Rural Roads Evaluation - Year 1

Heather M. Padilla, PhD, RDN, LD

Ansley Kasha, MPH, MSW

Christina Garner

Agenda

Why did we evaluate rural roads?

How was the evaluation conducted?

What did the evaluation show?

What are the **next steps** following the project?

The national rural fatality rate (per 100 million VMT) is 1.7 times higher than urban fatality rate

- In 2019, 19% of the US population lived in rural areas
- Rural areas account for 31% of vehicle miles traveled
- 68% of total lane miles in the U.S. are in rural areas
- Nearly half of all truck VMT occur in rural areas
- 43% of all fatalities occurred in a rural area

VMT = Vehicle Miles Traveled

In Georgia, the rural fatality rate (per 100 million VMT) is **1.9 times higher** than urban fatality rate

VMT = Vehicle Miles Traveled
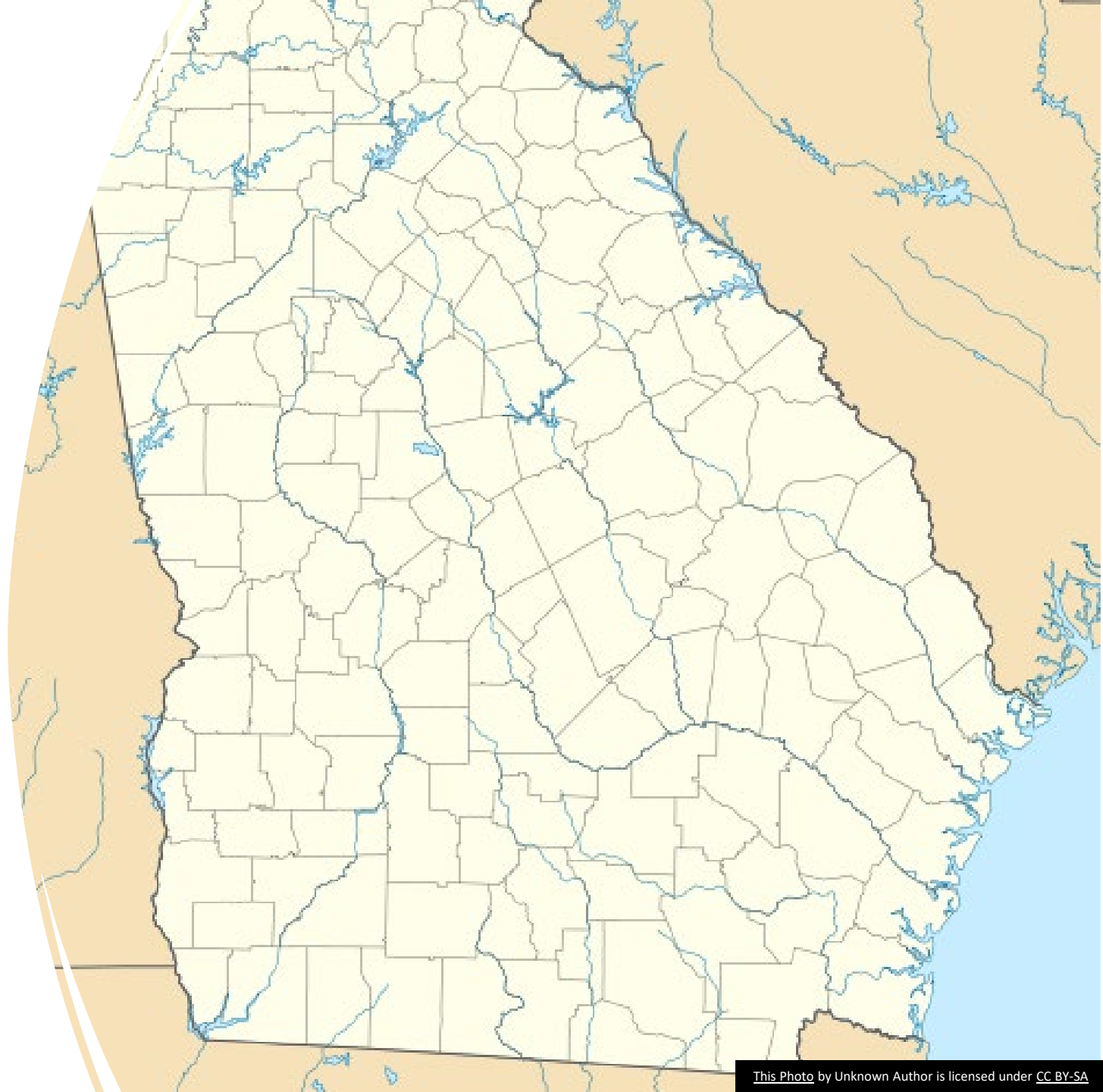
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Healthy People 2030

