



Fig. 5-1. A teacher and her students cross the road in Holly Springs, NC.

CHAPTER 5: PROGRAM AND POLICY RECOMMENDATIONS

Chapter Outline:

5.0 Overview

5.1 Program Recommendations

5.1.1 Education

5.1.2 Encouragement

5.1.3 Enforcement

5.2 Policy Recommendations

5.2.1 Growth

Management Plan

5.2.2 Subdivision and

Zoning Ordinances

5.3 Mode Share, Health, and Safety Goals

5.4 Complete Streets Policy

5.0 Overview

The creation and implementation of a successful bicycle and pedestrian system will involve more than facility improvements. The long-term success will also depend on proper development, use, and support of bicycle and pedestrian facilities. The following recommended programs will aid in educating pedestrians and bicyclists about safe behaviors in a multimodal roadway environment, enforcing laws that make bicycle and pedestrian travel safer, and encouraging people of all ages and abilities to use the bicycle and pedestrian network for the promotion of health and wellness. The adoption of the proposed policy revisions later in this chapter will ensure that Jacksonville will continue to grow and evolve as a bicycle and pedestrian friendly environment for all generations to enjoy.

5.1 Program Recommendations

Once safe facilities are in place, continued support for greenway, pedestrian, and bicycle networks is built through programs that focus on the three E's of planning: Education, Enforcement, and Encouragement. The other two E's (Engineering and Evaluation) are covered in Chapters 6 and 7. These categories are the foundation used in evaluating applications for the national Bicycle Friendly Communities (BFC) Program. In North Carolina, Carrboro and Cary have both been designated as "Bronze level" BFC communities. If Jacksonville wants to become a great place for bicycling and walking

it should strive to implement programs that other BFC communities have completed. The key to success is not just to provide these kinds of programs but to provide them in a scale and quantity that reaches the community population.

Bicycle and pedestrian-related programs fall into three main categories: education, encouragement, and enforcement. The programs listed below are provided to demonstrate the variety of opportunities that exist for promoting bicycling, walking, and active lifestyles in Jacksonville. Communities all across North America are using these programs. The City of Jacksonville should work closely with local volunteers and community organizations to initiate at least one of the following programs or events (whichever are deemed the most appropriate and/or feasible to those organizing) within the first year of adopting this plan. Also, it will be necessary for staff to be assigned to focus on programming, researching additional program ideas, and working with local groups, non-profit organizations, schools, and citizens to develop programs further.

5.1.1 Education

Bicycle and Pedestrian Advocacy Group

The City of Jacksonville and Onslow County should actively participate in the development of a local bicycle and pedestrian advocacy group. A local advocacy group

is a beneficial resource for promoting safe pedestrian and bicycle travel, providing feedback on opportunities and obstacles within the bicycle and pedestrian system, and coordinating events and outreach campaigns (such as the programs outlined throughout this section). Advocacy groups also play a critical role in encouraging and evaluating the progress of overall plan implementation. This group can be modeled after the Bicycle and Pedestrian Plan Steering Committee and the Greenways Commission, and may even include many of the same members. The group should meet on a regular basis (at least quarterly) following the adoption of the plan. One of the goals should be to apply for a BFC community.

Public Education

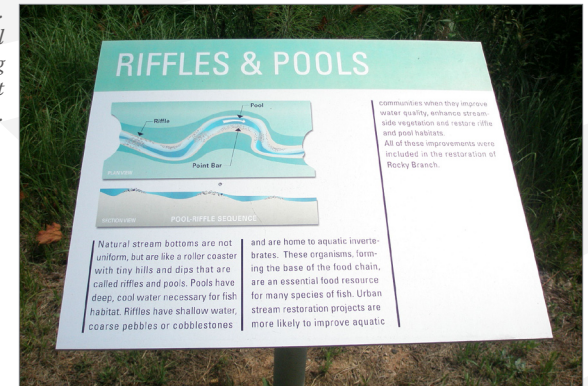
Educational materials can focus on safe behaviors, rules, and responsibilities. Information may include important bicycle and pedestrian laws, bulleted keys for safe travel, safe motor vehicle operation around bicyclists and pedestrians, and general facility rules and regulations. This safety information is often available for download from national bicycle and pedestrian advocacy organizations, such as the Pedestrian and Bicycle Information Center website, www.pedbikeinfo.org. Information can be distributed through brochures, newsletters, newspapers, bumper stickers, and other print media that can be inserted into routine mailings. It can also be posted on municipal websites and shown on local cable access television. Local events should be utilized to distribute

information and a representative from the bicycle and pedestrian advocacy group can answer questions related to bicycle and pedestrian safety. A booth could also be used to display safety information at various community events.

Internal Education

'Internal' education refers to the training of all people who are involved in the actual implementation of the Bicycle and Pedestrian Master Plan. Internal training will be essential to institutionalizing bicycle and pedestrian issues into the everyday operations of engineering, planning, and parks & recreation departments. In addition to relevant City staff, members of the local planning commission, NCDOT Division 3 staff, and county staff should also be included in training sessions whenever possible. This training should cover all aspects of the transportation and development process, including planning, design, development review, construction, and maintenance. This type of 'inreach' can be in the form of brown bag lunches, professional certification programs and special sessions or conferences. Even simple meetings to go over the Bicycle and Pedestrian Plan and communicate its strategies and objectives can prove useful for staff and newly elected officials that may not have otherwise learned about the plan. Pedestrian and bicycle planning and design issues are complex, and national research and guidelines continue to evolve. Therefore, training sessions need to be updated and repeated on a regular basis.

Fig. 5-2.
Educational
signage along
a greenway at
NC State.



Local law enforcement should be trained in accurate reporting of bicycle and pedestrian crashes involving automobiles. In many communities, police do not always adequately understand the rights of bicyclists and pedestrians. Proper interpretation of individual circumstances and events is critical for proper enforcement and respect between motorists, bicyclists, and pedestrians. Special training sessions should be instituted and occur annually for new employees within the Police Department that focus on laws relating to bicycle and pedestrian travel.

Environmental and Historic Education/Interpretation

Educational programs and interpretative signage could be developed along greenways and pedestrian routes. Greenways provide opportunities for learning outside the classroom. Specific programs that focus on water quality and animal habitat are popular examples. Events such as learning walks about specific animals or insects, tree identification, wildflower walks, environmental issues, stewardship education, and sustainability could be led by area experts. Also, simple educational signage would offer interactive learning opportunities for people who use the trail.

Interpretive Trails/Guided Tours

An educational component to the bicycle and pedestrian network could be added by developing historical, cultural, and environmental themes for the facilities. This idea

can be adapted to create walking tours throughout the Jacksonville Urban Area, using signage to identify the events, architecture, and landmarks that make the City of Jacksonville unique. These tours should be simple to navigate and should stand alone as an amenity. However, brochures can be used to supplement signage with more detailed information and a map of the tour. Other ideas to supplement the signage could be organized “talks” or lectures by local experts.

Fig. 5-3. Educational signage along a greenway trail in Greensboro, NC.



Table 5-1.

