



# CHAPTER ONE: INTRODUCTION & OVERVIEW

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## PROJECT BACKGROUND

The Marion Bicycle Plan was made possible by joint funding from the City of Marion, the North Carolina Department of Transportation (NCDOT) and the Kate B. Reynolds Charitable Trust. In 2014, Marion was awarded a matching grant from the North Carolina Department of Transportation (NCDOT) Bicycle and Pedestrian Planning Grant Initiative. **The purpose of the grant is to encourage municipalities to develop comprehensive bicycle plans and pedestrian plans.** To date, the initiative has funded planning efforts in more than 150 municipalities across the state. The program is administered through NCDOT’s Division of Bicycle and Pedestrian Transportation.

## PLANNING PROCESS

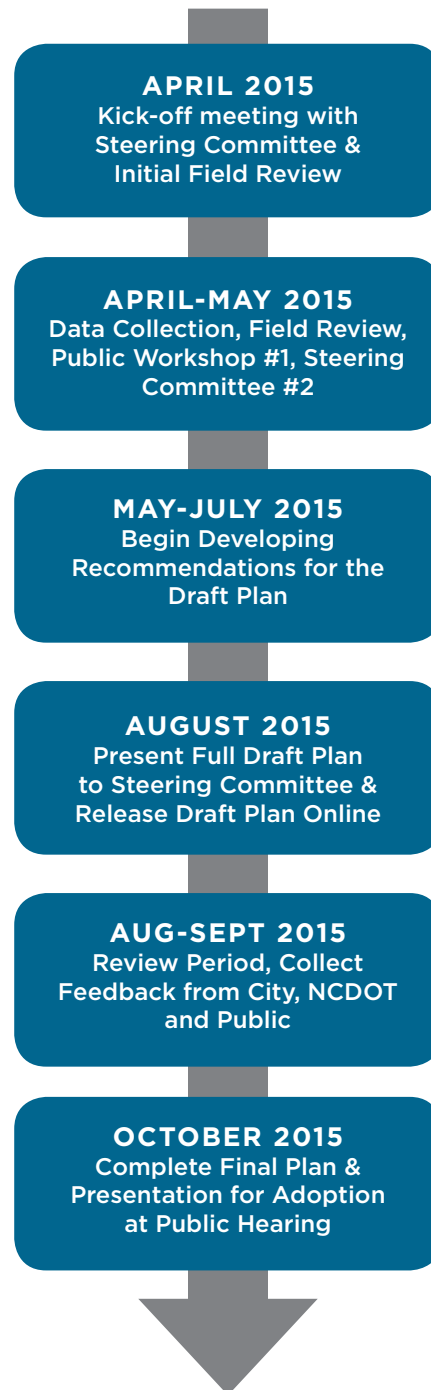
The planning process began with a Kickoff Meeting in Spring 2015, which was the first of four project Steering Committee meetings. The Steering Committee was made up of a combination of local residents, City staff and representatives, health professionals, and regional transportation planners. This Steering Committee guided the plan’s development throughout the planning process. Key steps included crafting an overall vision for the plan, communicating existing bicycling conditions to City staff and project consultants, and providing feedback on plan recommendations.



*Steering Committee members mark up base maps at the project Kick-Off Meeting.*

Aside from the Steering Committee input, the planning process included several other important methods of public outreach and involvement. The project website, public comment form, press releases, and public workshops were all used to gather input for the plan and ask for feedback on the draft plan.

### Key Steps in the Planning Process:



## PLAN VISION & GOALS

Through this plan, the City of Marion aims to:

- » Promote biking as a viable, healthy, safe and efficient mode of transportation.
- » Encourage youth to bike through education and encouragement activities.
- » Develop a bike network that connects key destinations, such as the existing Catawba River Greenway to the Peavine Rail Corridor.
- » Designate neighborhood bike routes that connect local destinations and rural bike routes that connect to regional destinations.
- » Establish a framework for future City and regional planning and funding opportunities.
- » Develop a comprehensive bicycle program around the 5 E's (Engineering, Education, Encouragement, Enforcement, and Evaluation) .



