Final Reports for Geography 595 (Spring 2021)

David Buneta — Internship with The Palmetto Cycling Coalition

Background: Creating bikeable cities

The phenomenon of bikeable cities is something novel to the United States. Proven to have a lower carbon footprint and decrease the risk of cancer and heart disease, many Americans are starting to take up cycling in order to live more sustainably and healthily. Following trends in European cities like Copenhagen and Amsterdam, cities in the Pacific Northwest like Seattle and Portland have been especially active in promoting biking safety and access. More recently, New York City has been a model for transitioning from car-dominated to bike-friendly city streets..

However, the adoption of laws and zoning practices amenable to cycling has been slow around the rest of the nation. A defining aspect of American culture is suburban sprawl and car - dependency. Following heavy federal investment in the post-war period, Sunbelt states became new hubs of suburban industry and car-dominated life. Thus, cities in the South and West were designed to accommodate vehicular traffic over multimodal transit. Urban development has thus favored cars in states like South Carolina since the twentieth century

As a result, only 0.6% of Americans use a bicycle to commute to work. The effects of this apathy are glaring, In South Carolina, 16.5% of traffic fatalities are cyclists and pedestrians. Appalled at such statistics, for 20 years the Palmetto Cycling Coalition has served as an advocate for cycling and pedestrian safety at the state, county, and local levels for all South Carolinians.

PALMETTO CYCLING COALITION

MAKING SC BIKE FRIENDLY FOR 20 YEARS!

The Problem:

Last year, the Department of Transportation allocated federal dollars to SCDOT to undertake a comprehensive road safety initiative. Part of SCDOT's job was to complete an audit of the most dangerous stretches of road for cyclists in the state. One of the five worst corridors for cyclist accidents and deaths, Blossom Street, crosses through UofSC's campus and affects students daily. Several cyclists have died on Blossom Street in recent years due to its lack of safety features.

SCDOT brought together representatives from the DOT, Richland County, the City of Columbia, the PCC, and the University to address the audit and measures to improve safety. However, it was clear in the meeting that the University's "representative" had neither the capacity to, nor the interest in, being part of the solution. This was concerning given the high volume of student and faculty that comprise Blossom Street traffic and its location through the heart of campus.

From the ongoing development of bike lanes on Greene Street, to hiring the COMET, to new plans for redeveloping S. Main Street, the University has made strides to proffer multimodal transportation. The lack of participation in SCDOT's audit posed confusion and concern for the future of non-car transit on campus.

The Palmetto Cycling Coalition

Spring 2021 Geography Internship

David Buneta

The Job:

I served as the PCC's student liaison to the university and was tasked with compiling a list of the key faculty related to transportation and campus planning. The PCC sought to create a strategy for working with the University to create substantive action on bicycle safety. My time was largely spent on the phone and writing emails to students, staff, and faculty to gain an understanding of multimodal transit and the chain of command for developing capital infrastructure projects. I interviewed the university's architects and campus planners, as well as student and faculty activists interested in cycling, multimodal transportation, and sustainability. I gained intimate knowledge of UofSC's cycling community and the forces at play in developing transportation policy. Surprisingly, external forces far outweighed internal apathy in terms of setbacks to non-car transportation.

Beyond seeing the campus' master plans for the last 10 years and the next decade, I gained an inside look at UofSC's relations with the City, County, and SCDOT. I learned that UofSC's planners are progressive on multimodality, and that they are consistently working to expand access to cyclists, pedestrians, and public transit users within the University's urban footprint. As such, they have drawn the ire of the SCDOT on many occasions. SCDOT has a car-centric focus and has sparred with the university several times over the past decade with Assembly Street's redesign being a major point of contention.

Despite having a relationship with key faculty at UofSC, SCDOT failed to invite the appropriate representatives to this meeting. With students being major stakeholders in Blossom streets safety, I was able to introduce the university to this road audit. Having many allies in common at the city and county level, including city council members and local biking associations, the PCC and UofSC can now work together to advocate for a safer Blossom Street. Unlike the SCDOT and some city council members, these two groups value a multimodal future. Going forward, expansion of Greene Street's bike lanes and inclusion of cyclists/pedestrians in the redesign of S. Main Street will also be feasible projects to tackle together.

