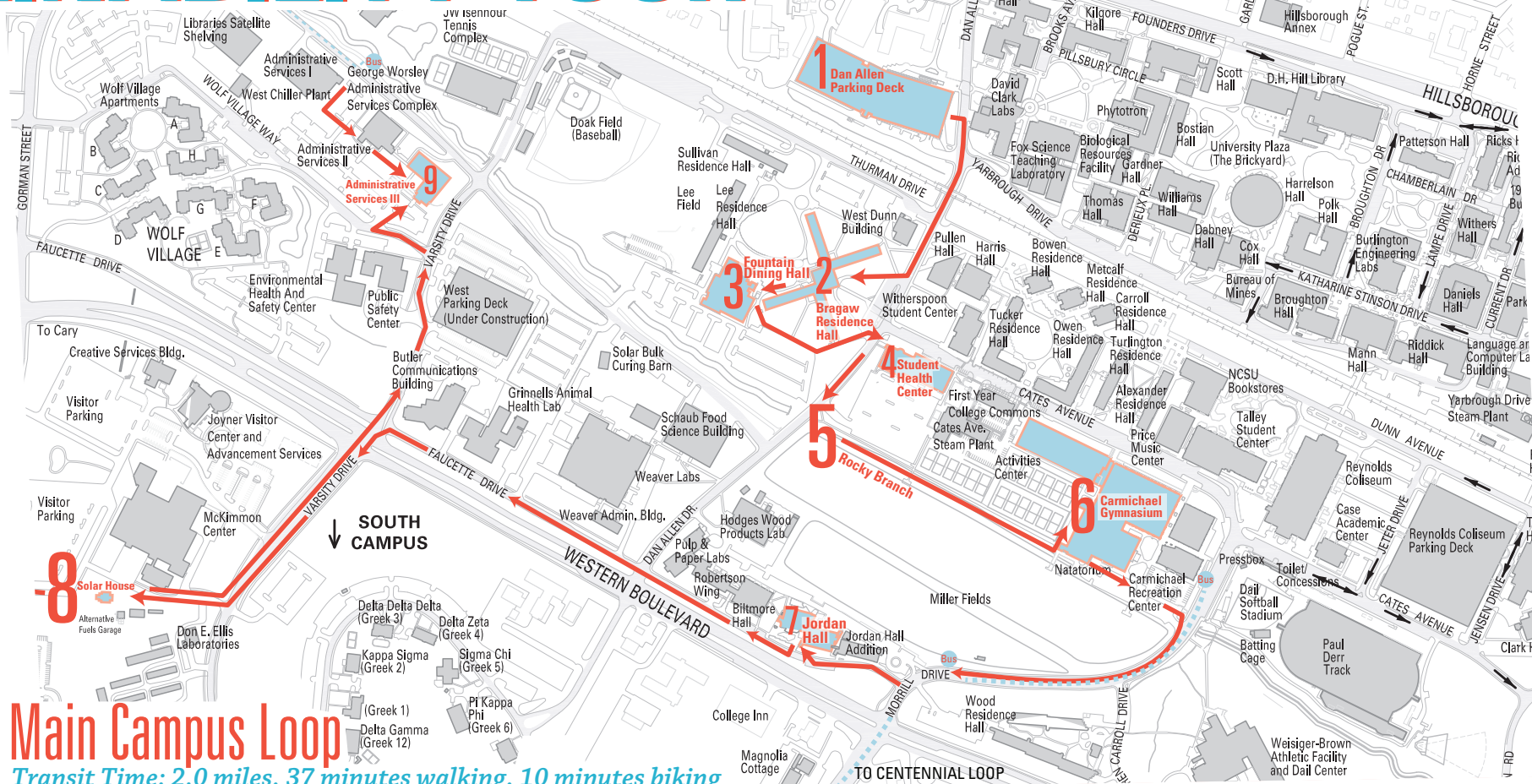


SUSTAINABILITY TOUR At NC State University

AT NC STATE UNIVERSITY, RED can also mean green. Eco-green, that is. All over campus, sustainability projects are rearing their heads and making everyone think a little harder about their impact on the world. From the efficient shine of LED lights to the smell of freshly-turned soil in organic gardens to the impressive shimmer of solar panels, everyone can find something to spark their interest. So park that car and grab your walking shoes, bike, skateboard, or even roller blades and see what sustainability means at NC State with this self-guided Sustainability Tour.

