



DEVELOPMENT CODE REVIEW AND POLICY  
GAP ANALYSIS TO IMPROVE THE COMMUNITY'S  
HEALTH, DESIGN, AND APPEARANCE



**CLARK ♦ NEXSEN**  
*Architecture & Engineering*



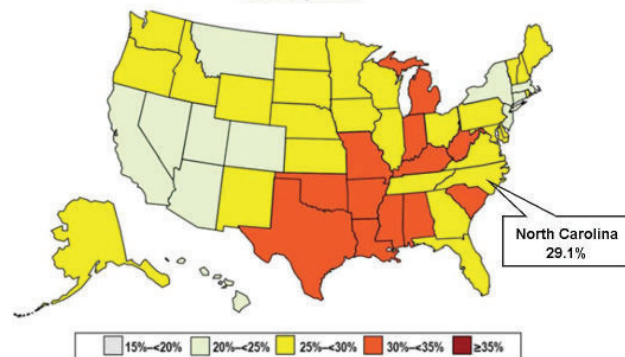
## Introduction

Chronic diseases such as cardiovascular disease, diabetes, and obesity account for the majority of death, disability, and healthcare costs in the United States today. Lack of exercise and poor diet together can be directly linked to approximately fourteen (14%) percent of all deaths; more than alcohol, drugs, firearms, and motor vehicles combined.<sup>1</sup> However, these chronic conditions are preventable by maintaining healthy lifestyles that include regular physical activity and proper nutrition.

Regular physical activity reduces the risk of coronary heart disease, hypertension, colon cancer, osteoporosis, arthritis, and non-insulin dependent diabetes. Additionally, physical activity improves mental health by reducing stress, anxiety and depression, while enhancing and prolonging the ability perform daily activities throughout one's life span.

Unfortunately, despite the clear health benefits of physical activity, two-thirds of American adults do not meet the Center for Disease Control and Prevention's (CDC) recommendations of at least thirty (30) minutes or more of physical activity at least five (5) days a week.<sup>2</sup>

Prevalence of Self-Reported Obesity Among U.S. Adults  
BRFSS, 2011



1 McGinnis J, Foegen W. Actual Causes of Death in the United States. JAMA. 1993

2 Centers for Disease Control and Prevention. *The Burden of Chronic Diseases and Their Risk Factors: National and State Perspectives*. 2004. Atlanta: U.S. Department of Health and Human Services; 2004.



Physical activity does not need to be a vigorous routine or extreme exercise regime, but rather can be accomplished in regular daily lifestyle activities such as walking to and from school or the office, climbing the stairs, gardening, or recreational walking, biking, or swimming. In fact, studies indicate it is not even necessary to obtain the thirty (30) minutes of activity in one occurrence. It has been shown that similar positive results of 30 minutes of physical activity are obtained even when these pursuits are spread out over the course of the day.<sup>2</sup> In short, positive, beneficial physical activity can be incorporated into the daily routines of the average American citizen.

To help promote healthier lifestyles, the US Department of Health and Human Services created the Communities Putting Prevention to Work program (CPPW) with the goal of making healthier living easier. Led by the CDC, the CPPW is a local grant funded initiative focused on improving community health by promoting environmental changes at the local level.<sup>3</sup>

This includes improving access to healthier food choices as well as promoting ways of increasing physical activity through neighborhood and community design.

The Pitt County Health Department is a grant recipient of the CPPW program. As a leadership team member, and in support of the program's objectives, the City of Greenville established a Project Work Group (PWG) to execute a review of city's existing plans and development standards, from a public health perspective, to identify opportunities for policy and/or development standard modifications that would improve the community's health, design and appearance.

<sup>2</sup> Centers for Disease Control and Prevention. *The Burden of Chronic Diseases and Their Risk Factors: National and State Perspectives*. 2004. Atlanta: U.S. Department of Health and Human Services; 2004.

<sup>3</sup> Centers for Disease Control and Prevention. *Communities Putting Prevention to Work brochure*; 2012



## Benefits of Physical Activity

- Reduce your risk of cardiovascular disease
- Reduce your risk for Type 2 diabetes and metabolic syndrome
- Reduce your risk of some cancers
- Strengthen bones and muscles
- Improve mental health and mood / lowers stress levels
- Increases your chances of living longer

## Background

Since 1900, life expectancy in the United States has increased by approximately 40 years, and of this accomplishment, only about 7 of those years can be attributed to improvements in disease care (cures through medication or eradication). Instead, the vast majority of years are the result of improved environmental conditions, such as sanitation and water improvements, and other prevention efforts.<sup>4</sup> The link between a community's health and the environment is unmistakable, and it is the focus and intent of this project to illustrate the correlation between personal individual health and the physical / built environment of the community in which we live.

Physical environments are a combined product of the natural and built environment, which together form the necessary infrastructure for physical activity.<sup>5</sup> The natural environment determines conditions such as weather, terrain, natural topography or scenery, while it is the built environment, consisting of buildings, roadways, sidewalks and their arrangement, that create the complete physical environment. Unquestionably, the built environment has an effect on the natural

environment, and can sometimes have a negative effect in promoting and supporting human physical activity.

