BIKERALEIGH

that's how we roll

DRAFT

BikeRaleigh Plan Update

Raleigh is a place where people of all ages and abilities bicycle comfortably and safely for transportation, fitness, and enjoyment.

The BikeRaleigh network is integrated into the transportation system to connect people to where they live, work, play, and learn.

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The BikeRaleigh Program encourages biking in Raleigh through on-road facility design, cycling safety and education promotion, and encouragement events. Our primary goal is to promote bicycle use as a viable, attractive, non-polluting form of transportation and assure safe and convenient access to all areas of the City.

Contact: Susan Wilson
City of Raleigh Bike & Pedestrian Program Manager
Raleigh, North Carolina, United States
Phone: 919-996-2476 | bikeraleigh@raleighnc.gov

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PROJECT STEERING COMMITTEE

Dan Howe, Raleigh Bicycle & Pedestrian Advisory Commission
Harry Johnson, Raleigh Bicycle & Pedestrian Advisory Commission
Seth Palmer, Raleigh Bicycle & Pedestrian Advisory Commission
Alan Wiggs, Raleigh Bicycle & Pedestrian Advisory Commission
Rodger Koopman, Raleigh Parks Recreation Greenway Advisory Board
Sig Hutchinson, Wake County Commissioner
Kathryn Zerinque, North Carolina State University
Kenneth Withrow, Capital Area Metropolitan Planning Organization
Bill King, Downtown Raleigh Alliance
Sara Merz, Advocates for Health in Action
Stephen Sposato, Wake County Public School System
Jeff Roberts, Trek Raleigh
David Zell, Oak City Cycling Project
Kristy Jackson, Oaks & Spokes
Dani Moore, NC Justice Center
Otis Allen, SE Raleigh Resident & Leader

PROJECT STAFF

Ken Bowers, AICP, Planning Director
Eric Lamb, PE, Office of Transportation Planning
Susan Wilson, AICP, Office of Transportation Planning
Jason Myers, AICP, Office of Transportation Planning
Todd Delk, PE, Office of Transportation Planning
Jed Niffenegger, PE, Public Works, Transportation Operations
Rebecca Duffy, PE, Public Works, Transportation Operations
Lisa Potts, Parks, Recreation and Cultural Resources
Todd Milam, Parks, Recreation and Cultural Resources
Kris Morley-Nikfar, AICP, Parks, Recreation and Cultural Resources

PROJECT CONSULTANTS

Matt Hayes, AICP, Alta Planning + Design
Jason Reyes, AICP, Alta Planning + Design
Stephen Bzomowski, Alta Planning + Design
Suzanne Unger Young, PE, Three Oaks Engineering
Craig Young, PE, Three Oaks Engineering

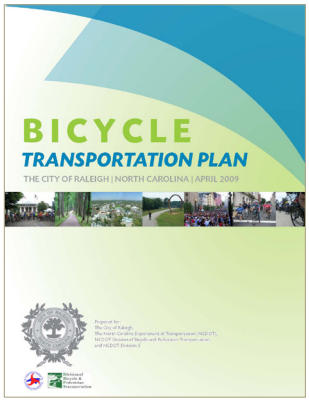
alta PLANNING + DESIGN

THREE OAKS ENGINEERING

Prepared for the City of Raleigh
Prepared by Alta Planning + Design, with Three Oaks Engineering

Introduction

This update of the BikeRaleigh Plan reflects the most common themes heard from the public and stakeholders in the planning process: that people of **all ages and abilities** should be able to bicycle **comfortably** and **safely** across Raleigh. The purpose of this plan is to improve cycling conditions in order to bring benefits to the entire city.



