The natural environment—trees, waterways, natural areas and open space—give city residents a way to escape from their urban surroundings, even if it’s just by glimpsing a greenbelt while traveling to work. Connecting with nature is important for health, too. Studies show patients heal faster, children learn better, the din of urban life becomes softer, the brutal summer heat lessens and air quality improves when cities embrace and connect with a healthy outdoor environment. Protecting Dallas’ natural environment is linked to policies throughout other elements of forwardDallas! The Transportation Element promotes alternatives to car travel which improves air quality and thereby reduces the need for pavement and impervious cover in the city. Land use policies encourage more compact and pedestrian-friendly development resulting in less land being used for homes and work places, freeing up acreage for wildlife and recreation. By fostering alternative forms of growth, forwardDallas! policies improve and protect the city’s natural environment.

**Background**

When asked about their priorities and values for the future of Dallas, residents listed the environment third in terms of critical priority, after education and public safety, and above jobs and neighborhood quality. In the survey, 81 percent of residents expressed concerned about air pollution and 73 percent were concerned about water pollution. Residents clearly tied a successful future with having clean air, clean water and a clean environment.

Dallas already has a great foundation upon which to build. From White Rock Lake and its trails, the Great Trinity Forest, the Cedar Ridge and Lower White Rock Creek Escarpments, the city possesses a variety of impressive natural features.
Floodplains and Riparian Areas

More than 360 miles of streams run through the city. Unfortunately, most of these now flow through pipes. Nevertheless, many miles of streams remain relatively untouched by the effects of development. The 100-year floodplains of the Trinity River and other streams cover 33,672 acres. Of these, about 7,415 acres of floodplains have been developed. The levee system along the Trinity has changed the shape of this floodplain to protect developed land. More than 10,000 acres of the city’s floodplain, however, is vacant and should be protected from development through acquisition, restoration and dedication of open space. As was made painfully clear along the Gulf Coast during the 2005 hurricane season, the loss of floodplains and other natural recharge areas not only negatively impacts water and air quality, it fails to minimize damage during floods. In addition to flood stabilization, reclaiming and restoring these areas would provide sites for recreation, wildlife habitat and buffers for riparian areas while improving water quality and lowering the heat island effect.

Riparian areas in Dallas are a stop for migrating birds and home to nesting birds and a rich variety of plants.

Aerial image of Trinity River floodplain drainage areas.

The banks of the Trinity River would benefit from restoration to improve habitat quality and natural scenery while also improving their function during floods.
Map II-6.1 Existing Natural Areas in Dallas
Air Quality

While air quality standards have improved since the 1990s, the City exceeds the federal clean air standard for ozone several days a year. As additional residents make Dallas home by 2030, it is critical that Dallas make land use decisions that contribute to improving air quality. This includes implementing strategies for decreasing commuting distances and providing alternative travel methods, as offered in the Transportation and Land Use Elements. These strategies reduce car travel by using land more efficiently through mixed uses and advance efforts to clean the air.

The Urban Environment

New construction will be needed to meet Dallas’s expected population and employment growth. Typically this results in increased energy demands for heating and cooling, additional miles of paved surfaces affecting storm water run-off and increased demands on disposal of auxiliary waste products. Green building techniques that lower resource use, improve energy efficiency, filter storm water on-site and allow open space protection and restoration present key strategies for Dallas’ future.
Trinity River Corridor

The Trinity River, having long been levied and rerouted, in the past was viewed as an obstacle to growth and development. Now, however, residents see the Trinity River as an unparalleled asset to create a sense of place and identity for the city. Harnessing the natural beauty of the Trinity River includes orienting development, such as condominiums, to the waterfront to capitalize on river views. Lining the riverbanks with trails for recreational use and travel can be accomplished, while at the same time protecting and restoring the river. The Trinity River Plans aim to boost economic vitality by bringing dynamic mixed-use development to the Trinity River Corridor to complement the remarkable architectural design of the Calatrava bridges. In addition, the Renaissance Plan provides a template for adding new trails and open space. The city’s environmental health can be exponentially improved by using this natural resource as a destination and scenic amenity, restoring habitat in floodplain areas, preserving and enhancing the Great Trinity Forest and other natural areas, and welcoming visitors and residents to the river’s edge with trails.
The Environment Element aims to protect the natural, scenic and ecological resources of Dallas by identifying, preserving and enhancing important natural resources and ensuring that the city’s natural and built environments are consistent with the forwardDallas! Vision and Core Values.

