Section 8: OPEN SPACE, RECREATION & ENVIRONMENT

Values:

Connected, Active and Passive Recreation, Conservation

Vision Statement:

With its connected system of open space, parks, greenway trails, and abundant recreational opportunities, Stallings is recognized as one of the most livable communities in the greater Charlotte region. The environment and natural resources are examined and thoughtfully considered as part of the Town's growth strategy.

Introduction

Issues

Active Living

Parks and Open Space

- Greenways
- Economic Benefits of Open Space
- Existing Facilities
- Programming
- Trends
- Future Needs

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- Stormwater
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Introduction

Open Space, recreational opportunities, and environmental conservation play a critical role in the quality of life and health of Stallings' residents. The Town has worked diligently, spending significant staff time and funds, to make Stallings Municipal Park one of the community's favorite attractions and a real asset to civic pride. Additional opportunities for expanding recreational amenities, particularly north of US 74, abound with Blair Mill Park offering 16 acres of useable parkland and another 8 acres of conservation space. Existing and planned greenway and pedestrian amenities offer a wonderful way to connect recreational facilities and promote active transportation throughout the Town and into surrounding municipalities.

As development continues to occur and large tracts of open space are converted to serve residential and non-residential needs, regional coordination, proactive conservation measures, and creative solutions to limited lands and resources will be needed. Open space and the natural environment must be protected to serve important community functions including:

- stormwater management and flood control,
- air and water purification,
- habitat and migration paths for wildlife,
- temperature regulation, and
- opportunities for current and future generations to enjoy nature.

Several sources were used to summarize the importance of open space, recreation, and environmental protection and to create a comprehensive inventory of available parks and recreation opportunities available to Stallings' residents. These include:

- The National Environmental Education Foundation
- 2016 State of the Industry Report for Recreation Management
- U.S. FootGolf Association
- Outdoor Recreation Trends and Futures, USDA Forest Service Southern Research Station







- National Recreation and Park Association
- U.S. Environmental Protection Agency
- Tree Pittsburgh
- Valuation of Landscape Trees, Shrubs, and Other Plants: A guide to the Methods and Procedures for Appraising Amenity Plants, Council of Tree and Landscape Appraisers and the International Society of Arboriculture

Open Space, Recreation and Environmental Issues

- A need for recreational facilities and programs that will serve an aging population. As the baby boomer generation ages, the proportion of people middle age and older will increase. This age group (57-72 years old in 2017) will have increasing amounts of leisure time and will probably be more active than the previous generation.
- Multi-generational recreational opportunities are needed.
 Young adult professionals show a preference for pedestrian and cycling trails, as well as other non-traditional recreational activities like skateboarding,

Comprehensive Land Use Plan

inline skating, BMX, whitewater sports, and mountain cycling.

- School recreational facilities are not fully accessible to the adjacent community as a public resource. The growing societal awareness of the unhealthy habits of Americans and the correlating increase in the emphasis on exercise and fitness, especially for children, may lead to an increased usage of Stallings' formal and informal (schools, places of worship, government buildings, etc.) recreational infrastructure.
- Although a plan exists and an interchangeable 18 hole disc golf course has been built, Blair Mill Park is not developed to its fullest potential.
- Projects within the Stallings pedestrian plan have not been fully developed, and should be prioritized for public investment and for private implementation as development occurs.
- While the need for active recreational fields and facilities continues to grow, Stallings must be ready to accommodate the trend toward increased use of parks and recreation facilities for less organized pursuits, such

as walking and cycling, and children's playground activities.

As the demand for more flexible open space grows, resources within Stallings for acquiring that space are decreasing. Innovative strategies for providing useable open space for the Town's residents must be sought.

Active Living

A key component of a healthy life is a physically active life. People who have direct access to parks and active transportation facilities are more likely to have active lifestyles and live healthier lives. Parks and other accessible green spaces form an essential part of a healthy community. The design of a community — including elements like the width of streets; the presence of well-lit sidewalks, parks, community gardens and trails; and the location of schools, shopping and employment centers relative to homes - affect people's ability to live healthier lifestyles. Living close to parks and trails can provide health benefits, as well as many social benefits that positively affect residents and their mental well-being. The bottom line is that physical activity is essential. Children need it to grow to their full potential. Adults need it to stay fit and healthy. Seniors need it to maintain quality of life.

Over the last half century, land development trends in and around Stallings have undermined healthy lifestyles, by inhibiting physical activity. Stallings is a community where land uses tend to be highly segregated, and when destinations are far removed from residential areas, people tend to rely on their vehicles more often — even for short trips — instead of walking or cycling. This can have far-reaching impacts, particularly upon young people. Far fewer children are walking to school than in previous decades, and according to the National Environmental Education Foundation (NEEF), have also witnessed a 50% loss of unstructured outdoor activity for children. Childhood obesity is one of the most urgent threats to the health of children and families in Stallings. Nearly one-third of all children and adolescents in the United States are overweight or obese. Cases of obesity in teens and adults has also reached alarming numbers.

According to the North Carolina Center for Health Statistics :

- 66% of North Carolina adults are overweight or obese.
- 28% of non-Hispanic white adults, 40% of non-Hispanic black adults, and 25% of Hispanic adults in North Carolina are obese.

26% of North Carolina highschool students are overweight or obese.