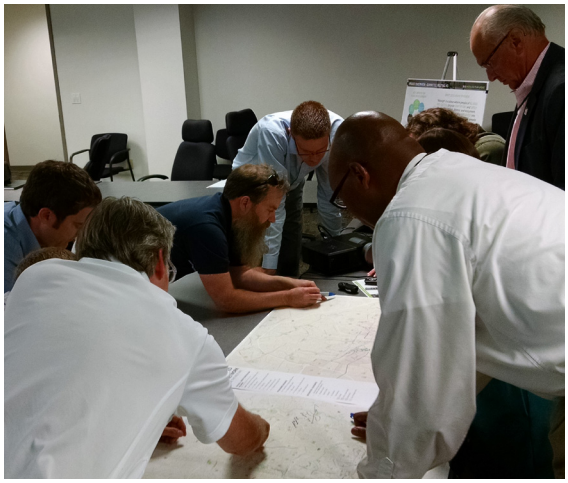
The 2009 Raleigh Bicycle Transportation Plan helped Raleigh achieve a bronze-level Bicycle Friendly Community (BFC).

The previous Bicycle Transportation Plan (2009) laid out an implementation framework that has helped to make Raleigh a bronze-level Bicycle Friendly Community (BFC) today. This plan updates the city's long-term bicycle network plan, and more importantly, lays out a 5-year infrastructure, programming, and policy strategy that will raise Raleigh to silver-level BFC status. The updated plan builds on accomplishments made since 2009 but also identifies the specific deficiencies, needs, and opportunities moving forward. It also builds upon new research, recent peer city experiences, and advances in bicycle facility design best practices in order to develop a plan that will serve Raleigh in the coming years. The strategies and actions included here will make bicycling a more viable form of transportation, benefiting all Raleighites. This will help to transform Raleigh into a city that is an active, healthy, and prosperous place to live, work, and play.

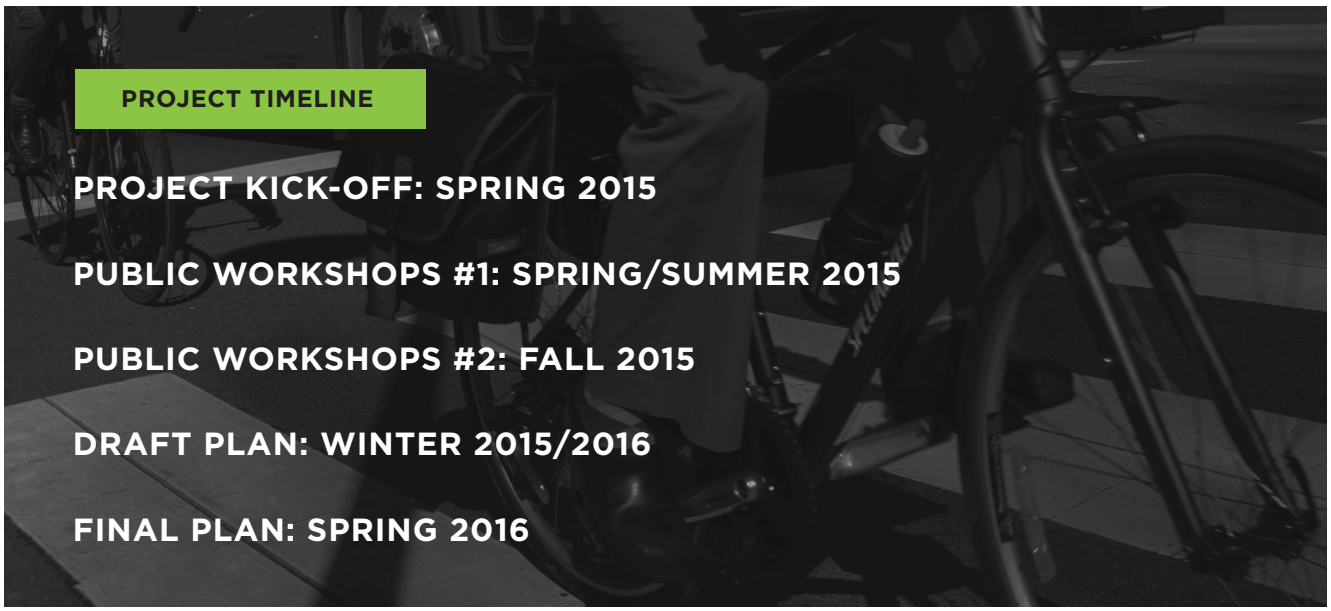
PLANNING FRAMEWORK

PLANNING PROCESS

In Spring 2015, the City of Raleigh began the process of updating its 2009 Bicycle Transportation Plan. The development of the updated plan included an open, participatory process in which an Informal Steering Committee of local stakeholders served as the guiding body. Residents of Raleigh provided input through public workshops and an interactive project website with survey questions, maps, and draft materials. Regular briefings were provided to the Raleigh Bicycle and Pedestrian Advisory Commission (BPAC) and the Raleigh City Council.



