Feiock et al. 2008, 467). Loudoun County in Virginia has had success with cluster zoning by



adopting a comprehensive plan in 1991 that discouraged the extension of water and sewer lines and promoting clustered development in rural areas (Porter 1997, 111). One of the principal problems associated with promoting compact development in rural areas, however, is that it can restrict development in certain areas while rewarding landowners in other areas. This approach, if used, should be coupled along with some other compensatory approaches for landowners.

### **Downzoning**

Downzoning (large-lot zoning), which is at the other end of the spectrum from cluster zoning, aims to protect open space. Rather than focusing on concentrating development on small lots, Bengston et al. (2004) argued, “downzoning sets minimum lot sizes large enough to discourage development”(278). Lot sizes must be set large enough to actually discourage development, however, or the result may be scattered development with lot sizes insufficient to encourage the continuation of land use for agriculture purposes (Bengston 2004, 278). Montgomery County, Maryland enacted a farmland preservation area using a minimum of 25-acre lots to deter development (Porter 1997, 109). The goal of these methods of conservation development is to protect the natural or social aspects of an area while still allowing development.<sup>18</sup>

Based on the findings in the research, zoning ordinances present themselves as an appropriate sub hypotheses to WH2. Thus, the following is expected:

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<sup>18</sup> For more information on conservation development, see Ellis, Ronald L. (2006) “Residential Land Use Policy and Conservation Development in the Blanco River Basin.”

***Sub-hypothesis 2b (WH2b):***

***San Marcos uses appropriate zoning ordinances to mitigate the negative effects of sprawl.***

**Public Ownership and Management of Land**

Land acquisition and management by local authorities is the most certain way to prevent unwanted development patterns, but it is also the most expensive. Usually, the public acquisition of land is a response to a market failure that fails to acknowledge a public good should be protected. The acquisition of land aims to keep the positive externalities that are provided by having certain areas of land protected or managed by the government. Bengston et al. (2004, 274) asserted that a social decision is made that this public good should be managed for the general population. Public acquisition of land can provide a framework for growth and, more importantly, define where growth is inappropriate. This technique serves multiple purposes. Land acquisition can shape the form of growth and manage the rate to grow for an appropriate area. McMahon (1999, 5) argued that public acquisition has become a rather popular approach in land management. Thirty of largest metropolitan areas in the nation and hundreds of smaller communities have regional plans that are used to define where not to grow.

As a result of these research findings, the following working hypothesis was developed to assess the methods of public ownership and management that are in use to mitigate the negative effects of sprawling development in San Marcos, TX:

***Working Hypothesis 3(WH3):***

***San Marcos uses public ownership and management to mitigate the negative effects of sprawl.***

**Purchase of Development Rights**

Purchase of development rights (PDR) programs have gained much popularity in recent years. The purchase of development rights offers farmers and landowners the opportunity to obtain a one-time payment for the full assessed market value of their land or farms in return for an agreement to keep their land in working uses (Williams 2000, 24). This method provides an incentive for landowners to put development restrictions on their land by providing compensation. Daniels (1991, 422) argued that in urban fringe areas purchasing development rights might be successful due to their political popularity.

The ultimate goal of a PDR program is to preserve a mass of farmland or open space from restricting development. This technique can also be useful for younger individuals, who need capital to retain their land, or farmers and landowners nearing retirement, who wish to pass their farm or land down to the next generation. This strategy has become particularly popular in western states such as Montana, Arizona, and Utah, who are all establishing programs with state funding (ICMA, 2010, 12).

## **Transfer of Development Rights**

Transfer of development rights is one of the most complex approaches to municipal land use regulation. Transferring development rights is within the same theme as purchasing them, but the key difference is that the rights are then up for sale. These rights are then to be used at a more suitable location. Caton (2004) defined transfer of development rights as a “market based zoning technique in which growth is transferred from places where a community would like to see less development to places where a community wants to encourage development”(40). For most areas, identifying lands worth being protected (sending areas) is much easier than identifying the receiving areas, where the growth should be directed.

Ducker and Owens (2000, 39) explained how property is divided into two components, the physical land and the development rights associated with that land. While transferring development rights is not an outright purchase of the actual land itself, it allows the owners of the land that should be protected to enjoy economic benefits without having to sell or develop the land. Local governments allot development credits to landowners equal to the value of their assessed land. Then, the landowner in turn can offer the development rights for sale to developers (Williams 2000, 24). This method can provide an incentive for owners of environmentally or socially valuable lands to retain the dignity of their property while transferring development rights to an area more suited for growth. The development rights, which were formerly associated with that particular parcel, can then be acquired by the owner of another location and enacted to increase the allowable development on that new location (Ducker & Owens 2000, 39).

Maryland has had the most experience with transfer of development rights programs. Montgomery County in Maryland, as mentioned before, has an agriculture preservation program which uses strategies to protect farmland and open space. They also have the most well known TDR program in the United States, having secured over 32,000 acres of farmland in the northern third of the county for protection (Porter 1997, 112). The preservation of land through public acquisition of development rights has become an increasingly popular way to maintain open space, while at the same time directing growth in a time where regulations on land use have come up against political and legal challenges (Daniels & Lapping 2005, 326).

Based on the ability of the transfer or purchase of development rights to direct and manage growth, TDR presents itself as an appropriate sub hypothesis of WH3. Thus, the following is expected:

***Sub-hypothesis 3a (WH3a):***

***San Marcos uses transfer or purchase of development rights to mitigate the negative effects of sprawl.***

**Fee-Simple Acquisition**

Fee-simple acquisition is the most often used means of land acquisition and provides the most protection of agricultural land and open space from development (Porter 1997, 101). This type of approach for protecting open space and managing growth is the oldest form of policy instrument in the United States and occurs at all levels of government (Bengston et al. 2004, 277). Governments purchase land

outright to manage it for several reasons, whether they are social, economical, or environmental (ICMA 2010, 13). In this form of transaction, whatever is purchased includes the complete ownership rights or fee-simple interest in the land. Most of the time, acquiring these lands for protection purposes requires the buyer to pay for the complete value of the property. In some instances, however, the landowner will allow a discounted price of the fee simple interest for a reduced sale price. Local governments frequently manage growth by adopting their own acquisition strategies.

Porter (1997, 102) noted, in 1967 citizens in Boulder, Colorado voted to levy a special sales tax to acquire mountain land around the city in order to maintain the area's unique setting. The popularity of fee-simple acquisition is indicated by the fact that over thirty of the largest metropolitan areas and hundreds of smaller communities have or are developing local green-space plans that involve public acquisition to define where and where not to grow (McMahon 1999, 5). Because of the cost of outright acquisition of land, the other methods of acquiring rights of land may be more economically attractive to local governments.

Based on the findings in the research, fee-simple acquisition presents itself as an appropriate sub hypothesis of WH3. Thus, the following is expected:

***Sub-Hypothesis 3b (WH3b):***

***San Marcos uses fee-simple acquisition of land to mitigate the negative effects of sprawl.***

## **Summary of Conceptual Framework**

The conceptual framework of this applied research project is working hypothesis. These hypotheses were used to explore the various policies that can be used to mitigate negative impacts of developmental sprawl in San Marcos, TX. Shields (1998, 211) explained, working hypotheses are exploratory tools of inquiry, useful for developing understanding of problematic situations at the early stages of research. The purpose of this research is, first, to explore policy strategies that can be used to mitigate the negative effects of sprawl in San Marcos, TX. Second, this research study performs a preliminary assessment of San Marcos' current policy framework in regards to mitigating the negative effects of sprawl.<sup>19</sup> Third, the results of this assessment are used to make policy recommendations to mitigate the effects of sprawl in San Marcos, TX. Table (4.1) shows the connection between the working hypotheses and the literature.

