

7. PEDESTRIAN

INTRODUCTION

Purpose of Chapter

This chapter provides the pedestrian element of the *Cape Fear Commutes 2035 Transportation Plan*. It describes the relevance of pedestrian facilities to the transportation system, existing facility conditions and trends, and current and future issues.

Relevance to the Transportation System and the Plan

Going for a stroll along the Riverwalk on a summer evening is a favorite pastime of many Wilmington Urban Area residents and visitors. This part of the region has been walkable from its founding days in the mid-eighteenth century and has a lively street life year-round. Outside of the historic core of the region, the walking environment changes from a traditional compact grid network of streets with sidewalks to a loosely connected network of neighborhood streets, sidewalks, trails, and informal paths separated by arterial roadways with multiple lanes of traffic in each direction.

The pedestrian experience varies dramatically in different parts of the Wilmington Urban Area. The historic downtown area has a rich system of sidewalks, marked crosswalks, signalized intersections, and other accommodations for walkers. Within residential neighborhoods, there are many areas with low traffic volumes and low vehicle speeds, so walking on the side of road is fairly pleasant. However, along many of the city's major arterials, people must walk along busy roadways, and there are many areas where there are no sidewalks or crosswalks, resulting in a relatively unpleasant pedestrian environment.

WMPO members understand the importance of creating a region where streets, sidewalks and other pedestrian accommodations are designed to make pedestrians feel safe and comfortable. Several initiatives and projects are underway to support pedestrians and bicyclists including the NCDOT Safe Routes to School program, City of Wilmington Neighborhood Traffic Management Program, Cross-City Trail, Military Cutoff Trail, River to the Sea Bikeway improvements, and sidewalk construction program. The Military Cutoff Trail is a popular route for leisure walking and bicycling which connects the neighborhood of Ogden with the Mayfaire development. The Cross-City Trail, which will eventually span over twenty miles, will connect key destinations such as Wrightsville Beach, University of North Carolina Wilmington, McCrary Park, Empie Park, Cameron Art Museum, Halyburton Park and James E. L. Wade Park.

The walking environment is the base from which all residents, employees and visitors experience the Wilmington Urban Area. The region's pedestrian system is vital to everyone, regardless of his or her transportation choice. Everyone who travels in the city is a pedestrian at some point during their journey. This includes walking to and from bus stops and parking facilities.

However, it takes more than sidewalks to ensure an effective and appealing pedestrian transportation system—it requires attention to elements both inside and outside of the right-of-way.

These elements can include landscaping, lighting, building design, building orientation, access to transit, and the presence of street crossings.

The Wilmington Urban Area needs to build upon its current strategies for constructing, improving, and maintaining the pedestrian facilities throughout the city. This will help address problems such as gaps in the pedestrian system, inadequate maintenance and repair, and hazardous conditions. A key component to developing a walkable region is effective and sustained public education and involvement. Opportunities for education exist with relation to the laws governing our roads and sidewalks, the availability of city programs for pedestrians, as well as communicating the societal need for transportation choices.

The *Cape Fear Commutes 2035 Transportation Plan* recommends the implementation of new policies, guidelines and design standards that ensure pedestrians are provided an adequate and safe transportation system. The plan also focuses on program development to expand education, encouragement and awareness campaigns and programs, which in turn helps to enhance safety and enforcement initiatives.

The *Cape Fear Commutes 2035 Transportation Plan* encourages pedestrian activity by working toward creating a safe and inviting environment for walking. The plan expands upon the foundation created by the *2030 Long Range Transportation Plan* and other adopted studies and plans.

The Pedestrian Appendix includes:

- existing pedestrian facilities in the Wilmington Urban Area;
- an estimation of the transportation demand for pedestrian facilities;
- recommended pedestrian facilities needed to improve the regional transportation system; and
- recommended policy changes needed to improve the regional transportation system.