**GOAL 6.1 PROTECT DALLAS WATER QUALITY AND WATERSHEDS**

The City should provide for the protection of water quality, preservation of the ecological function of watersheds, and management of storm water to mitigate impacts of development.

**Policy 6.1.1 Develop and implement storm water management practices.**

Develop and implement storm water management practices to reduce harmful run-off, filter storm water on-site and provide protection against erosion and other consequences of flooding.

**IMPLEMENTATION MEASURES**

6.1.1.1 Continue to work closely with the North Central Texas Council of Governments (NCTCOG) to implement new standards for Integrated Storm Water Quality Management (ISWM).

6.1.1.2 Provide leadership to other governments within the region in adopting new storm water standards that adequately mitigate the potential impact of new development on existing development, the storm water system and on the natural environment.

6.1.1.3 Develop regulations and storm water management standards for alternative methods of development that retain natural site drainage and reduce impervious (pavement) coverage. Standards will address storm water quality treatment and storm water conveyance/detention. Favor alternatives that support Goal 6.2. Natural Area Protection.

6.1.1.4 Develop landscaping standards to appropriately manage run-off created by impervious surfaces.

6.1.1.5 Establish standards to limit the amount of impervious surface that can result from development activity, as part of a comprehensive storm water management strategy. Such
standards should consider the possible different conditions in new development, as well as denser more urban redevelopment areas.

6.1.1.6 Promote alternative storm water management techniques such as grassy swales, biofilters, eco-roofs, green streets, pervious pavement and other more natural methods.

6.1.1.7 Consider shared parking and other parking reduction strategies to minimize unnecessary paved areas.

6.1.1.8 Develop alternative street designs and standards which allow for narrower streets and associated infrastructure, resulting in less pavement.

6.1.1.9 Develop alternative street designs and standards that allow for greater filtration and more appropriate storm water conveyance.

Policy 6.1.2 Mitigate non-point pollution.

Provide additional strategies to reduce non-point source pollution.

IMPLEMENTATION MEASURES

6.1.2.1 Expand the role of the City of Dallas Office of Environmental Quality to include an interagency taskforce whose responsibility is to educate and advocate for environmentally sound development practices.

6.1.2.2 Promote the use of alternative landscaping that is native or climate tolerant and erosion resistant.

6.1.2.3 Through education and outreach, promote the use of and, where feasible, require non-phosphorus fertilizer and other environmentally safe lawn products in buffer areas, along riparian corridors and in floodplains.

6.1.2.4 Limit the use of pesticides and harmful herbicides in natural areas and open space managed or maintained by the City of Dallas.

6.1.2.5 Evaluate areas important for groundwater recharge and limit the types of uses and activities there as well as require better treatment of storm water on these sites.
GOAL 6.2 PRESERVE AND INCREASE TREE CANOPY

By maintaining and improving the tree canopy and the quality of the urban forest within developed and developing areas, the city will benefit from the additional shade, which will mitigate the urban heat island effect and keep drainages cool. This will also create more walkable/livable neighborhoods and preserve and enhance wildlife within developed areas.

Policy 6.2.1 Establish a tree canopy coverage enhancement program.

IMPLEMENTATION MEASURES

6.2.1.1 Develop an Urban Forestry Master Plan to guide overall management and preservation of tree canopy throughout the city. This plan will include a Street Tree Master Plan to guide planting trees during development and redevelopment and to designate appropriate trees for plantings along major roads and corridors.

The Street Tree Master Plan will include:
• Preparing a methodology to implement the Street Tree Master Plan.
• Identifying and recommending standards for public streets, planting strip width and design, etc.
• Identifying potential funding including utility bill surcharges for planting, initial maintenance, sidewalk repair and replacement by City crews.
• Identifying potential funding needed to replace damaged, dying or removed trees.
• Evaluating compliance with the Street Tree Master Plan.
• Defining the level of development or redevelopment that would trigger compliance with the plan.