### **WH1: Incentive-Based Policies**

The first working hypothesis was formulated to assess the incentive-based policies that San Marcos, TX uses to mitigate the negative effects of sprawling development. Based on the literature, it is expected that these incentive policies can direct and manage growth in a way that is appropriate.

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<sup>19</sup> The assessment of this policy framework does not imply that more policies are necessarily better. Many policy options may achieve the same desired outcome and can be used interchangeably.

## **WH2: Regulatory Policies**

The second working hypothesis focuses on regulatory policies that can be used to mitigate the negative impacts of sprawling development. This hypothesis anticipates that the use of regulatory tools can mitigate sprawl impacts in San Marcos, TX.

## **WH3: Public Ownership and Management of Land**

The third working hypothesis was developed because of the certainty of this approach for directing growth and, more importantly, where not to grow. This hypothesis expects that the use of public ownership and management of lands can assist in mitigating sprawl impacts in San Marcos, TX by protecting areas that the market fails to.



**Table 4.1: Conceptual Framework Table**

Working Hypothesis	Source
<b>WH1: San Marcos uses appropriate incentive-based policy instruments to mitigate the negative effects of sprawl.</b>	
WH1a: San Marcos uses impact fees to mitigate the negative effects of sprawl.	Bauman & Ethier (1987), Bengston, Fletcher & Nelson (2004), Brueckner (2000), Ducker & Owens (2000), Nelson & Duncan (1995), Porter (1997)
WH1b: San Marcos uses appropriate tax policies to mitigate the negative effects of sprawl. <i><b>WH1b<sub>1</sub>: Use Value Taxation</b></i> <i><b>WH1b<sub>2</sub>: Split Rate tax</b></i>	Anderson (2000), Bengston, Fletcher & Nelson (2004), Daniels (1999), Hartzog (1997), International City/County Management Association (2010), Williams (2000)
WH1c: San Marcos uses infill development incentives to mitigate the negative effects of sprawl.	Bengston, Fletcher & Nelson (2004), Farris (2004), International City/County Management Association (2010), Porter (1997), Schmitz (2003)
<b>WH2: San Marcos uses appropriate regulatory-based policy instruments to mitigate the negative effects of sprawl.</b>	
WH2a: San Marcos uses “rate-of-growth” controls such as development moratoria or adequate public facilities ordinances to mitigate the negative effects of sprawl.	Bengston, Fletcher & Nelson (2004), Ducker & Owens (2000), Owens (1990), Porter (1997)
WH2b: San Marcos uses appropriate zoning ordinances to mitigate the negative effects of sprawl.	Bengston, Fletcher & Nelson (2004), Coughlin (1991), Daniels (1991), Ducker & Owens (2000), Feiock, Tavares and Lubell (2008), Freilich (2003), International City/County Management Association (2010), Pendall (1999), Porter (1997)
<b>WH3: San Marcos uses public ownership and management of land to mitigate the negative effects of sprawl.</b>	
WH3a: San Marcos uses transfer or purchase of development rights to mitigate the negative effects of sprawl.	Caton (2004), Daniels (1991), Daniels & Lapping (2005), Ducker & Owens (2000), International City/County Management Association (2010), Porter (1997), Williams (2000)
WH3b: San Marcos uses fee-simple acquisition of land to mitigate the negative effects of sprawl.	Bengston, Fletcher & Nelson (2004), International City/County Management Association (2010), McMahon (1999), Porter (1997)

## **Chapter Summary**

The review of scholarly literature captures the broad body of developmental sprawl's causes, effects, and policy responses. Several contributing factors have led to the increase in sprawling development to accommodate the preference of many Americans to live in low-density housing at the urban fringe.

Sprawling development can have a wide array of impacts on an area effecting social, economic, and environmental change. The use of policy instruments to mitigate any negative effects should be enacted before irreversible change occurs. These policy options are not necessarily meant to be used as the only means to an end but, rather, to supplement planning that dictates the rate and direction of growth in an area. Several of these different policy instruments may result in similar outcomes, so it would not be ideal to incorporate all of them. This review explored literature on of controls currently in use around the country, in order to examine San Marcos policy to mitigate sprawl from a comprehensive perspective. However, these various forms of policy instruments give a broad range of different strategies that can be used in conjunction with planning to mitigate the negative effects of sprawling development. The following chapter develops the methodology and explains how this research operationalizes and tests the working hypotheses.

# Chapter 5 – Methodology

## Chapter Purpose

This chapter describes the research methodology used to assess the policies of the City of San Marcos with regard to mitigating the negative effects of sprawling development. The comments from the interviews conducted and the documents analyzed are used to evaluate these policies with regard to mitigating the negative effects of sprawling development. The results are organized using the working hypotheses conceptual framework. This chapter also discusses the operationalization of the conceptual framework and addresses some of the advantages and disadvantages of case study research.

## Operationalization Table

The operationalization table is presented in table 5.1. The purpose of this table is to connect the conceptual framework, the research methodology, the sources, and the evidence. This table outlines the operational relationship between each working hypothesis and the corresponding methodology used to explore it. For example, WH1c, dealing with infill development, uses document analysis and structured interviews to determine the presence of infill development incentives. Below, table 5.1 specifies both the documents to be examined and the interview questions.

**Table 5.1: Operationalization Table**

<b>Working Hypothesis</b>	<b>Research Method</b>	<b>Source</b>	<b>Evidence</b>
<b>WH1: San Marcos uses appropriate incentive-based policy instruments to mitigate the negative effects of sprawl.</b>			
WH1a: San Marcos uses impact fees to mitigate the negative effects of sprawl.	Document analysis Structured Interviews -How does the city of San Marcos deal with the costs of new infrastructure for development?	-Comprehensive plan for San Marcos, TX -City of San Marcos website -Code of Ordinances-San Marcos -City officials	Presence of the use of impact fees on developers to finance infrastructure
WH1b: San Marcos uses appropriate tax policies to mitigate the negative effects of sprawl. <i>WH1b1: Use Value Taxation</i> <i>WH1b2: Split Rate tax</i>	Document analysis Structured Interviews -How are property taxes assessed for the city of San Marcos? -How is value determined?	-City of San Marcos website -Comprehensive plan for San Marcos, TX -Responses of City officials -Tax Policies for San Marcos	Presence of appropriate tax policies such as use-value taxation and a split-rate tax
WH1c: San Marcos uses infill development incentives to mitigate the negative effects of sprawl.	Document analysis Structured Interviews -What are the goals for the city in regards to redeveloping areas with existing infrastructure and what policies will help reach those goals?	-City of San Marcos website -Comprehensive plan for San Marcos, TX -Responses of City officials	Presence of incentives that promote infill development
<b>WH2: San Marcos uses appropriate regulatory-based policy instruments to mitigate the negative effects of sprawl.</b>			
WH2a: San Marcos uses appropriate zoning ordinances to mitigate the negative effects of sprawl.	Document analysis Structured Interviews -Does the city promote any kind of agricultural or cluster zoning to preserve open space and reduce infrastructure costs?	-City of San Marcos website -Zoning ordinances in San Marcos, TX -Responses of city officials	Presence of zoning ordinances in use to accommodate compact growth and separate land uses
WH2b: San Marcos uses “rate-of-growth” controls to mitigate the negative effects of sprawl.	Document analysis -What provisions are in place to ensure that the city of San Marcos would be able to adequately keep up with a growing population?	-City of San Marcos website -Municipal code-San Marcos -Comprehensive plan for San Marcos, TX	Use of rate-of-growth controls such as moratorium or adequate public facilities standards
<b>WH3: San Marcos uses public ownership and management to mitigate the negative effects of sprawl.</b>			

WH3a: San Marcos uses transfer or purchase of development rights to mitigate the negative effects of sprawl.	Document analysis Structured Interviews -Has the city of San Marcos acquired any development rights to ensure that particular areas are not developed?	-City of San Marcos website -Comprehensive plan for San Marcos, TX -City officials	-Presence of participation in a PDR or TDR program
WH3b: San Marcos uses fee-simple acquisition of land to mitigate the negative effects of sprawl.	Document analysis Structured Interviews -Has the city of San Marcos acquired any property strictly to ensure that these areas are not developed?  Direct Observation of areas that have been acquired by the city for the purpose of ensuring it is not developed	-Comprehensive plan for San Marcos, TX -City officials -City of San Marcos website	-Presence of acquired land through fee simple acquisition

## Research Methods

This applied research project uses a case study methodology. Case study research is a multi-methods approach that is used to explain “how” or “why” something works. Case studies are an appropriate method when “research questions require an extensive and in-depth description of some social phenomena” (Yin 2009, 4). Exploratory research, given its preliminary nature, is suited for many forms of data collection. A case study methodology is particularly well suitable for exploratory research due to its likelihood of collecting qualitative data (Shields & Heiclebeck, forthcoming). This research is a case study that explores the different policy instruments that can be utilized to mitigate the negative effects of urban sprawl in San Marcos, TX.

