

**CONSERVATION
DEVELOPMENT
IN TEXAS**

Credits

Editor: Danielle Pieranunzi

Contributors: Heather Venhaus, Steve Windhager, Saralee Tiede

Design: Betsy Woldman Design - www.woldmandesign.com

Produced by The Lady Bird Johnson Wildflower Center, 2006

The Lady Bird Johnson Wildflower Center is committed to protecting and restoring healthy regional landscapes. Our mission is to increase the sustainable use and conservation of native wildflowers, plants and landscapes. With population growth threatening wildlife and water resources, Texas has much to gain from the increased use of the conservation development concept.

Conservation subdivisions are a way to protect the rural heritage of Texas while expanding land development practices to incorporate the principles of regional identity, land conservation and land stewardship. As our founder, Lady Bird Johnson, said, "I like it when the land speaks its own language in its own regional accent." We hope to encourage further discussion about how conservation development principles can be applied to benefit both people and our environment.



Above: The Woodson Place / Photo by Gary McCoy (www.garymccoy.com)

Cover photos: top - Jackson Meadow / Photo by Peter Bastianelli Kerze; bottom - The Woodson Place / Photo by Gary McCoy (www.garymccoy.com)



Photo by Peter Bastianelli Kerze

Jackson Meadow

What is conservation development?

Conservation development is a method of developing land for housing in a way that preserves open space for future generations. Typically, it involves building homes in groups with smaller lot sizes, protecting natural features and open space for use by all the residents. The Lady Bird Johnson Wildflower Center defines conservation development as a development that seeks to reduce its ecological footprint by preserving significant, contiguous open spaces amid groups of clustered homes and supporting the sustainable use of invaluable resources.

Why is it important?

Urban sprawl is a fact of life for most Texas cities. The wide open spaces are fast disappearing to development, most of it for residential housing. The American Farmland Trust reported in 2002 that the United States was losing two acres of mostly prime farmland every minute to development. The same report estimated a loss of 6 million acres of farmland between 1992 and 1997 due to sprawl. In Texas, the loss during that period was approximately 332,800 acres of quality farmland -- a 42 percent increase in rate of loss over the previous five years and more than any other state during that period. Most of those losses occurred in the Texas Blackland Prairie around Austin, Waco and Dallas-Fort Worth and in the Lower Rio Grande Plain.

**Conservation development—
a way to show
that humans
can work
with the rest
of nature**

Development on the urban fringe is the conventional response to population growth and the migration from country to cities that has been underway for the past century. Unfortunately, it destroys habitat for wildlife, threatens water quality, strains water resources and, too often, does not produce the quality of life that homeowners expect.

Conservation development offers a wonderful opportunity to celebrate



Courtesy of Prairie Crossing

Prairie Crossing

Whether hill country, prairie or coastal plain, this approach to land development is appropriate because it preserves the unique local flora and fauna. Conservation development is a way to show that humans can work with the rest of nature to achieve their own goals without compromising a healthy ecology.

Conservation development balances the demands of a growing population with the need to conserve natural resources. In addition, the adjacent open space increases the value of the homes and the tax revenue from the property. The heritage of rural Texas and its unique regional identity is preserved along with critical water resources and habitat.

The economics of open space

Open space has a value to the homeowner, to the real estate developer and to local governments that rely on property tax revenue. Studies have shown that prospective buyers are willing to pay a premium for homes near open space -- one of the benefits of conservation subdivisions. The land value of property near open space is likely to appreciate more than conventional subdivisions, helping ensure a growing tax base for local governments.

For decades we have assumed that residential development is the highest and best use of land because of the higher tax revenue that results. That

assumption is disputed by Texas A&M Professor John L. Crompton's analysis of parkland value in 2000. Crompton tested the proximate principle which holds that parkland increases the land value of nearby homes, generating additional tax revenue. He determined that, in general, there is a positive impact of 20 percent on property values adjacent to parks. A similar 2004 study of housing values in two Georgia counties near Atlanta also found that values were higher near pine forests and large pastures. Other studies show the value of open space. See www.wildflower.org.