Ashley Clubb — Internship with FoodShareSC

EST. 2015

FOODSHARE

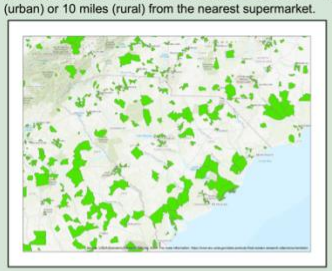
* IT'S MORE THAN JUST A BOX OF FOOD *

Spring 2021 Geography 595 Internship: FoodShareSC

Ashley Clubb

Background

In the United States, an estimated 1 in 9 Americans are food insecure, meaning that they have a high limitation in the accessibility and/or the lack of resources (e.g., income, transportation, skills, etc.) for safe and nutritious food to support normal growth [1]. This food insecurity is exacerbated by these low-income families having a lack of affordable housing, social isolation, chronic or acute health problems, high medical costs, and low wages[2]. This issue occurs in places that are food deserts, which are places with too few choices of healthy and affordable food and are often oversaturated with unhealthy food outlets such as fast-food restaurants [3]. There is a prevalence of food deserts in the United States because they are a result of socio-economic factors combined with a lack of transportation and economic flux that has driven grocery stores out of the city[2]. In South Carolina, 1 in 8 people struggle with hunger and 1 in 6 children are food insecure[2]. Of the households that receive SNAP benefits, 48.3% have children[2]. Food insecurity occurs in both urban and rural areas, shown in the map that displays the distribution of number of residents more than 1 mile (urban) or 10 miles (rural) from the nearest supermarket.



Low-income census tracts where a significant number or share of residents is more than 1 mile (urban) or 10 miles (rural) from the nearest supermarket.

FoodShareSC Description

FoodShareSC is an organization headquartered in Columbia, South Carolina that creates access to fresh produce at an affordable price for community members regardless of socioeconomic status, age, location, or transportation. FoodShareSC aims to enhance quality of life by providing affordable food, quality cooking, and skills education. FoodShareSC collaborates with South Carolina's Supplemental Nutrition Assistance Program (SNAP) through the Healthy Bucks Program, which incentivizes healthy eating choices. With the Healthy Bucks subsidy, large produce boxes sell for $10 in SNAP benefits ($20 cash), and small boxes for $5 in SNAP benefits ($10 cash).

Internship Overview

As an intern, I worked alongside the FoodShare Columbia team to promote, pack, and deliver produce boxes to the community on a biweekly schedule. The items included in the box vary from week to week based on seasonality and availability. I learned about supply chain management and distribution as I shadowed my superiors in their coordination of vendor communication. I was trained by the Statewide Rural Outreach Coordinator on supply chain and produce ordering system to serve as a resource to emerging FoodShare Hubs in rural communities. I also assisted the Healthy Bucks reimbursement program, run by DSS, to understand how the state program relates to the food system. A large portion of my internship was through the Culinary Medicine elective offered to medical students through the University of South Carolina School of Medicine through FoodShareSC. This course combines the science of food nutrition and medicine in weekly class gatherings with curriculum emphasis on the role of food in prevention and treatment of diseases. The class connects the complex medical theory of human health to attainable conversations of practical nutrition and cooking advice to relay to future patients. As a monitor for the class, I attended the instructional sections and then aided the cooking portion of the class. I set-up each cooking station with utensils and ingredients. As students cooked, I provided guidance in safe kitchen skills and recommendations on how to mindfully cook and eat, emphasizing how our conversations serve as a template for their future recommendations to patients about healthy eating.

Example of a produce box and FoodShare shirt

Culinary Medicine workstation

Box packing team

Rural Hub Outreach

I was trained by the Statewide Rural Outreach Coordinator in supply chain and the produce ordering system to serve as a resource to emerging FoodShare Hubs in rural communities. I collaborated with Laurens, York, and Georgetown counties through email threads, conference calls, and site visits to mentor each Hub as they prepare to launch FoodShare in their community. I first learned through training worksheets how to work within the budget of FoodShareSC and the prices set by the Senn Brothers Produce, the main provider for all FoodShare Hubs in South Carolina. In selecting produce, I had to consider the context of an area and the people they serve. For example, in Columbia, FoodShareSC serves a large population of elderly, pre-diabetic and diabetic, African American, and Hispanic populations. With these people groups in mind, we selected foods that relate to the different dietary needs and cultures that we serve in Columbia. The produce boxes need color and nutritional variety and being heavy enough, so people feel as if they are getting extreme value for their purchase. Each of these factors must be considered while staying within budget. Produce ordering was done through an online system with Senn Brothers. On the day of packing, produce is delivered to all Hub locations across South Carolina. For new hubs, minor challenges like spoiled produce or a need for volunteers for packing were the most common issues that arose. This ease of the process is because of the rigor of registering to be a FoodShareSC Hub, they have each completed hours of training and have bought equipment needed for the soft launches. The conversations with each emerging Hub provided experiential learning in rural food insecurity and opportunities for leadership development of each of the Hub teams as they passionately serve their communities as they seek sustainable change. One of the obstacles to overcome for the rural Hub was that the Hub leaders in various locations had a difficult time being confident in marketing the FoodShareSC mission effectively. The local community leaders were invested and passionate because they cared for their community but were needed to be taught how to express their purpose concisely in which local partners would want to join. We did this by training them on FoodShareSC language and invited them to meetings where we modeled this behavior for them.