For example, typical suburban design that separates residential, commercial, and industrial uses into distinct areas, often at substantial distances, can discourage at best, and often eliminate entirely, any options of walking or biking from one destination to another. This requires residents to drive more, offers fewer opportunities to walk and bicycle, and further decreases daily prospects for physical activity.

<sup>4</sup> Centers for Disease Control and Prevention. *Healthy Community Design* Fact Sheet brochure; 2006

<sup>5</sup> The Robert Wood Johnson Foundation. *Healthy Places, Healthy People: Promoting Public Health & Physical Activity Through Community Design*. 2004. Washington, DC.



Master Plan Concept  
Woods Corner, Virginia Beach

Past efforts in reversing the obesity epidemic focused solely on changing individual behaviors towards increased physical activity.<sup>6</sup> These efforts failed in part because little emphasis was placed on the physical surroundings where individuals lived, worked and played. So, many of today's efforts build on the concept of creating healthy communities that support and promote healthy eating and active living. This new approach requires commitment from diverse organizations and sectors such as education, health care, housing, transportation, city planning, parks and recreation, and public health, as well as engagement of business leaders and residents, in discussions of community transformation.

<sup>6</sup> McCann B. *Community design for healthy eating: How land use and transportation solutions can help*. Princeton, NJ: Robert Wood Johnson Foundation; 2006



## Focus

Active living communities remove barriers to physical activity and provide amenities (e.g., parks, bike paths, playgrounds, recreation centers) that support healthy behaviors, especially walking and bicycling. Walkable neighborhoods are characterized by proximity (a mix of homes, shops, schools and other destinations) and connectivity (streets providing direct routes and safe connections to destinations for pedestrians and bicyclists).<sup>7</sup> Recent research also shows that more children walk to school when there are sidewalks available, and in general, people with access to a variety of built and natural facilities are forty-three (43) percent more likely to exercise for thirty (30) minutes on most days, compared with people who have poor access to such facilities.<sup>8</sup>

Local policies such as zoning codes, which regulate the use and development of property within specific categories, and subdivision development codes, which regulate the design and layout of new developments, have a tremendous influence on the built environments. It is often these very development regulations that limit opportunities for healthy community design. Therefore smarter land-use practices that provide the flexibility to encourage and promote healthy community design principles should be explored.

Within the framework of the CPPW grant, the City of Greenville, through the Community Development Department established a Project Work Group (PWG) comprised of representatives from various committees and boards. With attention focused on public health perspectives, the PWG completed a review of the city's existing plans and development standards to identify opportunities for policy and/or development standard modifications that would improve the community's health, design and appearance.

<sup>7</sup> Active Living Research. *Designing for Active Transportation*. Feb. 2005. Quoting Saelens B.E., Sallis J.F., and Frank, L.D. *Environmental Correlates of Walking and Cycling: Findings from the Transportation, Urban Design, and Planning Literatures*. *Annals of Behavioral Medicine*, 25, 80–91 (2003).

<sup>8</sup> Active Living Research. *Designing for Active Recreation*. Feb. 2005. Quoting Frank L.D., Andresen M.A., and Schmid T.L. *Obesity Relationships with Community Design, Physical Activity, and Time Spent in Cars*. *American Journal of Preventative Medicine*, 27, 87–96 (2004).



Specific project objectives include:

1. Identify specific local policies and regulations that work for and against the goals of making Greenville a healthier community.
2. Detect and consider revisions to local policies and regulations that have a significant impact on traditional land use development patterns that limit opportunities for mixed-use development areas in favor of separate isolated land use patterns (traditional zoning).
3. Distinguish for continued or enhanced implementation, local policies and regulations that have a significant impact on walkability, bicycling, and other non-motorized forms of transportation.
4. Discover local policies and regulations, or lack thereof, that will increase the community's residents access to healthy food choices, by expanding opportunities to locate, purchase, and/or grow healthier food options.
5. Understand how other internal city departments, as well as other governmental agencies such as school systems or NCDOT, work with or against each other and whether consistent and effective policies can be coordinated that achieve the goals of the city's CPPW program.



## Codes, Ordinances, and Plans of Primary Focus

The appraisal of existing plans, policies and ordinances began with reviews of the following City of Greenville development guidance documents:

1. Zoning Ordinance for Greenville, North Carolina.
2. Subdivision Regulations for Greenville, North Carolina.
3. 2011 Bicycle & Pedestrian Master Plan  
for the Greenville Urban Area Metropolitan Planning Organization.
4. Horizons: Greenville's Community Plan.
5. Horizons: 2009-2010 Comprehensive Plan Review and Update.
6. 2004 Greenway Master Plan, City of Greenville, North Carolina.
7. 2004 Greenville Urban Area Thoroughfare Plan.