The bottom line for developers

In the highly competitive world of real estate development, there is a constant quest for the amenities that will entice buyers into paying more for their homes. One of those tried and true benefits is open space, whether it is unimproved parkland or hike and bike trails. Homes in conservation developments come with built-in sales points -- scenery, open space, recreation as well as the appeal to a sense of environmental responsibility. Small wonder these homes sell faster.

Conservation development allows the builder to construct higher priced homes while paying less for infrastructure. Since the homes are grouped together, there is less cost to building the necessary streets and laying pipelines and conduits for water, wastewater and electricity. Central Texas developer Terry Mitchell estimates that infrastructure costs for one project with significant open space and clustered housing will be up to 30 percent less than for a conventional subdivision.

Another important sales point is the way such homes appreciate over time. The University of Massachusetts looked at two subdivisions near Amherst built in the 1960s with similar style homes and selling prices. One subdivision used conservation design principles and preserved woodlands, meadows and recreation facilities; the other, conventional. In 1968, the homes in the conservation subdivision sold for \$600 more but by 1989, they sold for an average of \$17,000 more. Similarly, a conservation subdivision near Concord called Meriam's Close was built in 1989 with 86

Buyers are willing to spend more for homes near open space.



Courtesy of Prairie Crossing

percent of its acreage set aside for recreation and natural areas. In an analysis of sales between 1980 and 1988, the Meriam's Close homes appreciated at an average annual rate of 21.4 percent compared to 18.4 percent for other homes in the area. **They sold for a premium of \$115,000 in 1988, even though their lots were only one-fifth the size of other homes in Concord.**

The bottom line for local government

From the point of view of local elected officials, residential development can cost more than it returns in tax dollars. Cost of community services (COCS) studies look at the cost of providing services such as roads, schools and police and fire protection to various types of land uses -- residential, commercial/industrial and farm/forest/open space. A recent COCS study in Hays County, Texas, revealed that residential development cost the county \$1.26 for each \$1 collected in tax revenue.

Similar studies of 71 municipalities across the United States showed that the average cost of service per dollar of tax revenue was \$1.22 for residential areas, but only 38 cents for farm/forest and open space.

Conservation developments are less expensive to serve than conventional residential developments because homes and infrastructure are clustered. There are other savings resulting from trails and open space, according to a 1995 study by the National Park Service:

- When sensitive areas like steep hillsides are protected from development, damage from flooding and landslides and the resulting expense to local governments is much less.



University of North Carolina

- Wetlands and open space are natural water filtration systems, often preventing or lessening the severity of costly floods.
- Trees and plants control air pollution by absorbing air pollutants and releasing oxygen.
- Trails and green belts provide healthy recreation opportunities that keep people fit and combat obesity. The Center for Disease Control estimates that health care costs attributable to obesity were more than \$78 billion in 1998.

Even better, developers using conservation design principles provide open space at no public cost, lessening the pressure on elected officials to buy and maintain public parks.

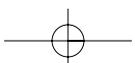
The value of a healthy ecology

Increasingly, people recognize the importance of clean air, clean water and a healthy environment and are willing to pay for it. As more land is paved for development, stormwater runoff with all the accompanying pollutants can contaminate streams and underground water supplies. That is why the cities of San Antonio and Austin have spent more than \$243 million on land acquisition in recent years to protect the quality and quantity of their drinking water.

Both cities depend on the Edwards Aquifer for drinking water, and the aquifer is particularly sensitive to contamination from roads and parking lots because runoff may drain directly into the aquifer. Between 2000 and 2005, voters in San Antonio approved \$155 million in land purchase bonds while Austin voters endorsed \$88 million for the same purpose.

Not surprisingly, pollution diminishes property values. A University of Maryland study of the value of Chesapeake Bay waterfront homes determined that homeowners were willing to pay for improved water quality. The study estimated that if the fecal coliform bacteria count in the bay were lower by 100 counts per 100 milliliters, it would raise the value of the homes by 2 percent.

The average cost of services per dollar of taxes was \$1.22 for residential but only 38 cents for open space.



What are the risks?

