

**Residential Land Use Policy and Conservation Development  
in the Blanco River Basin**

**by**

**Ronald L. Ellis, Jr.**

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Dr. Patricia M. Shields

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Melody Kuhns

### **Abstract**

The purpose of this research has two parts. The first is to evaluate the compatibility of residential land use policies in the Blanco River Basin with conservation development. The second is to identify, through open-ended interviews, policy alternatives that may be useful to accomplish conservation development in the Blanco River Basin. The research methods included document analysis of residential land use policies of the cities and counties that govern most of the Blanco River Basin and personal interviews with planners and developers who have expertise in conservation development planning. The findings indicate that residential land use policies in the Blanco River basin are generally incompatible with conservation development, but that alternative policy methods exist that may be able to permit its practice.

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## **Chapter I - Introduction**

### ***Research Purpose***

The Nature Conservancy's *Conservation Area Plan for the Blanco River* identifies home development as one of the major threats to the conservation elements in the Blanco River basin. Home development, especially subdivision development, results in habitat fragmentation and loss. The problem is exacerbated when homes are sited in ecologically delicate areas such as along ridge tops or near water. The conservation plan states that home development threats "may be mitigated through ecologically sensitive design and construction of subdivisions and homes" (Nature Conservancy 2004, 15).

Conservation development is a subdivision planning method that can be used to preserve environmental and cultural features. Under traditional subdivision development, subdivisions are designed to utilize all buildable parts of a tract of land for houses or roadways. Under conservation development, half or more of the buildable land, including all of the most ecologically delicate areas, is set aside as open space to protect its environmental or cultural value. Conservation development has been successfully used in other locales to preserve natural resources, natural beauty, and rural character without adverse economic impact on homeowners, developers, or communities (Arendt 1996; Arendt 1999; National Park Service n.d.).

The purpose of this research has two parts. The first is to evaluate the compatibility of residential land use policies in the Blanco River Basin with conservation development. The second is to identify, through open-ended interviews, policy alternatives that may be useful to accomplish conservation development in the Blanco

River Basin. The first purpose is addressed through document analysis of comprehensive plans, zoning ordinances, and subdivision ordinances of the three cities and two counties that govern most of the Blanco River Basin. The second purpose is addressed through personal interviews with planners and developers who have expertise with area policies and in conservation development planning.

### ***The Blanco River Basin***

Originating from springs in Kendall County, the Blanco River flows 87 miles through Blanco and Hays Counties before reaching the San Marcos River. Its basin covers more than 280,000 acres in the Edwards Plateau ecoregion of central Texas. The basin is currently lightly developed, but faces present and future development pressure from rapid growth in the region (Nature Conservancy 2004, ii). The Nature Conservancy has designated the Blanco River basin (figure 1.1) a conservation area and has developed a conservation plan for the area.

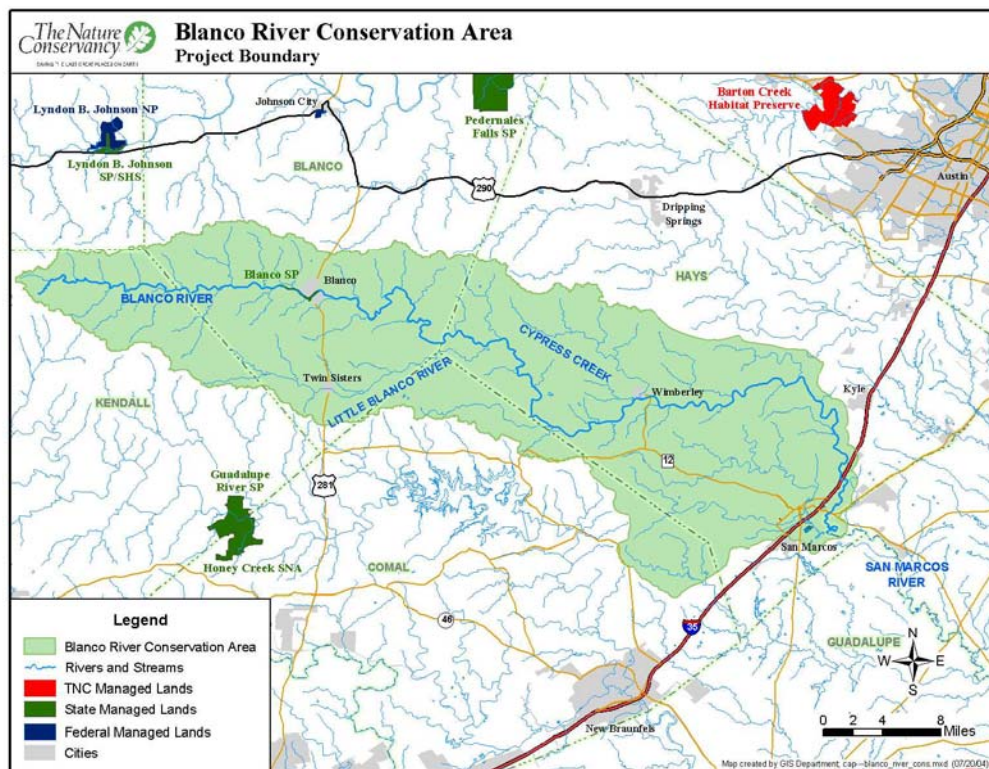
The Nature Conservancy selected the Blanco River Basin as a conservation area as a result of a process called an eco-regional assessment. An eco-regional assessment is “A compilation of individual species occurrence data, remotely-sensed data, and other data that describes bio-diversity from plant and animal species on up to natural community types.”<sup>1</sup> According to Steve Jester, Blanco River Project Manager for the Nature Conservancy, the Blanco River Basin ranked very high for aquatic diversity, terrestrial diversity, and system sustainability.

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<sup>1</sup> Steve Jester (Nature Conservancy Blanco River Project Director) in personal interview with the author, March 17, 2006.

One of the primary species that the Nature Conservancy focused on is the Golden-cheeked Warbler, an endangered migratory songbird. The Blanco River has a narrow valley with numerous steep ashe-juniper lined canyons. This characteristic makes for good Golden-cheeked Warbler habitat. In addition to the better-known species, “there are all sorts of rare plants and unique vegetative communities that occur up and down the valley.” Steve Jester points out that although they’re not as charismatic as a lot of the mammals or birds or fish that occur in the Blanco River Basin, those rare plants and vegetative communities are extremely important, too.<sup>2</sup>

**Figure 1.1 – Blanco River Conservation Area**



Source: Steve Jester, The Nature Conservancy

<sup>2</sup> Steve Jester (Nature Conservancy Blanco River Project Director) in personal interview with the author, March 17, 2006.



### *City Profiles*

Located from west to east on the river, Blanco, Wimberley, and San Marcos are the largest towns in the basin. Blanco is a small town with a 2000 census population of 1,505. It is located approximately 50 miles north of San Antonio and 50 miles west of Austin, and in recent years has seen growth from those cities. Over the next decade, the town anticipates a higher growth rate as “ranchette” style large-lot developments are built around Blanco (BCMP 2005).

The Village of Wimberley, located between Blanco and San Marcos on the river, has an incorporated area of nine square miles and the 2000 census population was 3,797<sup>3</sup>. Wimberley’s natural features, such as Jacob’s Well, Blue Hole, and the Blanco River, make it an attractive place to live or own a second home. This attractiveness has created development pressure, which threatens the town’s water supply, water quality, and rural character (VWCP 2002).

San Marcos is a much larger city than Blanco or Wimberley. Its 2003 population was 43,007<sup>4</sup>, and it is home to Texas State University, which has an enrollment of more than 27,000 students<sup>5</sup>. The population of San Marcos is expected to reach nearly 70,000 by 2020 (*San Marcos Horizons* 1996). Geographically, San Marcos lies at the eastern end of the Blanco River at its confluence with the San Marcos River. The San Marcos Springs, Spring Lake and the San Marcos River are its best-known natural features, and, like the Blanco River, they are all part of the larger Guadalupe-Blanco River system (*San Marcos Horizons* 1996).

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<sup>3</sup> <http://censtats.census.gov/data/TX/1604879624.pdf>

<sup>4</sup> <http://quickfacts.census.gov/qfd/states/48/4865600.html>

<sup>5</sup> <http://www.txstate.edu/MainSite/about.do>

For all three cities and the surrounding unincorporated areas, the combination of anticipated population growth and sensitive natural features, dictates the need for careful planning for future residential development. In some cases, current municipal and county policies may not be designed to effectively meet that need.

### ***Policy Setting***

All of the land in the Blanco River Basin falls under the regulatory authority of a city or a county. The land use policies of the cities Blanco, Wimberley, and San Marcos and Blanco and Hays counties<sup>6</sup> govern the type of development that is done there. The regulatory powers, granted by the state of Texas, of those entities dictate the types of policies that they are able to put into place.

Texas municipalities have the regulatory authority<sup>7</sup> to create zoning districts and adopt ordinances pertaining to land use control. Texas counties, on the other hand, have much less power to govern land use, and therefore have less ability to control the type of development that occurs within their borders (Redington 2002).

Chapter 232 of the Texas Local Government Code outlines the land use authority of county governments. Directly, counties may regulate the subdivision and platting of property so long as subdivided lots are less than ten acres in size (Redington 2002). Indirectly, counties can regulate development through On-site Sewage Facility (OSSF) Rules. Power to regulate on-site sewage facilities is derived from general authority

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<sup>6</sup> The basin covers small parts of Kendall and Comal counties, but is mostly located within Blanco and Hays counties.

<sup>7</sup> Granted by Texas Local Government Code §51.001, §51.012, §211.003.

granted by the Texas Health and Safety Code<sup>8</sup> and the Texas Water Code<sup>9</sup>. Under these codes, they may “(1) enforce laws reasonably necessary to protect public health; (2) expend funds for public health and sanitation purposes; and (3) regulate water quality” (Redington 2002, 5). On-site sewage facility rules are the foundation for minimum lot sizes in Blanco and Hays counties.

### ***Senate Bill 873***

In 2001, the Texas legislature passed Senate Bill 873 amending Section 232.101 of the Local Government Code. This amended rule grants 30 counties the authority to “adopt rules governing plats and subdivisions of land within the unincorporated area of the county to promote the health, safety, morals, or general welfare of the county and the safe, orderly, and healthful development of the unincorporated areas of the county”<sup>10</sup>.

These new powers are extended to counties with populations of 700,000 or more, counties adjacent to those counties and in the same metropolitan statistical area (MSA), and Texas-Mexico border counties with populations of 150,000 or more (Redington 2002). Hays County is included because it borders Travis County (700,000 or more population) and lies within the same MSA. Although Blanco County borders Travis County, it is not in its MSA, so it does not receive the new authority.

While SB 873 extends some counties’ authority over land use, it specifically excludes zoning and the regulation of “the number of residential units that can be built

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<sup>8</sup> §121.003

<sup>9</sup> §26.171, 26.175

<sup>10</sup> Texas Local Government Code §232.101

per acre of land”.<sup>11</sup> Its usefulness for conservation development has yet to be determined. Some counties, such as Travis and Medina, have enacted new land use regulations under SB 873, but most other eligible counties have yet to do so.

Travis County has adopted a rule requiring developers to dedicate land for parks or pay fees in lieu of doing so. This requirement must be met as a condition of plat approval. Travis County now also requires that floodplains remain undeveloped and in their natural state (Tiffany 2005).

Medina County, located southwest of San Antonio, has adopted new subdivision rules under the authority granted by SB 873. These rules function similarly to conservation development zoning rules discussed in the Zoning Ordinances section of Chapter III of this paper. Article 9.4.2 of the Medina County Subdivision Regulations creates this incentive to preserve conservation areas:

In order to encourage the protection of water quality, the reduction of water demand, and the preservation of open space, Medina County allows the calculation of minimum lot size to include a percentage of land area that the developers set aside for conservation areas...(MCSR 2005, 27)

Essentially, under the regulation, developers are able to reduce their minimum lot size based on the amount and type of open space they preserve (MCSR 2005). The rules have their limitations, and to some, might not meet the full requirements of conservation development, but they are a very good example for other counties that wish to use SB 873 increase their land use authority.

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<sup>11</sup> Texas Local Government Code §232.101.

## ***Chapter Organization***

Chapter II – Conservation Development Overview, defines conservation development and discusses its environmental benefits, economic benefits, and relationship to other planning concepts. This chapter also presents survey data, collected in Hays County, regarding the attitudes of residents toward their natural and cultural environments.

Chapter III – Fundamental Components of Conservation Development, discusses policy features that are conducive to conservation development. Key elements drawn from the literature are used to define several fundamental components<sup>12</sup> of comprehensive plans, zoning ordinances and subdivision ordinances. These fundamental components, when present, help a community to foster conservation development.

Chapter IV – Methodology, outlines the methodology used to evaluate the residential land use policies and to identify policy alternatives that might work in the Blanco River Basin. The research methods are described and operationalized in this chapter.

Chapter V – Results, reports the results of the document analysis and interviews outlined in the methodology chapter. The results are reported by fundamental component, and information supporting the document analysis and obtained through the interviews is integrated into the discussion of the document analysis results. The results of the open-ended questions designed to allow for the emergence of alternative approaches are also presented.

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<sup>12</sup> The concept of fundamental components is a hybridization of the *Categories* and *Practical Ideal Type* conceptual frameworks developed in Shields (1998).

Chapter VI – Recommendations and Conclusions, outlines the recommendations and summarizes the conclusions derived from Chapter V. Since the regulatory powers and administrative resources of each jurisdiction are different, the recommendations for each are different. The conclusions are grouped into town recommendations and county recommendations.

## Chapter II – Conservation Development Overview

### *Chapter Purpose*

The purpose of this chapter is to define conservation development and discuss its environmental benefits, economic benefits, and relationship to other planning concepts. This chapter also presents survey data, collected in Hays County, regarding the attitudes of residents toward their natural and cultural environments.

### *Conservation Development*<sup>13</sup>

Conservation development is known by a variety of names. Randall Arendt (1996) calls it *conservation design*. The Wisconsin Department of Natural Resources (n.d.) calls it *cluster development*, and the Environmental Protection Agency (n.d.) uses the term *open space development*. All of these terms describe the same thing, which can be defined as: “A residential site design and zoning technique used to protect natural, cultural or recreational features of the landscape while allowing new development” (WDNR n.d.).

The end result of conservation development is a *conservation subdivision*. The Wisconsin Department of Natural Resources has published a model ordinance that defines a conservation subdivision as “a housing development in a rural setting that is characterized by compact lots and common open space, and where the natural features of the land are maintained to the greatest extent possible” (WDNR 2001, 5).

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<sup>13</sup> See for example: Arendt 1996, 1999; Lady Bird Johnson Wildflower Center 2005.

Another way to describe conservation development is to compare it to traditional subdivision development. A traditional subdivision is one in which all of the development parcel is divided into housing lots and streets. The only parts not used are the unbuildable parts – steep slopes, floodplains, wetlands, and storm water facilities. The unintended consequence of traditional subdivision development is that it eliminates open spaces for social, recreational, and scenic enjoyment. Generally this consequence is not recognized until an entire community is filled with traditional subdivisions (Arendt 1996, 6).

A frequent analogy used for conservation development is that of a golf course community without the golf course. In a golf course community, the golf course is laid out first and houses and roads are planned around it. Frequently, the golf course will preserve half or more of the development parcel as open space. Conservation subdivisions are planned similarly: “Half or more of the buildable land area is designated as undivided, permanent open space” (Arendt 1996, 6). This is accomplished while building the same number of homes as would be built under the traditional subdivision model, since the homes are clustered on smaller lots to achieve the same density (Arendt 1996, 6).

### ***Environmental Elements and Design***

According to *The Small Town Planning Handbook*, “The most pressing environmental concerns in most small communities are (1) the preservation of rural character, (2) the segregation of agricultural uses from residential development, (3) water quality, (4) protection from floods, and (5) the preservation of open space and unique



sites” (Daniels, Keller, and Lapping 1995, 130). This section discusses how the conservation development design process addresses water quality, flood protection, and open space preservation.