Site visit to Laurens soft launch packing day

Box packing assembly line

Map of current and future FoodShareSC Hubs

Career Readiness Competencies

Global/Intercultural Fluency: Food is reflective of the cultural identities, in both the produce packed boxes and the Culinary Medicine class, I am encouraged to have a sensitivity and awareness of the people that we serve. By giving people access to affordable produce that also respects their food culture, we gain the trust of the people because they acknowledge our efforts to best care for them.

Teamwork/Collaboration: I collaborate with my co-interns and supervisors on each aspect of my internship. On produce box packing days, we have a team of about 25 people to fill the boxes. On a more intimate level, I am considered an equally contributing member in the team structure as I manage rural FoodShare Hub projects

Critical Thinking: Strategically planning produce boxes with high nutritional value that also matches the cultural connections to food.

Acknowledgements

I would like to thank my supervisors Michelle Troup and Courtney Watson as well as the entire FoodShareSC team for welcoming me into the mission and team. It has been an honor to have learned and gained skills under their leadership

1. Huizar, Martha I et al. "The global food systemic: The impact of food insecurity, Malnutrition and obesity on the healthspan amid the COVID-19 pandemic." Progress in cardiovascular diseases, S0033-0620(20)30139-0. 10 Jul. 2020. doi:10.1016/j.pcad.2020.07.002
2. What is Food Insecurity in America? Hunger and Health. (n.d.). https://hungerandhealth.feedingamerica.org/understand-food-insecurity/
3. Winne, M. (2008). Closing the food gap resetting the table in the land of plenty. Beacon Press.

Autumn Davis — Internship with Conservation Voters of South Carolina

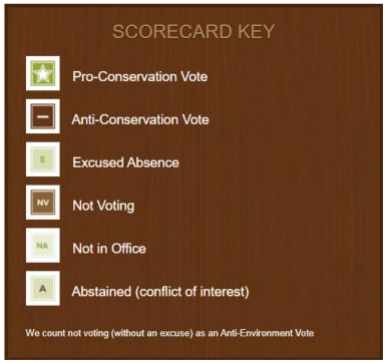
GEOG 595: Conservation Voters of South Carolina Internship

Autumn Davis
University of South Carolina- Geography Department

About CVSC

Environmental issues affect everyone. The future of South Carolinians relies on the quality and preservation of our natural resources. Unfortunately, some elected officials pass laws that threaten these resources. This is where Conservation Voters of South Carolina (CVSC) comes in. CVSC is a bi-partisan organization that prioritizes environmental issues, such as those concerning air, water, land protection, energy, and waste, and brings them to the attention of elected officials and the public.

This organization works to inform citizens about what conservation issues are currently going on in the state and what legislators are doing about it. Additionally, the group works to promote green legislation and candidates and hold all representatives accountable for the decisions they make. This can be seen in their biennial legislative scorecard which scores representatives based on conservation legislation they did- or did not- vote on.



Environmental Issues

Legislation focused on during my time with CVSC related to:

PFAS (Forever chemicals)

- Toxic, man-made chemicals used in a variety of everyday products.
- It is estimated that over 200 million Americans have tap water that is contaminated with these chemicals (Sneed).
- The chemicals can build up in our bodies and have harmful effects on our health.

Nurdles

- Plastic pellets that can be melted down to produce plastic products.
- End up in waterways through accidental spills.
- They can end up in our ocean and impact marine life as well as our own health.

Burning of plastic

- The burning of plastic by factories pollutes the air and can impact the health of surrounding communities.

My Work

A big part of my work was outreach. I would contact CVSC members by phone and email to inform them about current environmental issues and legislation. This included resolutions H.514 and S.219 which would require DHEC to develop regulations to limit PFAS and resolution S.596 which would define plastic pellet pollution and establish regulations for the pellet industry to follow.

Every week or so, I was given a new task, some of which required me to explore different topics related to conservation or advocacy and write a report.

One of my favorite assignments was to research black environmentalists for a presentation. The term environmentalist is usually associated with the white and middle-class. Though environmental issues disproportionately affect lower income and minority groups, this association can prevent them from joining in environmental actions (Pearson et al.). This presentation was meant to bring attention to the achievements of black conservationists as well as tear down this misconception, and I was happy to be a part of it.

Challenges & Takeaways

The biggest challenge for me was phone banking. People are not guaranteed to answer their phones for a variety of different reasons: maybe they are busy or do not recognize the number. So response rates vary. The lack of response could be disheartening at times but being able to talk to a handful of people made it worth the effort, because these are important issues that need to be heard. There is a need for greater education surrounding these topics and for us to continue to build connections and reach out to others.

I have acquired skills in research and advocacy, along with some nontechnical skills such as self-discipline and time management. Moreover, I gained a better understanding of our state government and the environmental issues facing South Carolina today.