*The Catawba River Greenway was identified as a key destination by the steering committee and general public.*

The following Vision Statement draws upon input from the Steering Committee at the Kick-Off Meeting, outlining the overall vision for the outcomes of this plan:

## VISION STATEMENT

*“The City of Marion is a bicycle-friendly community connected by a safe, convenient, and enjoyable bicycle network that provides access for users of all skill levels; links neighborhoods to destinations; and promotes healthy living through active transportation.”*

## WHY THIS PLAN IS IMPORTANT

In absence of research focused directly on Marion, the sections that follow highlight national and statewide trends for each topic.

### SAFETY FOR PEDESTRIANS & BICYCLISTS

#### TRENDS AND CHALLENGES

According to a survey of 16,000 North Carolina residents for the 2011 North Carolina Bicycle and Pedestrian Safety Summit, the most commonly reported safety issue for walking and bicycling was inadequate infrastructure (75%).<sup>1</sup> A lack of bicycle and pedestrian facilities, such as sidewalks, bike lanes, trails, and safe crossings, lead to unsafe conditions for bicyclists and pedestrians:

- » Each year on average (2008-2012), 168 pedestrians and 22 bicyclists are killed in collisions with motor vehicles on North Carolina roads, while many more are seriously injured.<sup>2</sup>
- » North Carolina is ranked as one of the least safe states for walking (41st) and bicycling (44th).<sup>3</sup>
- » 13% of all traffic fatalities in North Carolina are bicyclists and pedestrians.

- » During the five-year period from 2008 to 2012, a total of 4,889 bicycle-motor vehicle crashes and 13,186 pedestrian-motor vehicle crashes were reported to North Carolina authorities.
- » In Marion, from 2007-2012, there were two bicycle-motor vehicle crashes.<sup>2</sup>

#### IMPROVING SAFETY

Separate studies conducted by the Federal Highway Administration and the University of North Carolina Highway Safety Research Center demonstrate that installing pedestrian and bicycle facilities directly improves safety by reducing the risk and severity of pedestrian-automobile and bicycle-automobile crashes. For example, installing a sidewalk along a roadway reduces the risk of a pedestrian “walking along roadway” crash by 88 percent. Furthermore, according to the aforementioned survey, 70% of respondents said they would walk or bicycle more if safety issues were addressed, citing a lack of bicycle and pedestrian facilities as the top issues<sup>1</sup>

The following web addresses link to more comprehensive research on safety.

- » <http://www.ncdot.gov/bikeped/planning/walkbikenc/>
- » [http://www.pedbikeinfo.org/data/factsheet\\_crash.cfm](http://www.pedbikeinfo.org/data/factsheet_crash.cfm)



*Cyclists are currently using roads like Sugar Hill Road although there are no existing bicycle facilities.*

## HEALTH IMPACTS OF ACTIVE TRANSPORTATION

### TRENDS AND CHALLENGES

North Carolina’s transportation system is one of the most important elements of our public environment. Unfortunately, it includes many streets that are unsafe for walking and bicycling, posing barriers to healthy living and active transportation. In 2012, NCDOT’s Board of Transportation revised its mission statement to include “health and well-being” and passed a “Healthy Transportation Policy,” which declares the importance of a transportation system that supports positive health outcomes. Below are some key trends and challenges related to health and transportation in North Carolina:

- » 65% of adults in North Carolina are either overweight or obese. The state is also ranked 5th worst in the nation for childhood obesity.<sup>4</sup>
- » In a 2012 survey, 88% of North Carolinians responded that they spend no time walking or biking as a means of transportation.<sup>5</sup>

- » Recent reports have estimated the annual direct medical cost of physical inactivity in North Carolina at \$3.67 billion, plus an additional \$4.71 billion in lost productivity.<sup>6</sup> However, every dollar invested in pedestrian and bicycle trails can result in a savings of nearly \$3 in direct medical expenses.<sup>7</sup>
- » Of North Carolinians surveyed, 60% would increase their level of physical activity if they had better access to sidewalks and trails.<sup>5</sup>

### BETTER HEALTH THROUGH ACTIVE TRANSPORTATION

Using active transportation to and from school, work, parks, restaurants, and other routine destinations is one of the best ways that children and adults can lead measurably healthier lives. Increasing one’s level of physical activity through walking and bicycling reduces the risk and impact of cardiovascular disease, diabetes, chronic disease, and some cancers. It also helps to control weight, improves mood, and reduces the risk of premature death.<sup>8</sup>