Like conventional subdivision development, conservation development preserves steep slopes, floodplains and wetland areas. Conservation subdivision design, however, will also protect other critical areas such as “upland buffers alongside wetlands, water bodies and watercourses – areas that would ordinarily be cleared, graded and covered with houses, lawns and driveways in conventional development.” Protecting these conservation areas preserves wildlife habitat greenways. These open spaces provide cover and corridors for wildlife to travel through as they move between feeding or hunting areas and their homes (Arendt 1996, 13).

Preserved upland areas also decrease the amount of storm water shed by the development. The land filters runoff, trapping sediment and pollutants as before they can reach water bodies. The slowed runoff decreases downstream flooding and allows more of the water to be absorbed into the ground as recharge for aquifers. According to conservation biologists, riparian corridors and their adjacent uplands provide the best setting for wildlife corridors because in these areas the widest variety of organisms can be found (Arendt 1996, 13-14).

On development tracts without riparian areas, conservation subdivisions can be designed around meadows. A wildflower meadow can provide food and cover for insects, small mammals and birds, while providing visual interest for homeowners. As with upland areas, the meadow’s vegetation filters pollutants from storm water and slows its path toward watercourses decreasing downstream flooding (Arendt 1996, 14).

Conservation development subdivision layout consists of two stages. In the *background stage*, the tract's special features are identified and prioritized. The result is an overlay map showing the best general locations for the building of streets and homes (Arendt 1996, 27-39). In the *design stage* open spaces are designated, home sites are selected, streets are drawn, and lot lines are drawn (40-47).

### ***Background Stage***

To identify the property's building opportunities and constraints, a thorough inventory of its physical characteristics should be taken. This step in traditional subdivision design usually involves identifying the legally unbuildable areas and squeezing as many units as possible on the remaining land. In conservation development design, the property's important features are mapped and divided into *primary conservation areas* and *secondary conservation areas* (Arendt 1996, 30-31).

In his 1996 book, *Conservation Design for Subdivisions: A Practical Guide to Creating Open Space Networks*, Randall Arendt defines primary and secondary conservation areas.

Primary conservation areas consist of the following:

- **Wetlands** – Tidal and freshwater wetlands and the upland buffers around them should be identified. These areas are critical to storm water control and filtration and provide important wildlife habitat.
- **Floodplains** – Building should occur outside of the 100-year floodplain as defined by the Federal Emergency Management Association. The best practice is to build 50 to 100 feet beyond the edge of the floodplain.
- **Slopes** – Whenever possible slopes over 15% should be avoided for building, clearing, or re-grading. Slopes over 25% should always be avoided. Development on slopes creates the high likelihood for erosion and sedimentation of waterways (Arendt 1996, 31-34).

Much of a tract that is considered a primary conservation area will be legally or practically unbuildable, so its preservation in conservation development is not much different than in conventional development. Secondary conservation areas are where the environmental advantages of conservation development have the greatest impact.

The following elements are secondary conservation areas:

- **Soils** – Identifying the drainage characteristics of the property’s soil can target the best locations for on-site sewage disposal. Drainage analysis can also find poorly drained areas that may be subject to long periods of standing water.
- **Significant wildlife habitat** – Areas that are “likely travel corridors linking the areas used as food sources, homes, and breeding grounds” of wildlife (Arendt 1996, 34). Protecting land along watercourses often serves wildlife and water quality purposes.
- **Woodlands** – If the property has been previously cleared for agriculture, woodlands may consist of small stands of trees that give critical shelter for wildlife. In heavily wooded areas, the most mature sections should be spared.
- **Historic, archaeological, and cultural features** – Stone walls, burial grounds, old buildings, or other ruins should be identified and preserved. These features help define a place and give it character.
- **Views into and out from the site** – Home locations should be determined based in part on visual lines to geographic and cultural features. By incorporating open space into the layout, designers can give homeowners views of ridgelines or streams, instead of views of other houses.
- **Aquifers and recharge areas** – Without buffer zones around their recharge areas, aquifers can be susceptible to pollution from fertilizers, treated sewage, and lawn and garden chemicals. Not building in recharge areas allows filtered recharge and contributes to good water quality (Arendt 1996, 31-38).

The Environmental Protection Agency’s model ordinance language for conservation development states similar priorities. It designates that “resource buffers, high quality forest resources, individual trees, critical habitat areas, and high quality soil

resources” should be among the areas prioritized and preserved in subdivision planning (USEPA n.d.)

Once all of the primary and secondary conservation areas have been identified and mapped, the designer and developer can see which areas should not or cannot be built upon (primary areas) and which areas need to be prioritized for preservation (secondary areas). Generally, the amount of space within a property covered by primary and secondary conservation areas is less than half of the tract. This leaves half or more for house lots and streets (Arendt 1996, 39).

### *Design Stage*

The design stage consists of four steps that draw on the information gathered during the background stage. In the first step, the planner or developer designates all of the primary and secondary conservation areas as areas to be preserved and labels them as such on the map. If necessary to achieve neutral density (the same number of homes as a conventional design) the developer can identify additional building sites from the lowest priority secondary conservation areas (Arendt 1996, 42).

In the second step, the home sites are located. By locating home sites before drawing lot lines or streets, the designer can preserve smaller features large trees, rock outcroppings, or stone walls. It’s also a good practice to create as many “view lots” as possible. Home sites should also be located close to open spaces for easy access by residents (Arendt 1996, 42).

In step three the streets and trails are drawn. By using certain techniques, street design for conservation development can augment the aesthetics of the land. Curving

roads can provide different views of open space areas as they drive, while long, straight roads can detract from aesthetics and encourage driving at unsafe speeds. A technique that is equally of value in conservation and marketing is using “single-loaded” streets. Single-loaded streets have homes on only one side. They provide residents with across-the-street views of open space areas instead of across-the-street views of other homes. Single-loaded streets also help to prevent the ugly house-back views from roadways that are so common in conventional subdivision developments (Arendt 1996, 44-45).

The fourth step in the conservation development design process is usually the first step in conventional subdivision design: drawing the lot lines. In conservation development, while the lot lines are legally important, they are less significant from a design perspective. The more important considerations are how the home relates to the open space, the other homes, and the street (Arendt 1996, 47).

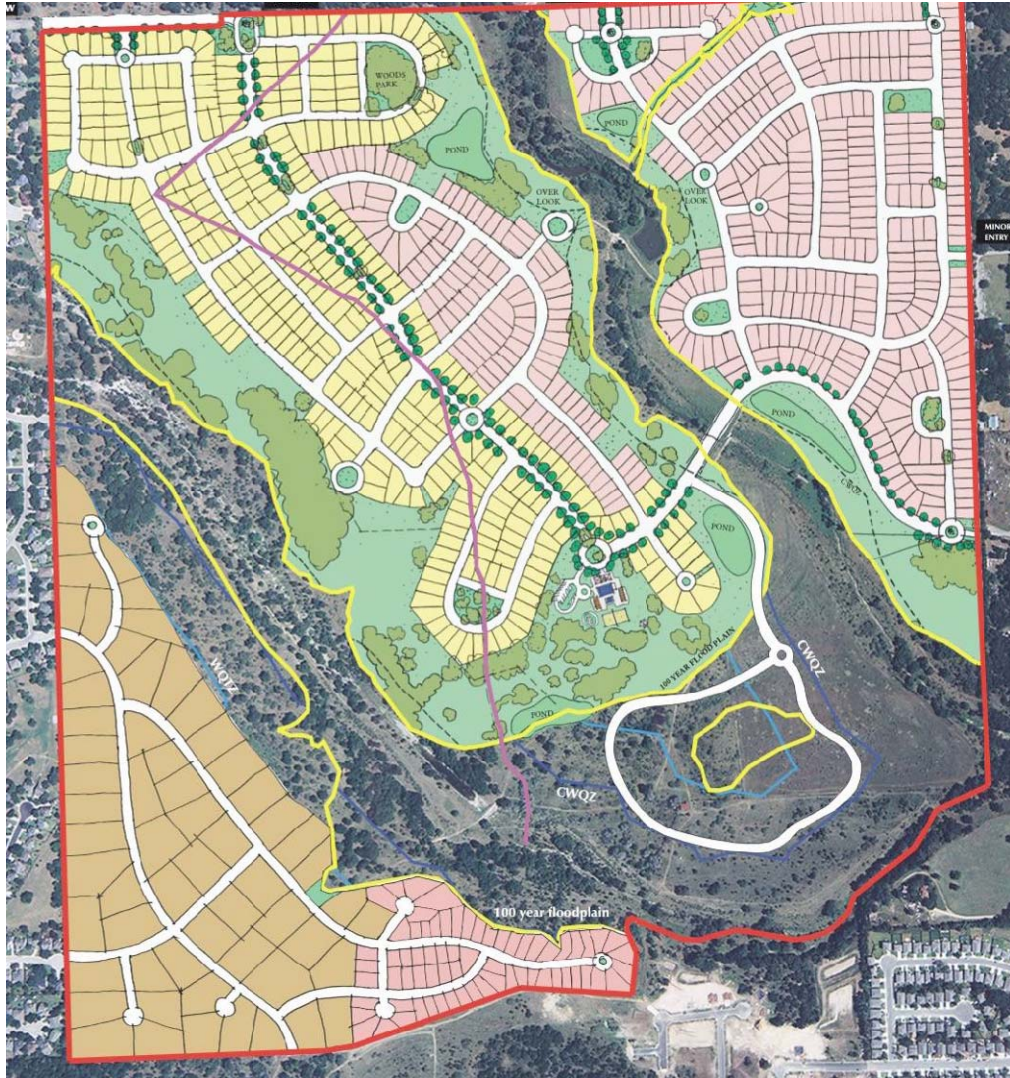
Figure 2.1 shows a traditional subdivision design sketch for a development in Austin, Texas. Lots and roads are drawn throughout the tract except in flood plains and on steep slopes. The design depicted in Figure 2.2 is a more conservation-friendly design on the same tract. The number of units has been reduced from approximately 850 to about 650<sup>14</sup>, and the lots are designed smaller to create more open space on the tract. The lots are situated according to the locations of primary and secondary conservation areas. The preserved open space contains 304 acres of Slaughter Creek watershed as well as mature stands of live oak, post oak, and cedar<sup>15</sup>.

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<sup>14</sup> In this case, the developer was willing to reduce the number of units because land costs were reduced when the City of Austin purchased part of the tract.

<sup>15</sup> Trust for Public Lands press release June 25, 2002. [http://www.tpl.org/tier3\\_print.cfm?folder\\_id=264&content\\_item\\_id=9903&mod\\_type=1](http://www.tpl.org/tier3_print.cfm?folder_id=264&content_item_id=9903&mod_type=1)

**Figure 2.1 – Example of Traditional Subdivision Design. All buildable parts of tract are planned for development.**



Source: Terry Mitchell, Momark Development



**Figure 2.2 – Example of Conservation Subdivision Design. All primary and many secondary conservation areas are preserved.**



Source: Terry Mitchell, Momark Development

### ***Research on Environmental Benefits***

A research study in Pitkin County, Colorado, compared the impacts of conventional subdivision development and conservation subdivision development on wildlife. Pitkin County is in west-central Colorado and is home to the resort towns of Aspen and Snowmass, and between 1960 and 2000, its population grew from 2,300 to 15,000 (Odell, Theobald, and Knight 2003, 73).

The study authors wanted to measure how rural home development affected wildlife habitat. They found that the presence of homes had a positive impact on some species of birds and a negative impact on others. Species that are “generalists”, that is they don’t have narrow requirements for habitat and food, became more abundant near houses. Generalist species include American Robin, Black-billed Magpie, and Brown-headed Cowbird. Species that have specific, narrow food and habitat needs became less abundant near the homes. These birds, classified as specialists, include Blue-gray Gnatcatcher, Black-headed Grosbeak, and Plumbeous Vireo. Medium sized mammals, specifically coyotes and foxes, were also detected less frequently near homes (Odell, Theobald, and Knight 2003, 77).

The study found that each home had a *zone of influence*, in which it had the most impact, which extended approximately 100 meters from the home in all directions. The authors concluded that the use of clustered development would lessen the impact on wildlife, since zones of influence would overlap, decreasing the total area impacted. They also concluded that since a home’s zone of influence can extend 100 meters, developments that border wild or undisturbed lands should include a 100-meter buffer zone between the homes and the wild land (Odell, Theobald, and Knight 2003, 77-78).



### ***Rural Character***

“Open space and small-scale buildings are the two hallmarks of rural character” (Daniels, Keller, and Lapping 1995, 130). More broadly stated, a list of the positive aspects of rural character include: Wooded areas, rivers, open fields, two lane roads, wildlife, farm animals, planted fields, prairies, vistas, ravines, bluffs, and wetlands.

Hamburg Township, Michigan, is in Livingston County, 40 miles northwest of Detroit. In the 1990s Livingston County experienced 31% population growth. To try to preserve “its rural beauty”, Hamburg Township enacted an open space ordinance utilizing conservation development and requiring 40% to 60% of residential subdivision building sites to be preserved as open space (Kaplan, Austin, and Kaplan 2004, 300-302).

Kaplan, Austin, and Kaplan conducted a study to measure residents’ satisfaction with the open space and natural features in their neighborhoods. The authors surveyed equal numbers of residents of “open-space communities” and “conventional communities” (2004, 302). Respondents from both types of subdivisions provided similar responses in their descriptions of their communities. Both groups frequently mentioned the importance of natural features, and both indicated that the “nature view from home is the highest priority when choosing a place to live” (307).

The strongest distinction between respondents from the two types of subdivisions was in their “level of satisfaction with the nearby natural environment”. The open-space subdivision residents expressed a much higher level of satisfaction in this category. The authors conclude, “the open-space community concept is important to residents and was successfully achieved” (Kaplan, Austin, and Kaplan 2004, 310).

### ***Economic Benefits***

The economic impact of environmental degradation can take many forms. In *Rural by Design*, Elizabeth Brabec examines the costs of land consumption, air pollution and water pollution.

Large lot subdivisions consume large quantities of land. Ironically many communities have enacted zoning laws requiring large lots, and have done so in an effort to protect open space. The reality is that large lot zoning fragments open space degrading the ecological and agricultural value of being contiguous. Local agriculture-based economies disappear when all of the agricultural land has been developed (Brabec 1994, 281).

As land is developed, impervious cover is increased. The result is increased runoff, which carries motor oil, pesticides, fertilizers, and sediment into streams, lakes, and rivers. Non-point source pollution degrades water supplies and fisheries, which has negative economic consequences (Brabec 1994, 281).

Removing woodlots and greenways, which is often necessary in conventional and large lot subdivision development, results in a loss of carbon dioxide removal capacity by trees and other vegetation. Sprawling subdivisions also require more automobile use, increasing miles driven and tailpipe emissions. Subdivisions designed compactly with social and recreational activities within walking distance can help decrease trips and emissions (Brabec 1994, 282).

Brabec (1994) cites studies that show increases in costs of public services under conventional development. For instance in Culpepper County, Virginia, “for every dollar of revenue collected from residential land, \$1.25 is spent on county services”, and “for

every dollar collected from farm/forest/open space, 19 cents is spent on services” (Vance and Larson 1988).

Conservation development also has a positive economic impact through appreciation of the homes in conservation subdivisions. A study in Massachusetts compared the market appreciation for clustered housing with open space to the market appreciation for conventional development. Appreciation was measured in percent change over a period of time. The study was repeated in two communities, Concord and Amherst, with similar results (Lacy 1990, purpose section).

In Concord, sales figures from 1980 through 1988 were used to calculate market appreciation. Homes in the conventional subdivision appreciated 146.8% over the time period. Homes in the cluster subdivision appreciated 167.9% - 26 points more than the homes in the conventional subdivision. The average size of the house lots in the conventional subdivision was 33,453 ft<sup>2</sup>, while the average lot size in the conservation development was only 7,232 ft<sup>2</sup> (Lacy 1990, Concord section).