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Blake Gibbons — Internship with The COMET

Spring 2021 Internship at The COMET

Blake Gibbons
University of South Carolina - Department of Geography, GEOG 595

Background

Public transportation in the United States is facing steep challenges with funding and ridership, especially given. While it is a small transit facility, Columbia faces many of the same issues tackling larger cities.

In the late 19th century, U.S. cities began to expand rapidly, with new suburbs growing along streetcar lines. These lines connected residential communities to downtown. Later, buses replaced streetcars. But increasingly, the automobile replaced all forms of public transportation.

After World War II, suburbs grew faster than ever, and these new suburbs were designed entirely with the car in mind, with little thought to other modes of transportation. Suburbia was heavily subsidized by the federal government through the Federal Housing Association and the Veteran's Administration. The new car-dependent infrastructure was also subsidized by the federal government.

There was a strong racial component to car-oriented suburbia. Most African-Americans were blocked from living in suburbs by redlining. Efforts by Black civil rights activists to gain access to housing and to desegregate schools and public services led to 'white flight' and disinvestment from public services, including public transit. Thereafter, public transport became associated with low-income Black communities, and the US political system was biased against public transit. Funding has been unpredictable and unreliable for local transport agencies, as it depends on federal matching funds. Without local funding, the federal match is not available

Suburban sprawl continues to disperse people far away from where they need to go, making fixed route transportation difficult. Richland County also has many rural areas that are difficult to reach by fixed route service. However, there are signs that people are becoming interested in public and multimodal transportation

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Stromberg, Joseph. "The Real Reason American Public Transportation Is Such a Disaster." *Vox*, 10 Aug. 2015,
Walker, Jarrett. *Human Transit How Clearer Thinking Can Enrich Our Communities and Lives*. Island Press, 2014.

Overview

The COMET was founded in 2002 as the Central Midlands Regional Transit Authority or CMRTA to tackle transportation issues in Columbia. Prior to 2002, the transit system was owned and operated by the South Carolina Electric & Gas Company (SCE&G) as a successor of a former streetcar system.

CMRTA rebranded as The COMET in 2012 with new streams of funding from the Penny Tax passed by county residents, and it has taken a robust approach to transit. Routes, service times, and service areas have all expanded. The COMET is also diversifying transportation options through bikeshare and taxi services.

As a result of new funding from the Penny, fleet size has expanded from 68 to 83 vehicles, service hours have increased from 61,557 to 243,607, and over $49 million dollars worth of funds were added through federal matching. These improvements have increased ridership from 1,498,818 in 2012 to 2,458,740 in 2020.

Responsibilities

I served as an intern in the planning department at The COMET. I was tasked with prioritizing amenities for our bus stops, collecting data on route performance, and compiling data into reports for our staff and board using Excel and ArcMap.

One of the major projects on which I worked was our 2020-2021 Route Analysis Report for our Board of Directors. Produced annually, this report provides insights on route performance, passenger counts, scheduled vs. actual hours and miles traveled, and fare revenue collected, among other data. The report noted some challenges we experienced with route efficiency and passenger counts. Our corridor routes had high ridership, but our rural routes had very low ridership to the point where some routes were extremely ineffective to justify their need.

In addition to analyzing routes for our report, I helped to implement over fifty locations for stop amenities including shelters, benches, and trash cans.

THE COMET CENTRAL MIDLANDS TRANSIT

Uof SC South Carolina

Chandler H. Gross — Internship with the SC Forestry Commission

Spring 2021 Geography Internship: Insect and Disease Lab at the South Carolina Forestry Commission

Chandler H. Gross

Background

Invasive plants and animals spread quickly and displace native plants, prevent native plant growth, and decrease the biodiversity of an area by creating monocultures. P. Calleryana is an example of such a species that has become a problem in South Carolina. Commonly known in the US as the Bradford pear tree, this cultivar is native to China along similar latitudes but is now considered an invasive across the southeast US. *P. Calleryana* grows beautiful white flowers in the spring, and its leaves turn to a bright red in the fall. The tree is grown mainly for ornamental value today but was initially brought to the US to combat fire blight in the common pear. By the 1920s *P. calleryana* was found to be tolerant not only to disease but also to a wide variety of pH levels in soil, excess moisture, and pollution (Culley, 2007). The Callery was deemed the ideal street tree, as still evident on many streets across the southeast.

Callery pears propagate readily from birds and other animals spreading the seeds of fallen fruit. Because of their beauty and hardiness, the trees continue to be planted and now have been sprouting readily for a century. Unfortunately, with its rapid growth and high-light preference, the tree has impeded on many native species' habitat. In Manchester State Forest, for instance, most of the acreage (64 percent) is covered with pine types, such as the Longleaf, Loblolly, and Slash pine (SCFC, 2017). Once the Callery gets to an area, it crowds out all other native plants. These sites then become patches of pure Callery. The tree also isolates native insects and birds. According to the SC Wildlife Federation, the tree does not support caterpillars in any significant numbers, so SC native butterflies will not choose it as a host plant. The needles of pines are also essential for nesting in many native birds such as the Red-Cockaded Woodpecker (SCWF). If the Callery pear crowds out pine species, it will have a negative impact on these native birds.