## **Document Analysis**

Document analysis is one of the three methods of research chosen for this case study. The most important use of document analysis in a case study is to confirm and strengthen evidence gathered from other sources (Yin 2009, 103). Documents can be used to verify details or findings from other sources and make inferences about further problems in an area of interest. Documents play an important role in any form of case study research because they provide a concrete source of facts and details about information on a topic. Documents have much strength as an object of research. Stability is one of the strengths because they can be viewed repeatedly and at the convenience of the researcher. Documents contain precise information such as names, references, and details needed for research. Finally, documents offer broad coverage and can spanning time, events, and settings (Yin 2009, 102).

Document analysis also presents some weaknesses in case study research. Irretrievability can be an issue; some documents may be difficult, if not impossible to find. There is also the potential for biased selectivity if certain collections of information are incomplete. Bias can also be reflected in the work of an author of a document. Access can be a major obstacle in document analysis. Some documents may be deliberately withheld, making them unable to be examined (Yin 2009, 102). This applied research project focuses on records and policy documents. This research explores records and policy documents through open records access. Thus, many of the above obstacles do not apply.

The document analysis in this study is used to explore the current policies in San Marcos using working hypotheses developed in the conceptual framework. The documents analyzed in this study consist of the City of San Marcos website, which includes links to different areas regarding development and goals such as the city's master plan and zoning ordinances for the city. The website will be used to review policies that the City of San Marcos has enacted and how they relate to the working hypotheses. A review of the policies and plan for the city of San Marcos is used to determine what instruments are in place to mitigate the negative effects of sprawling development.

Table 4.1 - List of Documents from the City for Analysis

- City of San Marcos website
- San Marcos Horizons Master Plan
- Wonder World Drive Land Use Plan
- Code of Ordinances for San Marcos, TX
- Impact Fee Ordinance for San Marcos, TX
- San Marcos Greenbelt Alliance website
- City of San Marcos Parks, Recreation and Open Space Master Plan
- City of San Marcos Downtown Master Plan

### **Structured Interviews**

Structured interviews are also used to explore the current sprawl mitigation policy framework, why policies and ordinances are in place, and the functions they currently serve. Yin (2009) explained that structured interviews can be used to

further confirm facts that may already be present as well as to expand upon other areas of the topic. Interviews focused on city officials and planning administrators who have planning authority and input into San Marcos's future goals.

Yin (2009) noted that interviews are "one of the most important sources of case study information"(106). Structured interviews are a good tool for case study research because they are targeted; thus, the focus of the interview is directly related to the topics in the case study. Interviews can also be insightful and provide "perceived causal inferences and explanations" (Yin 2009, 102). Interviews can provide information targeted specifically for a case study and are designed to allow for elaboration and additional insight into a topic.

Structured interviews also have some weaknesses. Interviews have the potential to be biased due to poorly articulated interview questions and poor recall or articulation from the interviewee. If the interviewee has poor recall, it can result in misinformation and inaccuracies (Yin 2009, 108). There is also the problem with reflexivity. Interviewees may be biasing their answers and responses to give the interviewer what they want to hear as opposed to what is really going on (Yin 2009, 102). To avoid reflexivity, it is important to appear naïve about the topic and not ask leading questions that may sway the interviewee to respond in a certain manner (Yin 2009, 107). The questioning used in these interviews will be more addressed to some of the problems related to sprawl and geared toward the city officials offering solutions.

For this research, the sample of individuals to be interviewed will come from administrators and staff of the city of San Marcos from the department of



Development Services. These individuals were chosen because of the expertise they should provide on the city of San Marcos and can also provide viewpoints from different areas such as the future goals of the city along with how development can have financial, social, and environmental impact on the area. The possible bias in these interviews could include the interviewee telling the interviewer what they want to hear or by poor questioning by the researcher. This study is an exploration of policy instruments being used so records are kept. The purpose of these interviews is to corroborate facts that have already been established about the presence of policy tools. The interviews for this study were conducted in March 2011. It should be noted that while the officials interviewed provided valuable insight into the policies used by the City of San Marcos, using other city officials could provide other insights into how San Marcos utilizes policy to manage growth and development.

Table 4.2- List of City Officials Interviewed

- Interim Director for the Department of Development Services
- Planner in Development Services
- Program Director for the Main Street Program

### **Direct Observation**

Direct observation is used in this case study to identify the areas that have either been designated or protected from future growth. Observation provides concrete evidence as to why certain areas may or may not be appropriate for growth or certain patterns of development. It also provides visual evidence of areas

that have been designated for protection from development. Including photographs and evidence from direct observation can give outsiders a better understanding of the case being studied (Yin 2009, 110). Case studies should take place in the setting of the case, allowing an opportunity for direct observation. In most cases, “relevant behaviors or environmental conditions will be available for observation” (Yin 2009, 109). Direct observation is only being used for one sub-hypothesis (WH3b) in this study to provide evidence of the use of fee-simple acquisition of land.

Direct observation has strengths in case study research because it covers the events and phenomena in real time. It is also contextual, meaning that it covers the context of the “case” being studied. There are also weaknesses associated with direct observation research. Direct observation can be time consuming. It can also incorporate selectivity bias. Performing direct observation on broad areas can be difficult without a team of observers sharing the work. Direct observation can also be reflexive, causing events to unfold differently because of the presence of observation. Direct observation entails observing phenomena. In this particular instance, the phenomenon is the preservation of land and natural resources. Bias among different individuals is not applicable to this research due to the nature of what is being observed. Regardless of who is observing the land that is preserved, the evidence should present itself identically. Additionally, direct observation can be costly due to the number of hours required by human researchers. This research was conducted by one individual, so the time necessary was limited and cost was minimal. Selectivity is addressed through structured interviews, narrowing down specific areas to be viewed, as opposed to viewing a broad variety of areas.

## **Human Subjects Protection**

Because this study involves focused interviews, which require human subjects, certain ethical concerns must be addressed. A statement that participation is voluntary is needed that emphasizes no negative consequences for refusal to participate to ensure that the participants will be interviewed only if they desire so. Any potential harm to participants is addressed through full disclosure and informed consent. This research asked participants for information and opinions on the state of growth and San Marcos, TX and the potential ways to mitigate the negative effects of sprawl in the area. The participants were informed about the scope and components of the research prior to and during interviews. Any participant that was uncomfortable in sharing their opinions on these subjects was excused from participation without prejudice.

The following chapter presents the results of the research and is organized by the conceptual framework.

# Chapter 6- Results

## Chapter Purpose

The purpose of this chapter is to assess the various policies that San Marcos, TX uses to mitigate the negative effects of sprawling development. This applied research project explores the policy framework of the City of San Marcos in relation to the potential for mitigating the negative effects of sprawling development. Three working hypotheses were developed to examine the policy framework San Marcos uses to control urban sprawl. These hypotheses focused on incentive based policy, regulatory policy, and land ownership and management practices.

