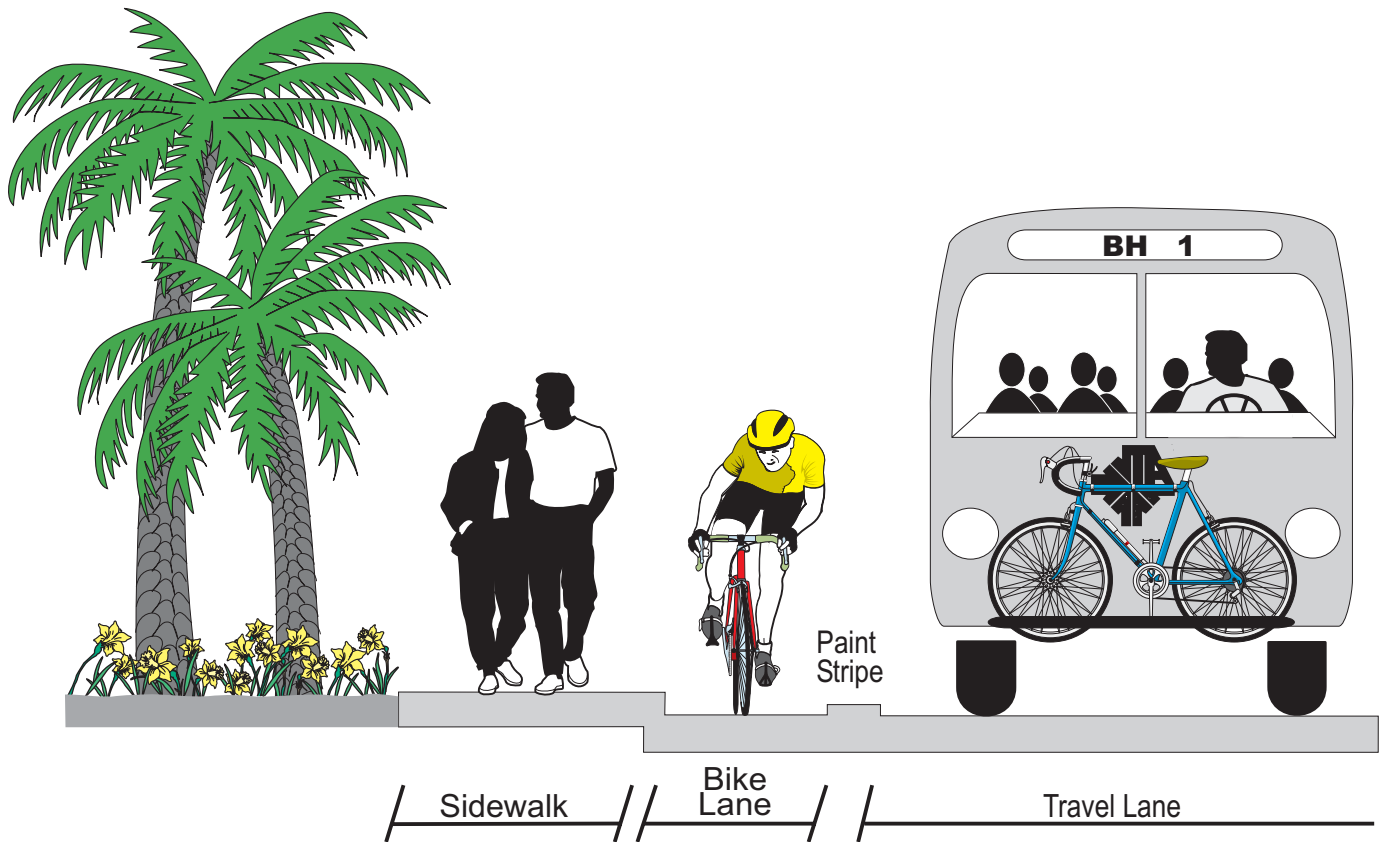


# COMPREHENSIVE BICYCLE / PEDESTRIAN PLAN



**Metropolitan Planning Organization  
for the  
Jacksonville Urbanized Area**

*April 1999*



Serving Duval County and Portions of Clay and St. Johns Counties

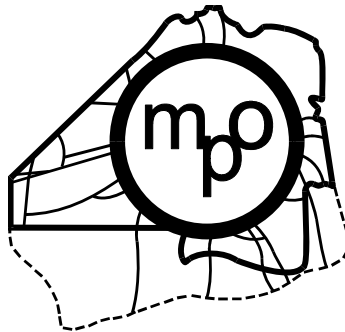
# COMPREHENSIVE BICYCLE / PEDESTRIAN PLAN

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METROPOLITAN PLANNING ORGANIZATION  
FOR THE JACKSONVILLE URBANIZED AREA (MPO)



SERVING DUVAL COUNTY AND PORTIONS OF  
CLAY AND ST. JOHNS COUNTIES

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## **GLOSSARY**

**AASHTO** - American Association of State Highway and Transportation Officials

**ADA** - The Americans with Disabilities Act

**Bicycle** - A vehicle having two tandem wheels, either of which is more than 16 inches in diameter, or having three wheels in contact with the ground, any of which is more than 16 inches in diameter, propelled solely by human power, upon which any person or persons may ride.

**Bicycle Facilities** - A general term denoting improvements and provisions made by public or private agencies to accommodate or encourage bicycling, including bike lanes, bicycle paths, parking and storage facilities, lockers and showers, marked routes and shared roadways not specifically designated for bicycle use.

**Bicycle Lane (Bike Lane)** - A portion of a roadway (typically 4-5 feet wide) which is designated by signing and pavement markings for the preferential or exclusive use by bicyclists (Also see “Undesignated Bicycle Lane)

**Bicycle/Pedestrian Advisory Committee (B/PAC)** - A politically appointed group of citizens and technicians who provide input on bicycle and pedestrian related planning issues.

**Bike Route** - A system of roads and ways that are linked by signs to aid bicyclists.

**Bikeway** - Any road, path, or way which in some manner is specifically designated as open to bicycle travel, regardless of whether such facility is designated for the exclusive use of bicycles or is shared with other transportation modes.

**Bicycle Signal Loops** - Detector loops embedded in the roadway that activate traffic signals. Bicycle sensitive detector loops respond to electrical field variations induced by metal in a bicycle over the detector loop.

**Crosswalk** - Pavement markings that define where a pedestrian can cross at an intersection.

**Enhancement Funds** - Under TEA-21, set aside funds for ten categories of projects including bicycle and pedestrian facilities and trails.

**FDOT** - Florida Department of Transportation

**FHWA** - Federal Highway Administration

**MPO** - Metropolitan Planning Organization

***Pedestrian Detectors (Push Buttons)*** - Push buttons conveniently located near each end of a crosswalk to allow pedestrians to activate the crossing signal when they approach an intersection.

***Pedestrian Facilities*** - A general term denoting improvements and provisions made by public agencies to accommodate pedestrians and/or encourage walking, including sidewalks, curb ramps, crosswalks, raised medians, pedestrian signals, street lighting, landscaped walkways, and showers and lockers.

***Rail Trail*** - A multi-use path built within the right-of-way of an existing or abandoned railroad. These may be either paved or unpaved.

***Refuge Island (Median)*** - A raised island in the roadway that separates a crosswalk and provides a refuge for crossing pedestrians.

***Shared Roadway*** - Any roadway upon which a bicycle lane is not designated and which may be legally used by bicycles regardless of whether such facility is specifically designated as a bikeway.

***Shoulder (Paved)*** - That portion of a roadway which is contiguous to the traffic lanes, allowing for use by motor vehicles for emergencies, for specialized use by bicyclists and pedestrians, and for lateral support of base and surface courses.

***Sidewalk*** - That portion of a highway designed for preferential or exclusive use by pedestrians. Typically located in public right-of-way adjacent to a roadway.

***Street Furniture*** - Benches and other seating, lampposts, planters, newspaper stands, shelters, bike racks, signs, bollards, trash bins.

***TEA-21*** - Transportation Equity Act for the 21<sup>st</sup> Century enacted in 1998. Federal legislation guiding the expenditure of federal highway funds.

***Undesignated Bicycle Lane (Bike Lane)*** - A bicycle lane which is striped as a regular bicycle lane, but is not designated with the diamond, bike, and arrow pavement markings.

***Wide Curb Lane or Wide Outside Lane*** - A minimum roadway improvement where the curbside lane is typically widened to 14 feet wide. This treatment is generally being replaced in Florida with a designated or undesignated bicycle lane.

## **EXECUTIVE SUMMARY**

The purpose of this plan is to outline a comprehensive program to address the bicycling and pedestrian issues facing the Jacksonville Urbanized Area, and to meet the goals established by the Metropolitan Planning Organization for the Jacksonville Urbanized Area (MPO) through their Bicycle/Pedestrian Advisory Committee. The comprehensive approach to bicycle and pedestrian planning set forth in this plan is based upon the "Four E's" established by the Florida Bicycle/Pedestrian Program: Education, Enforcement, Engineering, and Encouragement. The following chapters of this plan include: an introduction, a description of the bicycle and pedestrian environment in the Jacksonville Urbanized Area and the conditions that provide for safe bicycle and pedestrian transportation, and each subsequent chapter discusses the "Four E's" of the bicycle and pedestrian program. Each chapter concludes with goals and objectives to achieve the issues discussed in the chapter. The following are six goals identified in the Comprehensive Bicycle and Pedestrian Plan to improve bicycling and walking in the Jacksonville Urbanized Area:

### **GOAL 1**

Increase the current percentage of total trips made by bicycling and walking in the Jacksonville Urbanized Area.

### **GOAL 2**

Reduce the number of bicyclists and pedestrians killed or injured in traffic crashes in the Jacksonville Urbanized Area.

### **GOAL 3**

Educate bicyclists, pedestrians and motorists how to safely coexist on the roadways.

### **GOAL 4**

Enforce existing laws to improve the performance and safety of bicyclists and pedestrians.

### **GOAL 5**

A transportation system which permits bicycle and pedestrian travel that is safe, efficient, and free of barriers that impede travel.

### **GOAL 6**

Promote increased selection of bicycling and walking as modes of transportation.