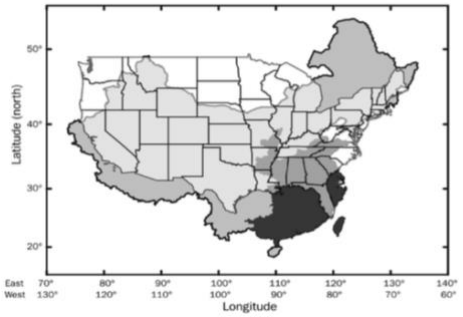
References:
1. Culley, T. doi:10.1641/b571108 **2.** SCFC, www.trees.sc.gov/mpm.pdf **3.** SCWF, www.scwf.org/native-plant-list

The South Carolina Forestry Commission

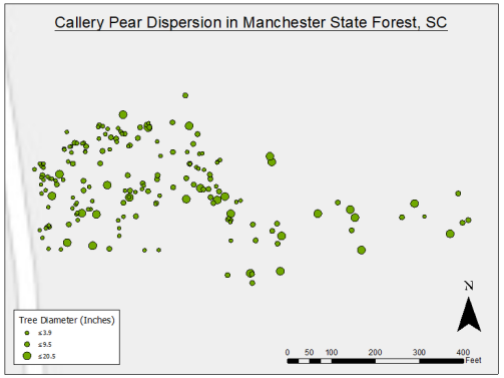
At SCFC, foresters monitor, report, and coordinate suppression of endemic pests, disease, and invasive species that affect forest trees in South Carolina. Callery pear has become a threat both to our forests and urban landscapes,. The SCFC has for decades remained dedicated to battling their spread with outreach and education using their pamphlet detailing all SC invasive species. It also occasionally organizes herbicide treatments on trees less than 10 ft tall. They encourage citizens with vacant land to cut down all existing Callery pears and to replace with native alternatives such as Service Berry, Tupelo, or Dogwood.

Mapping *Pyrus calleryana,* the Callery Pear

This semester, I worked with Forest Health Specialist David Jenkins in the Insect and Disease Lab at the South Carolina Forestry Commission. At SCFC, foresters monitor, report, and coordinate suppression of endemic pests, disease, and invasive species that affect forest trees in South Carolina. My job was to help track *Pyrus calleryana* in a small lot of Manchester State Forest located in Sumter County, SC. Using QGIS and ArcGIS Online, I mapped previously collected data on *Pyrus calleryana*. The pear trees were mapped by their location and diameter at breast height. Those with the largest diameters are the assumed parents of the youth and sapling trees. Using my map, David and SCFC can visualize the patterns of dispersal and reproduction in this lot of Manchester State Forest. They can then identify the best method of control and eradication of the species in order to promote the health of the forest to prevent further harm to native species, and to reduce the potential costs associated with invasive-species control. My findings show Callery spreading to the northwest and attempting to dominate the roadside where they can get the most sun. Many of these trees are small. This pattern indicates that herbicides can be effective in limiting their spread.



*The US and China at similar latitudes. Areas in China where P. calleryana are found are in **black** at the same latitudes as areas in the US where the species is invasive. (Culley, 2007).*



Gracie Leatherman — Internship with FoodShare

FOODSHARE
It's more than just a box of food.

Gracie Leatherman · Spring 2021 GEOG 595 Internship

Food Security and Poverty in South Carolina

Food insecurity haunts the US, yet in 2010. Many Americans live in food deserts, which the USDA defines as "regions of the country that often feature large proportions of households with low incomes, inadequate access to transportation and a limited number of food retailers providing fresh produce and healthy groceries for affordable prices" (Ver Ploeg, et al., 2011). Food waste is another problem. The USDA estimated in 2020 that 133 billion pounds of food were lost or wasted. There are few ways to transport food "waste" to those facing food insecurity, though food banks and pantries are making an effort. Winne (2008) discusses how food banks, food pantries, and other organizations were created in response to the lack of government intervention in feeding the hungry. More recently, the focus has shifted to reducing food waste. Food waste in this instance is the food that is nearly or recently expired food from grocery stores and restaurants. Such food can be were donated to these food banks for distribution.

