

# CREATE. CONNECT. THRIVE.

*The Health and Economic  
Impacts of Connecting  
People to Nature with the  
East Cooper Trail*

PREPARED FOR:



**EAST COOPER  
LAND TRUST**  
Our Present for the Future

PREPARED BY:



**alta**  
PLANNING + DESIGN

# CONSTRUCTING THE EAST COOPER TRAIL

will connect communities from downtown Charleston and Mt. Pleasant to Sullivan's Island, Isle of Palms, Awendaw, and McClellanville, providing residents and tourists a fun and healthy way to experience the culture and nature of East Cooper.

**Planned for active transportation and outdoor recreation, the trail will extend a total of 82 miles, linking shopping, restaurants, and historic sites to beaches, parks, and forests.** With a team of partners already hard at work implementing sections of the trail, residents of the East Cooper area are already experiencing improvements in their quality of life.

  
**2,000**  
PLANT & WILDLIFE SPECIES WILL BE A BIKE RIDE AWAY!





*By constructing the East Cooper Trail,  
the Charleston Region will gain:*



**2,230,000**  
MORE BIKE TRIPS  
PER YEAR



**1,392,000**  
MORE WALK TRIPS  
PER YEAR



**424,000**  
MORE HOURS OF  
PHYSICAL ACTIVITY  
PER YEAR



**300**  
MORE TEMPORARY AND  
PERMANENT JOBS



**\$264,000**  
IN HEALTH AND  
ENVIRONMENTAL  
BENEFITS PER YEAR



**\$83,808,000+**  
IN ECONOMIC AND  
TOURISM BENEFITS  
PER YEAR



**\$3,362,000**  
IN TRANSPORTATION  
AND ACCESS  
BENEFITS PER YEAR



**\$3,393,000**  
IN ONE-TIME PROPERTY  
VALUE BENEFITS

OVER  
**\$87 MILLION** IN TOTAL  
BENEFITS  
PER YEAR

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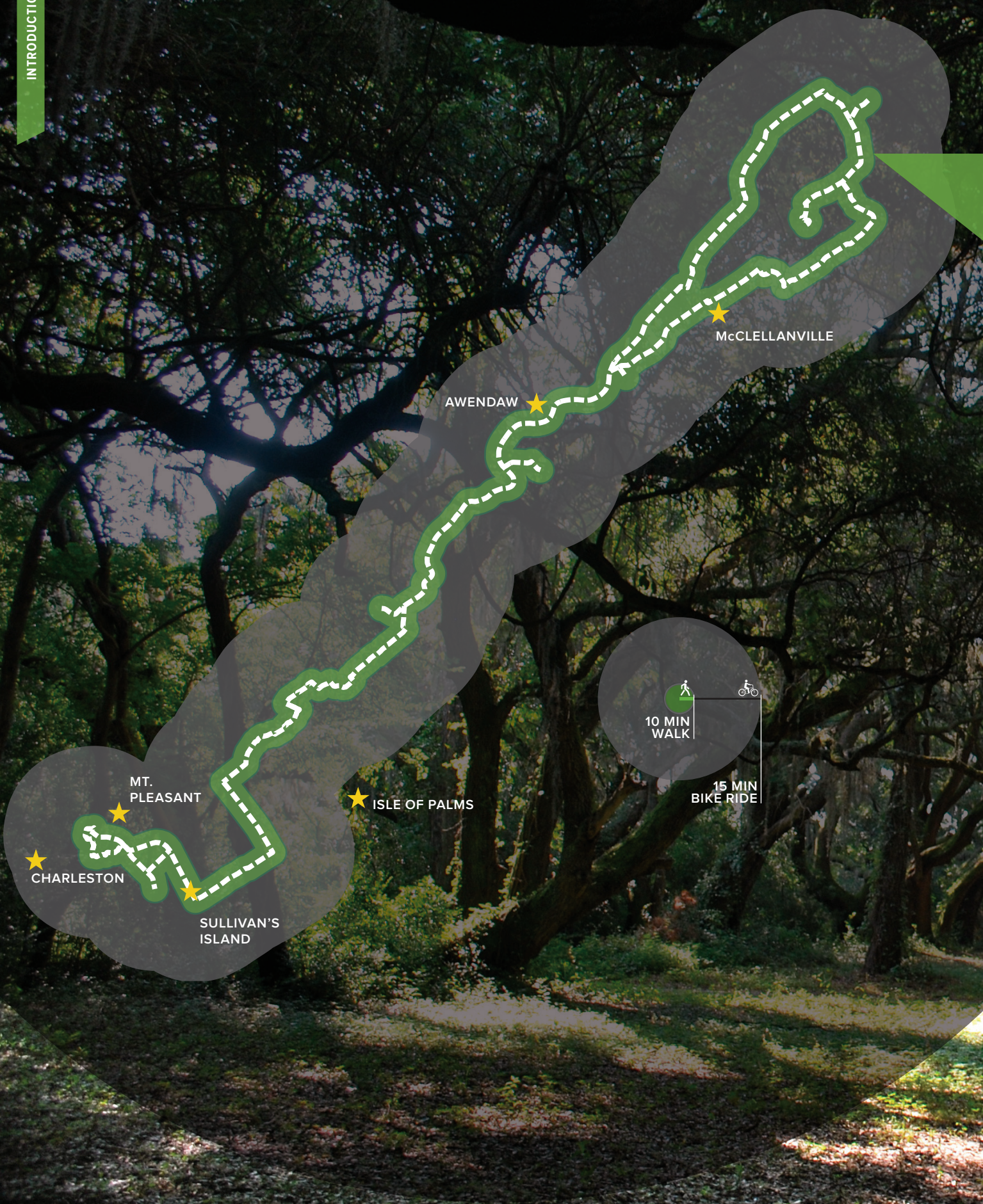
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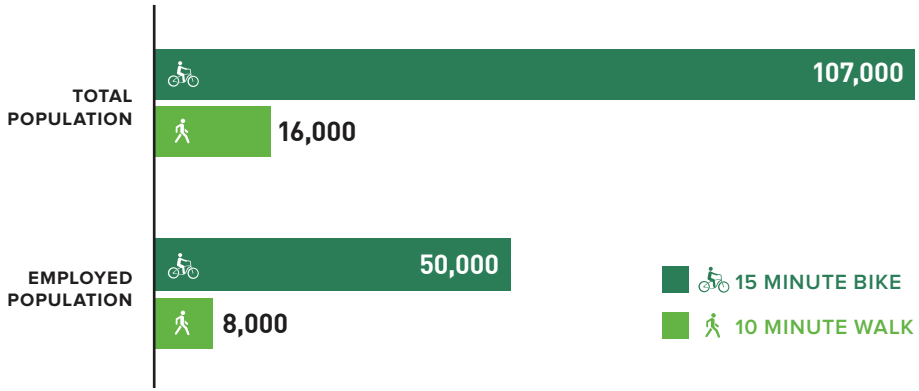


