



DENTON COUNTY GREENBELT PLAN

For The Future

EXECUTIVE SUMMARY



ACKNOWLEDGEMENTS

Denton County Greenbelt Plan Sponsors

Denton County

Denton County, under leadership of the County Judge and Commissioners, provides planning and other services for the rural and urban areas of the County; and, coordinates transportation and public works needs among communities as the population continues to grow - - while keeping sustainability, environmental protection, and quality of life as priorities.

Upper Trinity Regional Water District

Upper Trinity Regional Water District was created by the Texas Legislature in 1989 for the benefit of cities and utilities in the Denton County area. Its mandate is to develop regional plans for water and wastewater services on a wholesale basis to cities and utilities in the Denton County area. Upper Trinity is a leader in public education about water conservation and water quality protection.

Acknowledgements

Many stakeholders participated and contributed to the development of the Denton County Greenbelt Plan - - some by participating in public meetings and others through the website or online surveys. The Plan Sponsors would like to express appreciation to all stakeholders who participated. Active stakeholders included:

- Denton County Residents
- City / Town Officials and Staff
- University of North Texas – Lewisville Lake Environmental Learning Area
- Greenbelt Alliance
- North Central Texas Council of Governments
- Texas A&M AgriLife Extension Service – Denton County
- Texas A&M Forest Service
- Texas Department of Transportation
- Texas Master Naturalists
- Texas Parks and Wildlife Department
- Trust for Public Land
- and more!

Upper Trinity Conservation Trust

Created as a nonprofit 501(c)(3) land trust in 2010 by the Upper Trinity Regional Water District Board of Directors, the Conservation Trust works with communities, landowners and developers to preserve natural watershed and riparian assets within the catch basins of the District's water supply sources. The mission of the Trust is to promote the conservation and stewardship of land and water resources through educational activities, coordination with local governments, and the acquisition of land and conservation easements - - protecting water quality in our water supply basins for future generations.

Many thanks to the consultant team:

Alan Plummer Associates, Inc.

Schrickel, Rollins and Associates, Inc.





FOREWORD FROM UPPER TRINITY CONSERVATION TRUST

As land continues to be developed in Denton County, converting farms and ranches into communities, it's important to remember the role and benefits of creeks and waterways - - not only as a source of water for farm animals and wildlife, but also as a source of drinking water for our growing communities. Preserving the natural areas (greenbelts) adjacent to the creeks and other waterways is vital to having dependable, clean drinking water. As water flows across the land, these greenbelts help filter out harmful pollutants before the water enters the creeks and lakes, protecting the quality of water.

The Denton County Greenbelt Plan helps set a common vision for preserving greenbelts; and, it provides strategies for stakeholders (municipalities, developers, landowners and residents) to use in protecting these valuable natural assets. Within the mission of Upper Trinity Conservation Trust, one strategy for protecting these assets is through conservation easements. Conservation easements offer a convenient way to preserve valuable watershed areas and greenbelts - - also, wildlife habitat and family heritage lands.

Conservation easements are voluntary agreements between a landowner and a qualified land trust that enables a landowner to retain possession while protecting a designated area in perpetuity. As a nonprofit land trust, Upper Trinity Conservation Trust is available to accept conservation easements from landowners, developers and municipalities that desire to protect greenbelts and other watershed lands. Easement donors can enjoy a valuable partnership with the Trust who can help them carry out their goals that they have for their land.

The voluntary nature of the Denton County Greenbelt Plan will ensure that the municipalities, developers and others implementing it are doing so because of the great economic, environmental and social benefits for everyone in Denton County. Together, we can preserve the quality of our environment and life in Denton County and leave a legacy for future generations.



Trent Lewis

President
Upper Trinity Conservation Trust



FOREWORD FROM DENTON COUNTY

Denton County is one of the best places to live, work and raise a family. Just take a look around: a strong local economy, thriving communities, excellent educational institutions, and a rich history, and beautiful landscapes. Over the next several years, Denton County's population is expected to surpass one million people, making the County the fifth fastest growing in the State. As our County transitions to a more urban setting, we should be mindful of potential impacts on our quality of life, and to the environment, especially to protection of water quality in our local lakes - - a key source for our drinking water.

The County's long-term prosperity and success depends on an adequate and safe drinking water supply; without it, our economy cannot grow or prosper. Maintaining precious natural assets, such as greenbelts, is important to the safety and security of our water supply, and to the quality of life that residents have come to expect in Denton County. If left in their natural condition, greenbelts (the vegetated areas along creeks and streams) offer many benefits and provide a buffer between homes and the neighboring creeks. Greenbelts also provide recreational and educational opportunities to residents; and, help filter out harmful pollutants before reaching the creek.



Denton County is proud to be a sponsor of the **Denton County Greenbelt Plan** - - a voluntary guide to preserving and protecting local greenbelt areas. The Plan offers a common vision in preserving these natural assets; and, will help coordinate the roles that municipalities, developers, landowners and other stakeholders have in protecting greenbelts. Each of us can have a role in preserving and protecting greenbelts - - now, and for future generations!

A coordinating committee will help champion and oversee implementation of the Plan. The mission of the Committee will be to encourage, and work with, the many stakeholders to pursue the most effective strategies for preservation of greenbelts throughout the County. The committee will be diverse and represent the many stakeholders that makes our County so unique. Together, we can make a difference to ensure our economy continues to grow, while preserving important greenbelt areas and protecting our valuable water supply.

Now is the time to protect our natural resource assets for future generations!

Mary Horn
Denton County Judge



FOREWORD FROM UPPER TRINITY REGIONAL WATER DISTRICT

Local communities are knitted together by the many water courses that extend into and through neighborhoods, transporting water to the nearest creek or lake - - the sources of our drinking water. Please, an alert! As our region transforms from a largely rural setting to one with more urban character, it is urgent that we consider the effect on water quality and our water supply. At Upper Trinity Regional Water District, a priority goal is to safeguard our local water resources and the quality of life “right where we live”. To reach the goal, we need your help.

