Coastal Carolina University Bicycle Master Plan 2024





Office of the President

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November 29, 2023

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Dear Sara,

I am very pleased to provide my support for the Coastal Carolina University Bicycle Master Plan. This important initiative – the first of its kind at the University – directly correlates with CCU's burgeoning sustainability efforts. It also provides us with an opportunity to expand our reach and presence within the community through ongoing collaboration with both Conway and Myrtle Beach.

Thanks to the steadfast work of the Bicycle Advisory Council, we are recognized as a silver level Bicycle Friendly University by the League of American Bicyclists. Through initiatives such as Coastal Cycles, our campuswide bike share program, and the Horry County Trail Summit, which we hosted last year to raise awareness about much-needed strategic bicycle pathways in the area, the University is committed to making our campus and community more bicycle friendly.

The implementation of the Bicycle Master Plan will encourage our students, faculty, staff, and visitors to use bicycles more often for recreation and transportation, both on and around campus. It also will help to create a less vehicle-congested campus that is safer for pedestrians.

On a personal note, I'm especially partial to bicycles as my "scholar's bike" (as they referred to them at Oxford) was my mode of transportation for all 3 years during my graduate program in England. We have much to learn as Americans from other countries, not only in terms of mass transit but also how enjoyable – and efficient – it can be to get around on a bike.

I fully recognize and support the incredible impact that the Bicycle Master Plan will have on the University and surrounding area. Thank you to you and your Council for your hard work and commitment to this effort.

Yours sincerely,

Michael T. Benson

President and Professor of History

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Executive Summary From the Chair of the Bicycle Advisory Council

Dr. Sara Rich

1.a. Purpose of Plan

The purpose of the Coastal Carolina University (CCU) Bicycle Master Plan is to improve bicycle access and cycling safety for students, faculty, staff, and visitors to campus. As the first-ever bicycle plan for CCU, this document initiates the formal integration of bicycling into university policies. The Plan is also an effort to inform partners and community members about the importance of cycling to and on campus, and to identify areas of greatest need for improvement.

1.b. Introduction

The Plan focuses on the CCU campus and immediately surrounding areas (0-10 mile radius) where most students, staff, and faculty reside and from where they commute to campus. Campus assessments have indicated that commuting to CCU from off campus produces a significant portion (13%) of the University's total greenhouse gas emissions.² Data in CCU's 2022 report to the Association for the Advancement of Sustainability in Higher Education produced a score of 2.69/5.00 in the Commute Modal Split category, with 61% of students choosing sustainable transportation for their commute to campus, but only 5% of employees.³ In 2019, the League of American Bicyclists found that CCU qualifies as a Silverrated Bicycle Friendly University, but that significant challenges remain in accessing the University by bicycle. Both assessments indicate that to improve the University's standing as a sustainable campus and as a bicycle-friendly campus, the University should partner with off-campus agencies and organizations to enhance transportation diversity in our environs. Therefore, while existing on-campus concerns are addressed in the Plan, it also emphasizes connections to the larger urban and suburban context. For example, the Plan offers suggestions for an improved campus bikeway system, connected with the City of Conway to the west and Myrtle Beach to the east. This travel network, coupled with bicycle education, encouragement, enforcement, and equity measures, will create a more sustainable and more bicycle-friendly campus and community.

¹ https://storage.googleapis.com/starsstatic/secure/627/8/765/7163/Commuter_Footprint_Survey_22SP.pdf

² https://publuu.com/flip-book/21559/343485/page/22

³ https://reports.aashe.org/institutions/coastal-carolina-university-sc/report/2022-12-22/OP/transportation/OP-16/

In this way, the Plan aims to help create a long-term programmatic vision supported by a variety of implementation measures. Namely, the Plan aims to encourage CCU to serve as a model for surrounding communities on how to implement transportation diversity measures, and to serve as a central force in the City of Conway and Horry County to enact changes off campus to make cycling a more viable means of transportation. The anticipated result is an increase in commuters choosing to bicycle to and from campus.

The timeline for the Plan's goal is to implement the projects and programs described herein within the next 10 years. Updates to the Plan every five years are recommended to capture the current vision and to ensure that campus bicycling needs continue to be addressed.

1.c. Plan Rationale: Why Cycling Matters

The Plan supports the view that cycling is an ideal form of transportation for CCU affiliates, given some key changes to current cycling conditions. The campus is located in the South Carolina Lowcountry with flat terrain that characterizes the coastal plains. The characteristically warm, sunny local weather is also highly conducive to pleasant cycling. In addition to these geographical conditions that support cycling as a mode of transportation, there are additional reasons specific to CCU's 2024 Strategic Plan, which prioritizes the three aims below, each of which can be supported through safer cycling.

1.c.1. Student Success

Student success is undoubtedly a key feature of institutional success, and it is CCU's Strategic Priority 1. We want our students to get the most from their educational experience, and to enjoy the process of doing so. A bicycle-friendly campus can help achieve this goal, particularly in relation to Initiative 3, Goal 1 (I3-G1):

Infuse campus culture with opportunities that cultivate students' understanding of, appreciation for, and commitment to, personal and community well-being and Initiative 4. Goal 1 (I4-G1):

Develop and enhance key retention and persistence programs that cultivate proactive strategies to decrease barriers to resources.

Campus Recreation data from the 2018-2019 Coastal Cycles survey (n = 482) indicate that students who ride bicycles to and on campus have higher retention rates, which is undoubtedly a key measure of student success and satisfaction at CCU, and which clearly pertains to I4-G1. There is almost certainly a causal relationship between cycling and retention, as the survey also indicates that student cyclists – especially Freshmen – are more likely to 1) attend class and 2) be alert for class.

I'm renting this bike because (Select all that apply)	Helps me get to/from class & appts.	It's an easy form of transportation	It's free	I can take it off campus	It's a good way to be healthy/exercise	It's easier than driving and parking a car	Sustainable & good for environment	A different reason
All Respondents	328 68.9%	252 52.9%	189 39.7%	65 13.7%	144 30.3%	107 22.5%	93 19.5%	6 1.3%
Freshman	144 68.6%	116 55.2%	85 40.5%	16 7.6%	56 26.7%	33 15.7%	35 16.7%	3 1.4%
Sophomore	54 65.1%	49 59.0%	28 33.7%	15 18.1%	30 36.1%	18 21.7%	17 20.5%	1 1.2%
Junior	66 75.0%	46 52.3%	41 46.6%	18 20.5%	28 31.8%	30 34.1%	21 23.9%	-
Senior	58 69.9%	36 43.4%	33 39.8%	16 19.3%		24 28.9%	17 20.5%	2 2.4%
Other	6 50.0%	5 41.7%	2 16.7%	-	4 33.3%	2 16.7%	3 25.0%	-

Percentages do not equal 100 due to multiple response (more than one reason selected).

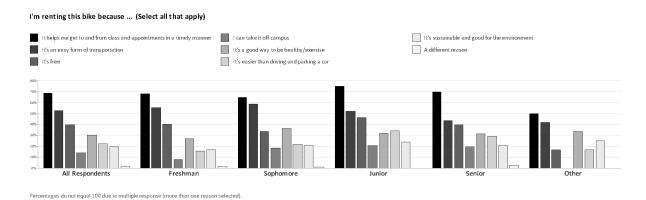


Figure 1. Survey results indicating reasons for renting a bike from Coastal Cycles, including arrival to class on time, possibility of riding off campus, exercise, ease of access, and sustainability.

Renting a bike	Improves my class attendance	Somewhat improves my class attendance	Has no impact on my class attendance
All Respondents	177	24	61
	67.6%	9.2%	23.3%
Freshman	60	10	17
riesiiiiaii	69.0%	11.5%	19.5%
Sophomore	23	6	12
	56.1%	14.6%	29.3%
Junior	42	5	14
Junior	68.9%	8.2%	23.0%
0:	50	3	16
Senior	72.5%	4.3%	23.2%
Oak	2	-	2
Other	50.0%	-	50.0%

Renting a bike					
Improves my class attendance	Somewhat improves my o	class attendance Has n	o impact on my class attendance		
80%					
70%					
60%	_	_			
50%					
40%					
10%					
20%					
1.0%					
os All Respondents	Freshman	Sophomore	Junior	Senior	Other

Figure 2. Survey results indicating how many students found that access to a bicycle improves their class attendance.

Renting a bike	Helps me be alert and engaged in class	Somewhat helps me be alert and engaged in class	Has no impact on my alertness and engagement in class
All Respondents	120	57	85
All Respondents	45.8%	21.8%	32.4%
Freshman	39	21	27
ricalillali	44.8%	24.1%	31.0%
Sophomore	22	4	14
	55.0%	10.0%	35.0%
Junior	26	15	20
Junior	42.6%	24.6%	32.8%
Senior	31	16	23
Senior	44.3%	22.9%	32.9%
Other	2	1	1
Other	50.0%	25.0%	25.0%

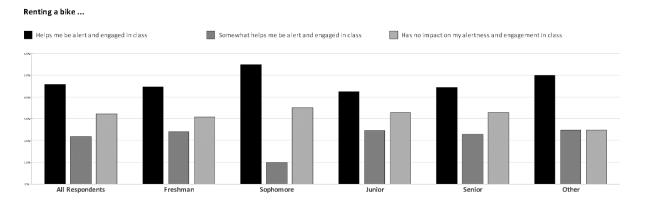


Figure 3. Survey results indicating how many students found that access to a bicycle improves alertness and engagement in class.

The reasons for the trend in increased attendance are apparent: traffic congestion along the only thoroughfares to campus (Highway 501 and Highway 544) is a frequent occurrence. It is not uncommon to spend over one hour to travel 10 miles along these corridors due to frequent automobile accidents, and the lack of alternative routes. Additional to off-campus traffic congestion, there is limited parking on campus, and students can spend 30 minutes or more looking for parking. Parking tickets range from \$35-250, a prohibitive cost, especially to students; therefore, finding a properly designated parking spot is often a higher priority than arriving to class on time or at all. Some of the parking demands have been alleviated by a recent policy that prohibits students living in University Place from driving to campus; students rely instead on shuttles, which can put them behind schedule if they are missed or if shuttles are running behind. In either event, attendance is still affected.

Given that University Place is only one mile from the heart of campus, attendance could be improved by making bicycles more accessible to students, and by making cycling safer and more inviting. But this is true for all campus affiliates living near campus. It is important for everyone - students, staff, faculty - to feel confident that they can safely commute by bicycle to work and school, and bypass the traffic congestion and parking woes at the same time. These efforts toward cycling infrastructure and a cycling culture would also contribute to I3-G1 (above).

All too easy to overlook are the simple health and cognitive benefits of cycling to student success. Staying healthy means missing fewer classes, and cycling, like other forms of exercise, decreases drowsiness and increases cognitive function, which is needed to stay alert and perform to the best of one's ability during classes. The connections between cycling and student success are abundant and clear.

As a final note on this matter, CCU's 2022-2027 Quality Enhancement Plan (QEP), Belong@Coastal: Building Student Achievement through Inclusive Engagement, encourages university-wide measures to increase diversity, equity, and inclusion on campus.⁴ Encouraging cycling works toward this aim because cycling is an inexpensive form of transportation available to most or all regardless of financial means. Cycling is often disability-friendly too. In the BAC's 2022 Fall Cycling Survey (n=203), a student response to the question of "What is your favorite thing about cycling on campus?" with "I like getting around quickly without tiring my feet out, as I have chronic foot pain, and walking around campus all day makes my feet hurt the next day." It's not just one student; campus affiliates with other disabilities, such as blindness and epilepsy, are not permitted to drive, but they can and do ride bicycles. In these ways, cycling levels the transportation playing field and creates a more equitable campus and community, one which welcomes diverse abilities and social classes.

⁴ https://www.coastal.edu/qep/

Student Success: I3-G1	Student Success: I4-G1
Cycling promotes personal well-being	Cycling promotes student retention, attendance, and alertness
Cycling promotes community well-being	Free access to bicycles decreases financial barriers to those who do not have a bicycle
Cycling promotes equity	Safe cycling infrastructure decreases transportation barriers

1.c.2. Building Community

Aligned with student success and retention is helping students to develop a sense of place and belonging in the community where they reside. This sense of community is also important for staff and faculty well-being and morale, which is why CCU has identified Building Community as its third Strategic Priority. Bicycles offer a cost-effective and efficient way for campus affiliates to explore the surrounding communities, including cultural hotspots like museums, galleries, and theatres, and areas of great natural beauty, such as our beaches and the wetlands surrounding the Waccamaw River. In this and other ways, supporting cycling will help achieve Initiative 4, Goal 1 (14-G1):

Connect the campus community to each other, the University, and our local region to create and bolster belonging, common purpose, and shared mission.

CCU students, especially those who do not have automobile access, often feel isolated on campus and unable to make connections with the outside community. This isolation – cornered between two state highways, housing developments, strip malls, and golf courses – can also be alleviated with better cycling and pedestrian networks. CCU is located only eight miles from downtown Myrtle Beach and five miles from downtown Conway, with its historic buildings, renowned Riverwalk and marina, family-owned businesses and restaurants, and numerous cultural venues. Unfortunately, many students have never set foot across the river to explore the charms and amenities of this small Southern town, which proudly waves a "Home of the Chanticleers" flag at the Main Street entrance to the city, and CCU flags are posted on either side of Main north to 6th Ave. The second Teal Nation store just opened its doors in downtown Conway on 9 October 2023, so it is clear that symbolic connections between campus and downtown are growing; now we just need the physical, infrastructural, connections.



