Analysis Summary – Network Connectivity and Gaps
CMCOG - LSCOG

Takeaways:

- Connectivity within municipal jurisdictions is significantly better than regional connectivity between adjacent communities (>1 mile in distance).
- Grocery stores are generally more connected (at 60-70% rate) to existing sidewalks than schools (<60%) or parks (<45%).
    - An effort to physically connect sidewalks for Safe Routes to Schools opportunities should be a priority and funding opportunity.
- Data accuracy is limited while using statewide resources, or a compilation of data from local sources. More work is needed to consolidate, standardize, and track progress over time for regional connectivity.
- Tracking the total distance of multimodal facilities should be a future goal (performance measure) for each COG, highlighting the progress made per year toward increasing these facilities.

Report Writeup:

Multimodal network connectivity refers to sidewalks, bikeways, or greenway trails that *physically connect* with one another across multiple cities, towns, or counties. Many of these facilities are constructed one-at-a-time through development projects (new construction) or roadway improvements, and therefore begin as isolated facilities with 'gaps' in between.

The objective of this connectivity analysis is to improve multimodal access to community assets, like schools, parks, transit stops, and/or grocery stores. Our team intends to accomplish this by building a trusted GIS data resource to more quickly identify, quantify, and plan for roadway improvements along SCDOT-maintained corridors. A desktop assessment of connectivity establishes a baseline that allows for informed decision-making at the beginning of this regional planning process. The quality of input data will likely determine the usefulness of the data at the end, which suggests that continual data maintenance should be a priority for regional partners.

Beginning in the summer of 2024 the assembly of data resources initiated with our SCDOT project team members obtaining local or regional files and compiling into a single folder. Each dataset had a unique jurisdiction (coverage area) with different attribute values such as facility status, type, category, length, or other descriptions. Aggregating or merging files was necessary to perform work on a consistent, well-organized dataset for

each COG region. The process of aggregating files and standardizing data attributes represent an important limitation for regional data, with inconsistent values for each jurisdiction's files (e.g., different values relating with different features). By consolidating many files into a single file, some attributes are 'lost', while others are filled with <Null> values because they lacked these details from the beginning.

To the best of our capabilities, the existing conditions data received represents the most up-to-date and complete multimodal resources for use on these pilot projects, and no field work was performed to confirm the accuracy of these data.

Geographic Information Systems (GIS) data shared by local/regional partners includes:

Community Points of Interest / Attractors
- Schools / Colleges
- Shopping Centers / Grocery Stores
- Parks / Libraries

Recreation Trails
- SC Trails (SCDOT)
- SC Parks Recreation and Tourism (PRT) Touring Routes

Existing Multimodal Facilities
- Bicycle Lanes (multiple sources)
- Sidewalks (county sources)
- Statewide Railroads (SCDOT)

Planned Multimodal Facilities
- Walk-Bike Columbia Plan recommendations
- Composite recommendations for CMCOG / LSCOG (multiple sources)

Analysis:

Existing Bikeway and Pedway Facilities

Using ArcGIS software, the project team organized, reviewed, summarized and mapped existing multimodal facilities. A breakdown of miles by COG/County is included below.

Table 1. Existing Multimodal Facilities (miles)

Jurisdiction	Sidewalks	Bikeways	Touring Routes	Greenways/Trails
CMCOG	1,036	45	100	469
LSCOG	388	294	122	296

**Note: LSCOG features includes the City of Aiken, SC*

The estimated trail length for CMCOG (469 miles) appears to be incorrect, as a preliminary review of trails along the Congaree and Wateree Rivers suggest that they may not actually be existing, but rather should be attributed as '*planned*' trail.

Sidewalks exist within small communities, though there are few sidewalk connections that extend more than one-mile between adjacent communities. The result is a pattern of sidewalk 'islands' that lack a physical connection.

