

Appendix B: Benefits of Open Space

There are various ways in which open space benefits each of us in Wake County. Protecting water recharge areas and wetlands, and buffering streams helps preserve the water quality and, in turn, Wake County's drinking water. Buffers along our streams slow down storm runoff and decrease the chance of flooding. Allowing adjacent wetlands and floodplains to store water without obstructions during storm events keep homes and businesses from flooding. Open space and greenways increase the value of nearby land, and recreational opportunities encourage corporations to bring their headquarters to this area. By supplementing agriculture, farms and scenic vistas, open space helps offset the visual impact of ever growing cities and towns. Open space ensures that the quality of life found in Wake County will continue to attract people to this area in the future. Recreational opportunities are also important to the quality of life. Active and passive recreation requires open space and parkland. It is also necessary to preserve the cultural and historical landscapes of Wake County for future generations. Finally, large, contiguous tracts of land and good water quality are needed for wildlife habitat. As one can see, there are many reasons why open space is beneficial to Wake County. All of the mentioned benefits of open space are explored further in the following section.

Water Quality and Water Quantity Benefits

Open space and greenways often preserve wooded landscapes along creeks and streams which filter pollutants and absorb flood waters. Open space improves water quality in three distinct ways. First, any land that remains in a natural, undisturbed (no cars, buildings, parking lots, etc.) condition generally does not contribute pollutants to surface and ground water.

Second and most importantly, open space contains natural vegetation that serves as filters, removing pollutants before they are deposited in water bodies. These vegetated areas slow down water and allow for pollution to drop out of the storm water before they get to our surface and ground water. Some plants, particularly wetland species, soak up pollut-



Water Quality and Water Quantity Benefits



ants. These pollutants are not removed if storm water is collected in pipes and discharged directly into water bodies.

Third, open space can be used to protect water recharge areas. These areas are where surface water returns to aquifers (underground rivers and lakes) to replenish ground water. If these are not protected, ground-water can become contaminated with pollutants.



In general, the lands immediately surrounding bodies of water are the most useful for filtering pollution from surface and sub-surface waters. Surface runoff is most concentrated near these bodies of water. Wetlands that filter surface water and allow it to recharge aquifers also tend to be found in low areas near other bodies of water. The Triangle region will soon be home to nearly a million people. Improving surface water quality in streams not only benefits local residents but also aquatic and terrestrial wildlife that depend on streams for their habitat. Finding creative and unobtrusive ways of preserving the lands that protect our water quality is a high priority for this Open Space Plan.



Open space and greenways also help to control water quantity. Flooding has been a problem in Wake County in the past. In some areas, buildings and other land uses have encroached into flood prone areas. By designating floodplains as greenways, the encroachments can be better managed. In some cases, these can be replaced with linear open space that serves as an amenity to local residents and businesses, as well as provides important flood water storage capacity.

As a flood control measure, open space near bodies of water and greenways act as a primary storage zone during periods of heavy rainfall. The protected floodplain can also be used during non-flood periods for other activities, including recreation and alternative transportation.



Impervious surfaces also affect the quantity of water during a storm event. The more pavement and buildings that cover the soil, the less water penetrates it during a storm event. When rain soaks into the ground, it becomes "groundwater". As this groundwater slowly percolates through the soil, it either joins underground water reserves, "aquifers", or eventually feeds a body of water. Aquifers are often used for drinking water, and contamination could be hazardous. In water recharge areas, wetlands can be used to hold water, releasing it back into the groundwater gradually. This allows for pollutants to either settle out or be soaked up by plants. If we continue to withdraw water from aquifers without letting it replenish, these underground reservoirs will become depleted.

Fast moving flood waters not only increases the risk of losing structures, it can deplete water quality. If rain does not soak into the ground because of a high amount of impervious surfaces within a watershed, this rain will flow at higher velocities into surface water bodies. With increased velocity and flow, storm water will scour the soil surface and the sides of streams

and rivers, dumping more and more sediment into our water bodies, in turn, depleting our water quality.

Other human activities have contributed to the flooding problem, even though they were well intended. For many years, it was believed that floods could be controlled by straightening and deepening stream channels, or by building dikes and flood walls to contain excess water. These efforts have proven to make overall flooding worse by increasing the velocity of water. By allowing water bodies to use their natural floodplains and wetlands again, these streams will be slowed.

Protecting open space, such as wetlands, and greenway buffers will help keep valuable structures from flooding, remove pollutants from the water supply, and permit our groundwater to replenish. In conjunction with existing storm water management policies and programs implemented in the county, open space and greenway lands can be established as development occurs.

Plant and Animal Habitat Benefits

Open space areas and greenway corridors can serve as viable habitat for many species of plants and wildlife. They provide essential food sources and, most importantly, access to water that is required by all wildlife. Large tracts of forested land (over 50 acres) help protect interior species. Additionally, greenways protect the habitat of edge species, such as deer, squirrel and rabbit. Contiguous tracts of open space, along with greenways also preserve primary migratory corridors for terrestrial wildlife, serving to help maintain the integrity of many plant and animal gene pools. Some wildlife biologists have extolled greenways as future “gene-ways” and determined that migration routes are essential to maintaining healthy wildlife populations. Contiguous tracts of open space and greenways can also serve as “gene-ways” for plant species, which migrate with changes in climate and habitat. These “gene-ways” often follow river and stream corridors that have long served as transportation routes for animals and humans. Programs can be established to not only protect the valuable existing forested and wetland areas, but also to reclaim and restore streams to support higher quality habitat.