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Neighborhood and Built Environment

Overview and Objectives

Evidence-Based Resources

Goal: Create neighborhoods and environments that promote health and safety.

Injury Prevention

Reduce deaths from motor vehicle crashes — IVP-06

⬛ Little or no detectable change

Let's set the scene

- Southwestern Georgia county
- Two cities
- Population of 6,293 (2019)
- Major federal and state roads cross the county
- 423.6 miles of roads
  - 290.3 miles = county roads
  - 44.7 miles = unpaved roads

Design of the Project

- Utilized mixed methods
- Conducted stakeholder interviews (n=10)
- Completed a community survey (n=50)
- Observed traffic patterns

Study was exempt by the UGA Institutional Review Board

Stakeholder Interviews

- Utilized a **snowball sampling** technique
- Engaged with **10 stakeholders** representing various roles within the community
  - City and county government officials – both elected and non-elected positions
  - Public safety personnel (Police, EMS)
  - K-12 educator
  - Forestry industry employees
- Length of interviews **averaged** 43 minutes (17-89 minutes)
- Implemented a **constant comparative method** of analysis

Thematic Results

Theme	Summary	Anecdotal Example
Long commutes for shopping and work	County residents travel to nearby larger cities to obtain groceries and other goods due to limited availability in the county. It is common for residents to drive ~30-150 miles one way.	*"Most people work outside the county."*
Personal cars are a necessity	Due to the geographic spread of the county, a personal car is needed to travel large distances safely – including for work and shopping for food.	*"So, it's a rural area, very rural. If you're not in the city limits, particularly [city] or [city], you definitely would need a vehicle to get around"*
Regional Transport Service	A transport service was described for elderly and low-income residents that provided transportation to doctor, pharmacy, and grocery stores.	*"It's mostly for elderly people to get to the doctor."*
Informal transportation arrangements	Private citizens transport people to places in exchange for money through a word of mouth and informal arrangements.	*"Somebody might want to go to Columbus or from here to the drug store, to the grocery store and they'll call a private citizen, a particular private citizen that does transportation like that."*

Thematic Results

Theme	Summary	Anecdotal Example
Commercial vehicle traffic	Participants reported heavy commercial vehicle traffic in the area that has taken its toll on roadways and bridges. Logging trucks are common on the roads due to the large forestry industry in the area.	*"There's a lot of semi traffic that goes through there. We have a lot of forestry industry down here, log trucks."*
Road conditions varied	Road conditions were reported as poor to good and varied whether participants were referencing state highways, county paved roads, or county dirt roads. State highways were in good condition. County paved roads required significant maintenance and repair, and county dirt roads were in poor condition.	*"We have a problem with getting funding to have our streets resurfaced. And, right now, we are way behind...sometimes it takes 2 years...most of our streets are full of potholes and we're spending trying to keep the potholes patched. And by the time we get one patched, we have 4 more."*
Rumble strips	Rumble strips were recently installed on state highways and participant perceptions varied about their functionality.	*"I feel like they are bad because if you pull over and hit one you might snap the car back to the other side."*