Now is the time to preserve natural waterways and to protect water quality in local watersheds. Greenbelts and flood plains; streams and waterways; riparian lands and wetlands - - all are irreplaceable assets. Greenbelts help protect creeks and lakes by filtering out pollutants, such as sediment, pesticides and fertilizer. Also, greenbelts are an important buffer during flood events. These critical functions are the focus of the Denton County Greenbelt Plan - - helping protect and safeguard these assets for the future. Good news: it costs very little to protect existing watershed assets - - if we do it now. In contrast, it would cost a fortune to try to restore greenbelts later, if the watershed were allowed to become impaired.

In some cases, greenbelts can help enhance the quality of life for residents by enabling hike and bike trails. Typically, greenbelts also help improve property values for nearby homes. The Greenbelt Plan will serve as a useful guide for municipalities, landowners and developers for voluntary implementation of greenbelts areas. The Plan encourages stakeholders to coordinate the planning and preservation of multi-use greenbelts according to a common vision.

If you appreciate natural greenbelt areas, we urge you to get involved, to volunteer to help. Please join in the effort to achieve sustainability of greenbelt assets in Denton County, and enhance the quality of life for all residents.

If we each do our part well, just think of the legacy you can leave for future generations!



Thomas E. Taylor
Executive Director
Upper Trinity Regional Water District



EXECUTIVE SUMMARY

DENTON COUNTY AT A POINT OF GREAT OPPORTUNITY

Denton County is growing - FAST. In less than 25 years, the population of Denton County is projected to be over 1.4 million, or double its current population. With growth, land uses will change. The rural character of the County will likely transform to urban and suburban land uses similar to what is occurring in neighboring Counties. As developable space becomes a premium, the County's streams, creeks, and other aquatic resources will be stressed from these impending land-use changes. Now is the time to initiate cooperative efforts for the protection of Denton County's water resources, especially its streams, creeks, and the Elm Fork of the Trinity River – the sources for our drinking water.

To address the foreseeable land use changes, the Upper Trinity Conservation Trust, Denton County, and Upper Trinity Regional Water District commissioned a study to inventory and analyze greenbelts along the County's major streams and the Elm Fork of the Trinity River. The major emphasis for this study was to identify existing greenbelts, opportunities for developing and expanding greenbelt corridors, and to categorize and prioritize area streams and watersheds for greenbelt preservation. This document summarizes those efforts with the overarching goal "to protect the water quality entering Denton County's three primary drinking water supply reservoirs – Lewisville Lake, Ray Roberts Lake, and Grapevine Lake." Of course, once preserved, a greenbelt offers community benefits far beyond just protection of water quality. Such drainageways flow through all communities, with many opportunities to benefit neighborhoods and Denton County as a whole.

"A greenbelt is defined as a vegetated portion of land typically adjacent to area streams, creeks, rivers or lakes that is set aside for preservation purposes."

The purpose for the Denton County Greenbelt Plan ("the Plan") is to assist in protecting the greenbelts along and associated with streams that flow into the local water supply reservoirs. *The Plan is not intended to be a regulatory document; rather, a convenient guide to encourage and enable closer coordination among stakeholders.*

Stakeholders include Denton County's municipalities, developers, citizens, and land owners. It is important to recognize the importance of our waterways and associated riparian zones, and to acknowledge the priority streams identified within the Plan. Implementation strategies are provided in the Plan to help protect the identified priority greenbelt corridors and streams for the foreseeable future. The following are highlights of the Denton County Greenbelt Plan.

"The vision for the Greenbelt Plan is to grow the economy of Denton County while conserving and preserving its existing Greenbelt assets as well as expanding Greenbelt assets throughout the County."