The goals and objectives identified in this Plan to improve bicycle and pedestrian transportation in the Jacksonville Urbanized Area can be realized with a strong foundation of political support. There must be a re-thinking of the community's transportation goals, from moving cars to moving people so that the needs of bicyclists and pedestrians are not ignored. The safety problem must be recognized as one that can be solved with the proper commitment of time and money to improve bicyclists, pedestrians, and motorists behavior, to provide the necessary facilities to eliminate the current hazards that exist on the roadways, and to increase public awareness to the benefits of bicycling and walking as effective and efficient transportation alternatives.

# Chapter 1: Introduction

## Bicycle and Pedestrian Planning/Problems and Issues

The popularity of bicycling and walking in the United States has increased dramatically over the past decade. People are recognizing that bicycling and walking are viable modes of transportation that also provide health and recreational benefits. Additionally, they can contribute to a solution to traffic congestion, air pollution, fuel consumption, and noise pollution. For example, bicycling is considered by the Environmental Protection Agency (EPA) as a reasonable transportation control measure for cities to regain attainment status for air quality. According to the Federal Highway Administration (FHWA), national figures show almost two-thirds of all trips are less than five miles long. The National Personal Transportation Study (NPTS), conducted by the Federal Highway Administration, revealed the average walking trip in the U.S. in 1990 was .6 miles and the average bicycle trip was 1.3 miles. Yet regular bicyclists generally ride farther. Though currently people do not choose to walk more than one mile, if the infrastructure is in place to make walking more desirable, trip distances could increase. The NPTS also found that 27 percent of all trips are one mile or less. This figure shows the potential of bicycling and walking as viable transportation alternatives to the automobile, and to contribute to a solution to traffic congestion.

Florida continues to be one of the fastest growing states in the country. As a result, the State and the Jacksonville Urbanized Area are confronting the need for, and the problems associated with, bicycle and pedestrian transportation. Specific impacts are: 1) dramatic growth in population and tourism, 2) the rapid expansion of the suburbs, particularly as employment centers, 3) the growth of the senior adult population, and 4) the rising popularity of bicycling and walking in the state.

Bicycling and walking can contribute to a solution to traffic congestion, air pollution, fuel consumption, and noise pollution, but not without challenges. Statistics from the National Highway Traffic Safety Administration and the Florida Department of Highway Safety and Motor Vehicles indicate that in 1996 Florida ranked second in the United States in total number of bicycle fatalities (108) and pedestrian fatalities (536). Among the 67 counties in the State of Florida, Duval County ranked among the ten counties with the most severe crash problems in the State. In 1996 Duval County experienced 320 bicycle injuries, 5 bicycle fatalities, 398 pedestrian injuries, and 23 pedestrian fatalities.

Florida's high number of bicycle and pedestrian crashes can be attributed to several factors: many streets and highways are designed without consideration for the needs of bicyclists; many bicyclists ride with a casual disregard for traffic laws; many people operating bicycles are not proficient in bicycle handling skills; and motorists tend to disregard the bicyclists rights as a vehicle in Florida. People who walk also encounter many inconveniences and hazards, including: fragmented sidewalk segments or no sidewalks; cars and trucks on the streets, in parking lots, and driveways; bicyclists on sidewalks; broken or slippery sidewalks, poorly-lighted walkways; debris around construction sites; crime; and aggressive dogs.

These same factors contribute to the high crash totals in the Jacksonville Urbanized Area, as well. The Jacksonville Urbanized Area consists of the Cities of Jacksonville, Atlantic Beach, Neptune Beach, Jacksonville Beach, and Baldwin (Duval County) as well as Ponte Vedra Beach (St. Johns County) and Orange Park (Clay County). It is characterized by a sprawling development pattern with a roadway system that was designed for motor vehicles. Bicyclists and pedestrians have typically received minimal consideration in terms of safe and efficient travel. Enforcement of bicycle and pedestrian traffic violations remains a low priority for local police officers. Until recent years, schools have devoted limited time to safety education for children. Despite an advanced arterial roadway system built in Jacksonville during the past three decades, the rapid increase in traffic volume has resulted in traffic congestion with its accompanying air quality problems.

Traditionally, most traffic engineers and planners have focused the majority of their attention to motorized traffic in an effort to improve traffic safety and efficiency. Unfortunately, this has been achieved at the expense of bicycles and pedestrians, as is evident by the high number of crashes. The rapid growth in many areas, particularly suburban developments, has forced local officials to re-examine their priorities concerning land development, engineering of roadways and signals, safety education, and enforcement of traffic violations. Properly planned, designed, and constructed facilities are essential for increasing bicycle and pedestrian mobility, accessibility, and safety. Bicycling and walking must be viewed as legitimate modes of transportation.

Bicyclists and pedestrians are of all ages and abilities. Therefore, it is important to understand that there exists many user groups of varying needs and characteristics: children, teenagers, adults, senior adults, visually impaired, mobility impaired, mentally impaired, emotionally impaired, and others. By considering the physical and physiological limitations of each user group, we are better able to plan, design, and program to more fully accommodate everyone.

### **History of Bicycle and Pedestrian Planning in the Jacksonville Urbanized Area**

In 1983, the bicycle was legally defined as a vehicle in the state of Florida, with bicyclists having all of the rights to the roadways and all of the duties applicable to the driver of any other vehicle. Bicyclists riding on the sidewalk have all the rights and duties applicable to a pedestrian, except that bicyclists must yield the right-of-way to any pedestrian on the sidewalk.

In 1984, legislation was adopted requiring that bicycle and pedestrian transportation be included in the traffic circulation elements of the comprehensive plans developed by urbanized areas with populations of 50,000 or more. In response to the legislation, each municipality within the Jacksonville Urbanized Area established goals, objectives and policies within the Traffic Circulation Element of their Comprehensive Plans, related to bicycle and pedestrian planning (See Appendix D). The purpose is to establish a long term effort to improve bicycle and pedestrian transportation in the Jacksonville Urbanized Area.

The Bicycle Advisory Committee (BAC) was formed in the Spring of 1984, to assist in the preparation of a bicycle facilities plan. The Comprehensive Bikeway Plan was completed in the Spring 1986 after which the BAC became dormant. In the Fall of 1987 the BAC was reactivated to

assist in the determination of priorities for implementation of bicycle facilities, and has met regularly since.

In May 1992, the BAC expanded its role and membership to formally include pedestrian related facilities planning. By amendment of the bylaws the BAC became the Bicycle/Pedestrian Advisory Committee (B/PAC).

In 1996, the City of Jacksonville amended the Traffic Circulation Element of the 2010 Comprehensive Plan to provide for the construction of designated bicycle lanes or paved shoulders when constructing or reconstructing roads in Jacksonville in accordance with the Metropolitan Planning Organization (MPO) Transportation Improvement Program. This amendment strengthened the existing policy which then required a fourteen (14) foot wide outside curb lane to accommodate bicyclists in the roadway.

In 1998, Clay County amended their Comprehensive Plan to also strengthen the existing policies to provide for the construction of designated bicycle lanes or paved shoulders on all future roadways constructed or reconstructed in Clay County.

### **Scope of Plan**

The comprehensive approach to bicycle and pedestrian planning set forth in this plan is based upon the "Four E's" which are defined as follows:

**Education:** Training bicyclists, pedestrians and motorists to share the roadway safely and efficiently. Training teachers, youth leaders, and resource officers in the specific bicycle and pedestrian-related skills to perform their duties effectively.

**Enforcement:** Improving the traffic behavior of bicyclists, pedestrians, and motorists through police intervention. Increasing the enforcement level for bicycle and pedestrian violations, as well as enforcement against motorists who violate bicycle or pedestrian rights. Increasing the awareness among police of the importance of enforcement and to develop community support for traffic law enforcement for bicyclists and pedestrians.

**Engineering:** Providing a safe environment for bicyclists and pedestrians with the support facilities necessary to connect with other modes of transportation, and a transportation system which permits bicycle and pedestrian travel that is safe, efficient, and free of barriers.

**Encouragement:** Promoting bicycling and walking as efficient and effective choices for transportation. Providing opportunities, information, and incentives to the public of the benefits of bicycling and walking.

The purpose of this plan is to outline a comprehensive program to address the bicycling and pedestrian issues facing the Jacksonville Urbanized Area, and to meet the goals established by the Metropolitan Planning Organization for the Jacksonville Urbanized Area (MPO) through their Bicycle/Pedestrian Advisory Committee. The following chapters of this plan include: a description of the bicycle and pedestrian environment in the Jacksonville Urbanized Area and the conditions that

provide for safe bicycle and pedestrian transportation, and each subsequent chapter discusses the "Four E's", providing recommendations how each can be achieved.

# **Chapter 2: The Bicycle and Pedestrian Environment**

## **Origins and Destinations of Bicycle and Pedestrian Trips**

The volume of bicycle and pedestrian activity is directly related to the type of land use in an area. The residential neighborhood is the primary generator of bicycle and pedestrian traffic. People leave their homes to go to work, school, play and shopping. People generally traverse to secondary destinations from the primary destinations, for example; work to shop, school to parks, etc. As a result, there is a need to provide an interconnected network of bikeways and sidewalks to facilitate travel between multiple destinations. Both bicycling and walking are more prevalent in higher density areas where trip lengths tend to be shorter and where barriers are minimal.

Bicycle and pedestrian activity occur primarily in environments providing a sense of comfort and security. Examples include: continuous network of bike lanes, walkways that provide accessibility to shops and services, multi-use trails, and parks. These type of facilities encourage bicycle and pedestrian activity.

## **Zoning and Land Use**

Zoning and land use designations serve to separate modes of transportation uses. Frequently, nonresidential uses do not intermingle with residential uses which reduces convenience to services by bicycling or walking. This increases peoples dependency on the automobile.

Historically, the proximity of activities to a downtown were important. However, as the automobile became the mode of choice, land use patterns reflected that choice. Single use developments, primarily residential uses, are the prevailing characteristic of suburban communities today. This desire to maintain the separation of land uses in the suburbs has increased the dependency on the automobile, and decreased the potential for bicycling and walking. The future trend indicates that activities are locating in suburban areas to be near the people. Land use planning in the future should have as one of its goals to minimize the need for vehicular transportation by providing for bicycle and pedestrian access. Multi-use activity centers can be designed to facilitate multi-modal transportation (auto, bike, walk, transit). This will enable people to access different services without entering their cars each time. Mixed land uses can reduce the need for multiple auto trips, encourage bicycling and walking between land uses, and encourage public transit use.