## Purpose

Through its partnership with Pitt County, in the participation in the CPPW grant, the City of Greenville is committed to improving opportunities for daily physical activity to its residents. This report summarizes the findings of the Land Use Policy Review of the City of Greenville's CPPW Project Work Group, and is considered a first step in enhancing the physical environment of the City of Greenville.

The overall goal of this audit is to identify specific policy recommendations or requirements that have impact on the built environment, as it relates to the physical activity of the city's residents. Through this discovery, it will be possible to determine corrective actions necessary for the strengthening, coordinating and integrating local land use policies that will increase their consistency and effectiveness in achieving the goals of the CPPW program. More specifically, it will provide a clearer path to achieving the city's goal of making

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## Gap Analysis Guide

At its simplest, a gap analysis is the process of studying the differences between existing standards and the delivery results of those standards in relation to the desired goal. For the purpose of this review, the gap analysis process was utilized to determine

the difference between the expectation of a specific policy, and actual policy experience as it relates to improved opportunities for physical activity.



## Policy Gap Analysis

Analysis of the information derived from policy review audit indicates that the City of Greenville has taken considerable proactive measures to improve the health and physical activity opportunities for its residents. Conflicts between regulatory code requirements are rare. The most common limitations appear to be discrepancies between stated policy objectives and the controlling legislative authority to compel its completion. In other words, a plan may identify a certain goal or objective, but there are little or no adopted codes or regulations that can be applied to require its execution. A common strategy to increase walkability discussed during PWG meetings was to encourage mixed-use developments to allow residents close, safe, pedestrian, access to many of their daily activities like work, dining, shopping, and recreational activities. However, outside of the Master Plan Community, with a fifty (50) acre minimum land area requirement, there are no regulatory mechanisms available to promote this type of development.

The following regulatory language items were identified as the top five (5) priority elements having the most positive impacts on making Greenville a healthier community.

1. Drafting and implementation of a Mixed-Use development ordinance.

2. Improve/increase the acceptance of property dedications for inclusion into the greenway corridor system and/or the community's parks program.
3. Adoption and implementation of recommendations presented in the 2011 Bicycle & Pedestrian Master Plan.
4. Adoption of NCDOT Complete Streets Planning and Design Guidelines to promote design flexibility and alternatives to increase pedestrian amenities in street design.
5. Adopt language to require commercial developments to install sidewalks along corridors adjoining property development

Tabular listings of all existing policies, standards, and regulations identified as contributing to physical activity design elements in the City of Greenville are provided below. *Table 1* provides a listing of policy guidelines that are viewed as positive elements where implementation efforts should continue, or where only minor policy amendments are recommended to improve on obtaining the objective of the language. *Table 2* cites references that appear contrary to the efforts of promoting a healthy Greenville, or at a minimum may need to be amended through ordinance revisions to meet the policy objective. Where appropriate, recommendation statements are provided for guidance on how

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**TABLE 1: Existing Ordinance Citations that Promote a Healthy Greenville**

CODE / SECTION / TITLE	EXISTING TEXT	RECOMMENDATION
<p>* Zoning * Article J - Master Plan Community * Sec. 9-4-167 - Site Design Criteria; General * (B) Site planning; internal relationship</p>	<p>(3) Pedestrian circulation. A pedestrian circulation system is encouraged in such development. Walkways for pedestrian use shall form a logical, safe and convenient system of access to all dwelling units, project facilities and principal off-site pedestrian destinations. Walkways to be used by substantial numbers of children as routes to schools, play areas or other destinations shall be so located and safeguarded as to minimize contact with normal automobile traffic. Street crossings shall be held to a minimum. Such walkways, where appropriately located, designed and constructed, may be combined with other easements and used by emergency or public service vehicles, but not be used by other automobile traffic. In addition, bike paths may be incorporated into the pedestrian circulation system and are to be encouraged in such developments.</p>	<p>Positive element.</p> <p>Consider potential design elements for assistance in promoting this.</p>
<p>* Zoning * Article M - Residential Cluster Development * Sec. 9-4-202 - Area; Permitted Districts, Exemption; Street Access; Open Spaces; Relationship to Greenway Plan; Density; Dimensional Standards * (D) Open Space</p>	<p>(5) The area shall be left in its natural or undisturbed state if wooded at the time of development, except for the cutting of trails for walking or jogging or, if not wooded at the time of development, is improved for the uses listed under subsection (D)(3) above, or is properly vegetated and landscaped with the objectives of creating a wooded area or other area that is consistent with the objective set forth in subsection (D)(6) below; (6) The area shall be capable of being used and enjoyed for purposes of informal and unstructured recreation and relaxation or for horticulture if not devoted to other allowable uses in this subsection; (7) The area shall be legally and practically accessible to the residents of the development, or to the public if so dedicated;</p>	<p>Positive element.</p> <p>Consider potential design elements for assistance in promoting this</p>
<p>* Zoning * Article O - Parking * Sec. 9-4-241 - Purpose * (A)(2)</p>	<p>(2) The purpose of these regulations is also to improve the visual quality of parking areas by making them more pleasant, attractive, and compatible with the surrounding environment; to ensure safe and efficient operation of parking areas by clearly defining and delineating potential circulation movements of motorists and pedestrians; and to improve air quality and encourage energy conservation by moderating the microclimate of parking lots.</p>	<p>Positive element.</p> <p>Consider design elements to better clarify a distinction between interior pedestrian/ automobile circulation patterns.</p>