Large, undisturbed areas of particular plant species should also be protected. Large areas of mature trees have been on the decline as development continues in the area. Stands of trees, especially mast producing hardwoods and bottomland forest are important to wildlife. Several endangered plant species have been identified in Wake County. Efforts should be made to protect any endangered or unique plant and animal species in the county.

Plant and Animal Habitat Benefits



Economic Benefits



Economic Benefits

Open space preservation offers numerous economic benefits, including higher real property values, increased tourism and recreation related revenues, and cost savings for public services. Greenways have been shown to raise the value of immediately adjacent properties by as much as 5 to 20 percent. For example, in a new development in Raleigh, North Carolina, new lots situated on greenways were priced \$5,000 higher than comparable lots off the greenway. Many home buyers and corporations are looking for real estate that provides direct access to public and private greenway systems. Open space is viewed as amenities by residential, commercial and office park developers who, in turn, are realizing higher rental values and profits. Additionally, greenways can also save local tax dollars by utilizing resource-based strategies for managing community storm water and hazard mitigation, thus productively using landscapes that could not be conventionally developed.

Open space can enhance the role that tourism plays in the economy. Tourism is currently ranked as the number one economic force in the world. In several states, regional areas and localities throughout the nation, greenways have been specifically created to capture the tourism potential of a regional landscape or cultural destination.

Open space and buffers help filter pollutants from drinking water sources. It costs much more to pretreat water than to let open space do it naturally. The maintenance of open space reduces the need for future spending on environmental clean-up and revitalization.

Transportation Benefits



Transportation Benefits

Most American communities have grown in a sprawling, suburban form as a result of dependence upon the automobile as the sole means of transportation. Americans have abandoned some traditional forms of transportation (such as passenger train service), and have been slow to improve other forms of transportation (bicycle and pedestrian networks, bus systems, local train service). In order to provide relief from congested streets and highways in the metro area, future transportation planning and development should be concentrated on providing a choice in mode of travel to local residents. These mode choices should offer the same benefits and appeal currently offered by the automobile: efficiency, safety, comfort, reliability and flexibility.

Greenway corridors can serve as extensions of the road network, offering realistic and viable connections between origins and destinations such as work, schools, libraries, parks, shopping areas and tourist attractions. According to national surveys by the Federal Highway Administration, Americans are willing to walk as far as two miles to a destination, and bike as far as five miles. Using these limitations as a guide, destinations can be linked to multiple origins throughout Wake County with a combination of off-road trails and on-road bicycle and pedestrian facilities.

Health and Recreation Benefits

Studies have shown that as little as 30 minutes a day of moderate-intensity exercise (such as bicycling, walking, in-line skating or cross-country skiing) can significantly improve a person's mental and physical health and prevent certain diseases. Providing opportunities for participation in these outdoor activities, close to where people live and work, is an important component of promoting healthy lifestyles for area residents.

In 1987, the President's Commission on Americans Outdoors released a report that profiled the modern pursuit of leisure and defined the current quality of life for many Americans. Limited access to outdoor resources was cited as a growing problem throughout the nation. The Commission recommended that a national system of greenways could provide all Americans with access to linear open space resources.

There are two types of recreation that the Wake County Open Space Program will provide for: active and passive. Active recreation is the type that we are most familiar with. It includes activities that are most commonly associated with parks, such as soccer, softball, football, bicycling, etc. Passive recreation includes walking in the woods, fishing, picnicking, etc.

Open space can be managed and intended for either or both types of recreation, or none at all. An area of bottomland hardwoods surrounding a stream may be an excellent place for passive recreational activities, such as bird-watching, but not well suited for active recreation, like a field team sport. It is important to determine what type of recreation is appropriate for each site.

The Wake County Open Space system will be developed to complement the community's existing parks and open space system. The open space system can be developed to serve as a primary recreation and fitness resource.

Air Quality Benefits

As the population increases in the Triangle, the air quality decreases. Traffic along Interstate 40 has left Wake County with more and more 'Code Red' days. The combination of open space and greenways helps keep Wake County's air clean. Open space, especially mature stands of trees, helps filter pollutants from the air. Greenways as alternative transportation corridors could serve to reduce traffic congestion, helping to improve local air quality. Since the majority of automobile trips are less than two miles in length, offering viable, alternative transportation choices through greenways would encourage people to bicycle and walk more often, especially on short trips, thereby reducing traffic congestion and automobile emissions.

Health and Recreation Benefits



Air Quality Benefits



Cultural and Historical Benefits



Cultural and Historical Benefits

Open space can enhance the culture and protect historic resources in Wake County. For cities and towns large and small, parks and greenways have become a cultural asset and focal point for community activities. Parks are utilized for festivals to attract tourist and entertain locals, alike. Some communities sponsor local events to celebrate the outdoors and local traditions. Various walking and running events are also held in parks and on greenways to support charity events or extend traditional sporting events. Many civic groups adopt segments of open space and parks for clean-up, litter removal and environmental awareness programs. Some central parks and greenways, like San Antonio's Riverwalk, are the focal point not only for community activities, but also for economic development.

The richness and diversity of area historic resources are represented by numerous National Register of Historic Places and locally significant sites and historic districts. The purchase or protection of historic sites as open space, such as Yates Mill Pond and Mitchell Mill, helps protect them for future generations. The interpretation of historic and archeological sites along greenways can serve to increase the awareness and appreciation of the area's rich history. Open space can also be a vehicle to provide controlled public access to important cultural sites in a manner that promotes preservation and enhances interpretive opportunities.