For developers, profitability lies in building enough houses to recover the substantial fixed costs necessary to buy the land, bring in utilities and construct roads and other amenities as well as the cost of building each house. To achieve this, a conservation development will often have the same number of houses (density neutral) as a conventional subdivision, but they will be arranged in higher-density groups, leaving other parts of the land entirely open.

For environmentalists and critics of urban sprawl, conservation development does not solve all of the problems created by growth. It may even encourage long commutes not only to work but also to shops, schools and restaurants since conservation subdivisions do not typically include mixed-use development -- most are not large enough to support it. Proponents of



Courtesy of the Lady Bird Johnson Wildflower Center

affordable housing argue that the premium prices of homes in conservation developments make them too costly for lower-income people. They argue that close in, high-density, mixed-use neighborhoods are a better alternative. For these

reasons, conservation development may not be the right solution in every case. But, for many rural and suburban areas quickly developing into bedroom communities for nearby cities, this is an exciting and innovative approach to land and community development, one that is economically and environmentally viable for developers, local governments and homeowners.



Jackson Meadow

Photo by Peter Bastianelli Kerze

Do counties have authority to encourage conservation development?

In Texas, home-rule cities have comprehensive zoning authority and can regulate most aspects of development. However, most conservation development takes place beyond city limits because it requires the large tracts of undeveloped land usually located outside incorporated areas. Therefore, the key question is whether counties, with regulatory authority defined by state law, can enact the ordinances that permit and encourage conservation development. Many county officials believe they lack authority to regulate land use or development in any way. However, options do exist to encourage conservation subdivision development.

Senate Bill 873, enacted in 2001, gives 30 counties adjacent to major metropolitan areas and along the Mexico border authority to regulate such subdivision features as right-of-way, major thoroughfares, minimum lot frontages, reasonable setbacks and developer participating contracts as needed to promote health, safety, morals and the general welfare of the county. This important legislation gives these counties some parity with home-rule cities in regulating growth within their boundaries.

While there are limits on what counties can regulate -- zoning, height or bulk of buildings and density limitations are specifically prohibited -- those

**Options
exist to
encourage
conservation
development
in Texas.**



The Fields of St. Croix

Robert Engstrom (photographer and developer)

30 counties now possess the ordinance making tools necessary to encourage conservation development.

At issue has been the different interpretations of the powers conferred by S.B. 873. Some counties have been fairly aggressive in interpreting it broadly. Travis County, for example, requires developers to dedicate a

certain portion of land for parks or pay fees to the county in lieu of establishing parkland as a condition of plat approvals. In addition, Travis County mandated that floodplains be left in their natural state.

One feature of conservation developments is roads that are narrower than those in conventional tracts, reducing runoff and requiring less infrastructure. This feature often runs afoul of street width requirements set by counties.

Conservation development frequently takes place under the guidance of local ordinances that set certain requirements -- generally the preservation of 40 to 60 percent of a parcel of land as open space. Travis County is now considering a conservation development ordinance that would create a voluntary option to conventional subdivisions, including a provision for narrower roads that would not require the developer of a conservation development ordinance to obtain a variance.

Aside from county ordinance-making authority, any county in Texas can enable a Planned Unit Development (PUD) provision or a development agreement between local governments and developers interested in conservation subdivisions. Given the economic benefits for developers, it is likely that many would take advantage of this alternative if it were available and the risk of regulatory delay was reduced.



Prairie Crossing

Courtesy of Prairie Crossing

What are the criteria for a conservation development?

Ecological analysis The first step in planning a conservation subdivision should be a thorough ecological assessment. This will provide the information needed about the features that should be preserved as open space.

The assessment should identify such sensitive environmental features as wildlife habitat, sensitive and valuable ecosystems, waterways, steep slopes and viewsheds as well as other areas that have ecological and cultural value, such as prairies or agricultural land.

Open space The goal of conservation development regulations should be the preservation of open space. Between 40 and 60 percent of the parcel's gross area is a reasonable proportion of open space, with not more than half of the preserved lands being drawn from unbuildable land (primary conservation areas). Unbuildable lands include buffer zones around waters mandated by the Clean Water Act, slopes greater than 25 percent or 100-year flood plains. Open space should be contiguous and, if possible, linked to other protected lands to connect wildlife corridors, preserve water resources and provide opportunities for trail systems. Active recreation facilities within the open space, such as ball fields, should be limited to 25 percent of the total because of high water use, intensive use of non-native grasses and minimal ecological value.