In Amherst the study examined the difference in market appreciation between two subdivisions from 1968 to 1989. Over the period, homes in the conventional subdivision appreciated 410%. Homes in the clustered subdivision with adjoining open space appreciated 462% - 42 points higher than homes in the conventional subdivision. As in Concord, the conservation development homes in Amherst were on substantially smaller lots (Lacy 1990, Amherst section).

### *Development Economics*

In addition to increased home values and decreased environmental costs, conservation development can have a positive impact on the developer's bottom line<sup>16</sup>. This point was made repeatedly in an interview with Terry Mitchell, a central Texas developer with experience in conventional and conservation subdivision design. According to Mitchell, "the real estate business is all about mitigating risk" and "lower costs equal reduced risks". Conservation subdivision design lowers costs by lowering the developer's investment in infrastructure. Shorter roads, shorter water and sewage lines, and less landscaping are among the per-lot costs that decrease when homes are clustered.

Mitchell illustrates his assertion with numbers based on two hypothetical development plans for one tract of land<sup>17</sup>. In the first, a traditional design is used; 100% of the tract is developed and none is public open space. The tract is 1000 acres and under existing regulations, the site yield is 1000 units. Table 2.1 breaks down expenditures in this scenario.

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<sup>16</sup> Terry Mitchell (President, Momark Development), in personal interview with the author, March 27, 2006.

<sup>17</sup> The two hypothetical cost scenarios were prepared by Terry Mitchell and are based on the costs of an actual development project on which he participated.

**Table 2.1 - Hypothetical Cost Breakdown for Traditional Subdivision**

<b>Conventional Design 1000 Acres, 1000 Units</b>	<b>Total Costs</b>	<b>Costs per Unit</b>
Land	\$8,000,000	\$8,000
Internal Hard Costs	\$45,000,000	\$45,000
Offsite Hard Costs	\$2,000,000	\$2,000
Dry Utilities	\$3,000,000	\$3,000
Soft Costs	\$8,000,000	\$8,000
<b>Total Lot Cost</b>	<b>\$66,000,000</b>	<b>\$66,000</b>

Source: Terry Mitchell, Momark Development

In the second hypothetical scenario, conservation subdivision design is used. 25% of the tract is developed and 75% is conserved as public open space. Again, the development tract is 1000 acres and the site yield, based on the site yield under existing regulations, is 1000 units. Table 2.2 breaks down the expenditures in this scenario.

**Table 2.2 - Hypothetical Cost Breakdown for Conservation Development Subdivision**

<b>Conservation Design 1000 Acres, 1000 Units</b>	<b>Total Costs</b>	<b>Costs per Unit</b>
Land	\$8,000,000	\$8,000
Internal Hard Costs	\$15,000,000	\$15,000
Offsite Hard Costs	\$5,000,000	\$5,000
Dry Utilities	\$2,000,000	\$2,000
Soft Costs	\$5,000,000	\$5,000
<b>Total Lot Cost</b>	<b>\$35,000,000</b>	<b>\$35,000</b>

Source: Terry Mitchell, Momark Development

The largest expense to the developer is the internal hard costs. These are roads, water, sewage, and storm water drainage systems. In the conventional design, the internal hard costs are \$45,000,000. In the conservation design, they drop to \$15,000,000 because of shortened roads, shortened water and sewer lines, and less need for storm water control.

The most important cost reduction, though, is in the total cost per unit. According to Mitchell, selling a house built on a lot that cost \$35,000 to develop is easier than selling one built on a lot that cost \$66,000 to develop. The home is less expensive and the potential pool of buyers is larger. The result is increased absorption, or rate of sales, which means quicker profits and lower risk for developers and lenders.

### ***Citizen Attitudes Toward the Environment***

For conservation development to be successful in a geographic area, the citizens in the area communities must value what it can preserve. If water quality, wildlife habitat, storm water control, and rural character are important to area residents, then they are more likely to embrace conservation development. The following section discusses the results of two previous surveys in Hays County.

### ***Blanco River Valley Property Owner Survey***<sup>18</sup>

The *Blanco River Valley Property Owner's Survey* was funded by the River Systems Institute at Texas State University, and conducted by Dr. Sally Caldwell at Texas State University. The survey was designed to Blanco and Hays County landowners' attitudes toward natural resources issues in the Blanco River Valley.

The original intent was to mail surveys to a sample of 2000 Hays County landowners and 1000 Blanco County landowners. Unfortunately, the Blanco County mailing list was flawed and most of the Blanco County surveys were returned as undeliverable due to incorrect address. Fortunately, Hays County respondents returned over 300 completed and usable surveys.

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<sup>18</sup> The data given here is from a draft copy of the *Preliminary Findings of the Blanco River Valley Property Owner's Survey* provided by the River Systems Institute at Texas State University.

### ***Preliminary Findings***

Landowners were asked to rate the importance of different items in the purchase or retention of their property. Over 75% of them stated “rivers, creeks, and springs” are “important” or “very important”. Over 85% stated “small town atmosphere” is “important” or “very important”. For the item “wildlife viewing or hunting”, more than 65% responded that it is “important” or “very important”. “Outdoor recreation opportunities” and “Hill Country scenery” also garnered strong support with 67% selecting “important” or “very important” for the former and 85% for the latter.

**Table 2.3 – Importance of Item in Purchase or Retention of Property:  
Rivers, Creeks, and Streams**

		Frequency	Percent	Valid Percent
Valid	Very Unimportant	8	2.6	2.7
	Unimportant	9	3.0	3.0
	Neutral	50	16.6	16.8
	Important	105	34.8	35.2
	Very Important	126	41.7	42.3
	Total	298	98.7	100.0
Missing		4	1.3	
Total		302	100.0	

**Table 2.4 – Importance of Item in Purchase or Retention of Property:  
Small Town Atmosphere**

		Frequency	Percent	Valid Percent
Valid	Very Unimportant	7	2.3	2.4
	Unimportant	5	1.7	1.7
	Neutral	26	8.6	8.8
	Important	127	42.1	42.8
	Very Important	132	43.7	44.4
	Total	297	98.3	100.0
Missing		5	1.7	
Total		302	100.0	



**Table 2.5 – Importance of Item in Purchase or Retention of Property:  
Wildlife Viewing or Hunting**

		Frequency	Percent	Valid Percent
Valid	Very Unimportant	25	8.3	8.5
	Unimportant	29	9.6	9.8
	Neutral	49	16.2	16.6
	Important	112	37.1	38.0
	Very Important	80	26.5	27.1
	Total	295	97.9	100.0
Missing		7	2.3	
Total		302	100.0	

**Table 2.6 – Importance of Item in Purchase or Retention of Property:  
Outdoor Recreation Opportunities**

		Frequency	Percent	Valid Percent
Valid	Very Unimportant	16	5.3	5.4
	Unimportant	18	6.0	6.0
	Neutral	59	19.5	19.8
	Important	123	40.7	41.3
	Very Important	82	27.2	27.5
	Total	298	98.7	100.0
Missing		4	1.3	
Total		302	100.0	

**Table 2.7 – Importance of Item in Purchase or Retention of Property:  
Hill Country Scenery**

		Frequency	Percent	Valid Percent
Valid	Very Unimportant	8	2.6	2.7
	Unimportant	12	4.0	4.1
	Neutral	24	7.9	8.1
	Important	105	34.8	35.6
	Very Important	146	48.3	49.5
	Total	295	97.7	100.0
Missing		7	2.3	
Total		302	100.0	

The survey also asked about landowners' attitudes toward the present and future states of natural resources. For the item "Home development has a negative impact on resources", more than 75% responded "agree" or "strongly agree" for the present, and

more than 87% responded “agree” or “strongly agree” for the future. Similarly, 59% of respondents agreed or strongly agreed that the “Blanco River has pollution problems” in the present state, and 73% agreed or strongly agreed for the future state.

**Table 2.8 – Attitude Toward Natural Resources (Present):  
Home Development Has Negative Impact on Resources**

		Frequency	Percent	Valid Percent
Valid	Strongly Agree	102	33.8	34.2
	Agree	122	40.4	40.9
	Neutral	42	13.9	14.1
	Disagree	28	9.3	9.4
	Strongly Disagree	4	1.3	1.3
	Total	298	98.7	100.0
Missing		4	1.3	
Total		302	100.0	

**Table 2.9 – Attitude Toward Natural Resources (Future):  
Home Development Has Negative Impact on Resources**

		Frequency	Percent	Valid Percent
Valid	Strongly Agree	159	52.6	54.5
	Agree	97	32.1	33.2
	Neutral	19	6.3	6.5
	Disagree	14	4.6	4.8
	Strongly Disagree	3	1.0	1.0
	Total	292	96.7	100.0
Missing		10	3.3	
Total		302	100.0	

**Table 2.10 – Attitude Toward Natural Resources (Present):  
Blanco River Has Pollution Problems**

		Frequency	Percent	Valid Percent
Valid	Strongly Agree	33	10.9	11.3
	Agree	139	46.0	47.8
	Neutral	81	26.8	27.8
	Disagree	34	11.3	11.7
	Strongly Disagree	4	1.3	1.4
	Total	291	96.4	100.0
Missing		11	3.6	
Total		302	100.0	

**Table 2.11 – Attitude Toward Natural Resources (Future):  
Blanco River Has Pollution Problems**

		Frequency	Percent	Valid Percent
Valid	Strongly Agree	107	35.4	36.8
	Agree	108	35.8	37.1
	Neutral	52	17.2	17.9
	Disagree	15	5.0	5.2
	Strongly Disagree	9	3.0	3.1
	Total	291	96.4	100.0
Missing		11	3.6	
Total		302	100.0	

Landowner attitudes toward conservation and natural resources management approaches were also gauged. When asked about the effectiveness of providing “more information about environmentally friendly homes for developers, builders, and buyers”, more than 80% responded “effective” or “very effective”. When asked about the effectiveness of providing “financial incentives for environmentally friendly homes for developers, builders, and buyers”, again, more than 80% responded “effective” or “very effective”.

**Table 2.12 – Attitude Toward Conservation and/or Natural Resources  
Management: More Information about Environmentally Friendly Homes for  
Developers, Builders, and Buyers**

		Frequency	Percent	Valid Percent
Valid	Very Effective	110	36.4	36.9
	Effective	132	43.7	44.3
	Neutral	34	11.3	11.4
	Ineffective	19	6.3	6.4
	Very Ineffective	3	1.0	1.0
	Total	298	98.7	100.0
Missing		4	1.3	
Total		302	100.0	

**Table 2.13 – Attitude Toward Conservation and/or Natural Resources Management: Financial Incentives for Environmentally Friendly Homes for Developers, Builders, and Buyers**

		Frequency	Percent	Valid Percent
Valid	Very Effective	130	43.0	44.5
	Effective	110	36.4	37.7
	Neutral	37	12.3	12.7
	Ineffective	11	3.6	3.8
	Very Ineffective	4	1.3	1.4
	Total	292	96.7	100.0
Missing		10	3.3	
Total		302	100.0	

These survey results seem to indicate strong support for the values of rural character and natural resource protection. Support for those values might also signify support for conservation development.

#### ***Hays County Parks, Recreation and Open Space Survey***

The *Hays County Parks, Recreation and Open Space Survey*<sup>19</sup> was conducted by the Scripps-Howard Texas Poll in April through June 2000. The company sent surveys to 2000 randomly selected Hays County residents. Nine hundred forty-three surveys were returned, giving the survey a 47% response rate. The survey asked residents questions regarding parks, park funding, open space protection, and the role of county government in park and open space development. The questions did not directly address residential development, but they did address some of the goals of conservation development.

One question asked was: “If Hays County begins a program to acquire more park and open space land, how important is it for the county to acquire... Buffer lands along streams to provide flood protection, protect habitat, natural environment and water

<sup>19</sup> The data given in this section is from the *Hays County Parks, Recreation and Open Space Survey* available at <http://www.parks.co.hays.tx.us/pdf/surveyresults.pdf>.

quality?” More than 70% of respondents indicated that this is “very important” or “extremely important”. Similarly, more than 75% responded that it is “very important” or “extremely important” to acquire “land to protect aquifer recharge areas”.

**Table 2.14 - If Hays County begins a program to acquire more park and open space land, how important is it for the county to acquire:**

Buffer lands along streams to provide flood protection, protect habitat, natural environment and water quality?	Percent (N=904)
Extremely Important	44
Very Important	27
Moderately Important	14
Slightly Important	5
Not Important	7
No Opinion	3

Land to protect aquifer recharge areas?	Percent (N=908)
Extremely Important	55
Very Important	23
Moderately Important	11
Slightly Important	4
Not Important	5
No Opinion	2

Another group of questions asked how much residents agree or disagree with a list of statements. The statement “It’s important that we preserve open space for future generations” generated “strongly agree” or “Agree” responses from almost 90% of respondents. Over 70% of residents also strongly agreed or agreed with the statement “I am concerned that Hays County will lose its rural character because of the county’s current level of growth”.

**Table 2.15 – How much do you agree or disagree with each of the following:**

It's important that we preserve open space for future generations.	Percent (N=891)
Strongly Agree	63
Agree	26
Neutral	6
Disagree	2
Strongly Disagree	2
No Opinion	1

I am concerned that Hays County will lose its rural character because of the county's current level of growth.	Percent (N=886)
Strongly Agree	43
Agree	28
Neutral	14
Disagree	8
Strongly Disagree	3
No Opinion	4

The final section of the survey asked residents “How important is it to you for the Hays County Commissioners’ Court to focus on the following activities?” More than 80% stated that “protecting air and water quality” is “extremely important” or “very important”. More than 70% stated the same for “preserving open space and park land”, and 72% responded that the commissioners’ court should focus on “guiding residential and commercial development”.

**Table 2.16 - How important is it to you for the Hays County Commissioners Court to focus on the following activities?**

Protecting air and water quality	Percent (N=919)
Extremely Important	49
Very Important	35
Moderately Important	12
Slightly Important	2
Not Important	1
No Opinion	1

Preserving open space and park land	Percent (N=915)
Extremely Important	37
Very Important	35
Moderately Important	20
Slightly Important	4
Not Important	3
No Opinion	1

Guiding residential and commercial development	Percent (N=914)
Extremely Important	39
Very Important	33
Moderately Important	16
Slightly Important	6
Not Important	4
No Opinion	2

This survey asks residents about some of the same concerns that are addressed by conservation development: providing flood control, protecting water quality, protecting wildlife habitat, preserving open space, and maintaining rural character. The strong positive responses to questions on those issues seem to indicate that residents would be

supportive of conservation development. The survey results also show that residents believe that the Hays County government should address open space, environmental quality, and development. This may imply that commissioners' court action in support of conservation development would receive community backing.



## **Chapter III – Fundamental Components of Conservation Development**

### ***Chapter Purpose***

This chapter discusses policy features that are conducive to conservation development. Key elements drawn from the literature are used to define several fundamental components<sup>20</sup> of comprehensive plans, zoning ordinances and subdivision ordinances. These fundamental components, when present, help a community to foster conservation development.

### ***Implementation***

In most communities, conservation development can only be implemented with regulatory change. Generally, municipal and county zoning and subdivision ordinances do not permit the densities it requires, and developers are not going to spend the time and money to build something that will need special exceptions from a community planning staff. To successfully implement conservation development, towns and counties must update (or develop) their comprehensive plan to indicate a desire for open space preservation and identify the spaces to be preserved. They also must rewrite their subdivision rules and zoning ordinances to reflect the comprehensive plan (Arendt 1999). Using conservation development literature and model ordinances, this section establishes an ideal type for community comprehensive plans, zoning ordinances, and subdivision rules.

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<sup>20</sup> The concept of fundamental components is a hybridization of the *Categories* and *Practical Ideal Type* conceptual frameworks developed in Shields (1998).