Active Transportation: Pathway to Health



Source: Alta Planning + Design; WalkBikeNC

## ECONOMIC BENEFITS

### TRANSPORTATION SAVINGS

When it comes to transportation costs, bicycling is one of the most affordable forms of transportation available, second only to walking. According to the American Automobile Association, the cost of owning and operating a medium-sized sedan for one year, assuming one drives 10,000 miles per year, is approximately \$7,804.90. Owning and operating a bicycle costs just \$120 per year, according to the League of American Bicyclists. The Pedestrian and Bicycle Information Center explains how these lower costs help individuals and communities as a whole: *“When safe facilities are provided for pedestrians and bicyclists, more people are able to be productive, active members of society. Car ownership is expensive, and consumes a major portion of many Americans’ income.”*

### PROPERTY VALUES

Bicycle facilities such as bike lanes, paths, and greenway trails are popular community amenities that add value to properties nearby. Trends related to economics and bicycling in North Carolina:

- » North Carolina is the 6th most visited state in the United States and visitors spend as much as \$18 billion a year, many of whom partake in activities related to walking or biking.<sup>9</sup>
- » The annual return to local businesses and state and local governments on bicycle facility development in the Outer Banks is approximately nine times higher than the initial investment.<sup>10</sup>
- » Walking and biking are economically efficient transportation modes. Many North Carolinians cannot afford to own a vehicle and are dependent on walking and biking for transportation (6.6% of occupied housing units in North Carolina do not own a vehicle).<sup>11</sup>

To determine your driving costs accurately, keep personal records on all the costs listed below. Use this worksheet to figure your total cost to drive.

#### Annual Cost Per Mile

costs	yearly totals
<b>operating costs</b>	
gas per mile	_____
total miles driven	× _____
total gas	= _____
maintenance	+ _____
tires	+ _____
<b>total operating costs</b>	<b>+ =</b> _____
<b>ownership costs</b>	
depreciation	_____
insurance	+ _____
taxes	+ _____
license and registration	+ _____
finance charges	+ _____
<b>total ownership costs</b>	<b>+ =</b> _____
<b>other costs</b> (washing, accessories, etc.)	<b>+ =</b> _____
<b>total driving costs</b>	<b>=</b> _____
<b>total miles driven</b>	<b>÷</b> _____
<b>cost per mile</b>	<b>=</b> _____

*Driving Costs Worksheet. AmericanAutomobile Association, Your Driving Costs Report: 2013 Edition.*

## MOBILITY AND ACCESSIBILITY BENEFITS OF ACTIVE TRANSPORTATION

### OPPORTUNITY TO INCREASE WALKING AND BICYCLING RATES

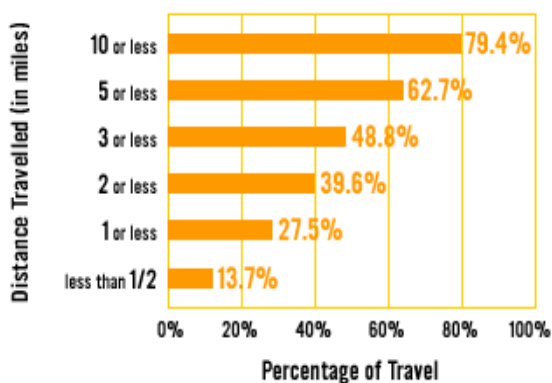
According to the 2011 Bicycle and Pedestrian Safety Survey, at least 70 percent of North Carolinians would walk or bike more for daily trips if walking and bicycling conditions were improved. With appropriate accommodations, walking and bicycling can provide alternatives to driving for commuting to work, running errands, or making other short trips.

Commute rates for walking and bicycling in North Carolina currently fall below the national average, with just 0.2% of North Carolina commuters bicycling to work and 1.8% walking to work, compared to 0.6% bicycling and 2.9% walking nationwide. This places North Carolina 42nd for walking commute rates and 41st for

bicycling commute rates in nationwide state rankings.<sup>3</sup> Charts in Chapter 2 show national model communities for biking rates, model communities in North Carolina, and peer communities in the region.