## **Why People Don't Ride or Walk**

Although the popularity of bicycling and walking in Florida continues to increase, not everyone shares the same enthusiasm as advocates for these choices of transportation. Some

people believe that the problems associated with bicycling and walking outweigh any benefits or enjoyment. The principal concerns are: risk of being hit by a car, inadequate facilities to bicycle or walk, travel distances, noise and pollution from auto and truck traffic, crime, weather conditions, no place to store equipment (bikes). Of all these concerns, the factor which most impacts peoples choice of travel mode is distance. Unless the trip length can be shortened, most people will not consider bicycling or walking. For this reason, it is important for local planners to focus on compact land development. The average bicycle trip length is 1.3 miles while the average walking trip length is .6 miles. Land use policies emphasizing urban infill, moderate density development, and a return to the principles of traditional neighborhood design are important measures if bicycling and walking are to become viable transportation alternatives to the automobile.

## **Recommendations**

### **GOAL 1**

Increase the current percentage of total trips made by bicycling and walking in the Jacksonville Urbanized Area.

**Objective 1.1** Create a transportation network within the Jacksonville Urbanized Area which provides for the safe movement of pedestrians and bicyclists.

### **Policies**

- 1.1.1** Establish and maintain facilities to accommodate pedestrians and bicyclists within transportation corridors to provide a safe transportation environment.
- 1.1.2** Adopt land use policies that emphasize urban infill, moderate density development, and the principles of traditional neighborhood design.
- 1.1.3** Continue to support the conversion of utility corridors and abandoned railroad corridors into bicycle and pedestrian paths.

### **GOAL 2**

Reduce the number of bicyclists and pedestrians killed or injured in traffic crashes in the Jacksonville Urbanized Area.

**Objective 2.1** Establish a comprehensive safety program that will provide continued learning of traffic safety for bicyclists, pedestrians, and motorists.

### **Policies**

- 2.1.1** Establish permanent, dedicated funding sources for bicycle and pedestrian safety programs.
- 2.1.2** Establish grade school and adult level bicycle and pedestrian education programs.
- 2.1.3** Continue to analyze crash data for the Jacksonville Urbanized Area on an annual basis in order to identify trends in crash occurrence.
- 2.1.4** Determine high crash locations and target these locations for physical improvement through inclusion in the Metropolitan Planning Organization for the Jacksonville Urbanized Area (MPO) Transportation Improvement Program (TIP).

# Chapter 3: Education

## Introduction

Educational programs typically have focused on the operation of motorized vehicles and the learning of traffic laws. Little attention has been devoted to bicycle and pedestrian safety. Children and adults have not been taught basic skills and hazardous avoidance techniques to prepare them to deal with traffic. Therefore, it is not surprising that bicycle and pedestrian crashes continue to occur at an alarming rate. Children have long been the primary victims of bicycle and pedestrian crashes. Leading all other injuries to children is being hit by a car, either as a bicyclist or as a pedestrian.

## Current Approaches to Safety Education for Children

The Traffic and Bicycle Safety Education Project for Duval County Schools is funded by a grant from the Florida Department of Transportation (FDOT) and administered by the Duval County Health Department, Injury Prevention Division. This project is part of the statewide Florida Traffic and Bicycle Safety Education Program. The program encourages bicycling and walking as healthy and environmentally responsible transportation choices. By training teachers, youth leaders, and resource officers in traffic safety skills and rules of the road, they in turn can teach children to be predictable and competent in traffic. The program utilizes a progressive skill building approach with repetitive, practical experiences (including on-bike practice) in traffic and bicycle safety. The Traffic and Bicycle Safety Education Curriculum teaches traffic skills to elementary school children and is incorporated into the school so that all children can receive training. Activities for grades K, 1, 2 focus on pedestrian safety skills while grades 3-5 receive bicycle safety skills training.

## Bicycle and Pedestrian Safety Education for Adults

Children often observe and mimic the actions of adults. Therefore, it is important for adults to have the proper knowledge of bicycle and pedestrian safety issues in order to avoid demonstrating incorrect skills on the roadways. Safety education for adults can be achieved through written handouts and brochures, presentations at group events, and the participation in bicycle and pedestrian clubs. Information can be provided directly to parents on bicycle and pedestrian crash situations involving young children and what actions they should take to protect their children. Training materials can be distributed to pre-school programs, and day care centers on bicycle and pedestrian safety for young children. Reinforcement of these safety principles can be achieved through material distribution at PTA/PTO meetings and school based materials sent home in report cards. It is important to distribute information through many different mediums so as to educate as many adults as possible about the importance of bicycle and pedestrian safety.

It is also important to improve awareness among senior adults of the changes that come with aging and adjust their bicycling and walking behaviors to minimize risk. Once senior adults give up their driving privileges, they typically use walking, more so than bicycling, as their primary mode of transportation. In areas of higher elder population, facilities should be designed to accommodate older pedestrians, particularly at intersections. For example, extended crossing time, larger signs, pedestrian signals, medians, and refuge islands. Educational material for senior adults must include information on how to use these pedestrian friendly treatments when they are available, and how to operate most safely when no treatments are available. More information on bicycle and pedestrian safety skills can be provided for use at senior centers and retirement communities. Organizations like the American Association of Retired Persons (AARP) can be utilized to administer some of these efforts and to gain support from the constituency. Unless allowances are made for the slower and restricted movement and reduced vision of the senior adult, their over-representation in traffic crashes will continue.

### **Education of the Motorist**

There is a need to improve motorist acceptance of their responsibility towards bicyclists and pedestrians and their understanding of how to interact safely with bicyclists and pedestrians. More bicycle and pedestrian safety education needs to be incorporated into the driver's education curriculum in our high schools. Driver's education classes enable aspiring drivers to be taught proper searching skills before they ever drive on the roadways, making them more aware of bicyclists and pedestrian behaviors. Students are more inclined to retain safety information in driver's education classes because of their strong desire to earn driving privileges.

The Florida Handbook for Drivers addresses both bicycle and pedestrian issues to educate motorists. Questions related to these issues are also included on the drivers license exam. Other programs that should be updated to include bicycle and pedestrian issues are: Defensive Driving Courses and DUI Training Programs. In addition, Public Service Announcements (PSA's) should be developed for media broadcast alerting motorists to main causes of bicycle and pedestrian crashes and what they can do to avoid a collision. In addition, roadway signs can provide a subtle reinforcement to motorists to be aware of bicyclists and pedestrians.

### **Recommendations**

#### **GOAL 3**

Educate bicyclists, pedestrians and motorists how to safely coexist on the roadways.

**Objective 3.1** Train adults and children in bicycle and pedestrian safety skills.

#### **Policies**

- 3.1.1** Incorporate the Florida Traffic and Bicycle Safety Education Program in the curriculum of the schools.

- 3.1.2 Upgrade existing bicycle and pedestrian education programs offered by the Jacksonville Sheriff's Office.
- 3.1.3 Raise general awareness of bicycle and pedestrian safety issues through the dissemination of literature, use of radio and television public service announcements, billboards, mailings through motor vehicle registration, the American Automobile Association (AAA), and interaction with Transportation Management Organizations, local employers, PTA's, bicycle clubs, pedestrian clubs, and other organizations where contact is made with people who walk or ride their bicycles.
- 3.1.4 Encourage local bicycle and pedestrian clubs to expand their role in the education of new riders and walkers by sponsoring events to teach bicycle and walking etiquette and the rules of the road, and by participating more in safety education training.

**Objective 3.2** Improve awareness among senior adults of the changes that come with aging and adjust their bicycling and walking behaviors to minimize risk.

**Policies**

- 3.2.1 Contact organizations like the American Association of Retired Persons (AARP) to provide bicycle and pedestrian safety information to the desired constituency.
- 3.2.2 Develop educational material on bicycle and pedestrian safety for use at senior centers and retirement communities.

**Objective 3.3** Improve motorist understanding of how to interact safely with bicyclists and pedestrians.

**Policies**

- 3.3.1 Include more bicycle and pedestrian safety education in the driver's education curriculum in our high schools.
- 3.3.2 Make recommendations to update the Florida Handbook for Drivers, driver's license examination and defensive driving course to include more items related to bicycle and pedestrian safety.
- 3.3.3 Use Public Service Announcements (PSA's) to alert motorists to main causes of bicycle and pedestrian crashes and what they can do to avoid a collision.

# Chapter 4: Enforcement

## Introduction

Bicycle and pedestrian crash reports on a local, state or national level reveal that bicyclists, pedestrians and motorists are making mistakes on the road, and violating traffic laws in the process. Examples of violations include: red light running, wrong way riding, running stop signs, crossing not at intersection, failure to yield. Bicyclists and pedestrians of all ages must learn to practice traffic survival skills, motorists must develop an active awareness of bicyclists and pedestrians, and police officers must correct or penalize unlawful activity, if the situation is to improve. Police involvement in bicycle and pedestrian safety occurs within the schools, however, the involvement typically has not extended to the streets. Bicycle and pedestrian law enforcement has typically been a low priority for police officers. Bicycle and pedestrian education, when not supported by consistent enforcement of traffic laws, has limited impact.

## Current Approaches to Enforcement

The Florida Bicycle Helmet Law (F.S. 316.2065 (3)(d)(e)), passed in 1996, requires all bicyclists under 16 years of age to wear a bicycle helmet that is properly fitted and fastened securely upon the passenger's head by a strap. A bicycle rider or passenger who violates this subsection may be issued a citation by a law enforcement officer and assessed a fine for a nonmoving traffic violation. The effect of this legislation has been a significant increase in bicycle helmet usage by children.

Additional efforts in law enforcement include the development of police bicycle patrols within local police departments in the MPO area. The use of bicycle officers in the enforcement of bicycle and pedestrian laws has many advantages. Since many of the violators are children, the experience of being stopped and either warned or cited by an officer in a patrol car may be more of a traumatic experience rather than a learning one. An officer on a bicycle provides the opportunity for more direct contact, since it enables casual conversation with other bicyclists and pedestrians. Not only does it make the execution of official duties easier, it holds unique possibilities in the realm of public relations.

## Recommendations

### **GOAL 4**

Enforce existing laws to improve the performance and safety of bicyclists and pedestrians.