The USDA SNAP program is an important way to alleviate hunger. Some have argued that junk food should be banned from being purchased with SNAP. Fisher (2018) argues that prohibiting junk food demeans and patronizes SNAP recipients. It would also limit access to affordable food, even if that food is not very nutritious. South Carolina's Healthy Bucks tries to solve this problem by making healthy, nutritious food more accessible. With the Healthy Bucks program, local farmers can provide affordable produce to low-income residents, and some can even accept SNAP. In Columbia, for instance, Gruber Farm sells produce at Soda City Market and accepts SNAP. However, local farmers do not have the capacity to provide food to everyone. FoodShare SC fills this gap by working with wholesale distributors who operate in a larger market. This model provides enough low-cost fresh produce to fill approximately 800 food boxes every two weeks.

The role of farms and agriculture has changed tremendously in the past several decades. Growing multiple crops is not economically efficient for most farmers today. Large farms are producing single cash-crops, leaving smaller farmers to produce the nutritious fruits and vegetables that you see at the farmer's market or in the produce section of grocery stores. Despite the number of farmers and roadside markets in Richland County, there are only three places that accept Healthy Bucks in Richland County (including FoodShare SC).

Cabannes & Marocchino (2018) discuss the role of food systems in urban planning. Urban planners must consider the entire food system--the production, processing, distribution, consumption, and waste management of food--in order to achieve foster food security. Planning for more community gardens, farms, and grocery stores will provide for more access to affordable food.

Harvest Hope

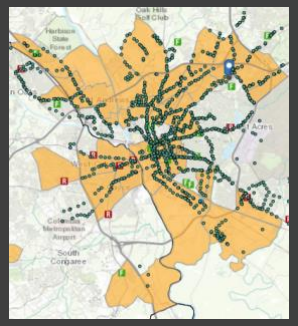
Before starting with FoodShare SC, I volunteered with Harvest Hope's emergency food pantry distribution. COVID regulations altered the normal distribution procedures. Shopping carts were filled with a variety of food, including meats, fruits, vegetables, juice, dairy, soda, pastries, and snack food, and each car that came through the line received everything in the over-flowing cart no matter household size. Bus-riders were also able to receive the same items, and most people would carry bags filled with food and drinks. In many cases, the food distributed was either expired or close to expiring. More problematically, many items were processed or high-calorie with limited fresh, nutrient rich food available for intake.

FoodShare SC

FoodShare SC was established in 2015 to provide affordable, fresh food to those with limited access to grocery stores. It is now a part of the UofSC School of Medicine. FoodShare SC programs include a fresh-produce delivery service. Boxes filled with fruit, vegetables, and recipe cards are delivered or picked up by customers every other week. A small box costs $15, or $5 for those with SNAP benefits, while a large box costs $20, or $10 with SNAP. The subsidy for SNAP recipients comes from the Healthy Bucks program. By increasing access to fresh produce, FoodShare aims to combat chronic illnesses such as heart disease and diabetes, which are prevalent in low-income communities. The program also trains medical students how to promote a healthy lifestyle to their patients. The FoodShare Culinary Medicine program works with medical students to incorporate the "food as medicine" approach in their future practice through readings, discussions, and cooking. A key lesson for medical students is that patients may not have the resources or time to buy healthier food. While food can be the best medicine, lack of food affordability and access undermines this notion (Imhoff, 2019).

Take-Aways from Internship

As a FoodShare intern, I assisted with the Culinary Medicine classes by prepping recipes and making sure that the cooking ran smoothly. I distributed produce boxes and dropped off a few boxes through the NeighborShare system (for those without transportation). I also assisted with data management using OneBox, an application created for FoodShare. Each FoodShare location records information about program participants, including payment method and use NeighborShare. Each location also keeps track of which products are purchased each week for the boxes along with the quantity purchased and the price and any delivery costs. OneBox helps each location determine whether it makes sense economically to include certain products in the box.



- Yellow- 2019 USDA Food Access – Low-income (LI) and low-access (LA) tract measured at ½ mile and 10 miles.
- Green "F"-Farmer's markets
- Red "R"-Roadside markets
- Green dots- COMET stops
- Blue dot - Harvest Hope on Shop Rd.
- Marker-FoodShare SC at Columbia Mall Blvd.

I was able to map food insecurity in Richland County with information provided by DHEC. Both FoodShare SC and Harvest Hope are located within areas of LI and LA. The Comet route is a common mode of transportation taken by people in this area; however, transporting large amounts of groceries, particularly perishables, is not ideal (Winne, 2008).

There are multiple challenges in operating a non-profit that seeks to provide nutritious, affordable food to those living in food deserts. FoodShare locations are responsible for determining where to buy produce, securing funding, and identifying pick-up locations. FoodShare requires grants and donations to operate, and many of the grants require certain guidelines to be met to continue funding. This could be anything from a patient attending cooking classes to the produce purchased and the number of boxes distributed.