6.2.1.2 Determine Dallas’s baseline tree canopy coverage and establish a monitoring program to be updated regularly.

6.2.1.3 Set annual targets for increasing the tree canopy coverage in concert with population and development density increases.

6.2.1.4 Develop additional regulatory tools to preserve tree canopy based on an analysis of the existing tree canopy and identification of priority areas.
6.2.15 Implement tree planting requirements for new developments, including parking lots and building setback areas.

Map II-6.2 Tree Canopy Coverage throughout Dallas
GOAL 6.3 IMPROVE ENERGY EFFICIENCY AND AIR QUALITY

The City should strive to reduce non-renewable energy resource consumption and improve Dallas’ air quality.

Policy 6.3.1 Promote green building practices.

IMPLEMENTATION MEASURES

6.3.1.1 Use the City’s Office of Environmental Quality taskforce to educate and advocate for environmentally sound development to promote green building practices across the city. (See Policy 6.1.2.1.)

6.3.1.2 Identify appropriate green building and site development standards and develop a phased implementation program.

6.3.1.3 Establish a minimum threshold, based on the City’s green building scoring system, to be met by appropriate development that receives City funding, including projects that receive tax abatements.

6.3.1.4 Establish minimum thresholds for bicycle infrastructure, storm water management, energy efficiency and other green building practices and provide development fee credits to encourage additional innovative elements.

6.3.1.5 Expedite the entitlement process for projects that meet LEED certification standards or other environmentally sensitive programs.

6.3.1.6 Promote energy conservation by supporting programs to improve energy efficiency in existing buildings, including existing single-family homes.
Policy 6.3.2 Institute transportation demand management.

Promote transportation demand management programs. This program asks businesses and organization employing more than 100 people to offer incentives to employees to use alternative modes of transportation such as bus passes, reduced parking costs for carpoolers, showers and changing facilities to encourage bicycling, bike storage, private shuttles to transit stations, carpool match programs, telecommuting options and flex-time schedules.

IMPLEMENTATION MEASURES

6.3.2.1 Develop a citywide transportation demand management program, expanding and continuing incentives such as subsidized transit passes, car pool coordination and telecommuting options.

6.3.2.2 Develop incentives and thresholds for implementing transportation demand management programs for all businesses with more than 100 employees. Once established, this program can be expanded to include businesses or groups of businesses with less than 100 employees.

Policy 6.3.3 Limit vehicle miles traveled.

The City should develop strategies that will reduce total vehicle miles traveled and emissions from idling vehicles.

IMPLEMENTATION MEASURES

6.3.3.1 Work closely with the North Central Texas Council of Governments to develop strategies which will reduce vehicle miles traveled and air pollution from vehicle emissions.

6.3.3.2 Provide opportunities to live close to shopping and employment opportunities and use alternative modes of travel.

Policy 6.3.4 Promote alternative energy and reduce consumption.

The City should reduce non-renewable energy resource consumption and promote the use of alternative energy.
IMPLEMENTATION MEASURES

6.3.4.1 Promote the use and development of alternative transportation modes intended to reduce the consumption of fossil fuels and other non-renewable energy resources.

6.3.4.2 Identify and promote federal and state programs and incentives for energy efficiency credits and tax rebates.

6.3.4.3 Promote energy-efficient design and use of solar power in residential, commercial and industrial development.

6.3.4.4 Encourage development to occur in locations and at intensities that facilitate using alternative transportation modes to the extent compatible with the surrounding community.

6.3.4.5 Continue to replace City automobiles with clean fuel and low-emission vehicles as they need replacement. Where this is not feasible, purchase vehicles with high fuel economy.

6.3.4.6 Work with private, nonprofit and public sectors to implement innovative programs to limit new air pollution and improve existing air quality.

The City of Dallas will continue to replace vehicles within its municipal fleet with more energy-efficient models including hybrids, electric vehicles and those that run on alternative fuels.

With urbanization happening throughout Dallas; securing and restoring remaining open space is a high priority in order to provide recreational escape and protection of remaining wildlife habitat.
GOAL 6.4 IDENTIFY, PROTECT AND RESTORE OPEN SPACE

By identifying, protecting and restoring open spaces, natural areas and ecologically sensitive areas, the City can achieve the following:
- Conserve and improve storm water conveyance and flood control functions of wetlands, riparian areas and floodplains.
- Prevent erosion and protect slopes.
- Improve water quality within natural water bodies and drainages.
- Preserve and restore habitat for all species, especially endangered and sensitive species.
- Preserve beautiful vistas and access to the natural features of Dallas.