THIS TOUR HAS TWO LOOPS: The Main Campus Loop, an easier trip of just 2.0 miles and 9 stops, and the Centennial Challenge Tour, an additional 2.9 miles with 5 stops. If you would like to take the Main Campus Loop with or without the Centennial Challenge Tour, start the tour at stop #1: Dan Allen Parking Deck on Centennial Campus. And of course, feel free to pick and choose your favorite sustainability destinations!



Main Campus Loop
Transit Time: 2.0 miles, 37 minutes walking, 10 minutes biking

1 SINCE THIS TOUR IS ALL about sustainability, first curb your vehicle in the **Dan Allen Parking Deck**. The lighting in this deck was completely replaced with LED fixtures creating a more energy efficient and safe environment. Energy Management, University Housing, and Transportation have initiated several projects to retrofit buildings, residence halls, and parking decks with LED lighting. Current research on the Bragaw Residence Hall, your next stop, indicates a savings of roughly 63% on energy used for lighting.

NEXT STOP: 0.2 mi, 2 minutes walking.
DID YOU KNOW? In 2010, Building Maintenance & Operations (BM&O) supported 13 building energy and water saving projects on campus which had a combined annual savings of over \$1.6 million.

2 CONTINUING SOUTH, YOU'LL BE able to enter **Bragaw Residence Hall**, the largest residence hall in the country where the rooms have been retrofitted with LED lighting. All suites also include low-flow showers and toilets, good water conservation measures. Don't forget to pick up some Howling Cow ice cream in the C-Store – made from NC State cows' milk and processed in the Schaub Food Science Building.

NEXT STOP: 0.1 mi, 1 minute walking.
DID YOU KNOW? Tucker Residence Hall was the first hall to have sustainable carpet, made of 100% recycled products that requires no glue, resulting in no chemicals or odor. It can also be recycled. Tucker Hall is competing in the 2010 EPA Biggest Energy Loser competition as one of the 14 buildings across the nation, ranging from convention centers to elementary schools, trying to reduce their energy consumption.

3 IF YOU FEEL A PANG IN YOUR stomach, stop at **Fountain Dining Hall** where University Dining has embraced sustainability. Vegan and vegetarian options are offered at every meal, trays have been eliminated to conserve over 51,000 gallons of water weekly, and over 1,000 gallons of cooking oil is recycled each month to convert into biodiesel fuel. Each Friday the dining hall's salad and fruit bars feature local and organic options.

NEXT STOP: 0.1 miles, 1 minute walking.
DID YOU KNOW? Waste Reduction and Recycling diverts 45% of campus waste from landfill through waste reduction, recycling and re-use. Through a partnership with University Dining, composting food waste began in 2010.

4 JOG BACK EAST TOWARDS THE **Student Health Center**, where sustainability is on everyone's minds. The new expansion, opening in the spring of 2011 will leave the Health Center looking very sustainable –

landscaping features include rain gardens and garden areas for outdoor enjoyment, reduced impervious surfaces, and rain water capture in an underground cistern. The project also includes full cut-of exterior light fixtures, which reduce light pollution and maintain security and safety. A public shower is available in conjunction with bike racks to support alternate means of transportation. The new addition will be LEED silver certified, adding to the sustainability fever – no pun intended!

NEXT STOP: 0.1 mile, 1 minute walking

5 AS YOU CONTINUE TO HEAD EAST, be sure to walk along the banks of **Rocky Branch**, an urban creek that runs more than a mile through the heart of the NC State campus. The purpose of the restoration project that started in 2001 is to stabilize the creek, improve water quality, create aquatic and wildlife habitat, and integrate the creek into the campus environment. Take the new greenway path directly north of the creek to arrive to your next stop on the tour.

NEXT STOP: 0.4 miles, 6 minutes walking
DID YOU KNOW? NC State has a composting program that composts all yard wastes and then redistributes it around campus as mulch.

6 YOUR WALK WILL DELIVER you directly to the **Carmichael Recreation Center**, NC State's gymnasium complex. The gym is doing their part in campus water conservation by providing low-flow fixtures to all sinks and showers, reducing energy use by using light sensors, and purchasing recycled plastic and/or lumber for all new restroom partitions and benches. There are also various bottle refilling stations around the gym, and solar-thermal heating is in the works for our swimmers. WolfWheels, a bicycle sharing program, is headquartered at Outdoor Adventures in Carmichael where students, faculty, and staff can rent bikes to use around campus. Here the campus community can hop on the free university Wolfline bus or the CAT

8 SOON YOU WILL ARRIVE AT the **Solar House**, one of the most visible and visited solar buildings in the United States. Since 1981, the Solar House has served as an educational and demonstration showcase for solar and energy-efficient technologies. Also, the nearby Solar Center (1201 Gorman Street) serves as a clearinghouse for renewable energy programs, information, research, technical assistance, and training for the citizens of North Carolina and beyond.