Beyond cosmetic concern and quality of life issues, obesity has been identified as a contributing factor to many chronic diseases and conditions in both adults and children, including hypertension, type-2 diabetes, colon cancer, osteoarthritis, osteoporosis, and coronary heart disease. In addition, the health care costs associated with our sedentary lifestyles, and obesity-related illnesses are on the rise, with costs for treatment estimated at over \$78 billion annually.

The need for recreation and active lifestyles is paramount, and parks have a vital role to play. NEEF has found that children living within a 1/2 mile of a park are more likely to have higher levels of physical activity. Children who spend more time outdoors are less likely to be overweight by 27 - 41%.

While many residents of Stallings can afford physical activity through private membership venues, most of the Town's residents are in need of freeuse public facilities for exercise. Free, public recreation within a community is a matter of civic responsibility and promotes the common good for all citizens.

Parks and Open Space

As the population of Stallings continues to expand, the preservation and construction of parks, recreational facilities and open space is becoming even more critical. With the steady growth in residential development and road construction occurring in previously undeveloped areas, particularly in the U.S. 74 and Old Monroe Road corridor, the Town must ensure that significant tracts of land are set aside for open space preservation and future recreational needs. Creating linkages and connections throughout the Town and to neighboring jurisdictions will increase opportunities for recreation and provide viable means of reaching destinations.

Greenways

As Stallings continues to grow, there is a necessary opportunity to preserve and make use of some of the Town's best natural assets. The development of greenways can provide the community with miles of paths for walking, jogging, bicycling and other forms of non-automotive recreation.

The development of greenways has been a trend in cities across the country since the 1970's. The trend emerged both because of a dramatic shift toward the activities for which greenways are best suited, and because of the relative





cost-effectiveness of greenway development. Greenways are usually located on land that goes unused for any other purpose. While greenways typically include some type of trail for public or private use, they can also remain completely natural.

Greenways benefit the public through the transportation, environmental, and connectivity functions that they serve. They can potentially connect parks, neighborhoods, schools and other destinations. If a greenway is strategically located, it can function as an alternate transportation system, giving pedestrians and cyclists a safer and more enjoyable route than thoroughfares. Greenways also function to preserve natural habitats, remove critical areas from development, and serve as a buffer between development and streams, providing filtering for stormwater runoff.

Other greenway benefits include:

- Helping to reduce air pollution by lessening the demand for vehicular travel.
- Enhancing urban livability through the protection of stream corridors and offering the opportunity to interact with the natural environment.
- Preserving natural features, and thereby adding aesthetic value to

the overall image and quality of life of our community.

- Protecting wildlife by providing habitat, shelter, and linear movement for the wildlife.
- Providing opportunities for people, particularly children, to have a close-up, live classroom setting of how nature relates to the environment.

Potential greenway land might not be obvious in Stallings because vegetation, buildings, and/or the rise and fall of the land can obscure it. Frequent greenway locations include streams and floodplains, abandoned streets, abandoned railroad beds, and utility rights-of-way.

Greenways help to protect important community scenic and historic sites, and they can connect these places to parks, neighborhoods, and schools. When determining locations for future greenway funding, policy makers should look at making connections between existing and future community facilities such as:

- parks;
- schools and school playgrounds;
- neighborhoods;
- retail centers;
- existing greenways and trails;

- community recreation centers;
- historic sites and tourism sites;
- libraries, offices, employment centers, civic spaces;
- miscellaneous points of interest and visitation; and,
- major tracts of open space.

Economic Benefits of Open Space

Evidence abounds of the economic benefits of green space and recreational facilities through increased real estate value based on the property's proximity to these features. In addition, these amenities can lead to a more desirable community, by helping to:

- improve business recruitment;
- increase visitation, and
- retain retirees.

Improve Business Recruitment:

In today's knowledge-based economy, businesses are adding quality of life to their list of factors affecting business location. Many location recruiters give high scores to amenities such as entertainment, recreation, parks and open spaces, and cultural events. For Stallings to diversify its economy and attract and retain knowledge-based companies, the Town must strategically invest in these quality of life factors.

Increase Visitation:

Parks, greenways, and open spaces can attract visitors from other communities. In addition, many recreation leagues are continuously looking for local facilities for tournaments, 5k walks and runs, bicycle races, and other events Participants and fans often eat at local restaurants and will shop at local stores.

Retain Retirees:

The U.S. Census shows that, in terms of per-capita disposable income in the United States, older adults tend to be the wealthiest portion of the population. While many retirees choose to age in place, many others search for a new location that will provide the types of services they will need in their later years. Attracting and retaining what may be the most affluent and activity-oriented group of retirees to Stallings will require an robust mix of recreational and cultural activities.

The provision of adequate parks, open spaces, greenways, and recreational facilities is an important indicator of quality of life, and therefore, will be instrumental in attracting a diversified economy and workforce to Stallings. Parks and open spaces make the community more livable and more competitive. If marketed well, these assets could attract businesses, visitors and new residents.



The Stallings of the future should have an abundance of parks and open spaces distributed equitably throughout the community, with connecting greenways that accommodate the variety of recreational needs of a growing and diverse population. The Town has a great start with its variety of current facilities.

Existing Recreational Facilities

The following is an inventory of recreational facilities in and adjacent to the Town of Stallings. The list includes public, private and school facilities.