### ***WH1: Incentive Based Policies***

***San Marcos uses appropriate incentive-based policy instruments to mitigate the negative effects of sprawl.***

Incentive based policies can be used to regulate and manage growth to mitigate some of the negative effects of sprawling development by providing different incentives and disincentives for development. In this study, the incentive based policies explored were the use of impact fees, property tax policies, and infill development incentives.

### **Impact Fees: Document Analysis (WH1a)**

The San Marcos City Council approved the adoption of an impact fee ordinance on September 25, 2002. The purpose of this ordinance is to both assure that new development in the city has adequate public facilities and to require new

development to contribute payments toward its share of the costs for the new facilities (Ordinance No.2002-86).<sup>20</sup>

The ordinance states that impact fees will be computed and collected at the time the city issues a building permit or approves a utility application. San Marcos currently charges a combined amount of \$890 for both water and wastewater per new service unit. A service unit is defined by the city as “a unit of development which produces an average anticipated sewage flow of 338 gallons per day” (Impact Fees Frequently asked Questions – City of San Marcos Website).<sup>21</sup> One single-family house is equal to one service unit. Other structures are calculated by fixing a number to characteristics of that structure. For example, a multi-unit housing structure would have the equivalent to .85 service units per dwelling, or apartment.

According to the ordinance, the intent of imposing impact fees for development is:

Create funding for future development infrastructure that is paid at a higher rate by new development... reduce pressure to raise water and wastewater bills of existing customers to fund new development... [and to] create revenue that allows the city to be more proactive about putting infrastructure into new growth areas, which may, in turn, help to keep lot costs lower.

### **Impact Fees: Structured Interviews (WH1a)**

The interviews revealed that impact fees are assessed equally across the board to pay for the impact that development is having on the system. A local official in the Development Services department explained that impact fees assist with

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<sup>20</sup> The full impact fee ordinance can be viewed at [http://www.sanmarcostx.gov/departments/planning/docs/Impact\\_Fees/Ordinance\\_Adopted.pdf](http://www.sanmarcostx.gov/departments/planning/docs/Impact_Fees/Ordinance_Adopted.pdf)

<sup>21</sup> Frequently asked questions on impact fees for the City of San Marcos can be viewed at [http://www.sanmarcostx.gov/departments/planning/docs/Impact\\_Fees/FAQ.pdf](http://www.sanmarcostx.gov/departments/planning/docs/Impact_Fees/FAQ.pdf)

financing capital improvement projects but are not used to guide development because they are not assessed by location.

### **Impact Fees: Level of Support (WH1a)**

WH1a was supported by the interview responses and document analysis. Table 6.1 presents the questions explored and the findings. The use of impact fees successfully absorbs some of the costs of new development and infrastructure, which is one of the negative effects of sprawling development.

**Table 6.1: WH1a - San Marcos uses impact fees to mitigate the negative effects of sprawl.**

<b>Method</b>	<b>Question</b>	<b>Findings (Supported)</b>
Document Analysis	Do the documents address the use of impact fees?	-Adoption of an Impact Fee Ordinance -Impact Fees collected for the purpose of “create revenue that allows the city to be more proactive about putting infrastructure into new growth areas”
Interviews with City Officials	Have the impact fees been used to guide development?	-Impact fees are not based upon location and are equal across the board. -Impact fee assessments have been used for new projects to assist with funding.
	Have the impact fees been helpful with assisting in financing new development?	

### **Tax Policy: Document Analysis (WH1b)**

The tax policies examined for this study were use-value taxation (WH1b<sub>1</sub>) and a split-rate tax (WH1b<sub>2</sub>). The county tax assessor-collector is designated as the assessor-collector for the City of San Marcos as stated in Sec. 78.076 of the San

Marcos code of ordinances. Property taxes in San Marcos are based on the assessed value of land. The buildings and structures in the city are as appraised by the Hays, Guadalupe, and Caldwell County appraisal districts. All real and business personal property located within the city is valued at 100% of the fair market value for any given year. Neither use value taxation nor split rate taxation are within the tax code.

### **Tax Policy: Structured Interviews (WH1b)**

The interviews revealed that the Hays county appraisal district bases the appraisals strictly on zoning districts. One of the key components of valuing property is the highest and best use. There is a legal definition of highest and best use that states what is legally allowed. For example, if a property is zoned single-family, it cannot be given commercial value on an appraisal if the chance of the property being rezoned is nonexistent. If the chances of rezoning are likely, then it is up to the appraiser to figure out how likely the rezoning is and provide support. If an area is zoned commercial or single-family, then the value is corresponding to the district. Hence, the interviews confirmed that neither a use-value tax nor split-rate taxes are utilized.

### **Tax Policy: Level of Support (WH1b)**

The City of San Marcos is taxed on property at the legal definition of its “highest and best use.” Table 6.2 presents the questions explored and the findings. Taxes are assessed exclusively on zoning districts; therefore, WH1b<sub>1</sub> (use-value tax) and WH1b<sub>2</sub> (split-rate tax) are not supported.

**Table 6.2: WH1b - San Marcos uses appropriate tax policies to mitigate the negative effects of sprawl.**

Method	Question	Findings (Not Supported)
Document Analysis	-How are property taxes assessed for the City of San Marcos?	-Property taxes are based on the assessed value of land, buildings and structures in the city as appraised by the Hays, Guadalupe, and Caldwell County Appraisal Districts.
Interviews with City Officials	How are taxes assessed for property in the city of San Marcos?	-Property is assessed according to its zoning district

### **Infill Development: Document Analysis (WH1c)**

The City of San Marcos website identifies Community Development Block Grant Program, which funds the First-Time Homebuyer Program to provide financial assistance to eligible low-income first time homebuyers. The program, administered by the Department of Development Services, promotes infill development by providing a maximum of \$8,000 per applicant. Homes must be located inside of the city limits of San Marcos and must be a new or existing single-family dwelling as defined by the city's land development code.<sup>22</sup>

The downtown smart code regulates development to create a cohesive style of development. Downtown incentive program gives \$5000 off if housing is built downtown, thus promoting infill development. Also the 2010 Planning and Zoning

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<sup>22</sup> For more information on the First-Time Homebuyer Program, visit [http://www.sanmarcostx.gov/departments/planning/CDBG/community\\_development.htm?menu=DP6#Firsthb](http://www.sanmarcostx.gov/departments/planning/CDBG/community_development.htm?menu=DP6#Firsthb)



Commission End of the Year Report<sup>23</sup> stresses the desire for an increase in infill development but identifies the current inability to do so outside of housing as a limit on infill development.

According to the 2010 Planning and Zoning End of the Year Report with regard to encouraging infill development:

The proposed SmartCode is a step towards fulfilling this goal. However, single-family areas adjacent to the SmartCode study area present countless opportunities for infill development but cannot meet the requirements of the Land Development Code. Reviewing the development standards to allow the opportunity for the redevelopment of these lots would be a significant step towards accomplishing this goal. Additionally, the City continues to offer infill incentives for infill housing sold at or below \$106,000.00.

This reveals that San Marcos is in support of encouraging infill development and making strides to do so, but currently there are obstacles to completing these goals.

### **Infill Development: Structured Interviews (WH1c)**

The interviews revealed that as of now the City of San Marcos has several goals in relation to promoting infill development. A new development code has been created to spur infill development. According to officials interviewed, current development in the downtown area is constrained by the Suburban Context Code, which makes it very difficult to build downtown because the lot dimensions do not match up with the subdivision or zoning regulations. Interviewees mentioned that the Downtown Smart Code, a form-based code, is currently being developed and is scheduled for adoption to regulate development and create a much more cohesive

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<sup>23</sup> For full report, visit <http://www.sanmarcostx.gov/departments/planning/CDBG/docs/2010endoftheyear.pdf>

style of development that matches existing infrastructure.<sup>24</sup> City officials also mentioned the Downtown Incentive Program for building infill development. This program awards a five thousand dollar discount for the construction of housing in the downtown geographic area. According to one city official, the City of San Marcos also has an Infill Development policy, which offers incentives to promote infill development within the city.