Priority Education Actions	
Action	Responsible Agency
Apply to become a Bicycle-Friendly Community (BFC)	City of Jacksonville; Bicyclist & Pedestrian Advocacy Group
Actively participate in the development of a local bicycle and pedestrian advocacy group, starting with members from the Bicycle and Pedestrian Plan Steering Committee and/or Greenways Commission	City of Jacksonville Parks and Recreation Department
Sponsor annual training sessions for bicycle/pedestrian design/review	City of Jacksonville Engineering and Planning Divisions
Sponsor a session for law enforcement focusing on bicycle and pedestrian issues	City of Jacksonville Police Department
Create a self-guided walking tour of downtown historic/cultural sites	Chamber of Commerce; City of Jacksonville
Establish outdoor classrooms utilizing interpretive signage in open space, parks, greenways, etc.	Jacksonville schools; other Onslow County schools; City of Jacksonville Parks and Recreation Department
Produce and/or obtain a variety of safety materials for distribution to various age groups and at various events/locations	City of Jacksonville JUMPO

Education Resources

America Walks is a national coalition of local advocacy groups dedicated to promoting walkable communities. Their mission is to foster the development of community-based pedestrian advocacy groups, to educate the public about the benefits of walking, and, when appropriate, to act as a collective voice for walking advocates. They provide a support network for local pedestrian advocacy groups. <http://americawalks.org>

Safe Communities is a project of the National Highway Traffic Safety Administration (NHTSA). Nine agencies within the U.S. Department of Transportation are working together to promote and implement a safer national transportation system by combining the best injury prevention practices into the Safe Communities approach to serve as a model throughout the nation. <http://www.nhtsa.dot.gov/safecommunities>

Safe Kids Worldwide is a global network of organizations whose mission is to prevent accidental childhood injury, a leading killer of children 14 and under. More than 450 coalitions in 15 countries bring together health and safety experts, educators, corporations, foundations, governments and volunteers to educate and protect families. Visit their website to receive information about programs, involving media events, device distribution and hands-on educational activities for kids and their families. <http://www.usa.safekids.org/>

Stepping Out is an online resource for mature adults to learn about ways to be healthy by walking more often, and walking safely. www.nhtsa.dot.gov/people/injury/olddrive/SteppingOut/index.html

Pedestrian Fatalities Related to School Travel is a fact sheet pertaining to school-age children (NHTSA). [http://www.nhtsa.dot.gov/people/injury/pedbimot/ped/Getting to School/pedestrian.html](http://www.nhtsa.dot.gov/people/injury/pedbimot/ped/Getting%20to%20School/pedestrian.html)

Rules of the Road for Grandchildren: Safety Tips is an information website for grandparenting. If you are a grandparent, you can play an important role in teaching your grandchildren the “rules of the road.” AARP. <http://www.aarp.org/confacts/grandparents/rulesroad.html>

Streets in America are Unsafe and Unforgiving for Kids. Article by the Pedestrian Safety Roadshow. U.S. Department of Transportation. Federal Highway Administration. <http://www.tfhrc.gov/safety/pedbike/articles/unsafe.html>

Focusing on the Child Pedestrian. Pedestrian information related to children from the FHWA. <http://safety.fhwa.dot.gov/roaduser/pdf/PedFacts.pdf>

Safekids is a child safety information website. Pedestrian injury remains the third leading cause of unintentional injury-related death among children ages 5 to 14. <http://www.safekids.org/>

Fig. 5-4. Booths provide information on local trails on National Trails Day in Greensboro, NC.



Eat Smart, Move More is a statewide movement that promotes increased opportunities for healthy eating and physical activity wherever people live, learn, earn, play and pray. <http://www.eatsmartmovemorenc.com/>

NCDOT Division of Bicycle and Pedestrian Transportation provides significant information related to bicycle and pedestrian programming. <http://www.ncdot.org/transit/bicycle/>

5.1.2 Encouragement

Employer Programs

To encourage bicycling and walking to work, employers can provide programs and incentives. When bicycling is encouraged, the employer benefits from improved employee health and morale along with an enhanced community perception when protecting the environment and being active in the community. Promotions could include a Bike to Work Day or a morning Pit-Stop where employees can receive free refreshments. Employers can provide educational workshops, bicycle parking options, and employee incentives. Incentives may include prize drawings, t-shirts, free tune-ups at a local bicycle shop, and bicycle maps.

School Programs

Many programs exist to aid communities in developing safer bicycle and pedestrian facilities around schools.

Programs can be adopted by parents or the schools to provide initiatives for walking or biking. Information is available to encourage group travel, prevent bicycle and pedestrian related injuries, and sponsor commuter related events. For example, a ‘Walking School Bus’ is an encouragement program that provides an alternative way to transport children to school. A parent can be responsible for accompanying a group of children to school by utilizing the bicycle and pedestrian system in Jacksonville.

Community leaders, parents and schools across the U.S. are using Safe Routes to School programs to encourage and enable more children to safely walk and bike to school. The National Center for Safe Routes to School aims to assist these communities in developing successful Safe Routes programs and strategies. The Center offers a centralized resource of information on how to start and sustain a Safe Routes to School program, case studies of successful programs as well as many other resources for training and technical assistance. For more information on Safe Routes to School, refer to the ‘Encouragement Resources’ section below.

Awareness Days/Events

A specific day of the year can be devoted to a theme to raise awareness and celebrate issues relating to that theme. A greenway and its amenities can serve as a venue for events that will put the greenway on display for



Fig. 5-5. Art sculptures surround the Reedy Creek Greenway in Raleigh, NC.

the community. Major holidays, such as July 4th, and popular local events serve as excellent opportunities to include bicycle and pedestrian information distribution. The following are examples of other national events that the City of Jacksonville can use to improve usage of bicycle and pedestrian facilities:

Walk to Work Day/International Car Free Day (September 22)

Designate one day a year for people to walk to work to help advance programs, promote active living, and raise awareness for environmental issues. Walk to Work Day can be at the end of an entire week or month of bicycle and pedestrian promotional activities, including fitness expos, walking and jogging group activities, running and bicycling races and rides, etc.

“Strive Not to Drive Day”

This event example, from the Town of Black Mountain, NC is an annual event to celebrate and promote the Town’s pedestrian achievements for the year throughout their region. Awards for pedestrian commuters, as well as booths, contests, and other events are organized through their local MPO Bicycle and Pedestrian Task Force and the Land-of-Sky Regional Council. A similar event could be held in Jacksonville, as the Bicycle and Pedestrian Plan is implemented.

National Trails Day

This event is held every year in June. Other events, competitions, races, and tours can be held simultaneously to promote trail use within Jacksonville. The Greensboro Parks and Recreation-Trails Division, for example, sponsors National Trails Day for the City of Greensboro, NC every year and it has become a huge event for the City.

Earth Day

Earth Day is April 22nd every year and offers an opportunity to focus on helping the environment. Efforts can be made to encourage people to help the environment by walking to destinations and staying out of their vehicles. This provides an excellent opportunity to educate people of all ages in Jacksonville.

Use Facilities to Promote Other Causes

Network facilities, especially trails, could be used for events that promote other causes, such as health awareness. Not only does the event raise money/publicity for a specific cause, but it encourages and promotes healthy living and an active lifestyle, while raising awareness for bicycle and pedestrian activities. Non-profit organizations such as the American Cancer Society, American Heart Association, and the Red Cross sponsor events such as Breast Cancer Walk, Diabetes Walk, etc.

Bicycle and Pedestrian Activities/Promotion within Local Organizations

The City of Jacksonville has numerous organizations that

could be utilized to promote bicycle and pedestrian activities (e.g., the YMCA, local schools/PTAs, neighborhood groups, homeowners associations, etc.). Education, enforcement, and encouragement programs can be advertised and discussed in local organization newsletters, seminars, and meetings. Such organizations could even organize their own group walks, trail clean-ups, and other activities listed in this section.