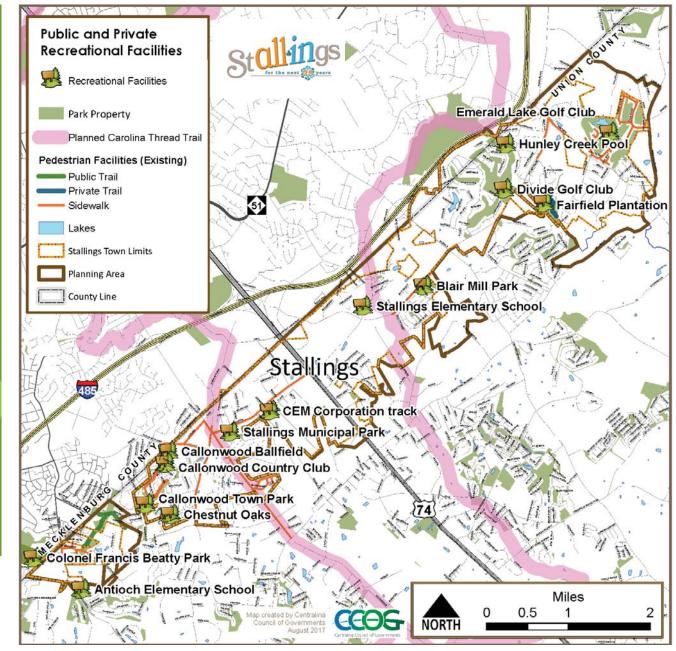
PUBLIC PARKS AND FACILITIES

Stallings Municipal Park

340 Stallings Road Area: 9.33 acres, fenced Parking: 91 spaces

- 4 playgrounds
- 2 multi-purpose fields
- restrooms
- 2 picnic shelters
- 3 picnic pods
- 1 outdoor nature classroom
- covered performance stage
- 2 decorative pavilions with shelters
- 2 tennis/ pickleball courts
- small water park
- .5 mile walking path/boardwalk
- lighting
- crosswalk connection to Town Hall













Blair Mill Park Photo: Ryan Pitkin/USW

Blair Mill Park Fair Oaks Drive Area: 16 useable acres (24 acres total) Parking: 40 spaces

- 1 multi-purpose field
- 18 hole disc golf course
- wooded area
- sidewalk along Stevens Mill Road and Fair Oaks Drive



Stallings Elementary School

3501 Stallings Road

- fenced youth baseball field
- soccer field
- 2 playgrounds
- running track
- walking path (.1 mi.)



Colonel Francis Beatty Park (adjacent to town limits) 4330 Weddington Road, Area: 265 acres

- 2 basketball courts (lighted)
- 6 tennis courts
- 5 lighted soccer fields
- 4 horseshoe pits
- Indoor shelters
- 2 outdoor picnic shelters
- 10 picnic areas with tables and grills
- Walking trails
- 2 playgrounds
- Mountain Biking Trails
- Conference Center
- Rest Rooms
- 2 softball fields
- Lake with kayaking, fishing and canoeing



Antioch Elementary School Photo: Google Earth

Antioch Elementary School (adjacent to town limits)

3101 Antioch Church Road,

- 2 playgrounds
- running track





PRIVATE PARKS AND FACILITIES

Callonwood

Hammond Drive Area: 2.17 acres Parking: 9 spaces

- clubhouse •
- pool house .
- 7-lane swimming pool .



Callonwood Town Park Hammond Drive, Area: 16.88 acres Parking: 33 spaces

- picnic shelter •
- 2 playgrounds •
- fenced baseball field

- soccer field
- 10 picnic tables
- wooded area



Callonwood Baseball Field Photo: Google

Callonwood Baseball Field Callonwood Drive Parking: 44 shared spaces

- fenced
- lighted
- adult size field



Fairfield Plantation

Fieldstone Drive Stoney Ridge Road Area: 19.3 acres Parking: 54 spaces

Syears

- clubhouse
- swimming pool
- picnic shelter
- 2 tennis courts
- playground
- multi-purpose field
- walking trail with boardwalk
- wooded area



Chestnut Oaks

Chestnut Oaks

Craftsman Ridge Drive, Area: 12.1 acres Parking: 23 spaces

- clubhouse
- 7-lane swimming pool
- pavilion
- basketball (1/2 court)
- multi-purpose field
- playground
- wooded trail



Divide Golf Club, Shanamara 6803 Stevens Mill Road Area: 161.51 acres Parking: 164 spaces 18-hole private course clubhouse



Emerald Lake Golf Club 9750 Tournament Drive Area: 153 acres Parking: 135 spaces

- 18-hole private course
- clubhouse

.