The planning process included many levels of input, such as outreach at public events (left) and input from an Informal Steering Committee (right).



TYPES OF BICYCLISTS

To be most successful, bicycle infrastructure should accommodate as many users as possible, providing a comfortable experience for the greatest number of people. A framework for understanding the characteristics, attitudes, and infrastructure preferences of different bicyclists in the US population as a whole is illustrated below. The previous bike plan laid out a framework of facilities that featured the best practices at the time, which primarily served "Enthused and Confident" riders but did not adequately account for the much larger "Interested but Concerned" bicyclist group. These bicyclist types are referred to through this plan. The term cyclists of "All Ages and Abilities" refers to the combination of the top three groups.

HIGHLY EXPERIENCED (APPROXIMATELY 1% OF POPULATION)

This group is characterized by bicyclists that will typically ride anywhere regardless of roadway conditions or weather. These bicyclists can ride faster than other user types, prefer direct routes, and will typically choose roadway connections—even if shared with vehicles—over separate bicycle facilities such as shared use paths.

ENTHUSED AND CONFIDENT (~ 5-10% OF POPULATION)

This user group encompasses bicyclists who are fairly comfortable riding on all types of bikeways but usually choose low traffic streets or multi-use paths when available. These bicyclists may deviate from a more direct route in favor of a preferred facility type. This group includes commuters, recreationalists, racers, and utilitarian bicyclists.

INTERESTED BUT CONCERNED (~ 60% OF POPULATION)

This user type comprises the bulk of the cycling population and represents bicyclists who typically only ride a bicycle on low traffic streets or multi-use trails under favorable weather conditions. These bicyclists perceive significant barriers to their increased use of cycling, specifically traffic and other safety issues. These people may become "Enthused & Confident" with encouragement, education, and experience.

NO WAY, NO HOW (~ 30% OF POPULATION)

Persons in this category are not bicyclists, and perceive severe safety issues with riding in traffic. Some people in this group may eventually become more regular cyclists with time and education. A significant portion of these people will not ride a bicycle under any circumstances.

Source: Four Types of Cyclists. (2009). Roger Geller, City of Portland Bureau of Transportation. Supported by data collected nationally since 2005.

PLAN VISION AND GOALS

The 2009 Bicycle Transportation Plan presented a series of ten vision statements and four measurable goals. In 2015, progress in achieving these visions and reaching these goals was assessed to guide refinement of the plan vision and the setting of new goals.

PROGRESS ON 2009 GOALS

In 2009, four measurable goals were established. The City has achieved much success in all four goals as described below:

1. **Quadruple the 2000 Census bicycle commute rate by 2015.** In the 2000 decennial census, the commute rate was 0.3%. The American Community Survey (ACS), which has a different methodology with a much larger margin of error, has shown estimates as high as 1.0% bicycle mode share in 2012. The current ACS five year estimate (2010-2014) is 0.51%. While there has been progress, this goal has not been met.

2. **Complete the plan's top five priority bicycle projects by 2011 and complete the top twenty by 2015.** The City has exceeded this by jumping from 5.3 miles of on-road bike facilities to nearly 70 miles.

3. **Become designated as a "Bicycle Friendly Community" by 2010.** The City has earned the Bronze-level designation.

4. **Launch/participate in three new programs in three years.** The City has exceeded this with the hiring of a bicycle/pedestrian coordinator, establishing regular CIP funding for bicycle facilities, engaging in enforcement programs, creating a Bicycle and Pedestrian Advisory Commission (BPAC), producing hardcopy bicycle maps, branding the BikeRaleigh program, and rolling out numerous education and encouragement programs.