Art in the Landscape

The inclusion of art along bicycle/pedestrian corridors and trails would encourage use of facilities and provide a place for artwork and healthy expression to occur. Artwork could be displayed in a variety of ways and through an assortment of materials. Living artwork could be “painted” through the design and planting of various plant materials. Sculpture gardens could be arranged as an outdoor museum. Art through movement and expression could be displayed during certain hours during the day or during seasonal events. An “Art Walk” could be established as an event featuring destinations throughout the City that display local art. Artwork can be provided by local schools, special interest clubs and organizations, or donated in honor or memory of someone.

Walking/Running Clubs

Neighborhoods, local groups, or businesses could promote walking or running clubs for local residents or em-

ployees to meet at a designated area and exercise on certain days before or after work, during lunch breaks, or anytime that works for the group. This informal group could be advertised on local bulletin or information boards. These clubs could be specialized to attract different interest groups. Examples include:

- Mother’s Morning Club (mom’s with strollers)
- Walking Wednesdays (senior groups)
- Lunch Bunch (office workers who run during their lunch hour)

Adopt-A-Trail

Local clubs and organizations provide great volunteer services for maintaining and patrolling trails. This idea could be extended to follow tour routes or specified streets/sidewalks. A sign to recognize the club or organization could be posted as an incentive to sustain high quality volunteer service. The Boy Scouts of America serve as a good model for participation in this type of program.

Revenue Generating Programs

The City of Jacksonville should be proactive in increasing revenue from programs and events that can help fund the building, management, and maintenance of future facilities. Fees could be increased in events annually or biannually to increase revenue. Specific program and event ideas that are being used to generate revenue



Fig. 5-6. A Safe Routes to School event in Durham, NC.

across the country include:

- Races/triathlons (fees and/or donations)
- Concessions
- Educational walks/Nature walks/Historic walks (fees and/or donations)
- Fund-raisers including dinners/galas
- Moonlight bike rides and walks (fees and/or donations)
- Greenway parade (fees and/or donations)
- Concerts (fees and/or donations)
- Art events along greenway (fees and/or donations)
- Events coincident with other local events such as fairs, festivals, historic/folk events, etc.
- Media events and ribbon-cuttings for new walkways (donations)

Table 5-2.

Priority Encouragement Actions	
Action	Responsible Agency
Encourage Jacksonville employers to provide programs and incentives for their employees to walk or bicycle to work	City of Jacksonville; Jacksonville-Onslow Economic Development Commission; Onslow County Health Department; Bicyclist & Pedestrian Advocacy Group
Encourage children to walk or bicycle to school safely through a combination of programs listed under encouragement resources	City of Jacksonville Parks and Recreation Department; Onslow County Schools; Bicyclist & Pedestrian Advocacy Group
Establish awareness days	City of Jacksonville Parks and Recreation Department; Bicyclist & Pedestrian Advocacy Group
Encourage the establishment of walking and bicycle clubs	Neighborhood groups; Health clubs; Bicyclist & Pedestrian Advocacy Group
Use bicycle and pedestrian facilities, particularly trails, to promote causes and hold special events for causes	Non-profit groups; Bicyclist & Pedestrian Advocacy Group
Utilize greenways for artwork and plantings	City of Jacksonville Parks and Recreation Department; Bicyclist & Pedestrian Advocacy Group

Encouragement Resources

Safe Routes to School is a national program with \$612 million dedicated from Congress from 2005 to 2009. Local Safe Routes to School programs are sustained by parents, community leaders, and citizens to improve the health and well-being of children by enabling and encouraging them to walk and bicycle to school. Recently, the state of North Carolina has started the NC Safe Routes to School Program based off of the national program. The state has \$15 million over the next 5 years for infrastructure improvements within 2 miles of schools. This funding can also be used towards the development of school related programs to improve safety and walkability initiatives. The state requires the completion of a competitive application to apply for funding and a workshop at the school to determine what improvements are needed. <http://www.saferoutesinfo.org>

National Walk our Children to School Day is usually held in October with the objective to encourage adults to teach children to practice safe pedestrian behavior, to identify safe routes to school, and to remind everyone of the health benefits of walking. To register walking events in Jacksonville, go to the main webpage, and follow the International Walk to School links: www.walktoschool-usa.org

Walk a Child to School in North Carolina. Forty years

ago, half of all U.S. school children walked to school. Today, according to the Centers for Disease Control, only an estimated 10 percent walk to school. In many communities, as much as 30 percent of morning commuter traffic is generated by parents driving their children to school. These traffic habits and children's lifestyle choices can have serious consequences. Traffic jams around our schools foul the air, waste fuel, and create safety problems for children. In addition, the U.S. Surgeon General recently reported that 13% of children aged 6 to 11 years and 14% of adolescents aged 12 to 19 were overweight in 1999. This statistic has nearly tripled in the past two decades for adolescents. A growing number of community groups throughout the nation, such as health professionals, 'Smart Growth' advocates, traffic safety groups, local PTAs, and elected officials, are promoting walking to school initiatives. In North Carolina, Walk a Child to School Programs have gained a foothold and are growing each year. To date more than 5,000 students in 12 communities in the state have participated. <http://www.walktoschool.org>

Preventing Pedestrian Crashes: Preschool/Elementary School Children provides information to parents on pedestrian risks for preschool and elementary school children. Information about the Safe and Sober Campaign is available on the NHTSA website. www.nhtsa.dot.gov/people/outreach/safesobr/15qp/web/sbprevent.html

Kidswalk-to-School is a resource guide to help communities develop and implement a year-long walk-to-school initiative; sponsored by the Centers for Disease Control and Prevention.

www.cdc.gov/nccdphp/dnpa/kidswalk/kidswalk_guide.html

The following two links are for model bicycle coops in North Carolina that encourage the use of the bicycle as a mode of transportation and recreation. They are located in Carrboro, NC and Durham, NC, respectively: <http://www.recyclery.info/> and <http://www.durhambike-coop.org/>.

This web page from the League of American Bicyclists has information on encouraging bicycle commuting: <http://www.bikeleague.org/resources/better/commuters.php>

The role of the Active Living Resource Center (ALRC) web site is to provide resources and tools to help make walking and bicycling part of your community's healthy lifestyle. This page of the website has encouraging success stories from other communities: http://www.active-livingresources.org/stories_directory.php

Bikes Belong is sponsored by the U.S. bicycle industry with the goal of putting more people on bicycles more

often. From helping create safe places to ride to promoting bicycling, they carefully select projects and partnerships that have the capacity to make a difference. Their work concentrates on four main areas:

Federal policy and funding, national partnerships, community grants, and promoting bicycling. In addition, they operate the Bikes Belong Foundation to focus on kids and bicycle safety. <http://www.bikesbelong.org/>

5.1.3 Enforcement

Motorist Enforcement

Based on crash data analysis and observed patterns of behavior, law enforcement can use targeted enforcement to focus on key issues such as motorists speeding, not yielding to pedestrians in crosswalks, parking on sidewalks, etc. According to a 2007 FHWA study (see Appendix F), enforcement of speed limit results in a 70% crash reduction. Sidewalk parking, for example, is often not enforced but should be in order to maintain pedestrian accessibility, avoid maintenance issues, and comply with local ordinances. All of these key issues should be targeted and enforced consistently. The goal is for bicyclist, pedestrians, and motorists to recognize and respect each other's rights on the roadway.