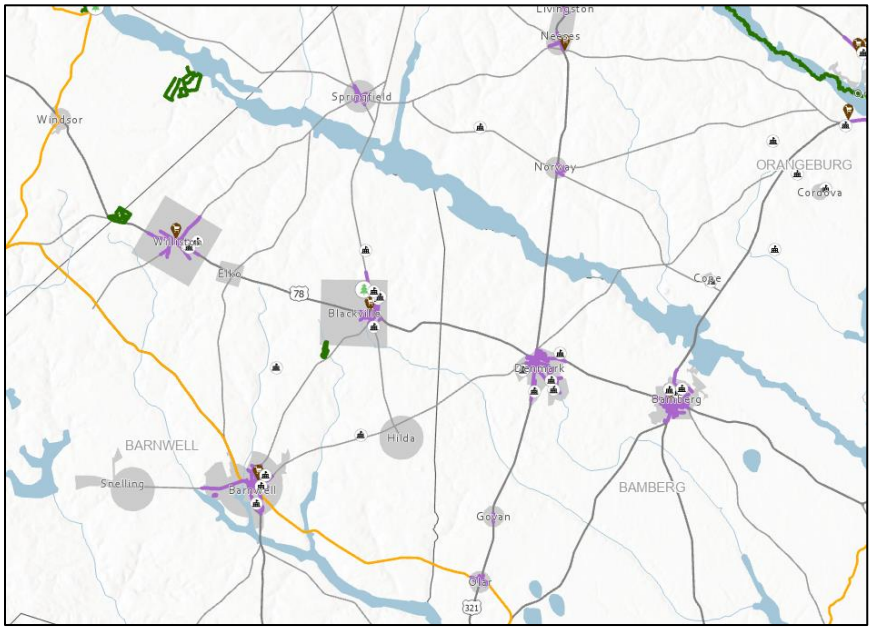


Figure 1. Screen snag of sidewalk 'islands' in Barnwell-Orangeburg counties

Community Destinations

Community points of interests, or trip attractors, were included within this analysis to validate whether nearby destinations were physically connected with existing facilities. Parks and schools were largely found to be disconnected from the existing network, which may be partially explained by their site selection in either conservation areas along streams (parks) or where land is less expensive and available to build (schools). Grocery Stores were generally more directly connected to sidewalks (61% and 70%) than other destinations (Table 2).

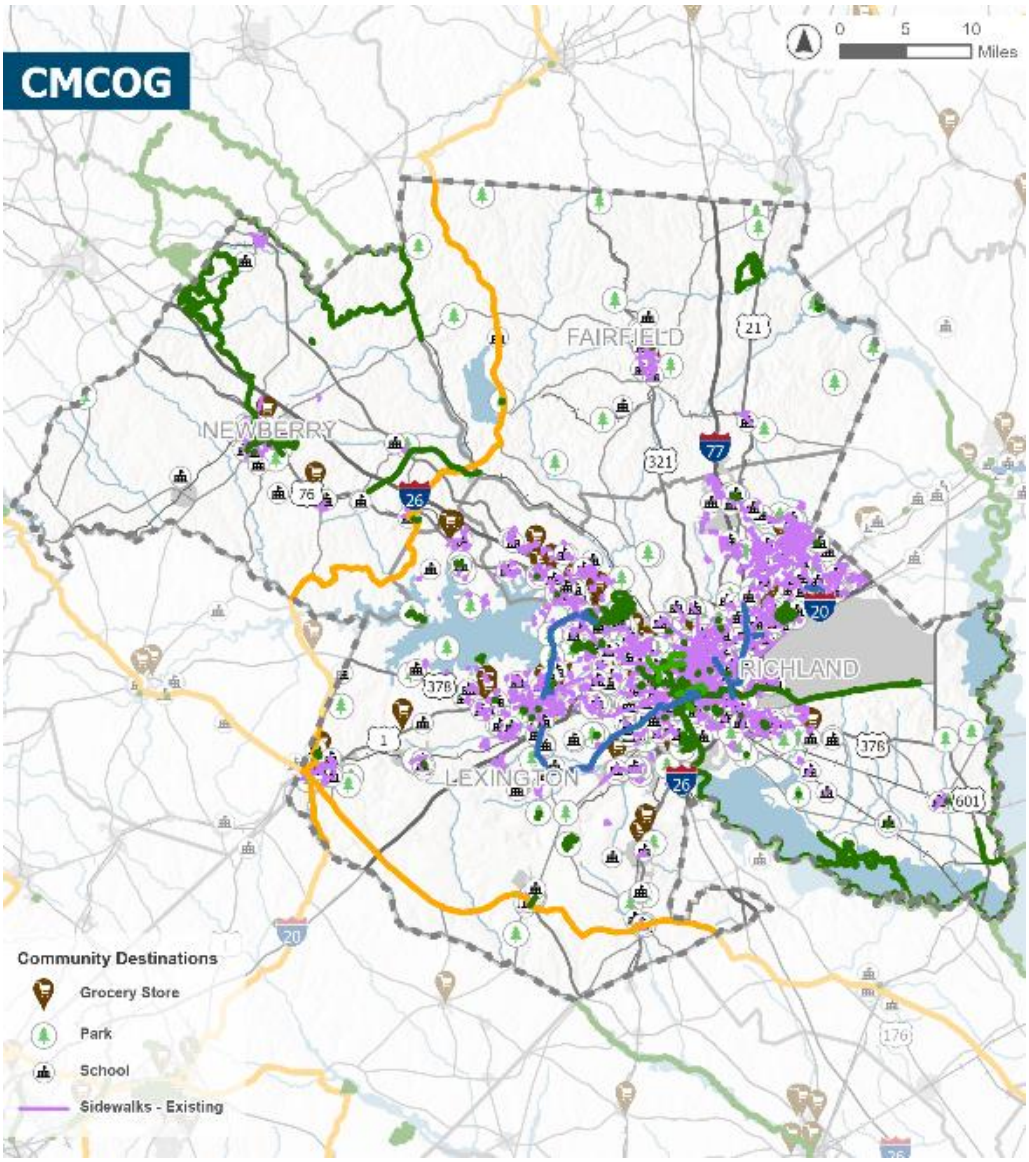
Transit stop data has not been made available to the project team, therefore a similar connectivity analysis for transit cannot be compared. Parks and grocery store data was limited from both Calhoun County, and Allendale County (LSCOG jurisdiction), suggesting that the accuracy of data at the local level is lacking. For future analyses, an alternative data source (or sources) may be needed at the state or regional level to be more consistent and therefore valuable.