The goal of conservation development regulations should be to preserve open space.

How do I do a conservation development?

Where do I begin?

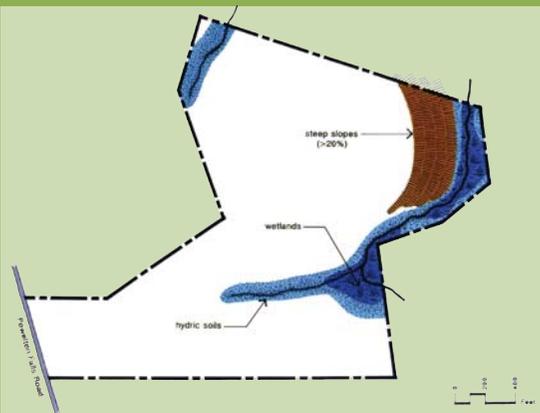
First, it is important to contact a local conservation organization such as the Texas Land Trust Council (www.texaslandtrusts.org) for information on conservation easements. Some environmental organizations can also recommend appropriate developers, builders, land planners and consultants. Next, contact your local city or county government for information on incentives and regulations.

What are the steps to designing a conservation development?

The concept of conservation development has been widely discussed for at least a decade. Randall Arendt, a land-use planner, author and lecturer, pioneered in bringing the benefits of conservation development to the attention of communities,



Site Before Development



Site Identifying Primary Conservation Areas

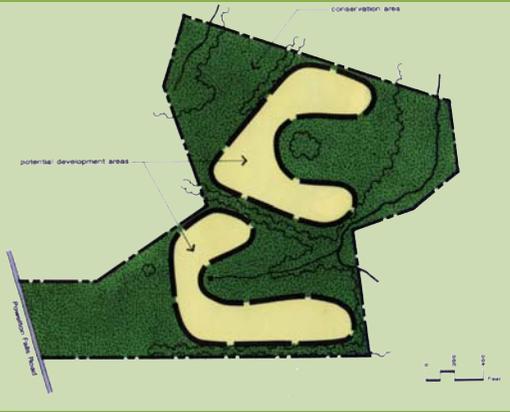
government officials and developers in the early 1990s. In his 1996 book, *Conservation Design For Subdivisions: A Practical Guide To Creating Open Space Networks*, Arendt lays out a four-step process for design and development of an actual site.

1. Identifying land that should be permanently protected

This consists of the Primary Conservation Areas (unbuildable wetlands, floodplains and steep slopes). Add these areas to the Secondary Conservation Areas



Site With Conventional Design



Site Identifying Potential Development Zone After Excluding Secondary Conservation Areas



Site With Conservation Design

that can include land that is most sensitive environmentally, most significant historically or culturally, most scenic or which possess unusual or rare attributes.

2. Locating the sites of individual houses

Maximize the number of "view lots". Locate home sites within convenient walking distance from open space and other houses in subdivision.

3. Designing street and trail alignments

Avoid crossing wetlands and minimize the length (and cost) of the access roads. Narrow streets with fewer long, straight segments will slow traffic and create a more rural feel. Connect streets and avoid dead-ends.

4. Drawing in lot lines

Different options for setbacks, lot width and depth are available depending on density levels, average street traffic, proximity to open space and other site attributes.

Drawings: Randall Arendt. *Conservation Design for Subdivisions: A Practical Guide to Creating Open Space Networks* (Island Press, 1996) far left - pages 59, 60, 62; this page - pages 63,64,68.

Viewshed and cultural resource protection Open space should provide protection for scenic views, which typically requires a ban on ridgeline construction and care in designing roads. The National Scenic Byways Program provides guidelines for preserving views. Conservation developments can preserve rural regional character by including working farms and ranches.

Native landscaping and land restoration Conservation subdivisions should be landscaped with native plants that are compatible with the ecology and regional character of the area. This will allow the open space to resemble as closely as possible the natural state of the land prior to European settlement and reduces the ecological risks caused by invasive species.