NEXT STOP: 0.3 miles, 7 minutes walking, bus option available

OPTION 1
To get to Centennial Challenge Loop, we suggest that you catch the Wolfline #3 Engineering bus right at Carmichael Gym. This bus only takes 8 minutes to get

9 TO GET TO THE FINAL stop on the Main Campus Loop, head back north either by walking on Varsity Drive or on bus (Wolfline #5 Varsity, exit Admin on Sullivan Drive), leading you straight to the **University Sustainability Office** located in the Administrative Services Building III. Housed in room 108, feel free to stop by the office and chat with any of our sustainability experts – they can answer any of your questions from the tour or any others you might have about sustainability efforts on campus.

You have now finished the Main Campus Loop. Try the Centennial Challenge Loop if you haven't had enough of sustainability!

TO NEXT STOP: 0.3 miles, 6 minutes walking, bus option available.

IF YOU'RE NOT IN THE MOOD for hills and want to test out the Wolfline bus system, hop on any bus that stops at the Carmichael Gym stop on Morrill Drive and exit one stop later. Be sure to pull the cord to tell the driver to stop!

DID YOU KNOW? A new E85 fuel tank was added to the motor pool fueling station to provide state vehicle users a convenient way to use alternative fuel.

7 FROM THE FAUCETTE Drive access road, you can see the Rainwater Recovery System holding tanks behind **Jordan Hall** and **Biltmore Hall**. This system collects rainwater used to then irrigate the close by Miller Intramural Fields, conserving an estimated 641,600 gallons of water every year. The installation of other rainwater recovery systems, such as for the Yarbrough Cooling Towers Rainwater and Water Reuse System, conserves another 750,000 gallons per year.

NEXT STOP: 0.5 miles, 10 minutes walking, bus option available.

DID YOU KNOW? In 2007, NC State and UNC competed against each other in a water conservation challenge: NC State won by reducing our water usage by 29%

to the next stop on tour. If you've got your walking shoes on, the trek to Centennial Campus is only about 1.2 miles and takes about 20-25 minutes.

OPTION 2
To continue on the Main Campus Loop, get onto the #5 Varsity bus stop on Morrill Drive and exit on Varsity by the McKimmon Center. This bus will take about 5 minutes to arrive at the Solar House. If walking is your forte, a 10 minute walk will deliver you to the next stop.

DID YOU KNOW? Located on a brown-field site on University property near the RBC Center lays, what was at the time of installation, North Carolina's largest grid-tied photovoltaic solar panel array: a 75.6 kilowatt (kW) system, comprised of 432 ground-mounted solar panels.

Plan Ahead Suggestions

➤➤➤ IF YOU'RE INTERESTED IN SAMPLING some of Raleigh's local foods, stop by the State Farmers' Market. Open on Monday-Saturday 5 am – 6 pm and Sundays 8 am – 6 pm, this market offers locally grown produce as well as meats, cheeses, bakery items, and North Carolina wines. Even closer to the campus is NC State University's own Campus Farmers Market! This student-run market supports NC agriculture by fostering direct farmer-to-consumer interaction right on the Brickyard, bringing local vendors in during the spring and fall on Wednesdays from 10 am – 3 pm.

<http://www.agr.state.nc.us/markets/facilities/markets/raleigh/index.htm>
<http://campusfarmersmkt.wordpress.com/>

➤➤➤ HEAD OVER TO THE J.C. RAULSTON Arboretum, part of the Department of Horticultural Science at NC State University. With the most diverse collection of cold hardy temperate zone plants in the southeastern United States and one of the first green roofs in the area, this is a must-see stop.

<http://www.ncsu.edu/jcraulstonarboretum/index.php>

➤➤➤ THE CITY OF RALEIGH HAS AN EXTENSIVE greenway system that stretches well beyond the boundaries of the university. If you have the chance, you can explore the greenway trails and City of Raleigh Parks, one of which, Pullen Park, is located directly to the east of the university.

www.raleighnc.gov

➤➤➤ IF YOU CAN JOIN US IN THE FALL, MAKE sure to attend a Wolfpack game at Carter-Finley Stadium and check out the WE Recycle program. WE Recycle is NC State's stadium tailgate recycling program which recycles nearly 20 tons of beverage containers each season, making it one of the nation's most productive stadium recycling efforts. The program relies on volunteers, cruising the tailgating lots in the hours before the game to collect cans and bottles, and stress the importance of recycling to the whole NC State community.