**Objective 4.1** Increase enforcement level for bicycle and pedestrian violations.

### **Policies**

- 4.1.1 Encourage police officers to enforce bicycle and pedestrian laws.
- 4.1.2 Develop and conduct an awareness program communicating the importance of bicycle, pedestrian and motorist enforcement.
- 4.1.3 Continue to support the expansion of bicycle patrols to enforce bicycle and pedestrian traffic laws, as well as motor vehicle traffic laws.

**Objective 4.2** Increase enforcement against motorists who violate bicycle and pedestrian rights.

**Policies**

- 4.2.1 Educate police officers about critical violations of bicycle and pedestrian rights by motorists.
- 4.2.2 Ensure that key cases against motorists for violating bicycle or pedestrian rights are vigorously prosecuted in traffic courts.

**Objective 4.3** Develop community support for traffic law enforcement for bicyclists and pedestrians.

**Policies**

- 4.3.1 Conduct a public awareness campaign to increase awareness and acceptance of enforcement programs.

# Chapter 5: Engineering

## Introduction

The primary objective of engineering is to provide a transportation system which permits travel by motorists, bicyclists, and pedestrians that is safe, efficient, and free of barriers that impede or prohibit travel. If bicycling and walking are to become viable choices of transportation, we must provide the support facilities necessary to encourage their use. For bicyclists, support facilities include: constructing bike lanes and/or paved shoulders or wide curb lanes on all new or expanded roadways to accommodate shared use by bicyclists and motorists; off-street separated paths, rail trails, better traffic control devices that accommodate bicycle use; adequate maintenance of facilities to ensure continued safe operation by bicyclists; requiring the provision of bicycle parking facilities at commercial establishments and transit stations; and encourage employers to consider providing showers at the work place to accommodate those who might be willing to bicycle or walk to work. For pedestrians, support facilities include: the development of sidewalks along all new or expanded roadways to provide a safe walking environment; sidewalks to pedestrian traffic generators (e.g., transit routes, shopping areas, parks, recreational areas, senior adult housing facilities, school walking zones, parking facilities); route continuity for pedestrians; adequate maintenance of sidewalks to ensure pedestrian safety; better traffic signal and signing indications to instruct pedestrians of the actions desired from them; and facilities to accommodate the needs of special pedestrians, such as children, senior adults, and people with disabilities.

## Roadway Design

Bicycle and pedestrian friendly roadway design practices can enhance bicycle and pedestrian transportation. Proper design can improve the safety and efficiency of a roadway by guiding bicycle and pedestrian movement, and eliminate the need for costly improvements later. Roadway design features that can be implemented, include: bicycle lanes, wide curb lanes, paved shoulders, sidewalks, refuge islands, and street lighting.

Bicycle lanes and wide curb lanes are usually preferred in restrictive urban conditions and the paved shoulder is generally more accommodating in rural areas. Bicycle lanes are the more detailed roadway design because they delineate available road space for preferential use by bicyclists and motorists. This can increase a bicyclist's confidence in motorists not straying into his/her path of travel. Likewise, passing motorists are less likely to swerve to the left out of their lane to avoid bicyclists on the right.

Sidewalks can improve mobility and safety on the roadway by reducing pedestrian and motorist conflicts. A network of sidewalks can link pedestrians to residential, employment, recreation, shopping and business areas. Sidewalks must be of adequate width to accommodate the volume of pedestrian traffic, free of intrusions such as poles, parking meters, newspaper vending machines, and other obstructions. When adjacent to higher speed roads, it is particularly

important that the sidewalks be set back from the street to provide the necessary clearance from passing vehicles and insure the safety of pedestrians.

Refuge islands are roadway design features that should be considered for roads that are extremely wide and difficult for pedestrians to cross during one traffic signal cycle. They provide the pedestrian with a safe haven in the roadway to await the next signal cycle to complete their crossing movement. Two examples of refuge islands include raised medians and pavement markings used to define a safety island.

Street lighting reduces conflicts along roadways and at intersections. Lighting allows bicyclists and pedestrians to see surface conditions and obstacles, as well as improve the motorists visibility of the bicyclists and pedestrians within the roadway. Lighting should be considered where bicycling and walking at night is expected, such as near colleges, near areas concentrated with night clubs and bars, and at intersections. Lighting should also be considered through underpasses or tunnels, high crime areas, and residential streets.

### **Traffic Operations**

Traffic operations can have a significant effect on the movement of bicyclists and pedestrians at an intersection. Traffic operations are design standards that are related to the operational characteristics of an intersection. For example, pedestrian crosswalks, bicycle lane markings, traffic signal and timing, bus stop location.

Markings for crosswalks are designed to encourage proper movement of pedestrians at an intersection and to alert motorist of potential pedestrian activity. However, marked crosswalks can actually decrease safety conditions for pedestrians. Motorists making a right turn at an intersection typically block the crosswalk in order to gain adequate sight lines to make the right turn. This results in increased conflicts between pedestrians and motorists at an intersection. Designs need to be improved so that right turning vehicles can stop before the marked crosswalk and have an unobstructed sight line to make the right turn.

Bicycle lane markings tend to complicate both bicyclist and motorist turning movements at intersections, particularly approaching motorist right-turn-only lanes. Bicyclists proceeding straight through the intersection and motorists turning right must cross paths. Striping and signing configurations which encourage these crossings in advance of the intersection, in a merging fashion, are preferable to those that force the crossing in the immediate vicinity of the intersection. (See Appendix C)

At intersections where bicycle and pedestrian traffic exists or is anticipated, bicycles and pedestrians should be considered in the timing of the traffic signal cycle, as well as the traffic detection device. Signal phasing should be arranged so there is sufficient time for a bicyclist or pedestrian to cross the intersection. Detectors (signal loops) for traffic-actuated signals should be sensitive to bicycles and located in the bicyclist's expected path. Pedestrian detectors (push buttons) should be conveniently located near each end of crosswalks where pedestrian actuation is required and signs should be present explaining their purpose and use. Pedestrian signal

indications should be installed in conjunction with vehicular traffic signals in accordance with the Manual on Uniform Traffic Control Devices.

The improper location of bus stops have a direct effect on pedestrian safety at an intersection. When the bus stop is located on the near side of an intersection, the bus conflicts with right turning motorists and bicyclists and it obstructs the sight line of pedestrians attempting to cross the road. However, when the location of the bus stop is on the far side of the intersection, right turning movements are not restricted for motorists and bicyclists and pedestrian sight lines are unobstructed which results in safer crossing behavior.

### **Traffic Calming Techniques**

The function of roads is not solely to act as a corridor for automobile traffic. They are also for bicycling, walking, playing and social interaction. Different roads within the Jacksonville Urbanized Area have these components in differing proportions, however, many roads within the area are dominated by the automobile, resulting in the virtual exclusion of all other components. These roads generally have heavy traffic volumes, high crash rates, high levels of noise and air pollution, and pose significant safety problems (especially for children). One approach to reducing these problems is the concept of traffic calming. Traffic calming attempts to maximize mobility while creating a more livable city by reducing the undesirable effects of that mobility. The main objectives of traffic calming are: to reduce crashes, to allow the mixed use of streets by all traffic participants, to improve safety conditions, and to enhance the character of an area.

There are numerous traffic calming techniques that can be employed to achieve the desired results. Slower traffic results in fewer crashes, less severe crashes that do happen, reduced levels of noise and air pollution, and increased capacity of the existing road space. One technique of traffic calming is to change the road design to force traffic to travel at a slower, more even pace. Road design methods include: narrow traffic lanes, interrupted sight lines, changes in road surface, changes in direction, paved speed tables, and roundabouts or turning circles. Strategically placed landscaping, paved strips and narrowed lanes can change the psychological feel of the street. It has a more relaxed feel that encourages pedestrian activity and informs the motorist that this is a shared space. Other techniques of traffic calming include discouraging the use of private automobiles and increasing incentives to use public transportation. Parking restrictions and higher parking fees, coupled with an attractive fare system in public transportation and a time advantage over cars, can encourage people to transfer to public transportation and result in a more efficient use of existing road space.

### **Facilities for the Disabled**

The Americans with Disabilities Act of 1990 (ADA) is adopted and incorporated into the laws of the State of Florida through the Florida Americans with Disabilities Implementation Act. The purpose and intent of the law is to require all buildings, structures and facilities in Florida to provide accessibility to disabled Americans. Examples of roadway design features that must meet Americans with Disabilities Accessibility Guidelines (ADAAG) are: curb ramps, special signals, special signs, and crosswalk guidestrips. These facilities enable pedestrians with physical impairments to function effectively in the transportation system.

Curb ramps at intersections should provide a smooth transition between the roadway and the sidewalk. Curb ramps enable wheelchair pedestrians to cross the road without the need for assistance and they also assist blind pedestrians to align properly when crossing the road. Curb ramps also benefit pedestrians pushing strollers or carts.

Special signals at intersections provide certain features, such as extended crossing times, audible buzzers, and pedestrian detectors (push buttons) to assist disabled pedestrians crossing the roadway. The extended crossing times enable slower pedestrians, such as those in wheelchairs, or those who are blind, or senior adults whose reactions have diminished, to cross the road safely. Audible buzzers aid blind pedestrians by alerting them of when it is time to cross the street. Pedestrian detectors or push buttons allow pedestrians to activate the crossing signal when they approach the intersection. They should be conveniently located near each end of crosswalks where pedestrian actuation is required.

Special signs should be used in areas where frequent disabled pedestrian activity is expected. Two examples of special signs are: signs to alert motorists of disabled pedestrian activity, and braille signs located near push buttons to explain their purpose and use to blind pedestrians. These special signs provide safer conditions within the roadway for disabled pedestrians to move about.

Crosswalk guidestrips are raised pavement markings that define the crosswalk at an intersection. The raised markings assist blind pedestrians to maintain a straight line while crossing the road.

### **School Zones**

The safety of children bicycling and walking to school is an important issue in every community. An effective measure to provide safe conditions for school children is the use of school zones. School zones utilize zone flashers to alert motorists of children and to warn them of lower speed limits. The slower speeds enable motorists to react to children crossing the roadways and reduce the potential for crashes. In addition to zone flashers, crossing guards can significantly improve safety within the school zones by providing adults to guide the movement of children and to direct vehicle traffic. In 1992, the Florida Legislature passed a law requiring most local governmental entities to provide a training program for school crossing guards based on the guidelines set forth by the Florida Department of Transportation, to raise the professional level of all school crossing guards statewide.