PRIORITY STREAMS FOR DENTON AND SURROUNDING COUNTIES

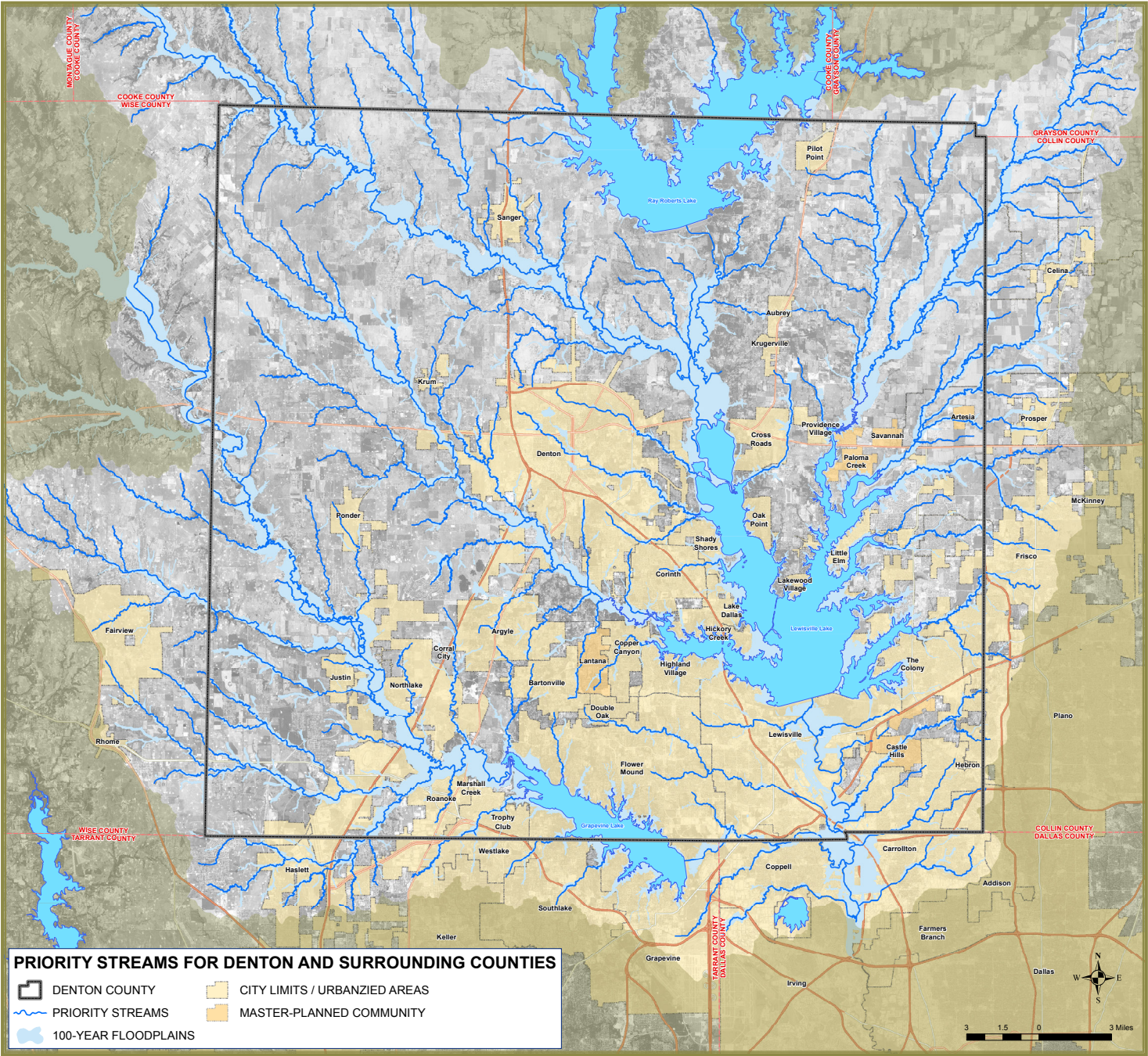


Figure ES-1: Priority Streams

GREENBELT SYSTEM COMPONENTS

Streams

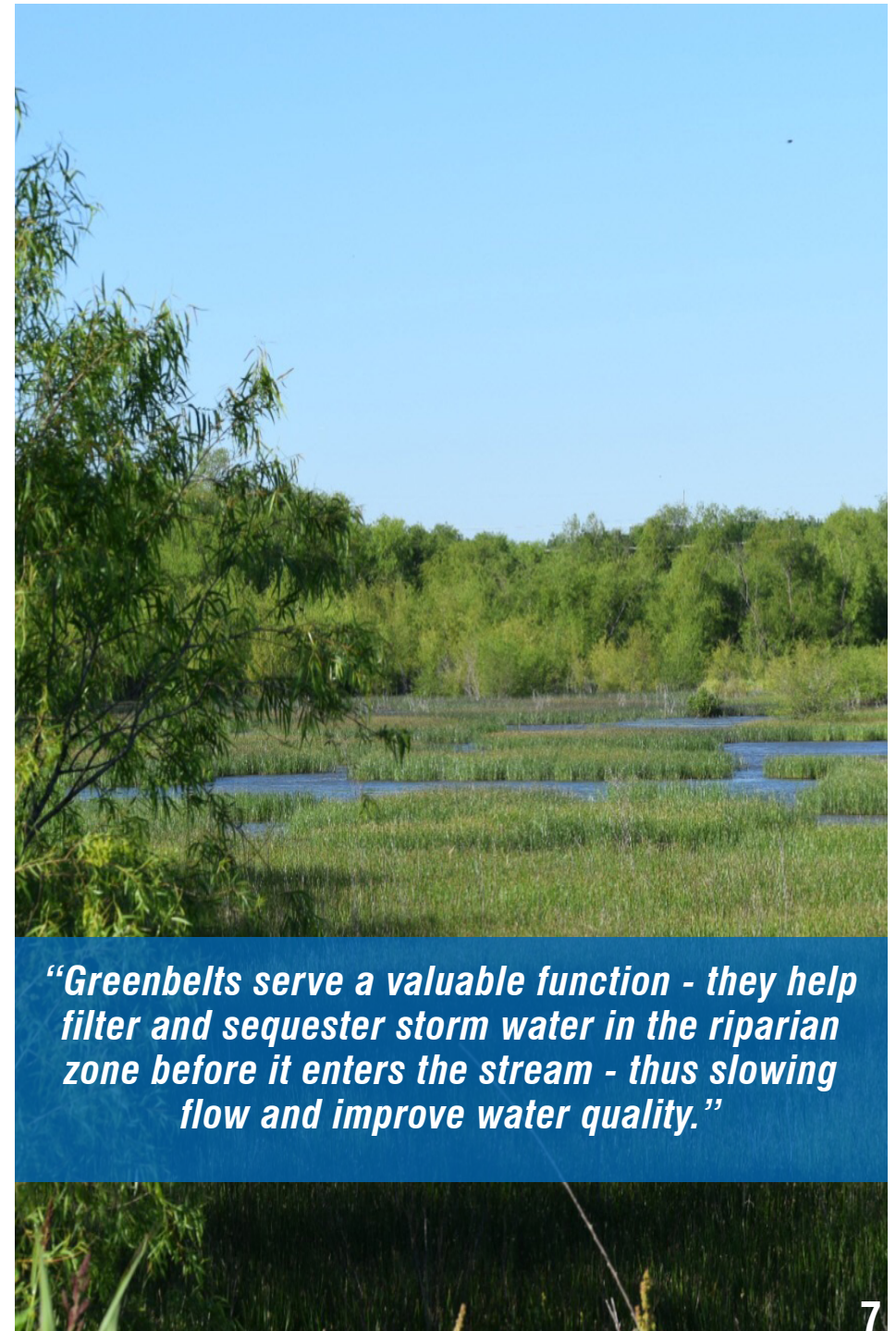
Within the Plan, approximately 1,225 miles of streams were identified as “priority streams” (Figure ES-1) both within Denton County and the adjoining Counties. These priority streams are significant contributors of water to the local water supply reservoirs. These streams are located in both urban and urbanizing areas, and in rural areas. Corridors along some of these streams already contain developments at or near the streams edge. Therefore, opportunities for greenbelt protection along these developed stream segments may be limited.

Of special note, the Plan identifies those streams that will help maintain existing greenbelts and the streams that have an opportunity to restore connections to the existing greenbelt corridors. **A compelling fact: it is much more cost effective to protect greenbelts and stream corridors now -- rather than restore greenbelts and stream corridors after they have been lost to nearby development.**

Existing Greenbelts

Several of the priority streams are flanked with significant widths of vegetation typically consisting of a mixture of trees, shrubs, and herbaceous vegetation. These heavily vegetated streams are the existing greenbelts identified within the Plan. The graphic in Figure ES-2 shows the existing greenbelt inventory.