*The fully constructed East Cooper Trail will improve the region's access to outdoor recreation opportunities and provide new ways for residents and visitors to experience all that the East Cooper area has to offer.*

While the construction of the East Cooper Trail will benefit all residents of and visitors to the region, those living within three miles (about a 15 minute bike ride which includes parts of downtown Charleston and Daniel Island) and one-half mile (about a 10 minute walk) of the trail will have the most convenient access and will gain the most from the trail's completion. To calculate these benefits, **we have estimated bicycling benefits of the trail system for residents living within three miles of the trail and walking benefits for residents living within one-half mile of the trail.**

For the purpose of this report, East Cooper is the land area bounded by the Cooper River and Lake Moultrie to the west, the Atlantic Ocean to the east, the Santee River to the north, and Charleston Harbor to the south. All estimated values are rounded and should be considered order of magnitude estimates rather than exact amounts.

### Who Lives Near the Trail?<sup>2</sup>



### What Will It Connect?

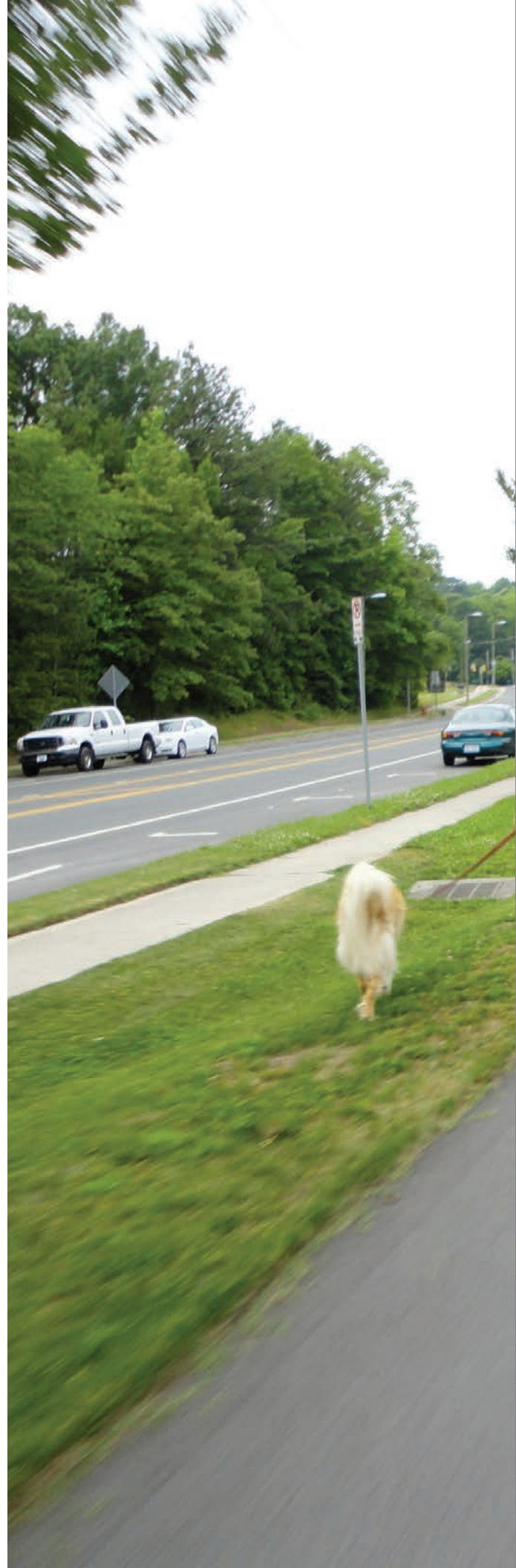
- CITIES**
  - CHARLESTON
  - MT. PLEASANT
  - AWENDAW
  - MCCLELLANVILLE
- BEACHES**
  - SULLIVAN'S ISLAND
  - ISLE OF PALMS
- PARKS**
  - SHEM CREEK PARK
  - LAUREL HILL COUNTY PARK
  - FRANCIS MARION NATIONAL FOREST
  - SANTEE COASTAL RESERVE
  - MT. PLEASANT MEMORIAL WATERFRONT PARK
- REC. AREAS**
  - BUCK HALL RECREATION AREA
  - MT. PLEASANT/CHARLESTON KOA
  - BOONE HALL PLANTATION
  - FORT MOULTRIE





## METHODS

To calculate health, environmental, economic, tourism, transportation, and access impacts, this analysis uses five-year socioeconomic and travel behavior estimates generated by the US Census Bureau and regional multipliers generated by the Bureau of Economic Analysis. Currently, just over 1 percent of Charleston County residents bicycle to work and 3 percent walk to work.<sup>3</sup> **With better access to a trail system that connects popular regional destinations, the number of people bicycling and walking in Charleston County will rise to be more in-line with the most active cities in the southeast.**



*Better access to a trail system will help East Cooper be more in line with the most active cities in the southeast.*



## How the East Cooper Trail Compares

How will a fully-constructed trail network change the way residents and visitors experience East Cooper? To better understand the shift in travel behavior, we looked at transportation patterns in cities and counties similar to Charleston County but with more advanced bicycle and pedestrian networks. These geographies, known as peer locations, were selected based on proximity to Charleston County as well as similarities in their roadway networks, climates, terrains, and population make-up.