## **Recommendations**

### **GOAL 5**

A transportation system which permits bicycle and pedestrian travel that is safe, efficient, and free of barriers that impede travel.

**Objective 5.1** Insure bicycle and pedestrian friendly design on all road and highway projects in the Jacksonville Urbanized Area.

### **Policies**

- 5.1.1** Support current Florida Department of Transportation design standards for incorporating bicycle and pedestrian considerations in the design of roadways within the Jacksonville Urbanized Area.
- 5.1.2** Support statewide legislation to permit bicycling on certain limited access facilities, as determined by the Florida Department of Transportation.
- 5.1.3** Provide public and private sector planning and engineering agencies with the latest FDOT and AASHTO standards and encourage the review of site plans, capital improvement programs, etc., for bicycle and pedestrian considerations.
- 5.1.4** Review the Metropolitan Planning Organization for the Jacksonville Urbanized Area (MPO) Transportation Improvement Program (TIP) for roadway construction or reconstruction projects to ensure that bicycle and pedestrian transportation needs are considered.
- 5.1.5** Ensure needed bicycle and pedestrian facilities are in the MPO Transportation Improvement Program.
- 5.1.6** Identify, upgrade and install needed facilities for people with disabilities.
- 5.1.7** Annually review crash reports to identify high crash locations which could indicate possible roadway design problems.
- 5.1.8** Provide an inventory of existing bicycle and pedestrian facilities within the Jacksonville Urbanized Area to identify gaps in the transportation network and develop and implement safety projects to correct identified problems.
- 5.1.9** Develop a bicycle and pedestrian facilities map to identify those roadways which accommodate bicycle and pedestrian travel.
- 5.1.10** Clean, inspect, and correct defects in bicycle and pedestrian facilities.

- 5.1.11** Encourage the Public Works Departments in the MPO area to provide traffic signal detectors (signal loops) that are sensitive to bicycles and located in the bicyclist's expected path.
- 5.1.12** Coordinate with the Jacksonville Transportation Authority to locate bus stops on the far side of intersections.
- 5.1.13** Train school crossing guards based on the guidelines set forth by the Florida Department of Transportation, to raise the professional level of all school crossing guards statewide.

# Chapter 6: Encouragement

## **Introduction**

People must be made aware that bicycling and walking are effective and efficient commuting alternatives to the automobile. While providing health and wellness benefits to the individual, bicycling and walking can contribute to a solution to traffic congestion, air pollution, fuel consumption, and noise pollution. These are all reasons that local governments are beginning to recognize bicycling and walking as viable transportation choices. Promoting bicycling and walking is a challenging task given the presence of many deterrents. These deterrents include: inadequate facilities, crime, risk of being hit by a car, noise and air pollution from motorized traffic, travel distances, weather conditions, no place to store equipment (bikes). These are the perceptions that most people have of the bicycling and walking environment. In order to change these perceptions, an effective bicycle and pedestrian program must provide opportunities, information, and incentives to the public of the benefits of bicycling and walking.

## **Commuting and Incentive Programs**

A number of things can be done to make it easier to bicycle and walk and to reward those who do so. Incentive programs can be implemented by employers to encourage bicycling and walking as commuting alternatives. Examples include: providing financial incentives to employees, implement flex time schedules, provide emergency rides home, provide showers and changing rooms, provide secure bicycle parking facilities.

## **Bicycle Parking**

Concern for bicycle theft is a real deterrent for bicycle use. Typically, if bicycle parking is available it is in the form of bicycle racks which leave the equipment exposed to the weather and susceptible to vandalism. There is a need for secure bicycle storage facilities if bicycle use is to be encouraged in urban areas. The Guide for the Development of Bicycle Facilities, produced by the American Association of State Highway and Transportation Officials (AASHTO) reports, bicycle parking facilities should be provided at both the trip origin and trip destination and should offer protection from theft and damage. Long-term parking is needed at locations such as employment centers, transit stations, and multi-family dwellings. Examples of long-term parking facilities are bicycle lockers and attended storage areas. Short-term parking is needed at locations such as shopping centers, libraries, recreation areas, and post offices. An example of a short-term parking facility is a bike rack that supports both wheels or the frame. Bent rims are common with racks that only support one wheel. Parking facilities should be very convenient and be near building entrances or other visible areas which are self policing, but they should not interfere with normal pedestrian flow. An increasing number of cities are requiring bicycle parking in new developments. The City of Jacksonville has adopted policies in the Land Use Regulations that require the provision of bicycle parking based on the type of land use.

## **Linking Bicycle/Pedestrian Facilities With Transit**

The Jacksonville Transportation Authority (JTA) has shown an interest in improving bicycle and pedestrian access to mass transit systems. Providing intermodal connections has the potential to improve transit ridership, reduce traffic congestion, air pollution, fuel consumption, and noise pollution. The National Bicycling and Walking Study, Case Study No. 9, produced for the Federal Highway Administration reports, that substantial investments in park-and-ride facilities have been made by transit agencies to entice commuters from the suburbs to take public transit rather than drive to work. While this strategy has proven successful to a large extent, a shortage of adequate bicycle parking and pedestrian access to transit stations substantially reduces the potential benefits. A large portion of parking spaces at park-and-ride facilities are occupied by cars that have been driven very short distances--many 3 miles or less. Many of these short distance automobile trips could be eliminated if proper investments were made in bicycle and pedestrian paths from residential neighborhoods to the transit stations and in secure bicycle parking facilities or bike racks on buses. In 1997, the Jacksonville Transportation Authority implemented the Bikes-on-Buses project to encourage bicyclists use of JTA buses.

## **Recommendations**

### **GOAL 6**

Promote increased selection of bicycling and walking as modes of transportation.

#### **Objective 6.1** Increase public awareness to the benefits of bicycling and walking.

- 6.1.1** Develop and disseminate literature and use radio or television public service announcements describing the benefits of bicycling and walking and what the community is doing to improve conditions for bicyclists and pedestrians.
- 6.1.2** Publish articles in local newspapers encouraging bicycling and walking, highlighting bicycle lane and sidewalk development, and promoting the JTA Bikes on Buses Program.
- 6.1.3** Encourage local bicycling and walking clubs to sponsor exhibits at various community functions.
- 6.1.4** Encourage local officials to speak out on behalf of bicycling and walking.

#### **Objective 6.2** Promote bicycling and walking.

- 6.2.1** Encourage local employers to provide incentives to employees for bicycling and walking, such as bicycle parking, showers and lockers at employment sites, flextime schedules, etc.

- 6.2.2 Highlight developers within the community who make special provisions for bicycling and walking.

**Objective 6.3** Provide better and more convenient bicycle and pedestrian access to transit systems.

- 6.3.1 Encourage the development of bicycle and pedestrian paths from residential neighborhoods, schools, recreational facilities and commercial areas to transit stations.
- 6.3.2 Encourage Jacksonville Transportation Authority (JTA) investment in secure bicycle parking (bicycle lockers) at transit stations.
- 6.3.3 Encourage Jacksonville Transportation Authority (JTA) investment in bicycle racks on public buses.

## Appendix A

### **Florida Bicycle and Pedestrian Safety Laws**

#### **335.065 Bicycle and pedestrian ways along state roads and transportation facilities.--**

(1) (a) Bicycle and pedestrian ways shall be given full consideration in the planning and development of transportation facilities, including the incorporation of such ways into state, regional, and local transportation plans and programs. Bicycle and pedestrian ways shall be established in conjunction with the construction, reconstruction, or other change of any state transportation facility, and special emphasis shall be given to projects in or within 1 mile of an urban area.

(b) Notwithstanding the provisions of paragraph (a), bicycle and pedestrian ways are not required to be established:

1. Where their establishment would be contrary to public safety;
2. When the cost would be excessively disproportionate to the need or probable use;
3. Where other available means or factors indicate an absence of need.

(2) The department shall establish construction standards and a uniform system of signing for bicycle and pedestrian ways.

(3) The department, in cooperation with the Department of Environmental Protection, shall establish a statewide integrated system of bicycle and pedestrian ways in such a manner as to take full advantage of any such ways which are maintained by any governmental entity. For the purposes of this section, bicycle facilities may be established as part of or separate from the actual roadway and may utilize existing road rights-of-way or other rights-of-way or easements acquired for public use.

#### **316.2065 Bicycle regulations.--**

(1) Every person propelling a vehicle by human power has all of the rights and all of the duties applicable to the driver of any other vehicle under this chapter, except as to special regulations in this chapter, and except as to provisions of this chapter which by their nature can have no application.

(2) A person operating a bicycle may not ride other than upon or astride a permanent and regular seat attached thereto.

(3) (a) A bicycle may not be used to carry more persons at one time than the

number for which it is designed or equipped, except that an adult rider may carry a child securely attached to his or her person in a backpack or sling.

(b) Except as provided in paragraph (a), a bicycle rider must carry any passenger who is a child under 4 years of age, or who weighs 40 pounds or less, in a seat or carrier that is designed to carry a child of that age or size and that secures and protects the child from the moving parts of the bicycle.

(c) A bicycle rider may not allow a passenger to remain in a child seat or carrier on a bicycle when the rider is not in immediate control of the bicycle.

<sup>1</sup>(d) A bicycle rider or passenger who is under 16 years of age must wear a bicycle helmet that is properly fitted and is fastened securely upon the passenger's head by a strap, and that meets the standards of the American National Standards Institute (ANSI Z 90.4 Bicycle Helmet Standards), the standards of the Snell Memorial Foundation (1984 Standard for Protective Headgear for Use in Bicycling), or any other nationally recognized standards for bicycle helmets adopted by the department. As used in this subsection, the term "passenger" includes a child who is riding in a trailer or semi-trailer attached to a bicycle.

(e) Law enforcement officers and school crossing guards may issue a bicycle safety brochure and a verbal warning to a bicycle rider or passenger who violates this subsection. Effective January 1, 1998, a bicycle rider or passenger who violates this subsection may be issued a citation by a law enforcement officer and assessed a fine for a pedestrian violation, as provided in s. 318.18. The court shall dismiss the charge against a bicycle rider or passenger for a first violation of paragraph (d) upon proof of purchase of a bicycle helmet that complies with this subsection.