Greenbelts serve a valuable function for all of us; they help filter and sequester storm water in the riparian zone before it enters the stream – thus slowing the flow and improving the quality of water entering the actual stream. Within Denton County, some agencies have set aside certain existing greenbelts, providing protection for water quality and riparian assets. Examples include already established linear parks, federal lands associated with the three major lakes within Denton County, and areas protected by ordinances, setbacks and dedications in the Cities of Denton and Lewisville, Town of Flower Mound, and the master-planned community of Lantana. However, a majority of the existing greenbelt opportunities lack mechanisms to protect their ecological and water quality functions.



“Greenbelts serve a valuable function - they help filter and sequester storm water in the riparian zone before it enters the stream - thus slowing flow and improve water quality.”

INVENTORY OF STREAMS WITH GREENBELT CHARACTERISTICS

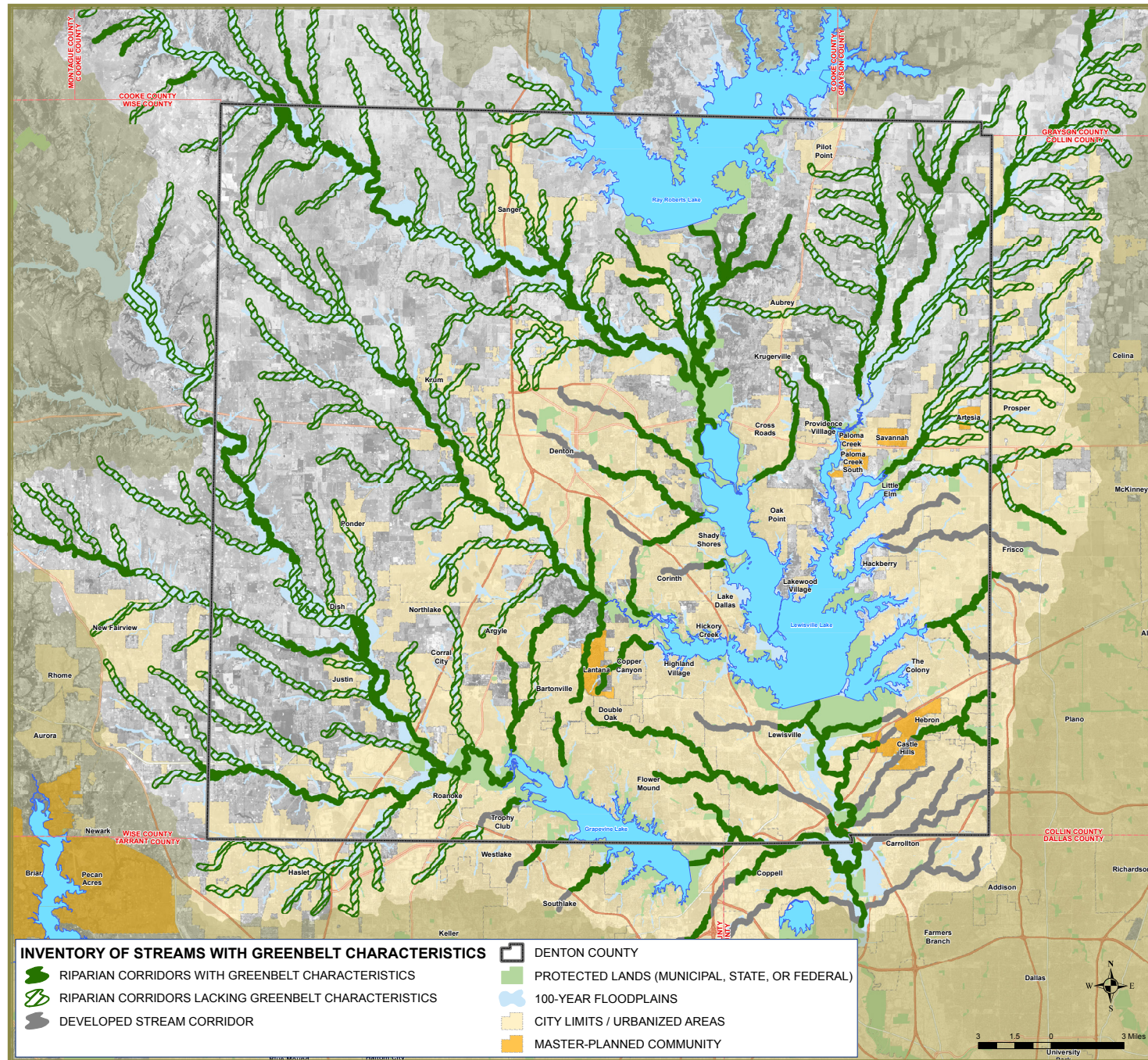


Figure ES-2: Greenbelt Inventory

GREENBELT SYSTEM OPPORTUNITIES

A majority of the priority streams identified in the Plan lack diversity of vegetation to meet the usual qualifications for greenbelt status. The vegetation surrounding these priority streams has either been greatly reduced in species composition and width, or completely removed for agricultural pursuits or for some other land use. However, all is not lost; they are still worthy of being preserved for their riparian assets and benefits.

Within the Plan, these stream segments are classified as Greenbelt Opportunities. These are the areas that need special attention and preservation to protect the quality of water and to ensure other benefits for future generations. Figure ES-4 identifies these Greenbelt Opportunities.

These Greenbelt Opportunity streams may require modifications to adjacent land uses as well as implementing protection mechanisms.

Example land use modifications include allowing vegetation to reestablish within the riparian corridor, possibly limiting or excluding cattle or other livestock from the stream corridor - - and for the long-term, providing for preservation of the riparian zone and a potential set-back for future development from the stream's edge. Design parameters for the protection of streams are provided in the document.

In summary, to protect the quality of water within local water supply reservoirs, preserving a 100-foot wide buffer or set-back from the top of stream bank is generally recommended, as illustrated in the Figure below. However, greenbelts of lesser width will yield significant benefits for water quality protection, for bank stabilization and for trails or other uses. Existing municipal ordinances in Denton County vary in specified width; and, some municipalities have different widths depending on the size of the stream. Each municipality in cooperation with development activity is encouraged to determine what is feasible for their purposes.