Figure 4. Entering downtown Conway, with Main St. Memorial Bridge to the left, and a "Home of the Chanticleers" flag at the base of the bridge. Photo: Sara Rich, 2023.

Once again, designated bicycle and pedestrian networks (including lanes and multi-modal trails for non-vehicular traffic) between campus and Conway would go a long way toward enhancing students' sense of community, in a safe place where all Chanticleers feel welcome and where they know they belong, in no small part because they can travel there safely.

Developing a cycling culture now will also be key to achieving Initiative 4, Goal 3:

Prepare for future threats and hazards by anticipating, communicating, and mitigating short-, medium-, and long-term disruptions to the University's environmental, economic, and social context.

Because cycling is practically waste-free and cost-free, paving the future with bike lanes and paths, and enabling a cycling student body, will help ensure a resilience to an uncertain economic and ecological future.

Building Community: 14-G1	Building Community: 14-G3
CCU as the nexus of bicycle paths, routes, and lanes extending to key areas in Horry County would connect the campus to our local region.	Because cycling is cost-free, a cycling culture would be resilient to future economic disruptions.

Fostering a cycling culture on and off campus would help create a sense of place and belonging among students.

Because cycling is waste-free, a cycling culture would mitigate CCU's contributions to environmental disruptions (see below).

1.c.3. Local, State, and Regional Impact

A university inevitably impacts its surrounding areas, but doing so with intentionality can bring benefits to partners on and off campus, which is why this is identified as CCU's second Strategic Priority. By doing even more to encourage cycling on and off campus, CCU can set itself even further apart from peer and regional universities as a campus truly dedicated to a sustainable future, thereby helping to achieve Initiative 1, Goal 2 (I1-G2):

Provide leadership and scholarship in support of the sustainable stewardship of our natural resources and a healthy environment

and, at the same time, Initiative 4, Goal 4 (I4-G4):

Develop infrastructure to create connectivity between CCU, its neighbors, and the community.

The President's Council for Sustainability and Coastal Resilience has as its mission:

The President's Council for Sustainability and Coastal Resilience (PCSCR) is committed to transforming CCU into a sustainable campus, centering sustainability in our curriculum and student services, and serving the surrounding communities as we endeavor towards a sustainable future.5

CCU is in a position – geographically and socially – to act as exemplar for Conway, Horry County, and neighboring universities in the Southeast. According to Sustain Coastal's Commuter Footprint Survey (Spring 2022), an astounding 84.6% (n=677) of respondents (including students, faculty, and staff) said that they drive to campus by themselves, despite 34.1% of respondents living less than 5 miles from campus. Only 2.2% of respondents use a bicycle or other non-motorized vehicle to arrive on campus. A university committed to a healthy future for people and planet must focus on its transportation element. By championing the green, cost-effective bicycle, CCU can take an additional yet crucial step toward achieving the aim of a more sustainable future for Chanticleers and our friends and neighbors.

⁵ https://www.coastal.edu/president/presidentscouncilforsustainabilityandcoastalresilience/

⁶ https://storage.googleapis.com/starsstatic/secure/627/8/765/7163/Commuter_Footprint_Survey_22SP.pdf



Figure 5. The Low Country infrastructure of Belgium and The Netherlands could act as a model for the Lowcountry of Horry County, and especially the CCU campus. Top: Student and other bicycle commuters at the University of Leuven, where cycling is the norm. Photo: Erik Daems (CC-BY-NC). Right: Bicycle on CCU campus with a sign in Dutch "Weer een auto minder" (one less car). Photo: Sara Rich, 2023.



Given the flat terrain and the temperate weather, the South Carolina Lowcountry—with Coastal at its core—has the potential to become like the university towns in the other Low Country areas, the Lagelanden of Belgium and the Netherlands, with bicycle- and pedestrian-friendly infrastructure that lends itself to more meaningful social encounters, leisurely trips from point A to point B, quieter streets, and importantly, cleaner air to breathe, cleaner soil to grow our food, and cleaner water to drink.

A CCU-backed commitment to promote cycling and cycling infrastructure in our area would accord with the UN's Sustainable Development Goals (SDGs) 3, 6, 7, 9, 10, 11, 12, 14, and 15.



Figure 6. UN's Sustainable Development Goals (SDGs).

For SDG 3, cycling, and being able to do so safely, clearly promotes good health and wellbeing; for SDG 6, cycling promotes clean water by reducing vehicle debris, waste, and leaked fluids that produce harmful runoff into our irreplaceable wetlands; for SDG 7, cycling promotes affordable and clean energy by reducing or eliminating reliance on fossil-fuelpowered vehicles for transportation; for SDG 9, the promotion of cycling infrastructure coincides with the City of Conway's recent investment in designing new trails to connect "trail islands" in our area; for SDG 10, cycling reduces social class inequalities by encouraging a no- or low-cost mode of transportation, which can also be utilized by those with disabilities that prevent them from driving or walking; for SDG 11, cycling culture is a core component of sustainable cities and communities worldwide, and the promotion of cycling among residents will better help the City of Conway and Horry County to justify investing in cycling infrastructure, such as a rail trail from CCU to Downtown Conway (see also SDG 9); for SDG 14, cycling works to protect life below water by reducing pollution that enters our coastal ecosystems by way of street runoff; and for SDG 15, cycling works to protect life on land by reducing fossil fuel emissions, reducing the numbers of roadkill, and promoting healthier lifestyles among the human residents.

Local, State, and Regional Impact: I1-G2 Local, State, and Regional Impact: I4-G4

CCU as community nexus can model the value of environmental stewardship by championing cycling.	CCU as community nexus can position itself to create connectivity between CCU, its neighbors, and the community.
Cycling meets at least 9 of the UN's 17 SDGs, as it enables a healthy environment and sustainable stewardship of our natural resources.	CCU and the Lowcountry can become as connected and healthy (in terms of personal health, community health, and health of ecosystems) as the "lowcountry" of Belgium and the Netherlands.

Although cars have become an icon of American identity, the ultimate symbol of freedom and liberty is the bicycle. No license is required; there are no age limits and few restrictions; they don't need the gas that fuels foreign conflicts; and the feeling of the wind in your face as you fly down a hill that you just pedaled hard to climb is analogous to the American work ethic as a whole. Bicycles are freedom. Bicycles are the future. They are American, and they can be South Carolinian. Let's create a better future for our Lowcountry.

Sara Rich, Assistant Professor of Interdisciplinary Studies, Bicycle Advisory Council Chair, 2020-2024

2. Current Bicycle Initiatives

2.a. Bicycle Advisory Council

The Bicycle Advisory Council (BAC) was formed in the academic year of 2014/2015 by Layne Flynn to support cycling at CCU.⁷ In the years since, the BAC has seen several initiatives through, all related to encouraging cycling on and off campus. In 2021, the BAC drafted its first formal vision statement,

To educate campus residents and neighbors on cycling-related issues, and to transform our campus and local community infrastructure into a pedestrian and bicycle-friendly network

and mission statement,

To partner with CCU and local stakeholders to champion cycling as a viable means of transportation and recreation.

In addition to regular education and outreach programs related to cycling, the BAC has supported numerous other notable initiatives, such as the 2015 League of American Bicyclists (LAB) designation of CCU as a bronze-rated Bicycle Friendly Campus, and the 2019 designation as a silver-rated Bicycle Friendly Campus. The BAC also participates in Sustain Coastal's Sustainability and Earth Day fairs, where it encourages awareness of cycling initiatives on campus and recruits new members to the team. The BAC has also run surveys (among Coastal Cycles renters in 2019 and CCU-wide in 2022) to garner data on campus affiliates' attitudes and behaviors toward cycling.

Additional to CCU partners, such as Sustain Coastal, Outdoor Recreation, and Auxiliary Enterprises, the BAC also partners with the City of Conway, the Myrtle Beach Bicycle and Pedestrian Committee, Palmetto Cycles, and the local chapter of the Fellowship of Christian Athletes (FCA) to promote cycling in our area: e.g., group rides, Myrtle Beach LAB bicycle-friendly designation, cycling summits, and bicycle-friendly legislation on state and local levels.

2.a.1. Bicycle-Friendly Campus

Being designated as a Bicycle Friendly University, at any level, by The League of American Cyclists is a massive achievement and speaks to years of work, planning, and education by the university, faculty, staff, students, and the local community. According to The League of American Cyclists, "The Bicycle Friendly University program recognizes institutions of higher education for promoting and providing a more bikeable campus for students, staff and visitors." As of November 2022, there are only 221 total universities that have been

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⁷ https://www.coastal.edu/transportation/bicycleadvisorycouncil/

^{8 &}lt;a href="https://bikeleague.org/bfa/university/">https://bikeleague.org/bfa/university/

designated with any level of this achievement in the United States. The levels of designation are Honorable Mention, Bronze, Silver, Gold and Platinum. Only 67 universities have been awarded at the Silver level, of which Coastal Carolina University is one.

The Coastal Carolina University Bicycle Advisory Committee originally applied to be a Bicycle Friendly University in 2015 and was awarded the Bronze level designation. The original designation process was intensive and included the application itself as well as a site visit from The League of American Bicyclist to evaluate our campus infrastructure. Every four years, universities are up for renewal of their application, and in 2019 The Coastal Carolina University Bicycle Advisory Council applied for renewal and was awarded the Silver designation. The BAC is up for renewal again in 2024.

Both designations by themselves are a huge achievement; however, what's especially impressive is being able to move up a level in such a short amount of time. The process to apply is time-intensive and requires universities to evaluate how they are doing on the "5 E's" of The League of American Cyclists: Equity and Accessibility, Engineering, Education, Encouragement, and Evaluation and Planning. The application process requires significant input from university officials, administrators, public safety, grounds, facilities, recreation, faculty, staff, students, and local community members. However, the application process itself, and not just the award, provides a way that Coastal Carolina University can evaluate where it's been in regards to cycling on campus, where it is now, and what the plans for the future are. The League of American Cyclists also provides a feedback packet as part of its response to the application with recommended improvements for the future. The process itself provides a great evaluation rubric and reflection tool.

Coastal Carolina University is up for designation renewal in 2024, and the challenge that lays ahead for the campus bicycle community is in determining, "What now?" "What next?" and "How do we get there?" This campus bicycle master plan addresses these (and other) priority items for a safer and more equitable transportation culture on and off campus.

2.a.2. 2022 Horry County Trail Summit

Following a successful Bicycle and Pedestrian Trail Summit in Myrtle Beach in 2019, hosted by the Myrtle Beach Bicycle and Pedestrian Committee, the BAC hosted the 2022 Horry County Trail Summit on 11 May on the CCU campus. The summit gathered state and local elected officials, along with other stakeholders in public and private sectors, under the theme "Getting to Shovel Ready," with the primary focus of establishing a Rail Trail between



Figure 7. Logo for the 2022 Horry County Trail Summit, hosted by CCU.

Conway, CCU, and the beach, and a secondary focus of expanding the East Coast Greenway through North Myrtle Beach.

Namely, the Summit successfully identified missing links and next steps toward realizing these crucial bicycle networks in our county. By securing the Rail Trail, along the RJ Corman train tracks from the beach across the Intracoastal Waterway to CCU and across the Waccamaw River to Conway and eventually Loris, and by expanding the East Coast Greenway, Horry County could boast two key trail "arteries" (the rail trail running east-west and the greenway running north-south) from which other smaller trail projects could grow, like veins and capillaries, to expand this circulatory network into other residential, commercial, and recreational areas.

2.b. Coastal Cycles

CCU seeks to develop students who are both knowledgeable in their chosen fields and prepared to be productive, responsible, healthy citizens. To aid in this mission, CCU began a bike share program, Coastal Cycles, in 2010 with 21 bicycles and has been a thriving part of the community since.

Coastal Cycles now provides transportation to up to 1,500 users annually. Since its inception, this program has experienced both growth and shrinkage (following the covid-19 outbreak in 2020) and currently sits with a fleet of 170 bikes. Another 70 bicycles will be added to the fleet in 2024 to support the increased student demand. Students may rent a

⁹ https://www.coastal.edu/transportation/bicycleadvisorycouncil/horrycountytrailsummit/

bicycle free of charge for 30 days at a time from the Outdoor Center at the HTC Student Recreation Center. All bikes come with a U-lock, reflectors, and free bike lights. Helmets are made available to anyone wishing to include one in their bike rental. This program is the University's greatest sustainability and public heath success to date, as seen through an assessment of annual growth.

Year	Coastal Cycles (appx. number of bicycles)	Coastal Cycle Rentals
2010-11	21	No data
2011-12	40	No data
2012-13	100	No data
2013-14	175	No data
2014-15	300	1,616
2015-16	375	2,631
2016-17	525	3,357
2017-18	600	3,048
2018-19	600 *estimated	Not Available
2019-20	600 *estimated	Not Available
2020-21	150	Not Available
2021-22	160	1325
2022-23	170	1272 (as of 22 March 2023)

In addition to free rentals, Coastal Cycles provides bicycle repair and maintenance services free of charge for students and access to four Bike Fixlt Stations on campus. Free bike maintenance to students is available whether it's needed for personal bikes or a Coastal Cycles rental. For personal bikes, parts must be supplied by the owner when needed, although there is never a charge to any student for labor.

Offering these options to students promotes bicycling and provides the tools for the campus community to choose to ride over driving at CCU.

2.c. Sustain Coastal

Established in 2005, Sustain Coastal is committed to transforming Coastal Carolina University into an environmentally sustainable university through campus operations, student curriculum, engaging students through learning and outreach, and collaboration in the community through sustainable stewardship of resources.