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<p><b>* Zoning</b>  <b>* Article 0 - Parking</b>  <b>* Sec. 9-4-251 - Improvement Standards</b>  <b>* (B)(16)</b></p>	<p>(16) Parking areas so designed to serve ten or more vehicles, may reduce the required number of spaces by 10%, to a maximum reduction of three spaces, where off-street parking or storage of non-motorized vehicles is provided at a rate of ten non-motorized spaces per motorized space reduced. Non-motorized spaces shall be conveniently located in relation to the assigned use;</p>	<p>Positive element.</p> <p>Consider design elements to better clarify a distinction between interior pedestrian/ automobile circulation patterns.</p>
<p><b>Subdivision Regulations</b>  <b>* Sec. 9-5-96 - Pedestrian Crosswalks within Blocks</b></p>	<p>Where orientation or length of blocks or other considerations justify such action, the Planning and Zoning Commission may require pedestrian circulation and provide access to schools, playgrounds, shopping centers, transportation and other facilities. Where such crosswalks are provided, they shall be located, dimensioned, fenced, screened or otherwise improved by the subdivider in such a manner as to provide security, tranquility and privacy for occupants of adjoining property, and safe use. Such pedestrian ways, if suitably improved, may be used by emergency vehicles but shall not be used by other motor vehicles.</p>	<p>Positive element. Consider greater utilization.</p> <p>However, consider some design changes. Complete screening and size limits have great potential for creating an unsafe and non-desirable pedestrian pathway.</p>
<p><b>Subdivision Regulations</b>  <b>* Sec. 9-5-100 - Public Sites and Open Spaces; Relation to Quasi-Public and Private Open Space Network; Intent (A) &amp; (B)</b></p>	<p>(A) To provide for efficiency, economy and amenity, it is the intent of these regulations to encourage and promote the development and maintenance of public open space systems.</p> <p>(B) It is intended that to the maximum extent reasonably feasible there shall be a continuous network of public lands adapted to multiple purposes, including preservation and maintenance of natural waterways and water areas, protection of watersheds, neighborhood or community service areas and other public uses requiring extensive open space.</p>	<p>Positive element that promotes the expansion and connectivity of public greenways and parks. Consider greater utilization, and explore options to expand.</p>

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<p><b>Subdivision Regulations</b> * Sec. 9-5-100 - <b>Public Sites and Open Spaces; Relation to Quasi-Public and Private Open Space Network; Intent (C)</b></p>	<p>(C) It is further intended that these regulations shall encourage and promote consolidation, combination and coordination of quasi-public and private common open space with the public land network where appropriate. The purposes of such action shall include the following, applied generally or under particular sets of circumstances:</p> <p>(1) To increase the extent, effectiveness and amenity of the total open space network;</p> <p>(2) To provide protection for areas of substantial ecological importance; and</p> <p>(3) To minimize conflicts among automotive traffic, pedestrians and cyclists, and to provide safe, convenient movement systems for pedestrians and cyclists through open spaces not generally open to automotive traffic, in a pattern connecting their principal origins with destinations such as schools, parks and recreational facilities; and otherwise to ensure the advantages arising from an open space network with multiple potentials for public use and reuse, as contrasted with scattered open spaces serving only limited functions.</p>	<p>Positive element that promotes the expansion and connectivity of public greenways and parks.</p> <p>Consider greater utilization, and explore options to expand.</p>
<p><b>Subdivision Regulations</b> * Sec. 9-5-101 - <b>Reservations for Recreation Areas; Generally</b></p>	<p>All subdivisions shall indicate recreation area at the time of submission of the preliminary plat. If the subdivision is developed in sections, the recreation area shall be contained within the first section unless as otherwise approved by the Planning and Zoning Commission upon recommendation of the Director of Recreation and Parks. At the time of submission of the final plat, the owner shall give the city a valid option on the land provided for as recreation area. The total development area shall be used as the basis for computation of the area reserved for recreation purposes.</p>	<p>Positive element that is not well utilized. Zoning ordinance has language that allows for exceptions.</p> <p>Consider limiting or eliminating exceptions, and explore a more aggressive approach in purchasing or acquiring the recreational land set aside.</p>
<p><b>Subdivision Regulations</b> * Sec. 9-5-102 - <b>Same; Minimal Area</b></p>	<p>The minimum amount of land which shall be reserved for recreation area in the subdivision plan shall be one acre for each subdivision and in addition, for all subdivisions over 25 acres in area, reservation of recreation space shall include one acre plus 4% of the gross total area over 25 acres or 400 square feet for each lot over 110, whichever is greater.</p>	<p>Positive element that is not well utilized. Zoning ordinance has language that allows for exceptions. Consider limiting or eliminating exceptions, and explore a more aggressive approach in purchasing or acquiring the recreational land set aside.</p>