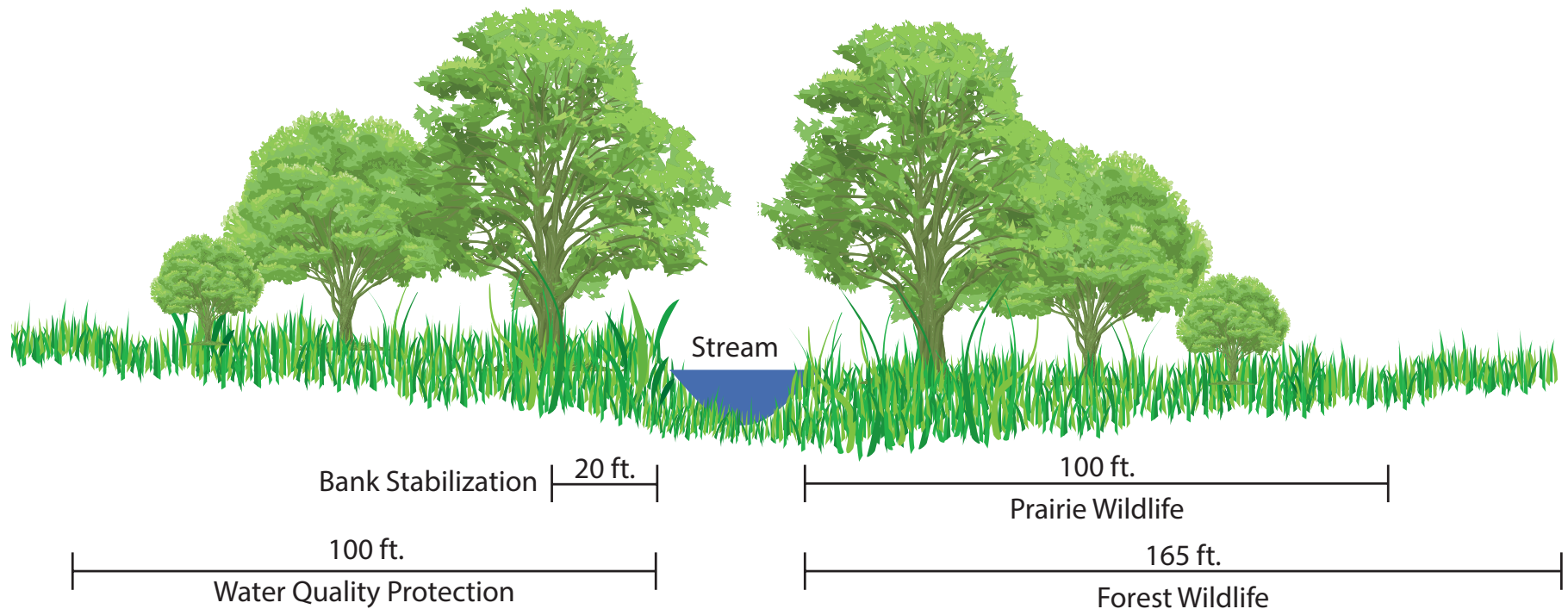


Figure ES-3: Recommended Greenbelt Corridor Width, Courtesy Texas A&M Agrilife Extension Service