Conservation development must balance environmental needs with the need for profit.

Density and lot size In most areas of the country, maximum density depends on local zoning. Most conservation development ordinances allow smaller lot sizes than those in conventional developments so open space can be preserved without reducing the number of lots. In Texas, where counties have no zoning

authority, density and minimum lot size are constrained by the land's physical limitations or the area needed for septic systems and water wells. The number of lots may need to be limited to protect water and other resources, but, if density is too low, it becomes economically infeasible for a developer. To be successful, conservation development must balance environmental needs with the developer's need for profit.

Impervious cover Total impervious cover in a conservation subdivision should be limited to 15 to 25 percent of the gross site acreage because roads and structures prevent rainwater from recharging aquifers and can increase the risk of floods. A limitation on impervious cover reduces the overall human footprint on the environment. Texas counties may currently have the authority to regulate impervious cover based on state flood protection statutes.

Narrow roads Relatively narrow roadways are another important feature of conservation development. These subdivisions are typically built in more

rural areas with less traffic, so wide streets are often unnecessary. Narrower roads can slow traffic, increase safety, limit impervious cover, protect water resources and reduce infrastructure costs. Currently, Texas law requires minimum road widths in unincorporated areas that regulate subdivisions. These provisions can inhibit the development of conservation subdivisions, but there are alternatives:

1. Amend state law to give counties more flexibility in regulating road widths.
2. Allow counties affected by S.B. 873 to amend subdivision regulations to permit narrow roads, a process currently underway in Travis County.
3. Use flood protection statutes to adopt ordinances allowing narrow roads.

Green Building Standards Buildings within conservation subdivisions should use appropriate building materials and be constructed to operate with maximum possible efficiency. For example, Woodson Place in north Texas follows Austin's Green Building standards. Developers should look for local standards, or contact the U.S. Green Building Council. Following green building guidelines can serve as a marketing tool for prospective buyers interested in a home that conserves water, energy and other resources.

Courtesy of Prairie Crossing



Prairie Crossing

Utilities Conservation subdivisions take advantage of water conservation measures, such as rainwater harvesting, gray water re-use (water from bathroom sinks, showers and washing machines used for irrigation) and reduced-flow toilets.

Long-term maintenance of open space Before construction, an agreement should be reached establishing the terms necessary to maintain the open space in perpetuity. Conservation easements are a time-tested, secure and frequently-used tool to protect land. Most conservation subdivision ordinances permit several options for ownership of open space, including a homeowners association, government agency, a non-profit conservation organization or a land trust. Land trusts are often the most appropriate entity to manage open space due to their experience in land stewardship and monitoring and their commitment to conservation. The agreement should also identify a funding source.

How can my community best support and promote the conservation development approach?

A voluntary alternative Conservation development should be established in local regulations as a by-right voluntary alternative to conventional subdivisions. This would allow conservation development to proceed without review by local elected officials and does not replace conventional development as a practice mandated by law.



Courtesy of Prairie Crossing

Prairie Crossing

feasible. Also, sites smaller than 25 acres should be considered when the preserved land would be contiguous with open space on adjacent properties.

Minimum parcel size In the absence of a county conservation plan, there should be a minimum parcel size of 25 acres for conservation subdivisions to realize the ecological benefits of open space. It is difficult on smaller parcels to preserve the land needed for habitat corridors and water resource protection. However, because topographical features vary, there may be critical environmental features on smaller sites that make a conservation subdivision

Arendt's book, *Growing Greener: Putting Conservation into Local Plans and Ordinances*, provides a guide for municipalities to achieving successful conservation subdivisions. It is important to first conduct a community assessment of development trends to determine the long-term results of existing ordinance provisions. With that information, a map of potential conservation lands can be prepared to guide decisions that could preserve an interconnected open space network. A preferable approach is to adopt conservation development regulations as a voluntary choice for developers.