Based on these criteria, Alachua County (FL), Arlington (VA), Auburn (AL), Orange County

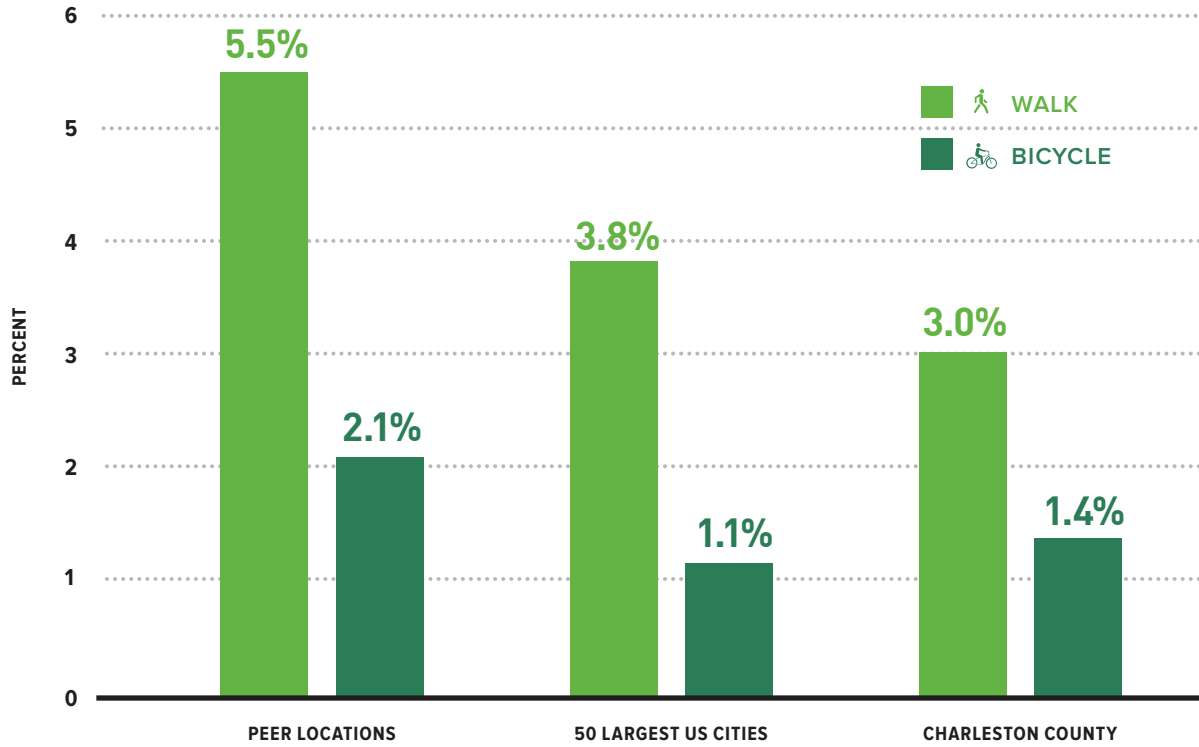
(NC), and Monroe County (IN) were selected as peer locations to Charleston County. With the exception of Auburn, all of the peer locations (or the largest city within them) received the League of American Bicyclist's Silver Level Bicycle Friendly Community © award designation.<sup>4</sup> In addition, the major cities within Alachua County and Monroe County each received a Bronze Level Walk Friendly Community © award designation, and Arlington received a Gold Level designation.<sup>5</sup> Currently, the City of Charleston is a Bronze Level Bicycle Friendly Community © but this designation does not extend to the East Cooper area.<sup>6</sup>

The designation of a locale as a Bicycle Friendly or Walk Friendly Community represents a significant investment in improving the bicycling and walking environment. Because of this, **residents in the four peer locations on average are more likely to bicycle or walk compared to residents in Charleston County.** Currently, only 1 percent of the Charleston County population bicycle to work compared to an average of 2 percent in the peer locations.<sup>7</sup> And 3 percent of people in Charleston County walk to work compared to an average of 5 percent among peer locations.<sup>8</sup>



*Alachua County (FL), Arlington (VA), Auburn (AL), Orange County (NC), and Monroe County (IN) were selected as peer locations*

### WALK AND BICYCLE COMMUTE MODE SHARE <sup>9</sup>



#### How the Impacts are Calculated

A series of over 50 factors developed from various studies around the U.S. and peer-reviewed journal articles were used to convert the estimated number of new bicycle and walking trips that will result from the construction of the East Cooper Trail into dollar figures.

#### Limitations of the Analysis

**The primary purpose of the analysis is to create a clearer, fuller picture of how the East Cooper Trail will improve the quality of life of East Cooper residents.** The estimated impacts reflect the benefits that may be experienced with the full construction of the 82 mile trail, and although the construction of the trail may take place through the completion of individual segments over time, the benefits cannot necessarily be assumed to be proportionally divided among those segments.



## HEALTH + ENVIRONMENTAL BENEFITS

The health and wellness of East Cooper residents and the health of our environment are tightly linked. We know that health conditions caused, in part, by a lack of physical activity are a fast growing problem in the United States, and Charleston County is no exception.<sup>10</sup> We also know that air pollution can intensify existing health conditions and contribute to severe health problems in children and pregnant women.<sup>11</sup>

The Environmental Protection Agency placed Charleston County in the bottom 10 percent of counties in the country for carcinogenic air releases and the bottom 20 percent for all environmental releases.<sup>12</sup> These high levels of toxic material helped earn the state of South Carolina a spot on the National Resource Defense Council's "Toxic 20 list", and contribute to the broader picture of negative health outcomes among residents.<sup>13</sup>

Constructing a well-designed, connected trail system across East Cooper will encourage a shift from energy-intensive modes of transportation such as cars and trucks to active modes of transportation such as bicycling and walking. While many of the active living-related benefits of a trail network can be difficult to quantify – such as improved mental health, educational growth, connection to nature, and sense of place – a growing body of literature links parks and trails to increased physical activity, decreased healthcare costs, and improved air quality.<sup>14, 15</sup>

The completed East Cooper Trail will dramatically shape the ability of residents in Charleston County to get out and live more active, healthier lifestyles. It will help to generate over 3.6 million more bicycling and walking trips, remove over 4.8 million pounds of pollutants from the atmosphere, and spur over 424,000 new hours

of physical activity. This boost to wellness will save over \$176,000 in healthcare-related costs per year.