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Andrew Reed — Internship with the SC Office of Regulatory Staff

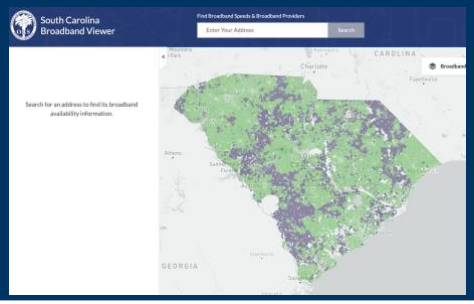
South Carolina Office of Regulatory Staff: Broadband Development Program

Andrew Reed, GEOG 595 Spring 2021

Overview

The biggest projects that I worked on at the ORS would help to map broadband coverage throughout the state, track solar energy capacity by zip code and county, and identify areas of the state that need further funding for broadband expansion. Broadband has become an incredibly important utility in the past 12-14 months because of the Covid-19 pandemic. With work and school transitioning to remote work and remote school, the state tasked the ORS to map the availability of internet throughout the state. The resulting map below shows in purple the areas of the state that are both inhabited and not served adequate internet. Along with this transition to remote work and school there is scientific research that shows the relationship between internet availability and higher employment, education levels, and health care availability. With many hospitals overwhelmed with Covid, it became imperative that many doctor's visits be adjusted to telehealth visits. This is where Access to the internet became so crucial in healthcare. Along with healthcare, schools had to reach students without internet access, to help with this the ORS purchased 200,000 internet hotspot devices and distributed well over 100,000 of these to students without internet access at home.

Mora-Rivera, J., & García-Mora, F. (2021). Internet access and poverty reduction: Evidence from rural and urban Mexico. Telecommunications Policy, 45(2), 102076–.



About the SC ORS

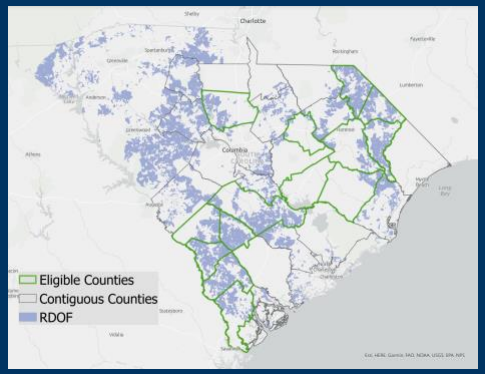
The Office of Regulatory Staff was created in 2003 to regulate all for-profit utility companies in the state. The ORS advises the SC legislature on how to allocate funding for new infrastructure projects, such as the Cares Act funds provided to the states by the federal government during the COVID pandemic.

"The ORS represents consumers of investor-owned utilities in South Carolina before the Public Service Commission of South Carolina. The PSC is the state agency that sets utilities' rates. The ORS must look at the impact to the consumer and utilities' continued investment in reliable and high-quality services. The ORS audits and inspects investor-owned utilities and provides limited oversight of electric cooperatives, administers the leasing program for solar panels in South Carolina, and participates in matters before the PSC for electric, natural gas, transportation, water and wastewater utilities, and most telecommunications providers". – ORS 2020-2021 budget proposal

The ORS is also in charge of determining where to apportion funds for infrastructure projects throughout the state. The Rural Digital Opportunity Fund is a federal program to bring internet to underserved communities throughout the country. The ORS keeps tabs on where this federal money is sent and helps to distribute state funded grants to other underserved areas. As a GIS intern I worked to help keep track of the areas that would need further funding. Internet service providers would submit applications with gis data and I would create maps to highlight where these companies would be applying to expand internet services. I also created a map of Solar panel data through out the state.

Role/Responsibilities

Using CARES Act funding, the ORS contracted a company to create a map of broadband availability in the state. I was hired as a GIS specialist to handle GIS data from Internet Service Providers for the map. I handled GIS data transfers, standardized data shared with the ORS by different departments, and created a new Energy Dashboard for the energy department and produced one-off maps. The majority of my time at the ORS was spent creating these one-off maps with ArcGIS and learning about better ways to convert and work with data. I was given access to computers with high graphics and high computing capabilities, giving me the opportunity to try different methods of data manipulation. Going forward I will continue to work at the ORS helping to train incoming interns on how to use ArcGIS and how to use SQL to work with large batches of data. My role in creating online dashboards for the energy department will remain the same, and I will now have the opportunity to gain more experience in web development and design.



Julia Williams — Internship with Central Midlands Council of Governments

Central Midlands Council of Governments

GEOG 595 Internship – Julia Williams

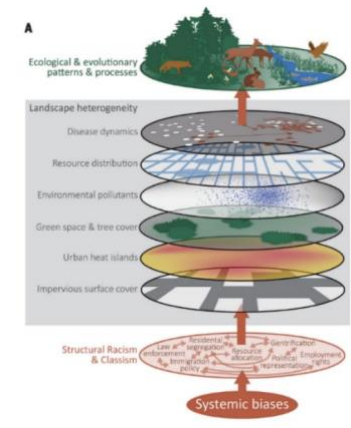
About the CMCOG

The Central Midlands Council of Governments was created in 1969 and works with the four Midlands counties and local governments to provide comprehensive development plans that best serve the region. The Council promotes collaboration on issues that transcend each member government's county boundaries. This includes water quality, transportation, housing, and business development. There are currently 15 council members that generate common growth and development goals.