(4) No person riding upon any bicycle, coaster, roller skates, sled, or toy vehicle may attach the same or himself or herself to any vehicle upon a roadway. This subsection does not prohibit attaching a bicycle trailer or bicycle semi-trailer to a bicycle if that trailer or semi-trailer is commercially available and has been designed for such attachment.

(5) (a) Any person operating a bicycle upon a roadway at less than the normal speed of traffic at the time and place and under the conditions then existing shall ride as close as practicable to the right-hand curb or edge of the roadway except under any of the following situations:

1. When overtaking and passing another bicycle or vehicle proceeding in the same direction.
2. When preparing for a left turn at an intersection or into a private road or driveway.
3. When reasonably necessary to avoid any condition, including, but not limited to, a fixed or moving object, parked or moving vehicle, bicycle, pedestrian, animal, surface hazard, or substandard-width lane, that makes it unsafe to continue along the right-hand curb or edge. For the purposes of this subsection,

a "substandard-width lane" is a lane that is too narrow for a bicycle and another vehicle to travel safely side by side within the lane.

(b) Any person operating a bicycle upon a one-way highway with two or more marked traffic lanes may ride as near the left-hand curb or edge of such roadway as practicable.

(6) Persons riding bicycles upon a roadway may not ride more than two abreast except on paths or parts of roadways set aside for the exclusive use of bicycles. Persons riding two abreast may not impede traffic when traveling at less than the normal speed of traffic at the time and place and under the conditions then existing and shall ride within a single lane.

(7) Any person operating a bicycle shall keep at least one hand upon the handlebars.

(8) Every bicycle in use between sunset and sunrise shall be equipped with a lamp on the front exhibiting a white light visible from a distance of at least 500 feet to the front and a lamp and reflector on the rear each exhibiting a red light visible from a distance of 600 feet to the rear. A bicycle or its rider may be equipped with lights or reflectors in addition to those required by this section.

(9) No parent of any minor child and no guardian of any minor ward may authorize or knowingly permit any such minor child or ward to violate any of the provisions of this section.

(10) A person propelling a vehicle by human power upon and along a sidewalk, or across a roadway upon and along a crosswalk, has all the rights and duties applicable to a pedestrian under the same circumstances.

(11) A person propelling a bicycle upon and along a sidewalk, or across a roadway upon and along a crosswalk, shall yield the right-of-way to any pedestrian and shall give an audible signal before overtaking and passing such pedestrian.

(12) No person upon roller skates, or riding in or by means of any coaster, toy vehicle, or similar device, may go upon any roadway except while crossing a street on a crosswalk; and, when so crossing, such person shall be granted all rights and shall be subject to all of the duties applicable to pedestrians.

(13) This section shall not apply upon any street while set aside as a play street authorized herein or as designated by state, county, or municipal authority.

(14) Every bicycle shall be equipped with a brake or brakes which will enable its rider to stop the bicycle within 25 feet from a speed of 10 miles per hour on dry, level, clean pavement.

(15) A person engaged in the business of selling bicycles at retail shall not sell any bicycle unless the bicycle has an identifying number permanently stamped or cast on its frame.

<sup>1</sup>(16) (a) A person may not knowingly rent or lease any bicycle to be ridden by a child who is under the age of 16 years unless:

1. The child possesses a bicycle helmet; or
2. The lessor provides a bicycle helmet for the child to wear.

(b) A violation of this subsection is a nonmoving violation, punishable as provided in s. 318.18.

(17) The court may waive, reduce, or suspend payment of any fine imposed under subsection (3) or subsection (16) and may impose any other conditions on the waiver, reduction, or suspension. If the court finds that a person does not have sufficient funds to pay the fine, the court may require the performance of a specified number of hours of community service or attendance at a safety seminar.

(18) Notwithstanding s. 318.21, all proceeds collected pursuant to s. 318.18 for violations under paragraphs (3)(e) and (16)(b) shall be deposited into the State Transportation Trust Fund.

(19) The failure of a person to wear a bicycle helmet or the failure of a parent or guardian to prevent a child from riding a bicycle without a bicycle helmet may not be considered evidence of negligence or contributory negligence.

(20) Effective January 1, 1998, law enforcement officers may issue traffic citations for a violation of subsection (3) or subsection (16) only if the violation occurs on a bicycle path or road, as defined in s. 334.03. However, they may not issue citations to persons on private property, except any part thereof which is open to the use of the public for purposes of vehicular traffic.

<sup>1</sup>**Note.**--Section 3, ch. 96-185, provides that "[a] county may exempt itself from the provisions of section 316.2065(3)(d) and (16), Florida Statutes, if the board of county commissioners: "(1) Passes an ordinance to that effect before January 1, 1998; and "(2) Provides notice, holds a hearing, and takes testimony before passing the ordinance."

### **316.151 Required position and method of turning at intersections.--**

(1) The driver of a vehicle intending to turn at an intersection shall do so as follows:

(a) *Right turn.*--Both the approach for a right turn and a right turn shall be made as close as practicable to the right-hand curb or edge of the roadway.

(b) *Left turn.*--The driver of a vehicle intending to turn left at any intersection shall approach the intersection in the extreme left-hand lane lawfully available to traffic moving in the direction of travel of such vehicle, and, after entering the intersection, the left turn shall be made so as to leave the intersection in a lane lawfully available to traffic moving in such direction upon the roadway being entered. A person riding a bicycle and intending to turn left in accordance with this section is entitled to the full use of the lane

from which the turn may legally be made. Whenever practicable the left turn shall be made in that portion of the intersection to the left of the center of the intersection.

(c) *Left turn by bicycle.*--In addition to the method of making a left turn described in paragraph (b), a person riding a bicycle and intending to turn left has the option of following the course described hereafter: The rider shall approach the turn as close as practicable to the right curb or edge of the roadway; after proceeding across the intersecting roadway, the turn shall be made as close as practicable to the curb or edge of the roadway on the far side of the intersection; and, before proceeding, the bicyclist shall comply with any official traffic control device or police officer regulating traffic on the highway along which the bicyclist intends to proceed.

**316.155(2) When signal required.--**

(2) A signal of intention to turn right or left must be given continuously during not less than the last 100 feet traveled by the vehicle before turning, except that such a signal by hand or arm need not be given continuously by a bicyclist if the hand is needed in the control or operation of the bicycle.

**316.091(2)(4) Limited access facilities; interstate highways; use restricted.--**

(2) Except as provided herein, no person shall operate upon a limited access facility any bicycle, motor-driven cycle, animal-drawn vehicle, or any other vehicle which by its design or condition is incompatible with the safe and expedient movement of traffic.

(4) No person shall operate a bicycle on the roadway or along the shoulder of an interstate highway.

**349.04(1)(d) Purposes and powers.--**

(1) (d) It is the express intention of this chapter that the authority, in completing the construction of the Jacksonville Expressway System, is not limited to the description thereof contained in the proceedings of the commission which authorized the issuance of \$28 million in bonds to finance part of the cost thereof, but it is authorized to construct any additional extensions, additions, or improvements to the system, or appurtenant facilities, including all necessary approaches, roads, bicycle ways, bridges, and avenues of access, with such changes, modifications, or revisions of the project as are deemed desirable and proper. It is the intent of this chapter, and to effect its purposes the Legislature determines, that bonds issued under this chapter be deemed to be state capital improvement bonds to finance or refinance the cost of state capital projects. However, the provisions of s. 316.091(2), relating to bicycles, do not apply to this system.

**316.130 Pedestrian obedience to traffic control devices and traffic regulations.--**

- (1) A pedestrian shall obey the instructions of any official traffic control device specifically applicable to the pedestrian unless otherwise directed by a police officer.
- (2) Pedestrians shall be subject to traffic control signals at intersections as provided in s. 316.075, but at all other places pedestrians shall be accorded the privileges and be subject to the restrictions stated in this chapter.
- (3) Where sidewalks are provided, no pedestrian shall, unless required by other circumstances, walk along and upon the portion of a roadway paved for vehicular traffic.
- (4) Where sidewalks are not provided, any pedestrian walking along and upon a highway shall, when practicable, walk only on the shoulder on the left side of the roadway in relation to the pedestrian's direction of travel, facing traffic which may approach from the opposite direction.
- (5) No person shall stand in the portion of a roadway paved for vehicular traffic for the purpose of soliciting a ride, employment, or business from the occupant of any vehicle.
- (6) No person shall stand on or in proximity to a street or highway for the purpose of soliciting the watching or guarding of any vehicle while parked or about to be parked on a street or highway.
- (7) When traffic control signals are not in place or in operation, the driver of a vehicle shall yield the right-of-way, slowing down or stopping if need be to so yield, to a pedestrian crossing the roadway within a crosswalk when the pedestrian is upon the half of the roadway upon which the vehicle is traveling or when the pedestrian is approaching so closely from the opposite half of the roadway as to be in danger. Any pedestrian crossing a roadway at a point where a pedestrian tunnel or overhead pedestrian crossing has been provided shall yield the right-of-way to all vehicles upon the roadway.
- (8) No pedestrian shall suddenly leave a curb or other place of safety and walk or run into the path of a vehicle which is so close that it is impossible for the driver to yield.
- (9) Whenever any vehicle is stopped at a marked crosswalk or at any unmarked crosswalk at an intersection to permit a pedestrian to cross the roadway, the driver of any other vehicle approaching from the rear shall not overtake and pass such stopped vehicle.
- (10) Every pedestrian crossing a roadway at any point other than within a marked crosswalk or within an unmarked crosswalk at an intersection shall yield the right-of-way to all vehicles upon the roadway.
- (11) Between adjacent intersections at which traffic control signals are in operation, pedestrians shall not cross at any place except in a marked crosswalk.
- (12) No pedestrian shall, except in a marked crosswalk, cross a roadway at any other place than by a route at right angles to the curb or by the shortest route to the opposite curb.

(13) Pedestrians shall move, whenever practicable, upon the right half of crosswalks.

(14) No pedestrian shall cross a roadway intersection diagonally unless authorized by official traffic control devices, and, when authorized to cross diagonally, pedestrians shall cross only in accordance with the official traffic control devices pertaining to such crossing movements.

(15) Notwithstanding other provisions of this chapter, every driver of a vehicle shall exercise due care to avoid colliding with any pedestrian or any person propelling a human-powered vehicle and give warning when necessary and exercise proper precaution upon observing any child or any obviously confused or incapacitated person.