• swimming pool



Hunley Creek & Willowbrook Pool Millhouse Lane at Green Ash Lane Area: 4.37 acres Parking: 54 spaces

- clubhouse
- 2 tennis courts
- pool
- playground



CEM Corporation Track 3100 Smith Farm Road

- paved track
- 6 hole disc golf course



ADDITIONAL PRIVATE AMENITIES:

Arlington Downs

- 202 Arlington Downs Boulevard
- clubhouse
- pond with fountain

Chestnut Place 2

5016 Stonehill Lane

- clubhouse
- pool

Courtyards at Emerald Lake

- 2365 Avalon Place
- clubhouse
- pool

Courtyards at Weddington Road Coltsview Lane

- clubhouse
- pool

Wendover at Curry Place 101 Azteca Drive

- clubhouse
- pool

Fairhaven

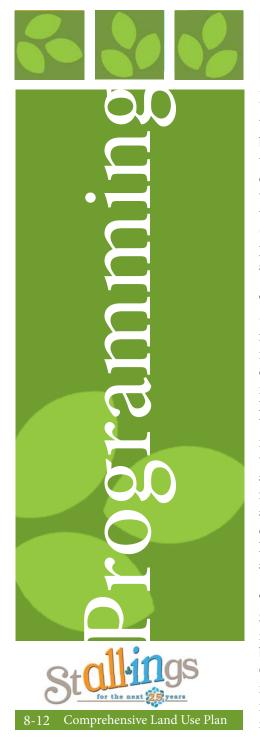
1115 Tranquil Falls Lane

- clubhouse
- pool

Kerry Greens 3061 Vivian Court

- clubhouse
- pool





Programming

Various standards have been developed by professional and trade associations that are used throughout the country to determine optimal ratios of population to open space. According to the National Recreation and Park Association (NRPA), a figure of 10 acres per 1,000 population is a commonly accepted standard used by many communities.

The Trust for Public Land (TPL) 2017 City Park Facts reviewed park statistics for the 100 most populous U.S. cities in 2016. The cities ranged from high density cities like Arlington, VA (13.53 residents per acre) to low density cities like Charlotte (2.96 residents per acre). While the population of Stallings is much lower than Charlotte's, its density of residents per acre is comparable at approximately 2.81. The TPL study found the median amount of parkland as a percentage of overall land area (excluding airports and railyard areas), for low density municipalities, was 8.1% and 24 acres per 1,000 residents.

The accompanying table shows Level of Service (LOS) standards for park and recreation facilities as recommended by the NRPA (or by the State of North Carolina when there is no national recommendation). The table gives the recommended number of various recreational facilities that a municipality should have based upon its population. The recommended number of facilities is compared to the number of those facilities within Stallings, as well as the Town's goals for those facilities in the future.

These numbers are not "minimally acceptable standards" of park and recreation facilities; rather they are targets to strive toward for an optimum level of service for the community (totals are rounded).

Recreational Facilities - Level of Service

Facility Type	Recommended Standard per Population	Facility Needs (July 1, 2015 pop. 15,270)	Facility Inventory* (2017)
Adult baseball fields (lighted)	1/20,000	1	1
Youth baseball/ adult softball	1/5000	3	3
Ball field (soccer, football)	1/5000	3	6
Basketball courts	1/5000	3	2.5
Tennis courts	1/2000	8	12
Picnic tables	1/125	122	
Picnic shelters	1/2000	8	5
Playgrounds	1/1000	15	14
Trails	0.4 mile/1000	6.1	
Recreation Center w/ gym	1/25,000	1	
Swimming pool	1/20,000	1	5
Golf course (9-hole)	1/25,000	1	2
Golf course (18-hole)	1/50,000	0	2
Open Space/Park Land	16 acres/1000	243	442**
Dog Park*	1/50,000	0	0
Skateboard Park*	1/50,000	0	0

*Includes both public and private recreational facilities in Stallings and adjacent to Town limits.

National Recreation and Park Association

Trends

While parks and recreation agencies across the country often operate on very limited budgets, studies indicate that more Americans are taking advantage of services than ever before. Whether trading in a pricier health club membership to work out at the local rec center, or swapping that beach vacation to splash around in the local waterpark, many citizens are looking for ways to do their own budget cutting, and parks and recreation offers an alternative.

As people progress through the stages of life, their abilities and preferences for physical and leisure activities change. Young adults, particularly single professionals, may look for solo or couple exercise opportunities such as greenways and trails, bicycle paths, and jogging tracks. Families with children are likely to seek out playgrounds, athletic fields, aquatic facilities, and picnic areas. Senior citizens may enjoy greenway trails, but may also want to take advantage of activities offered at recreation centers.

According to a 2016 State of the Industry report of recreation, sports, and fitness professionals by *Recreation Management*, the top 10 amenities included at park and recreation facilities were:

- 1. Playgrounds
- 2. Park Shelters
- 3. Park Restrooms
- 4. Outdoor sports courts for games like basketball and tennis
- 5. Community Centers
- 6. Bike Trails
- 7. Skateparks
- 8. Dog Parks
- 9. Community Gardens
- 10. Disc Golf Courses

The report shows that these amenities also dominate the plans those surveyed had for improving their facilities, with park structures, trails, and playgrounds being among the top five planned additions. Some notable additions also appearing in the top five were splash play areas and dog parks, with skateparks and disc golf courses following close behind in popularity.



The accompanying Level of Service Table shows that Stallings has a high number of golf facilities for its local population. The National Golf Foundation reports that the traditional golfing industry has been on the decline over the past 8 years. While this trend may pose some degree of hardship on local courses, there is a growing trend in the alternative golf movement. Some communities are taking a creative approach to breathe new life into an old sport, and these variations on the golf theme are attracting participants of all ages. Young people are enjoying Footgolf, played with large holes and soccer balls. Seniors are being drawn to fast play par 3 Short Course golf. And recreational golfers are taking up Hack Golf, which uses 15-inch holes and relaxed rules. Some courses encourage local running clubs to use cart paths early in the morning, before courses open. U.S FootGolf Association (USF-GA) Executive Director Bill Clevenger remarks: "Traditions of the game are changing to fit today's demographic."