Sustain Coastal coordinates sustainable services at CCU including recycling, food waste composting, water refill stations, energy conservation, alternative transportation, as well as educational programs and outreach events such as farmers markets, classroom presentations, volunteer opportunities, campus sustainability tours, and opportunities for collaboration; both on and off-campus. The department also manages major sustainability initiatives such as Zero Waste Football, Earth Month programs, Pop-Up Thrift Shop, and Campus Salvage.

In January 2022, Coastal Carolina University (CCU) earned a Gold rating in recognition of its sustainability achievements from the Association for the Advancement of Sustainability in Higher Education (AASHE). STARS, the Sustainability Tracking, Assessment & Rating System, is a program of AASHE that measures and encourages sustainability in all aspects of higher education. CCU's 70.62-point score is the highest among South Carolina public colleges and universities, and second in the state only to Furman University, a private institution. The results highlight CCU's leadership in academic programs and courses that address sustainability, as well as research and scholarships. The STARS score also reflects the strength of CCU's sustainability programming and outreach, as well as experiential learning opportunities available to students, faculty and staff.

At CCU, Teal Transportation makes efforts toward sustainable transportation:

CCU is a pedestrian friendly campus, designed to encourage the use of sustainable transportation options such as walking or biking. The use of sustainable transportation can reduce parking demands, save time and money, ensure pedestrian safety, promote healthy lifestyles, and help create a cleaner environment.¹¹

2.d. Rolling Forward

The Rolling Forward Project was a program initiated by Drs. Stephanie Southworth and Sarah Braillier (Department of Sociology) with a local homeless shelter based on the results of surveys of homeless shelter residents. Rolling Forward was a bike share program where people who were staying at the shelter could borrow a bike to get where they needed to go. Bikes and bike racks came from donations (including CCU's Department of Public Safety and the community) as well as grants Southworth and Brallier received. The program ran for about three years. Program respondents reported using the bikes for mental health, to get

¹⁰ https://reports.aashe.org/institutions/coastal-carolina-university-sc/report/2022-12-22/

¹¹ https://www.coastal.edu/sustain/campussustainabilityinitiatives/tealtransportation/

to work, and to see family, among other uses. The shelter has let the program lapse, but it was hugely successful when it was in operation.

2.e. Myrtle Beach Bicycle and Pedestrian Committee

The mission of the Myrtle Beach Bicycle and Pedestrian committee is to identify opportunities for safer cycling and walking within the City of Myrtle Beach. These opportunities range from working with city staff to identify and plan for improvements to existing cycling infrastructure, to creating new safe cycling byways to promote economic development via tourism related to cycling and to enable safe commuting for the local hospitality-centric workforce.

In 2023, the committee focused using existing cycling infrastructure and what would be needed to connect areas of employment to existing concentrations of workforce housing. For 2024, the priorities for the committee will be:

- 1. Assist city staff in developing the actionable plan to implement the 2023 recommendations:
- 2. Create and implement a safety education and promotion plan;
- 3. Draft local e-bike regulations;
- 4. Work to achieve Walk Friendly and the League of American Bicyclists' "Silver" Bicycle Friendly Community certifications.

2.f. Palmetto Cycling Coalition

The Palmetto Cycling Coalition is a Columbia-based non-profit organization whose mission is "to make South Carolina bicycle and pedestrian friendly, by improving safety through better access and education, to promote healthy lifestyles and livable and economically viable communities." The PCC advocates for bicycle and pedestrian friendly legislature and organizes Bike Walk Summits in SC. It has mapped low-stress routes across the state for cyclists and conducts road safety audits, in addition to numerous other forms of advocacy.

2.g. Complete Streets

In 2021, the SC Department of Transportation adopted the "Complete Streets" policy, which requires SCDOT to work with the state's regional transportation planning partners and regional transit providers to identify and include walking, bicycling, and transit needs as part of their regional visioning plans. These plans will be tailored to the unique needs of each

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¹² https://pccsc.net/

area of the state and will serve as a foundation for highway planning and design, construction, maintenance, and daily operations.

The policy aims to make the SC highway system safe and accessible to all users, including drivers, passengers, bicyclists, pedestrians, and transit riders.

Key components of the Policy include:

- Funding for these accommodations is to be included in the budget for each project if warranted on the individual project and in accordance with the regional plans.
- SCDOT will update and modernize its design manuals to include multimodal accommodations.
- SCDOT will establish a council to facilitate ongoing communication to seek continuous improvement opportunities and initiatives.¹³

The Policy shares much in common with Charleston's 2008 Complete Streets Resolution, which has created greater connectivity and access for cyclists and pedestrians.¹⁴

2.h. Local Public Transportation

The Myrtle Beach metropolitan area features a bus line operated by Coast RTA, whose mission is "to provide safe, reliable, affordable, and courteous mass public transportation that enhances the quality of life for residents and supports the growth of tourism." Based in Conway, Coast RTA's current routes traverse Conway, Myrtle Beach, Bucksport, and Loris in Horry County, and Georgetown, Choppee, Andrews, and Plantersville in Georgetown County. Buses also feature front racks that hold either two or three bicycles depending on the model. Rides are only \$1.00 with a maximum daily fare of \$3.50 if paying with contactless. Coast RTA also partners with Conway and CCU to offer special event shuttles between campus and downtown Conway.

CCU also provides free shuttles for students, staff, and faculty around campus and to popular off-campus destinations such as Wal-Mart and CVS. Shuttles also have front racks that hold up to two bicycles.¹⁶

¹³ This section's text was adapted from the press release at http://info2.scdot.org/SCDOTPress/Lists/Posts/Posts.aspx?ID=3102.

¹⁴ https://www.charleston-sc.gov/961/Complete-Streets

¹⁵ https://coastrta.com/

¹⁶ https://www.coastal.edu/transportation/shuttle/

3. Existing Bicycle Networks

3.a. CCU Campus and Immediate Environs

The main campus of Coastal Carolina University, which is situated between two of the busiest highways in Horry County, 501 and 544, and bordered on its third side by University Boulevard, provides bicyclists with a dedicated bicycle lane around its inner perimeter: the U-shaped Chanticleer Drive East (0.94 miles, end-to-end). A wide slab-style sidewalk runs beside the stretch of Highway 544 that parallels the campus, and the same type of sidewalk lines University Boulevard, allowing bicyclists to ride relatively free of close contact with automobiles.



Figure 8. University Boulevard on CCU campus. Note the raised pedestrian crosswalk, which cyclists also use when crossing the street. Without bicycle lanes, cyclists also share the sidewalk with other non-motorized vehicles, golf carts, and pedestrians. Photo: Sara Rich, 2023.

Upon leaving campus, however, bicyclists face an immediate challenge. Other than the entrance into Quail Creek sub-division and a short pedestrian exit behind Dogwood Hall into College Park, bicyclists like all drivers must either 1) turn left or right on University Boulevard, whose main function is to connect 501 and 544, or 2) take Founders Drive to 544. Highway 501 runs northeast to Conway or southeast to Myrtle Beach; 544 heads briefly north to 501 or south to Socastee before bending east to Surfside. A pedestrian crossing over 544 is currently slated for construction to help students safely reach housing on the other side of the highway. A similar construction, either a skywalk over or a tunnel beneath 501 is also needed to protect students, staff, and faculty who need to cross the highway at the intersection of University Drive and 501 to reach the east side of campus. As

CCU continues to grow eastward across 501, the necessity to safeguard pedestrians and cyclists traveling across the highway will only increase in urgency.

A mile further from campus is the start of Highway 90, routing vehicles eastward toward North Myrtle Beach until spilling out twenty-one miles later on Highway 9 between Little River and Longs. With the exception of intermittent sections of 90, none of these thoroughfares is friendly to bicycles: narrow shoulders and rumble-strips, heavy traffic (including semi-trucks), and traffic congestion all present significant hazards for two-wheel travel.¹⁷

Despite these obstacles, by navigating sub-divisions such as College Park and Quail Creek, enterprising riders can access a number of stress-free "networks." About two miles from CCU's football stadium, for instance, is the Cox Ferry Recreation Area (part of the Waccamaw National Wildlife Refuge), whose abundant dirt, gravel, wood, and paved routes are a delight to explore. Adventurous bicyclists will also enjoy the five-mile (in and out) gravel trail around the former Lake Busbee (parking available) four miles from CCU.

3.b. Conway

On 17 July 2023, Conway became South Carolina's inaugural "Trail Town." The honor was bestowed due to the city's Riverwalk and potential for eco-tourism, but as observed in the Charleston *Post and Courier*, it is also an honor to live up to.¹⁸ Plans for enhancing trails and access to them must address the Waccamaw River and the fact that the two bridges currently crossing it are not safe for cyclists or pedestrians. However, creative thinking – such as a ferry crossing for cyclists and pedestrians – is bound to resolve some of these concerns. There is great potential for Conway to become the true Trail Town that its title suggests.

Although CCU is located in greater Conway, the town of our "Rivertown" itself is located a few miles southwest of the exact center of Horry County, which is the biggest county by area in the state (1255 square miles), and thus a hub to countless semi-rural and rural roads, most of them boasting high visibility and good surfaces. While Conway does not offer bicycle lanes, the city does feature designated bicycle routes, and there are some signs indicating these routes, all of which start at the marina and lead through historic Elm Street to wind through residential areas near the Waccamaw River and Crabtree Swamp. For example, to the southwest of the city is Willow Springs Road, leading far into the countryside through which winds the Pee Dee Highway and dozens of byways for short, medium, or epic day-rides.

¹⁷ Recent construction along Highway 90 has led to sections with wider shoulders and smooth surfaces, albeit with rumble-stripped white lines.

¹⁸ Perry, Charles D. "For SC's first Trail Town, the Most Ambitious Projects Still Lie Ahead," *The Post and Courier*, 18 July 2023: https://www.postandcourier.com/myrtle-beach/news/conway-named-first-south-carolina-trail-town/article/4b71bff0-255a-11ee-90b1-b34dc837007a.html.

To the town's northeast is Long Avenue Extension, a starting-point for mile upon mile of rural highway (668, 65, etc.) that recreational riders and racers have traversed, both group and solo, for decades, taking them as far afield as Loris and the Playcard Environmental Education Center on Highway 410. Key back roads in this region are Daisy, Cane Branch, and Highway 19, all of which figure in several loop options familiar to local bicyclists; from a start at the Conway Marina, such loops average between twenty and thirty-five miles.

CONWAY SC RECREATION DATA



CONWAY SC RECREATION DATA



Figure 9. Map of Conway's bicycle routes (top) and detail of bicycle routes in the downtown area (bottom).

It is recommended that cyclists avoid Highway 701 north out of Conway and Highway 905 east/northeast out of Conway altogether. Highway 701 south out of Conway leading to Georgetown on the coast would make an ideal out-and-back day trip were it safe to ride on the road; lumber trucks and the absence of any shoulder classify this route as another one to avoid.

Riding into Conway by bicycle from CCU is a challenging task: first because only two approaches to the city are available, and second because each approach is not without risk. One choice, the 501-Business corridor, resembles a drag-strip that ends at the base of the Memorial Bridge over the Waccamaw River, whose two lanes can barely accommodate the girth of SUVs, 4x4 trucks (often hauling trailers wider than the trucks themselves), school buses, dump trucks, and too-frequent unlawful 18-wheelers. Bicyclists must prepare for a combination of squeeze and pitch.



Figure 10. Northbound traffic on 501 Business entering downtown Conway, with the Main St. Memorial Bridge in the distance and the entrance to Depot Road and the Waccamaw River Park to the right. Also note the rumble strips lining the unofficial bike lane. Photo: Sara Rich.

The long way around means Depot Road, one mile of which has recently been resurfaced by SCDOT, but deep potholes have already formed and remain in the section not resurfaced. When traffic is congested on 501 Business, which is frequent, drivers are now rerouted through GPS to Depot Road because they can bypass much of the highway. There are currently two conflicting posted speed limits of 25 MPH and 45 MPH, neither of which is heeded, so cyclists face speeding traffic on a winding, poorly maintained state road, which has already taken motorists' lives. It too leads to the base of the bridge downtown. Once safely downtown, cyclists can enjoy the bicycle routes described above.

3.c. Horry County

By comparison to cycling to Conway, biking from CCU to Myrtle Beach via 501 and other points south is all but inconceivable. There is a bicycling dead zone of 4.5 miles between CCU and the Kroger Supermarket plaza at Carolina Forest Boulevard (CFB). (From that point, the dead zone extends to the big box district at Seaboard Street in Myrtle Beach.) Getting to CFB without touching 501 requires stitching together streets behind and/or through the Conway Medical Center, Wild Wing Boulevard, Waterford Plantation, and the like.

It is worth the effort. In addition to matching all-purpose paths on each side, CFB has generous, well-marked, and smooth shoulders that experienced cyclists may prefer to the paths with their frequent interruptions. One so inclined may spin at speed toward River Oaks Drive, the Hulk (Myrtle Beach's terrific mountain bike park), or Myrtle Beach proper, where many opportunities for commuting, training, or lifestyle riding exist. CCU-affiliated cyclists hope that a road under construction in the woods one hundred yards to the west of 501—between Cookout Restaurant near CCU and Walgreen's across from Carolina Forest shopping center—will feature shoulders sufficiently wide so that said cyclists can avoid 501 altogether in their effort to reach the bicycle-friendly asphalt of CFB.