Policy 6.4.1 Identify and prioritize ecologically sensitive areas.

Ecologically sensitive areas including riparian corridors, waterways, upland habitat, treed areas and other sensitive areas bordering riparian zones, should be surveyed, inventoried and mapped, with special attention given to the following:
- Obtain comprehensive information in order to prioritize programs that would protect key resources.
- Preserve floodplain areas for storm water conveyance.
- Retain habitat for all species, particularly environmentally sensitive and endangered species.
- Protect riparian areas and wildlife corridors.
- Recognize the fragility of the escarpment.
- Identify key natural features including:
  - The Great Trinity Forest
  - The Mountain Creek Escarpment
  - White Rock Lake
  - Major creeks including Turtle Creek, White Rock Creek and Five Mile Creek

IMPLEMENTATION MEASURES

6.4.1.1 Update and/or create maps to clearly delineate the boundaries of sensitive areas and floodplains. Identify and map areas of citywide and potential citywide significance to minimize conflicts with development.

6.4.1.2 Establish a system of designating specific areas as ecologically sensitive areas worthy of protection. Particularly in riparian areas, establish standardized buffer widths based on resource type and adjacent topography. For riparian areas, buffer widths will be based on water quality and ecological considerations.
Map 6.3 Undeveloped Floodplain throughout Dallas
quality function and wildlife habitat needs. Establishing standardized buffers may require that precise boundaries be delineated prior to environmental review for new development, particularly in riparian areas. Also identify key public landmarks and scenic views.

6.4.1.3 Evaluate connectivity between open spaces and natural areas.

6.4.1.4 Require environmental review of projects occurring within ecologically sensitive areas, with a priority on floodplains, riparian areas and areas with slopes exceeding 12 percent.

6.4.1.5 Through a confidential “willing-seller” program, assess properties that are vacant or otherwise available for public acquisition or purchase to be established as public open space, particularly those within the designated escarpment buffer zone, riparian areas and floodplain. Special attention and priority will be given to those areas with low economic value unsuitable for development. In addition, the responsibility of managing newly acquired lands, the potential for restoration of these lands, and potential and need for public access will be evaluated. The multiple values of open space for wildlife habitat, recreation and trails, storm water conveyance, and protection of scenic views will be evaluated comprehensively.

**Policy 6.4.2 Protect open space.**

Strategies should protect the ecological, scientific and scenic values of land designated as ecologically sensitive. This would include developing a comprehensive strategy and establishing tools such as greenbelts, open space zoning, conservation easements and density transfers to restrict urban development in environmentally sensitive areas.

**IMPLEMENTATION MEASURES**

6.4.2.1 Evaluate the potential effectiveness of methods to regulate development in environmentally sensitive areas to prevent incompatible development and to preserve the ecology. Land adjacent to riparian corridors and floodplains will get special attention.

6.4.2.2 Restrict development within the floodplain. Where alternatives are not feasible, require balanced cut and fill to prevent loss of flood storage capacity and appropriate mitigation to prevent loss of ecological values.
6.4.2.3 Establish buffer zones and protection areas around key ecologically sensitive areas to prevent future development within those boundaries except for recreational facilities. This includes the escarpment and significant riparian areas. Appropriate restrictions and setbacks will be used. Potentially detrimental activities, such as clear-cutting and standard development and construction practices, will not be allowed.

6.4.2.4 Create new cluster development regulations tailored to protect specific types of environmentally sensitive areas. These developments must be compatible with adjacent neighborhoods and minimize the loss of the property’s development capacity. Develop compensation programs and zoning regulations to allow the transfer of development capacity from constrained to unconstrained portions of tracts. Other compensatory measures, such as easement purchasing programs, should also be considered.

6.4.2.5 With the escarpment as a priority, establish zoning measures to allow transfer of development rights from environmentally constrained areas to unconstrained areas outside the escarpment.