GREENBELT OPPORTUNITIES

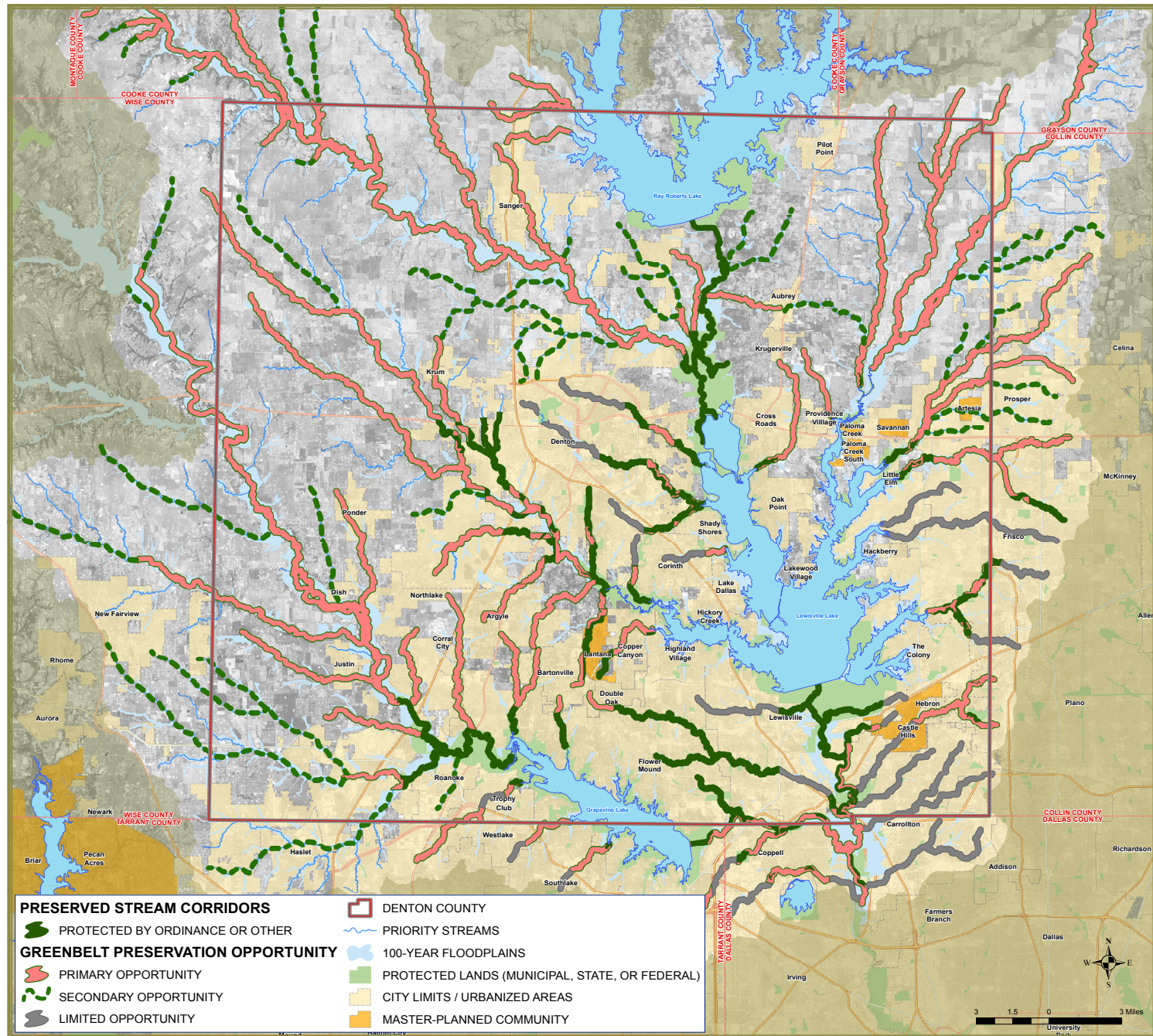


Figure ES-4: Greenbelt Opportunities

PRIORITY WATERSHEDS AND STREAMS

In the planning area, forty-one sub-watersheds to the Elm Fork of the Trinity River contribute flow directly to the three Denton County reservoirs. Within those 41 sub-watersheds, there are 73 named streams including the Elm Fork of the Trinity River. Each of the named streams, their tributaries, and their watersheds were ranked based on a high, medium, or low priority status, which translates to a timeline for implementing the Plan. The planning horizon associated with the prioritization rankings is:

1. High – 1-10 years
2. Medium – 10-20 years
3. Low – 20 years and beyond

Of the 41 sub-watersheds, 11 were ranked as high priority; and, of the 73 named streams, 26 were identified as high priority streams. Figure ES-5 shows the priority status associated with the 41 sub-watersheds and the 73 name streams and their tributaries. As shown, the majority of the high priority watersheds and streams are near the three major reservoirs and the major urban centers within Denton County.

The existing Greenbelts and Greenbelt Opportunities were then overlaid onto the prioritized watersheds and streams. This helps to identify the greenbelts in need of protection and/or preservation. Figure ES-6, on the following page, shows the highest priority watershed with existing Greenbelts and Greenbelt Opportunities identified. Each of the 41 sub-watersheds are identified in the Appendices with the existing Greenbelts and Greenbelt Opportunities shown.