Not to be overlooked is International Drive, the new link between 90 and the Academy of Arts, Sciences, and Technology; Ocean Bay Elementary and Middle Schools; and Robert Grissom Parkway. Noting that the County planners installed well-designed bike lanes on both International Drive and CFB, interested pedalers now await the construction of the same along all of 90, where free-flow lanes are needed for those seeking safe access to International Drive. Needless to say, in the expansive but rapidly diminishing wild spaces between 90, and the swelling suburbs to the east and south, there remain hours of off-road riding in the Lewis Ocean Bay Heritage Preserve, from whose trailhead mid-way on International Drive one is free to ride through the remnant longleaf pine savannahs of the County's northeast interior.



Figure 11. Trailhead for Lewis Ocean Bay Heritage Preserve on International Drive in Myrtle Beach. Photo: Sara Rich, 2023.

3.c.1. East Coast Greenway

The East Coast Greenway (ECG) is a planned urban trail system that links 25 major US cities from Calais, Maine to Key West, Florida. The main spine of the trail will stretch 3,000 miles along the East Coast, with an additional 2,000 miles of alternate routes to provide connectivity to towns, cities, parks, and natural areas. The trail accommodates pedestrians, cyclists, and other non-motorized modes of transportation. According to the East Coast Greenway Alliance, "Of the 270-mile route through SC, 15% is complete on greenway trails and another 20% is in development." Myrtle Beach actively participates on the SC ECG Steering Committee. Myrtle Beach is proud to be the first city in the country to have completed its segment of the ECG from city limit to city limit. The proposed Rail Trail (see above and below) would connect Conway (and eventually, Loris), with the ECG segment in Myrtle Beach, establishing two major trail arteries, to which other trails, pathways, and routes might connect in order to establish a bicycle- and pedestrian-friendly transportation network.

¹⁹ This is section is slightly adapted and used with permission of the authors from the corresponding section of the Myrtle Beach Bicycle and Pedestrian Master Plan (2018).

4. Needs Analysis

4.a. Crash Analysis

Although the BAC's Fall 2022 Cycling Survey reported only 2 cyclists as having been in a crash (one with a truck, the other with a pedestrian), the threat to cyclists and pedestrians across the county, and across the state, is real. Smart Growth America's Dangerous by Design report (2022) ranked South Carolina as the third most dangerous state for pedestrians.²⁰ These data correspond to the National Highway Traffic Safety Administration and the SC Department of Transportation (SCDOT), who found that death rates of pedestrians and cyclists were among the highest in the nation.²¹ Their last recorded data were from 2020 in which there were a total of 201 pedestrian and cycling fatalities, with 63 of those were in Horry County alone.²² Pedestrian deaths rose to 4% from 2019 – 2020 and cycling deaths lowered to 0.27%, which is slightly below the national average.

²⁰ https://pccsc.net/data-statistics/

²

https://explore.dot.gov/views/DV_FARS_PC/Home?%3Aiid=3&%3AisGuestRedirectFromVizportal=y&%3Aembed=y

²² https://explore.dot.gov/views/DV_FARS_PC/CrashCharacteristics

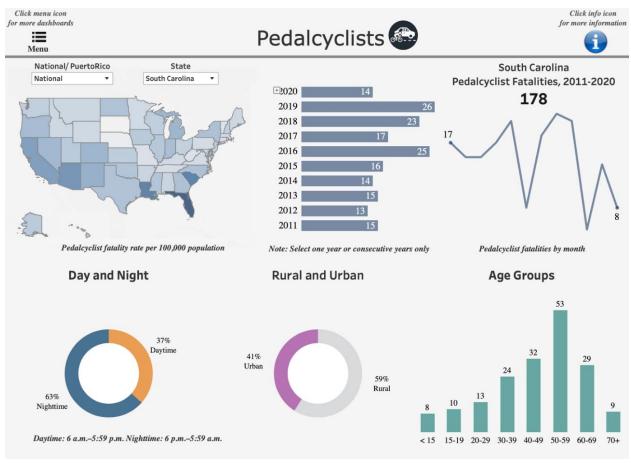


Figure 12. NHTSA Website: South Carolina Pedalcyclist Fatalities from 2011 – 2020.

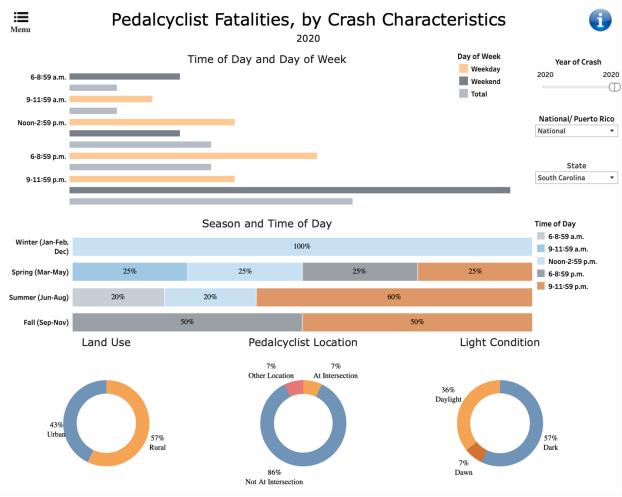


Figure 13. NHTSA Website: South Carolina Pedalcyclist Fatalities by crash characteristics 2020.

The Palmetto Cycling Coalition and SC Livable Communities Alliance assembled the Pedestrian and Bicycle Crash Analysis (2009-2017), which reports that Horry County is in the top five counties in the state for bicycle and pedestrian crashes, the vast majority of which occurred in fair weather, and about half of which occurred in broad daylight.²³

Although there are no official data yet for recent years, below is a sample of crashes involving bicycles that were reported in local Myrtle Beach news outlets in the years since 2017:

22 January 2018, 6:04pm: fatal bicycle crash, SC 501, Myrtle Beach²⁴

²³ https://pccsc.net/data-statistics/

²⁴ https://wpde.com/news/local/fatal-wreck-on-highway-501-and-forestbrook-road

- 1 January 2019, 3:40am: fatal bicycle crash and nonfatal bicycle crash, SC 501, Myrtle Beach (first responder also injured on the scene when hit by a different car)²⁵
- 14 June 2020, 2:15pm: nonfatal bicycle crash, SC 501, Myrtle Beach²⁶
- 4 February 2022, 5:40am: fatal bicycle crash, Red Bluff Road, Loris²⁷
- 5 May 2022, 10:30pm: fatal bicycle crash (hit-and-run), US 17 Business, Myrtle Beach²⁸
- 13 July 2022, 11:30pm: fatal bicycle crash, Clay Pond Road, Myrtle Beach²⁹
- 2 January 2023, 4:00pm: fatal bicycle crash, Market Common, Myrtle Beach³⁰
- 15 August 2023, morning: nonfatal bicycle crash, Rober Grissom Parkway, Myrtle Beach³¹
- 23 August 2023, 8:00am: nonfatal bicycle crash, North Myrtle Beach High School³²
- 9 September 2023, 11:30pm: nonfatal bicycle crash (hit-and-run), Burcale Road, Forestbrook³³

The increase in bicycle crashes in recent years indicates an urgent need for improved cycling infrastructure across the county, but we can start with our own campus and the immediately surrounding areas.

4.b. Demands for Supplies and Facilities

4.b.1. Repair Stations

CCU has a bike Fixit station at University Place and Main Campus, at the Outdoor Rec Center in the HTC Building. These stations include Philips and flat-head screwdrivers; 2.5, 3,

²⁵ https://account.myrtlebeachonline.com/paywall/subscriberonly?resume=223794485&intcid=ab_archivehttps://www.myrtlebeachonline.com/news/local/article 223794485.html

²⁶ https://www.myrtlebeachonline.com/news/local/article243548967.html

²⁷ https://www.myhorrynews.com/news/crime/friends-of-horry-county-activist-dameion-fowler-want-more-investigation-into-his-death/article_24342d7e-9037-11ec-82b6-ab245bf2c535.html

²⁸ https://www.myhorrynews.com/news/crime/bicyclist-killed-outside-myrtle-beach-after-getting-hit-on-highway-17/article_8073c4e4-cd42-11ec-8125-536314b98185.html

²⁹ https://wpde.com/news/local/bicyclist-dies-in-horry-county-crash-burcale-road-near-clay-pond-road

³⁰ https://www.wmbfnews.com/2023/01/16/coroners-office-identifies-bicyclist-killed-crash-market-common-area/

³¹ https://www.wbtw.com/news/grand-strand/myrtle-beach/1-person-hurt-in-crash-involving-bicycle-in-myrtle-beach-fire-official-says/

³² https://www.wmbfnews.com/2023/08/23/n-myrtle-beach-high-school-student-hurt-pedestrian-involved-crash/

³³ https://www.wmbfnews.com/2023/09/11/bicyclist-severely-hurt-hit-and-run-crash-forestbrook-area/

4, 5, 6, 8mm Allen wrenches; 8, 9, 10, 11, 15, 32mm box wrenches; T25 Torx wrench Tire levers (2) and an air pump.

The two on campus both need replacement pump heads, so students often use the air compressor located in the bike shop. Funds to repair these stations and to purchase two additional Fixit stations have been generously award the BAC through CCU's Sustainability Grant (2023-2024). The new stations will be located in highly trafficked parts of campus to help increase the accessibility of safe bicycles and to incentivize riding bikes to and from campus instead of driving.

4.b.2. Bicycle Racks

There are over 110 bike racks across CCU's campus, parking lots, and off campus housing facilities providing safe locking spaces for over 600 bikes. There are bicycle racks located outside every building, and these range in material and types. New racks were recently installed outside the HTC Building, courtesy of Sustain Coastal.

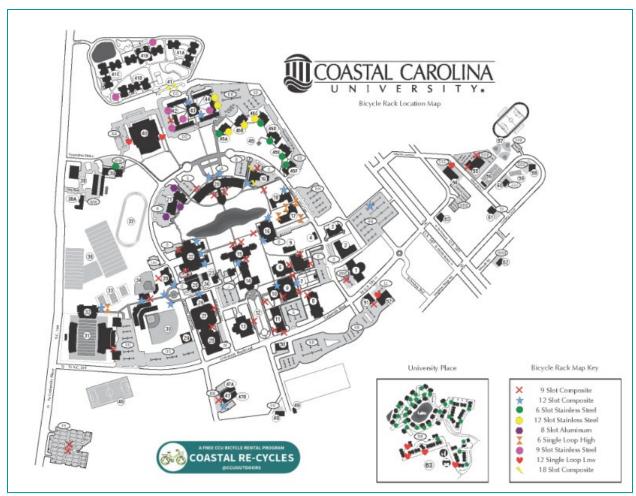


Figure 14. Current bicycle parking types and locations on the main campus.

Figure 15. Example of the recycled plastic bike racks (composite racks) outside nearly every campus building. Photo: Sara Rich, 2023.



However, according to the BAC's Cycling Survey (Fall 2022), covered racks are strongly desired by students, staff, and faculty. Covered racks are in particular demand because bicycles are not allowed inside buildings or offices, regardless of the weather conditions or how long the bicycle has to be left locked up.

According to surveys by the League of American Bicyclists, the key determinant in whether people will get on a bike and ride is the physical environment. LAB's other key component is bicycle parking in dry, accessible spaces. To achieve this, CCU would need to invest in covered bicycle racks strategically placed across campus.

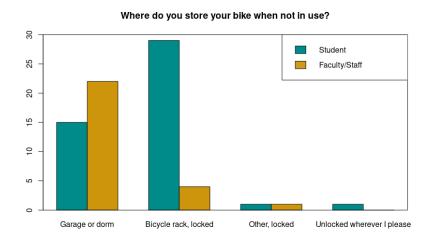
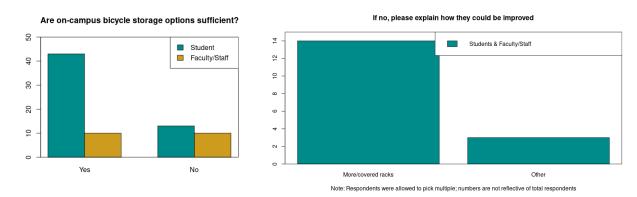


Figure 16. Graphs of parkingrelated responses to the BAC's Cycling Survey (Fall 2022).

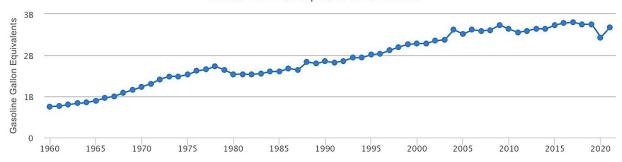


As CCU continues to grow, and if a park-and-ride system is implemented so that commuters park their cars in lots a short distance from main campus and use a bicycle to arrive on campus, then covered racks with greater security from theft and protection from weather will become necessary.

4.c. Demands for Transportation Diversity

Despite increasing consumption, gas prices continue to rise. Along with this increase in cost comes the rising need for accessible transportation for all. Therefore, a safe and diverse means of transportation is essential for every economy so that the workforce can afford to travel to work.





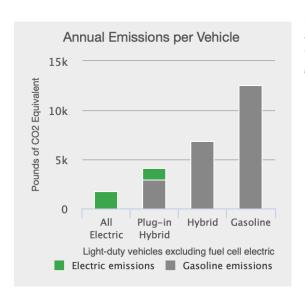


Figure 17. Data from the U.S. Department of Energy showing the increase in fuel consumption in South Carolina (top), and annual emissions in pounds of CO2 per vehicle (left).