### ***Fringe Growth***

In the United States in recent years, most growth has been occurring in the *metropolitan fringe*. The growth in these areas is using more land per person than urban residence. Large residential lots and campus-style office parks use large chunks of land and cost more for construction and maintenance (Daniels 1999, 8). “Low density development requires more miles of roads, curbs, sewers, and water lines; and municipal services must be delivered over greater geographic area” (Urban Land Institute 1991). The metropolitan fringe and outward on the urban to rural continuum is the most appropriate place for conservation development to occur.

A metropolitan area is a central city of at least 50,000 people, the suburbs that surround the city, the edge cities that surround the city, and “a fringe of the countryside”. “Nearly four out of every five Americans live within 273 metropolitan regions” (Daniels 1999, 4). The fringe, sometimes called the *exurbs* or the *rural-urban fringe*, is a hybrid area. It is no longer remote, but is much less dense than the central city or suburbs (9).

According to Daniels (1999, 14), the key elements that identify the rural-urban fringe are:

- Located 10 to 50 miles from a city of 500,000 or five to 30 miles from a city of 50,000
- Commuting distance is 25 minutes or more each way
- Homes have on-site septic and well
- Population density is less than 500 people per square mile
- Mix of long term residents and newer residents (less than ten years)
- Population growth, property taxes, and the cost of public services are frequent topics of conversation

- Residents drive over 15,000 miles each year
- Declining rural industries such as agriculture and forestry

One challenge that communities have in managing metropolitan fringe growth is “a lack of vision at the community, county, or regional level” (Daniels 1999, 48). “Two key factors in creating vision and a growth management system are political will on the part of elected officials and the involvement of a diversity of concerned citizens” (49).

Another obstacle to managing fringe growth is “the reluctance of fringe politicians to reform outdated zoning and adopt a coordinated package of growth management techniques.” Many small communities have simply copied zoning ordinances from other communities with dissimilar needs or features. Other communities refuse to use growth management techniques that have worked in other places because they are not “homegrown” (Daniels 1999, 57).

### ***Community Audit***

When facing development pressure, a *community audit* can help a town or county predict its development future. The audit examines past development trends, recent land use trends, and current land use ordinances. Arendt recommends three evaluation methods or steps that can be employed independently or in combination (1999, 9).

The first step is a numerical analysis of growth projections. It will quantify the number that will be converted from open space to houses and streets over the next 10 to 20 years. The second step is a local ordinance review. The purpose is to compare the land use ordinances with the community’s land conservation objectives. Another purpose is to

offer improvements that facilitate conservation-friendly planning. The third step is to illustrate the future development pattern - under conventional subdivision design - visually on a build-out map. Arendt calls this the “coming attractions map” and says that it “illustrates the law of unintended consequences (1999, 14).” The map will depict the community, as its only possible outcome under traditional subdivision ordinances: “Wall to wall subdivisions” (8). Conducting these steps will help a community see the need to update (or create) its comprehensive plan.

### ***Comprehensive Planning***<sup>21</sup>

The role of the comprehensive plan is the big picture illustration of the community’s development goals. Concerning conservation development, comprehensive planning can help “a community better understand the landscape, the unique issues affecting the community, and determining where conservation subdivisions are applicable and appropriate” (Wisconsin D.N.R. 2001, 7). To effectively protect and conserve natural resources and cultural character, a community should address conservation in these five elements of the comprehensive plan:

- **Background Information** – This section describes, in broad terms, the community’s history, demographics, natural features, industries, and transportation systems. It should give a general impression of the natural and cultural features that make the community special.
- **Resource Inventory** – This section gives a detailed accounting of the community’s natural and cultural features. It documents their physical locations and describes land-use activities that are appropriate for their vicinity. The features detailed in this section are the primary and secondary conservation areas described previously.

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<sup>21</sup> See for example: Daniels, Keller, and Lapping (1995), and Arendt (1999).

- **Goals and Policies** – “This section offers a chance to relate the community’s resources to its vision of what it would like to eventually become after much or all of its permitted development occurs” (Arendt 1999, 20). The process is to set broad goals, define specific objectives to accomplish the goals, and then implement policies that achieve the objectives. This section helps to prevent later problems by eliminating uncertainty. Through clearly defined policies, it tells developers how they can operate in order to meet community goals.
- **Other Elements** – The goals and objectives defined in the previous step should also help guide planning for economic development, sewage disposal, transportation, or other public services. Without coordination, natural features protected by land use policy can be degraded by other development initiatives.
- **Implementation** – This section should detail how the necessary policies will be implemented. It should specify changes to ordinances - including encouraging or requiring conservation development - that are connected to the communities’ goals and objectives. Additional conservation methods that can be included here are purchasing land, purchasing development rights, or securing conservation easements to protect the most environmentally or culturally significant lands in the community (Arendt 1999, 20-21).

The comprehensive plan is an important tool that can help protect natural and cultural resources. In most states, however, it is not a regulatory document. This is why it is critical that the zoning and subdivision rules reflect the goals and objectives outlined in the plan (Arendt 1999, 19).

### ***Ordinance Review***

The second step of the community audit and the third and fifth sections of the comprehensive plan elements deal with the review and revision of local ordinances. There are several substantive and procedural elements that should be examined in the local ordinance review. A good example of a zoning ordinance for conservation development is the Calvert County, Maryland zoning ordinance. In section 5-1.03, which governs “lay-out and design of single-family residential communities”, the ordinance states:

Residential communities outside Town Centers shall be designed to fit into the existing rural landscape in a manner that will retain the land's capacity to grow crops, produce timber, provide wildlife habitat, prevent soil erosion, provide recreational open space, contribute to maintaining clean water and air and preserve rural character. These features not only contribute to the health and welfare of county residents but also contribute to the economic base by providing jobs and revenues in resource-related and tourism –related enterprises. New buildings and roads shall be designed to enhance rather than replace these important existing features (Calvert County, MD n.d.).

### ***Zoning Ordinances***

Concerning zoning ordinances, substantive provisions include density standards (lot sizes and environmental constraints), frontages and setbacks, and required open space. In conventional subdivision planning, density is generally regulated through minimum lot size requirements. Using this method, all land is allocated to streets and house lots. A better way to regulate density is “as the buildable acres required per dwelling including common, undivided conservation land.” For example, an ordinance might specify one dwelling per two acres with an open space requirement of 50% of the tract's buildable land. Under this model, the typical house lot on the tract will be one acre, since that is the largest size achievable with the 50% conservation requirement (Arendt 1999, 10).

Zoning ordinances should also account for environmental constraints such as legally unbuildable areas and primary conservation areas when calculating density. These environmentally constrained areas – wetlands, steep slopes, and floodplains – should be subtracted from the parcel size before calculating density. For instance if a 200-acre tract contains 40 acres of legally unbuildable areas, then the developable area is only 160 acres, and the density calculation should be based on 160 acres. The allowable density should be based on the number of unconstrained acres in a tract (Arendt 1999, 10).

If a tract has a high percentage of its area as unbuildable land, the completely discounting those lands from the density calculation may be economically unreasonable. Another approach that addresses these cases is to require that unbuildable lands do not make up more than 50% of the total preserved open space (Lady Bird Johnson Wildflower Center 2005, 29).

Although density should not be determined by minimum lot size, a zoning ordinance should still dictate minimum lot sizes to prevent too much density. For example in a district zoned for two acre density, the minimum lot size should be one acre (of unconstrained land) or less. The difference between the density requirement (in this case, two acres) and the minimum lot size (one acre) is the opportunity for open space conserved (one acre, or 50%). If the minimum lot size is 50% of the density requirement, then the achievable open space ratio is 50%. If the minimum lot size is 25% (or 1/4 acre in our example above) then the achievable open space ratio is 75% (Arendt 1999, 10). To ensure reaching the desired open space conservation, the zoning ordinance should dictate the proportion between density and minimum lot size (Arendt 1999, 11).

In a conservation development setting, rules should also allow smaller minimum frontages and setbacks. As with lot sizes, frontages and setbacks consume land. Additionally, the zoning ordinance should set a standard for the quantity and quality of preserved open space. As discussed with regard to density calculations, open space requirements should be fulfilled excluding unbuildable land. For instance if a 200-acre tract has 40 acres of unbuildable land and the zoning ordinance requires 50% open space, then the open space requirement should be calculated on 160 acres. The result is 80 acres

of quality open space that is useful to people for recreation and wildlife for habitat. Environmentally constrained areas often do not fit those purposes (Arendt 1999, 11).

Procedurally, zoning ordinances should be permitted *by right* instead of as a *conditional use*. “Developers tend to avoid procedures that increase the length of the review period, that subject their proposals to the additional scrutiny of widely advertised public hearings, and that establish a process involving greater uncertainty with respect to the outcome of their application.” Ordinances that allow by right permitting status and clearly outline standards for design will achieve higher acceptance and use by developers (Arendt 1999, 13).

### ***Subdivision Ordinances***

In communities without zoning authority, subdivision ordinances should contain substantive provisions on the quantity, quality and configuration of open space. Similar to the zoning ordinance, the open space or greenway requirements should be based on a percentage of the total tract less unbuildable lands (Arendt 1999, 186).

The types of land to be included in open space should consist of primary and secondary conservation areas, and they should be described in detail. Natural and cultural elements of importance to the community should be listed and prioritized. This list should be used to guide the design of conservation areas within subdivisions. An effective subdivision ordinance will also require the consideration of adjoining open spaces in the design process. The purpose of this is to interconnect open spaces and create contiguous recreational and habitat corridors across regions (Arendt 1999, 12-13).



Procedurally, a good subdivision ordinance for conservation development will allow local officials to review proposed development plans before the developer incurs significant engineering costs. A good model will require a *conceptual preliminary plan stage* in which the developer provides a rough sketch of the proposed development. The conceptual preliminary plan can then be easily and inexpensively modified if it does not meet community conservation goals (Arendt 1999, 13).

The Wisconsin D.N.R. model ordinance recommends an initial conference between staff and developer before submission of the subdivision application. After the initial conference, the developer will submit an initial application, which includes a resource inventory that identifies the land's features, such as scenic views and natural and cultural resources (Wisconsin D.N.R. 2001, 20).

Similarly, Arendt (1999) recommends requiring developers to create and use an *Existing Resources and Site Analysis Map*. This document is critical because it ensures that design decisions are made based on the natural or cultural features of the land. Other procedures that can be included are to require site walks by community planning officials and to require conservation areas to be designated before house lots and streets. Site walks can add greater perspective on natural features than do site maps, and designing conservation areas first encourages the serious evaluation of those areas (Arendt 1999, 14).

The key to advancing conservation goals lies in the ability of conservationists to make those goals economically attractive. Instead of being opponents to economic growth, conservationists must find and support planning solutions that are both economically positive and environmentally sound (Bean 1989, 271). If effectively

implemented, conservation development is a planning solution that is both economically positive and environmentally sound. Effective implementation depends upon good comprehensive community planning and strong land use ordinances to guide development (Arendt 1996). Communities, especially ones in the metropolitan fringe, must realize that growth is going to happen, and if they want to preserve open space – for recreation, wildlife habitat, water quality, or rural character – they should plan accordingly (Urban Land Institute 2004).

### ***Summary of Model of Fundamental Components***

The preceding section discussed key land use policy elements that must be present for successful implementation of conservation development. These key elements identified in the literature are used to establish a model of fundamental components to assess the regulatory changes necessary to foster conservation development in the Blanco River Basin. The following summary briefly highlights those elements that compose the fundamental components. Table 3.1 lists the fundamental components and connects them to the literature.

### ***Comprehensive Planning***

To successfully implement conservation development, Cities and towns must update (or develop) their **comprehensive plan** to indicate a desire for open space preservation and identify the spaces to be preserved (Arendt 1999).

To effectively protect and conserve natural resources and cultural character, these are some of the elements a community should address in their comprehensive plan:

- **Resource Inventory** – This section gives a detailed accounting of the community’s **natural and cultural features**. It documents their physical locations and describes land-use activities that are appropriate for their vicinity (Arendt 1999, 20-21).
- **Goals and Policies** – “This section offers a chance to relate the community’s resources to its vision of what it would like to eventually become after much or all of its permitted development occurs” (Arendt 1999, 20). The process is to set **broad conservation goals**, define **specific objectives** to accomplish the goals, and then implement **policies** that achieve the objectives. (Arendt 1999, 20-21).
- **Implementation** – This section should detail how the necessary policies will be implemented. It should specify **changes to ordinances** - including encouraging or requiring conservation development - that are connected to the communities’ goals and objectives. (Arendt 1999, 20-21).

### *Zoning Ordinances*

Zoning ordinances generally regulate density through minimum lot sizes. A way to **regulate density** that is more consistent with conservation development is “as the buildable acres required per dwelling including common, undivided conservation land.” For example, an ordinance might specify one dwelling per two acres with an **open space requirement** of 50% of the tract’s buildable land. (Arendt 1999, 10).

Zoning ordinances should also **account for environmental constraints** such as legally **unbuildable areas** and primary conservation areas when calculating density. These environmentally constrained areas – wetlands, steep slopes, and floodplains – should be subtracted from the parcel size before **calculating density**. The allowable density should be based on the number of unconstrained acres in a tract (Arendt 1999, 10).

Procedurally, zoning ordinances should permit conservation development **by right** instead of as a **conditional use**. “Developers tend to avoid procedures that increase the length of the review period, that subject their proposals to the additional scrutiny of

widely advertised public hearings, and that establish a process involving greater uncertainty with respect to the outcome of their application.” Ordinances that allow **by right** permitting status and clearly outline standards for design will achieve higher acceptance and use by developers (Arendt 1999, 13).

### ***Subdivision Rules***

In communities without zoning authority, **subdivision ordinances** should contain substantive provisions on the **quantity, quality and configuration of open space**. Similar to the zoning ordinance, the **open space or greenway requirements** should be based on a percentage of the total tract less unbuildable lands (Arendt 1999, 186).

Procedurally, a good **subdivision ordinance** for conservation development will allow local officials to review proposed development plans before the developer incurs significant engineering costs. A good model will require a **conceptual preliminary plan stage** in which the developer provides a rough sketch of the proposed development. (Arendt 1999, 13).

Another procedural element of a good **subdivision ordinance** is an **Existing Resources and Site Analysis Map**. Requiring this document is critical since it ensures that design decisions are being made based on the natural or cultural features of the land (Arendt 1999, 14). Table 3.1 summarizes the fundamental components and connects them to the literature.

**Table 3.1 – Model Regulatory Environment for Conservation Development**

Research Purpose: <i>To evaluate the compatibility of residential land use policies in the Blanco River Basin with conservation development</i>	
<i>Fundamental Components</i>	<i>Scholarly Support</i>
<b><i>Comprehensive Plan</i></b> <ul style="list-style-type: none"> <li>• Cities and towns should have a comprehensive plan</li> <li>• The comprehensive plan should include a natural and cultural resource inventory</li> <li>• The comprehensive plan should include conservation goals, objectives, and policies</li> <li>• The comprehensive plan should detail how the conservation policies will be implemented including ordinance changes if necessary</li> </ul>	Arendt (1999), Calvert County, MD (n.d.), Urban Land Institute (2004), Wisconsin DNR (n.d.)
<b><i>Zoning Ordinances</i></b> <ul style="list-style-type: none"> <li>• To implement conservation development zoning ordinances should allow increased density</li> <li>• To implement conservation development zoning ordinances should require open space</li> <li>• To implement conservation development zoning ordinances should require density calculations to account for unbuildable land</li> <li>• Conservation development should be allowed by right in zoning ordinances</li> </ul>	Arendt (1999), Calvert County, MD (n.d.), Lady Bird Johnson Wildflower Center (2005),
<b><i>Subdivision Rules</i></b> <ul style="list-style-type: none"> <li>• To implement conservation development, subdivision rules should contain an open space element designating quantity and quality of open space</li> <li>• To implement conservation development, subdivision rules should require a conceptual preliminary plan</li> <li>• To implement conservation development, subdivision rules should require an Existing Resources and Site Analysis Map</li> </ul>	Arendt (1999), Wisconsin DNR (n.d.)