In addition, studies show that increased physical activity helps seniors stay mentally fit,<sup>16</sup> reduces the risk of coronary heart disease, and even decreases the amount of insulin needed by people with Type I diabetes.<sup>17</sup> The Centers for Disease Control and Prevention (CDC) identified the Type II diabetes rate in Charleston County as one of the highest in the country and listed South Carolina as one of 15 states in the U.S.'s "diabetes belt."<sup>18</sup> In 2012, there were over 10,000 emergency room visits for diabetes across the county, among which almost 75 percent were by African-American patients.<sup>19</sup> When combined with a healthy diet, increased physical activity has been shown to reverse the course of Type II diabetes.<sup>20</sup>

*You're only one bike ride away from  
a good mood.*



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## WHY IT MATTERS

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**21%**

OF PEOPLE IN CHARLESTON COUNTY **HAVE NOT EXERCISED** IN THE LAST MONTH <sup>21</sup>



**26%**

OF THE ADULT POPULATION IN CHARLESTON COUNTY **IS OBESE** <sup>22</sup>



SOUTH CAROLINA RANKS

**46 / 50 STATES**

FOR CORE DETERMINANTS OF HEALTH <sup>23</sup>

DIABETES COSTS CHARLESTON COUNTY

**\$166 MILLION**

PER YEAR <sup>24</sup>

*That's enough to cover all planned public school and library renovations!*



**14%**

OF ADULTS IN CHARLESTON COUNTY **DID NOT SEE A DOCTOR** DUE TO COST <sup>25</sup>

*When the East C  
Charleston Coun*



**81%**

MORE PEOPLE MEETING THE CDC RECOMMENDED HOURS OF PHYSICAL ACTIVITY (~ 30 minutes/day)





Cooper Trail is constructed,  
city will gain:

**3,050,000**  
MILES BIKED PER YEAR



That's the  
equivalent of  
**6 round trips**  
to the moon

**361,000**  
MILES WALKED PER YEAR



That's the  
equivalent of  
**1,300 trips**  
across South  
Carolina

**\$176,000**  
ANNUAL HEALTHCARE  
COST SAVINGS



the equivalent  
of **3,500 hours**  
with a  
personal trainer  
(at ~ \$50/hour)

**\$88,000** SAVINGS FROM REDUCED  
VEHICLE EMISSIONS PER YEAR





## ECONOMIC + TOURISM BENEFITS

Creating a major recreational resource like the East Cooper Trail that provides access to local parks, historic and cultural destinations, beaches, and a national forest not only contributes to a sense of place for local residents but also attracts tourists to East Cooper.

With more than 12 percent of people within Charleston County employed in the leisure and hospitality industry (excluding the agricultural industry due to seasonal fluctuations),<sup>26</sup> tourism makes up a critical component of the area's economy. While it is difficult to accurately forecast the change in tourism spending resulting from the construction of the trail

system, an analysis of the U.S.'s Bureau of Economic Analysis RIMS II multipliers shows that the region can anticipate an **\$83 million increase in tourism spending per year.**

The same amenities that will draw tourists to the area also appeal to residents looking to buy new homes or open new businesses. Property value studies of similar trail systems show that nearby property owners can expect a minimum increase of 4 percent in the value of their properties after the East Cooper Trail is completed,<sup>27, 28, 29</sup> with a collective property value increase of nearly \$3.4 million for homes and businesses directly adjacent to the proposed trail.



*“Bicycles are the indicator species of a community, like shellfish in a bay.”*

- P. MARTIN SCOTT

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## WHY IT MATTERS

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A RECENT STUDY FOUND THAT THE CITY OF CHARLESTON HAS

**LESS TOURISM INFRASTRUCTURE THAN SIMILAR CITIES,**

PUTTING PRESSURE ON THE HISTORIC DISTRICT AND CREATING AN OPPORTUNITY FOR INCREASED EAST COOPER TOURISM <sup>32</sup>

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VISITORS TO CHARLESTON COUNTY ON AVERAGE SPENT

**\$889**

PER ADULT PER TRIP <sup>31</sup>



OVER

**12%**

OF REGIONAL SALES CAN BE ATTRIBUTED TO TOURISM <sup>33</sup>

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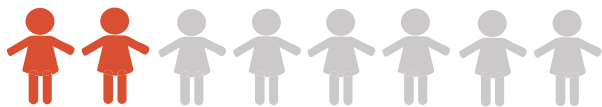


CHARLESTON COUNTY WELCOMED AN ESTIMATED

**4.9 MILLION**

VISITORS IN 2014 <sup>30</sup>

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**26%**

OF CHILDREN IN CHARLESTON COUNTY LIVE IN POVERTY <sup>34</sup>

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*When the East C  
Charleston Coun*

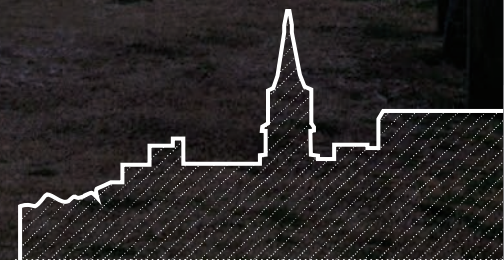
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**300** MORE JOBS

SUPPORTED BY THE EXPECTED INCREASE IN TOURISM SPENDING (permanent and temporary)

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*Cooper Trail is constructed,  
city will gain:*

**144,000**

MORE VISITORS PER YEAR



**\$83,808,000**

MORE TOURISM SPENDING PER YEAR



**\$30,454,000**

TOTAL IMPACT ON EARNINGS  
PER YEAR (excluding retail sales)



**\$3,393,000**

IN ONE-TIME  
PROPERTY VALUE  
GROWTH





## TRANSPORT + ACCESS BENEFITS

The fatality rate on South Carolina's roads is tied for the highest in the nation.<sup>35</sup> Charleston County has one of the highest traffic-related death rates among all South Carolina counties.<sup>36</sup> Between January and August of 2015, the County experienced five bike and pedestrian traffic fatalities, according to Accident Data Center.<sup>37</sup> These collisions and fatalities disproportionately affect low-income populations. An analysis of 22,000 collisions in America found that pedestrian fatality rates in low-income portions of metro areas are approximately twice that of more affluent neighborhoods.<sup>38</sup>