Further, as a result of high fuel consumption, greenhouse gas emissions are at an all-time high, according to the U.S. Department of Energy. The annual gasoline emissions reached 22,431 pounds of CO2 equivalent per vehicle in South Carolina.³⁴ In order to lower the CO2 emissions rate, transportation diversity is key. According to research by University of Oxford transport professor Dr. Christian Brand, choosing a bike over a car just once a day can reduce one person's carbon footprint by 67%.³⁵

Other reasons for transportation diversity include accessibility for persons with disabilities and/or financial hardship, and a long-term solution for parking shortages. In order for Coastal Carolina University to serve all students, faculty and staff equally, there must be access to a variety of transportation options that allow choice and agency. Cycling culture creates a sense of community and belonging. It promotes a healthy lifestyle in which human interaction, relationship to the natural environment, and exercise are key.

³⁴ https://afdc.energy.gov/states/sc

³⁵ https://www.sciencedirect.com/science/article/pii/S1361920921000687?via%3Dihub

4.d. Demands for Infrastructure

Bicycle friendly campuses have access to basic needs via well-connected, safe bicycle networks including but not limited to pharmacies, grocery stores, bookstores, gyms, etc.

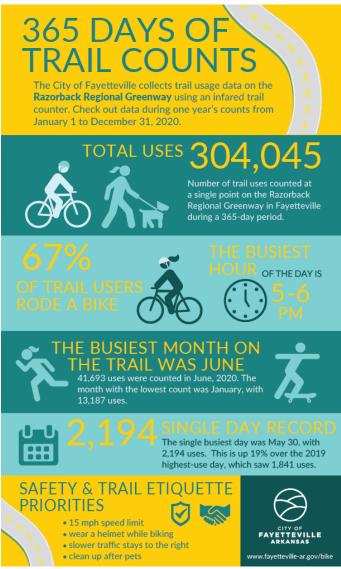


Figure 18. Data on usage of the Razorback Regional Greenway in Fayetteville, Arkansas.

Well-connected bicycling networks consist of quiet neighborhood streets, conventional and protected bike lanes, and shared-use trails. Currently on the CCU campus, the gym, bookstore, and campus dining are accessible via bicycle or walking. There is currently a part of our campus that is completely inaccessible via bicycle or walking because it is located across 501. There is no pedestrian or bicycle crossing available to reach the Burroughs and Chapin Center (Theatre Design and Production Studios), Coastal Science Center, Stevens Tennis Complex, Intramural Fields, Atlantic Hall, Beach Volleyball Complex, and 450-B Century Circle (University Printing Services).

By contrast, Fayetteville, AR, is a great example of a moderately-sized city that has seen a tremendous increase in connectivity since establishing bicycle infrastructure. Data from the Razorback Regional Greenway indicate that over the course of one year, 304,045 people used the trail, and 67% of those users were cyclists.³⁶

The implications for our campus and surrounding community are that if cycling infrastructure is built, people

will use it. Whether Fayetteville's renowned trail network, the rail-to-trail system in Ottawa, KS, or the Swamp Rabbit Trail in Traveler's Rest, SC, all municipal, county, and state investments in cycling and pedestrian infrastructure have proven invaluable to community members and visitors alike. Our community needs to make this change toward multi-modal infrastructure for the sake of students, tourists, and permanent residents old and new.

³⁶ https://www.fayetteville-ar.gov/3470/Bicycle-Fayetteville

The most visible and perhaps most tangible evidence of a great place for bicycling is the presence of infrastructure that welcomes and supports it. Any community, whether campus or city, must take responsibility for keeping cyclists and pedestrians safe from motorized vehicles, and CCU clearly needs to do more to protect the safety of its students, staff, and faculty who travel on two wheels or two feet.

According to surveys by the League of American Bicyclists, the key determinant in whether people will get on a bike and ride is the physical environment. Our campus and surrounding community offer an ideal terrain and climate for cycling. With greater infrastructural investments, the lure of cycling over driving will be irresistible.

The BAC's CCU Cycles Safely project represents the first steps toward supporting cycling as a safe and reliable alternative mode of transportation on and off campus. The objective of this project is to advocate for safe, well-connected and accessible cycling paths and trails and to educate the campus and grander Coastal Carolina University community on the benefits of cycling. Identified infrastructural needs include the following for on-campus cycling:

- Connect cycling paths across the entire campus
- Repaint cycling/pedestrian paths with a brighter paint and provide more safety ... for evening and night riding including lights, reflectors and reflective vests
- Create a signage and campaign for bridge safety and dismount zones
- Install more bicycle repair stations across the campus
- Create and participate in cycling and sustainability events to create an environment of excitement, fun and education around campus cycling
- Install weather-proof bicycle racks in strategic areas across campus.

To connect the larger CCU community our objective is to promote road cycling through the following steps:

- Connect CCU spill-over zones with cycling paths to promote road cycling from rental communities and university housing to campus
- Develop a bike lane on University Blvd.
- Install share-the-road signs on campus
- Use off-campus CCU billboards for messaging to advocate for bicycle safety.

To be successful, these initiatives must include the cooperation of CCU, the City of Conway, Horry County, and SCDOT.

5. Summary of Recommendations According to LAB's 5Es

5.a. Engineering

The most visible and perhaps most tangible evidence of a great place for bicycling is the presence of infrastructure that welcomes and supports it.

The 2019 LAB report provided the following general recommendations for CCU to improve its bicycle-friendly engineering:

- Increase the quantity and quality of bike parking, ensuring all new and existing parking meets or exceeds Association of Pedestrian and Bicycle Professionals (APBP) guidelines.³⁷
- Begin adding protected bike lanes or cycle tracks on campus, starting with areas of highest bicycle traffic or those that connect key destinations.
- Install automatic bike counters to better understand usage patterns and needs for infrastructure improvements.
- Strengthen partnerships with local municipalities and advocacy groups to improve off-campus cycling infrastructure and connectivity, making cycling to and from campus safer and more convenient.

Further considerations are detailed below.

5.a.1. Bicycle Lanes

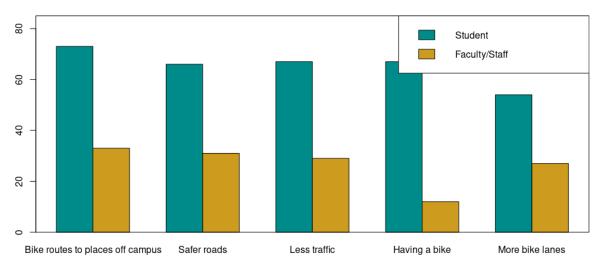
Designated bicycle lanes are the clearest way to protect cyclists from motorized traffic. While cyclists have the right to ride on streets and highways, motorists do not always respect that right. From distracted to aggressive drivers, there are numerous threats to cycling safely that can best be alleviated by designating bicycle lanes. This also has the effect of slowing traffic, ensuring that increased safety is awarded to everyone sharing the road (see "Enforcement" below).

Unfortunately, the very real threats to safe cycling in our area prevent many potential cyclists from taking to two wheels. This was indicated in the BAC's Cycling Survey (Fall 2022).

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³⁷ https://www.apbp.org/Publications

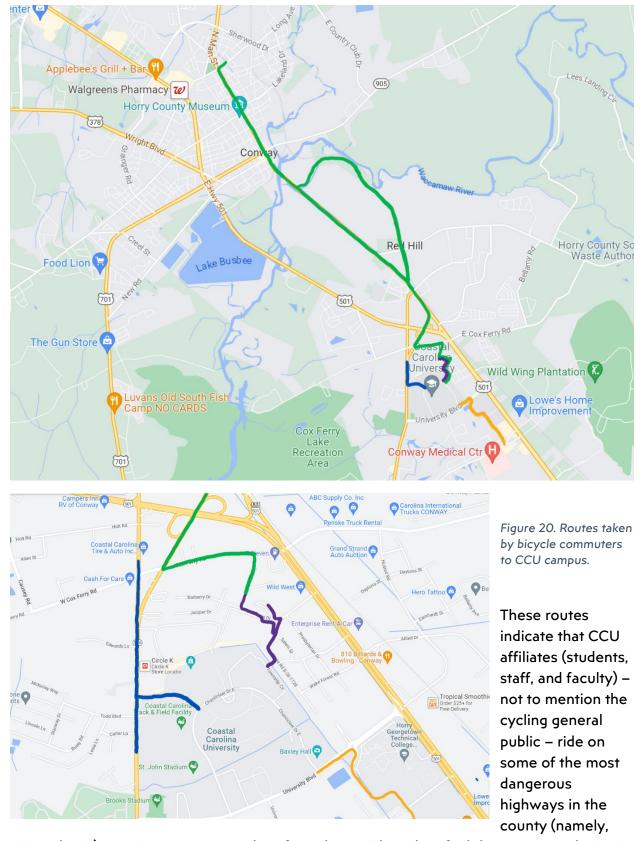
What would encourage you specifically to ride a bicycle more often?(1)



Note: Respondents were allowed to pick multiple; numbers are not reflective of total respondents

Figure 19. Graph from the BAC's Cycling Survey (Fall 2022) indicating what would encourage most respondents to cycle.

The demand for bicycle infrastructure presents a problem: people are reluctant to cycle because they don't feel safe, and authorities are reluctant to make engineering changes because there aren't enough cyclists to warrant the investment. In the Cycling Survey, campus respondents who do commute by bicycle to campus indicated their routes.



501 and 544) to arrive on campus. Therefore, the BAC has identified these areas as being in

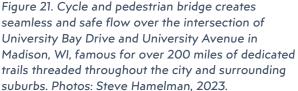
the greatest need of bicycle lanes. However, ideally, bicycle lanes should extend east along 544 at least to the intersection of Jackson Bluff Road (with University Place apartments and access to the Waccamaw National Wildlife Refuge with its mountain biking trails), if not further eastward to the intersection of Myrtle Ridge Drive (where numerous staff and faculty live and where there is a grocery store frequented by them as well as students living at University Place on the north side of 544). Myrtle Ridge Drive also connects to 501, where there is a CVS pharmacy at the intersection. Many students have noted that they cannot get to a pharmacy without driving, so bicycle lanes along this route would help alleviate this valid concern. Cycling also needs to be made safe on Highway 501 since the CCU campus is expanding across the highway, and because there have been numerous collisions between motorists and cyclists on this section of the highway in recent years, including one fatality.

5.a.2. Crossing Waterways and Highways

On campus, there are three wooden pedestrian bridges that cross streams and ponds. While signage indicates that these bridges are dismount zones, cyclists, scooter-riders, and skateboarders rarely heed the call for safety, which puts pedestrians – especially those using canes, crutches, and wheelchairs but also the visually impaired and hard of hearing – at risk. To avoid requiring the presence of campus safety officers at the bridges, new non-motorized, wheeled traffic bridges should be installed as safe alternatives for cyclists, scooter-riders, and skateboarders. Ideally, these would be linked to bicycle routes on campus and a network of paths and lanes on and off campus.

Off campus, the highways are the most immediate concern. A pedestrian footbridge is slated for construction across 544 to allow students safe crossing when moving to and from student housing located on the other side of the highway. However, another bridge is desperately needed for students, staff, and faculty to travel safely across highway 501, where the University is continuing to expand. A bridge, such as the one shown in Figure 21, would resolve this issue, as many other universities across the country have also had to contend with heavily trafficked streets and highways as the university grows.







Further off campus, a footbridge, connecting to boardwalks or other paths through the wetlands, could be an option for resolving connectivity issues across the Waccamaw River and/or the Intracoastal Waterway. For the Waccamaw River, which connects downtown Conway with greater Conway (where CCU is located), the Memorial Bridge on Main St. in Downtown Conway is currently the only reasonable option for crossing the river as a pedestrian or cyclist. SCDOT repaired the bridge in 2019, during which point a CCU faculty member appeared at a town hall meeting to inquire about using the opportunity to make necessary changes to the bridge to increase safety for pedestrians and cyclists (for more examples of BAC advocacy, see the Appendix). When the City reached out to SCDOT, the response was that they did not want to encourage walking or cycling over the bridge, so changes to the engineering were not on the table. With this serious limitation in mind, other options include free ferry service from one side of the river to the other. Something along the lines of the "Pink Ferry" carrying pedestrians, dog-walkers, hikers, and cyclists across England's River Hamble would be a cost-effective and more immediate solution to connecting the two sides of the river. However, the ferry service would only be useful if there are pathways through the Waccamaw wetlands to destination areas, such as the Waccamaw River Park (which also hosts a mountain biking trail), CCU campus, and even the beach. Businesses in the Red Hill district would benefit economically, as they did in

Traveler's Rest, SC, following the construction of the Swamp Rabbit Trail.³⁸ The Swamp Rabbit Trail offers another suitable model for cycling and pedestrian infrastructure where a university acts as the nexus between two urban centers: in its case, Furman University is located at the center between Traveler's Rest and Greenville.





Figure 22. The Swamp Rabbit Trail runs parallel to Main Street in Traveler's Rest, SC (top), before arriving at Furman University (bottom) and going on to Greenville. Now totaling 22 miles of trail, this regional example of cycling and pedestrian infrastructure acts as a model that could be implemented locally. Photos: Sara Rich, 2023.

³⁸ https://www.blueridgenow.com/story/news/2014/05/18/swamp-rabbit-trail-revitalizes-travelers-rest/28317411007/

In Horry County, a rail with trail system would be the ideal solution for connecting downtown Conway to CCU and Myrtle Beach. The system would not have to follow the train tracks, which are owned by the county and maintained by RJ Corman, in their entirety, but rather when the terrain and lack of alternative pathways or connections (such as ferries or footbridges) deems it most reasonable. This rail trail has been the subject of numerous meetings with stakeholders at the local and state levels, but there remain some roadblocks such as funding and security concerns. However, with the cities of Conway and Myrtle Beach, along with CCU in the geographic middle, having expressed varying degrees of commitment to this project, it is hoped that Horry County will echo that commitment to connectivity and transportation diversity and invest in a healthier future for its residents. That the rail trail would connect to the East Coast Greenway, and eventually, all the way northwest to Loris, should be considered as an unmatched opportunity for eco-tourism as well.