(16) No pedestrian shall enter or remain upon any bridge or approach thereto beyond the bridge signal, gate, or barrier after a bridge operation signal indication has been given. No pedestrian shall pass through, around, over, or under any crossing gate or barrier at a railroad grade crossing or bridge while such gate or barrier is closed or is being opened or closed.

(17) No pedestrian may jump or dive from a publicly owned bridge. Nothing in this provision requires the state or any political subdivision of the state to post signs notifying the public of this provision. The failure to post a sign may not be construed by any court to create liability on the part of the state or any of its political subdivisions for injuries sustained as a result of jumping or diving from a bridge in violation of this subsection.

(18) No pedestrian shall walk upon a limited access facility or a ramp connecting a limited access facility to any other street or highway; however, this subsection does not apply to maintenance personnel of any governmental subdivision.

## **Appendix B**

# **FDOT Bicycle Lane Width Requirements**

## Appendix C

# **Bicycle Lane/ Bicycle Shoulder and Intersection Pavement Markings**

**FDOT, District 4, 3400 W. Commercial Blvd., Ft. Lauderdale, Florida  
July 22, 1997**

**Reviewed by:  
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District Design Engineer**

# Appendix D

## Comprehensive Plans of Municipalities within the Jacksonville Urbanized Area

### *Goals, Objectives and Policies Related to Bicycle and Pedestrian Planning*

#### CITY OF JACKSONVILLE

#### GOAL 3

Increase Total Roadway Network Capacity - New lane-miles shall be added to the existing roadway network when necessary to ensure the safe, efficient movement of persons and goods. The addition of lane-miles will be accomplished, where possible, within the existing roadways' rights-of-way.

**Objective 3.1** By 1991, the City shall approve only those roadway construction projects for which transportation systems management (TSM) techniques are not cost-effective and which reduce vehicle delay, have a net positive effect on the environment, improve operational safety, increase transportation network capacity and improve the facility's use as a multimodal corridor.

**Policy 3.1.3:** Within the City, the following guidelines shall be used to determine minimum lane widths on new or expanded roadways as defined by the proposed roadway's operating functional classification.

	<u>Urban Profile</u>	<u>Rural Profile</u>
<b><u>Limited Access</u></b> .....	12 feet	12 feet
<b><u>Major Arterial</u></b>		
Outside lane .....	16 feet <sup>1,2</sup>	17 feet <sup>1,3</sup>
All other lanes .....	12 feet	12 feet
<b><u>Minor Arterial</u></b>		
Outside lane .....	16 feet <sup>1,2</sup>	17 feet <sup>1,3</sup>
All other lanes .....	12 feet	12 feet
<b><u>Collector</u></b>		
Outside lane .....	16 feet <sup>1,2</sup>	17 feet <sup>1,3</sup>

All other lanes .....	12 feet	12 feet
<b><u>Local - Over 1,600 ADT</u></b>		
Outside lane .....	14 feet <sup>4</sup>	12 feet
All other lanes .....	12 feet	12 feet
<b><u>Local - Under 1,600 ADT</u></b>		
Outside lane .....	12 feet	12 feet
All other lanes .....	12 feet	12 feet
<b><u>Cul-de-sacs and loop streets</u></b>		
Outside lane .....	10 feet	10 feet
All other lanes .....	10 feet	10 feet

<sup>1</sup> In areas where right-of-way width constraints are present, consideration shall be given to reducing travel lane widths to eleven (11) feet to still allow for the designated bicycle lanes. The lack of adequate right-of-way width and the costs associated with its acquisition in built up areas may not allow provision of the additional width for bicyclists on all projects. The inclusion of designated bicycle lanes in roadway improvements shall be reviewed on a case-by-case basis and only under extreme right-of-way width constraints should designated bicycle lanes be excluded from a project, and a design standard of fourteen (14) foot wide outside curb lanes be used for both urban and rural profiles.

<sup>2</sup> In an urban profile, the outside lanes of major arterial, minor arterial and collector roadway's shall include four foot wide designated bicycle lanes.

<sup>3</sup> In a rural profile, the outside lanes of major arterial, minor arterial and collector roadway's shall include five foot wide designated bicycle lanes.

<sup>4</sup> Unless it is determined by the Director of Public Works that such need does not exist.

**GOAL 4**

Establish Non-Motorized Transportation Network - The establishment and use of an interconnected system of rights-of-way which provides for the safe movement of pedestrians and bicyclists throughout the City shall be supported.

**Objective 4.1:** The City of Jacksonville shall support the establishment and maintenance of facilities for non-motorized transportation, specifically pedestrian and bicycle accommodations, within minor arterial, collector and selected major arterial corridors as identified in the Comprehensive Bikeway Plan for Jacksonville Urbanized Area or its latest update; and shall, after 1991, provide pedestrian facilities on all newly constructed or improved existing minor arterials, collector roadways and local streets abutting residential land uses.

**Policy 4.1.1:** The City shall implement the Bicycle Corridor Long Range Plan (1990-2010) as described in the Comprehensive Bikeway Plan for the Jacksonville Urbanized Area or its latest update by considering the needs of bicyclists on all roadway projects. This policy provides for the construction of designated bicycle lanes or paved shoulders when constructing or reconstructing roads in Jacksonville in

accordance with the Metropolitan Planning Organization (MPO) Transportation Improvement Program. As stated in Policy 3.1.3, the roadway design shall contain twelve (12) foot wide travel lanes with four (4) foot wide designated bicycle lanes in an urban profile and twelve (12) foot wide travel lanes with five (5) foot wide designated bicycle lanes in a rural profile. However, in areas where right-of-way width constraints are present, consideration shall be given to reducing travel lane widths to eleven (11) feet to still allow for the designated bicycle lanes. The lack of adequate right-of-way width and the costs associated with its acquisition in built up areas may not allow provision of the additional width for bicyclists on all projects. The inclusion of designated bicycle lanes in roadway improvements shall be reviewed on a case-by-case basis and only under extreme right-of-way width constraints should designated bicycle lanes be excluded from a project, and a design standard of fourteen (14) foot wide outside curb lanes be used for both urban and rural profiles.

**Policy 4.1.2:** The City shall require new local streets serving residential areas to include four-foot sidewalks within the dedicated right-of-way or an approved alternative pedestrian circulation system.

**Policy 4.1.3:** By 1991, the City shall require new dedicated local streets serving non-residential areas to include five-foot sidewalks within the dedicated right-of-way or an approved alternative pedestrian circulation system unless determined by the Planning Commission that such need does not exist.

**Policy 4.1.4:** The City shall provide for the maintenance of pedestrian and bicycle travel ways on City facilities.

**Policy 4.1.5:** The City shall have the right to require all developers of commercial property to provide for access by and securing of bicycles on site

**Policy 4.1.6:** Where intersection construction or improvements are performed, the City shall provide or require curb-cut ramps at all intersections where one or more of the rights-of-way of the intersecting streets contain sidewalks and where roadway lane widths do not exceed twelve (12) feet, unless otherwise authorized by the City Traffic Engineer.

**Policy 4.1.7:** The City shall utilize pavement surface and pavement marking treatments which support the accommodation of bicyclists within the roadway.

**Policy 4.1.8:** The City shall develop a set of local roadway, sidewalk, and parking lot criteria which emphasize and support pedestrian traffic in appropriate neighborhood areas.

**Objective 4.2:** The City shall actively encourage its citizens to use non-motorized travel modes and support same with policies to assure pedestrian and bicycle access to all parks, recreational facilities and public schools within the City.

**Policy 4.2.1:** The City through its Bicycle Program and its Planning and Public Works Departments, shall coordinate with and encourage the Duval County School

Board and area colleges and universities in the implementation of programs and incentives to encourage the use of pedestrian and bicycle travel modes by their students. The City will continue to sponsor workshops and seminars at area schools through its Bicycle Coordinator.

**Policy 4.2.2:** The City shall, through its Bicycle Program and in conjunction with the Office of the Sheriff and the Northeast Florida Safety Council, encourage compliance with and the enforcement of existing bicycle laws.

**Policy 4.2.3:** The City, through its development review process, shall require that the non-motorized transportation network receives full consideration and pedestrian needs are accommodated in future development within the City. Special consideration shall be given to the movement of pedestrian traffic in the core area of the Central Business District (CBD).

## **CITY OF ATLANTIC BEACH**

### **GOAL 1**

Provide a safe, reliable and efficient roadway system with reasonable operation and maintenance characteristics.

**Objective 1.1:** Develop and maintain a roadway system that provides the safest practicable environment for motorists, cyclists and pedestrians.

**Policy 1.1.1:** Maintain a program to promote safety in all activities on streets under the City's jurisdiction.

**Policy 1.1.2:** The Public Works Department shall be responsible for the planning, reviewing, supervising and coordinating all activities that affect the safety characteristics of the roadway system.

**Policy 1.1.4:** The City shall accept the FDOT Manual of Uniform Minimum Standards for Design, Construction and Maintenance for Streets and Highways as minimum criteria for the development and maintenance of the roadway system.

**Policy 1.1.5:** By 1995, the City shall strive to eliminate all traffic signal deficiencies, unwarranted traffic signals and to require warrants for installation of new traffic control devices.

## **CITY OF JACKSONVILLE BEACH**

## **GOAL TC.1**

Provide a safe, convenient, efficient transportation system.

**Objective TC.1.7:** The City shall require provisions for alternate methods of transportation such as bicycle routes and pedestrian facilities in new developments in accordance with the principles established in Policies TC.1.7.1, TC.1.7.2, and TC.1.7.3 effective April 1, 1991.

**Policy TC.1.7.1:** New single-family developments shall continue to provide sidewalks in accordance with the current requirements for collector streets.

**Policy TC.1.7.2:** New multiple family developments and non-residential developments shall provide sidewalks along all abutting public streets.

**Policy TC.1.7.3:** The City shall encourage the use of bicycles through the establishment of bike routes throughout the community that are consistent with the MPO's Bicycle Plan and coordinated with the City of Neptune Beach.

## **CITY OF NEPTUNE BEACH**

### **GOAL B.01**

To provide a safe, convenient and efficient motorized and non-motorized transportation system for all residents and visitors to the city.

**Objective B.01.04:** The provision of motorized and non-motorized vehicle parking and the provision of bicycle and pedestrian ways will be regulated.

**Policy B.01.04.01:** Neptune Beach shall promote bicycle and pedestrian ways connecting residential areas to recreational areas and schools.