### **Infill Development: Level of Support (WH1c)**

Based on the interviews and document analysis, WH1c had limited support. Table 6.3 presents the questions explored and the findings. The city of San Marcos provides incentives for infill development while at the same time aiming to keep the unique character of the town. Revitalizing the existing infrastructure in San Marcos and retaining its unique downtown character can help to reduce sprawling development. However, at the current time, the actual ability to perform infill development due to conflicting regulations makes the incentives less practical.

**Table 6.3: WH1c - San Marcos uses infill development incentives to mitigate the negative effects of sprawl.**

<b>Method</b>	<b>Question</b>	<b>Findings (Limited Support)</b>
Document Analysis	-Does the City of San Marcos offer any incentives that would promote infill development?	-Community Development Block Grant Program -Inability to perform infill development downtown
Interviews with City Officials	What are some of the goals for the city of San Marcos in regards to infill development? Are any incentives in place to promote infill development?	-Downtown Housing incentive program -Code does not allow for redevelopment downtown

<sup>24</sup> The Downtown Smartcode was adopted on April 19, 2011.

***WH2: Regulatory Policies***  
***San Marcos uses appropriate regulatory-based policy instruments to mitigate the negative effects of sprawl.***

Regulatory policies differ from incentive based policies in that they form an authoritative relationship between the government and those being regulated. Regulation is a way to dictate growth management. The regulatory policies explored in this study were rate of growth controls and zoning ordinances.

**Rate of Growth Controls: Document Analysis (WH2a)**

The land development code (Section 7.1.1.1) is a type of “rate of growth” regulation that provides standards for areas that are proposed for development in regards of adequate services. The general policy for adequate public facilities standards<sup>25</sup> states “land proposed for development in the city and in the city’s extraterritorial jurisdiction must be served adequately by essential public facilities and services. These requirements include water facilities, wastewater facilities, roadway and pedestrian facilities, drainage facilities, and park facilities.” The policy states, “land shall not be approved for platting or development unless and until adequate public facilities necessary to serve the developer exist or a provision has been made for the facilities. The facilities can either be located within the property being developed or offsite.” The responsibilities of the developer include the phasing of development or improvements of the area in order to ensure that adequate public facilities are provided. The developer must provide extensions to existing public facilities and roadways as well as provide for all operations and

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<sup>25</sup> For full ordinance on Adequate Public Facilities Standards, visit <http://library.municode.com/index.aspx?clientId=11549&stateId=43&stateName=Texas>

maintenance of those facilities. They are also responsible for all fiscal securities required for the construction of new public facilities. Adequate public facilities ordinances control the rate of growth by commanding that infrastructure is sufficient before development is allowed to ensue.

### **Rate of Growth Controls: Level of Support (WH2a)**

Some of the negative effects of sprawling development are the inability for the government to financially keep up with the pace of growth and having adequate infrastructure in place for new development. Table 6.4 presents the questions explored and the findings. The city has a series of Adequate Public Facilities Standards that require certain provisions before the time of development. Having these standards in place can funnel growth into geographic areas that are more capable of handling development. They can also regulate the timing of development to prevent the community's growth from outpacing the government's ability to provide the necessary public facilities to serve that growth. Therefore WH2a was supported. The City of San Marcos also has used moratoria on an as-needed basis in the past. While there is no formal policy that establishes the use of moratoria, San Marcos has utilized this tool to regulate development.

**Table 6.4: WH2a- San Marcos uses "rate-of-growth" controls such as development moratoria or adequate public facilities ordinances to mitigate the negative effects of sprawl.**

<b>Method</b>	<b>Question</b>	<b>Findings (Supported)</b>
Document Analysis	What provisions are in place to ensure that the city of San Marcos would be able to adequately keep up with a growing population?	-Land Development Code Sec 7.1.1.1 -Moratoria are used on an as needed basis

## **Zoning ordinances: Document Analysis (WH2b)**

The primary evidence of support for the zoning ordinances in San Marcos to mitigate the negative effects of sprawling development can come in different forms. The presence of agricultural or large lot zoning at very low densities can be utilized to protect open space and direct growth away from areas that are environmentally sensitive or undesirable for development. This method can discourage development in certain areas by setting lot size minimums large enough. Another way to provide evidence of support would be the promotion of cluster development as a way to still allow development while also preserving open space. The use of large-lot or agricultural zoning in collaboration with cluster zoning can allow development while retaining open space and protecting sensitive areas. Figure 6.1 provides a map of the zoning districts in San Marcos, TX.

The zoning ordinances in San Marcos allow for agricultural uses in certain areas one of two ways. The first way is by permitting the zoning district for a certain land use. The second way is by issuing a conditional use permit (CUP) in the zoning district to allow for a particular land use. The City of San Marcos has a designated zoning district for agriculture and ranching. It requires a minimum of five-acre lots. The future land use map designation for these districts allows for a very low residential density of zero to three dwellings per unit acre. The purpose of these agricultural ranch districts is to preserve agricultural usage of land, to offer protection to agricultural land from the effects of objectionable, hazardous, or environmentally disruptive uses, and to discourage untimely scattering of more dense urban development.

Future development districts are also established and are set on minimum lot sizes of two-acres. They also have a future land use map designation of very low residential density of zero to three dwellings per unit acre. The purpose of future development districts is to provide areas for land that is relatively underdeveloped or agricultural in nature. These districts also act as a default district for land that is newly annexed that is not yet ready to be designated and zoned for a particular land use.

The San Marcos municipal code<sup>26</sup> addresses the cluster development plan to “authorize the use of residential density standards in substitution for minimum lot size standards for residential uses, or to authorize increased impervious cover or lot coverage for nonresidential uses.”

The planning area for Wonder World Drive extension is zoned primarily (73%) for very Low Density Residential, which sets residential housing at an overall density of zero to three dwelling units per acre. The Wonder World Land Use Plan, which was adopted January 14, 2002 as part of the Horizons Master Plan, distinguishes areas both inside and outside of the road extension. Areas inside the extension, north and east of the roadway, are designated for an overall density of two to three dwelling units per acre. Areas outside the roadway are designated for an overall density of up to one dwelling unit per acre. The use of these large-lot zoning provisions allows for the protection of the environmentally sensitive areas around the Wonder World Drive extension.

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<sup>26</sup> Section 1.5.8.1

The plan encourages clustering and conservation development for all areas in the development zone in order to “provide maximum protection for the water resources of the Edwards Aquifer as well as to minimize the costs of providing infrastructure” (Wonder World Land Use Master Plan, 15). The plan also recommends the formulation of a conservation development overlay-zoning district for the purpose of encouraging the preservation of large areas of open space for environmental protection, recreation and aesthetic preservation (Wonder World Land Use Master Plan, 22).