Research shows that more Americans are participating in outdoor recreation more frequently, and their preferences for outdoor recreation are changing. In a national study by the USDA Forest Service Southern Research Station, *Outdoor Recreation Trends and Futures*, current choices for outdoor recreation differ noticeably from those made by previous generations. Participation in "traditional" activities such as hunting and fishing has flattened or declined while activities that involve viewing

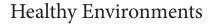


and photographing nature are becoming more popular. Because of the continued importance of public lands for outdoor recreation, study findings have direct implications for how these lands are managed in the future.

Future Needs

Acquisition of parklands and open space is a time sensitive priority. Once Stallings has "built-out," opportunities for open space and parkland preservation will be forever lost. Land for parks, recreational and open space purposes are capital investments that help to secure a sustainable and economically viable future for the Town. These lands are vital for Stallings to be a well-rounded community that is attractive to both new residents and businesses. The establishment of parks and open spaces should be considered an ongoing process as the Town expands. Just a few of the noteworthy trends identified by the NRPA underscore the need for increased investment in recreational lands:

- Local healthcare providers will increasingly refer patients to evidence-based health activities in parks.
- There will be more cooperation between park and rec agencies and school systems especially in the design and programming of park/school facilities.
- More agencies will develop "Rec2Tech" initiatives in rec centers using technology, 3D printers, maker-training, and other tech-friendly activities to engage hard-to-reach teens.
- Agencies will increasingly use drones as part of their light displays and/or festivals.



A healthy and attractive natural environment is a fundamental component for providing a superior quality of life for residents of Stallings, contributing to both the healthy well-being of its residents and to a healthy business environment. The natural environment significantly defines both the social and economic quality of the community. It directly effects property values, and can potentially attract new development and tourism. Clean air, water and soil are both the products and the prerequisites for a healthy natural environment. The conscientious conservation of the Town's natural resources will help ensure that future residents and businesses have resources necessary for the community's continued vitality.

People value undeveloped land. The NRPA has predicted that in 2017, parks will be appreciated for their conservation value as much as their recreation value. With rapidly diminishing amounts of open space available across the U.S., the natural values of every park will be considered one of the more important assets of the community, as places that reduce urban temperatures, provide habitats that protect nature and biodiversity, manage stormwater naturally, and protect and preserve clean air and pure water. Wild natural









areas with limited evidence of humans provide a source of inspiration, wonder and escape from busy urban environments. Undeveloped green space also plays an important role in maintaining physical and mental health. Wild areas are necessary for wildlife to thrive, while serving as "living classrooms" that provide important educational opportunities. Out of this growing awareness and appreciation, the NRPA foresees that the public will turn out in ever greater numbers to volunteer for conservation activities in parks.

Land set aside for conservation is not inactive. It is working in multiple and profound ways for the benefit of the Town, and the people who live there. Depending on variables like acreage, land cover, and geologic features, the benefits of preserved open space include: stormwater absorption, air and water purification, microclimate regulation, the reduction of greenhouse gases, carbon sequestration, flood control, erosion control, and the support of habitat for wildlife and native plants.

As Stallings becomes more urbanized, the natural environment will inevitably suffer. Increased impervious surface creates more rapid runoff causing siltation problems in lakes and streams. Increased rooftops, streets and parking lots will also cause a warming effect

on cold-water streams, changing the habitat conditions and hindering the survival of some species. Increasing residential development (particulalry single-family resdiential) will tend to bring with it more lawns, which are often treated with fertilizers, pesticides and herbicides. Fertilizers containing phosphorus wash into wetlands, lakes and streams and foster new forms of vegetative growth hazardous to existing and native plant life. Urban growth creates more noise and air pollution as freeways and roads become more congested and more and more industry is developed. These trends are not unique to Stallings, and are just as much of a regional issue as they are a local issue.

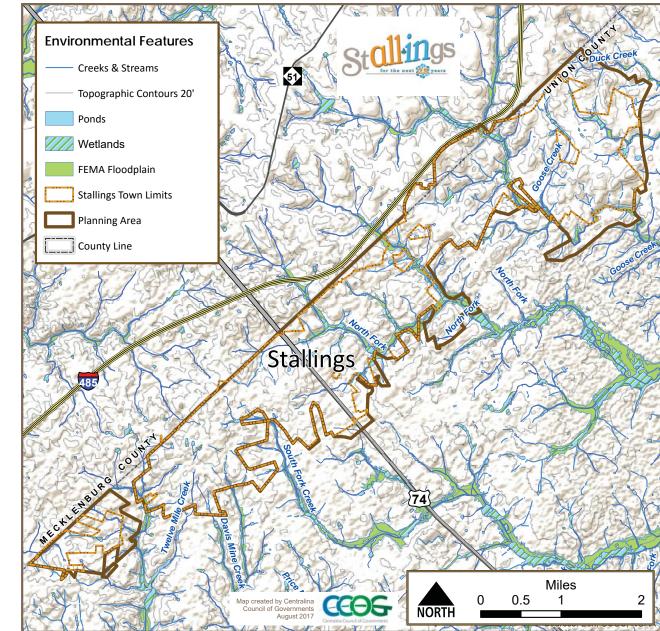
While some of the damage cannot be corrected, making better choices to minimize impacts to the local environment can put Stallings on a path towards becoming a more sustainable community enjoyed by generations to come. Sustainable practices include preserving, conserving, and intensively managing resources to minimize the impact of development on the environment, as well as ensuring that all residents live in areas free from the unhealthy effects of environmental pollution.