Existing Facilities

Types of Facilities:

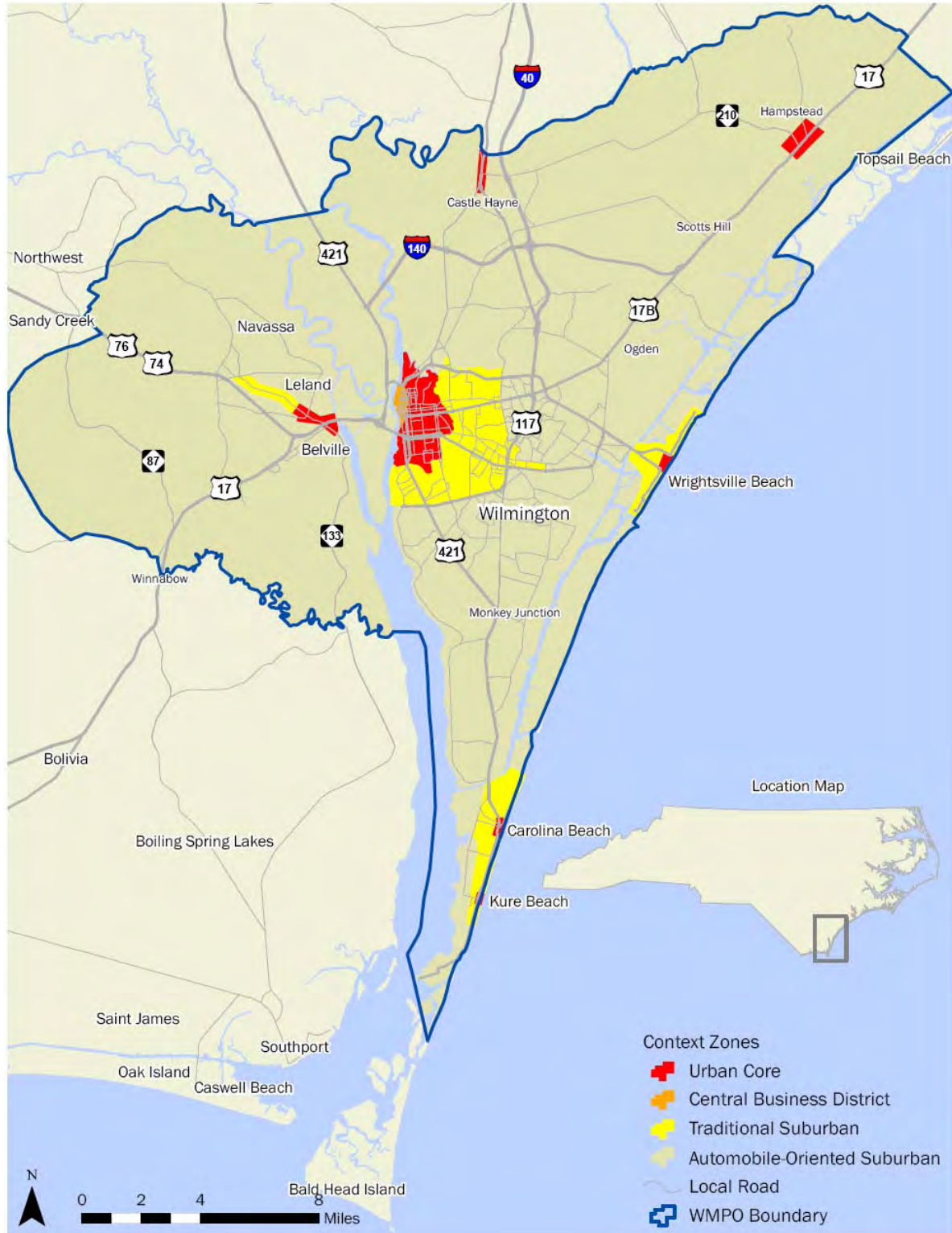
- **Sidewalk:** a five- to eight-foot-wide concrete walkway adjacent to a roadway for use by pedestrians. Example: South 3rd Street (US 17 Business) between Market Street and Willard Street.
- **Multi-use path:** an eight- to twelve-foot-wide paved asphalt path for use by pedestrians and bicyclists; multi-use paths can be located within conservation areas, easements, parks, roadway rights-of-way, and public lands. Example: Military Cutoff Road between Gordon Road and Drysdale Drive.
- **Signalized pedestrian crossing:** a marked crosswalk with pedestrian signal heads located at an intersection with a traffic control signal. Signalized pedestrian crossings may be actuated with push-buttons or concurrent with the parallel green phase during every signal cycle. Example: Oleander Drive (US 76) at Independence Boulevard.