The City of San Marcos has also established parkland requirements for the development of residential subdivisions. The San Marcos Municipal Code<sup>27</sup> states:

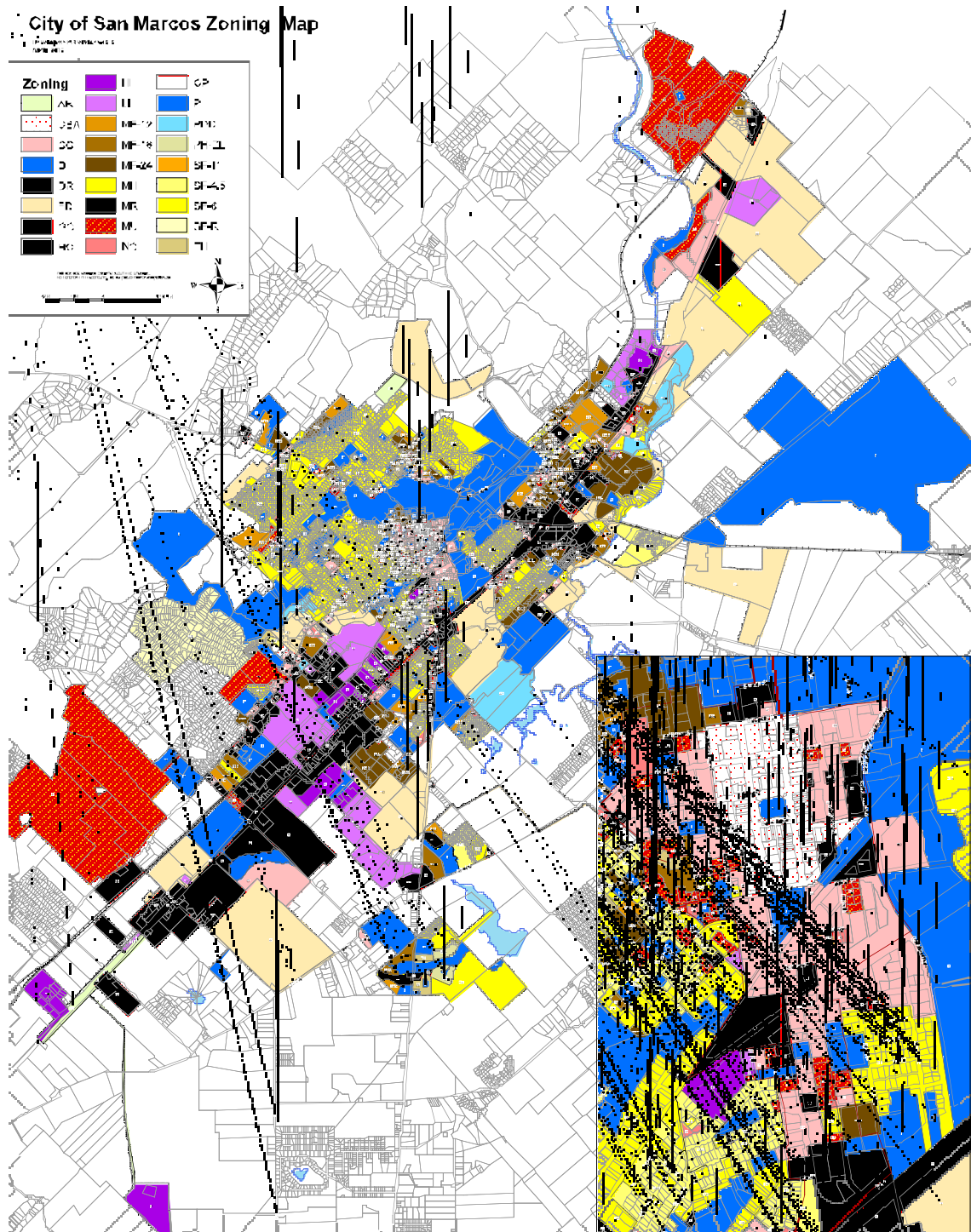
The City of San Marcos has determined that recreational areas in the form of public parks and open spaces are necessary for the well being of the residents of the City. The City has further determined that a reasonable connection exists between the subdivision of residential property and the need for additional parkland to serve new residents of the community. It is the intent of this Section, therefore, to require a reasonable method for the dedication of public parkland, or the payment of a fee in lieu of property dedication, that is directly related to the need for high quality park land and open space sites for the use and enjoyment of the citizens of San Marcos.

These requirements are meant to provide open space benefits for the residents of San Marcos. Also, by requiring open space and parkland dedication, developers may be influenced to construct more compact development.

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<sup>27</sup> Section 7.6.1.2

**Figure 6.1: San Marcos Zoning Map 2011**



Source: City of San Marcos Website  
[http://www.sanmarcostx.gov/departments/CIP/docs/06mar\\_Zoning.pdf](http://www.sanmarcostx.gov/departments/CIP/docs/06mar_Zoning.pdf)



### **Zoning Ordinances: Structured Interviews (WH2b)**

According to officials interviewed, “the city of San Marcos does allow for agricultural zoning (AR) districts. The primary use of these districts is for holding purposes to allow time for decisions to be made as to what the future use for areas may be and be zoned appropriately.”

San Marcos has made an attempt to integrate cluster zoning, in the form of smaller lot sizes forming a denser area. According to interviewed officials, “there have been no requests from developers to practice cluster zoning.” The city has encouraged cluster zoning but it has never gone anywhere. Developers have been reluctant to practice cluster zoning because of the fears about the consequences of improper execution. The city has pushed cluster zoning pretty hard but developers have been reluctant to proceed with doing it.

### **Zoning Ordinances: Level of Support (WH2b)**

The document analysis and structured interviews provided limit support for WH2b. Table 6.5 presents the questions explored and the findings. While agricultural districts do serve the purpose of holding land until future land-use decisions are made, they are not set up specifically for the purpose of preventing development in areas that may be socially or environmentally valuable. The city also has been unable to promote cluster development.

**Table 6.5: WH2b - San Marcos uses appropriate zoning ordinances to mitigate the negative effects of sprawl.**

<b>Method</b>	<b>Question</b>	<b>Findings (Limited Support)</b>
Document Analysis	Does the city of San Marcos have zoning districts designated for the purpose of preserving open space or directing and managing growth?	<p>-The city of San Marcos has agricultural zoning districts with the purpose of preserving agricultural usage of land, to offer protection to agricultural land from the effects of objectionable, hazardous, or environmentally disruptive uses, and to discourage untimely scattering of more dense urban development.</p> <p>-The city's master plan recommends cluster or conservation development for the purpose of encouraging the preservation of large areas of open space for environmental protection, recreation and aesthetic preservation.</p>
Interviews with City Officials	<p>Does the City of San Marcos use agricultural zoning to direct growth elsewhere?</p> <p>Has cluster zoning been implemented in San Marcos?</p>	<p>-Use of Agricultural zoning for holding purposes</p> <p>-Cluster zoning not taken to by developers</p>

***WH3: Public Ownership and Management of Land***  
***San Marcos uses public ownership and management of land to mitigate the negative effects of sprawl.***

The acquisition and management of land is a way to direct and manage growth and, more importantly, define where growth is inappropriate. Usually the public acquisition of land is a response to a market failure that fails to acknowledge a public good should be protected. The acquisition of land aims to keep the positive externalities that are provided by having certain areas of land protected or managed by the government. The two methods of public land acquisition and management explored in this study are the purchase or transfer of development rights and fee-simple acquisition of land.

**Transfer/Purchase of Development Rights: Document Analysis (WH3a)**

The city of San Marcos allows for the transfer of development rights through the Transfer of Development Rights (TDR) zoning process. Development Transfer districts allow for the “transfer of residential density or impervious cover from a site that is to be in whole or part restricted to permanent open space to a different site on which the density or impervious cover can be utilized pursuant to an integrated development design” (San Marcos Land Development Code).<sup>28</sup> In other words, these districts identify sending areas, where the development rights are transferred from, to remain undeveloped and a receiving area, which receives the development rights.

The Land Development Code of San Marcos mentions Development Transfer Granting districts that are “applied to preserve land in a natural state, such as areas

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<sup>28</sup> Section 4.2.7.1 of the San Marcos, TX Code of Ordinances

located over the Edwards Aquifer or watershed protection zones, buffer zones, floodplains and any other areas that have environmentally significant natural features.” These districts can combine with both residential and nonresidential base zoning districts to restrict the number of dwellings or the amount of square feet that can be constructed on all or part of the land. The Development Transfer Receiving Districts (receiving areas) may be applied to land that does not contain environmentally significant resources. The development of this land must also be compatible with adjacent land uses and be consistent with the city’s master plan (San Marcos Code of Ordinances). The use of transferring development rights can direct and manage growth to protect open space and environmentally sensitive areas, which can be threatened by sprawling development. They can also be coupled with other approaches, such as cluster zoning to allow for development, while dictating where growth development should not happen and preserve open space.