The BikeRaleigh branding was used for all bicycle-related outreach materials, as seen in these outreach event images from this planning process.

2009 VISION STATEMENT ASSESSMENT

The ten Vision Statements from 2009 will continue to serve as sub-vision statements for the new comprehensive vision statement. Below is a summary of the Steering Committees' scores of all ten 2009 vision statements on a scale of 1-5 (1 meaning nothing accomplished; 5 meaning vision achieved). The evaluation of the Vision Statements indicate that the City has made significant progress but still has work to do.

2015 IMPLEMENTATION SCORE	2009 STATEMENT
3.30	Institutional support, staffing, and resources will be available for Plan implementation and facility maintenance.
3.30	Land use in Raleigh will accommodate bicycling with increased density, thereby reducing the distance between destinations.
3.20	Bicycle policy will be integrated into City codes, and bicycle culture will be integrated into City life.
2.80	We see all types of cyclists—beginners to experts—out riding to work, to school, for fun, for shopping, and for exercise.
2.75	Education programs and enforcement of laws will increase safety and build courtesy between drivers and cyclists.
2.56	Connectivity to other cities, towns, and their bicycle route networks will provide access to regional destinations.
2.44	Bicycle projects will be strategically placed, with connections to major destinations, trailheads, and transit as priorities for overall multi-modal transportation.
2.40	The streets of Raleigh will accommodate bicycling within the existing street network, with bicycle safety as a goal for all roadway projects.
2.20	Bicycle facilities provide a viable alternative to driving, thereby reducing overall motor vehicle traffic congestion and improving the health of residents and the environment.
2.20	When bicycle facilities and increased density are combined with services (such as covered parking, bicycle stations, showers at employment centers, wayfinding amenities, and bicycle rentals), bicycling in Raleigh becomes more comfortable, convenient and efficient than driving.

The Informal Steering Committee developed this concise and comprehensive vision statement for the BikeRaleigh Plan Update. In addition, three new measurable goals are set by this plan update.

VISION STATEMENT

"Raleigh is a place where people of all ages and abilities bicycle comfortably and safely for transportation, fitness, and enjoyment. The BikeRaleigh network is integrated into the transportation system to connect people to where they live, work, play, and learn."

GOALS FOR THE BIKE RALEIGH PLAN UPDATE

The specific measurable goals to achieve in the next five years are:

1. **Build priority projects to serve cyclists of All Ages and Abilities.**
   - » Have 30 miles of Separated Bikeways (buffered bicycle lanes, cycle tracks, and side paths) implemented in five years.
   - » Have 30 miles of Neighborhood Bikeways implemented in five years.

2. **Launch/participate in four new programs in four years:**
   - » Work with community partners to hold "Open Streets" events in Raleigh.
   - » Partner with Wake County Public School System to build a bicycle safety education program for children.
   - » Establish training and encouragement programs that target specific groups of potential cyclists.
   - » Develop an ongoing bicycle count program.

3. **Attain designation as a "Silver Level Bicycle Friendly Community" in three years.**

MAKING THE CASE FOR INVESTING IN BICYCLING

When considering the amount of dedication, time, and valuable resorucces that it takes to create a bicycle-friendly community, it is also important to assess the immense value of investing in bicycling.

Extensive research has highlighted the multitude of economic, health, mobility, environment, safety, and quality of life benefits of having a bicycle-friendly community.

The following sections discuss the many benefits of planning for and creating a bikable Raleigh. Resources for these benefits are listed at the end of this chapter.