The future challenge to Stallings will be to accommodate growth while slowing

The benefits of preserved open space include:

- stormwater absorption
- air and water purification
- microclimate regulation
- reduction of greenhouse gases
- carbon sequestration
- flood control
- erosion control
- support of habitat for wildlife and native plants









the loss of land, the consumption of resources, the pollution of waterways, congestion, and environmental stress brought on by sprawling development patterns. Environmental policy must strike a balance, encouraging prudent use of natural resources without compromising the ability of future generations to meet their needs. This path towards sustainability starts with understanding practices that damage the environment and working to develop policies that provide more emphasis on restoring and preserving the natural environment.

Water Quality

The EPA rates stormwater runoff pollution as the number one water quality problem in the United States. Pollutants that enter waters fall into two categories: point sources and non-point sources. Point sources can be traced directly to sites such as sewage outfall pipes emptying into streams, rivers and lakes. Non-point sources come from dispersed and less identifiable locations such as lawns, golf courses, motor vehicles, parking lots, roof tops, etc. Nonpoint source pollution occurs when stormwater runoff carries pollutant particles into streams, rivers and lakes. While these sources originate from a broad range of land use activities, factors that affect stormwater runoff and

non-point source pollution are generally development related.

As the population increases within the Stallings planning area, so will the rate of urbanization, and with that, increased amounts of impervious surface that yield increased stormwater runoff. In the future, careful land use planning emphasizing pollution prevention and minimization will be necessary to maintain current water quality and to prevent further degradation.



Creek near Lake Drive, Fairfield Plantation, Stallings

Stormwater

Urban drainage and flood control have traditionally focused on removing the water as quickly as possible through structured systems such as curbs, gutters, pipes and culverts. While such rapid drainage techniques can be efficient, they can also cause flooding and erosion downstream, as the fast delivery of stormwater overwhelms the natural drainage systems when they eventually meet.

Low-Impact Development favors the management of stormwater drainage on-site. Rather than draining away all the water at once during a storm, a significant portion of it is detained on the property for a period, then released slowly to the drainage system. On-site detention strategies provide dual benefits. First, the volume of water released to the stream during the critical period of the storm is reduced. Second, a portion of the water is removed naturally on site by absorption into the soil and evaporation. This effect is facilitated by natural (rather than structural) drainage systems, such as swales and retention ponds, that allow the water to evaporate and percolate into the soil.

The major challenge with drainage systems in Stallings is likely to be maintenance. Drainage structures on public property, such as street rights-of-way





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Stevens Mill Crossing Photo: Google

or easements, are regularly maintained. But most drains, pipes and ditches are located on private property. Broken or blocked pipes and drains can cause regular flooding, sinkholes, erosion, polluted water and unsafe road conditions.

Wetlands

Wetlands are areas inundated or saturated by surface or groundwater at a frequency and duration sufficient to support a prevalence of vegetation typically adapted for life in saturated soil conditions. The ecological parameters for designating wetlands include hydric soils, hydrophytic vegetation, and hydrological conditions that involve a temporary or permanent source of water to cause soil saturation. Wetlands generally include swamps, marshes, bogs and similar areas. The Environmental Features map of Stallings, included in this section, shows where these areas are concentrated within the 100-year floodplains of the major creeks, particularly the Goose Creek and North Fork branches.

Soil Management

Soil conditions need to be evaluated and considered in the planning and development process to ensure buildings and structures are adequately supported and that soil is conserved. Minimizing soil erosion can help control airborne dust as well as sediment deposition in watercourses. Soil depths must also be adequate for water to infiltrate into the ground and maintain groundwater levels in aquifers. Soils host a community of insects, fungi, roots, and bacteria integral to every natural ecosystem. Disturbances to this ecosystem may affect vegetation and decomposition, promote the colonization of invasive species, decrease water quantity, or degrade water quality.

Soils have varying suitability for land development, roads and septic fields. Their capacities for drainage, load bearing, and fertility vary by soil type. Identifying soil characteristics allows for proper evaluation for land development with regard to the physical suitability of the soil.

The Benefits of Trees

Trees improve the environment by producing oxygen, removing pollutants from the air, buffering noise, providing wildlife habitat, reducing stormwater impacts, and lowering air temperatures during hot summer months. Trees also provide psychological benefits and increase real estate values by as much as 15%, according to the National Association of Home Builders. As Stallings continues to develop, trees must be integral to that development.

Urban trees often have substantial monetary values. Studies document how real estate agents and home buyers assign between 10 and 23 percent of the value of a residence to the trees on the property. Local governments capture some of this monetary value because enhanced property values increase assessed values and the tax base.

Trees benefit the community by:

- Reducing stormwater runoff;
- Lowering summer air temperatures;
- Reducing air pollution and atmospheric carbon dioxide (CO2);
- Reducing heating and cooling costs;
- Enhancing property values;
- Providing wildlife habitat;
- Improving health and wellbeing; and,
- Providing aesthetic benefits.