<http://www.ncsu.edu/facilities/recycling/werecycle.php>

5

HEADING BACK NORTH TO THE heart of Centennial Campus, the North Carolina Wildlife Resources Commission (NCWRC) Center features indoor and outdoor educational exhibits in addition to being a LEED Gold certified building. Open Monday-Friday 8:30 am – 4:45 pm, the Center teaches visitors about ecological succession and the role human choices play in shaping nature in the Piedmont. Be sure to stay long enough to view the 20-minute long video with a timeline of changes in the Piedmont, from natural wildlife areas to suburban sprawl. Also, be sure to check out their outdoor exhibits where you can see rain gardens and composting demonstrations.

DID YOU KNOW? During the North Creek restoration project on Centennial Campus, goats were used as a biological control for the removal of the invasive vine, kudzu, that has overtaken the land.

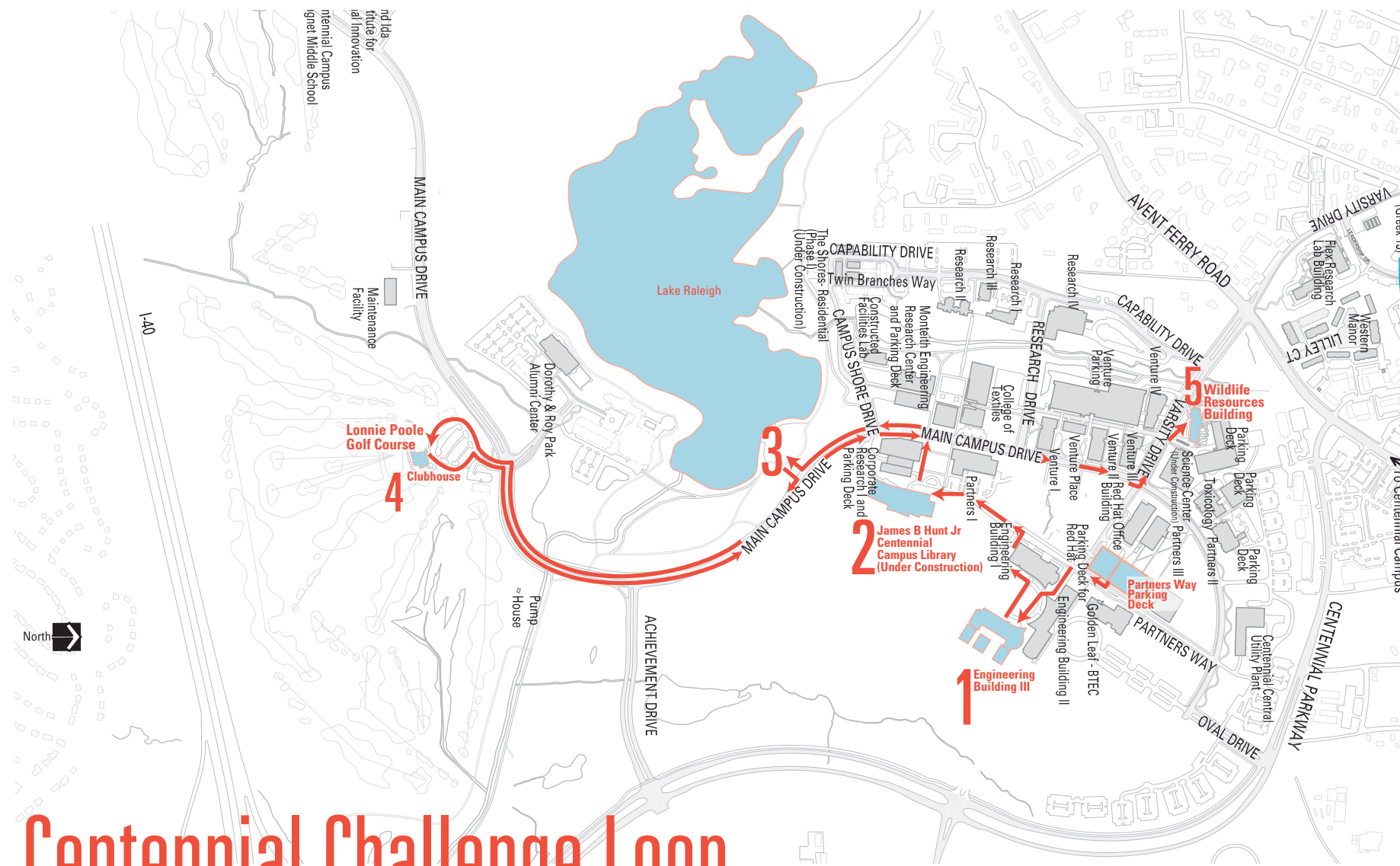
OPTION 1

If you took the Centennial Challenge Loop as a detour from the Main Campus Loop, you can hop on the Wolfline #11 Village Link bus at the corner of Varsity Drive and Main Campus Drive to get back on route. Exit at the intersection of Varsity Drive and Marcom Street and walk through the Varsity Parking lot to arrive to the next stop, the Solar House, stop #8 on the Main Campus Loop.

OPTION 2

If you chose just to complete the Centennial Challenge Loop, head back east on Varsity Drive to arrive to the Partners Way Parking Deck.

You have now completed the Centennial Campus Challenge Loop. Congratulations on your dedication to sustainability, and for burning all of those calories! Be sure to check out the NC State university Sustainability Office website for updates on sustainability activities and efforts on campus and in the community.



Centennial Challenge Loop

Transit time: 2.9 miles, 56 minutes walking, 15 minutes biking

1 EITHER BY WALKING, BUS, OR dropping off your car, start the Centennial Challenge Loop in the Centennial Campus Oval and head over to **Engineering Building III (EB III)**. Here, NC State is at the head of the pack with its 3,780-square-foot green roof which is just as it sounds – a living roof! Research is being conducted to investigate the quantity and quality of the stormwater runoff and the project will save the university money on heating and cooling costs. If you are able to enter the building, climb the stairs to the fourth floor to see the living roof from above! The Future Renewable Electric Energy Delivery and Management (FREEDM) Systems Center is a National Science Engineering Research Center headquartered at NC State. FREEDM'S