Fortunately, one study showed that a pedestrian's risk of being in a collision declines 34 percent if walking and bicycling double

in their community.<sup>39</sup> Additionally, American cities with higher per capita bicycling rates tend to have much lower traffic fatality rates for all road users than other cities, and per capita collisions between people driving, walking, and bicycling decline as walking and bicycling increases.<sup>40</sup>

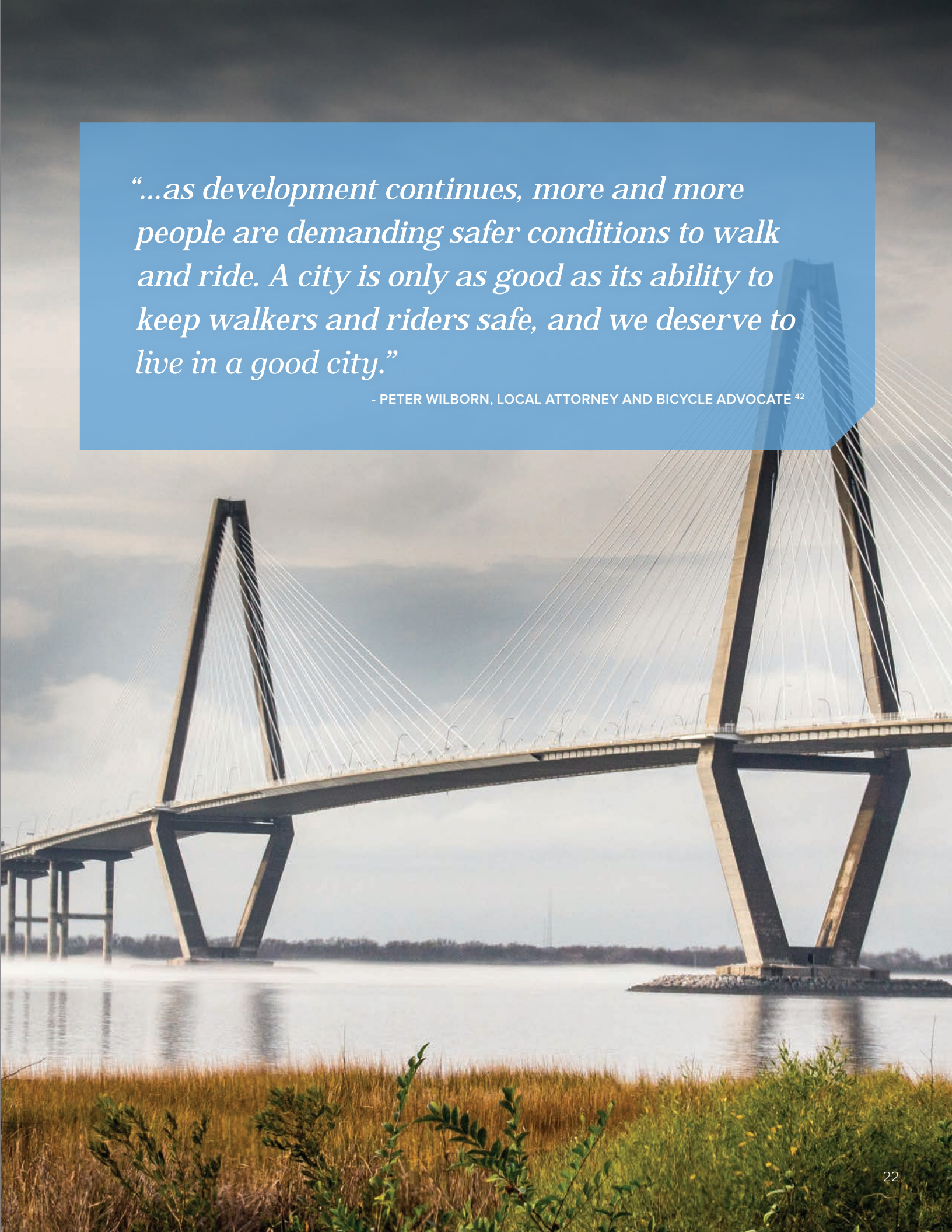
**The construction of the East Cooper Trail will make walking and bicycling in East Cooper easy and fun, which in turn will help reduce the overall number of pedestrian and bicyclist injuries and deaths.** In total, East Cooper residents are estimated to save \$1,303,000 per year in collision-related costs with completion of the trail.

The demand for trails is high in Charleston County. Walking is the preferred outdoor recreation

and leisure time activity in the region during fall or winter months (walking for pleasure or exercise remains the activity in which the largest percentage of people participate), but 37% of South Carolinians and 32% of Charleston County residents feel they do not have enough access to outdoor recreation or leisure time facilities and activities.<sup>41</sup> With the construction of the East Cooper Trail, it is estimated that there will be over 3.4 million more miles biked or walked and 2.6 million fewer miles driven in a car each year. This is estimated to save residents a total of over \$2 million in congestion, roadway maintenance, and household vehicle operation costs per year.