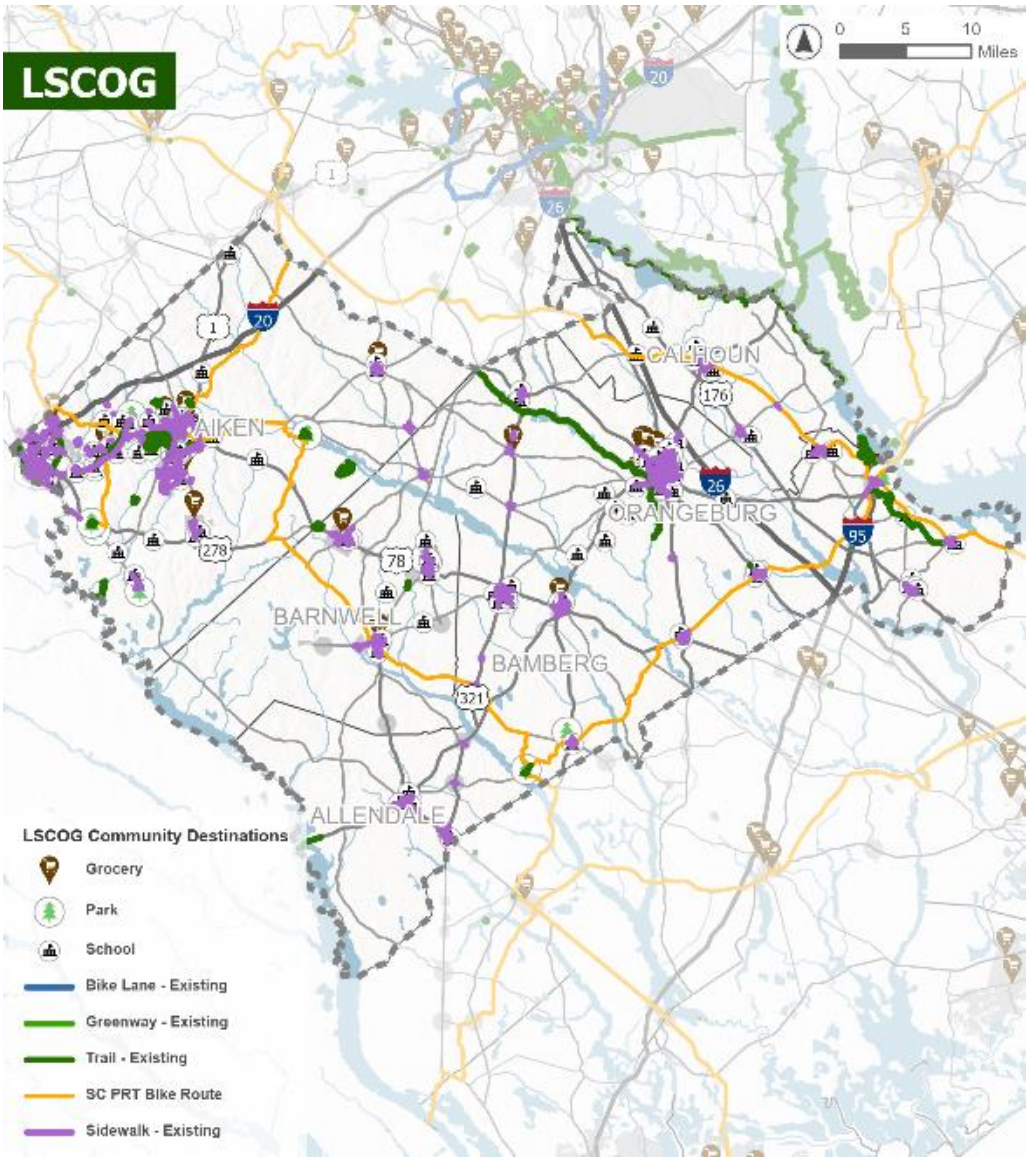
Table 2. Community Destinations and Connectivity Rates

Jurisdiction	Schools	Parks	Grocery Stores
CMCOG	350	210	62
% Connected	*(62%)*	*(44%)*	*(61%)*
LSCOG	150	19	23
% Connected	*(47%)*	*(37%)*	*(70%)*

Note: Percentage refers to the portion that are located within 500 feet of **any existing sidewalk / trail. Further examination to determine whether the front door of the facility is directly connected is left for future studies.*

Maps:




LSCOG
0 5 10
Miles
AIKEN
CALHOUN
ORANGEBURG
BARNWELL
BAMBERG
ALLENDALE
LSCOG Community Destinations
Grocery
Park
School
Bike Lane - Existing
Greenway - Existing
Trail - Existing
SC PRT Bike Route
Sidewalk - Existing