6.4.2.6 Prohibit the practice of under-grounding streams, except where alternatives are not feasible. Limit the use of culverts. Where drainages must be placed in a culvert, require alternative designs that minimize impacts to stream health.

6.4.2.7 In conjunction with the Parks and Recreation Department, undertake a study of open space needs, acquisition and/or dedication of land, payment into dedicated open space fund, as well as other mechanisms for providing open spaces. Explore a full range of funding and acquisition alternatives. Update the Renaissance Plan concurrently with forwardDallas! updates so park and open space needs are identified and funding for parks and open space is included in capital budget planning.

Policy 6.4.3 Acquire natural areas.

In order to meet the demands of a growing population, the City should acquire priority areas for preservation.
IMPLEMENTATION MEASURES

6.4.3.1 Establish deed, transfer of ownership, and other acquisition programs for the purpose of acquiring property that has been identified for potential acquisition.

6.4.3.2 Acquire land within floodplains and riparian corridors, particularly those with low economic value, and restore this land as a natural area or preserve it for open space or recreational purposes.

Policy 6.4.4 Restore and manage sensitive areas.

Restoring and managing ecologically sensitive areas will include planting, managing and replanting native or climate tolerant vegetation.

6.4.4.1 Focus resources on educating City employees and Dallas residents about the value of and proper techniques for restoring and maintaining natural areas and backyard habitats.

6.4.4.2 Promote wise use of irrigation and climate appropriate landscaping and vegetation.

6.4.4.3 Develop requirements for landscape restoration with native plants from regional seed stocks on ecologically sensitive sites disturbed by urban development. Within the escarpment area, those sites suffering from erosion, or vulnerable to erosion should be included.

6.4.4.4 Promote public and private efforts to restore degraded natural habitat areas.

6.4.4.5 Restore and/or promote the restoration of waterways, floodplains and riparian corridors, particularly in areas identified as ecologically sensitive.

6.4.4.6 Promote the practice of day-lighting streams and tributaries in order to restore their natural function.

6.4.4.7 Develop a comprehensive citywide program to landscape public properties with native plants or climate tolerant vegetation that provides wildlife habitat. In particular, focus on City-owned parks and natural areas as well as large campuses with significant open space. Remove non-native species that threaten overall habitat quality and replace with native species or climate tolerant vegetation.

6.4.4.8 Minimize development of natural areas on public lands and

Acquiring natural areas will help the city meet future demands for outdoor recreation opportunities such as those provided by White Rock Lake Park.

Dallas will work to educate City employees and the public about using native or climate tolerant plants and how to improve backyard habitat. Source: Portland Metro Green Streets Manual.

Riparian areas constitute the lushest and most biologically diverse part of a stream.
GOALS, POLICIES AND IMPLEMENTATION

manage these areas to protect habitat integrity.

GOAL 6.5 PROVIDE ACCESS TO PARKS, OPEN SPACES AND RECREATIONAL OPPORTUNITIES

It is important that all residents—current and future—have access to parks, open spaces and recreational opportunities. The City’s intent is to establish one of the nation’s premier parks and recreation systems.

Policy 6.5.1 Update the parks master plan.

The Renaissance Parks Plan should be regularly updated for a 20- to 30-year time span. The update should incorporate the needs of future residents as outlined in the forwardDallas! Vision and in key Area Plans, such as the Trinity River Corridor Plan and Downtown Parks Master Plan. The update should showcase premier parks as regional amenities and pay special recognition to the basic goals of sustainability and walkability.

IMPLEMENTATION MEASURES

6.5.1.1 In the Renaissance Plan, advocate the use of more comfortable, shady and engaging built environments embodied in the forwardDallas! Vision.

6.5.1.2 Establish an acquisition program to maintain or improve the amount of designated open space per capita as the city’s population increases. Ensure that adequate open space is provided with all development. Devise an equitable strategy for increasing dedicated open space, especially in park deficient areas. This may include incentives for dedication of trails or parks. When possible, neighborhood parks or “pocket parks” constructed in conjunction with infill or redevelopment should remain privately owned or be maintained privately. Programs should recognize the cost of maintaining these parks and, where possible, use incentives such as density bonuses to offset costs in publicly accessible parks.