KEY BENEFITS OF BICYCLE FRIENDLY CITIES

DEMAND FOR BIKE-FRIENDLY COMMUNITIES

» Bikeways/trails are ranked the second-most important community amenity by prospective homebuyers, behind only access to highways and above golf courses, parks, security, and others.[i]

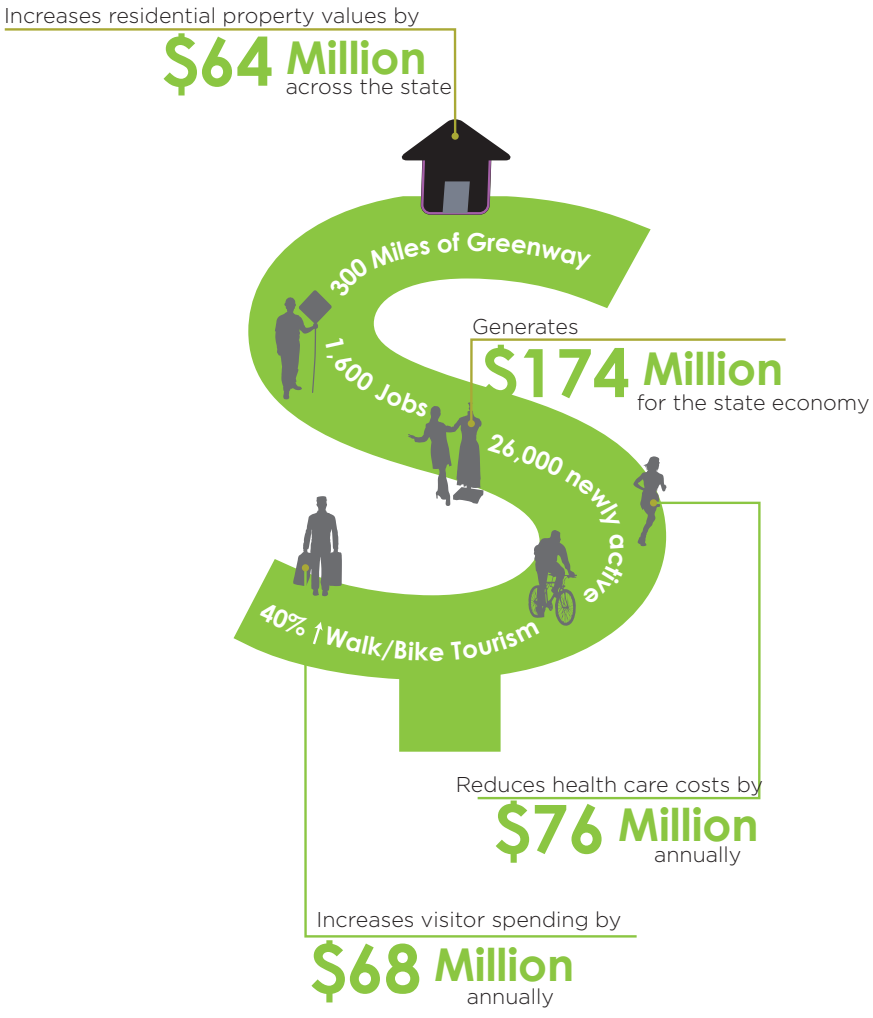
» The percent of people 16-24 with a driver's license peaked in 1983 and is now at its lowest rate since 1963.[ii]

» The average young person is driving 23% less, biking 24% more, and taking transit 40% more.[iii]

» If you build it, they will come. People are more likely to bike if protected bike lanes are available.[iv] Cities that added separated bike lanes saw bike traffic growth, compared to pre-installation levels.

- +266% Buffered bike lanes on Spruce and Pine Streets in Philadelphia
- +55% Separated bike lane on Kinzie St. in Chicago
- +56% Separated bike lane on Columbus Avenue in NYC
- +54% Separated bike lane on Dunsmuir St. in Vancouver, Canada
- +200% Buffered median bike lanes in Washington, DC on Pennsylvania Ave.
- +190% Separated bike lane on Prospect Park West in NYC
- +115% Separated bike lane on Market St. in San Francisco

An economic impact study, performed as part of the WalkBikeNC Plan, showed significant positive return on investment from the addition of 300 miles of greenways[v].



Economics

Buffered bike lane example from Silicon Valley, CA

Protected bike lane example from Austin, TX

Homes with direct access to greenway and biking trails tend to sell first.