One very well documented example of a community saving money through trees is Pittsburgh. In 2012, the City approved a master plan for maintaining and expanding its tree canopy over the next 20 years. The decision came after a nonprofit group called Tree Pittsburgh used i-Tree to determine that the trees planted along sidewalks and medians throughout the city provided \$2.4 million worth of environmental and aesthetic value every year. Since the city spends only \$850,000 a year on street planting, that's quite a return on investment: Pittsburgh gets about \$3 in benefits for every dollar it invests in trees.

Appraisal methods for estimating the monetary value of landscape vegetation, including trees, have been established for use by insurance companies, courts and public agencies, (see Valuation of Landscape Trees, Shrubs, and Other Plants: A Guide to the Methods and Procedures for Appraising Amenity Plants, prepared by the Council of Tree and Landscape Appraisers and published by the International Society of Arboriculture). While attaching a dollar value to the benefits of trees can be helpful for budgetting purposes, the overall environmental value to Stallings of trees and the tree canopy actually reaches far beyond this level of assessment.

Land Assembly and Funding Sources for Parks, Open Spaces, and Greenways

Investing the resources needed to ac-

quire and properly maintain and protect the parks and open space in Stallings can be monumentally challenging for the local government, but there are many avenues available to the community to accomplish this.

Private Land Donations

Private citizens may contribute any land that the Town is willing to accept. The land donor can claim the value of the land donated to a charitable organization as an income tax deduction equal to the land's current fair market value. Land donation will also remove its value from an estate, reducing future estate taxes. Land donations result in an actual transfer of ownership unlike a conservation easement - to be discussed - which relieves the owner of the management and care of the land. Furthermore, North Carolina provides a 25% of value state income tax credit (distributable over 5 years), for land and easements donated for public recreational and conservation purposes.

Land donations through development process

As development continues in Stallings, donation of land or payment in lieu of land for greenways or other open spaces can occur. In such instances, during the rezoning process, developers of both residential and non-residential projects agree to dedicate land and





The benefits of trees include:

- Reduced stormwater runoff;
- Lowered summer air temperatures;
- Reduced air pollution and atmospheric carbon dioxide (CO2);
- Reduced heating and cooling costs;
- Enhanced property values;
- Increased wildlife habitat;
- Improved health and wellbeing; and,
- Aesthetic benefits.





construct portions of the public greenway system. The developer can obtain credit for opens space improvements (residential developments), promote support for the project, and create an amenity for future buyers or users that will reach beyond their own project. Projects outside a greenway plan area can provide sidewalks and connector trails for access to the proposed or existing public trail system.

Development Code Mandates

Stallings can require a certain amount of land in residential developments to be set aside as open space. For this, the developer is permitted to develop in greater density/intensity on the remaining land and is freed of some lot dimensional and setback requirements. In this process, it is important that the set aside land meet certain standards. It must be more than just a leftover area that is not developable. Such land can sometimes be inaccessible and may have little use for recreational purposes.

Conservation Easements

Legally binding agreements can be made between a property owner and a governmental body or land trust that restricts the type and amount of development that may take place on the property. A conservation easement ensures a landowner that their land will be protected for future generations. The ownership of the land does not change hands and does not imply free ingress or egress by the public. For the municipality, conservation easements are a better financial alternative than land donations because the land remains in private ownership and on the tax rolls, unlike publicly owned land. The Town is not responsible for the maintenance of easements.

Excess purchase by municipality

Utilizing the proximaty principle, the municipality can purchase an excess amount of land for a park project. After developing the park, which increases the value of the surrounding land, the municipality can sell the remaining land at a higher market value. The increased property tax revenue pays for the original investment.

Grants

Money is available at both the state and local level through grants to purchase land for protection purposes.

General Revenue

Local general tax revenues and voter approved tax levies can support the purchase of property for open space protection.

Bonds

Another way Stallings can fund capital parks, recreation and open space improvements is through a general obligation bond referendum. Because the full faith and credit of the Town as a taxing authority is pledged, authority for a General Obligation (G.O.) bond issuance must be granted by the

electorate.



Crooked Creek Crossing disc course at Blair Mill Park

Goals and Strategies

Goal OS-1

Seek to better understand the recreational and open space needs of Stallings' citizens in the context of the surrounding region.



Strategy OS-1.1

Develop a comprehensive systemwide parks and recreation plan that includes: a descriptive inventory of existing natural and built resources, relevant demographic data, thorough public input opportunities and ongoing involvement plan, project and maintenance cost estimates, and funding strategies.

Strategy OS-1.2

Coordinate with adjacent communities to enhance the quality and extent of Stallings' recreational facilities and produce a multi-jurisdictional, connected system of parks, trails, and bike and pedestrian facilities.

Strategy OS-1.3

Include community participation in planning for future greenway projects.

Goal OS-2

Provide and maintain an open space system that enhances community character, protects natural habitat areas, enhances quality of life, and links people, neighborhoods, and resources together.

Strategy OS-2.1

Identify prominent cultural features, commercial and civic centers, and other key existing and planned destinations to help guide future greenway development in Stallings.

Strategy OS-2.2

Balance development with natural resource protection and conservation.

Strategy OS-2.3

Ensure equitable distribution of park and recreation facilities throughout the Town.