5.a.3. Weather-proof Bicycle Racks

The BAC's Fall 2022 Cycling Survey indicated that many CCU affiliates would be more likely to ride a bicycle to and on campus if there were covered bicycle racks. Currently, CCU offers only one covered bicycle rack, located at the Elvington Loop housing area, off the main campus. This covered storage is heavily utilized but is only available to University Housing residents. Other campus community members need covered bicycle parking to keep them out of inclement weather. Bicycles are also not allowed inside campus buildings, so for those of us who do ride, it means that our bicycles are left in the rain. When asked if on-campus bicycle storage was sufficient, 75% of faculty, 33% of staff, and 23% of students responded "no," and numerous qualitative responses demanded covered storage racks to prevent rust and sun damage to bicycles. Installing at least one covered bicycle rack at a central location on campus would be a strong indicator that CCU supports its growing cycling culture.

5.a.4. Repair Stations

The presence of public-use bike repair stations on our campus serves as a visible testament to our institution's dedication to sustainable transportation. Placed strategically across the main campus and University Place, these stations are easily accessible to students, faculty, staff, and visitors. They not only provide essential resources for cyclists to maintain their bikes but also play a pivotal role in promoting a culture of biking.

For students, these repair stations offer a sense of empowerment and self-reliance in maintaining their bicycles. By ensuring the stations are well-maintained, we demonstrate our commitment to providing reliable resources that empower students to confidently

choose biking as their primary mode of transportation. This accessibility and reliability are critical in fostering a vibrant biking culture on campus.

Currently, two repair stations are in operation, one next to the HTC center on the main campus and another at the activities house in University Place. Two additional stations, funded by a Sustainability Grant awarded to the Bicycle Advisory Council in 2023, are set to be installed on the main campus by the Lib Jackson Student Union and the UP Dining Hall. This expansion is a testament to our ongoing efforts to enhance the cycling infrastructure across all areas of the campus. These stations are not just practical resources; they represent our dedication to creating a more environmentally conscious and bike-friendly campus environment for all members of our community. Repair stations, and adequate bicycle parking, will be especially important if or when the Coastal Cycles fleet is restored to its pre-Covid quantity of 600 bicycles.

5.a.5. Public Transportation

Currently, Coast RTA has one route, no. 7, that stops at the CCU campus. Route 7 runs between the Ivory Wilson Transfer Center in Myrtle Beach to Glenforest Road in Carolina Forest to Conway Medical Center and Horry Georgetown Technical College before arriving at CCU's Kearns Hall on University Boulevard, and then going west on 544 to 501 and north to the Conway Terminal. With all these vital connecting points, and at a cost of only \$1.00 per ride, this route is an invaluable asset for students, staff, and faculty. Further, Coast RTA buses feature a front rack that can hold either two or three bicycles, depending on the model of the bus.

The schedule has been recently changed to more frequent buses on this route, but there is still an interval of over one hour between each bus. Coast RTA has an app that tracks each bus, which is useful because unlike buses in other metropolitan areas, if they are running early, they do not stop to let time catch up. Therefore, arrivals at listed stops often do not align with the schedule. Furthermore, in the mornings, bike racks are often full, which means that if you need to bring your wheels, you'll have to wait over an hour for the next bus, and hope for a space on its rack. These inconveniences unfortunately result in considerably less ridership than what the system could boast. Our recommendation would be to increase the number of buses along Route 7, and increase the number of bicycles that each bus's rack can hold, so that more faculty, staff, and especially students could conveniently and cheaply hop on a bus to downtown Conway or to the beach, and bring their bicycle along for the ride. This recommendation is especially important given the lack safe cycling infrastructure along the Conway – CCU – Myrtle Beach corridor.

5.b. Education

Giving people of all ages and abilities the skills and confidence to ride.

The 2019 LAB report provided the following recommendations on improving bicycle education on campus and for the community:

- Host a League Cycling Instructor (LCI) seminar to increase the number of certified instructors who can teach bicycle safety classes on campus.
- Expand education and safety classes for both cyclists and drivers, incorporating the Bicycle Friendly Driver curriculum to reduce conflicts and enhance road sharing (see also the following section, 5.c. Encouragement).
- Offer more maintenance and commuter classes through the campus bike center or co-op, ensuring these resources are widely advertised to the campus community.

Further details are provided below.

5.b.1. Bicycle Safety Course

Coastal Re-Cycles currently offers a series of online bicycle safety courses, called Smart Cycling 101.³⁹ Videos offer students tutorials on quick and easy fixes and adjustments that can be made with simple tools, as well as a tutorial on how to load a bicycle onto a shuttle bus bicycle rack.

More intensive, in-person bicycle safety courses could be offered for 1 to 3 credit hours, and could include maintenance and repairs as well as group rides around campus to learn proper signaling and street etiquette. Students could learn to ride different styles of bicycles, from tandem to mountain and beach cruiser to road bikes. Courses would help build confidence in new cyclists and help make the prospect of cycling more appealing and accessible. Such courses would be especially appealing to Exercise Science and Sustainability majors in particular, but they would also be attractive options for any students interested in exploring our area and getting some fresh air.

A Maymester bicycle safety or awareness course would coincide with the League of American Bicyclist's National Bike Month and Bike to Work Day, both of which take place in the month of May each year.

Periodic pop-up "bike clinics" at various locations around campus would also promote cycling while educating students, staff, and faculty on how to make simple repairs, such as fixing flats and replacing chains. These bike clinics could also be offered at select off-campus locations, such as the Teal Nation stores at Broadway at the Beach and downtown Conway. Off-campus educational opportunities would help establish CCU as the nexus for safe and responsible cycling, tighten connections between campus and the surrounding

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³⁹ https://www.coastal.edu/recreation/outdoors/coastalre-cycles/

municipalities, and promote cycling as a norm off campus, as it is in other urban areas. Cycling should be a viable means of transportation off campus too, and CCU has the educational credentials to change minds and entire cultures.

5.c. Encouragement

Creating a strong bicycle culture that welcomes and celebrates cycling

The 2019 LAB report offers the following suggestions for encouraging cycling on and off campus:

- Launch a public service campaign to raise awareness about sharing the road and safe cycling practices, possibly in partnership with local businesses or organizations.
- Establish or expand incentives for cycling, such as a bike commuting rewards program, to encourage more students and staff to cycle to campus.
- Consider implementing a bike share program or enhancing the existing one with more bikes and stations, especially in underserved areas of the campus.
- Celebrate cycling through events and challenges, like Bike to Work Day or the National Bike Challenge, to build a stronger bike culture on campus.

Further details are provided below.

5.c.1. Cycling Culture

The CCU Bicycle Master Plan makes clear its intent to help create a strong bike culture that welcomes and celebrates bicycling. In order to achieve this goal, the CCU plan cites the Bicycle Advisory Council's close ties to the campus departments Sustain Coastal, University Recreation, and the latter's Coastal Cycles program. As noted above, one key to encouraging a cycling community would be to increase the number of rental bicycles available through Coastal Cycles, to at least restore the fleet to its pre-Covid total of about 600 bicycles. This would involve purchasing approximately 430 new bicycles to make freely available to students.

Also highlighted are the BAC's wish to foster community respect and bicycle awareness campaigns; to advocate the use of bike lights, reflectors, helmets, and reflective vests; and to publicize CCU's LAB designation as a Bicycle Friendly University with, as of 2019, a Silver rating. With the publication and implementation of this Plan, we hope to achieve the Gold rating by 2025.

But there is more to say on the subject of encouragement. The obvious place to start is to remind risk-averse members of the community (many of whom identified as such on the BAC's recent survey) that the benefits of bicycling are legion. Academic and professional studies coupled with reams of anecdotal evidence show that regular biking results in demonstrable physical, mental, and emotional well-being. Bicycles are attractive alternative

modes of transportation year-round; once one becomes accustomed to the varying types of weather, and of dressing appropriately for it, the initial resistance to that aspect of riding dissipates quickly, largely because the advantages of two-wheel travel outweigh the disadvantages of four-wheel travel.

Decreasing one's carbon footprint is not a trivial matter, nor is increasing one's sense of independence in a world where fossil-fueled movement seems hard-wired into the population. Hard-wired it may be, but natural it is not. Short commutes—five miles one way or less—are far less demanding than they appear to those who have not attempted them, after which converts look forward to the good feeling gained from self-propulsion rather than sitting in a car where stress mounts by the minute thanks to careless motorists, long red lights, back-ups, and trips to the gas-pump.

The practical side of riding parallels its pleasurable side; indeed, the two go hand-in-hand. Whether spinning up to, say, Aldi to pick up some items for supper, or knocking off a twenty-mile "B" ride with co-workers or pals, one slips into a flow that hearkens back to one's younger years, when pedaling around the neighborhood for its own sake conferred the joie de vivre of freedom. Biking from their dorms, if not from the more distant university apartments down 544 to their classrooms and dining halls, students would experience similar uplift—in addition to the satisfaction of contributing their daily mite to sustainability. Locally, nationally, globally: the bicycle is a miraculous feat of engineering whose positive impact on the environment and one's personal health cannot be overestimated.

For these reasons, the BAC encourages all members of the CCU community and the surrounding region to dial back from the machines that rule all of us, either by renting a bike at the HTC Recreation Center or by taking that old rig out of storage (or buying a new one!), adjusting the saddle height, pumping up the tires, setting the handlebars just so, customizing the frame (baskets, bells, whatever), donning the right clothes, throwing a leg over the top tube, and embarking on adventures unique to what may be humanity's most perfect invention: the bicycle!

5.c.2. Community of Respect

One of the BAC's initiatives, which aims to be implemented by 2025, is to foster a "community of respect" in relation to cycling on and off campus. As explained above, this will involve encouraging a certain paradigm shift among local residents in regards to bicycles, bicycling, and bicyclists.

Namely, the campaign will include delivering positive messages with the CCU logo and mascot to residents en masse: e.g., "Did you know? Bicycles are the reason American streets are paved! Let's give cyclists a brake and share the road!" and "Tired of traffic? Try cycling! It's a fun and healthy way to get where you're going!" These messages could be relayed through social media, but they could also be included in local television media ads or public service announcements, printed postcards mailed to residential addresses or

available at local businesses, and/or featured on local billboards, among other avenues of delivery.

By appealing to local Chanticleers pride, American patriotism, common frustrations with traffic, and increased desires for healthier lifestyles, this campaign's aims are twofold: to encourage respect for cyclists with whom auto drivers share the road, and to encourage more auto drivers to make the switch to cycling.

5.d. Enforcement

Ensure safe road conditions for all users

Although this one of the LAB's "5 E's" has recently been removed, it is retained here with the understanding that there are many ways to enforce traffic laws and ensure safe travel for cyclists and pedestrians that do not infringe upon the need for enforcement equity (see below). Such enforcement measures include "share the road" signage, crosswalks, and speedbumps.

5.d.1. Share the Road Signage

There is a clear need for "share the road" signs on and off campus, especially on designated bicycle routes and the areas where students, staff, faculty, and our neighbors off campus

ride most frequently.



Figure 23. Standard "share the road" sign, such as those needed along the routes trafficked by cyclists.

Unfortunately, there are no such signs at all on the areas most trafficked by cyclists, including 544 between CCU and student residential areas near the highway, such as University Place. The area of 501 and University Blvd, that connects the two halves of campus, is another obvious area to address, as is Cox Ferry Road, 501 Business, and Depot Road, where cyclists and pedestrians travel between the campus area and downtown Conway. The City of Conway itself also requires such signage along designated bicycle routes and other areas frequented by cyclists, including Main Street north to Homewood, Elm Street, Laurel Street, 16th Ave, Long Avenue, Country Club, Mill Pond, and Sherwood.

5.d.2. Crosswalks

Crosswalks are deficient in the areas immediately off campus, including the intersection of 501 and University Blvd that connects the two halves of campus. Ensuring safe crossing for

campus affiliates on bicycles or on foot is increasingly urgently needed as CCU continues to grow and expand in the area across 501, where numerous academic departments are already housed, and where numerous administrative buildings are also located.

Further crosswalks are needed at the notoriously dangerous intersection of 501 and Cox Ferry (where numerous motorists have been killed in crashes), 544 and Cox Ferry, and 501 Business and Depot Road (see Figure 8). These first two intersections are common places for CCU affiliates to enter and leave campus, and the third intersection is where bicycle commuters from Conway can leave the state highway for a quieter (usually) if longer (and bumpier) route to and from campus. It should also be noted that a crosswalk here would benefit pedestrians who fish along Depot Road and would make it easier for cyclists and pedestrians alike to visit the Waccamaw River Park, owned by the City of Conway, on Depot Road. The Waccamaw River Park even has a mountain bike trail, but at this point, it's nearly impossible to access without driving to the park.

Although designated crosswalks would enormously impact safer walking and cycling in our area, raised crosswalks, such as those on University Blvd, would enforce traffic laws even more, as they combine the features of a crosswalk with those of a speed bump.