- **Mid-block pedestrian crossing:** a marked crosswalk at a location other than an intersection with a traffic control signal. Mid-block pedestrian crossings may or may not have warning lights or other devices. Example: South 3rd Street (US 17 Business) at Ann Street.

Existing Facilities:

Pedestrian transportation systems cannot be properly evaluated in the context of the region as a whole. Different areas of the region serve different roles and therefore have different needs regarding pedestrian transportation and recreation. Development patterns in the Wilmington Urban Area and the corresponding character of the pedestrian transportation system can be divided into four general zones: Central Business District and Urban Core, Traditional Suburban Zone, and Automobile-Oriented Suburban Zone (see Figure 1).

Figure 1
Map of WMPO Context Zones



Within each of these zones, arterials, collector streets and local streets fulfill a critical role in the region's transportation network and provide varying levels of accommodation for pedestrians. These streets serve unique purposes and support differing volumes of traffic and therefore they should be assessed separately.

Much of the discussion and many of the recommendations in this plan are structured around these character zones. In this section, each area will be evaluated on the following aspects:

- **Connectivity:** does the pedestrian system provide convenient connections for non-vehicular travel? When viewed from the perspective of a pedestrian, connectivity refers to the completeness of the walking network. In other words, are there facilities that get the pedestrian where they want to go? In order to serve as a viable option for even short trips, the pedestrian network should be comfortable and easy to use, and should provide direct connections to destinations. Most pedestrian trips are to and from schools, shopping areas, libraries and community centers, work places, recreational opportunities and transit. Sidewalks and street crossings should be designed so people can easily and comfortably find a direct route to a destination, and delays are minimized. Connectivity is one of the most difficult and yet most important elements of transportation planning. People need to be able to access their destinations directly and safely. Missing sidewalks or crossing facilities may make walking trips difficult and deter people from choosing this transportation mode. In the Wilmington Urban Area, the pedestrian system generally provides good connectivity, but outside of the Central Business District and Urban Core, sidewalks, trails, and other walking facilities provide inconsistent functionality. This challenge can be observed in neighborhoods where residents may be able to walk to parks, schools and other institutions within the neighborhood, but may not be able to walk to other neighborhoods and destinations. Along the region's commercial arterials there are many areas that have decent sidewalk systems but provide poor crossing opportunities due to either long separations between crossings or the absence of marked crosswalks and pedestrian signals at intersections. As a consequence, many trips that could be taken on foot are done in motor vehicles. These short car trips add congestion on the region's roads and contribute emissions into the air.
- **Street crossings:** does the crossing provide appropriate accommodations for pedestrians? Street crossings present one of the greatest safety hazards for pedestrian travel. When crossing the street, pedestrians are entering into the realm of motor vehicle traffic and are most exposed to danger. Pedestrians must contend not only with cross traffic (cars and trucks passing along the cross street) but must also be aware of vehicles turning left or right across their path. Street crossings should be designed to provide maximum protection to the pedestrian through clear markings, appropriate signage or signalization, and adequate crossing time, pedestrian refuges (in certain cases) and other important elements. Signage and markings should provide clear guidance to both pedestrians and motorists as to their respective responsibilities at the crossing. Street crossing issues include:
 - Crossing distance: Multi-lane arterials carry substantial vehicle traffic and create wide intersections and long crossings for pedestrians. For example, at the main entrance

of UNCW, pedestrians crossing South College Road must cross eight lanes (approx. 100').