**TABLE 1: Existing Ordinance Citations that Promote a Healthy Greenville**

CODE / SECTION / TITLE	EXISTING TEXT	RECOMMENDATION
<p><b>Subdivision Regulations</b> *Sec. 9-5-105 - Same; Owner to Give Option to City; Provisions of Option (B)</p>	<p>(B) This option may contain such terms as shall be mutually agreed to by the owner and the city but shall contain the following:            (1) Provision for payment of \$100 to the owner upon execution of the option, which shall be applied to the purchase price if the option is exercised;            (2) Provision that the owner shall sell the land at an agreed raw land value. The raw land value is the fair market value of the recreation area before improvements or development. Should the city and the owner fail to agree on the raw land value, they shall choose one M.A.I. appraiser to appraise the recreation area. The sum per acre determined by the M.A.I. appraiser shall constitute the price per acre for the land. Cost of this process shall be equally divided between the city and the owner;            (3) Provision that the option shall have a term of at least four years unless terminated by exercise of the option to purchase by the city, or unless sooner terminated by the city by an instrument in writing;            (4) Provision that in addition to the stipulated purchase price if the option is exercised, the owner shall be entitled to interest on the purchase price from the date of execution of the option at 6% per year; and            (5) Provision that the option shall become effective upon recordation of the final subdivision plat containing such recreation area in the Pitt County Register of Deeds.</p>	<p>Consider greater execution of options in the future to ensure more opportunities for parks, play areas, and connectivity through the communities.</p>
<p><b>Subdivision Regulations</b> *Sec. 9-5-106 - Same; Relation to Bikeway Plan</p>	<p>Arrangement, character, extent, width, grade and location of the bikeway system for Greenville shall conform to the bikeway plan of the city and elements thereof officially adopted.</p>	<p>Positive element.  Consider implementation of other design and functional elements of the Bike and Pedestrian Plan.</p>

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CODE / SECTION / TITLE	EXISTING TEXT	RECOMMENDATION
<p><b>Subdivision Regulations</b> * <b>Article E Required Improvements</b> * <b>Sec. 9-5-123 - Sidewalks; Where to be Installed.</b></p>	<p>Sidewalks shall be provided by the subdivider in accordance with the following:            (A) Sidewalks shall be provided in conjunction with public street extensions pursuant to section 9-5-81 of this chapter.            (B) The location of proposed sidewalks required pursuant to this section shall be in accordance with the Manual of Standard Designs and Details.            (C) Sidewalks shall be provided along both sides of all minor and major thoroughfare streets as shown on the official Thoroughfare Plan.            (D) Sidewalks shall be provided along one side of all collector, standard residential, and planned industrial streets.            (E) Sidewalks shall be provided along one side of all minor residential streets which are in excess of 500 feet in length in the case of a cul-de-sac/terminal street or 1,000 feet in length in the case of a loop/connecting street.            (F) The arrangement of sidewalks in new subdivisions shall make provision for the continuation of existing sidewalks in adjoining areas.</p>	<p>Positive element to promote sidewalks.</p> <p>However, consider adoption of NCDOT Complete Streets manual to offer development alternatives for street designs that better promote walking and biking with greater detailed sidewalk design options.</p>
<p><b>2011 Greenville Bicycle and Pedestrian Plan</b></p>	<p>General – Bicycle and Pedestrian Plan for the future of the Greenville Metropolitan Planning Area. Identifies multiple projects and measures for attainment.</p>	<p>Encourage complete adoption of policy recommendations referenced in the Bicycle and Pedestrian Plan.</p>

**TABLE 2: Existing Ordinance Citations that Do Not Promote a Healthy Greenville**

CODE / SECTION / TITLE	EXISTING TEXT	RECOMMENDATION
<p>* Zoning * Article (F) * Sec. 9-4-106 * Relationship to Greenway Plan</p>	<p>(If any portion of the area proposed for development lies within an area designated in the officially adopted Greenway Master Plan as a greenway corridor, the area so designated shall be dedicated and/or reserved to the public <b>at the option of the city.</b></p>	<p>To further promote and support this initiative, remove "at the option of the city."</p>
<p>* Zoning * Article G * Sec. 9-4-119 * Bufferyard Setback Table (F) Fence Option</p>	<p>Must create a complete visual barrier for at least six feet in height. Acceptable materials are cedar, masonry, redwood, chain link with slats and treated lumber resistant to rot. Fence installation should be consistent with acceptable building practices.</p>	<p>Fences or walls create a barrier completely blocking connectivity between uses that could benefit from pedestrian connectivity.</p> <p>Consider revisions that allow for penetrations to promote connectivity with existing or potential pedestrian linkages.</p>
<p>* Zoning * Article G * Sec. 9-4-120 * Bufferyard Standards (H) Encroachments</p>	<p>(3) General (public/customer) pedestrian access walkways shall be subject to compliance with all of the following requirements: (a) Such walkways shall be designed to provide direct access to and from adjacent public and/or private streets, designated common property, public access easements and lot lines; (b) Encroachment zone. Walkways are allowed to cross individual or abutting bufferyards within an area equal in width to the minimum bufferyard as measured perpendicular to the property line; (c) Maximum width of each individual walkway shall not exceed six feet; and (d) Within the minimum bufferyard area two or more walkways providing access to a lot along any single property line shall be separated by not less than 50 feet as measured from center of walkway to center of walkway.</p>	<p>Six (6) feet may or may not be adequate depending on the uses involved.</p> <p>Consider scale to determine appropriate design and dimensions.</p> <p style="text-align: right;">Item # 6</p>