As traffic continues to increase on North Carolina's streets and highways, concern has grown over the safety



Fig. 5-7. Bicycle patrol in Greenville, SC.

of our children as they walk to and from school. At the same time, health agencies, alarmed at the increase in obesity and inactivity among children, are encouraging parents and communities to get their children walking and biking to school. In response, the Division of Bicycle and Pedestrian Transportation funded a study on bicycle and pedestrian issues, including school zone safety, and decided to establish a consistent training program for law enforcement officers responsible for school crossing guards. According to the office of the North Carolina Attorney General, school crossing guards may be considered traffic control officers when proper training is provided as specified in GS 20-114.1.

Bicycle and Pedestrian Enforcement

Observations made by local trail, bicycle, and pedestrian facility users can be utilized to identify any conflicts or issues that require attention. To maintain proper use of trail facilities, volunteers could be used to patrol the trails, particularly on the most popular trails and on days of heavy use. The volunteer patrol can report any suspicious or unlawful activity, as well as answer any questions a trail user may have. The volunteer patrol could be a responsibility of the bicycle and pedestrian advocacy group. When users of the bicycle and pedestrian network witness unlawful activities, they should have a simple way of reporting the issue to police. A hot line should be created, which would complement trail patrol programs. People could call in and talk to a live opera-

tor or to leave a voice mail message about the activity they witnessed. Accidents could also be reported to this hot line. Accident locations could then be mapped to prioritize and support necessary facility improvements.

Table 5-3.

Priority Enforcement Actions	
Action	Responsible Agency
Target and enforce all illegal motorist, bicyclist, and pedestrian behavior that may jeopardize the success of the Bicycle and Pedestrian Network	City of Jacksonville Police Department
Require all crossing guards to complete an NC DOT Crossing Guard Training Program	City of Jacksonville Police Department
Establish a crossing guard program for peak school hours	City of Jacksonville Police Department; Onslow County Schools in Jacksonville
Establish a local "Trail Patrol"	Community groups; City of Jacksonville Parks and Recreation Department
Establish an enforcement hotline	City of Jacksonville Police Department

Enforcement Resources

NCDOT School Crossing Guard Program

<http://www.ncdot.org/transit/bicycle/safety/programs/initiatives/crossing.html>

NCDOT's A Guide to North Carolina Bicycle and Pedestrian Laws.

For an online resource guide on laws related to pedestrian and bicycle safety (provided by the National Highway Traffic Safety Administration), visit:

www.nhtsa.dot.gov/people/injury/pedbimot/bike/resourceguide/index.html

The National Highway Traffic Safety Administration (NHTSA) awarded a grant to MassBike to develop a national program to educate police departments about laws relating to bicyclists. The program is intended to be taught by law enforcement officers to law enforcement officers as a stand-alone resource. The link contains downloads for presentations, videos, and other resources that are useful for police officers and everyday cyclists alike: <http://www.massbike.org/police/>

This webpage of the Pedestrian and Bicycle Information Center has a wealth of resources regarding enforcement issues, ranging from training for local law enforcement to procedures from handling violators, to enforcement example case studies: <http://www.bicyclinginfo.org/en->

[forcement/](#)

5.2 Policy Recommendations

While the physical recommendations described in Chapters 3 and 4 represent an overall bicycle and pedestrian network, strong policies and regulations are also necessary to ensure these facilities are developed, especially for new growth in Jacksonville. The purpose of this task is to evaluate existing Jacksonville policies and ordinances to determine how these documents support bicycling and walking. Existing land use policies, codes, and other documents were reviewed to identify areas where conflicts exist or new concepts can be adopted. This section summarizes these findings and makes recommendations for the City on which local codes, ordinances, and policies should be strengthened. These items should be integrated into the new 2008 Unified Development Ordinance (which was under Draft during the time of this Plan's development). Relevant federal and state policies can be found in Appendix G.

The chart on the following page summarizes the top priority items discussed in detail in the following sections.

Summary of Policy Recommendations		
<i>Policy</i>	<i>Action</i>	<i>Responsible Party</i>
Update Portions of Growth Management Plan	<ul style="list-style-type: none"> • Better address and consider Complete Streets policy that includes not only pedestrian facilities, but also bicycle facilities and greenways. • Make bicycle facilities, pedestrian crossing facilities, and off-road greenway facilities (that can provide multiple benefits) a higher priority. 	City of Jacksonville
Update Portions of Subdivision Ordinance (to be included in new UDO)	<ul style="list-style-type: none"> • Require all new development to dedicate pedestrian and bicycle facilities • Require mandatory dedication of greenway facilities for all development when on adopted Plan, including this Bicycle and Pedestrian Plan. • Provide fee-in-lieu options for sidewalk and greenway development. • Provide stronger language for the inclusion of bicycle, pedestrian, and public transit as transportation methods. • Provide stronger language to enhance bicycle and pedestrian mobility and connectivity between subdivisions and different land uses and destinations. 	City of Jacksonville
Update Portions of Zoning Ordinance (to be included in new UDO)	<ul style="list-style-type: none"> • Consider multi-modal transportation options when conducting a Transportation Impact Analysis • Create connectivity policy to extend pedestrian and bicycle facilities to other land uses • Create bicycle parking requirements with development 	City of Jacksonville
Adopt Complete Streets Policy Language	<ul style="list-style-type: none"> • All new roadways should be designed and engineered to accommodate all modes of transportation, including bicycle, pedestrian, and public transit. 	City of Jacksonville

5.2.1 Growth Management Plan

The Growth Management Element updates and supplements the City's Comprehensive Plan and establishes priorities for integrating the goals and policies of all Plan Elements. It was adopted in 2007. A review of the document provides the following analysis and recommendations. The analysis is divided into the sections of the Growth Management Plan.

Purpose and Background

One of the goals of this Plan is to "improve the physical environment of the community for human activities and the protection of natural resources." Another is to "protect the public health, safety and welfare, and promote the common good." These generally speak to improving the bikability and walkability which address healthier, more active living. Within these goals is an opportunity to more specifically address health and physical activity, along with specific mention of alternative transportation.

Community Challenges

A list of challenges is presented that could be improved to consider alternative transportation improvements, specifically greenways and bicycle facilities.

- One challenge is "*the need to minimize traffic congestion from external development and inefficient growth patterns.*" Within this

paragraph is no mention of alternative transportation. This is an important opportunity to present this as a legitimate means to reduce automobile traffic. More connected facilities, mixed-use development, and encouragement programs can increase the alternative transportation mode share.

- Another challenge is "*to promote development of quality urban and suburban neighborhoods.*" This does a fair job by stating the City should ensure that new neighborhoods have adequate infrastructure for recreation (e.g., parks and open space) and pedestrian/bicycle traffic. "Greenways" should be specifically mentioned.
- Two challenges address pedestrian facilities but not bicycle and greenway facilities. This presents a desire for sidewalk improvements but not "complete street" improvements that include bicycle lanes.
- One of these challenges is "*the need to provide opportunities for attainable housing.*" Upgrades to sidewalks, curbs, streetscapes, and street lighting are mentioned. Bicycle lanes, greenways, and/or shoulders are excluded and should be included here.

- The second challenge is *“the need to revitalize and rehabilitate the Downtown.”* The paragraph contains the statement: *“The community should retain high aesthetic standards and maintain the underlying infrastructure (streets, sidewalks, etc.)”* Again, bicycle facilities and greenways are not listed and should be considered an important part of infrastructure.
- Another challenge is *“the need to develop and encourage attractive gateways.”* These are very important as current entryways lack any aesthetic. Streetscape and signage improvements are recommended but overall improvements for pedestrian and bicycle facilities are not mentioned. These should be included with an emphasis on traffic calming and safer pedestrian and bicycle crossings.
- The final challenge is *“the need to maintain and improve community character by providing adequate parks and recreation facilities, libraries, schools, and cultural facilities and public art.”* This is a great concept but bicycle, pedestrian, and greenway facilities should be specifically mentioned.