5.d.3. Speed Bumps and Raised Crosswalks

As advised during a consultation with Palmetto Cycles, speed bumps and speed humps are highly effective at enforcing speed limits without the need for increased law enforcement personnel presence. Speed bumps and raised crosswalks exist on campus on Chanticleer Drive; however, more are needed to control the speed of traffic near campus on 544 and 501 Business, especially, and Depot Road preferably, in addition to other routes favored by cyclists coming and going to campus and surrounding areas.



Figure 24. Raised crosswalk on Chanticleer Drive. Photo: Sara Rich, 2023.

Speed bumps can be inexpensive portable varieties to test efficacy in certain locations prior to committing to permanently installed speed bumps at key intervals. At intersections, they can be combined with crosswalks to enhance and enforce safety measures that save lives. In addition to the locations mentioned above, raised crosswalks are also recommended to connect the two halves of Sherwood Park in Conway and the two halves of Crabtree Greenway, both of which are on a city bicycle route that cyclists and pedestrians frequent (see Figure 6).

5.d.4. Speed Limits

Automated signs that measure speed and warn drivers to slow down have been demonstrated to be effective at enforcing speed limits. SC DOT offers numerous other "traffic calming" options along with suggestions for funding such projects.⁴⁰ Traffic calming measures are sorely needed around our campus, as it is surrounded on two sides by heavily trafficked state highways.

Naturally, speed limits need to be posted for drivers to be aware of them, and this is unfortunately not the case for Depot Road, a key corridor between campus and Conway. Northbound on this corridor, the posted speed limit is 25 MPH, and southbound, there are – confusingly – two different speed limits posted: the first at 25 MPH, which is reasonable, and the second is 45 MPH, which is dangerously high for a little-maintained, winding state road with a city park located a mile in. Traffic speed could relatively inexpensively be

⁴⁰ https://www.scdot.org/business/pdf/accessMgt/trafficEngineering/SCDOT_TCG_06.pdf

enforced by speed bumps and designated paths for non-motorists, such as the proposed Rail Trail.



Figure 25. North end of Depot Road with its 25 MPH posted speed limit followed by a second posted speed limit of 45 MPH (seen in the distance). Photo: Sara Rich, 2023.

One clear choice for controlling speed is to reduce posted speed limits. This is especially needed on 501 Business, where the posted speed limit through the Waccamaw River backwaters is 55 MPH, which makes little sense given that the equivalent section of the four-lane Highway 501's speed limit is only 50 MPH. The two-lane 501 Business, where cyclists ride and pedestrians walk on the 16-inch paved strips opposite the rumble strips, should be controlled at no more than 45 MPH, which is consistent with the posted speed limit in the Red Hill district one mile to the south. When moving northbound into Conway, the speed limit drops to 30 MPH on the Main Street Bridge before dropping again to 25 MPH upon reaching downtown. A speed limit of 45 MPH for the duration of 501 Business would also help control traffic speed coming into downtown Conway and its considerable pedestrian traffic.



Figure 26. Southbound from Conway on 501 Business, a route that cycle commuters take to CCU campus. Photo: Sara Rich, 2023.

Interestingly, one of the tried-and-true methods for reducing traffic speed is to visually reduce lane widths by demarcating a bike lane with pavement markings in accordance with the MUTCD and SCDOT Standards. In other words, installing bicycle lanes on 544, 501 Business, and elsewhere would have the dual purpose of keeping cyclists safe and slowing automobile traffic.

Imagine all the accidents that could be prevented with a few minor infrastructural changes, the simple enforcement of existing traffic laws, and the modest reduction of speed limits in a few places.

5.e. Evaluation and Planning

Planning for bicycling as a safe and viable transportation option

The 2019 LAB report offered the following suggestions for improving the planning and evaluation for a more bicycle-friendly campus and community:

- Engage the campus community in the planning process, inviting feedback on proposed improvements and policies through forums or surveys.
- Consider increasing auto parking permit fees to generate funds specifically earmarked for cycling infrastructure and program improvements.
- Adopt a campus-wide Complete Streets policy to ensure all transportation projects accommodate safe access for all users, including bicyclists.

- Implement a Bicycle Accommodation Policy to ensure that all construction projects consider and accommodate optimal bicycle access.
- Explore grants, partnerships, and sponsorships to support the expansion of bicyclefriendly initiatives.

Every community needs effective planning in order to achieve its goals, and cycling communities are no different. The local engineering and enforcement concerns that need to be addressed in order keep CCU's cyclists safe and to increase cycling on and off our campus are outlined in the present and future editions of this Bicycle Master Plan for CCU. The success of these initiatives can be measured through periodic surveys, updates every five years to the Plan, increased number of cyclists and demand for bicycles from Outdoor Recreation, decreased bicycle incidents on and off campus, and the physical implementation of basic safety measures on and around campus. There are at least two other ways that this Plan supports evaluation and planning.

5.e.1. Integration of Plans

Cooperation between CCU and surrounding municipalities will be key to implementing the changes outlined in this Plan. The City of Conway has just released its 2035 Comprehensive Plan, which includes a Transportation Element to address all forms of local transportation. 41 CCU's BAC was involved in drafting this element, and it is our hope that the City of Conway will establish a Bicycle and Pedestrian Committee, which should include at least one CCU-Conway liaison.

In September 2022, Conway also released its Pathways and Trails Plan. ⁴² This plan establishes strategies and priorities for expanding the city's existing trails and connecting "trail islands" into complete networks. Establishing a bicycle and pedestrian route between Conway and CCU is noted numerous times as a priority. Therefore, it is hoped that CCU will collaborate with Conway to develop, fund, and implement such routes.

The Myrtle Beach Bicycle and Pedestrian Committee continues to do exemplary work with the City of Myrtle Beach to expand bicycle lanes and bicycle and pedestrian trails. These efforts aim to increase safety and enjoyment of the area while also decreasing traffic in a highly congested part of the county, especially during the summer months and the arrival of nearly 20 million tourists each year. The Committee ratified its Master Plan in 2019 and this Plan hopes to complement and supplement that one.

Horry County's Imagine 2040 planning document was also approved in 2019.⁴³ Chapter 8 is dedicated to the transportation element, and it identifies opportunities for greater

⁴¹ https://www.cityofconway.com/departments/planning/comprehensive_plan - 2019.php

⁴² https://cms1files.revize.com/conway/Conway%20Pathways%20and%20Trails%20Plan.pdf

⁴³ https://www.horrycountysc.gov/departments/planning-and-zoning/imagine-2040/

connectivity for cyclists and pedestrians. After a successful RIDE 3 initiative to fund and improve country roads, the RIDE 4 Commission and the RIDE 4 Advisory Committee were named in 2022. Although the BAC advocated that RIDE 4 fund the Rail Trail (see Appendix), it was not named as a candidate project in 2023.⁴⁴ However, the candidates do all include multi-modal elements to the street-widening projects, so bicycles will be more accommodated in those areas. Unfortunately, none of the candidate project areas are near the CCU campus.

To meet its mission, and to achieve the goals of this Plan, is crucial that the BAC continues to advocate county-wide for bicycle and pedestrian safety and for transportation diversity more broadly. To do this, the continued and express support of CCU Administration, including the Board of Trustees and the Office of the President, is fundamentally required. Without this support, our voices cannot be adequately amplified.

5.f. Equity, Diversity, and Inclusion

Ensure access to cycling for all people

In the interests of increasing diversity, equity, inclusion, and fostering a strong sense of belonging and wellness, bicycles and bicycle programs are offered free of cost to CCU students, with some amenities also available to staff and faculty.

5.f.1. Bicycle Facilities

CCU seeks to ensure that our bicycle facilities and physical amenities are accessible and welcoming to diverse populations. The Coastal Cycles program through University Recreation is a free bike rental program that provides students with an affordable and sustainable mode of transportation and exercise. This program is available to all students on a first-come first-serve basis. These bikes come with free U-locks to keep the bike safe, free lights and helmets, and free repairs. Although the fleet was cut during the COVID-19 pandemic, maintaining and expanding the number of bicycles available to students should be a priority for the coming years.

5.f.2. Programming

CCU seeks to develop programming for new and inexperienced bicyclists, non-native English speakers, women, People of Color, ADA community, LGBTQ+, low-income and nontraditional students, youth, seniors, etc. In addition to the Coastal Cycles program, we offer a free introductory mountain-bike ride once a week to help teach people from all

⁴⁴ https://cms6.revize.com/revize/myrtlebeachsc/Ride%204%20Update.pdf

backgrounds learn to mountain bike and get some exercise in the great outdoors. Other cycling programs free of cost to participants are currently in development.

5.f.3. Advocacy

CCU seeks to ensure that it advocates on behalf of cyclists with different abilities and means to safely recreate and commute on and off campus. In 2018, Coastal Cycles added two tandem bikes to its fleet for short term rentals available to visually impaired users wishing to exercise but unable to steer. These bikes are also available to the broader CCU community as well.

Appendix: BAC Public Advocacy Statements

Conway City Council 19 May 2022 - Sara Rich

Good afternoon, my name is Sara Rich, and I'm here to advocate for safer cycling in our area by establishing more trails and connecting pathways in Conway. As asst. prof. of Honors at CCU and chair of CCU's BAC, I'd first like to thank everyone here who was in attendance or otherwise in support of the Horry County Trail Summit hosted by CCU last week. It is clear that there is a great deal of need for and public interest in safer cycling and more pedestrian- and bicycle-friendly trails and pathways.

But as a bicycle commuter, who rides daily from north Conway to Coastal, I'd like to speak today about some of the low-hanging fruit that Conway could reach in the short-term to enable safer cycling in our community, which, with gas prices and the nature of public transport here, is an equity issue as much as a safety issue.

- On bicycle trafficked corridors, such as 501 Business, we need the roadkill cleaned up more frequently. Cars can drive over; bicycles cannot. And to dodge roadkill, we have to get out into traffic, which increases the chances of collision. And especially this time of year, a lot of roadkill makes it difficult for cyclists and pedestrians even to breathe.
- 2. Establish a Bicycle and Pedestrian Advisory Council, as Myrtle Beach has done. I volunteer to serve on this council as a liaison between CCU and Conway.
- 3. We need more designated bicycle lanes and share-the-road signs. Main St. is plenty wide enough to accommodate bicycle lanes, and share-the-road signs are inexpensive and effective reminders to drivers that bicycles have just as much right to the streets as they do. In fact, the reason the USA began paving streets and highways to begin with was because of the advocacy of cyclists.
- 4. Having a rail-trail, or pathway alongside the train tracks, between downtown Conway and University Blvd would decrease auto traffic and permit safe,

nonmotorized transportation between two heavily trafficked & populated parts of the city. It would also enable safe, non-motorized access to the Waccamaw River Park on Depot Road. Many of our 10,000+ students don't have a car, but they would take advantage of the amenities – shops, restaurants, parks, museum, library, theater – if they could only get here. So please think of the economic benefits in addition to the clear physical health, mental health, and environmental benefits of decreased auto traffic, and increased foot and bicycle traffic. We need this segment of the rail trail to be included in Conway's Pathways and Trails Master Plan, which as I understand it, is currently underway.

Thank you for your time.

Horry County Council 17 May 2022 - Sara Rich

Good afternoon, my name is Sara Rich, and I'm here to advocate for safer cycling in our area by establishing more trails and connecting pathways in Horry County. As asst. prof. of Honors at CCU and chair of CCU's BAC, I'd first like to thank everyone here who was in attendance or otherwise in support of the Horry County Trail Summit hosted by CCU last week. It is clear that there is a great deal of need for and public interest in safer cycling and more pedestrian- and bicycle-friendly trails and pathways.

As a bicycle commuter, who rides daily from north Conway to Coastal, I'd like to speak today about 4 of the ways that Horry County could enable safer cycling in our community, which, with gas prices and the nature of public transport here, is an equity issue as much as a safety issue.

- On bicycle trafficked corridors, such as 544 and 501, we need the debris, such as broken car parts and roadkill, cleaned up more frequently. To dodge nails, boards, roadkill, and broken automobile parts on the side of the road, we have to get out into traffic, which increases the chances of collision.
- 2. We need more designated bicycle lanes and share-the-road signs. Taking advantage of all complete streets opportunities offered by SCDOT is great, but in the short-term, share-the-road signs are inexpensive and effective reminders to drivers that bicycles have just as much right to the streets as they do. In fact, the reason the USA began paving streets and highways to begin with was because of the advocacy of cyclists.
- 3. Research shows that speed bumps are effective and cost effective tools to enforce speed limits. Installing speed bumps at strategic locations on Depot Road, 501 business, and 544 esp near CCU and the Waccamaw National Wildlife Refuge, would dramatically increase the safe movement of pedestrians and cyclists. I know some of these are state roads, but it seems that the county is in a good position to partner with the state and advocate on behalf of the electorate for these modest but vital

- changes. I am happy to meet with planners to assist in identifying locations where speed bumps would make the biggest differences for non-motorized traffic.
- 4. Having a rail-trail, or pathway alongside the train tracks, between downtown Conway and University Blvd would decrease auto traffic and permit safe, nonmotorized transportation between two heavily trafficked & populated parts of the city. Given the economic benefits along with the physical and mental health and environmental benefits of a rail-trail, we would like to see Horry County's Parks and Recreation Open Space Board amend the Plan to include plans for a rail-trail, which would first connect Conway and CCU, but eventually connect Loris with the beach and the East Coast Greenway. These two trails would act as arteries, to which smaller trails could connect, thereby creating a network of trails across the county, easily accessible by recreationalists (including tourists) and commuters who live here year-round. Budget and planning for this project could be included in the RIDE4 program currently in development.

Thank you for your time.