## **Chapter IV – Methodology**

### ***Chapter Purpose***

This chapter outlines the methodology used to evaluate the residential land use policies and to identify policy alternatives that might work in the Blanco River Basin. The research methods are described and operationalized in this chapter.

### ***Case Study***

This research is a case study. According to Yin (2003, 9), case studies are appropriate when “a ‘how’ or ‘why’ question is being asked about a contemporary set of events, over which the investigator has little or no control”. The case study looks at two different ways that conservation development might be accomplished in the Blanco River Basin. The first is through traditional policy methods - the ones utilized in other parts of the country and developed in the literature. The second is through alternative methods, explored here with interview subjects who work with conservation development within the existing local policy structures. The case study’s unit of analysis is the land use policies of each of the five jurisdictions within the geographic area studied.

The purpose of this research has two parts. The first is to evaluate the compatibility of residential land use policies in the Blanco River Basin with conservation development. The second is to identify, through open-ended interviews, policy alternatives that may be useful to accomplish conservation development in the Blanco River Basin.

The two parts of the research purpose were operationalized through document analysis of the 14 comprehensive plans, zoning ordinances, and subdivision ordinances that govern the five towns and counties in the case study. In addition, seven interviews were conducted - three to support the document analysis and four to identify potential policy alternatives. Table 4.1 shows the 14 documents analyzed, and Table 4.2 identifies the seven interview subjects.

**Table 4.1 – Documents Analyzed**

<b>City of Blanco</b>	<ul style="list-style-type: none"> <li>• Blanco Comprehensive Plan</li> <li>• Blanco Unified Development Code, Chapter 4 – Zoning Districts and Use Regulations</li> <li>• Blanco Unified Development Code, Chapter 5 – Subdivision and Land Development</li> </ul>
<b>Village of Wimberley</b>	<ul style="list-style-type: none"> <li>• Village of Wimberley Comprehensive Plan</li> <li>• Village of Wimberley Comprehensive Zoning Ordinance</li> <li>• Village of Wimberley Subdivision Ordinance</li> </ul>
<b>City of San Marcos</b>	<ul style="list-style-type: none"> <li>• San Marcos Horizons (comprehensive plan)</li> <li>• San Marcos Land Development Code, Chapter 1 – Development Procedures</li> <li>• San Marcos Land Development Code, Chapter 4 – Zoning Regulations</li> <li>• San Marcos Land Development Code, Chapter 5 – Environmental Regulations</li> </ul>
<b>Blanco County</b>	<ul style="list-style-type: none"> <li>• Blanco County Subdivision Regulations</li> <li>• Blanco County Rules for On-site Sewage Facilities</li> </ul>
<b>Hays County</b>	<ul style="list-style-type: none"> <li>• Hays County Subdivision and Development Regulations</li> <li>• Hays County Rules for On-site Sewage Facilities</li> </ul>



**Table 4.2 – Interview Subjects**

<b>Research Purpose #1:</b> Evaluate the Compatibility of Residential Land Use Policies in the Blanco River Basin with Conservation Development  These subjects were interviewed to support the document analysis	<b>Curt Busk</b> Interviewed March 23, 2006	City Council Member - Wimberley, Texas. Chair of Wimberley Planning and Zoning Commission during development of Village of Wimberley Comprehensive Plan.
	<b>Chris Holtkamp</b> Interviewed March 28, 2006	Planner - Community and Economic Development at Lower Colorado River Authority. Assisted City of Blanco with the writing of their comprehensive plan.
	<b>Steve Jester</b> Interviewed March 17, 2006	Blanco River Project Director for the Nature Conservancy. Implements the Blanco River Conservation Area Plan.
<b>Research Purpose #2:</b> Through interviews, Identify Policy Alternatives that May be Useful to Accomplish Conservation Development in the Blanco River Basin  These subjects were interviewed to try to identify policy solutions that are deserving of further exploration.	<b>Matt Duffy</b> Interviewed March 22, 2006	Developer. Owner of Papalote Homes. Planned and developed Heatherwood neighborhood in Hays County.
	<b>Joe Lessard</b> Interviewed March 24, 2006	Consultant in Land Development, Governmental Relations, and Organizational Change. Writing Conservation Development Ordinance for Travis County, Texas.
	<b>Terry Mitchell</b> Interviewed March 27, 2006	President, Momark Development. Developing Headwaters at Barton Creek, a conservation development in Hays County, Texas.
	<b>Mike Ridley</b> Interviewed March 18, 2006	Developer. Planned and developed The Preserve at Walnut Springs conservation development in Blanco County, Texas.

***Research Purpose #1: Evaluate the Compatibility of Residential Land Use Policies in the Blanco River Basin with Conservation Development***

The first purpose is primarily addressed through document analysis of comprehensive plans, zoning ordinances, and subdivision ordinances of the three cities and two counties that govern most of the Blanco River Basin. The policies were collected and analyzed by the author. Each was examined using the questions listed in Table 4.1, which are based on the fundamental components developed from the literature.

The document analysis was supplemented by interviews conducted with subjects who have unique experience or expertise with the policies being examined. The interview subjects were acquired through snowball sampling (Babbie 2004). The author began by contacting Emily Armitano at the River Systems Institute at Texas State University. Ms. Armitano referred potential interviewees who were then asked for other referrals. Ms. Armitano recommended Steve Jester who then recommended Chris Holtkamp. Contact with Curt Busk was made through recruitment efforts for a previous research purpose. Table 4.1 includes the interview questions posed to the subjects and their connection to the fundamental components. Table 4.2 lists the interview subjects and their expertise with the policies being examined.

**Table 4.3 – Operationalization Table for Fundamental Components of Conservation Development**

Research Purpose: <i>To evaluate the compatibility of residential land use policies in the Blanco River Basin with conservation development</i>			
<i>Fundamental Component</i>	<i>Documents Examined</i>	<i>Questions Used to Analyze Document</i>	<i>Interview Questions Used to Supplement Document Analysis</i>
<p><b><i>Comprehensive Plans</i></b></p> <ul style="list-style-type: none"> <li>• Cities and towns should have a comprehensive plan</li> <li>• The comprehensive plan should include a natural and cultural resource inventory</li> <li>• The comprehensive plan should include conservation goals, objectives, and policies</li> <li>• The comprehensive plan should detail how the conservation policies will be implemented including ordinance changes if necessary</li> </ul>	<p>San Marcos, Wimberley, and Blanco Comprehensive Plans</p>	<p>Does comprehensive plan exist?</p> <p>Does plan include a natural and cultural resource inventory? Is it complete? What does it include?</p> <p>Does the plan include conservation goals, objectives, and policies?</p> <p>Does the plan indicate how the policies will be implemented?</p>	<p><b><i>Asked of Chris Holtkamp, regarding City of Blanco Comprehensive Plan:</i></b></p> <p>How does the comprehensive plan foster conservation development?</p> <p>The comprehensive plan specifically discusses conservation development in the Growth Management chapter. Is this in response to a particular desire expresses by citizens?</p> <p><b><i>Asked of Curt Busk, Wimberley City Council Member:</i></b></p> <p>How does the Village of Wimberley Comprehensive Plan foster conservation development?</p> <p>How could it better encourage conservation development in future versions?</p>

**Table 4.3 – Operationalization Table for Fundamental Components of Conservation Development (continued)**

<i>Research Purpose: To evaluate the compatibility of residential land use policies in the Blanco River Basin with conservation development</i>			
<i>Fundamental Component</i>	<i>Documents Examined</i>	<i>Questions Used to Analyze Document</i>	<i>Interview Questions Used to Supplement Document Analysis</i>
<b><i>Zoning Ordinances</i></b> <ul style="list-style-type: none"> <li>To implement conservation development zoning ordinances should allow increased density</li> <li>To implement conservation development zoning ordinances should require open space</li> <li>To implement conservation development zoning ordinances should require density calculations to account for unbuildable land</li> <li>Conservation development should be allowed by right in zoning ordinances</li> </ul>	San Marcos, Wimberley, Blanco Zoning Ordinances	<p>Do zoning ordinances allow increased density? Under what circumstances?</p> <p>Do zoning ordinances require open space?</p> <p>Does the ordinance account for unbuildable land in density calculations?</p> <p>Is conservation development a by right land use? Is it allowed as a conditional use?</p>	<p><b><i>Asked of Curt Busk, Wimberley City Council Member:</i></b></p> <p>How is the Wimberley zoning ordinance compatible with conservation development?</p> <p>How could it be improved?</p>

**Table 4.3 – Operationalization Table for Fundamental Components of Conservation Development (continued)**

<i>Research Purpose: To evaluate the compatibility of residential land use policies in the Blanco River Basin with conservation development</i>			
<i>Fundamental Component</i>	<i>Documents Examined</i>	<i>Questions Used to Analyze Document</i>	<i>Interview Questions Used to Supplement Document Analysis</i>
<b><i>Subdivision Rules</i></b> <ul style="list-style-type: none"> <li>To implement conservation development, subdivision rules should contain an open space element designating quantity and quality of open space</li> <li>To implement conservation development, subdivision rules should require a conceptual preliminary plan</li> <li>To implement conservation development, subdivision rules should require an Existing Resources and Site Analysis Map</li> </ul>	Blanco County, Hays County Subdivision Rules  San Marcos, Wimberley, Blanco Subdivision Rules	Do subdivision rules designate open space requirement? Do they designate quality of open space required?  Do subdivision rules require a conceptual preliminary plan? What is the first plan stage required?  Do subdivision rules require an Existing Resources and Site Analysis Map? Is there any type of community resources map available to planners or developers?	<b><i>Asked of Curt Busk, Wimberley City Council Member:</i></b>  How is the Wimberley subdivision ordinance compatible with conservation development?  How could it be improved?

**Table 4.4 – Interview Subjects: Evaluating the Compatibility of Residential Land Use Policies in the Blanco River Basin with Conservation Development**

<b>Curt Busk</b> Interviewed March 23, 2006	City Council Member - Wimberley, Texas. Chair of Wimberley Planning and Zoning Commission during development of Village of Wimberley Comprehensive Plan.
<b>Chris Holtkamp</b> Interviewed March 28, 2006	Planner - Community and Economic Development at Lower Colorado River Authority. Assisted City of Blanco with the writing of their comprehensive plan.
<b>Steve Jester</b> Interviewed March 17, 2006	Blanco River Project Director for the Nature Conservancy. Implements the Blanco River Conservation Area Plan.

***Research Purpose #2: Through interviews, Identify Policy Alternatives that May be Useful to Accomplish Conservation Development in the Blanco River Basin***

The second purpose is addressed through personal interviews with planners and developers who have expertise with conservation development policy and planning. The interviews explored the viewpoints of these area planners and developers and sought to identify policy solutions that are deserving of further exploration. These interviews utilized open-ended questions that would allow for the emergence of new ideas and alternative approaches. The interview questions were tailored to the experience and expertise of the interview subjects.

Three of the interview subjects were acquired through snowball sampling (Babbie 2004). The author began by contacting Dr. Steve Windhager at the Ladybird Johnson Wildflower Center in Austin. Dr. Windhager referred Joe Lessard, Terry Mitchell, and Mike Ridley. Matt Duffy was found through an Internet search for “conservation development” and “Texas”. Table 4.3 lists the subjects interviewed for this research purpose, gives some of their specific expertise, and lists some of the questions used to guide the conversation.

**Table 4.5 – Interview Subjects: Identifying Policy Alternatives that May be Useful to Accomplish Conservation Development in the Blanco River Basin**

Interview Subject	Area of Expertise	Questions Used to Guide Conversation and Identify Policy Alternatives
<b>Matt Duffy</b> Interviewed March 22, 2006	Developer. Owner of Papalote Homes. Planned and developed Heatherwood neighborhood in Hays County.	How were you able to plan and build a conservation development in Hays County under the current subdivision rules?
<b>Joe Lessard</b> Interviewed March 24, 2006	Consultant in Land Development, Governmental Relations, and Organizational Change. Writing Conservation Development Ordinance for Travis County, Texas.	Under what authority does the draft Travis County ordinance allow Conservation Development?  Do you think it's a useful method for rural counties?
<b>Terry Mitchell</b> Interviewed March 27, 2006	President, Momark Development. Developing Headwaters at Barton Creek, a conservation development in Hays County, Texas.	Have you encountered any regulatory issues in developing your conservation development subdivision?  How have you addressed those issues?  What do you think of the Travis County Draft Ordinance?
<b>Mike Ridley</b> Interviewed March 18, 2006	Developer. Planned and developed The Preserve at Walnut Springs conservation development in Blanco County, Texas.	Did you encounter any regulatory issues in developing your conservation development subdivision?  How have you addressed those issues?  What would the ideal ordinance for a rural county look like?



### ***Human Subjects Protection***

Since this research utilized interviews, which require human subjects, potential ethical concerns were addressed. According to Babbie, some of the primary areas for ethical concern in social research are voluntary participation, harm to the participants, anonymity/confidentiality, and deception (2004, 64-68).

To ensure voluntary participation and prevent any occurrence of deception, any communications used to recruit interview subjects included full disclosure of the research purpose and a full description of the research method. Harm to participants was also addressed through full disclosure and informed consent. Each interview subject gave written permission to be identified by name and quoted for this Applied Research Project. The Institutional Review Board (IRB) at Texas State University reviewed and exempted the research prospectus. The IRB case number is 05-0372.

Chapter V reports the results of the document analysis and interviews outlined in this chapter. The results are reported by fundamental component, and information supporting the document analysis and obtained through the interviews is integrated into the discussion of the document analysis results. The results of the open-ended questions designed to allow for the emergence of alternative approaches are also presented.

## **Chapter V - Results**

### ***Chapter Purpose***

The purpose of this chapter is to report the results of the document analysis and interviews outlined in the methodology chapter. The results are reported by fundamental component in Tables 5.1, 5.2, and 5.4. Information supporting the document analysis and obtained through the interviews is integrated into the discussion of the document analysis results. Additional interview results, categorized by subject follow. These results are the product of open-ended questions tailored to the knowledge or expertise of the subjects and designed to allow for the emergence of alternative approaches.

### **Comprehensive Planning**

#### ***Blanco Comprehensive Master Plan***

The Pedernales Electric Co-op and the Lower Colorado River Authority (LCRA) prepared the Blanco Comprehensive Master Plan (BCMP) for the city of Blanco in 2005. The Growth Management chapter identifies “Protecting the small town character of Blanco” as a goal, and it sets specific action items to accomplish it (BCMP 2005, 5-1). The action items include updating the subdivision ordinance and developing a zoning ordinance. Additionally, it lists “Preserve open space, including agricultural lands, as appropriate to maintain rural character” as an action item. In the supporting text for this item, the plan specifically describes and discusses conservation development as a tool to preserve rural character (BCMP 2005, 5-6 - 5-7).

The inclusion of conservation development in the BCMP was in response to new developments already planned around Blanco. Chris Holtkamp, a planner for LCRA said, “They’re starting to see those big subdivisions come in and they’re concerned about what that’s going to mean for their water supply. They wanted to see some alternatives for development and what it could look like.”<sup>22</sup>

In the Implementation Guide chapter, the plan identifies specific conservation actions to protect open space and agricultural lands to maintain rural character in Blanco. Responsible parties, timelines, and possible partners for each of the action items are listed (BCMP 2005, 11-1.).

Overall, the plan is compatible with conservation development. It does not include a natural and cultural resource inventory, but it does set the goal of developing an inventory of historic sites and buildings in and around Blanco. Table 5.1 summarizes the document analysis results for the Blanco Comprehensive Master Plan.

### ***Village of Wimberley Comprehensive Plan***

Wimberley has a forward-thinking and thorough comprehensive plan for a small town. It places high value on natural resources and is for the most part compatible with conservation development.