Background Assessment

A list of strengths, weaknesses, opportunities, and threats (SWOT) is provided within this Plan. Appropriately, a *“lack of pedestrian facilities within new development”* and a *“lack of coordinated pedestrian facilities”* are listed as weaknesses. Another specific weakness that should be mentioned is a lack of adequate pedestrian crossing facilities at intersections. Again, bicycle and/or greenway facilities are excluded. While there is a lack of connectivity in pedestrian facilities, there are virtually no on-road bicycle facilities in Jacksonville. This should be regarded as an important weakness. Under the list of “Opportunities” should be the inclusion of pedestrian and bicycle facilities with roadway construction and closing gaps in the current sidewalk network, including making relatively inexpensive yet very necessary pedestrian crossing improvements.

Within the “Level of Service” section, numerous items are addressed including Road Facilities. A bicycle level of service should be developed for the area’s roadways along with a consideration of greenways.

Recommended Goals and Policies

A long section of goals and policies covers multiple categories including Community Growth and Development, Economic Development, Community Image, Community Facilities, and Natural Resources. Those goals and poli-

cies addressing bicycle, pedestrian, and greenway issues are pulled out and discussed below.

Community Growth and Development

Goal 2: Promote land use compatibility.

This goal contains numerous excellent policies that address pedestrian access to shopping, housing, schools, parks, and adjacent neighborhoods.

Policy 2.2: Encourage commercial developments that provide for a pedestrian-friendly environment by including requirements and voluntary incentives within zoning and subdivision regulations that allow for the provision of open space, plazas, and streetscape treatments.

Policy 2.5: Adopt standards that create attractive neighborhoods with a variety of housing types and convenient access to adjacent neighborhoods, parks, schools and neighborhood shopping.

Policy 2.6: Plan and provide for active and passive recreational facilities and opportunities to meet existing and projected needs of neighborhoods.

Policy 2.7: Pursue the compatible co-location of facilities by locating new public facilities as near as possible to existing and proposed community facilities, including parks, recreational centers, community centers, schools, galleries, libraries, and health centers.

Policy 2.8: Design schools, parks and neighborhood shopping areas to be accessible to neighborhood residents via tree-lined sidewalks and bikeways.

Recommendations:

- **Add attractive and efficient bicycle parking options.**
- **Include “traffic calming” and “Complete Streets” policy as a means of connecting land uses and encouraging bicycle and pedestrian travel.**

Goal 3: Coordinate extra-territorial development with Onslow County to facilitate long-term growth, provide equity for property owners and protect existing property owners from bearing the costs of growth.

While not specifically addressing bicycle and pedestrian facilities, this is critical to maintain common standards and maintenance for bicycle lanes, greenways, and sidewalks across City and County boundaries to provide connectivity. City and County cooperation will be important for construction of new facilities that cross political lines.

Policy 3.3: Seek mutually acceptable standards for public facilities and services with Onslow County to ensure that

services can be provided relatively seamlessly across jurisdictional boundaries. While service standards should be the same for similar types of development, regardless of the location of development, they should differentiate the type of planned development (urban, suburban or rural).

Policy 3.4: Coordinate City capital improvements plans with those of the County, school districts and other service providers to more efficiently serve the community.

Goal 5: Foster a vibrant mixed-use downtown that retains the character of existing commercial and residential neighborhoods.

This goal addresses improvements to the Downtown area. It effectively contains policies to improve pedestrian facilities and amenities within and away from Downtown.

Policy 5.7: Increase and maintain pedestrian, cultural and artistic amenities (e.g., streetscape, public art, public buildings, etc.) to attract residents and visitors to the downtown area.

Policy 5.10: Provide enhanced pedestrian amenities and streetscape improvements, and maintain more stringent design standards for the downtown than in other commercial areas of Jacksonville. Enhance pedestrian connections between downtown commercial areas and adjacent neighborhoods.

Recommendations:

- **Include bicycle facilities (connected bicycle lanes and bicycle parking options), not just pedestrian facilities.**
- **Include “traffic calming” and “Complete Streets” policy as a means of safely connecting land uses and encouraging bicycle and pedestrian travel.**

Goal 6: Protect critical neighborhood (local business) commercial and regional (highway) commercial corridors and gateways to encourage land use compatibility and improve corridor function and appearance.

This goal is significant in that it addresses corridors that traverse multiple land uses. Policies and goals related to pedestrian and bicycle access are listed below:

Policy 6.1: The City should act to protect and preserve key Neighborhood Commercial corridors and roadway segments, as shown in Exhibit 24, in conjunction with the Transportation Plan update and revisions to the development regulations, that incorporate the following:

- Adopt congestion management principles that increase vehicular and pedestrian safety and reduces the number of access points;

- Emphasize the pedestrian element, including sidewalks and scale;
- Limit outdoor storage and display;
- Establish setbacks that balance the right-of-way needs with the scale of future development along the corridor;
- Establish minimum lot sizes to encourage multi-parcel consolidation and redevelopment;
- Discourage parking within the right-of-way;
- Establish neighborhood-scale signage controls.

Policy 6.3: The review of commercial development proposals along key corridors may consider reduced setbacks, parking requirements and landscaping (so long as there is an increased street lawn) requirements to promote redevelopment activities, pedestrian-oriented design and pedestrian-friendly parking areas and to consolidate drives and access points.

Policy 6.4: Encourage and support redevelopment activities in the New River area.

- Provide incentives to promote infill and redevelopment projects. Incentives might include reduced application fees, accelerated review timelines and flexibility of design standards with regard to setbacks and parking requirements.
- Encourage redevelopment that incorporates

regional commercial uses for the existing New River Shopping Center.

- The review of commercial development proposals may consider incentives that promote the upkeep of low income housing and the redevelopment for multi-family housing and promote pedestrian-oriented design.

Recommendations:

- **Include bicycle elements and design (connected bicycle lanes and bicycle parking options), not just pedestrian elements and design.**
- **Include “traffic calming” and “Complete Streets” policy as a means of safely connecting land uses and encouraging bicycle and pedestrian travel.**
- **Include a “green bonus” for projects which address multiple benefits with minimal negative impacts.**

Goal 7: Increase neighborhood stability through collaborative code enforcement, provision of public amenities (e.g., sidewalks, green-space, streetscaping), and effective compatibility standards.

This is an excellent goal and policy for bicycle and pedestrian improvements. Again, this speaks to a standard that a “Complete Streets” policy can encompass.

Policy 7.7: Encourage residential and non-residential designs that facilitate walking, bicycling, and transit use, rather than increasing reliance on automobiles.

Community Image

Goal 14: Improve the visual image of Jacksonville and enhance the appearance of gateways and corridors through partnerships between the City, State and property owners.

Improving the appearance of Jacksonville requires a multi-prong approach. On-road and off-road bicycle and pedestrian corridors are a very valid approach to this issue. For example, the new greenway overpass over NC 24 is a very effective visual for off-road corridors.

Policy 14.13: Promote design that facilitates compatible inclusion of the following elements in residential neighborhoods:

- Neighborhood-based serving commercial;
- Compatible mixes of types and sizes of structures;
- Compatible mixes of densities;
- Interconnected streets and dispersed traffic

- pattern;
- Sidewalks; and
- Street tree canopies.