6.5.1.3 Provide adequate resources for recreational programming and parks maintenance as outlined in the parks master plan.

6.5.1.4 Promote the restoration of degraded areas and the use of native plants and climate tolerant vegetation in parks, riparian corridors and other natural areas consistent with the Renaissance Plan.
6.5.1.5 Cooperate with conservation organizations and others to promote public accessibility of privately owned open spaces.

**Policy 6.5.2 Implement the citywide trails master plan.**

The trails network master plan must be regularly updated with emphasis on the Trinity River Corridor. The goal is to provide an interconnected system of trails within public lands and natural areas, and to provide alter native connections throughout the city and region for pedestrians and bicyclists.

**IMPLEMENTATION MEASURES**

6.5.2.1 To facilitate bicycling and walking as means of transportation and to provide opportunities for recreation within and appreciation of natural areas, provide an interconnected system of multi-use trails for biking, walking and hiking, with handicap access where appropriate. Trails should meet national standards addressing appropriate trail width, elevation and surface materials.

6.5.2.2 Work closely with other jurisdictions and the North Central Texas Council of Governments to provide a regional system of trails, continually seeking to connect Dallas trails with those in bordering jurisdictions and completing the “veloweb” regional system of trails.

6.5.2.3 Inventory unimproved public rights-of-way citywide and identify areas that could be used for trails and/or public facilities.

6.5.2.4 Inventory existing trails and public access along the Trinity River Corridor and identify opportunities to link existing trails through new connections or by establishing new trails.

6.5.2.5 Acquire first right-of-refusal and the option to buy in the event of a decommissioned or abandoned rail line for the purpose of establishing a rails-to-trails program.

6.5.2.6 Limit the environmental impacts of trails in natural areas and open space by using environmentally responsible building materials, paving to prevent erosion where necessary, and locating new trails in areas that will minimize the erosion and degradation of sensitive environmental areas.
Map 6.4  Dallas Trail Network Master Plan
6.5.2.7 Establish and administer a Trinity River Corridor greenway trail standard that defines the preferred width, elevation, signage, surface materials and landscaping designated for all sections of the corridor. Such standards will be expanded or developed for other key trails.

6.5.2.8 Establish policies requiring that new development along the Trinity River and other designated priority trails provide public right-of-way and the construction of greenway trails along their property line.

6.5.2.9 Inventory trail networks within the escarpment and seek ways to build, extend or develop trails in order to provide an interconnected trail system with the least possible impact on the landscape.

**GOAL 6.6 INCREASE RECYCLING AND CONSERVATION OF RENEWABLE RESOURCES**

The City should work toward reducing the need to use virgin resources by reducing the quantity of waste materials generated and recovering materials from the waste stream.

**Policy 6.6.1 Increase recycling and composting.**

City and intergovernmental efforts in recycling and composting should be supported.

**IMPLEMENTATION MEASURES**

6.6.1.1 Support City efforts at recycling office wastepaper and other materials.

6.6.1.2 Work with businesses to develop better markets for recyclable materials.

6.6.1.3 Develop a plan, including targets and a schedule, to increase recycling and reduce overall waste, both at the residential level for single-family and multifamily homes, and for commercial operations.

6.6.1.4 Promote voluntary reuse and recycling of construction debris at demolition sites.

6.6.1.5 Support both voluntary and commercial efforts to compost waste.

6.6.1.6 Integrate recycling education programs into independent school district curricula to support citywide recycling initiatives.
Policy 6.6.2 Design for recycling.

Designs that are compatible with recycling of waste and reusing building materials will be encouraged and promoted.

IMPLEMENTATION MEASURES

6.6.2.1 Develop standards requiring new development of commercial and multifamily buildings to include facilities for waste recycling.

6.6.2.2 Support building designs which incorporate reused and recycled materials.

Policy 6.6.3 Handle hazardous waste correctly.

The City should facilitate proper disposal of hazardous waste.

IMPLEMENTATION MEASURES

6.6.3.1 Coordinate with intergovernmental agencies to identify sources of and manage collection and disposal of potentially hazardous business and household wastes such as pesticides, fertilizers, paint, electronic hardware, etc.

6.6.3.2 Provide sufficient resources to monitor and enforce non-compliant disposal and illegal dumping of wastes.