In Chapter V under Growth Management, it lists as a goal to “require that new developments provide adequate open green space and buffering, and acknowledge and respect the ecological and environmental aspects of their sites”. As sub-goals the plan states that “The Village should establish requirements for inclusion of green space and

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<sup>22</sup> Chris Holtkamp (Planner, Lower Colorado River Authority), in personal interview with the author, March 28, 2006.

park areas within new developments” and “The Village should encourage conservation-oriented development which preserves natural areas” (VWCP 2002, 29).

Curt Busk is on the Wimberley City Council and was Chair of the Planning and Zoning Commission during the development of the comprehensive plan. When asked he said: “We wrote as much as we could in both the comprehensive plan and the zoning ordinance directed at conservation development, but we had a lot of trouble generating words that would allow conservation development that were legal for us to use.”<sup>23</sup>

The comprehensive plan also includes a “Planning Area-Land Use Map”. The map shows the existing land use patterns in Wimberley and identifies logical extensions of those patterns (VWCP 2002, 43). Six planning areas are defined based on the impact of the uses envisioned for those areas. The plan instructs the City Council to create zoning districts, determine which zoning districts will be allowed in each planning area, and create land use policy statements for reference in future zoning decisions (VWCP 2002, 44).

While the plan includes conservation goals and specific implementation steps, it does not include a natural and cultural resource inventory. Such an inventory would help foster conservation development by identifying and mapping the city’s primary and secondary conservation areas for the benefit of the community and developers alike (Arendt 1999, 20-21).

Mr. Busk feels that the comprehensive plan has done a good job with regard to conservation development. “The plan right now tells the village government ‘we want this kind of conservation style development’. It’s already in the plan.” Concerning

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<sup>23</sup> Curt Busk (Wimberley City Council Member) in personal interview with the author, March 23, 2006.

potential updates to the plan, he believes that the plan could become more specific in the future.<sup>24</sup> Table 5.1 summarizes the document analysis results for the Wimberley Comprehensive Master Plan.

### ***San Marcos Horizons***

The *San Marcos Horizons* master plan, adopted in 1996, profiles the city, identifies trends, sets goals for the future, and lists specific implementation strategies. It does these things for the city as a whole and for each of the eight planning sectors it identifies. The plan is thorough and is generally supportive of conservation development.

The San Marcos Today chapter identifies general resources such as the Balcones Escarpment, Edwards Aquifer, and the San Marcos River. Each of the eight sector plans (seven have been adopted) discusses the geology, topography, watersheds and floodplains in that sector. These physical elements are considered when determining the appropriate land uses for the area. The descriptions in the sector plans are good tools, but they should include more secondary conservation areas and should be mapped in detail to be considered a complete natural and cultural resource inventory.

The Future Land Use Plan section of the San Marcos Tomorrow chapter includes numerous conservation policies. It sets “Open Space and Floodway” goals such as acquiring floodplain lands to preserve as greenbelts. Land use policy LU-2.10 states that “Land in the flood plain and other environmentally sensitive areas where development should be constrained should be given the highest priority for public use” (*San Marcos Horizons* 1996, Ch. 4 p. 34-35).

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<sup>24</sup> Curt Busk (Wimberley City Council Member) in personal interview with the author, March 23, 2006.

Policy LU-3.9 directly addresses clustering: “The city shall encourage very low density or cluster-type developments in the Edwards Aquifer Recharge Zone and shall develop appropriate standards for cluster-type development which will be adopted as part of the subdivision and zoning ordinances” (San Marcos Horizons 1996, Ch. 4 p. 38). While this policy does not define cluster development, or encourage it throughout the city, its inclusion is positive.

*San Marcos Horizons* also includes an Action Plan with implementation actions for the Future Land Use Map. Among those items is revising the zoning and subdivision ordinances to implement the Future Land Use Plan policies. Another implementation action is to prepare the sector plans to identify conflicts between the Future Land Use Map and the current zoning map (*San Marcos Horizons* 1996, Ch. 5 p. 4). Table 5.1 summarizes the document analysis results for *San Marcos Horizons*.

**Table 5.1 Document Analysis Results for Blanco, Wimberley, and San Marcos – Comprehensive Planning**

<i>Town</i>	<i>Blanco</i>	<i>Wimberley</i>	<i>San Marcos</i>
<i>Fundamental Component</i>	<i>Component Present?</i>	<i>Component Present?</i>	<i>Component Present?</i>
<b><i>Comprehensive Plan</i></b> <ul style="list-style-type: none"> <li>• Cities and towns should have a comprehensive plan</li> <li>• The comprehensive plan should include a natural and cultural resource inventory</li> <li>• The comprehensive plan should include conservation goals, objectives, and policies</li> <li>• The comprehensive plan should detail how the conservation policies will be implemented including ordinance changes if necessary</li> </ul>	Yes   Somewhat <sup>25</sup>   Yes   Yes	Yes   No   Yes   Yes	Yes   Somewhat <sup>26</sup>   Yes   Yes

<sup>25</sup> The Blanco Comprehensive Plan sets developing an inventory of historic sites as a goal.

<sup>26</sup> The San Marcos Today chapter identifies some general natural resources, and the individual sector plans identify some primary conservation areas.

## **Zoning Ordinances**

### ***Blanco Zoning Ordinance***

The Zoning Districts and Use Regulations Chapter of the City of Blanco *Unified Development Code* does not address conservation development. It is a basic zoning policy with only five residential districts. There is no provision that requires open space preservation. Density allowances and density calculations are addressed in the Subdivision and Land Development Chapter discussed in the next section. Table 5.2 summarizes the document analysis for the Blanco Zoning Ordinance.

### ***Village of Wimberley Comprehensive Zoning Ordinance***

The Village of Wimberley zoning ordinance presents no great legal barriers to conservation development, but it does nothing to encourage its practice either. The zoning ordinance applies to land within Wimberley's city limits or extra-territorial jurisdiction. Zoning districts include single-family residential categories that permit high densities. For instance, the R-4 classification allows a minimum lot size of 6,000 square feet, which is about one-seventh acre (VWCZO 2003, 55).

The key to lot sizes in Wimberley's case, and in the cases of many other rural jurisdictions, is water and sewage. If the developer builds, or hooks into an existing central water and sewage system, the zoning rules allow for high densities districts such as R-4, which could be useful for creating clustered designs (VWCZO 2003, 55). If the developer does not build or hook into central water and sewer, the minimum lot size is one acre (VWSO 2001, 72).



There is also no mechanism that allows a developer to increase density to meet the tract's original site yield. The point made in Chapter II by Mr. Mitchell applies in this case: Without the ability to build the same number of homes on the tract and realize the same economic potential, there is no economic incentive for developers to do conservation development<sup>27</sup>.

With regard to Wimberley's zoning and conservation development, Curt Busk said:

We crafted as much conservation style development into the documents as we could at the time, but we're still struggling. We don't think it's enough. I would personally like a segment of the zoning subdivision ordinance crafted that says 'you can either do this, which is conservation development, or you can go through the regular ordinances'.<sup>28</sup>

What he has described in that statement is a by right ordinance, in which conservation development is on the same footing as traditional subdivision development. In the current policy environment, a conservation development proposal would require at least a zoning change.

The current Wimberley zoning ordinances do not require open space, nor do they require density calculations to account for unbuildable land (VWSO 2001). Table 5.2 summarizes the document analysis results for the Village of Wimberley Comprehensive Zoning Ordinance.

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<sup>27</sup> Terry Mitchell (President, Momark Development), in personal interview with the author, March 27, 2006.

<sup>28</sup> Curt Busk (Wimberley City Council Member) in personal interview with the author, March 23, 2006.

### ***San Marcos Zoning Regulations***

Zoning and subdividing in San Marcos are governed by the city Land Development Code, which is Subpart B of the City Code. The Zoning Regulations are in Chapter 4, and the Environmental Regulations, which governs development within certain environmentally sensitive areas, are in Chapter 5.

Chapter 4 describes Planned Development (PD) District zoning. PD is an overlay zoning that provides a standard for flexible and creative planning district that would “result in a higher quality development for the community than would result from the use of conventional zoning districts.” Of the circumstances listed by the code for use of a PD district, two apply to conservation development:

- (2) The land, or adjacent property that would be impacted by the development of the land, has sensitive or unique environmental features requiring a more flexible approach to zoning, or special design standards, in order to afford the best possible protection of the unique qualities of the site or the adjacent property;
- and
- (7) The land is of such a character that it is in the community's best interest to encourage high quality development through flexible development standards to further the goals and objectives of the City's Master Plan (SMLDC 2004, §4.2.6.1.).

To obtain approval for the PD overlay zoning, a developer must submit a Concept Plan describing “the proposed location and arrangement of uses, the relationship of such uses to base zoning districts, development phasing, planned public improvements, open space, proposed amenities and the overall design of the development” (SMLDC 2004, §4.2.6.4).

If the development tract is located in the Edwards Aquifer recharge, transition or upland zone, on a hillside, or in a river or stream corridor – all areas covered by the Chapter 5 - the next step in the development process is submission of a Watershed

Protection Plan. The Watershed Protection Plan ensures that the environmental and flood control standards of the Environmental Regulations in Chapter 5 are being applied in the development (SMLDC 2004, §1.7.1.1).

The next step for a developer planning a conservation development that utilizes increased density is to file a Cluster Development Plan. An approved Cluster Development Plan is the mechanism that authorizes the use of *residential density standards* instead of minimum lot sizes. Residential density standards are calculated as an *average* number of units per acre for the gross tract instead of the actual number of units allowed on any given acre (SMLDC 2004, §1.5.8.1).

Under a Cluster Development Plan, a 100-acre tract with a PD district overlay and base zoning of Single-family Rural (SF-R), which normally requires one-acre minimum lots, would be allowed .80 units per acre, or 80 units. In a conservation development preserving 50% of the tract, those 80 units could be clustered on 50 acres. In the same development scenario, when using minimum lot sizes, the yield for those 50 acres would have only been 50 units. While the San Marcos Cluster Development Plan does allow increased density, it does not allow the developer to match the original site yield, which would be best for conservation development<sup>29</sup>.

If, however, the tract is in an area governed by Chapter 5 - Environmental Regulations, that chapter can allow density to be increased further. The “maximum number of residential units attained under the Cluster Development Plan shall be calculated as follows: *{Gross non-restricted site area}* multiplied by *{The number of*

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<sup>29</sup> See Chapter II - Development Economics section.

*units allowed under the applicable zoning district in accordance with Table 4.1.6.1} multiplied by {1.25}” (SMLDC 2004, §5.1.2.5).*

If this rule is applied to a Cluster Development Plan on a 100-acre tract with a PD district overlay and base zoning and of Single-family Rural (SF-R), the calculation would go as follows: Table 4.1.6.1 would allow .80 units per acre, or 80 units, which would be multiplied by 1.25 bringing the total to 100 units. San Marcos’ zoning regulations permit enough increased density to maintain the site yield under a Cluster Development Plan on a tract in the areas covered by Chapter 5 of the Land Development Code (SMLDC 2004).

The PD zoning overlay also contains open space standards. The standards require that a minimum of 20% of the gross area within the PD district be preserved as open space. In addition to falling short of the 50% desired for good conservation development, the standard allows primary conservation areas, such as flood plains, to be included in the calculation of open space (SMLDC 2004, §4.2.6.3).

While conservation development can be accomplished under the San Marcos Zoning Regulations, it does not appear to be easy or fast, and it is not by right. Mike Ridley, a real estate developer, said “every time we have to ask for an exception, it’s going to cost us in either time or money. If we can do something by right we’re going to do it that way.”<sup>30</sup> Doing conservation development in San Marcos requires at the minimum a zoning change (PD district overlay) and an approved Cluster Development Plan (SMLDC 2004). These are regulatory hurdles, which according to Mr. Ridley, discourages developers from using conservation development.

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<sup>30</sup> Mike Ridley (Developer, The Preserve at Walnut Springs), in personal interview with the author, March 18, 2006.

**Table 5.2 Document Analysis Results for Blanco, Wimberley, and San Marcos – Zoning Ordinances**

<i>Town</i>	<i>Blanco</i>	<i>Wimberley</i>	<i>San Marcos</i>
<i>Fundamental Component</i>	<i>Component Present?</i>	<i>Component Present?</i>	<i>Component Present?</i>
<b><i>Zoning Ordinances</i></b>			
<ul style="list-style-type: none"> <li>To implement conservation development zoning ordinances should allow increased density</li> </ul>	No <sup>31</sup>	No	Yes
<ul style="list-style-type: none"> <li>To implement conservation development zoning ordinances should require open space</li> </ul>	No	No	Somewhat <sup>33</sup>
<ul style="list-style-type: none"> <li>To implement conservation development zoning ordinances should require density calculations to account for unbuildable land</li> </ul>	No	No	No
<ul style="list-style-type: none"> <li>Conservation development should be allowed by right in zoning ordinances</li> </ul>	No <sup>32</sup>	No	No

<sup>31</sup> Density bonuses are addressed in the Subdivision and Land Development Chapter of the Blanco Unified Development Code.

<sup>32</sup> Clustered design with preserved open space is allowed by right in the Subdivision and Land Development Chapter of the Blanco Unified Development Code.

<sup>33</sup> Required when the tract being developed is subject to a Watershed Protection Plan. Must be zoned as a Planned Development District.

## **Subdivision Rules**

### ***Blanco County***

The current *Blanco County Subdivision Regulations* were adopted January 27, 2004, and last revised March 8, 2005. The document contains very basic platting procedures and design standards for subdividing property in Blanco County.

The rules contain no open space element, and the procedural requirements include identifying only the “major topographic features such as rivers, creeks, bluffs, etc. on or adjacent to the property” (BCSR 2004, 8). There is no provision for a conceptual preliminary plan.

The Design Standards section of the document addresses lot sizes. They state that when a subdivision uses private water wells and an on-site sewage facility, the minimum lot size is five acres. If the subdivision is served by an approved public water system and an on-site sewage system, the minimum lot size is reduced to three acres (BCSR 2004, 12). Table 5.4 summarizes the document analysis results for the Blanco County Subdivision Ordinance.

### ***Hays County Subdivision and Development Regulations***

The Hays County Subdivision and Development Regulations don’t contain an open space element defining the quantity or quality of open space to be preserved in Hays County subdivisions. Article V of the regulations, which defines the process for submitting a preliminary plan, does not include any provisions for a concept plan or an existing resources and site analysis map. The preliminary plan is required, and it must include identification of flood plains, water features, sensitive features, and the

boundaries of the Edwards Aquifer contributing and recharge zones (HCSDR 1997, 15). It, however, falls short of a complete inventory of primary and secondary conservation areas that would be assembled for an existing resources and site analysis map.

Lot sizes are controlled by the *Hays County Rules for On-site Sewage Facilities* (OSSF). There is no minimum lot size for subdivisions served by surface water or rainwater harvesting and a public sewer system. Lot sizes for subdivisions with public groundwater system or private wells can be as small as 1/2 or 3/4 acre if they are served by a public sewer system (HCROSSF 1997). Theoretically, a conservation development with its own public wastewater system could be built under these rules, but in the absence of an open space policy element in the subdivision regulations, developers are unlikely to do so<sup>34</sup>. Table 5.4 summarizes the document analysis results for the Hays County Subdivision Ordinance.

### ***City of Blanco***

As recommended by the *Blanco Comprehensive Master Plan*, the City of Blanco adopted new zoning and subdivision ordinances in the form of a unified development code (UDC). The Subdivision and Land Development Chapter of the UDC allows for conservation development in its Cluster Development provision.

The purpose of the Cluster Development provision in Section 5.6 is “to encourage clustered subdivisions in conjunction with the preservation of open space” (BUDC 2006, 5-9). The Cluster Development provision contains the Open Space Preservation Incentive, which gives developers a reduction in minimum lot size or an increase in

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<sup>34</sup> See Chapter II - Development Economics section.

maximum lot coverage in exchange for preserving a percentage of the gross site area.