### **Transfer/Purchase of Development Rights: Structured Interviews (WH3a)**

City officials stated that the city of San Marcos has never used the transfer of development rights provisions. One of the reasons why the provisions have never been used, the interviewees said, was that the city allows net acreage to be calculated for the units per acre. This provides no incentive to transfer development rights, even though the landowners are not going to build on the land. Landowners need to show a lower density than what is actually being constructed. For example, if a landowner owns two hundred acres and one hundred of those acres are on a floodplain, which cannot be developed, the landowner still gets to calculate the units

per acreage based on the total two hundred acres. City officials also noted that San Marcos has come under scrutiny for their failure to incorporate the transfer of development rights. Officials also noted that there has been no purchasing of development rights from the city due to the lack of incentive to do so.

### **Transfer/Purchase of Development Rights: Level of Support (WH3a)**

Based on the document analysis and interviews, policy is in place to acquire development rights. San Marcos, however, has not used Transfer of Development rights to mitigate the negative effects of sprawling development. Hence, WH3a is only partially supported. Table 6.6 presents the questions explored and the findings. The city has the mechanism to control sprawl through development rights acquisition; however, since it is not used and there doesn't seem to be a plan for them to be used, support for WH3a is weak at best.

**Table 6.6: WH3a - San Marcos uses transfer or purchase of development rights to mitigate the negative effects of sprawl.**

Method	Question	Findings
Document Analysis	Does the city allow for the transfer or purchase of development right?	<ul style="list-style-type: none"> <li>-The city of San Marcos allows for the transfer of development rights through its TDR zoning process.</li> <li>-The TDR program is designed to preserve land in its natural state and protect environmentally sensitive areas.</li> <li>-No mention was found on the purchase of development rights</li> </ul>
Interviews with City Officials	Where has the city performed a transfer of development right to protect certain areas?	<ul style="list-style-type: none"> <li>-The city of San Marcos has never actually taken part in a transfer of development rights because of the lack of incentive to do so.</li> </ul>

### **Fee-Simple Acquisition: Document Analysis (WH3b)**

Section 7.6.1.2 of the San Marcos Municipal Code states:

The city of San Marcos has determined that recreational areas, either in the form of public parks or open spaces, are essential for the well being of the community and residents of the city. The city established that a reasonable connection exists between the subdivision of residential property and the need for additional parkland or open space to serve the residents of the community.

The city has established an account for park benefit areas, including parkland and open space. The funds in the account are earmarked solely for the acquisition and development of parkland, either in the same park benefit area in which a subdivision is located or for regional parks, and open space that will benefit all of the citizens of San Marcos (Section 7.6.1.2. San Marcos Code of Ordinances).

The city of San Marcos established the Schulle Canyon Greenspace after acquiring the twenty-two acres of undeveloped parkland from a development company which had previously purchased the land from the Cox family. According to the San Marcos Greenbelt Alliance, the developers started the process of developing the property into townhouses and single-family housing. The city council approved an agreement for the twenty-two acres at Schulle Canyon under which the city traded a five-acre area along I-35 south at the site of the Lowman Airport. (San Marcos Greenbelt Alliance Website).<sup>29</sup>

The City of San Marcos has also purchased the Purgatory Creek Greenspace acreage in portions over the last several years. An initial purchase of thirty-three acres was made in 1979 for an area that had been zoned for high-density, multi-family development. Since that time, the city has purchased an additional 362.3

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<sup>29</sup> <http://www.smgreenbelt.org/SMNaturalAreas.htm#ProspectPark>

acres to minimize the environmental impact of the Wonder World Drive extension (San Marcos Greenbelt Alliance website). According to the Wonder World Drive Land Use Plan,<sup>30</sup> the purpose of this acquisition was for the preservation of open space and existing vegetation. The Wonder World Land Use Plan from the City of San Marcos gives an account of the natural value and benefits of preserving this area:

The natural Hill Country landscape of the planning area is one of its most distinguishable characteristics. Preservation of large contiguous areas of open space not only provide benefits for water quality, wildlife habitat, and other environmental concerns, but also help preserve the visual character of an area. In addition, by preserving as much existing vegetation as possible in developing areas, the negative visual impacts of urban development can be reduced and the natural beauty of the area preserved.

Another greenspace acquisition that the city has made recently is 9.02 acres of land located on the north side of Prospect Street near Colombia Street. This site consists of aquifer recharge features and caves. The value of the transaction was \$180,000. Half was paid in cash by the city and the other half was provided for by giving water and wastewater impact fee service units, which can be used in other developments elsewhere in San Marcos. The acquisition was made in order to protect this wooded area from development (City of San Marcos Website).

The City of San Marcos, Hays County, and Texas State University have also partnered to purchase and maintain the Spring Lake Preserve<sup>31</sup>. This 251-acre park sits just above the headwaters of the San Marcos River with nearly half of the

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<sup>30</sup> For the full plan, visit [http://www.ci.san-marcos.tx.us/departments/planning/docs/Land\\_Use\\_Plan\\_\(Adopted%201-14-2002\).pdf#xml=http://sanmarcostx.gov/scripts/texis.exe/webinator/search/xml.txt?query=wonder+world+land+use&pr=COSM&prox=page&rorder=500&rprox=500&rdfreq=500&rwfreq=500&rlead=500&sufs=0&order=r&cq=&id=4ad6f2b811](http://www.ci.san-marcos.tx.us/departments/planning/docs/Land_Use_Plan_(Adopted%201-14-2002).pdf#xml=http://sanmarcostx.gov/scripts/texis.exe/webinator/search/xml.txt?query=wonder+world+land+use&pr=COSM&prox=page&rorder=500&rprox=500&rdfreq=500&rwfreq=500&rlead=500&sufs=0&order=r&cq=&id=4ad6f2b811)

<sup>31</sup> Several grants and donations from Hays County, Texas Parks & Wildlife, the U.S. Department of the Interior, the Meadows Foundation, Terry Gilmore, the McCoy Foundation, the Lower Colorado River Authority, and the Guadalupe-Blanco River Authority have also contributed for allowing the purchase of this land.

property in the Edwards Aquifer recharge zone. All of the property is also part of the Sink Creek Watershed (San Marcos Greenbelt Alliance). This acquisition has protected environmentally sensitive areas from development and helped to maintain the natural setting in the area.

### **Fee Simple Acquisition: Structured Interviews (WH3b)**

Interviewed officials for the city of San Marcos stated that the city had acquired land through outright purchase for the purpose of protecting environmentally sensitive areas. One of the examples given was the Schulle Preserve, which was purchased in order to “protect an area that was environmentally sensitive.” Officials also mentioned that the “Edwards Aquifer Authority has a twenty percent impervious cover requirement over the recharge zone, which is located in this area.”

### **Fee Simple Acquisition: Direct Observation (WH3b)**

This study also used direct observation to provide for a first hand account of the land that had been acquired by the City of San Marcos. Direct observation allowed for a visual account of the properties and provided evidence that supports the working hypothesis. The two images below, figures 5.1 and 5.2, provide visual accounts of Schulle Canyon and Purgatory Creek. Schulle Canyon, figure 5.1, is 20.95 acres of woodland east of East Sierra Circle, west of Ridgewood, south of Schulle Street and north of Owens that was acquired by the city. The Purgatory Creek Greenspace, figure 5.2, is along the Wonder World roadway extension.