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CODE / SECTION / TITLE	EXISTING TEXT	RECOMMENDATION
<p>* Zoning * Article G * Sec. 9-4-120 * Bufferyard Standards (I) Recreational Use of Bufferyards</p>	<p>A bufferyard may be used for passive recreation; it may contain pedestrian, bike or equestrian trails, provided that: (1) The total width of the bufferyard is increased in direct proportion to the width of any encroachment(s) exceptas further provided; (2) Public dedicated greenway improvements shall be exempt from subsection (I)(1) above; and (3) All other regulations of this article and Article P of this chapter are met. In no event, however, shall the following uses be permitted in bufferyards: play-ground equipment, playfields, stables, swimming pools and ball courts.</p>	<p>Positive element to promote non-motorized mobility.</p> <p>Consider removal of item 1 to promote use of bufferyards for this activity without making it punitive to the developer that selects this option.</p>
<p>* Zoning * Article H * Sec. 9-4-133 * Mobile Home Park Development Standards (J) Recreation Area Requirement</p>	<p>(1) Common recreation area shall be provided at a ratio of 100 square feet per dwelling unit. (2) The recreation requirement for a mobile home park development shall not apply if the project is within one-half mile radius of a public recreation facility. (3) No portion of an active recreation area shall be located within the peripheral boundary setback or less than 20 feet from any mobile home stand. (4) Passive recreation areas may be located in the peripheral boundary setback in accordance with the bufferyard regulations. (5) Swimming pools shall be fenced in accordance with Article F.</p>	<p>Could have positive impacts.</p> <p>Consider possible design alternatives rather than a straight ban on these activities.</p>
<p>* Zoning * Article I - Multi-Family Development * Sec. 9-4-144 (E) - Open Space</p>	<p>(E) If any portion of the area proposed for a multi-family development lies within an area designated in the officially adopted Greenway Master Plan as a greenway corridor, the area so designated shall be included as part of the area set aside to satisfy the open space requirements of this section. The area within the greenway corridor shall be dedicated and/or reserved to the public <b>at the option of the city.</b></p>	<p>To further promote and support this initiative, remove "at the option of the city."</p>

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CODE / SECTION / TITLE	EXISTING TEXT	RECOMMENDATION
<p><b>* Zoning</b>  <b>* Article I - Multi-Family Development</b>  <b>* Sec. 9-4-145 - Development Standards (D) Setback for Recreation Areas</b></p>	<p>(1) Active: No portion of an active recreation area shall be located within the peripheral boundary setback or less than 20 feet from any dwelling unit.            (2) Passive: May be located within the peripheral boundary setback in accordance with the bufferyard regulations.</p>	<p>Elements of active recreation areas may not always be a negative.             Consider possible design alternatives rather than a straight ban on these activities.</p>
<p><b>* Zoning</b>  <b>* Article I - Multi-Family Development</b>  <b>* Sec. 9-4-146 - Recreation Area Requirements (Private)</b></p>	<p>(A) The recreation area requirement shall not apply to developments that:            (1) Contain less than two net acres; and/or            (2) Are located within a one-half-mile radius of a public recreation area.            (B) Common recreation areas shall be provided at a ratio of 100 square feet per dwelling unit.</p>	<p>Understanding of concept but results could be detrimental to the goal of increasing children’s physical activity. Radius may be excessive, especially if no pedestrian connectivity to get from home to park.             Consider revisions that would ensure park facilities are safely accessible to children and pedestrians.</p>
<p><b>* Zoning</b>  <b>* Article J - Master Plan Community</b>  <b>* Sec. 9-4-162 - Area; Regulation of Uses; Density; Open Space; Recreation; Parking; Landscape; Density Bonus Requirements.</b>  <b>* (A) Minimum area requirements.</b></p>	<p>(3) Except as provided under subsection (C) (3) below, master plan communities comprising 75 gross acres or more and 250 or more dwelling units may contain all of the uses permitted by subsections (B)(5) and (B)(6) of this section provided that all designated nonresidential area(s) shall meet all of the following design requirements:            (a) Shall be designed and located with the primary intention of serving the immediate needs and convenience of the residents of the master plan community.</p>	<p>Positive element to promote mixed uses, but still focuses on separation of uses. And, specifically requires that uses within the particular development are not “open” to others.             Consider revisions that incorporate a variety of uses throughout the development rather than sections of individual uses throughout, and development that is open, attractive, and accessible to all residents within walkable distances to the development.</p>