mission is to build the energy internet. The FREEDM System will act like an energy internet, giving consumers maximum control over the energy they use. FREEDM is housed in the Keystone Science Center just down the road from EB III.

TO NEXT STOP: 0.2 miles, 4 minutes walking.

DID YOU KNOW? If you have an electric vehicle, you can hook it up to the EVSE (Electric Vehicle Supply Equipment) Level 2 charging station located in the visitor parking lot in front of the E. Carroll Joyner Visitor Center. The EVSE is the first public level 2 charging station in the city of Raleigh

2 CONTINUING ON MAIN CAMPUS Drive, be sure to stop at the new **James B. Hunt Library**, currently under construction and projected to be finished by Fall 2012. The library

will be one of the first LEED Silver buildings at NC State. Sustainable features include a highly efficient chilled beam and radiant panel HVAC system, rooftop solar panels helping to provide hot water to the building, and efficient plumbing fixtures to reduce water use. Site features include paving materials with a low solar reflective index, a rain garden, and a green roof system on a portion of the building.

TO NEXT STOP: 0.3 miles, 6 minutes walking

DID YOU KNOW? University Housekeeping is dedicated to keeping their practices as green as possible. All housekeeping staff on main campus have been trained how to use Green Seal products, water conserving microfiber mops, and the new ionized water sanitation system.

3 A QUICK JOG SOUTH DOWN Main Campus Drive will take you to **Lake Raleigh**, complete with fishing pier, boat dock, greenway, and Frisbee golf course. The Lake Raleigh Woods are not only used for recreation but are also a central location for teaching and the newly-started student-run organic garden (located on the open field next to the dam).

TO NEXT STOP: 0.9 miles, 17 minutes walking.

DID YOU KNOW? The E.S. King Village, which houses NC State's married, graduate, and non-traditional undergraduate population, has had a community garden for over 20 years!

4 VEERING SOUTH FROM THE lake, the **Lonnie Poole Golf Course** is your next stop. Even if you can't take the time to play a round, you can still observe this environmentally-friendly research site that took degraded land and improved it by designing an Audubon Certified golf course, creating wildlife habitat while being maintained with low energy and water demands. Grab a refreshment at the clubhouse, and be sure to keep an eye out for the course's mammal community – deer, foxes, and even beavers!

TO NEXT STOP: 1.5 miles, 29 minutes walking.

DID YOU KNOW? Instead of using traditional bermuda grass that would need to be mowed every week, fine fescue is planted on 25% of the Lonnie Poole Golf Course – an adapted grass that only needs mowing once a year as well as little irrigation.