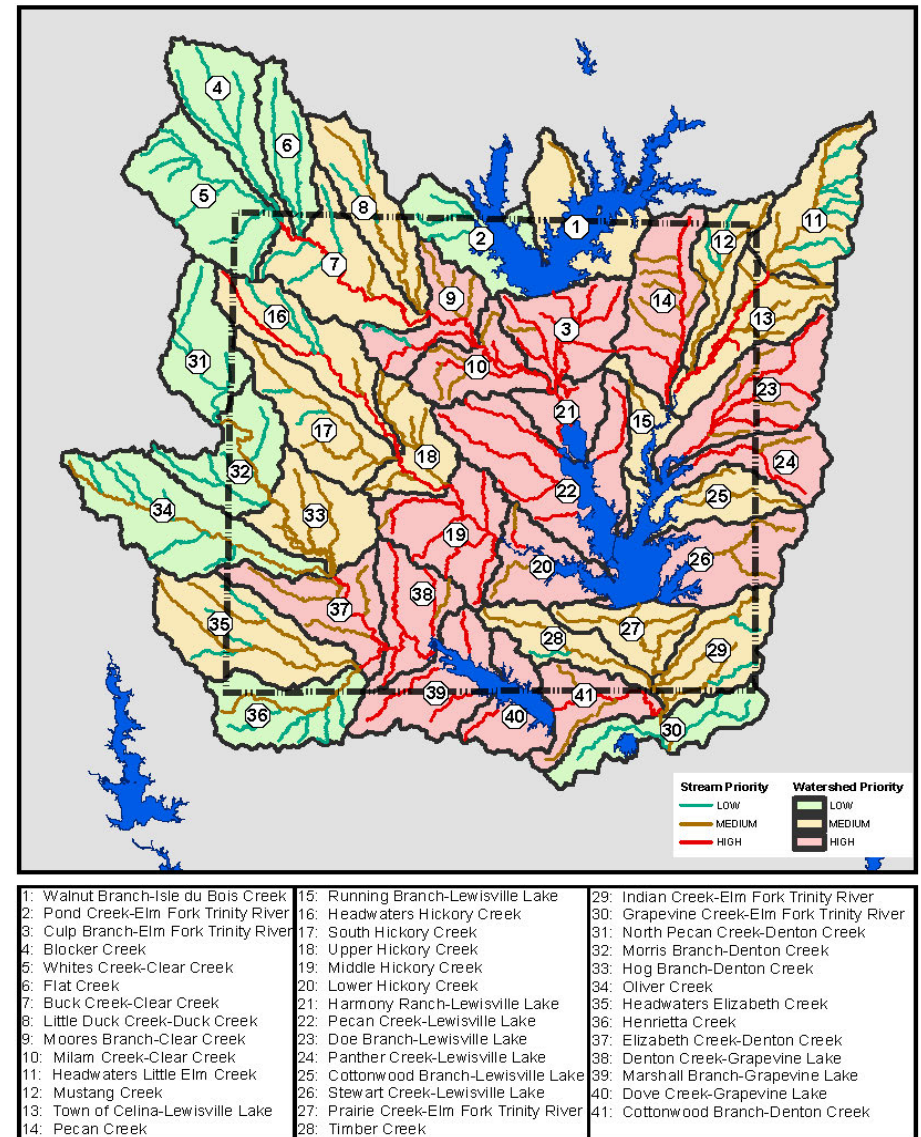


Figure ES-5 Watershed Priority Status

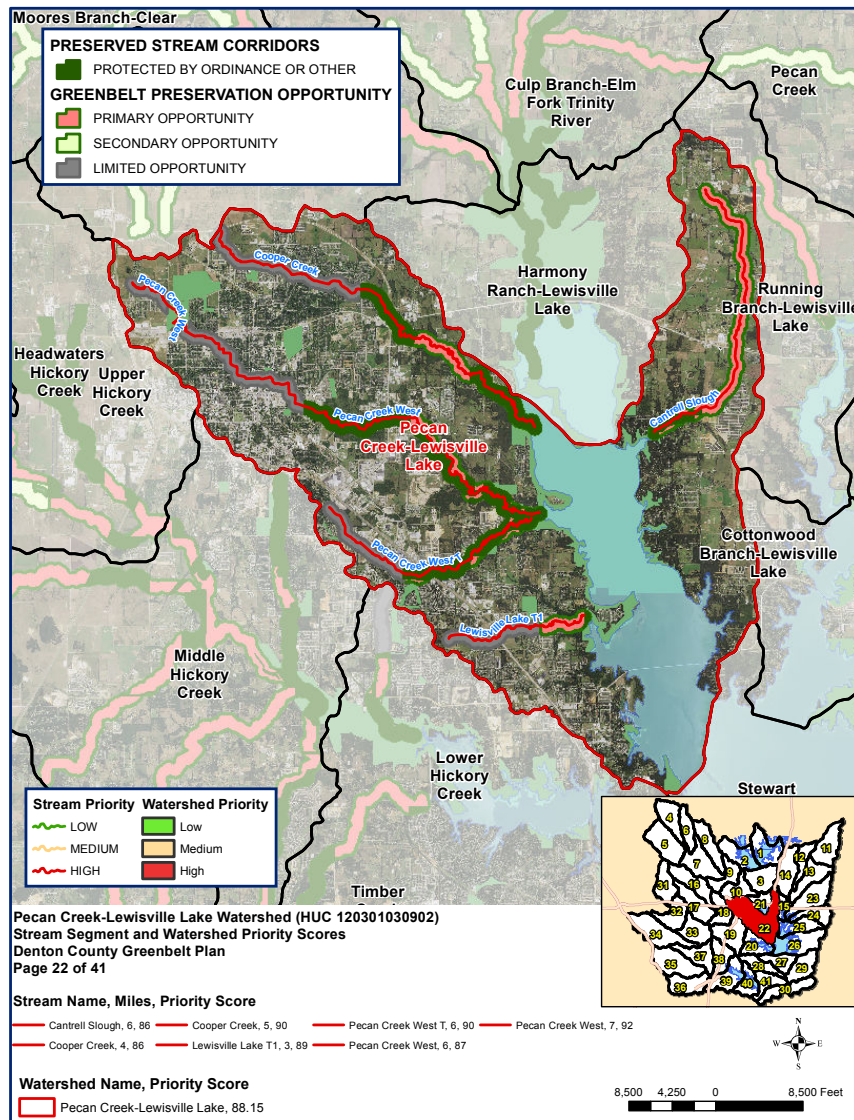


Figure ES-6: Highest Priority Watershed

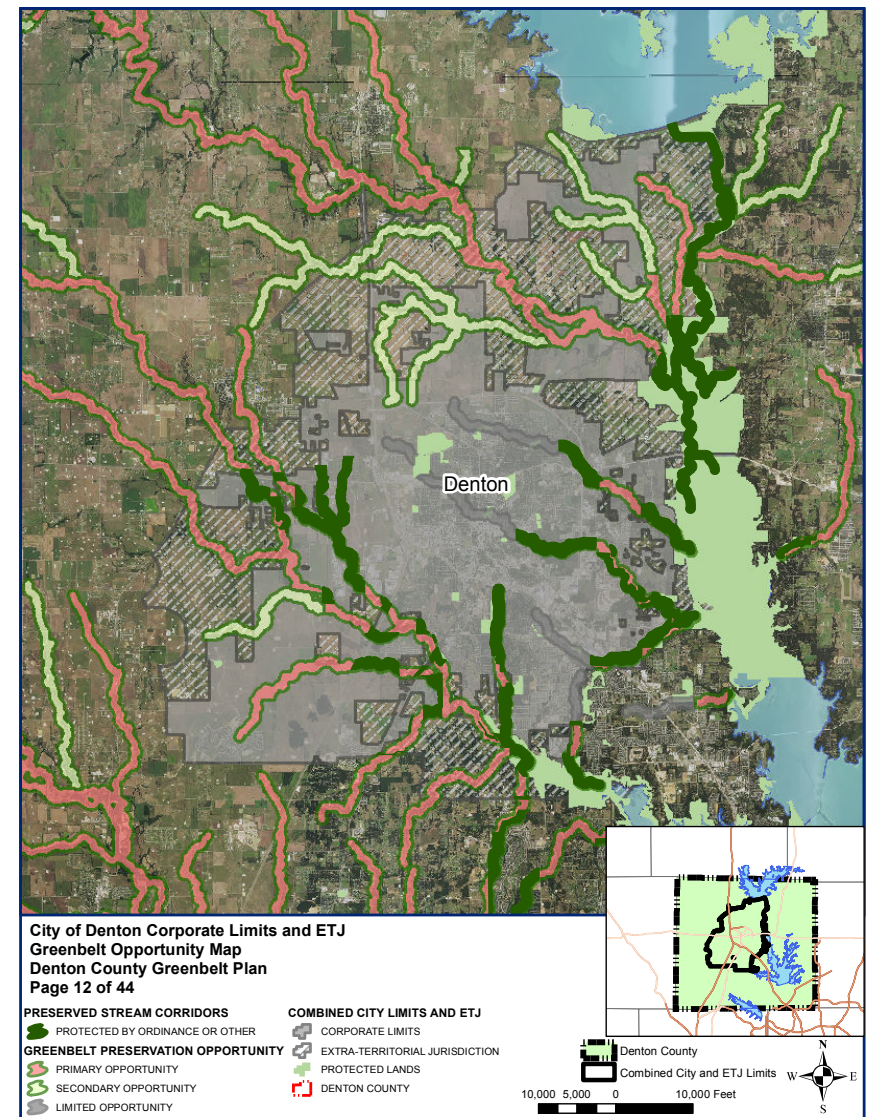


Figure ES-7: City of Denton Greenbelt Opportunity

To assist municipalities, the existing Greenbelts and Greenbelt Opportunities were superimposed onto their corporate limits and extra-territorial jurisdiction. As an example, Figure ES-7 shows the existing Greenbelts, Greenbelt Opportunities, and Developed Stream Corridors within the City of Denton.