Table 5.3 illustrates the incentives.

**Table 5.3 – City of Blanco Open Space Preservation Incentive**

Open Space Preservation (% of gross site area)	Reduction in Minimum Lot Size	<b>OR</b>	Increase in Maximum Lot Coverage
25 – 30%	Up to 15%		Up to 10%
>30%	Up to 20%		Up to 20%

Source: *Blanco Unified Development Code* p.5-9

Table 5.1 of the Blanco Subdivision and Land Development rules gives the allowable density and minimum lot areas for each of the Blanco residential zoning districts. District R-1, for example, allows a density of one unit per one acre and a minimum lot size of 30,000 ft<sup>2</sup> (BUDC 2006, 5-4).

In a hypothetical example, on a tract of 100 acres, if the developer set aside 50 acres as conservation area, he would receive a 20% minimum lot size reduction per Table 5.3. The new minimum lot size for the tract would be 24,000 ft<sup>2</sup>, or almost two units per acre<sup>35</sup>. With this minimum lot size, the theoretical yield for the 50 development acres is approximately 90 units<sup>36</sup>.

This subdivision ordinance contains two of the fundamental components of conservation development presented for zoning ordinances. It allows increased density and allows conservation development by right. They do not, however, designate quantity or quality of open space. In fact the rules use the gross site area for calculations, which

<sup>35</sup> One acre is 43,560 ft<sup>2</sup>.

<sup>36</sup> 50 acres (2,178,000 ft<sup>2</sup>) divided by 24,000 ft<sup>2</sup> equals 90.75 lots.



gives full open space credit for unbuildable land. Additionally, the subdivision procedures in Chapter 2 of the UDC do not require a conceptual preliminary plan or require an existing resources or site analysis map. Table 5.4 summarizes the document analysis results for the Blanco Subdivision Ordinance.

### ***Village of Wimberley Subdivision Ordinance***

According to Curt Busk, the Wimberley subdivision ordinance is open enough to allow conservation development, but lacks an incentive or fast track for doing it.<sup>37</sup> The Design Standards, outlined in Section 30000 of the Subdivision Ordinance, enumerate general principles that are consistent with conservation development. For instance, Section 31010, Part A states:

Open Space for the recreation and enjoyment of the residents should be provided and designed as an integral part of each neighborhood... The arrangement of lots and blocks and the street system should be designed to make the most advantageous use of topography and natural physical features. Tree masses and large individual trees should be preserved (VWSO 2001, 48).

While this policy does not specify the quantity or quality of preserved open space within each neighborhood, it does incorporate the concept of open space preservation into its language.

Wimberley's Subdivision Ordinance strongly recommends the use of a concept plan. In Section 22010 – Purpose and Applicability, it states:

The purpose of the concept plan is to provide an approximately scaled representation of a development proposal for use in initial discussions between the subdivider and the Village staff. By providing for early discussion between staff and developers regarding planning concerns and Village requirements, the

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<sup>37</sup> Curt Busk (Wimberley City Council Member) in personal interview with the author, March 23, 2006.

concept plan provides developers with a potential opportunity to reduce engineering costs during the early planning stages of development, enhance communications and improve understanding of regulations governing the subdivision of land, reduce problems, highlight opportunities and, most importantly, and potentially expedite Village approval of the project (VWSO 2001, 8).

In Section 22030 – Content, it suggests that to be useful, the concept plan should include “Existing natural features including, but not limited to, significant vegetation, drainage characteristics, and topographic features.” It also suggests the “Identification of known exceptional topographical, cultural, historical, archaeological, hydrological or any other physical conditions of the property to be developed” (VWSO 2001, 9).

Although the optional concept plan asks developers to identify a tract’s important natural resources, the Wimberley Subdivision Ordinance does not require an existing resources and site analysis map. Table 5.4 summarizes the document analysis results for the Village of Wimberley Subdivision Ordinance.

### ***San Marcos Subdivision Rules***

San Marcos’ subdivision rules are located in Chapter 1 (Development Procedures), Article 6 (Platting Procedures) of the Land Development Code. Section 1.6.1.1 lists 20 general purposes of the Platting Procedures. The closest any comes to supporting conservation development is: “Preserve the natural beauty and topography of the municipality, and ensure development that is appropriate with regard to these natural features” (SMLDC 2004, §1.6.1.1). The list does not include open space preservation as a purpose.

Sections 1.6.2.1 and 1.6.3.1 deal with Subdivision Concept Plats and Preliminary Subdivision Plats respectively. These documents require only general information

regarding the layout of the subdivision and the timing of the development. While they are required for Planned Development (PD) districts, they are not required to provide information about the natural features of the development tract (SMLDC 2004, §1.6.2.1 – 1.6.3.6). Table 5.4 summarizes the document analysis results for the City of San Marcos Subdivision Ordinance.

**Table 5.4 Document Analysis Results for Blanco County, Hays County, Blanco, Wimberley, and San Marcos – Subdivision Rules**

County/Town	Blanco County	Hays County	Blanco	Wimberley	San Marcos
Fundamental Component	Component Present?	Component Present?	Component Present?	Component Present?	Component Present?
<b><i>Subdivision Rules</i></b>					
<ul style="list-style-type: none"> <li>To implement conservation development, subdivision rules should contain an open space element designating quantity and quality of open space</li> </ul>	No	No	Some-what <sup>38</sup>	Some-what <sup>39</sup>	No
<ul style="list-style-type: none"> <li>To implement conservation development, subdivision rules should require a conceptual preliminary plan</li> </ul>	No	No	No	Some-what <sup>40</sup>	No
<ul style="list-style-type: none"> <li>To implement conservation development, subdivision rules should require an Existing Resources and Site Analysis Map</li> </ul>	No	No	No	No	No

<sup>38</sup> Blanco's Subdivision Rules provide incentives for clustering homes and preserving open space.

<sup>39</sup> While it falls short of designating quantity and quality of open space, Section 31010 - Urban Design Principles, states that "open space ... should be designed as an integral part of each neighborhood."

<sup>40</sup> The ordinance strongly recommends the use of a concept plan, but does not require one.

## **New Approaches Derived from Interviews**

The second purpose for this research was to identify new policy alternatives or approaches to conservation development through open-ended interviews. In the course of conducting the interviews, two new approaches to conservation development came to light. These mechanisms for accomplishing conservation development did not appear in any of the literature reviewed for the project. The first method utilizes condominium development rules, common in some jurisdictions, to accomplish clustering of homes, bypassing restrictive rural subdivision ordinances. The second method, a pre-written development agreement contract, enables a jurisdiction to use a contract agreement to accomplish goals that they may not have the power to accomplish with regulations.

### ***Condominium Regime***

The condominium regime approach was used by Matt Duffy of Papalote Homes to develop a neighborhood called Heatherwood in the unincorporated area of Hays County. Mr. Duffy's objective in developing Heatherwood was to build homes in a Hill Country setting in the \$130,000 to \$160,000 price range that schoolteachers, firefighters, and others with similar incomes could afford. He learned about conservation development at a conference hosted by the Ladybird Johnson Wildflower Center and felt that it was the best way to develop affordable homes while maintaining rural character.<sup>41</sup>

The Heatherwood development is on a 12-acre tract. The 17 home sites are clustered on three acres, leaving nine acres undeveloped. The total impervious cover on

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<sup>41</sup> Matt Duffy (Developer, Papalote Homes) in personal interview with the author, March 22, 2006.

the site is 14%. The homes are site-built manufactured homes, and are served by a central well and a central on-site sewage facility.<sup>42</sup>

The unique aspect of this development is that the home sites are not subdivided. The tract is a single lot under a condominium form of ownership. As such, it is governed by Part 3 of Section 10.1 of Hays County's On-site Sewage Facility (OSSF) Rules. Part 3 of Section 10.1 states that condominium, apartment, and non-residential developments shall "have a surface acreage of at least one (1) acre for each living unit equivalent (LUE) per day. A living unit equivalent is defined as three hundred and fifty (350) gallons of sewage per day" (HCROSSF 1997, 5). Since the development is 12 acres, under the Hays County OSSF rules described above, it can produce 4,200 gallons (12 acres times 350 gallons) of effluent per day.

Another important regulation in the planning of this development is Title 30, Part 1, Chapter 285, Subchapter A, Rule 285.4 of the Texas Administrative Code. It limits the output from on-site sewage facilities for manufactured housing or multi-unit residential developments that rent or lease space to 5,000 gallons per day for each individual tract of land in the development. Since the Heatherwood development is one tract of land, it is limited to 5,000 gallons sewage flow per day.

By staying under the 350 gallons per acre per day and the 5,000 gallons for the entire site per day, the OSSF, and the development as a whole is approved by-right in Hays County<sup>43</sup>. If the developer had subdivided the property according to Table 10.1 of

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<sup>42</sup> Matt Duffy (Developer, Papalote Homes) in personal interview with the author, March 22, 2006.

<sup>43</sup> Ibid.

the Hays County OSSF rules, the minimum lot size would have been two acres, yielding six home sites and consuming the entire tract (HCROSSF 1997, Table 10.1).

This method can be used to accomplish conservation development on a larger scale also. Mr. Duffy is currently planning a new development in Bell County, Texas. The total tract there is 50 acres and is being subdivided into five ten-acre tracts. Each new tract is being built as a separate condominium development with its own water and OSSF system. The development will total 72 homes, and 26 of the 50 acres will be preserved as open space.<sup>44</sup>

For developers, using condominium rules can have a downside. Homebuyers in rural areas are generally accustomed to buying land. When a buyer purchases a home in a condominium community, even though it may be a single-family detached home, he is buying only the house and not the land it sits on. Each buyer receives an undivided interest in the entire tract, but not the deed to a single lot. The developer can write the condominium association agreement to grant each owner the exclusive use of their *limited common element* (LCE), which is the defined piece of land under and immediately surrounding their home. The homeowner has exclusive use of the LCE, but not the deed to it.<sup>45</sup>

Other concerns with the use of condominium rules for conservation development include that it provides no guidelines or definitions for conservation development. The developer must take the responsibility for determining the appropriate locations for conservation areas, roads, home sites, and sewage systems. Additionally the conserved

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<sup>44</sup> Matt Duffy (Developer, Papalote Homes) in personal interview with the author, March 22, 2006.

<sup>45</sup> Ibid.

open space is protected only by its ownership by the condominium owner's association. The regulatory oversight of a conservation development ordinance is lost with this method.

According to Terry Mitchell, using condominium rules for conservation development has a lot of potential. "It may not be appropriate for 1000 units, but as long as you have fire safety and safe roads, it has a lot of applicability in conservation development."<sup>46</sup> Although it is not a perfect solution, using condominium development rules may be an effective by-right method for the conservation-minded developer to clear some of the conservation development's current regulatory hurdles.

### ***Travis County Draft Ordinance***

The new Travis County Conservation Development Ordinance, currently in draft form, takes another new approach. The proposed Travis County policy is not a regulatory method. It does not rely upon county authority. It relies on contract law. Joe Lessard explained that, "Every model ordinance I've ever seen is based on the governmental authority having land use control. Without clear land use authority, it dictates this approach."<sup>47</sup>

The policy essentially provides a specific, pre-written contract agreement that defines conservation development and provides guidelines and incentives for doing it. According to Mr. Lessard, "Instead of mandating something, it provides another option for landowners and developers if they want to do a certain type of development." Under

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<sup>46</sup> Terry Mitchell (President, Momark Development), in personal interview with the author, March 27, 2006.

<sup>47</sup> Joe Lessard (Policy Consultant), in personal interview with the author, March 24, 2006.



this policy, if adopted, a developer or landowner may submit a conservation development proposal to the county, and if they follow all of the guidelines, the county must approve the proposal and provide the incentives. It is a by-right option utilizing a development agreement instead of a regulatory approach.<sup>48</sup>

Another novel aspect of the policy is that a developer can initiate the agreement at the time of development application or a landowner can initiate the agreement at any time. It can be a mechanism for the owner of a large tract to protect some of it indefinitely. A good example would be a ranch that has been owned by a family historically. If the owner foresees that it may need to be sold in a future generation, this ordinance could be used to ensure that much of that ranch, if developed, would be preserved. Additionally, the present landowner would be eligible to receive incentives for entering into the agreement.<sup>49</sup>

To ensure that the policy incentivizes the type of development that the county intends, conservation development standards are clearly defined. Fifty percent of the tract must be conservation space, and the conservation space must include 75% of the significant and meaningful assets as defined by the policy. Conservation spaces must be greater than 150 feet in width at any point, and must be greater than 10 acres. Only half of the conservation space may be primary conservation areas. The policy also requires scenic buffers along adjacent major roadways and property boundaries, but those buffers may only account for 5% of the conservation space. Impervious cover is limited to 15% of the property acreage in the western watershed and 18% in the eastern watershed. There

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<sup>48</sup> Joe Lessard (Policy Consultant), in personal interview with the author, March 24, 2006.

<sup>49</sup> Ibid.

are energy conservation, water conservation, and materials conservation requirements as well. It is a comprehensive definition that is intended to ensure that only quality conservation design is eligible under the policy.<sup>50</sup>

There are also mechanisms included to streamline the process. For instance, the application process requires a Pre-submittal Meeting, in which the applicant presents the proposed development to the county staff. Ecological assessments and conceptual land plans must be presented to identify any major concerns or needs for information. The pre-submittal meeting may also include a site tour of the property. Additionally, the policy grants the executive director of the ordinance the ability to grant administrative variances over a limited number of design elements. These mechanisms are designed to streamline the process and provide incentive to developers to choose the conservation development option.<sup>51</sup>

The formal incentives in this policy are for the most part still being developed. According to Joe Lessard, incentives for landowners not developing their property might include tax-related financial incentives, but nothing has yet been formally proposed. Incentives to developers might include the ability to transfer impervious cover allowances from one development to another within certain limitations. Formal developer incentives would be in addition to the procedural incentives discussed above.<sup>52</sup>

The incentive most noticeably absent in the policy is the ability to transfer density to maintain the tract's original site yield. The policy does not directly address density at all. Ordinance provisions, such as the maximum impervious cover and conservation

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<sup>50</sup> Joe Lessard (Policy Consultant), in personal interview with the author, March 24, 2006.

<sup>51</sup> Ibid.

<sup>52</sup> Ibid.

space requirements, will control density and site yield indirectly. According to Joe Lessard, “It is anticipated that to meet the ordinance requirements the result will be lowered density on the conservation development property from what would be expected under the standard subdivision process.”<sup>53</sup>

Two of the developers interviewed for this project expressed differing opinions on controlling density and site yield. Terry Mitchell, as discussed in the Development Economics section of Chapter II, emphasizes that site yield should be maintained to make conservation development economically feasible.<sup>54</sup> On the other hand, Mike Ridley believes that density calculations and site yield are less important and impervious cover limitations are an appropriate way to control the number of units on a tract.<sup>55</sup> It is important to note that both of these viewpoints can be correct depending upon the market and financial circumstances of the individual development.

Another issue with the Travis County draft ordinance is its complexity. While the mechanism, contract law, may be a good mechanism to allow conservation development without major regulatory change, the policy as written may be too complex for rural counties with limited resources to administer. Mike Ridley believes that the inclusion of green building standards in the ordinance will discourage developers. In the Hill Country the developer and builder are generally different entities, and since rural counties don’t have building inspectors to enforce the green building standards, the enforcement will fall

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<sup>53</sup> Joe Lessard (Policy Consultant) in e-mail communication on April 3, 2006.

<sup>54</sup> Terry Mitchell (President, Momark Development), in personal interview with the author, March 27, 2006.

<sup>55</sup> Mike Ridley (Developer, The Preserve at Walnut Springs), in personal interview with the author, March 18, 2006.

on the developer. He believes that developers would not be willing to shoulder this responsibility and would therefore avoid conservation development<sup>56</sup>.