Figure 6.2: Schulle Park



Figure 6.3: The entrance to the trail at Purgatory Creek

### Fee Simple Acquisition: Level of Support (WH3b)

Based on the interviews, document analysis, and direct observation, WH3b is strongly supported. Table 6.7 presents the questions explored and the findings. The City of San Marcos has acquired land for the purpose of protecting open space and environmentally sensitive areas. These types of areas may be threatened by sprawling development and have been protected by public acquisition and management

**Table 6.7: WH3b - San Marcos uses fee-simple acquisition of land to mitigate the negative effects of sprawl.**

Method	Question	Findings (Supported)
Document Analysis	What areas of land has the City of San Marcos acquired for the purpose of preserving open space or guiding development?	-The city of San Marcos has an account established solely for the acquisition of parkland and open space. -The city of San Marcos has acquired land such as the Schulle Preserve, land in Purgatory Creek, and land near Prospect Street and Colombia Street for the purpose of protecting open space and environmentally sensitive areas.
Interviews with City Officials	Where/Why has the city acquired land to direct growth?	-Schulle Preserve -Purgatory Creek -Land was acquired for the purpose of protecting environmentally sensitive areas.

## **Chapter Summary**

Chapter 6 provided the results of the research performed for this applied research project. The research in this study was exploratory in nature: to explore the policies that the city of San Marcos has in place to mitigate the negative effects of sprawling development. Given the documents analyzed and interviews conducted, it appears that the City of San Marcos does have some policies in place to mitigate the negative effects of sprawling development. The interviews also revealed that certain provisions are being made to enhance some policy strategies such as the new Smartcode. Working hypotheses and sub-hypotheses were used to explore the different policy strategies that can be used for sprawl mitigation.

Chapter 7 provides some concluding remarks about the research conducted and provides recommendations for the city of San Marcos and for future research.

## **Chapter 7- Conclusions**

### **Purpose of the Research**

The final chapter of this applied research project summarizes the information and results. This project has a three-fold research purpose. The first purpose is to explore some of the policy options that could be used for the City of San Marcos in order to mitigate some of the negative effects of sprawling development. After the working hypotheses were formed, the second purpose is to examine if the city utilized the different forms of policies developed in the conceptual framework. The final purpose of the research is to provide recommendations for improving the policy framework with regard to mitigating the negative effects of sprawling development for the city of San Marcos, TX. Table 7.1 below provides a summary of the results.

**Table 7.1: Summary and Recommendations**

Working Hypothesis	Level of Support	Recommendations
<b>WH1: San Marcos uses appropriate incentive-based policy instruments to mitigate the negative effects of sprawl.</b>	Limited Support	
WH1a: San Marcos uses impact fees to mitigate the negative effects of sprawl.	Supported	-Vary impact fees to create incentive to develop in areas where growth is desirable
WH1b: San Marcos uses appropriate tax policies to mitigate the negative effects of sprawl. <i><b>WH1b1: Use Value Taxation</b></i> <i><b>WH1b2: Split Rate tax</b></i>	WH1b1-Not Supported WH1b2-Not Supported	-Review the policy on how city taxes are levied and explore the option of implementing a use-value or split-rate tax on property.
WH1c: San Marcos uses infill development incentives to mitigate the negative effects of sprawl.	Limited Support	-Continue providing infill housing incentives and revisit incentives for the downtown area once form-based codes are in place
<b>WH2: San Marcos uses appropriate regulatory-based policy instruments to mitigate the negative effects of sprawl.</b>	Somewhat Supported	
WH2a: San Marcos uses “rate-of-growth” controls such as development moratoria or adequate public facilities ordinances to mitigate the negative effects of sprawl.	Supported	-Continue to use Adequate Public Facilities Ordinances and moratoria to control timing of development and provide adequate infrastructure.
WH2b: San Marcos uses appropriate zoning ordinances to mitigate the negative effects of sprawl.	Limited Support	-Provide more incentive and guidance to promote cluster development
<b>WH3: San Marcos uses public ownership and management of land to mitigate the negative effects of sprawl.</b>	Supported	
WH3a: San Marcos uses transfer or purchase of development rights to mitigate the negative effects of sprawl.	Not Supported	-Utilize the Transfer of Development Rights provisions to make them more economically viable for both parties so that they may be used.
WH3b: San Marcos uses fee-simple acquisition of land to mitigate the negative effects of sprawl.	Supported	-Continue the fee-simple acquisition of land to protect sensitive areas and direct growth.

## **WH1: Incentive-Based Policies**

It was established that San Marcos does use impact fees to cope with some of the costs of infrastructure that are associated with new development. These fees are across the board and may provide incentive to develop in areas that already have an established infrastructure. The impact fees in San Marcos are equally assessed so they do not give incentive to develop in one area versus another.

The assessment of property taxes are designated to the assessor and collector of Hays County. Therefore, the city of San Marcos does not incorporate a use-value or a split-rate tax on property. Section §6.22 (b) of the Texas Property Tax Code states, “the assessor and collector for a home-rule city are determined by the city’s charter and ordinances.”

With the adoption of the new SmartCode, the City of San Marcos is confident that infill development will be much easier to practice and will not include the compatibility hurdles associated with the land development code. A revision of the infill development incentives offered should be done after the new SmartCode has been in place.<sup>32</sup>

## **WH2: Regulatory Policies**

WH2 was partially supported. The use of agricultural zoning in the City of San Marcos approximates a moratorium for development in certain areas since it acts as a holding mechanism in order to make future land use decisions. The City of San Marcos also has parkland requirements on development that mandate that

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<sup>32</sup> Adopted on April 19, 2011

open-space be set aside. This requirement helps to preserve some of the natural character of San Marcos, as well as provide social and environmental benefits.

The city also has a series of Adequate Public Facilities Standards that should continue to require certain provisions before the time of development. Having these standards in place can funnel growth into geographic areas that are more capable of handling development. These standards can also regulate the timing of development to prevent the community's growth from outpacing the government's ability to provide the necessary public facilities to serve that growth. These standards, therefore, serve to mitigate sprawl. The city has also enacted moratoria on an as-needed basis in order to regulate the timing and provisions of development.

### **WH3: Public Ownership and Management of Land**

While the city does have provisions and ordinances that support and allow for the transfer of development rights, the actual transaction has never been done between the city and the property owner or developer. The incentive to do so is not there, making it nearly impossible to utilize the transfer of development rights. Provisions should be made to make this a more attractive approach to both the city and landowners. San Marcos has preserved open space through the use of fee-simple acquisition, which has been an effective method. WH3 was supported because of the city's ability to mitigate some of the negative effects of sprawling development by the acquisition of land. It could be financially beneficial, however, for the city to restructure their transfer of development rights program, which could

make the purchase of development rights more attractive as well to provide alternatives to outright acquisition of land.

The city of San Marcos has successfully acquired land for the purposes of protecting it from development and should continue to utilize this approach when necessary.

### **Recommendations**

It is recommended that the impact fees should have varying costs, depending on the area being developed, which could provide further incentive for development in desired areas and not in environmentally sensitive or culturally and historically significant areas. For property taxation, the city could explore the option of implementing of a use-value or split-rate tax on property. Cluster/conservation development should be strongly considered while a more attractive approach needs to be taken to promote cluster development to developers. San Marcos should also reformulate their transfer of development rights program to make transactions more enticing. TDR programs can preserve land at a much lower cost than outright acquisition. While San Marcos does have an infill development policy, it is not easily accessible. The City of San Marcos should make their infill development policy more publicized and easy to access on the website.

### **Recommendations for Future Research**

This study is an exploration of the policy framework of the controls that the City of San Marcos currently uses to mitigate the negative effects of sprawling



development. This research does not advocate that San Marcos use all of the controls identified in the conceptual framework because different controls may be used to achieve the same desired effect. The exploration of the current use of controls should assist in making it possible to examine San Marcos policy to mitigate sprawling development from a comprehensive perspective. According to certain city officials, the City of San Marcos is currently in a transition period, updating several areas of planning and development including the new SmartCode and master plan. In order to explore what changes have been made, the policy framework of San Marcos should be revisited after the transition. Finally, the research framework used in this applied research project can be applied in the exploration of other cities.

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