There is no universal approach to conservation development. Policy makers should consider legal, environmental and geographic conditions unique to their jurisdictions in creating a regulatory framework that encourages conservation development. The primary feature of existing ordinances is a requirement that some percentage of the parcel to be developed be preserved as open space. Most ordinances also regulate density, lot size and other factors, with one essential purpose being clustering homes to preserve open space.

Examples of conservation development ordinances

Model ordinances developed by state and regional planning agencies have helped guide many local government agencies. The tables on the Wildflower Center's Conservation Development webpage (www.wildflower.org) summarize six model ordinances and four ordinances actually adopted by local governments. These tables include the Open Space Development model ordinance developed by the U.S. Environmental Protection Agency (EPA), useful as a model for any community, as well as statewide models from Wisconsin, Minnesota and Georgia.

Key Issues in Drafting the Travis County Conservation Development Ordinance

(Joe L. Lessard, Consultant for Travis County)

1. Desirability of By-Right provisions
2. Application of ordinance to commercial development
3. Desirability of sustainable development provisions
4. Financial and process incentives and their application to potential land uses

Where is this happening?

Examples of developments using conservation design principles

Jackson Meadow
Marine on St. Croix, MN
www.jacksonmeadow.com

Sugar Creek Preserve
Walworth County, WI
www.sugarcreekpreserve.com

Hidden Creek at the Darby
Columbus, OH
www.hiddencreekdarby.com

The Fields of St. Croix
Lake Elmo, MN
www.engstromco.com/prev_fields

Prairie Crossing
Grayslake, IL
www.prairiecrossing.com

The Woodson Place
Rains County, TX
www.woodsonplace.com

Santa Lucia Preserve
Monterey County, CA
www.santaluciapreserve.com

Tryon Farm
Michigan City, IN
www.tryonfarm.com

Serenbe
Fulton County, GA
www.serenbecommunity.com

For more information on these subdivisions, please visit www.wildflower.org



Sponsors

Land Planning Sponsor

BOSSE & TURNER ASSOCIATES, INC.

606 Blanco St
Austin, Texas 78703
www.btaustin.com
(512) 472-7332



Contact: Don Bosse (dbosse@btaustin.com)

Bosse & Turner Associates offers professional design services in conservation planning, both town and neighborhood planning, urban design and landscape architecture. For the past 10 years, Bosse & Turner Associates has actively developed innovative and practical methods of applying core design principles to private and public clients.

Landscape Architecture Sponsor

HALFF ASSOCIATES

8616 Northwest Plaza Drive
Dallas, Texas 75225

Contact: Francois de Kock, RLA,
LEED AP (fdekock@halff.com)
(214) 346-6243

Contact (Austin): Jim Carrillo (jcarrillo@halff.com)



Halff Associates is a full-service firm covering all aspects of conservation development from planning to implementation including planning, landscape architecture, habitat assessment and permitting, wetland delineation, land development, architecture and civil engineering, as well as LEED design services.

Environmental Consultant Sponsor

LOOMIS AUSTIN

3103 Bee Caves Road, Suite 225
Austin, Texas 78746
(512) 327-1180

www.loomisaustin.com

Contact: Clif Ladd, Senior Biologist, C.W.B. (clad@loomisaustin.com)

Loomis Austin, Inc. (LAI), established in 1993 and headquartered in Austin is a multi-disciplinary civil engineering, land surveying and environmental sciences firm with strong technical divisions in the areas of hydrologic and hydraulic engineering, land and hydrographic surveying, environmental science, water and wastewater engineering, municipal planning and general civil engineering.



Law Firm Sponsor

SMITH, ROBERTSON, ELLIOTT, GLEN, KLEIN & BELL, L.L.P.

221 West Sixth Street, Suite 1100
Austin, Texas 78701
(512) 225-5800

www.smith-robertson.com

Contact: Alan Glen (aglen@smith-robertson.com)



Smith Robertson provides services in the areas of environment and land use, real estate, business and litigation. We represent both private and governmental entities in implementing principles of conservation development.



Photo by Kathleen Day-Coen

Jackson Meadow



Lady Bird Johnson

Wildflowercenter

Lady Bird Johnson Wildflower Center

512.292.4200

4801 La Crosse Avenue, Austin TX 78739

www.wildflower.org