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CODE / SECTION / TITLE	EXISTING TEXT	RECOMMENDATION
<p>* Zoning * Article J - Master Plan Community * Sec. 9-4-162 - Area; Regulation of Uses; Density; Open Space; Recreation; Parking; Landscape; Density Bonus Requirements. * (F) Dedication of open space, park lands and greenways.</p>	<p>(1) If any portion of the area proposed for a master plan community lies within an area designated in the officially adopted greenway master plan as a greenway corridor, the area so designated shall be included as part of the area set aside to satisfy the open space requirements of this section. The area within such greenway corridor shall be dedicated and/or reserved to the public <b>at the option of the city.</b></p>	<p>To further promote and support this initiative, remove "at the option of the city."</p>
<p>* Zoning * Article J - Master Plan Community * Sec. 9-4-162 - Area; Regulation of Uses; Density; Open Space; Recreation; Parking; Landscape; Density Bonus Requirements. * (J) Residential density bonus provisions and standards.</p>	<p>(2) Bike paths/greenway systems. The provision of a constructed system of bike paths/pedestrian greenways that form a logical, safe and convenient system of access to all dwelling units, interior project facilities or principal off-site pedestrian destinations shall qualify for a density bonus. Such facilities shall be appropriately located, designed and constructed with existing topography, land form, and vegetation in accordance with the Greenway Master Plan requirements and other amenities associated with the master plan community. The density bonus allowed under this provision shall be 25% - (one total unit per gross acre) - above the base density of a master plan community.</p>	<p>Positive element. However density bonus maximum is smaller than what is allowed for other design features.</p> <p>To promote connectivity and increase walkability may want to consider revisions to how bonuses are calculated or at a minimum, increase to the density bonus for bike/pedestrian amenities.</p>
<p>* Zoning * Article J - Master Plan Community * Sec. 9-4-1623 - Master Plan Community; Residential Uses Dimensional Standards * (K) Recreation Area Setback</p>	<p>(K) Recreation area setback. No portion of an active private recreation area shall be located within 100 feet of the external boundary of the master plan community. Public recreation areas or park land dedicated or deeded to the city shall not be subject to any external boundary setback and may be located in the peripheral boundary setback area.</p>	<p>Could have positive impacts for the development and the community.</p> <p>Consider possible design alternatives rather than a straight ban on these activities.</p>

**TABLE 2: Existing Ordinance Citations that Do Not Promote a Healthy Greenville**

CODE / SECTION / TITLE	EXISTING TEXT	RECOMMENDATION
<p><b>* Zoning</b>  <b>* Article M - Residential Cluster Development</b>  <b>* Sec. 9-4-202 - Area; Permitted Districts, Exemption; Street Access; Open Spaces; Relationship to Greenway Plan; Density; Dimensional Standards</b>  <b>* (E) Open Space</b></p>	<p>(E) If any portion of the area proposed for a residential cluster development lies within an area designated in the officially adopted Greenway Master Plan as a greenway corridor, the area so designated shall be included as part of the area set aside to satisfy the open space requirements of this section. The area within the greenway corridor shall be dedicated and/or reserved to the public <b>at the option of the city.</b></p>	<p>To further promote and support this initiative, remove "at the option of the city."</p>
<p><b>Subdivision Regulations</b>  <b>* Sec. 9-5-81 Street Design Standards</b></p>	<p>General - Street designs are regulated through the Manual of Standard Designs and Details, and focuses mainly on the movement of automobiles.</p>	<p>Consider adoption of NCDOT Complete Streets manual to offer development alternatives for street designs that promote walking and biking.</p>
<p><b>Subdivision Regulations</b>  <b>* Sec. 9-5-81 - Street Design Standards (G)</b></p>	<p>(G) Reserve strips controlling access to public streets shall be prohibited except under conditions approved by the Planning and Zoning Commission.</p>	<p>Positive element, but should not be used indiscriminately.</p> <p>May want to define clear, limited instances in which this may be considered.</p>

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**TABLE 2: Existing Ordinance Citations that Do Not Promote a Healthy Greenville**