What have I learned?

The depth of watershed planning was something I was unfamiliar with before this course. I learned about the grant writing process and became familiar with SCDHEC and EPA guidelines. In terms of equitable adaptation, I realized how essential this is to future planning. As climate change continues to worsen, this will be essential to every planning process. Most notably, I had the opportunity to improve my public speaking skills by presenting these concepts at a meeting with the Project Advisory Committee members who overlook the feasibility of CMCOG projects. Since including equitable adaptation is relatively new to watershed management, many planning agencies still overlook it. However, federal regulations are beginning to direct efforts towards creating equality, and this is becoming an increasingly more important part of receiving grant funding. It was a pleasure to contribute to the conversation surrounding equity in watershed management, and I look forward to seeing how Richland and Lexington county incorporate this element in plans..

Special thanks to Gregory Sprouse and Guillermo Espinosa for welcoming me into this position, as well as Jory Fleming (CISA-Department of Geography) for his guidance.



The Three Rivers Watershed Plan

The Central Midlands Council of Governments has been drafting a grant proposal to DHEC to address levels of bacteria found in the Three Rivers watershed area. This area is approximately 55.6 square miles and lies with Richland and Lexington counties (seen in the image to the left). Since the area is so urbanized, there have been higher levels of fecal coliform bacteria found in the rivers. Not only are these rivers are popular recreational areas, but they are the source of drinking water for surrounding communities. Additionally, these rivers are also an ecosystem for many species of plants and wildlife. The grant aims to reduce levels of bacteria and pollution, in line with nine major EPA standards. Two standards that were relevant to my work were climate change considerations and education opportunities.

My role at CMCOG

As an intern, I focused on the section of the Three Rivers proposal pertaining to equitable adaptation. This element focuses on communities most vulnerable to the effects of climate change. Since equitable adaptation is a newer concept in watershed management in the U.S, I reviewed literature to help support the incorporation of this element into planning. Next, I worked with GIS to understand demographic patterns in the Three Rivers watershed area to understand how watershed development might affect different groups. Using EPA guidelines, we identified two significant areas of equitable adaptation that will be beneficial to CMCOG planning: green infrastructure and educational opportunities. The Chesapeake Bay Watershed is an example of a watershed that is currently incorporating green infrastructure projects, such as targeting rain gardens and water retention ponds in at-risk areas. Their current GIS equity dashboard has directed infrastructure projects and outreach opportunities towards socially vulnerable populations (low-income, minority) to ensure more equitable development throughout the area. In terms of education, people must understand how litter and pet waste impact watershed water quality. Educational opportunities should be geared towards at-risk stakeholders who previously may not have had access to information about risks that bacteria in the water may pose (Floress, 2015). The final step of the project was to write this element into the grant application. Other elements of my role included reviewing comprehensive plans for the Midland and Richland county areas to understand watershed development impacts, and to creating an overview of ways (including new infrastructure) to improve the sewer and water quality in this region.

Equitable Adaptation

Equitable adaptation addresses incorporating equity in climate change and watershed adaptation practices. As the effects of climate change, such as increased flooding, worsen, the burden will not be evenly felt throughout communities. Vulnerable populations, such as low-income groups and people of color, have historically been negatively affected by urban development and climate change exacerbates environmental hazards they face. Previously, social sciences were not considered in watershed management; however, many social elements are intertwined with how a watershed functions. Elements such as structural biases and systematic racism have a cascading effect on other areas of watershed development, such as impervious surfaces, which the grant addresses (Schell et al., 2020). Therefore, current plans must consider how at-risk populations may be disproportionately affected by climate change in order to ensure environmental equitability. By incorporating equitable adaptation, the Midland community region can ensure a thriving future watershed for all community members. Current efforts in the town of Lexington include encouraging water conservation activities to all town members preserving environmentally sensitive areas in town (Lexington Comprehensive Plan, 2018). If it is not considered now, there will be harsher consequences in the future when there are higher levels of precipitation and more bacteria in water supplies. Therefore, future infrastructure, such as rain barrels and additional green spaces, should be placed in areas that may not have been previously considered.

References

Floress, Kristin, et al. "The Role of Social Science in Successfully Implementing Watershed Management Strategies." *Journal of Contemporary Water Research & Education*, vol. 154, no. 1, 2015, pp. 85–105.,

Schell, Christopher J., et al. "The Ecological and Evolutionary Consequences of Systemic Racism in Urban Environments." *Science*, vol. 369, no. 6510, 2020.

Town of Lexington, SC Comprehensive Plan Update 2016.