INCREASED PROPERTY VALUES

- An Ohio study found that the Little Miami Scenic Trail increases single-family home property values by $7.05 for every foot closer a property is located to the trail.[vi]
- The Shepard's Vineyard housing development in Apex, North Carolina added $5,000 to the price of 40 homes adjacent to the regional greenway – and those homes were still the first to sell.[vii]
- "Homes within a half-mile of Indiana's Monon Trail sell for an average of 11% more than similar homes farther away."[viii]
- "For every quarter mile nearer to an off-street bicycle trail, the median home value in Minneapolis-St. Paul increases by $510."[ix]

BUSINESS/ECONOMIC DEVELOPMENT/TOURISM BENEFITS

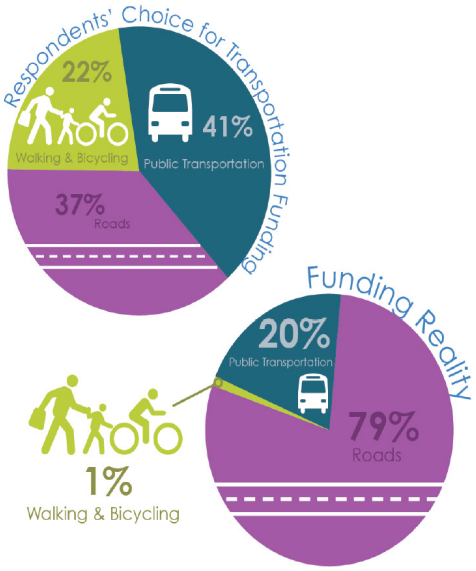
- Each year the U.S. bicycling industry contributes an estimated $133 billion to the national economy. It generates $17.7 billion in federal, state, and local taxes and supports over 1 million jobs.[x]
- "When San Francisco reduced car lanes and installed bike lanes and wider sidewalks on Valencia Street, two-thirds of merchants said the increased levels of bicycling and walking improved business. Only 4 percent said the changes hurt sales."[xi]
- "In New York City, after the construction of a protected bike lane and other improvements on 9th Avenue, local businesses saw up to a 49% increase in retail sales, compared to 3% increases in the rest of Manhattan."[xii]
- Bicycle and pedestrian projects generate nearly 2 times as many jobs as investment in typical road projects based on a national study. $1 million spent on bicycle facilities creates 11-14 total jobs, while the same expenditure on roadway projects creates only 7 jobs.[xiiii]

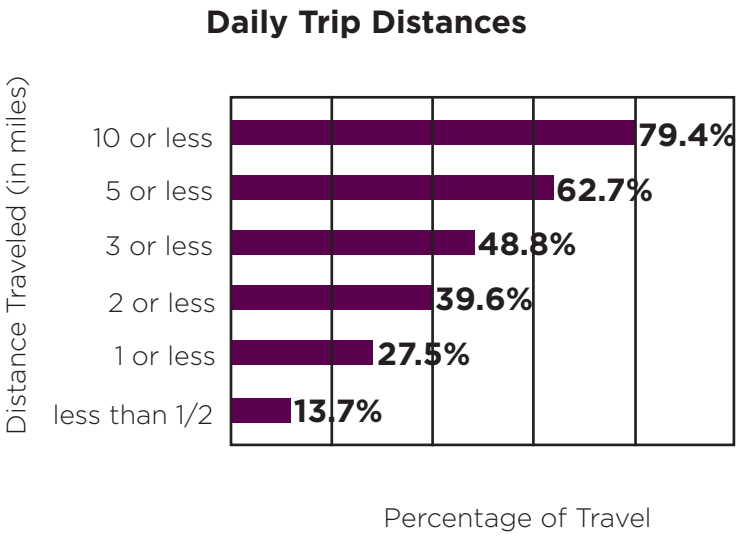
REDUCED CONGESTION & TRANSPORTATION COSTS

- Replacing a single car trip with a bike trip saves individuals and society $2.73 per mile in gas costs, congestion reduction, vehicle cost savings, roadway cost savings, parking cost savings, energy conservation, air pollution reduction, and collision risk reduction.[xiv]