*“...as development continues, more and more people are demanding safer conditions to walk and ride. A city is only as good as its ability to keep walkers and riders safe, and we deserve to live in a good city.”*

- PETER WILBORN, LOCAL ATTORNEY AND BICYCLE ADVOCATE <sup>42</sup>



## WHY IT MATTERS



**18%**

OF CHARLESTON COUNTY RESIDENTS DO NOT HAVE ADEQUATE ACCESS TO EXERCISE OPPORTUNITIES <sup>46</sup>



**\$8,220**

AVERAGE COST OF OPERATING A CAR PER YEAR <sup>44</sup>



**\$308**

AVERAGE COST OF OPERATING A BIKE PER YEAR <sup>45</sup>

CHARLESTON COUNTY HAS ONE OF THE **HIGHEST TRAFFIC-RELATED DEATH RATES**

IN SOUTH CAROLINA <sup>43</sup>



DRIVING ON **CONGESTED, DETERIORATED, OR UNSAFE ROADS** COSTS EACH CHARLESTON COUNTY DRIVER

**\$1,168** PER YEAR <sup>47</sup>

*When the East C  
Charleston Coun*



**\$182,000**

IN REDUCED CONGESTION-RELATED COSTS PER YEAR





*Cooper Trail is constructed,  
city will gain:*



**2,608,000**

FEWER MILES TRAVELLED BY  
AUTOMOBILES PER YEAR



**\$1,486,000**

IN REDUCED HOUSEHOLD VEHICLE  
OPERATION COSTS PER YEAR

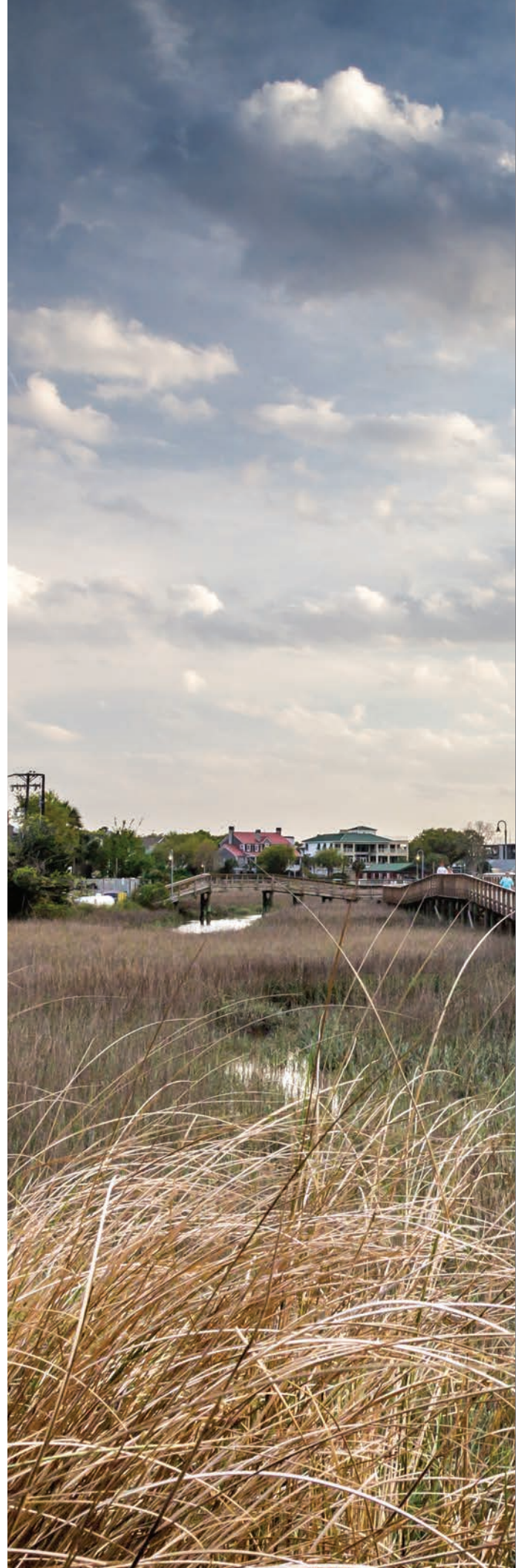


**\$1,303,000**

IN REDUCED  
COLLISION-RELATED  
COSTS PER YEAR

## OPEN SPACE EVALUATION

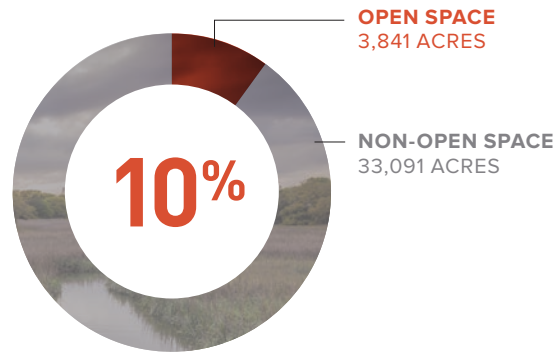
The U.S. Census Bureau cited Mt. Pleasant as one of the fastest growing municipalities in the country.<sup>48</sup> This rapid growth welcomes new residents and development, and also increases the need for open space. The East Cooper Land Trust's inventory of designed parkland (e.g., playgrounds, neighborhood parks, sports fields, and golf courses) and natural open space (e.g., wetlands, forests, and deserts) within Mt. Pleasant provides an important starting point for discussing open space needs in the East Cooper area.



*“Everybody needs beauty as well as bread,  
places to play in and pray in, where nature  
may heal and give strength to body and soul.”*

- JOHN MUIR, NATURALIST AND AUTHOR <sup>49</sup>

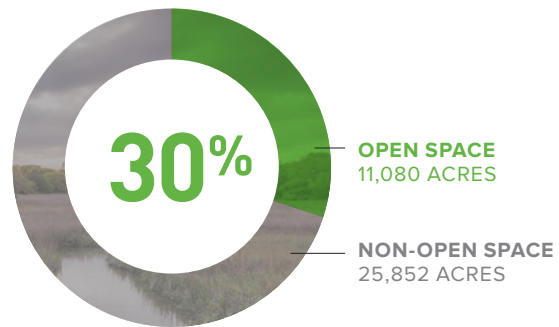




**EXISTING  
MT. PLEASANT  
OPEN SPACE**

### Open Space in Mt. Pleasant

In 2006, Charleston County adopted a Comprehensive Greenbelt Plan that established a goal of 30 percent open space.<sup>50</sup> Currently just over 10 percent of land area in the Town of Mt. Pleasant is designed parkland or natural open space, totaling 3,837 acres (the entire East Cooper area was not included due to the large influence of Francis Marion National Forest). To be in line with the County's 30 percent goal, Mt. Pleasant will need 11,080 total acres of open space.