E-mail to Ms. Gina Mishoe, from Sara Rich, 19 October 2022

Dear Ms. Mishoe.

Thank you for representing District 7 on the RIDE IV advisory committee. I'm a Conway resident (1504 McKeithan St in North Conway) and am writing to advocate for prioritizing projects that increase transportation diversity. Currently, it is very difficult for Horry County residents who do not drive (for whatever reason - disability, financial means, personal preference) to move around this area safely. For example, I commute by bicycle to the CCU campus where I work, but it is a dangerous trip because there are no bicycle lanes or even "share the road" signs, and auto drivers are often aggressive and/or distracted. Similarly, my husband has a vision impairment that prevents him from driving, so he runs errands, attends church, and when he was also at CCU, commutes to work, all by bicycle.

Conway has recently prioritized trails and pathways in its master plan, and RIDE IV is a great opportunity to fund one of the initiatives mentioned in the plan. The Rail Trail, a multi-modal trail system running parallel to the train tracks between Myrtle Beach and Conway (and eventually up to Loris), would allow safe bicycle commuting (and walking) for area residents, as well as a safe place for cyclists and pedestrians to move leisurely through our beautiful county and between the different cities. CCU students would be able to visit downtown Conway and enjoy the dining, shopping, and cultural resources offered in our town. Tourists as well could ride their bicycles from the beach to downtown Conway and boost local economies.

The Rail Trail would a) lessen the traffic congestion in our area by offering a reasonable alternative to get from point A to point B without driving, b) offer economic benefits to Conway-area businesses, c) help keep residents employed and able to make it to work and

school safely without relying on a car, and d) bring health benefits to our residents who use the trail to ride, walk, or run and get some fresh air and exercise.

Thank you for considering prioritizing the Rail Trail for Conway and Horry County. Sincerely yours,

Sara Rich

E-mail chain between Ms. Gina Mishoe, from Steve Hamelman and Sara Rich, 25-26 October 2022

E-mail to Ms. Gina Mishoe, from Steve Hamelman, 25 October 2022

Dear Ms. Eugenia "Gina" Mishoe:

Yesterday in an e-mail from Dr. Sara Rich, chair of Coastal Carolina University's Bicycle Advisory Council, of which I am a member, I learned that you represent District 7 (my district) on the RIDE IV advisory committee. Even though you're fully versed in the issues discussed in the recent BAC Summit as well as in other venues, I'd like to share with you some reasons why I—an avid bicyclist in Horry County for more than thirty years—hope to see key representative bodies in this area approve/pass/promote the RIDE IV Rail Trail initiative.

I live in the College Park subdivision off Highway 501. From this base, I bicycle several times a day from my house to work at CCU. True, this isn't a long distance, but I have found that even on the shortest trips, bicyclists face challenges ranging from inconvenience to outright danger. Congestion on and around CCU is one such danger. More broadly, automotive culture so excessively dominates regional infrastructure (parking lots, lanewidth, speed limits, narrow and/or nonexistent rumble-stripped shoulders, intersection design, surface quality, anti-traction litter and debris) that non-bicyclists can have little idea of the nature or number of hazards that imperil even the most mindful and experienced cyclist. These hazards multiply, of course, when I venture farther from home—to the Jackson Bluff recycling center, for instance, to which I regularly pedal on a bike/trailer combo that I purchased many years ago for this and related purposes. It is impossible for me to calculate the number of miles I have tallied over the years using this transportation system for shopping at Publix or Kroger; mailing packages from the UPS store; or hauling waste to the aforementioned center. These examples are exponentially multiplied by miles spent on my other main bicycle, which sees me spinning all the way to, say, the Carolina Forest Post Office in order to mail a single letter or to my podiatrist's office at the far end of Carolina Forest Blvd./River Oaks, where I may travel to pay a bill in person. (All praise for the newly widened/paved Carolina Forest Blvd.!)

I personalize here, I know, but I am typical. My point is, in every direction from my home on Salem Street, I am familiar with the dirt trails, paved streets, bumpy short-cuts, railroad crossings (the one at 501's PWA curve is exceptionally bad), highways, and every other surface-type which a bicyclist will encounter in Horry County. I'm aware of the risks of choosing to travel in this manner, of preferring this mode of transportation to driving. As a result, what have countless hours and miles convinced me that my fellow cyclists need most of all?—the same thing that would benefit drivers too, who would love to see less congestion on roads that daily become more difficult to navigate because of the phenomenal rise in population and the ensuing traffic?

A Rail Trail! Conway to CCU, through Red Hill down to Carolina Forest, and then the final link to Myrtle Beach, where other designated trails have secured relative safety to cyclists heading either north or south. Regional municipalities would quickly become known state-and nationwide for their commitment to an alternative transportation culture whose advantages—economic, social, practical—are evident throughout the country. Think Portland, Oregon; Madison, Wisconsin; or our very own Greenville, with its incredible urban-to-rural Swamp Fox Trail.

On my daily rides between Red Hill and wherever I must go (notice I'm talking about practical transportation; recreational rides in the County are a whole other wonderful experience available to us and to visitors), I can picture the Rail Trail . . . a wide all-purpose paved pathway inviting thousands of people to pedal their beloved bicycles from the Beach to Conway—someday, to Loris!—safely and quietly. I see myself entering the Rail Trail near my home, skirting brutal 501 and 544, and taking it through the backwaters of the Waccamaw, perhaps around old Lake Busbee, and into downtown Conway, where I can pay my tax bill, or have lunch at my choice of the growing number of fine bistros and restaurants, or visit a friend, or continue on a long recreational loop out past the last houses on the Long Avenue Extension.

I repeat: I am typical, not special. Thus, there is no doubt in my mind that Horry County, with its diverse demographics and robust middle-class economy, is a perfect location for the Rail Trail. Indeed, we may be a bit behind the times, and so now we must convince all interested parties that the RIDE IV Rail Trail would be a boon to Horry County by improving the health of our citizens, lending a boost to tourist economy, and creating a climate of all-around sustainability.

I appreciate the time you've taken to read this long letter and thank you too for sharing it verbatim or in summary with other representatives on the advisory committee as well as other influential citizens, including voters, within your circle.

All best.

Steve Hamelman

cc: Mr. Wayne Gray, Chair, RIDE IV Sales Tax Advisory Committee

Dr. Sara Rich, Chair CCU Bicycle Advisory Council

E-mail response from Ms. Mishoe, to Steve Hamelman and Sara Rich, 25 October 2022

Mr. Hamelman,

Thank you for your e-mail. I have had an overwhelming response to the bicycling issue. Once I received an e-mail from Dr. Sara Rich, I reached out to a few of my contacts over at CCU.

I must say I am disappointed that so many students/faculty has been either hit or pushed off the road. I had no idea so many used cycling as a way of commute, especially in that area.

I have made this my #1 priority, and will bring this to the board as one of my projects.

If I can be of assistance in anyway, please do not hesitate to contact me.

Sincerely,

Gina Mishoe

E-mail response to Ms. Mishoe and Steve Hamelman, from Sara Rich, 26 October 2022

Dear Gina (if I may),

Thank you so much for making safer cycling in our community a priority. We are grateful for your support. Steve's wonderfully written description of the challenges to cycling is certainly a very familiar one, and unfortunately, I'm not surprised that you've heard similar accounts from your contacts. So many of my students have expressed that they would prefer to ride to campus, but don't feel safe doing so.

As I rode to campus this morning, I was reminded of the perils that Steve described, especially the debris on our streets and roads (car parts from past collisions, litter that flies off open trailers, and sadly, roadkill). It seems to me that there are relatively easy fixes for the debris problem that would not only make cycling safer, but would also beautify our county and demonstrate to visitors the pride that we take in it.

The other thing that I realized this morning in relation to Steve's observations is how GPS is consistently making cycling more dangerous. That statement probably sounds strange, but even just a couple years ago, there were low-maintenance roads and off-the-beaten-path routes where cyclists could ride safely because of the limited auto traffic. Now though, GPS is rerouting auto traffic onto these "shortcuts" whenever traffic is congested (which is often) -- shortcuts that were previously only known to locals.

For example, I usually take Depot Road (a winding, one-lane, semi-paved state road) to and from campus to bypass some of 501 Business. But these days, it's less dangerous to ride on the narrow patch opposite the rumble strips on 501 Business than on this formerly quiet state road. Despite the location of the Waccamaw River Park (City of Conway) on Depot Road, there are no pedestrian crossings or bicycle paths, there are no traffic lanes, and there is not even a posted speed limit. So when cars reroute onto Depot to avoid traffic, they are flying, even despite the city park, not to mention the potholes, sunken patches, railroad crossing, and stretches of gravel. As a cyclist though, I have to ride around those potholes and rough patches and cross slowly and carefully at the tracks. I can't count the times that simply trying to stay on the road and avoid wrecking my bike has put me in the path of a speeding car, flying around a bend in the road -- and with impunity.

My point here is that designated bicycle-only trails and pathways, like the Rail Trail, would alleviate these dangers of having to share the roads, and even increasingly our "safer" shortcuts and bypasses, with speeding cars and the debris they leave behind.

Thank you so much for your support, Gina. If you'd like to discuss further by phone, I'm available until 3pm today, and tomorrow after 3pm.

Cheers,

Sara

E-mail sent to SC State Rep. Johnson, from Brian Nicosia, 8 February 2023

Dear Representative Johnson,

I'm writing to request your support for H.3121, the Recreational Trail Tax Credit bill. Your support of this bill through co-sponsorship would help ensure that it passes. The success of H.3121 would mean great things for Horry County residents. A Rail Trail to connect Conway to the beach has been recently proposed and is gaining a lot of momentum. This bill promises to help move the Rail Trail from the planning to execution stage through easements and greater public support. Trails exclusive to non-motorized vehicles and pedestrians would decrease traffic congestion and increase the safety and health of our community members.

Thank you for your support of H.3121.

Sincerely,

Brian Nicosia

E-mail sent to Kaylon Meetze (SCDOT), from Brian Nicosia, 25 October 2023

Dear Ms. Meetze.

I hope this message finds you well. I am writing to express my support for the US 17

Business Safety Improvements Project and to advocate for the incorporation of dedicated biking infrastructure within the proposed plans.

As a resident of Myrtle Beach, I am keenly aware of the traffic congestion and safety concerns that plague our city, particularly along the US 17 Business corridor. The upcoming project presents a significant opportunity to not only enhance vehicular safety but also to promote alternative modes of transportation, such as cycling, which can have far-reaching benefits for our community.

Here are a few compelling reasons why including bike lanes and biking infrastructure in this project would be immensely beneficial:

- 1. Improved Safety: Providing designated bike lanes will create a safer environment for cyclists and reduce conflicts between motorized and non-motorized traffic. This will help mitigate accidents and enhance overall road safety.
- 2. Reduced Congestion: By encouraging cycling as a viable mode of transportation, we can help alleviate traffic congestion, especially during peak hours. This not only benefits local residents but also eases the strain on our city's infrastructure during peak tourist seasons.
- 3. Promoting Active Transportation and Health: The inclusion of biking infrastructure supports a healthier and more active lifestyle for residents and visitors alike. It provides an opportunity for exercise and contributes to improved public health outcomes, which is a vital consideration for any community.
- 4. Environmental Sustainability: Encouraging cycling as a mode of transportation aligns with broader sustainability goals. It reduces carbon emissions, thereby contributing to a greener, more environmentally conscious Myrtle Beach.
- 5. Tourist Experience Enhancement: With approximately 19 million visitors annually, integrating biking infrastructure offers an attractive and sustainable means for tourists to explore our beautiful city. It adds to the overall visitor experience and may even reduce the number of cars on the road, further enhancing their stay.

I understand that the primary goal of this project is to enhance safety, and I believe that including bike lanes and biking infrastructure aligns seamlessly with this objective. It not only bolsters safety for cyclists but also contributes to a safer, more balanced transportation system for all.

I sincerely hope that you will consider these points and advocate for the inclusion of biking infrastructure in the US 17 Business Safety Improvements Project. Your leadership and dedication to the betterment of our community are greatly appreciated.

Thank you for your time and consideration. I look forward to the continued progress of this

project and to a safer, more vibrant Myrtle Beach.

Warm regards,

Brian Nicosia

Letter to the Editor, My Horry News, by Sara Rich, 8 February 2024

"More Cars? A Cyclist's Response to Horry County's RIDE IV Proposed Projects" 45

Letter to the Editor: More cars? A cyclist's response to Horry County's RIDE IV proposed projects

BY SARA RICH Feb 8, 2024



Many road construction and expansion projects in Horry County are funded by the RIDE program, a one cent sales tax that lasts for seven years and is enacted by a referendum. Instead of seven years, this year's iteration of a roads tax could be for 25 years instead of seven. Photo by S.T. Cardinal/tommy.cardinal@myhorrynews.com

By S.T. Cardinal tommy.cardinal@myhorrynews.com

Figure 27. The article linked in fn. 45 evaluates the list of proposed projects for RIDE IV funding and addresses concerns regarding the lack of multi-modal projects, especially in the Conway area. It urges the RIDE IV committee to prioritize projects with multi-modal infrastructure and to include multi-modal infrastructure in proposed projects near campus.

⁴⁵ https://www.myhorrynews.com/opinion/letter-to-the-editor-more-cars-a-cyclist-s-response-to-horry-county-s-ride/article_6ad8e2b6-c6a3-llee-bb5e-6f62e75f337c.html; an abridged version of this article was also submitted directly to the RIDE IV committee following a public input session on 23 January 2024 in Conway.