Mr. Ridley's perspective on the Travis County Conservation Development Draft Ordinance illustrates the important differences between development in rural and urban counties. While Travis County can administer and enforce an ordinance that is 26-plus pages long<sup>57</sup>, Blanco County probably cannot and Hays County probably falls somewhere in between. According to Mr. Ridley, the appropriate conservation development ordinance for Blanco or other rural counties would be no more than two pages long<sup>58</sup>. The important aspect for the purpose of this research is the mechanism. Although its effectiveness is still unknown, the Travis County draft ordinance presents a new mechanism for counties, which generally have little land use control, to use to allow conservation development.

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<sup>56</sup> Mike Ridley (Developer, The Preserve at Walnut Springs), in e-mail communication on April 4, 2006.

<sup>57</sup> The Travis Conservation Development Ordinance, 5<sup>th</sup> Draft, is 26 pages long and doesn't yet include the incentive provisions that will appear in future drafts.

<sup>58</sup> Mike Ridley (Developer, The Preserve at Walnut Springs), in personal interview with the author, March 18, 2006.

## **Chapter VI – Recommendations and Conclusions**

### ***Chapter Purpose***

The purpose of this research had two parts. The first was to evaluate the compatibility of residential land use policies in the Blanco River Basin with conservation development. The second was to identify, through open-ended interviews, policy alternatives that may be useful to accomplish conservation development in the Blanco River Basin.

The findings indicated that residential land use policies in the Blanco River basin are substantially incompatible with conservation development, but that alternative policy methods exist that may be able to permit its practice. The purpose of this chapter is to outline those recommendations and summarize conclusions. Since the regulatory powers and administrative resources of each jurisdiction are different, the recommendations for each will be different. The conclusions are grouped into town recommendations and county recommendations.

### ***Town Recommendations***

Since municipalities in Texas have the authority<sup>59</sup> to enact land use ordinances and adopt zoning districts, they generally can enact conservation development policies. Because of their expanded powers, cities and towns also have more policy options available to them for implementing conservation development. Some of those options include conservation development zoning districts, open space incentives in subdivision

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<sup>59</sup>Granted by *Texas Local Government Code* §51.001, §51.012, §211.003.

rules, and pre-defined development agreements like the Travis County Draft Conservation Development Ordinance discussed in Chapter V of this paper. The method by cities and towns used is not as important as ensuring that the policy encourages pre-development discussions, requires quality open space with similar overall density, and is allowed by right. Tables 6.1, 6.2, and 6.3 list recommendations for Blanco, Wimberley, and San Marcos respectively.

**Table 6.1 Town Recommendations for Blanco**

Fundamental Components	Component Present?	Recommendation
<b><i>Comprehensive Plan</i></b> <ul style="list-style-type: none"> <li>• Cities and towns should have a comprehensive plan</li> <li>• The comprehensive plan should include a natural and cultural resource inventory</li> <li>• The comprehensive plan should include conservation goals, objectives, and policies</li> <li>• The comprehensive plan should detail how the conservation policies will be implemented including ordinance changes if necessary</li> </ul>	<p>Yes</p> <p>Somewhat</p> <p>Yes</p> <p>Yes</p>	<p>Blanco's comprehensive plan outlines its conservation goals and specifically identifies how they can be implemented.</p> <p>In the next revision the town should add a natural resource inventory to the plan.</p>
<b><i>Zoning Ordinances</i></b> <ul style="list-style-type: none"> <li>• To implement conservation development zoning ordinances should allow increased density</li> <li>• To implement conservation development zoning ordinances should require open space</li> <li>• To implement conservation development zoning ordinances should require density calculations to account for unbuildable land</li> <li>• Conservation development should be allowed by right in zoning ordinances</li> </ul>	<p>No</p> <p>No</p> <p>No</p> <p>No</p>	<p>By allowing increased density and by right cluster design, the Blanco Subdivision Rules help compensate for the inadequacies of the Zoning Rules. A recommendation is to add a Conservation Development (CD) zoning district and zone residential development tracts as such. The CD district could require open space and density calculations could be required to account for unbuildable land.</p>
<b><i>Subdivision Rules</i></b> <ul style="list-style-type: none"> <li>• To implement conservation development, subdivision rules should contain an open space element designating quantity and quality of open space</li> <li>• To implement conservation development, subdivision rules should require a conceptual preliminary plan</li> <li>• To implement conservation development, subdivision rules should require an Existing Resources and Site Analysis Map</li> </ul>	<p>Somewhat</p> <p>No</p> <p>No</p>	<p>The Open Space Preservation Incentive gives developers a good opportunity to maximize units while preserving open space. It could be improved by allowing greater lot size reductions so conservation developments could achieve the original site yield.</p> <p>Procedurally, it should require a conceptual planning phase. It also should be updated to require an Existing Resources and Site Analysis Map.</p>

**Table 6.2 Recommendations for Wimberley**

Fundamental Components	Component Present?	Recommendation
<b><i>Comprehensive Plan</i></b> <ul style="list-style-type: none"> <li>• Cities and towns should have a comprehensive plan</li> <li>• The comprehensive plan should include a natural and cultural resource inventory</li> <li>• The comprehensive plan should include conservation goals, objectives, and policies</li> <li>• The comprehensive plan should detail how the conservation policies will be implemented including ordinance changes if necessary</li> </ul>	<p>Yes</p> <p>No</p> <p>Yes</p> <p>Yes</p>	<p>Wimberley’s comprehensive plan outlines its conservation goals and specifically identifies how they can be implemented.</p> <p>The plan can be improved by adding a natural and cultural resource inventory to identify primary and secondary conservation areas within Wimberley’s corporate limits.</p>
<b><i>Zoning Ordinances</i></b> <ul style="list-style-type: none"> <li>• To implement conservation development zoning ordinances should allow increased density</li> <li>• To implement conservation development zoning ordinances should require open space</li> <li>• To implement conservation development zoning ordinances should require density calculations to account for unbuildable land</li> <li>• Conservation development should be allowed by right in zoning ordinances</li> </ul>	<p>No</p> <p>No</p> <p>No</p> <p>No</p>	<p>Wimberley should enact a policy that will provide incentive for conservation development.</p> <p>Wimberley could adopt a conservation development zoning district that requires open space, allows clustering, and accounts for unbuildable land in density calculations.</p> <p>Another option would be to craft a pre-defined development agreement like the one being developed by Travis County.</p>
<b><i>Subdivision Rules</i></b> <ul style="list-style-type: none"> <li>• To implement conservation development, subdivision rules should contain an open space element designating quantity and quality of open space</li> <li>• To implement conservation development, subdivision rules should require a conceptual preliminary plan</li> <li>• To implement conservation development, subdivision rules should require an Existing Resources and Site Analysis Map</li> </ul>	<p>Somewhat</p> <p>Somewhat</p> <p>No</p>	<p>Although Wimberley’s subdivision rules encourage open space preservation, there is no incentive – policy or economic- for a developer to do so.</p> <p>Wimberley should adopt an open space preservation incentive with a mechanism similar to that in Blanco’s subdivision rules.</p> <p>The concept plan stage, which Wimberley’s rules encourage should be required, and an existing resources and site analysis map should be required as well.</p>



**Table 6.3 Recommendations for City of San Marcos**

Fundamental Components	Component Present?	Recommendation
<b><i>Comprehensive Plan</i></b> <ul style="list-style-type: none"> <li>• Cities and towns should have a comprehensive plan</li> <li>• The comprehensive plan should include a natural and cultural resource inventory</li> <li>• The comprehensive plan should include conservation goals, objectives, and policies</li> <li>• The comprehensive plan should detail how the conservation policies will be implemented including ordinance changes if necessary</li> </ul>	<p>Yes</p> <p>Somewhat</p> <p>Yes</p> <p>Yes</p>	<p>The San Marcos comprehensive plan outlines its conservation goals and specifically identifies how they can be implemented.</p> <p>It can be improved for implementation of conservation development by adding more detail, such as secondary conservation areas, to the physical land descriptions in the individual sector plans. The primary and secondary conservation areas and important cultural features should be mapped in detail.</p>
<b><i>Zoning Ordinances</i></b> <ul style="list-style-type: none"> <li>• To implement conservation development zoning ordinances should allow increased density</li> <li>• To implement conservation development zoning ordinances should require open space</li> <li>• To implement conservation development zoning ordinances should require density calculations to account for unbuildable land</li> <li>• Conservation development should be allowed by right in zoning ordinances</li> </ul>	<p>Yes</p> <p>Somewhat</p> <p>No</p> <p>No</p>	<p>San Marcos should simplify the route to conservation development and provide incentives for its use.</p> <p>Options for San Marcos include adopting a conservation development zoning district that requires open space, allows clustering, and accounts for unbuildable land in density calculations.</p> <p>Another option would be to craft a pre-defined development agreement like the one being developed by Travis County.</p>
<b><i>Subdivision Rules</i></b> <ul style="list-style-type: none"> <li>• To implement conservation development, subdivision rules should contain an open space element designating quantity and quality of open space</li> <li>• To implement conservation development, subdivision rules should require a conceptual preliminary plan</li> <li>• To implement conservation development, subdivision rules should require an Existing Resources and Site Analysis Map</li> </ul>	<p>No</p> <p>No</p> <p>No</p>	<p>San Marcos should adopt an open space requirement or an incentive with a mechanism similar to the Blanco Open Space Preservation Incentive.</p> <p>Procedurally, San Marcos should require conceptual preliminary plans to help plan for natural resource and development compatibility.</p> <p>San Marcos should also require sensitive cultural and natural resources to be mapped prior to plat approval.</p>

### ***County Recommendations***

As discussed in the Policy Setting section of Chapter I, Texas counties have much less land use control authority than cities and towns. As a result, counties must look to new or alternative methods if they wish to allow conservation development. Pre-defined conservation development agreements, condominium regulations, and new county powers under Senate Bill 873 are some of those new or alternative methods.

### ***Blanco County***

Blanco County, like other rural counties in Texas, has limited financial and staff resources for administration and enforcement of complex land use policies or development agreements. Unfortunately, that is probably not going to change until after much more development has been done – at which point it may be too late. Additionally, they are not one of the 30 counties affected by SB 873. These factors limit their regulatory options.

Blanco County could adopt condominium regulations, but they do not have the land use control to augment them with open space requirements. As a result, they might be used for dense, urban-style development without preserved open space.

The recommendation for Blanco County is to utilize the mechanism, contract law, from the Travis County Conservation Development Draft Ordinance. The details of the pre-defined development agreement could be as simple as allowing two-acre<sup>60</sup> lots instead of five-acre lots (on tracts served by private septic and private well) as long as the other three acres is preserved as open space on the tract. The contract could define areas

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<sup>60</sup>Texas Administrative Code Title 30, Rule §285.4 allows minimum lot sizes of one acre for subdivided lots served by private well and private septic system.

required to be included in the open space and recommend a conceptual preliminary plan and site analysis map. The incentive in this policy is that developers get to reduce some infrastructure costs while maintaining the site yield of the tract under the original five-acre minimum lot size. It would be important that the contract terms remain simple and relatively easy to administer. Table 6.5 summarizes the specific recommendations for Blanco County.

### *Hays County*

Hays County should examine the Travis County Conservation Development Ordinance carefully if it is adopted. Hays County shares many of the same natural resource issues that Travis County seeks to address with their ordinance. A pre-defined conservation development agreement for Hays County would need to be different, but the mechanism is one that they could emulate.

Since Hays County already has rules for condominium development, developers can use them for clustering home sites without regulatory change. The county should, however, augment them with open space requirements that dictate the quantity and quality of space preserved.

Hays County, because of its proximity to Travis County, has the expanded land use authorities granted by SB 873. They have the authority to “adopt rules governing plats and subdivisions of land within the unincorporated area of the county to promote the health, safety, morals, or general welfare of the county and the safe, orderly, and healthful development of the unincorporated areas of the county”<sup>61</sup>.

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<sup>61</sup> Texas Local Government Code §232.101

Medina County, located southwest of San Antonio, has adopted new subdivision rules under the authority granted by SB 873. These rules function similarly to conservation development zoning rules discussed in the Zoning Ordinances section of Chapter III of this paper. Essentially, under the regulation, developers are able to reduce their minimum lot size based on the amount and type of open space they preserve (MCSR 2005).

Medina County's rules have their limitations, and to some, might not meet the full requirements of conservation development, but they may provide a viable approach to conservation development for Hays County. Table 6.5 summarizes the specific recommendations for Hays County.

### Table 6.4 Recommendations for Blanco County

<i>Fundamental Components</i>	<i>Component Present?</i>	<i>Recommendation</i>
<b><i>Subdivision Rules</i></b> <ul style="list-style-type: none"> <li>To implement conservation development, subdivision rules should contain an open space element designating quantity and quality of open space</li> <li>To implement conservation development, subdivision rules should require a conceptual preliminary plan</li> <li>To implement conservation development, subdivision rules should require an Existing Resources and Site Analysis Map</li> </ul>	<p>No</p> <p>No</p> <p>No</p>	<p>Blanco County should utilize the mechanism from the Travis County Conservation Development Draft Ordinance. The details of the pre-defined development agreement should be simple and the agreement short.</p> <p>The contract could define areas required to be included in the open space and recommend a conceptual preliminary plan and site analysis map.</p>

### Table 6.5 Recommendations for Hays County

<i>Fundamental Components</i>	<i>Component Present?</i>	<i>Recommendation</i>
<b><i>Subdivision Rules</i></b> <ul style="list-style-type: none"> <li>To implement conservation development, subdivision rules should contain an open space element designating quantity and quality of open space</li> <li>To implement conservation development, subdivision rules should require a conceptual preliminary plan</li> <li>To implement conservation development, subdivision rules should require an Existing Resources and Site Analysis Map</li> </ul>	No	Hays County should consider crafting a pre-defined conservation development agreement. The details of the agreement would be different, but the mechanism is one that they could emulate.
	No	Hays County should augment their condominium rules with open space requirements that dictate the quantity and quality of space preserved.
	No	Another option for Hays County is adopt new rules under SB 873. The Medina County Subdivision Rules provide can be used as a model.

## ***Conclusion***

The policy options recommended above can apply in many cities, towns, and counties in Texas. The state has many urban fringe areas, like the Blanco River basin, being threatened by poorly planned development. The water quality, wildlife habitat, and rural character of those areas will be difficult and expensive – if not impossible – to renew if they are degraded.

There are many approaches to preserving land and open space. Cities and counties can buy raw land for parks, wildlife preserves, and water quality buffers. Land trusts can purchase or accept conservation easements<sup>62</sup> to protect sensitive land in perpetuity. The federal government can stop development to protect endangered species habitat. These methods are vital conservation tools but are often expensive and sometimes create legal conflict with development interests.

Conservation development is a conservation tool that can accomplish some of those same conservation objectives without the public expense and with less legal risk. There are economic benefits to the developer (decreased infrastructure costs), the homeowner (increased home value), and the community (preserved natural resources and rural character). In sum, conservation development should be one of the conservation tools available to cities and counties like those in the Blanco River basin.

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<sup>62</sup> For more information on land trusts and conservation easements see: *Land Trust Training and Technical Assistance Programs: A National Assessment* (Blecke 2005) at <http://ecommons.txstate.edu/arp/82/>.

### ***Future Research***

Since conservation development is a relatively new planning concept, there are many opportunities for future research.

One of the key challenges for policymakers and developers is to identify consistent and effective methods for protecting preserved open space in perpetuity. While conservation easements can be an effective solution, issues such as public access and long-term stewardship costs can make it difficult to find an easement-holder.

Another issue, briefly addressed in this project, which deserves more examination, is the potential use of SB 873 by counties in Texas. What power do county commissioners believe they have been granted? How do they think those powers can be used for open space conservation?

Finally, this project provides a model that can be replicated in other geographic areas. Any rural or urban fringe area that is experiencing development pressure, whose residents wish to conserve its natural features and rural character, would be an appropriate case to study in this manner.

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