**CHARLESTON  
COUNTY  
OPEN SPACE GOAL**

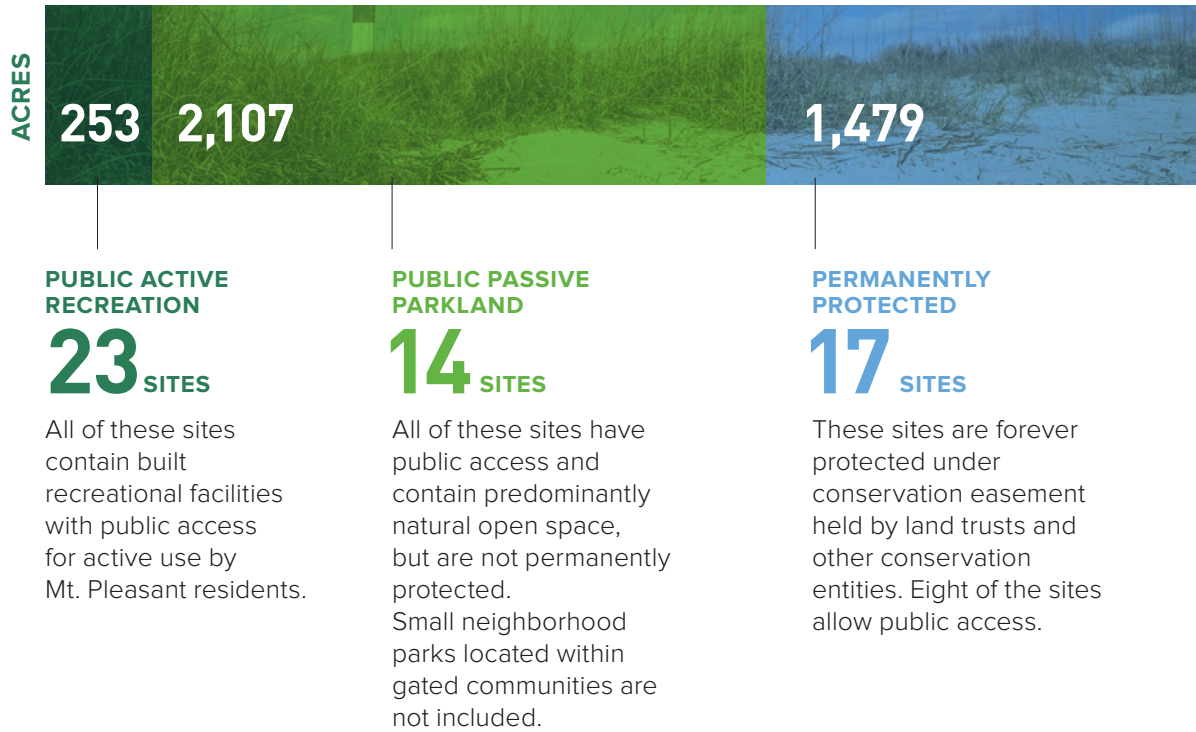


MT. PLEASANT NEEDS







**7,243**

**ADDITIONAL ACRES  
OF OPEN SPACE TO  
BE IN LINE WITH  
THE COUNTY'S GOAL**

## Types of Existing Open Space in Mt. Pleasant



## Public Facilities per Residents

PUBLIC FACILITY	NUMBER IN MT. PLEASANT	FACILITY / NUMBER OF RESIDENTS SERVED
 Playgrounds	11	1 per 7,072
 Ball Parks	19	1 per 4,094
 Tennis Courts	27	1 per 2,881
 Multi-Purpose Fields	34	1 per 2,288
 Off-Leash Dog Parks	2	1 per 38,898
 Skateboard Parks	1	1 per 77,796