- Jaywalking: Pedestrians often fail to use legal crossings, cross against the light, or step into the roadway without checking for oncoming traffic. These behaviors put pedestrians at risk of being struck by motor vehicles.
- Marked crosswalk: many signalized intersections do not have pedestrian signals or marked crosswalks. Where present, the crosswalks may not be on all 'legs' (sides) of the intersection. This is most prevalent on multi-lane arterials.
- Motorist behaviors: stopping within the crosswalk or pedestrian crossing area, failing to stop or yield for pedestrians, running red lights and exceeding posted speed limits significantly increase safety hazards for pedestrians. Turning motorists are often in conflict with pedestrians crossing major arterials.
- Signal spacing: long distances between signalized intersections on major arterials (up to one mile separation) either discourages crossing or promotes crossing away from an intersection. Crossing treatments that improve functionality and pedestrian comfort, such as high visibility crosswalks, median refuge islands, and curb ramps that meet ADA requirements are lacking in many locations.
- Signal timing: typical signal timing assumes that pedestrians walk between 3.5 and 4.0 feet per second. However, this may be inadequate for people do not enter the crossing at the beginning of the WALK signal or slower pedestrians (including people with strollers or small children, or wheelchair or other assistive device users).
- Stop bar location: throughout the region, stop bars at major signalized intersections appeared to be located within the legal pedestrian crossing area between the two sidewalk approached and/or wheelchair ramps.
- Wait time: many pedestrian signals have a long delay (over 60 seconds) between the time the push button is depressed and the WALK signal is displayed. This delay can lead to a lack of compliance.
- **Quality of facility**: generally, do pedestrian facilities look well maintained or is it in a state of disrepair? The quality of walking facilities relates to the condition and functionality of sidewalks, curb ramps and crosswalks. Sidewalks that are too narrow or are in poor condition are less comfortable for pedestrians to use, and may discourage walking in that area. Conversely, a well designed and maintained sidewalk allows pedestrians to walk where they want to go in a comfortable setting. Pedestrian facilities that are in very poor condition, with large cracks, uneven surfaces, or under designed pathways may be inaccessible for pedestrians with certain disabilities. For example, a curb ramp that is too steep may not be mountable by a wheelchair user.
- **Accessibility**: how easy is it for pedestrians with physical disabilities to use? Accessibility refers to the suitability of the walking network for people with disabilities. The availability,

design and condition of a particular sidewalk or curb ramp is important for any person but it is critical for a person with a disability who may need more time crossing a street or is in a wheelchair. The following two sections describe some of the issues specific to two categories of pedestrians with disabilities.

- **Walking-aid users:** people who employ walking aids include those who use canes, crutches, or walkers to ease their ability to travel. Surface quality significantly affects ease of travel for walking-aid users. Grates and cracks wide enough to catch the tip of a cane can be potentially dangerous for walking-aid users. Uneven surfaces can also be hazardous because they further reduce the already precarious stability of walking-aid users. Additionally, people who use walking aids tend to travel more slowly than other pedestrians. As a result, they benefit from longer pedestrian signal cycles at intersections and the presence of passing spaces to allow others to travel around them. A rapid change in cross-slope can also cause people with walkers to stumble.
- **Wheelchair users:** wheelchair and scooter users often travel much faster than walking pedestrians, especially on level surfaces or downgrades, but they can be much slower when traveling uphill. In addition, their stability and control can be affected by surfaces with cross-slopes, grades, or rough terrain. Wheelchair and scooter users require a wider path of travel than ambulatory pedestrians. Because wheels are difficult to propel over uneven or soft surfaces, wheelchair and scooter users need firm, stable surfaces and structures such as ramps or beveled edges to negotiate changes in level. Curb ramps allow wheelchair users to negotiate curbs more easily. Because cross-slopes tend to cause wheelchairs and scooters to veer downhill, manual wheelchair users must perform additional work to continue traveling in a straight line over areas such as driveway crossings. Severe cross-slopes can cause wheelchairs to tip over sideways, especially during a turn.
- **Streetscape design:** does the surrounding area feel safe and welcoming for pedestrians? Streetscape refers to roadway design and condition as it impacts street users and nearby residents. Generally, the streetscape is considered to be the aesthetic quality of the public space, between building fronts. The streetscape includes building placement and façade design, street plantings and street furniture, parking location and design and the design of the roadway. Because pedestrians move so much more slowly than cars, they are very aware of the surrounding environment. People tend to want to walk in settings that are attractive and visually interesting. Conversely, areas that are unattractive or are designed without consideration for the person walking by are unappealing and may make people feel unsafe. Streetscaping recognizes that streets are places where people engage in various activities, including walking, bicycling and driving. Streetscapes are an important component of the public realm (public spaces where people interact), which help defines a community's aesthetic quality, identity, economic activity, health, social cohesion and opportunity, not just its mobility.