CODE / SECTION / TITLE	EXISTING TEXT	RECOMMENDATION
<p><b>Subdivision Regulations</b> * <b>Sec. 9-5-81 - Street Design Standards (H)</b></p>	<p>(H) The street arrangement within new subdivisions shall not be such as to cause hardship to owners of adjoining property in platting their own land and providing convenient access to it or affect the health, safety and welfare of property owners and residences in the surrounding area. Streets within or adjacent to subdivisions intended for residential purposes shall be so designed that their use by through traffic shall be discouraged except, however, where such streets are existing or proposed thoroughfares.</p>	<p>Actually promotes a lack of connectivity throughout the community.</p> <p>Consider revisions to remove language that discourages connectivity.</p>
<p><b>Subdivision Regulations</b> * <b>Sec. 9-5-89 - Same; Maintenance of Natural Waterways and Water Areas; Relationship to Greenways Plan.</b></p>	<p>(B) If any portion of the area proposed for subdivision lies within an area designated in the officially adopted Greenway Master Plan as a greenway corridor, the area so designated shall be dedicated and/or reserved to the public <b>at the option of the city.</b></p>	<p>To further promote and support this initiative, remove “at the option of the city.”</p>
<p><b>Subdivision Regulations</b> * <b>Sec. 9-5-103 - Same; Waiver Provisions</b></p>	<p>Any subdivision owner may submit a map to the Planning and Zoning Commission of the area which is intended to be developed as a subdivision and request advice as to whether or not a recreation area shall be required in the proposed subdivision. Within 30 days, the Planning and Zoning Commission shall make a decision as to whether a recreation area should be included in the subdivision plan. It is the intent of this section to permit an early determination regarding recreation areas, especially of small subdivisions which, because of their proximity to other recreation areas or other good reasons, may not need recreation areas for the orderly development of the proposed subdivision. The owner or developer shall consider final any decision made pursuant to this section only if the final subdivision plat is approved.</p>	<p>Coordination review between developer and staff is a positive element. However, review of design should be for most appropriate layout for the facilities and/or linkage to existing facility, not an opportunity for non-dedication.</p>



## Conclusions

Throughout the Project Work Group's codes review process, a central issue of continuous discussion was that this step was but a beginning in moving Greenville towards becoming a healthier community. The impacts of improved design go beyond improvements in physical health. In addition to lower health care costs, walkable communities provide greater opportunity for social interaction, increasing community spirit and civic pride, lowers the risk of traffic related injuries, improves air and water quality, and increases opportunities to obtain healthier foods. Walkable neighborhoods have been shown to retain higher property values benefiting both the individual property owner as well as the local government tax base. In fact for each 1 point increase in a neighborhood's walk score, property values will have between a \$700 to \$3,000 additional home worth.

Upon witnessing the obvious benefits of healthy community design, it is the desire of the Project Work Group to further promote healthy living, and healthy community design within the City of Greenville. To do so, the PWG understands that efforts will need to expand beyond the parameters of this grant funded project, and begin to address not just existing codes, but also begin the dialog on issues and items that could use additional focus.

As the city continues to balance growth and development demands, and prepares for the the process of for major revisions to *Horizons: Greenville's Community Plan*, the PWG would like to offer additional recommendations and topics for consideration that should be considered during discussions of the physical development of the city.



A. Economically disadvantaged areas have higher potential to be areas known as “Food Deserts”. Food deserts are areas where access to healthy foods is unavailable or inaccessible within the district. Typically food services within the area are provided by fast food restaurants and/or convenience markets offering prepackaged processed food items. In order to promote economic development and combat the lack of access to healthy foods, efforts to attract super markets and promote community farmer’s markets should be targeted towards areas defined as food deserts.

B. Lack of pedestrian/bicycle access to schools within the area. The location and siting of schools is the responsibility of the Pitt County School System. To combat the lack of neighborhood connectivity to schools within the City of Greenville, the Community Development Department should open direct dialog with the school system to provide pertinent development data that would be useful in determining new school locations. By being involved in the process early, it will provide both entities with greater opportunities to provide alternate means of transportation to and from the schools. Federal programs are available to assist in promoting safe walking and biking to school initiatives.

C. Broaden the healthy communities conversation within the various segments of the private sector that can provide valuable assets and support to the city’s efforts. Specifically beginning dialog with the medical community to establish programs that concentrate not only on a cure to chronic disease, but promote prevention through neighborhood and community activities and programs.

D. In addition to schools and the medical community, explore options with companies and corporations for sponsorships of programs, activities, or even construction of trails or placement of benches or water stations along the trails.

E. In efforts to further promote mixed-use developments, the city should investigate the use of form based codes in areas where greater density would be appropriate.

F. Consider revisions to the city parking standards that considers maximum number of allowable spaces as opposed to only a minimum number of spaces. In addition imposes circulation standards within large lots that take into consideration the movement of pedestrians through the lot as opposed to only the vehicular traffic.



The recommendations provided above are presented in an effort to get the residents and leaders within Greenville to begin thinking about how plans and policies can be used to create and enhance environments that are supportive of different forms of physical activity, a key aspect of overall health. These recommendations are just a sample of ideas generated during the PWG's work efforts, and are considered starting points open for constructive discussion.

Through the Department of Health and Human Services, the CDC, and various other government and private organizations, there are multiple programs that offer grant funding to support these types of activities. In addition, communities throughout the United States are aggressively attacking the issue of obesity through walking, cycling, and active living programs. The PWG feels the City of Greenville can learn from these prior experiences but understands the need for local knowledge and context. Each of the examples provided can be effectively tailored to

meet local conditions, issues and concerns, and advancing policies of these conversations should be considered for inclusion into future municipal plans and ordinances.