## SOURCES

- 1 "Plants and Wildlife on the Francis Marion National Forest." Accessed Sep. 11, 2015. <[goo.gl/aFKsPO](http://goo.gl/aFKsPO)>
- 2 2009-2013 American Community Survey. US Census Bureau.
- 3 *Ibid.*
- 4 "Current Bicycle Friendly Communities." (2014). The League of American Bicyclists. <[http://bikeleague.org/sites/default/files/BFC\\_MasterList\\_2014.pdf](http://bikeleague.org/sites/default/files/BFC_MasterList_2014.pdf)>
- 5 "Full List of Walk Friendly Communities." (2015). U.S. Department of Transportation (FHWA), UNC Highway Safety Research Center, and FedEx. <<http://www.walkfriendly.org/communities/list.cfm>>
- 6 "Current Bicycle Friendly Communities." (2014). The League of American Bicyclists. <[http://bikeleague.org/sites/default/files/BFC\\_MasterList\\_2014.pdf](http://bikeleague.org/sites/default/files/BFC_MasterList_2014.pdf)>
- 7 2009-2013 American Community Survey. US Census Bureau.
- 8 *Ibid.*
- 9 *Ibid.*
- 10 "Physical Activity in South Carolina." (1999). South Carolina Department of Health and Environmental Control. <<http://www.sph.sc.edu/prevent/pareport/BROCH.PDF>>
- 11 Poursafa, P. and Dr. R. Kelishadi. "What health professionals should know about the health effects of air pollution and climate change on children and pregnant mothers." (2011) *Iran J Nurs Midwifery Res.* 16(3): 257-264.
- 12 "2002 Rankings: Major Chemical Releases or Waste Generation in Charleston County." (2002). Scorecard. <[http://scorecard.goodguide.com/env-releases/county.tcl?fips\\_county\\_code=45019](http://scorecard.goodguide.com/env-releases/county.tcl?fips_county_code=45019)>
- 13 "Kentucky, Ohio, Pennsylvania Have Worst Toxic Air Pollution from Power Plants." (2012). Natural Resources Defense Council. <<http://www.nrdc.org/media/2012/120809.asp>>
- 14 "Benefits of Greenways: A Pennsylvania Study." (2002). Pennsylvania Greenways Partnership Commission. <<http://atfiles.org/files/pdf/BenefitsPA2002.pdf>>
- 15 "The Environmental Benefits of Bicycling and Walking." (1993). Federal Highway Administration. <[http://safety.fhwa.dot.gov/ped\\_bike/docs/case15.pdf](http://safety.fhwa.dot.gov/ped_bike/docs/case15.pdf)>
- 16 Yaffe, K., et al. "More Physical Activity Leads to Less Cognitive Decline." (2001). *Archives of Internal Medicine.* <<http://www.americantrails.org/resources/benefits/VAcognitive.html>>
- 17 "A Step in the Right Direction." American Hiking Society. <<http://atfiles.org/files/pdf/AHShealthben.pdf>>
- 18 Hendrick, B. "Southern States Make Up Much of 'Diabetes Belt.'" (2011). WebMD Health News. <<http://www.webmd.com/diabetes/news/20110307/southern-states-make-up-much-of-diabetes-belt>>
- 19 "Diabetes in Charleston County." (2012). South Carolina Department of Health and Environmental Control. <<https://www.scdhec.gov/Health/docs/Epi/diabetes/Charleston.pdf>>
- 20 "A Step in the Right Direction." American Hiking Society. <<http://atfiles.org/files/pdf/AHShealthben.pdf>>
- 21 "County Health Rankings & Roadmaps." (2015). University of Wisconsin Population Health Institute, Robert Wood Johnson Foundation. <<http://www.countyhealthrankings.org/app/south-carolina/2015/rankings/charleston/county/outcomes/overall/snapshot>>
- 22 *Ibid.*
- 23 "All Determinants." (2014). America's Health Rankings. <<http://www.americashealthrankings.org/ALL/Determinants>>
- 24 "Charleston County, South Carolina." (2015). County Health Calculator. <<http://countyhealthcalculator.org/location/145019/#64>>
- 25 "Cost Barrier to Care." (2015). U.S. Department for Health and Human Services. <<http://www.cdc.gov/CommunityHealth/profile/currentprofile/SC/Charleston/10019>>
- 26 "Charleston-North Charleston-Summerville, South Carolina." (2011). "U.S. Department of Housing and Urban Development. <[http://www.huduser.org/publications/pdf/Charleston\\_Comp.pdf](http://www.huduser.org/publications/pdf/Charleston_Comp.pdf)>
- 27 Racca, D. and A. Dhanju. "Property Value/Desirability Effects of Bike Paths Adjacent to Residential Areas." (2006). Delaware Center for Transportation, The State of Delaware Department of Transportation. <<https://www.railstotrails.org/resourcehandler.ashx?id=4482>>
- 28 Webel, S. "Trail Effects on Neighborhoods: Home Value, Safety, Quality of Life." National Trails Training Partnership. <<http://www.americantrails.org/resources/adjacent/sumadjacent.html>>
- 29 "Economic Values of Greenways, Trails, and River Protection." National Trails Training Partnership. <<http://www.americantrails.org/resources/economics/NPSeconStudy.html>>
- 30 "Office of Tourism Analysis Annual Report." (2014-2015). College of Charleston. <<http://sb.cofc.edu/centers/tourismanalysis/news/Office%20of%20Tourism%20Analysis%20Annual%20Report%20-%202014-2015.pdf>>
- 31 *Ibid.*
- 32 *Ibid.*
- 33 *Ibid.*
- 34 "Selected Kids Count Indicators for Charleston County, South Carolina." (2013). Kids Count Data Center. <<http://www.datacenter.kidscount.org/data/customreports/6317/any>>
- 35 "South Carolina Transportation by the Numbers." (2015). TRIP. <[http://www.tripnet.org/docs/SC\\_Transportation\\_by\\_the\\_Numbers\\_TRIP\\_Report\\_Jan\\_2015.pdf](http://www.tripnet.org/docs/SC_Transportation_by_the_Numbers_TRIP_Report_Jan_2015.pdf)>
- 36 "2010 South Carolina Injury County Profile." (2010). South Carolina Department of Health and Environmental Control. <<https://www.scdhec.gov/library/CR-010454.pdf>>
- 37 "Complete Charleston County, SC accident report and news." (2015). Accident Data Center. <<http://accidentdatacenter.com/us/south-carolina/charleston-sc/charleston-county-sc>>
- 38 "Pedestrians Dying at Disproportionate Rates in America's Poorer Neighborhoods." (2014). *Governing.* <<http://www.governing.com/topics/public-justice-safety/gov-pedestrian-deaths-analysis.html>>
- 39 Litman, T. "Evaluating Public Transit Benefits and Costs." (2015). Victoria Transport Policy Institute. <<http://www.vtpi.org/tranben.pdf>>
- 40 *Ibid.*
- 41 "South Carolina Recreation Participation and Preference Study." (2005). South Carolina Department of Parks, Recreation and Tourism. <<https://www.scprr.com/files/RPE/2005%20Rec%20Study.pdf>>
- 42 Quick, D. "Winter's bike, pedestrian fatalities underscore importance of infrastructure, safety and awareness." (2015). *The Post and Courier.* <[goo.gl/veyFKA](http://goo.gl/veyFKA)>
- 43 "2015 County Health Rankings." (2015). County Health Rankings & Roadmaps. <[http://www.countyhealthrankings.org/sites/default/files/state/downloads/CHR2015\\_SC\\_0.pdf](http://www.countyhealthrankings.org/sites/default/files/state/downloads/CHR2015_SC_0.pdf)>
- 44 Mohn, T. "Pedaling to Prosperity: Biking Saves U.S. Riders Billions a Year." (2012). *Forbes.* <[goo.gl/YX2r1R](http://goo.gl/YX2r1R)>
- 45 *Ibid.*
- 46 "Motor Vehicle Deaths." (2015). U.S. Department of Health and Human Services. <<http://www.cdc.gov/CommunityHealth/profile/currentprofile/SC/Charleston/1076>>
- 47 Wren, D. "Road woes: Growing congestion threatens to choke Charleston port traffic, commerce." (2015). *The Post and Courier.* <[goo.gl/dfwXoK](http://goo.gl/dfwXoK)>
- 48 Cohen, T. "Population Trends in Incorporated Places: 2000 to 2013." (2015). U.S. Census Bureau. <<https://www.census.gov/content/dam/Census/library/publications/2015/demo/p25-1142.pdf>>
- 49 Muir, J. "Yosemite." (1912).
- 50 "Comprehensive Greenbelt Plan." (2006). Charleston County Greenbelt Program. <<http://charlestoncountygreenbelt.org/cgp.php>>



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