Policy 14.14: Promote positive design through the inclusion of the following elements in commercial and mixed use areas:

- Compact buildings of similar mass and scale which create a street wall;
- Mixtures of coordinated architectural styles;
- Pedestrian and transit supportive orientation to the street;
- Integration of a mix of mutually supportive uses;

Recommendations:

- **Include bicycle elements and design (connected bicycle lanes and bicycle parking options), not just pedestrian elements and design.**
- **Again, consider “Complete Streets” policy language that addresses aesthetics, landscaping, gateway signage and educational information, and safety.**

Community Facilities

Goal 16: Provide for appropriate levels of services throughout the City's service area.

This section addresses adequate facility policies for new development. This section offers tremendous opportunity to re-emphasize levels of service and bicycle/pedestrian connectivity. The single policy that includes these elements specifically is Policy 16.6, addressing schools.

Policy 16.6: Coordinate with the school district to ensure that new school sites can be adequately served by existing and planned infrastructure (including, streets, sidewalks, water, wastewater, stormwater and public safety facilities and services).

Recommendations:

- **Include bicycle elements as important infrastructure**
- **Add policy statement for improving level of service (connectivity and infrastructure) for bicyclists and pedestrians to reach more destinations including commercial hubs, office parks, recreational parks, and residential areas.**
- **Again, consider "Complete Streets" policy language that provides a more complete**

level of service for all transportation types.

- **Add specific language for Bicycle Level of Service standards (having a bicycle facility within 1 mile of all residents in Jacksonville and improving roadways to have better Bicycle Level of Service grades).**

Goal 18: Develop a street system that safely and effectively serves all users, including pedestrians and bicyclists.

This excellent goal speaks most directly to developing a transportation system that encompasses all users. It contains five policies listed to achieve this goal including a continuous network of pedestrian ways, bicycle trails, and bicycle lanes.

Policy 18.1: Establish a continuous network of pedestrian ways, bicycle trails and bike lanes as an integrated part of the transportation system which connects residential neighborhoods, commercial development, employment centers and public facilities.

Policy 18.2: Continue the development of the City's trail system in conjunction with the development review process and pursue public and private funding options for trail way acquisition and expansions.

Policy 18.3: To the extent feasible, separate bicycle and

pedestrian traffic from automotive traffic. Where trails can safely be accommodated, use existing railroad rights-of-way, utility corridors and drainage ways.

Policy 18.4: Enhance pedestrian circulation and accessibility in the downtown area through streetscape improvements and pedestrian amenities.

Policy 18.5: Coordinate street improvements with pedestrian, bicycle, rail, and airport improvements, as well as public utility projects.

Recommendations:

- **Add bicycle parking at destinations including commercial, office, and mixed-use centers to encourage bicycle use.**
- **Include “Complete Streets” policy approach that integrates bicycle and pedestrian facilities into all roadway and public works projects.**

Goal 19: Coordinate development and street improvements to maintain acceptable traffic flows and to minimize delays due to traffic congestion.

This important goal is satisfactory in that it encourages alternative transportation as an option to reduce automobile trips.

Policy 19.2: Encourage alternatives to single-occupancy automobile trips in Jacksonville by promoting:

- Ridesharing, vanpooling, telecommuting and flexible scheduling as a means of reducing demand for increased roadway and parking capacity. Provide incentives for employers who implement effective transportation demand management programs.
- Development designs that support future transit service.
- Street, trail, residential and non-residential development designs that enhance safe pedestrian and bicycle access through the City.

Goal 21: Provide a superior system of parks facilities and programs that serve neighborhood and community recreational needs.

This goal contains Policy 21.5 below that specifically addresses connectivity of parks.

Policy 21.5: Ensure that neighborhood and community parks have safe linkages to surrounding neighborhoods for pedestrians and bicyclists.

Recommendations:

- Use “greenway” language as well. Greenways, as linear parks, provide a safe, recreational alternative for connecting parks to parks and neighborhoods to parks. Greenways are the more appealing and favorable connection for novice pedestrians and bicyclists.

Natural Resources

Goal 24: Preserve and protect resources essential to sustain a healthy environment, including floodplains, river and stream corridors and woodland habitats.

This goal provides a number of excellent policies to protect the environment and minimize the impacts of human activity. Two specific policies most directly relate to greenways:

Policy 24.7: Incorporate green infrastructure in the City’s Parks and Trails Master Plan.

Policy 24.8: Encourage the increased development of greenways and green infrastructure as a means to protect water quality and reduce damage from stormwater runoff.

Recommendations:

- Greenways should be regarded as the “highest and best use” of floodplain land, as they create a multi-functional landscape that is beneficial to the entire community. Greenways should be defined as multi-functional utilities that provide a linear ecological, recreational, educational, and transportation facility and service. Greenways provide stream buffers, protect water quality, enhance property values, connect destinations, create recreational options, and accommodate pedestrian and bicycle traffic. Also, with the installation of dual purpose trails/maintenance roads, the floodplains would be fully accessible for flood management purposes. Within floodplain and other environmentally sensitive areas, alternative trail surfaces such as permeable paving may be considered.
- An additional policy item that should be included is: “To improve air quality by reducing pollution and fossil fuel used for transportation by encouraging walking, bicycling, and transit.”

Implementation Strategies Matrix

The final section of the Growth Management Plan is the Implementation Strategies Matrix which is composed of tasks by priority (for a total of five priorities). This is an opportunity to show that the City is committed to improving bicycle and pedestrian connectivity by making it a higher priority. Bicycle and pedestrian facilities are addressed very well in priority levels of 2, 4, and 5. Some of these priority statements can be combined together so that trail, sidewalk, and bikeway improvements are not the final items in the fifth and final priority grouping. Listing these improvements at the bottom of the matrix shows a lack of commitment and priority for these tasks.

2.12 Prioritize bike and hiking trail segments based on recreational and transportation benefits. Coordinate development of trails with appropriate entities.

2.13 Adopt code standards addressing alternative street designs, connectivity of streets and trails, and potential mass transit stops.

2.23 Develop neighborhood design guidelines to promote neighborhood stability and security. Guidelines should address relationships between different public and private land uses, including buildings, driveways, sidewalks, trails, streets and drainageways.

2.51 Revise the parks and open space fee for new development that includes provisions for in-lieu dedication of land. Adopt standards enabling the dedication of desirable parks, open space and trail segments in lieu of park or open space fees provided that the proposed dedication is consistent with City Plans for the respective facility.

4.06 Designate and post signs for on-street bicycle routes and lanes.

5.04 Expand the off-street trail network to provide recreational and commuter routes throughout the community to community facilities (e.g., library, schools, parks, museums, etc.) and other activity centers (e.g., major retail and employment centers).

5.05 Incorporate sidewalks, landscaping and appropriate lighting and bikeway improvements into all roadway improvement projects.

Recommendations:

- **Move priority statements 5.04 and 5.05 into the second priority level with 2.12.**
- **Move priority statement 4.06 into second priority level with 2.12. Signage for greenways should be included here, in addition to bicycle routes and lanes (of**

which there currently are none). Additional greenway signage is relatively inexpensive and can increase visibility of bicycle and pedestrian network.

5.2.2 Subdivision and Zoning Ordinances

During the time of this planning effort, a Unified Development Ordinance (UDO) was being drafted, that will supersede the pre-existing Zoning and Subdivision Ordinances. Recommendations to the Subdivision and Zoning Ordinances provided below should be translated to the new UDO.