Previous Plans:

Several transportation plans that include recommendations for pedestrian facilities have been drafted and adopted by the WMPO since the adoption of the *2030 Long Range Transportation Plan*. These include the *Coastal Pender Collector Street Plan* (2007), *River Road Small Area Plan* (2007), *US 17 Business Corridor Study* (2007), *Bicycle Facilities Study for the Blue Clay Corridor* (2008), *Cape Fear Historic Bypass Corridor Management Plan* (2008), *Comprehensive Bicycle Plan for Leland, NC* (2008), *Corridor Plan for Dow Road* (2009), *Pelican Drive/Salisbury Street Bicycle Plan for the Town of Wrightsville Beach* (2009), *Walk Wilmington: A Comprehensive Pedestrian Plan* (2009), and *Market Street Corridor Study* (estimated 2010). Elements of these plans were incorporated into the development of the *Cape Fear Commutes 2035 Transportation Plan*.

Pedestrian Facility Demand

Table 1 shows the transportation priorities of the respondents who completed the *Cape Fear Commutes 2035 Survey* which was administered in 2009. The highest transportation priority according to the survey is “Improving bicycle & pedestrian facilities,” while “Improving bicycle & pedestrian safety” ranked fourth out of the eight priorities listed.

Table 1
Regional Transportation Priorities

Goal	Rank
Improving bicycle & pedestrian facilities	1
Expanding public transit service	2
Improving function of existing roadways	3
Improving bicycle & pedestrian safety	4
Building new roadways	5
Improving safety of existing roadways	6
Building park and ride lots	7
Beautifying existing roadways	8

SOURCE: CAPE FEAR COMMUTES 2035 SURVEY, 2009

Table 2 shows the difference between the desired trips by walking and the current trips by walking. Over 34% of people who currently make less than ten percent of their trips by walking would like to make more. Most would like to make between ten percent and 50% of their trips using this mode. Running errands via walking is more appealing than commuting to work or school, with a two- to four-percent difference in favor of the former in the 10-25% and 26-50% rows.

TABLE 2
DIFFERENCE BETWEEN DESIRED AND CURRENT TRIPS BY WALKING

Percentage of total trips	Commuting to Work or School	Running Errands
<10%	-34.0%	-40.2%
10-25%	+18.1%	+20.0%
26-50%	+8.1%	+12.2%
51-75%	+3.3%	+3.3%
>75%	+4.4%	+4.6%

SOURCE: CAPE FEAR COMMUTES 2035 SURVEY, 2009

Table 3 clearly illustrates where the perceived gaps are in the pedestrian transportation system according to the survey. The public is strongly interested in the provision of additional sidewalks and multi-use paths and, to a lesser extent, improving safety of roadway crossing and connections between nearby homes, stores and offices.

TABLE 3
HOW DO WE ENCOURAGE PEOPLE TO WALK MORE OFTEN?

Strategy	Percentage
Construct more sidewalks and multi-use paths	81.3%
Improve safety of roadway crossings	62.5%
Improve connections between nearby homes, stores and offices	58.0%
Provide better information about safe walking routes	40.8%
Provide showers and changing rooms near workplaces	13.3%
Other	10.1%

SOURCE: CAPE FEAR COMMUTES 2035 SURVEY, 2009

PLAN RECOMMENDATIONS

Policy

- Continue to collaborate with Brunswick County Public Schools, New Hanover County Public Schools and Pender County Public Schools to improve school siting, pedestrian connections to existing schools and encouragement of walk to school programs
- Continue to implement the complete streets policies adopted by the WMPO and NCDOT

- Encourage all WMPO members to require the construction of sidewalks and pedestrian facilities as part of subdivision and/or site development
- Encourage all WMPO members to seek planning and infrastructure grants to improve the pedestrian transportation system within the Wilmington Urban Area
- Ensure that transportation projects within the Wilmington Urban Area do not disrupt existing or planned pedestrian routes or facilities
- Support and/or fund comprehensive pedestrian plans for the other municipalities within the Wilmington Urban Area
- Work to implement the policy recommendations of *Walk Wilmington: A Comprehensive Pedestrian Plan* and all other adopted transportation plans

Projects

- Construct new or improved pedestrian facilities as part of all transportation projects within the Wilmington Urban Area (with the exception of new freeways and limited-access roadways)
- Include marked crosswalks and pedestrian signal heads at all new traffic signals within the Wilmington Urban Area (with the exception of new freeways and limited-access roadways)
- Support and/or fund comprehensive pedestrian plans for the other municipalities within the Wilmington Urban Area to identify additional pedestrian projects for funding
- Work to construct the recommended projects within *Walk Wilmington: A Comprehensive Pedestrian Plan* and all other adopted transportation plans