**Policy B.01.04.02:** Neptune Beach shall promote the provision of bicycle storage areas in multi-family developments and shopping and recreational areas.

**Policy B.01.04.03:** Neptune Beach shall review all proposed development for its accommodation of bicycle and pedestrian traffic needs.

## **TOWN OF BALDWIN**

### **GOAL T.1**

A safe, convenient and efficient motorized and non-motorized transportation system shall be available for all residents of Baldwin.

**Objective T.1.2:** Upon implementation the provision of motorized and non-motorized vehicle parking, and the provision of bicycle and pedestrian ways will be regulated.

**Policy T.1.2.1:** The Town shall review all proposed development for its accommodation of bicycle and traffic needs.

**Policy T.1.3.3:** The Town shall require or provide pedestrian displays at signal installations and signal modifications.

**ST. JOHNS COUNTY**

**GOAL B.01**

The County will promote the development of a roadway network which will provide for the safe and efficient movement of people and goods.

**Objective B.01.05:** The county shall encourage, provide, or require bicycle and pedestrian ways for the safe integration of bicycle and pedestrian movement on selected segments of the roadway network, within public facilities, commercial development, residential areas, recreational facilities, and within other areas that allow access.

**Policy B.01.05.01:** By January 1993, a County bicycle route network shall be designated, and implementation shall be commenced to allow for proper consideration of safe bicycle use within the County.

**Policy B.01.05.04:** Facilities and features to accommodate bicycle and pedestrian use shall be considered in the design of all public projects including those selected roadways identified as elements of the bicycle route network referenced in Policy B.01.05.01.

**Policy B.01.04.01:** Right-of-Way Standards. The following minimum right-of-way standards are established for existing and future segments of the roadway network:

<b>Roadway Classification</b>	<b>Right-of Way Width</b>
Arterial	125 feet
Collector	80 feet

**CLAY COUNTY**

**GOAL 3**

Provide a transportation system with alternatives to automobile usage and which meets the transportation needs of all residents of the County's population.

**Objective 3.1:** Provide for non-vehicular transportation modes when planning new or upgraded roadways.

**Policy 3.1.1:** Design adequate protection for pedestrians from vehicular traffic and associated health and safety effects.

**Policy 3.1.2:** By 1992, the county shall prepare a bicycle corridor long-range plan (1991-2001) for the county. Those corridors identified for inclusion within the Metropolitan Planning Organization boundaries shall be included in the bicycle corridor long-range plan within the Comprehensive Bikeway Plan for the Jacksonville Urbanized Area.

**Objective 3.2:** The establishment of an interconnected system of rights-of-way which provides for the safe, convenient and efficient movement of non-motorized traffic, specifically pedestrian and bicycle accommodations, throughout the county shall be accomplished by requiring pedestrian facilities on all newly constructed or improved existing minor arterials, collector roadways and local streets.

**Policy 3.2.1:** *Policy 3.2.1 has been deleted and replaced with Policies 3.2.6 and 3.2.7.*

**Policy 3.2.2:** The County shall require the design of new local streets and collector roads which serve non-residential land uses to include five foot sidewalks within the dedicated right of way or an approved alternative pedestrian circulation system unless determined by the Planning Commission that a need does not exist. Non-residential development proposed adjacent to existing roads shall provide same as part of the development plans.

**Policy 3.2.3:** The County shall require all new local street projected to serve in excess of 1,600 vehicles per day, all new collector and minor arterial roadways and improvements to same within the Urban Service Area, to accommodate bicyclists within the roadway unless determined by the Planning Commission that a need does not exist or that physical constraints are prohibitive.

**Policy 3.2.4:** Where intersection construction or improvements are performed, the County shall provide or require curb-cut ramps at all intersections where one or more of the rights-of-way contain sidewalks and where roadway lane widths do not exceed 12 feet, unless otherwise authorized by the Planning Commission.

**Policy 3.2.6:** Within the County, the following guidelines shall be used to determine minimum lane widths on new or expanded roadways as defined by the proposed roadway's operating functional classification.

	<u>Urban</u> <u>Profile</u>	<u>Rural</u> <u>Profile</u>
<u>Limited Access</u> .....	12 feet	12 feet
<u>Major Arterial</u>		

Outside lane .....	16 feet <sup>1,2</sup>	17 feet <sup>1,3</sup>
All other lanes .....	12 feet	12 feet

**Minor Arterial**

Outside lane .....	16 feet <sup>1,2</sup>	17 feet <sup>1,3</sup>
All other lanes .....	12 feet	12 feet

**Collector**

Outside lane .....	16 feet <sup>1,2</sup>	17 feet <sup>1,3</sup>
All other lanes .....	12 feet	12 feet

**Local - Over 1,600 ADT**

Outside lane .....	15 feet <sup>4</sup>	11 feet <sup>4</sup>
All other lanes .....	11 feet <sup>4</sup>	11 feet <sup>4</sup>

**Local - Under 1,600 ADT**

Outside lane .....	10 feet <sup>4</sup>	10 feet <sup>4</sup>
All other lanes .....	10 feet <sup>4</sup>	10 feet <sup>4</sup>

**Cul-de-sacs and loop streets**

Outside lane .....	10 feet <sup>4</sup>	10 feet <sup>4</sup>
All other lanes .....	10 feet <sup>4</sup>	10 feet <sup>4</sup>

<sup>1</sup> In areas where right-of-way width constraints are presented, consideration shall be given to reducing travel lane widths to eleven (11) feet to still allow for the designated bicycle lanes. The lack of adequate right-of-way width and the costs associated with its acquisition in built up areas may not allow provision of the additional width for bicyclists on all projects. The inclusion of designated bicycle lanes in roadway improvements shall be reviewed on a case-by-case basis and only under extreme right-of-way width constraints should designated bicycle lanes be excluded from a project.

<sup>2</sup> In an urban profile, the outside lanes of major arterial, minor arterial and collector roadway's shall include four foot wide designated bicycle lanes.

<sup>3</sup> In a rural profile, the outside lanes of major arterial, minor arterial and collector roadway's shall include five foot wide designated bicycle lanes.

<sup>4</sup> Unless it is determined by the County Engineer that such need does not exist.

**Policy 3.2.7:** This policy provides for the construction of designated bicycle lanes when constructing or reconstructing roads in Clay County in accordance with the Clay County Transportation Improvement Program. As stated in Policy 3.2.6, the roadway design shall contain twelve (12) foot wide travel lanes with four (4) foot wide designated bicycle lanes in an urban profile and twelve (12) foot wide travel lanes with five (5) foot wide designated bicycle lanes in a rural profile. However, in areas where right-of-way width constraints are present, consideration shall be given to reducing travel lane widths to eleven (11) feet to still allow for the designated bicycle lanes. The lack of adequate right-of-way width and the costs associated with its acquisition in built up areas may not allow provision of the additional width for bicyclists on all projects. The inclusion of designated bicycle

lanes in roadway improvements shall be reviewed on a case-by-case basis and only under extreme right-of-way width constraints should designated bicycle lanes be excluded from a project.

## **TOWN OF ORANGE PARK**

### **GOAL 2**

The Town shall promote the development of a transportation system which will provide for the safe and efficient movement of people and goods in and around the Town and provide for alternative modes of transportation.

**Objective 2.8:** The Town shall encourage and promote the safe integration and utilization of bicycle and pedestrian movement on the major roadway network, within public facilities, commercial development, residential areas, recreational facilities, and other areas that allow public access.

**Policy 2.8.1:** Bicycle Route Network. The Town shall augment the present bicycle plan and identify paths where additional ridership is anticipated.

**Policy 2.8.2:** The Town shall review development orders as to the need for bicycle paths and their consistency with the bicycle plan.

**Policy 2.8.3:** The Town shall include provisions in the land development regulations for the construction of pedestrian walkways.

**Policy 2.8.4:** All road improvements shall be analyzed to determine the need for bicycle paths and pedestrian walkways and constructed where such need is demonstrated.

**Policy 2.8.5:** Bicycle Safety Education. Every effort shall be made to promote education in the safe proper use of bicycles on roadways. This education should especially be oriented to school children.

**Policy 2.8.6:** The Town shall continue to provide for the maintenance of bicycle paths and pedestrian walkways.

**Policy 2.8.7:** The Town shall continue to enforce all applicable bicycling laws

## Appendix E

### **Minimum Effective Sidewalk Widths Based on Area Type, Roadway Type, and Number of Dwelling Units Per Acre**

<b>Type of Area (land use, roadway functional classification, or number of dwelling units)</b>	<b>Recommended Minimum Effective Width</b>
Central Business District (CBD)	Wide enough to meet the level of service based on methods found in the 1985 Highway Capacity Manual. Minimum width of 2.4m (8 ft.)
Commercial and Industrial - outside the CBD	1.5m (5 ft.) with a 0.6m (2 ft.) planting strip 2.1m (7 ft.) wide without a planting strip
Residential - arterials and collectors outside the CBD	1.5m (5 ft.) wide with a 0.6m (2 ft.) planting strip
Residential - local streets, multi-family and single family	(1 to 4 dwelling units/acre) 1.5m (5 ft.) wide with 0.6m (2 ft.) planting strip

*Source: Design and Safety of Pedestrian Facilities: Report of Recommended Practice, Institute of Traffic Engineers, Washington, DC 1997.*

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# Appendices

- A. Florida Bicycle and Pedestrian Safety Laws**
- B. FDOT Bicycle Lane Width Requirements**
- C. Bicycle Lane/ Bicycle Shoulder and intersection pavement markings**
- D. Comprehensive Plans of Municipalities within the Jacksonville Urbanized Area**
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# **Appendix A**

## **Florida Bicycle and Pedestrian Safety Laws**

# **Appendix B**

## **FDOT Bicycle Lane Width Requirements**

# **Appendix C**

## **Bicycle Lane / Bicycle Shoulder and Intersection Pavement Markings**

# **Appendix D**

## **Comprehensive Plans of Municipalities within the Jacksonville Urbanized Area**

*Goals, Objectives and Policies Related to Bicycle  
and Pedestrian Planning*

# **Appendix E**

## **Minimum Effective Sidewalk Widths**

## **References**

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## **Introduction**

## **Chapter 2**

### **The Bicycle and Pedestrian Environment**

# **Chapter 3**

## **Education**

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