Subdivision Ordinance

Specific statements, related to bicycle and pedestrian travel, have been pulled from the subdivision ordinance. Recommendations are provided immediately following each statement.

Article I: Purpose

This section is important because it sets the tone for planning and development in Jacksonville. It is meant to be a very general, blanket statement of the purpose of this ordinance. Health and safety are significant issues for bicycling and walking - and they are explicitly mentioned in the first paragraph of the subdivision ordinance as follows:

“The purpose of this regulation is to regulate and con-

trol the subdivision of land within the corporate limits and extraterritorial jurisdiction of the City of Jacksonville in order to promote the public health, safety, and general welfare of the community.”

Another statement which adds to the above intent and provides significant support to this planning effort is:

“It is designed to lessen congestion in the streets and highways.....; to facilitate adequate provision for transportation, water, sewerage, schools, playgrounds, parks, and other public requirements.”

Recommendation:

Add “(automobile, public transit, pedestrian, and bicycle)” after transportation to indicate all transportation methods are considered.

Article VIII. Official Plans and Community Facilities

This section is an important opportunity to ensure that bicycle and pedestrian facilities are integrated into Jacksonville’s planning and development process. Currently this section is limited compared to other communities’ subdivision ordinances. Within the UDO, this is an important portion that can address pedestrian and bicycle facilities specifically. First, the current subsections are described. Second, a new section for Bicycle and Pedestrian Mobility is recommended.

B. Thoroughfares. “When a tract to be subdivided includes any part of a thoroughfare plan, collector street plan, or official transportation plan, such part of the planned public way shall be platted and dedicated by the subdivider in the location and at the width planned.”

Recommendation:

Add “(including bicycle, pedestrian, greenways, and trails plans)” after “official transportation plan.”

C. Transportation Impact Analysis. All subdivisions shall comply with the provisions of Section 113. Transportation Impact Analysis of the City of Jacksonville Zoning Ordinance.

Recommendation:

See Zoning Ordinance section

D. Recreation and Open Space

A statement should be added to the introduction paragraph saying, “*When a tract to be subdivided includes any part of a greenway, bicycle, or pedestrian plan and/or floodplain, such part of the planned public way shall be platted and dedicated by the subdivider in the location and at the width planned.*”

2. Standards.

In addition, to the existing text, a statement should be made to define “usable open space.”

“Usable open space includes: All-weather walking paths, bicycle trails, benches, picnic tables, shelters, gazebos, play areas, play equipment, etc.”

The following recommended section is an addition to the article “Official Plans and Community Facilities.” This is modeled after the Durham, NC UDO with additional language.

Bicycle and Pedestrian Mobility

General

A. Sidewalk, walkway, on-road improvements, and trail systems sufficient to serve both existing and projected pedestrian and cyclist needs shall be labeled on all site and subdivision plans. Such systems shall be designed to connect with all elements within the development, adjacent areas, and transit stops and may include sidewalks along public or private streets, wide outside travel lanes, bike lanes on roadways, and walkways and trails in alternative locations as appropriate. Design, location, dimensions, dedications, easements, and reservations shall conform to applicable City and County policies and plans for sidewalks, bicycle routes, and trails.

B. Walkways, bikeways and trails shall be designed to maximize the safety of users and the security of adjoining properties with respect to location, visibility, and landscaping.

Sidewalk Requirement

Unless the Planning and Development Services Director approves an alternate walkway, a conventional sidewalk shall be provided along streets within the right-of-way as shown in the table below unless the approving authority determines that the cost of providing the required sidewalks is disproportionate to the cost of the proposed development. In such cases a portion of the required sidewalk may be required or the requirement may be waived, at the discretion of the approving authority. Further adjustments to this location, if required, may be allowed by the Public Works Director, or designee during construction.

Bikeway Requirement (based on the national “Complete Streets” policy model).

Bicycle facilities shall be established in accordance with the Jacksonville Comprehensive Bicycle and Pedestrian Plan in new construction and reconstruction projects in all urbanized areas unless one or more of three conditions are met:

1. Bicyclists and pedestrians are prohibited by law from using the roadway. In this instance, a greater effort may be necessary

to accommodate bicyclists and pedestrians elsewhere within the right of way or within the same transportation corridor.

2. The cost of establishing bikeways or walkways would be excessively disproportionate to the need or probable use. Excessively disproportionate is defined as exceeding twenty percent of the cost of the larger transportation project.
3. Where sparsity of population or other factors indicate an absence of need. In rural areas, paved shoulders should be included in all new construction and reconstruction projects on roadways used by more than 1,000 vehicles per day.

Greenway Requirement

“The development of a network of greenways (or multi-use paths) that connect active and passive parks, schools, cultural sites, neighborhoods, and commuter destinations is required. [In any case in which a greenway is indicated on an adopted plan of the City of Jacksonville (including this Bicycle and Pedestrian Plan) as being located on lands proposed for development, such greenway shall be dedicated and developed.] All other developments shall have either a greenway or a connection to the greenway.”

Article XIII. Design Standards

This section deals with streets, lots, setbacks, easements, and fire hydrants. The Streets section simply refers to meeting “the requirements of the City of Jacksonville Manual of Specifications, Standards and Design.” For pedestrian and bicycle facilities, refer to Chapter 7, Design Guidelines of this plan. At a minimum, a general statement should be included with the following text:

“Sidewalks, bikeways, and shared use trails and paths will be designed in accordance with the AASHTO Bicycle and Pedestrian Guidelines and NCDOT guidelines.”

Zoning Ordinance

A review of the zoning ordinance is provided below to highlight areas where potential policy recommendations can result in improved conditions for pedestrians and bicyclists, and areas where modifications to sections could still be updated and included in the new UDO. The zoning ordinance has a solid base of support for walking and bicycling. The potential for mixed-use development, special overlay districts, and significant mention of greenways, trail, and sidewalk demonstrate support for non-motorized travel. Specific sections and suggested improvements include:

Section 102. Parking Requirements
The overall purpose is described in Part A. “These

regulations are intended to provide off-street parking, stacking and loading facilities in proportion to the need created by each use. These regulations are intended to provide for accommodation of vehicles in a functionally and aesthetically satisfactory manner and to minimize external effects on adjacent land uses.”

There is no specific mention of bicycle parking within this section. This should be improved to include bicycle parking ordinances. As discussed later, vehicles include both automobiles and bicycles.

The following is Bicycle Parking ordinance language used in other communities and recommended here for the new UDO:

10.3.3 Minimum Required Bicycle Parking

- A. Multifamily residential uses shall provide bicycle parking at the rate of one bicycle parking space for every 20 motorized vehicle spaces; however, no more than 100 total bicycle parking spaces shall be required for any single development.**
- B. Nonresidential uses with an off-street parking requirement for motorized vehicles of at least 15 spaces and not more than 40 spaces shall provide a minimum of two bicycle parking spaces.**
- C. Nonresidential uses with an off-street**

parking requirement greater than 40 spaces shall provide bicycle parking spaces equal to 10% of the total number of spaces required up to 100 spaces.

- D. Uses within the Downtown Tier that provide parking for motorized vehicles shall also provide parking for bicycles.

10.3.4 Conversion of Motorized Spaces to Bicycle Parking

During the site plan approval process, the Technical Review Committee and/or Planning Board may allow a new or a pre-existing development to convert up to 5% of its motorized vehicle spaces to non-required additional bicycle parking, as long as the spaces are conveniently located near a building entrance. Converted parking spaces shall yield at least six bicycle parking spaces per motorized vehicle space.