Strategy OS-2.4

Identify and promote opportunities to connect schools to natural areas using trails.

Strategy OS-2.5

Incorporate more recreational facilities favored by young professionals such as pedestrian and cycling trails, mountain bike trails, and facilities for non-traditional recreational activities like skateboarding, inline skating, BMX, and whitewater sports.







Goals and Strategies

Strategy OS-2.6

Provide recreational facilities and programs that target those over 55 to enhance their quality of life as they age within Stallings.

Strategy OS-2.7

Provide attractive, easy-to-read maps of the developing parks and trails system in Stallings on the Town's website. To provide the full range of recreational benefits to everyone, include information about levels of accessibility and the location of barriers, and the width, surface characteristics and grade of the trails.

Strategy OS-2.8

Develop an Open Space General Management Plan including: a description of park resources and facilities, an analysis of demands and trends, operations and management issues and recommendations with a complete maintenance schedule, -capital improvement needs and priorities, and land acquisition needs and priorities

Goal OS-3

Construct and encourage the development of greenway trails to capitalize on available open space, to provide an alternative mode of transportation, and to connect new and existing neighborhoods.

Strategy OS-3.1

Review the recommended trail projects described in the 2008 Stallings Pedestrian Plan and consider additional easements and other corridor opportunities that may have become available since that Plan's adoption.

Strategy OS-3.2

Review the specific ordinance language modifications recommended in the Pedestrian Plan (p. 54-56) and determine if this language should be incorporated into new zoning ordinances.

Strategy OS-3.3

Include a review of the Comprehensive System Plan Map within the Pedestrian Plan as part of every development project review. Where proposed trails and developments intersect, work with the developer or property owner to integrate trails into the project.

Strategy OS-3.4

Emphasize trails and pedestrian connectivity in small area plans and the UDO.

Strategy OS-3.5

Create a townwide Greenway Plan connecting town trails to adjacent jurisdictions.



Goals and Strategies

Goal OS-4

Understand existing funding mechanisms for park and recreation facilities and seek creative solutions (such as shared use, partnerships with the land conservancy, multi-use fields, etc.) for stretching resources.



Acquire additional recreational lands and corridors for greenways through incentives and requirements in the development process of both public and private lands.

Strategy OS-4.2

Evaluate the Town's annual capital improvement plan budget for open space and greenway projects.

Strategy OS-4.3

Encourage the dedication of properties for recreation through fiscal incentives.

Strategy OS-4.4

Float a bond referendum to finance popular recreational projects that are featured in the Town's adopted plans, including greenway projects from the 2008 Stallings Pedestrian Plan.

Strategy OS-4.5

Develop a recreation sponsorship program that encourages corporate, non-profit groups and individual volunteers to clear, construct or maintain park and greenway facilities where possible.

Strategy OS-4.6

Ensure that the Parks & Recreation Department has adequate staffing (and volunteer help) to plan and manage the construction of new facilities, grant writing and administration, and master plan implementation. Encourage shared parking areas when appropriate.

Strategy OS-4.7

Explore the recommended funding strategies in the 2008 Stallings Pedestrian Plan, Section 4.2.

Goal OS-5

Ensure that Town policy enables and encourages actions that engender a natural environment of highest quality.

Strategy OS-5.1

Require review of all projects, including new construction and additions for commercial and residential uses for stormwater impacts. Require a permit for all projects.

Strategy OS-5.2

Provide education and incentives designed to remind and motivate private property owners to properly maintain drainage structures - including drains, pipes and ditches - located on their property.

Strategy OS-5.3

Recruit volunteers from the community to assist with open space maintenance, like invasive plant removal and stream restoration projects.





Goals and Strategies

Goal OS-6

Increase coordination with public agencies and private interests to maximize the efficiency of the Town's park and recreation facilities and programs.

Strategy OS-6.1

Amend Town ordinances to adjust open space requirements in residential developments to promote useable and connected recreational areas.

Strategy OS-6.2

Coordinate with and seek technical and resource assistance from the Carolina Thread Trail, Mecklenburg Parks and Recreation, and other adjacent jurisdictions and regional organizations concerned with greenway development in the area.

Strategy OS-6.3

Make the most of existing recreational facilities in and around Stallings through joint use agreements (a formal agreement between two separate government entities–often a school and a municipality–setting forth the terms and conditions for shared use of public property or facilities). For example, establish a joint use agreement with Stallings Elementary School and Antioch Elementary School for public use of school recreational facilities by Town residents during hours not in use by the school.



Fairfield Plantation private boardwalk



8-24 Comprehensive Land Use Plan

Goals and Strategies

Strategy OS-6.4

Approach private communities within Stallings that have significant recreational facilities to determine if a mutually beneficial agreement can be established.

Goal OS-7

Develop Blair Mill Park as a recreational facility that incorporates optimal park amenities.



Strategy OS-7.1

Determine the optimal amenities to incorporate into Blair Mill Park through a system-wide park planning process that includes an inventory of current park facilities, projected future recreational needs, and a robust public engagement process.

Strategy OS-7.2

Explore various funding options for the development and ongoing maintenance of Blair Mill Park.

Strategy OS-7.3

Improve Blair Mill Park and establish a safe connection to Idlewild Market and to Stallings Park via pedestrian connections and the greenways.