An estimated 40% of all trips (commute and non-commute) taken by Americans each day are less than two miles, equivalent to a bike ride of 10 minutes or less; however, just 13% of all trips are made by walking or bicycling nationwide.<sup>3</sup> To put these numbers into perspective, 34% of all trips are made by walking or bicycling in Denmark and Germany, and 51% of all trips in the Netherlands are by foot or by bike.<sup>12</sup> Germany, Denmark, and the Netherlands are wealthy countries with high rates of automobile ownership, just like the United States. Yet, an emphasis has been placed on providing quality walking and bicycling environments which has alleviated the reliance on motor vehicles for short trips.

Daily Trip Distances of Americans



Most driving trips are for a distance of five miles or less. Chart from the Bicycle and Pedestrian Information Center website, [www.pedbikeinfo.org](http://www.pedbikeinfo.org)

### REDUCED VEHICLE MILES TRAVELED (VMT) & CONGESTION

Taking short trips by foot or by bike can help to greatly reduce motor vehicle miles driven and traffic congestion. Under the Nonmotorized Transportation Pilot Program, walking and bicycling investments contributed to an estimated 23% increase in the number of walking trips and

an estimated 48% increase in the number of bicycling trips in four pilot communities between 2007 and 2013.<sup>13</sup> These individual changes in travel behavior can add up to produce significant societal benefits. Traffic on arterials and other streets can be mitigated as people use sidewalks, bike lanes, paths, and other alternatives to get around. Parking lots can also be made less congested by reducing crowding, circling, and waiting for open spots.

The following web addresses link to more comprehensive research on transportation efficiency.

- » <http://www.ncdot.gov/bikeped/planning/walkbikenc/>
- » [http://www.pedbikeinfo.org/data/factsheet\\_general.cfm](http://www.pedbikeinfo.org/data/factsheet_general.cfm)

## STEWARDSHIP BENEFITS OF ACTIVE TRANSPORTATION

### TRENDS AND CHALLENGES

Below are some key trends and challenges related to stewardship and transportation in North Carolina:

- » Even a modest increase in walking and bicycling trips (in place of motor vehicle trips) can have significant positive impacts. For example, replacing two miles of driving each day with walking or bicycling will, in one year, prevent 730 pounds of carbon dioxide from entering the atmosphere.<sup>14</sup>
- » According to the National Association of Realtors and Transportation for America, 89% of Americans believe that transportation investments should support the goal of reducing energy use.<sup>15</sup>
- » North Carolina’s 2009-2013 Statewide Comprehensive Outdoor Recreation Plan (SCORP) found “walking for pleasure” to be the most common outdoor recreational ac-

tivity, enjoyed by 82% of respondents, and bicycling by 31% of respondents.<sup>16</sup>

- » The natural buffer zones that are protected along greenways and trails, protect streams, rivers, and lakes, prevent soil erosion and filter pollution caused by agricultural and roadway runoff.<sup>17</sup>

Providing safe accommodations for walking and bicycling can help to reduce automobile dependency, which in turn leads to a reduction in vehicle emissions – a benefit for residents and visitors and the surrounding environment. As of 2003, 27 percent of U.S. greenhouse gas emissions are attributed to the transportation sector, and personal vehicles account for almost two-thirds (62 percent) of all transportation emissions.<sup>18</sup> Primary emissions that pose potential health and environmental risks are carbon dioxide, carbon monoxide, volatile organic compounds, (VOCs), nitrous oxides

(NOx), and benzene. Children and senior citizens are particularly sensitive to the harmful affects of air pollution, as are individuals with heart or other respiratory illnesses. Increased health risks such as asthma and heart problems are associated with vehicle emissions.<sup>19</sup> The following web addresses link to more comprehensive research on active transportation and stewardship.

- » <http://www.ncdot.gov/bikeped/planning/walkbikenc/>
- » [http://www.pedbikeinfo.org/data/factsheet\\_environmental.cfm](http://www.pedbikeinfo.org/data/factsheet_environmental.cfm)

Stewardship addresses the impact that transportation decisions (both at the government/policy level and individual level) can have on the land, water and air that Marion residents and visitors enjoy.



*The Catawba River Greenway highlights the unique environmental assets of McDowell County.*



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