10.4.4 Design Standards for Bicycle Parking

- A. Bicycle parking may be located in any parking area or in other locations that are easily accessible and do not impede pedestrian or motorized vehicle movement into or around the site. Designating space for bicycle parking within buildings is a preferred option when feasible.

- B. Requirements for bicycle parking in other areas may be met by:
1. A bicycle storage room, bicycle lockers, or bicycle racks within a building;
 2. Bicycle racks or lockers in a parking structure, underneath an awning or marquee, or near a main building; or
 3. Bicycle racks on the public right-of-way with approval from the City or State and where such racks do not conflict with pedestrian use.
- C. When a percentage of the required motorized vehicle spaces are provided in a structure, an equal percentage of the required bicycle spaces shall be located inside that structure, unless other accessible, covered bicycle parking is located elsewhere on the site.
- D. Where bicycle parking facilities are not clearly visible to approaching cyclists, signs shall be posted to direct cyclists to the facilities.
- E. Facilities shall provide at least a 30-inch clearance from the centerline of each adjacent bicycle and at least 24-inches from walls or other obstructions.
- F. An aisle or other space shall be provided for bicycles to enter and leave the facility.

The aisle shall have a width of at least four feet to the front or the rear of a standard six-foot bicycle parked in the facility.

- G. Each bicycle parking space shall be sufficient to accommodate a bicycle at least six-feet in length and two feet wide. Overhead clearance shall be at least seven feet.
- H. Bicycle parking spaces shall be clearly marked as such and shall be separated from motorized vehicle parking by some form of physical barrier designed to protect a bicycle from being hit by a motorized vehicle.
- I. Each bicycle parking space shall be provided with some form of stable frame permanently anchored to a foundation to which a bicycle frame and both wheels may be conveniently secured using either a chain and padlock or a U-lock. The frame shall support a bicycle in a stable position without damage to frame, wheels, or components. The rack known as an “inverted U-rack” is the preferred type.
- J. Outdoor bicycle parking facilities shall be surfaced in the same manner as the motorized vehicle parking area and shall be equally level and accessible to the street.

K. Lighting and other security design features shall be provided in bicycle parking facilities equivalent to that provided in the facilities for motorized vehicles.

- L. Bicycle parking should be located no further from the building’s main entrance than the closest motorized vehicle parking space, excluding parking for persons with disabilities. Exceptions to this standard may be approved by the Technical Review Committee and/or Planning Board, considering site constraints and the availability of structured and/or enclosed parking for vehicles and bicycles. Uses with several major entrances shall locate a portion of the required bicycle parking at each entrance.

Section 113. Transportation Impact Analysis
Add a new subsection to define the term “Traffic.” This may seem like a minor semantic issue, but it is significant because the term appears often, and because it currently is not defined. Asserting that traffic means more than simply automobiles means the City recognizes walking and bicycling as legitimate forms of transportation. It is recommended that the following be used as the definition of traffic:

“Pedestrians, motor vehicles, bicycles and other conveyances either singly or together using any highway, street, or right-of-way for purposes of travel.”

This section should be cross referenced with Section 10: Definitions. The language is based on a combination of the Uniform Vehicle Code (UVC), the national model code which forms a basis for most state codes, and the North Carolina General Statutes. The NC Statutes do not include a definition of the term traffic, but they do define a bicycle as a vehicle. The UVC includes a broad definition of traffic, but does not explicitly mention bicycles. The text of these two sections of code are provided below:

Uniform Vehicle Code § 1-207 Traffic

Pedestrians, ridden or herded animals, vehicles, streetcars and other conveyances either singly or together while using any highway for purposes of travel.

NC General Statutes, Chapter 20, §.20.4.01 (49) Vehicle. – Every device in, upon, or by which any person or property is or may be transported or drawn upon a highway, excepting devices moved by human power or used exclusively upon fixed rails or tracks; provided, that for the purposes of this Chapter bicycles shall be deemed vehicles and every rider of a bicycle upon

a highway shall be subject to the provisions of this Chapter applicable to the driver of a vehicle except those which by their nature can have no application. This term shall not include a device which is designed for and intended to be used as a means of transportation for a person with a mobility impairment, or who uses the device for mobility enhancement, is suitable for use both inside and outside a building, including on sidewalks, and is limited by design to 15 miles per hour when the device is being operated by a person with a mobility impairment, or who uses the device for mobility enhancement. This term shall not include an electric personal assistive mobility device as defined in G.S. 20-4.01(7a).

In addition to defining the term “traffic,” bicycling and walking should also be integrated into the requirements for traffic impact studies in the following section:

B. TIA Required.

Add *“The TIA will be multi-modal and will address the needs of all modes of transportation, including walking, bicycling, transit, and automobiles. The level of service methods used for analysis will include motor vehicle, transit, bicycle, and pedestrian level of service as performance measures, where applicable.”*

Finally, a current requirement of the TIA Submission is an analysis of pedestrian and bicycle conditions. This

is an important requirement already in place in Jacksonville.

D. TIA Submission

The TIA submission includes the following statements: “7. Analysis of the key elements of the development and evaluation of the impacts of the development on the following:

h. Pedestrian and Bicycle Analysis

Continuity and adequacy of pedestrian and bike facilities shall be provided to the nearest attraction (existing or planned) within a 1/4 mile of the development site. Destinations of significance include bus stops, elementary schools, parks, activity centers and major bicycle facilities. Adherence to the Americans with Disabilities Act (ADA) shall be required.”

5.3 Mode Share, Health and Safety Goals

To truly make changes in alternative transportation policy, Jacksonville will need to set clear goals and benchmarks for achieving them. In 1993, the National Bicycling and Walking Study set a goal for the United States to “double the amount of bicycling and walking, and increase the safety of these modes by 10%.” Numerous communities have adopted versions of this combined mode share and safety goal. A decade later, Onslow County experienced a 46.3% decline in walking and bicycling to work, as shown in Table 5.1 from the U.S. Census. While

Jacksonville’s pedestrian mode share is quite high at nearly 20%, efforts should be made to keep it that way.

As part of the effort to reverse this trend, potential goals for Jacksonville could include:

1. Increase bicycling to 10% and maintain pedestrian mode share at 20% of all trips by 2020.
2. Improve pedestrian and bicyclist safety by 10% by 2020.
3. Encourage all residents to meet or exceed the U.S. Surgeon General’s recommendations for daily physical activity, including at least 30 minutes of exercise 5 days a week. This can be done through encouragement programs described earlier in this chapter such as Safe Routes to School and employer incentive programs.

Measuring these goals can be accomplished by routine travel surveys, systematic data collection and annual reporting on objectives derived from these goals.

5.4 Complete Streets Policy

There is a growing national trend towards integrating bicycling, walking and transit as a routine element in highway and transit projects. This movement has developed under the name of “Complete Streets,” which is de-

defined by the Complete the Streets Coalition as follows: “COMPLETE STREETS are designed and operated to enable safe access for all users. Pedestrians, bicyclists, motorists and bus riders of all ages and abilities are able to safely move along and across a complete street.” Source: <http://www.completethestreets.org/>

While the Jacksonville Comprehensive Plan, Zoning Ordinance, and Subdivision Ordinance address non-motorized transportation in a number of important ways, Complete Streets could be a new framework for integrating the Comprehensive Bicycle and Pedestrian Transportation Plan into a more systematic approach for implementation. A number of similar cities, including Columbia, MO; Santa Barbara, CA; Ft. Collins, CO, and others have taken this approach to non-motorized transportation policy. A review of Complete Streets policies from throughout the U.S. is provided in Appendix H.