Mobility

- Bike lanes are more space efficient and cost effective than car lanes: Bike lanes can carry 7 to 12 times as many users per meter of lane per hour and put much less stress on the pavement than car lanes.[xv]
- Under the FHWA Nonmotorized Transportation Pilot Program, bicycling and walking investments contributed to a 22.8% and 48.3% increase in the number of pedestrian and bicycle trips across 4 pilot communities between 2007 and 2013.[xvi]
- Each physically inactive person who starts bicycle commuting provides about $4,000-$5,000 annual economic benefits.[xvii]
- Nearly 50 percent of all trips in the US are 3 miles or less, which is less than a 20 minute bike ride.[xviii]





70%

of North Carolinians said they would walk and bike more for their daily needs if walking and bicycling conditions were improved.[xix]

Safety

- The most bike crashes happen on major streets without bicycle facilities, followed by minor streets without facilities, bike paths, and then bike lanes.[xx]
- Safety in numbers: When walking and cycling rates double, pedestrian-motorist collision risk decreases by 34%[xxi]
- "Protected bike lanes make riding feel safer and get more people moving. Up to 99% of riders in new protected bike lanes in San Francisco and DC said the facilities made biking safer. Up to 30% said they had already increased their biking as a result."[xxii]
- According to the FHWA, providing protected bicycle lanes reduces bicyclist crashes by 36-40%. [xxiii]

This separated bicycle lane on Wilmington Street provides links from Downtown Raleigh to William Peace University.

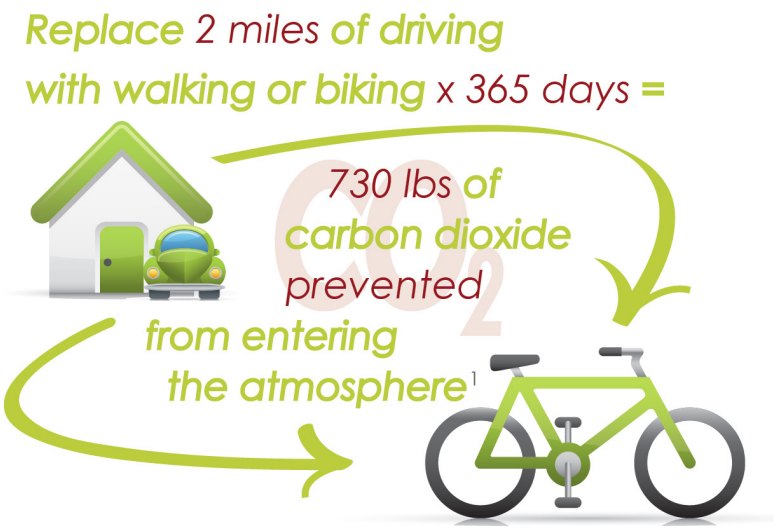
Health

- North Carolinians spend over $24 billion each year on health care costs associated with a lack of physical activity, diabetes, obesity, and related conditions.[xxiv]
- 60 percent of North Carolinians say they would increase their level of physical activity if they had better access to walking and bicycling facilities such as sidewalks and trails.[xxv]
- Regular physical activity such as bicycling and walking: [xxvi]
  - Reduces the risk and impact of cardiovascular disease and diabetes
  - Reduces the risk of some types of cancer
  - Controls weight
  - Improves mood
  - Reduces the risk of premature death
- Adolescents who bicycle are 48% less likely to be overweight in young adulthood.[xxvii]
- A Charlotte, NC study found that residents who switched to walking and using light rail for their commute weighed an average of 6.5 pounds less than those who continued to drive to work. [xxviii]
- Every $1 spent on bicycling and walking projects yields:
  - $2.94 in direct medical benefits in Lincoln, Nebraska.[xxix]
  - $3.40 in healthcare cost savings in Portland, Oregon, or $100 in benefits when the value of statistical lives is considered.[xxx]

Stewardship

Natural buffer zones along greenways protect streams, rivers, and lakes.

» A modest increase in walking and bicycling would save 3 billion gallons of gasoline each year and reduce CO_2 emissions by 28 million tons. A substantial increase in walk and bike rates could save 8 billion gallons of gasoline and prevent 73 million tons of CO2 emissions.[xxxi]



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