IMPLEMENTATION

Capturing the Enthusiasm - Realizing the Vision

The Denton County Greenbelt Plan is not intended to be a regulatory document; rather, the goal for the Plan is to be a convenient guide to encourage and enable closer coordination among stakeholders. Therefore, successful implementation of the Plan, on a voluntary basis, will require strong leadership at all levels: support from County officials, and active support from local municipalities and dedicated citizens. A successful fulfillment of the Plan will depend on informed and supportive citizens and landowners, the stewardship of the County's critical natural assets - private landowners own a majority of the greenbelt corridors in Denton County. The overall, long-term vision is to grow the economy of Denton County, conserving and preserving existing natural assets, while saving and connecting greenbelts.

Implementing the Plan

Greenbelt preservation will require a concerted effort from all stakeholders, each of which may have a different role. Denton County, as well as the local municipalities have a distinct role in implementing the Plan - these entities can enact ordinances, zoning requirements or other measures that will protect greenbelt corridors within their respective jurisdictions. In addition, they can provide funding for greenbelt preservation by issuing bonds or obtaining grants. Non-profit organizations, such as the Upper Trinity Conservation Trust, and other natural resource agencies can also obtain grant funding for projects that would especially benefit landowners and other citizens through public outreach efforts.

Opportunities for leadership exist - champions for greenbelt preservation. As part of the implementation, it is recommended that a Coordinating Committee be established. To keep all stakeholders informed and connected, the Committee will have an important role - The coordinating committee would be charged with keeping all stakeholders informed and connected. The committee will have an important role in the plan's implementations as well as facilitating momentum.

To address the goal for protecting valuable watershed assets, the Plan outlines various strategies to consider in preserving greenbelts.

- Tools to facilitate preservation of Greenbelts within municipal and County jurisdictions,
- Tools for landowners to consider for greenbelt preservation efforts, and
- Funding and acquisition opportunities to help save and connect Greenbelts.

Benefits of Greenbelts

Potential benefits afforded to Denton County and its communities from the preservation of Greenbelts are numerous and quantifiable:

- Conserve the quality of water entering Denton County's water supply reservoirs, the sources of our drinking water, as the County is rapidly urbanizing,
- Increase the quality of life for Denton County residents - - by providing nature-based recreational and educational opportunities,
- Rather than barriers, greenbelts enable increased connections for both people and wildlife,
- Add zest to neighborhoods and enhance property values,
- Healthy tree roots and other vegetative material help protect homes and property by stabilizing and protecting stream banks from erosion potential,
- Increase appreciation for environmental matters through nature-based educational opportunities,
- Preserve the cultural, historical and natural landscapes of Denton County, and
- Safeguard habitat for native plants, animals and aquatic species.

Promoting and Developing Demand for Greenbelts

Education and outreach programs about greenbelts and the importance of conserving greenbelt corridors will be imperative for the success of preserving these critical resources. Within the Plan, numerous strategies are identified to provide education and outreach. The principal purpose for these efforts are to generate demand and citizen interest for greenbelts. These strategies include:

Strategy 1 – Establish a brand for the plan – Denton County For The Future



Strategy 2 – Create campaigns to promote Greenbelt awareness and preservation in Denton County and adjoining counties.

Strategy 3 – Educate, raise awareness, and increase citizen involvement in the Greenbelt preservation efforts across the County.

Strategy 4 – Collaborate with Government and Non-Government agencies and organizations to support the Greenbelt Preservation efforts.

Greenbelt Protection Measures

Protection measures need to be implemented to preserve the identified greenbelt corridors into the foreseeable future. Numerous regulations are in place on the federal and state level that protects aspects of streams; however, those regulations do not provide protections to the vegetation associated with greenbelts per se. Certain municipalities within Denton County have enacted ordinances specifically to offer protections to greenbelts. Examples include the Cities of Denton and Lewisville, and the Town of Flower Mound have ordinances in place to provide protections to Greenbelt corridors. Ordinances, in conjunction with State and Federal regulations, are excellent vehicles for protecting Greenbelts.

The Plan offers other preservation measures to consider that are not necessarily regulatory in nature. These include the establishment of Greenbelt Districts, Purchase of Development Rights, Conservation



Easements, Mitigation Banking Opportunities, In-Lieu Fee Programs, and Property Tax Exemptions. Non-profit organizations, such as the Upper Trinity Conservation Trust, specialize in these types of protection measures and can partner with the various stakeholders in Denton County to implement these needed protection measures. Specifics about these voluntary programs are outlined in the Plan.

Greenbelt Preservation for Landowners

The majority of the land occupied with existing greenbelts and Greenbelt Opportunities in Denton County is in private ownership. These landowners are key to protecting existing greenbelts on their property, as well as enable connection of Greenbelt Opportunity corridors. The Plan offers several land management suggestions for landowners to protect water quality entering the receiving streams. Management suggestions include:

- Grazing Management
- Cropland Management
- Riparian Corridor Restoration
- Invasive Species Management

Funding

Numerous funding opportunities are available to assist in the preservation of Greenbelts, including bonds, grants, and donations. Specific funding opportunities outlined in the Plan include:

- General Obligation Bonds
- Community Development Block Grants
- Development Dedications
- Recreation Grants
- Highway Grants
- 319 Grants
- Public Private Partnerships
- Donations

Other opportunities may be available that are not included in the Plan, any funding opportunity that can be applied for greenbelt protection purposes should not be discounted.

FINDING A BALANCE

Finding a balance between growth and conservation in Denton County will be a challenge. The Denton County Greenbelt Plan is a step in the direction toward finding that balance. With the existing and priority Greenbelt Corridors identified, municipal and County leaders have the tools needed to know what assets are available for protection. Also, with the Greenbelt Corridors identified, Developers have the locations of the priority Greenbelts to consider in their development plans. Finally, the landowners who have priority Greenbelt corridors located on their property have tools and mechanisms available to improve water quality and stream function within their property.

Denton County is at a point of great opportunity. Now is the time to preserve its natural assets while sustaining economic growth for the next generations to come.





DENTON COUNTY
GREENBELT PLAN
For the Future