Thematic Results

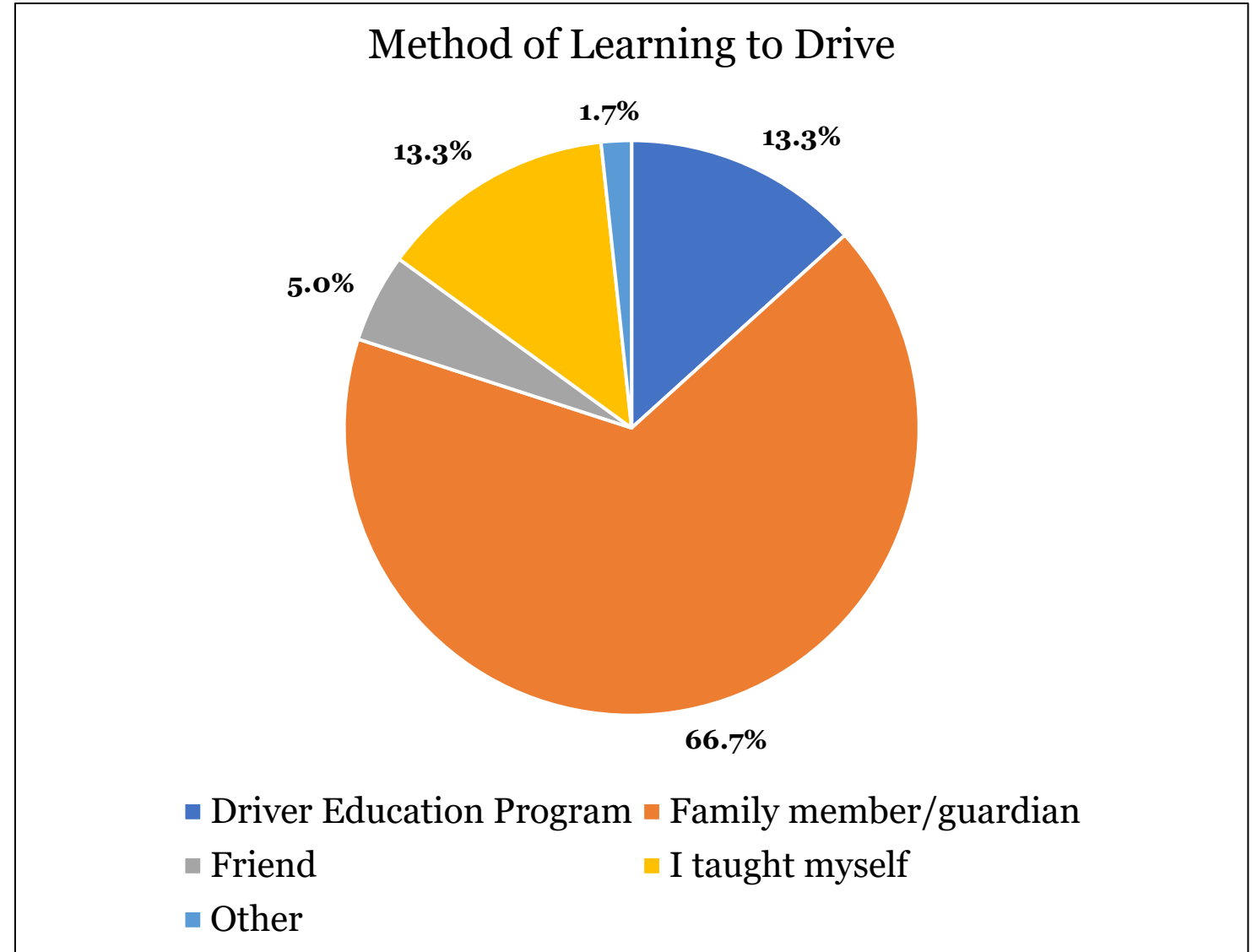| Theme	Summary	Anecdotal Example
School-age children rely on school bus transport	Not feasible for students to walk or bike to school due to the location of the school in the county and the lack of infrastructure.	"We have 100% ridership on buses."
Driver education	No driver education programs were offered in the county. Overwhelmingly, youth were taught to drive by their parents or other family members.	"I don't think the school does [teach drivers' education]."
Risky behaviors	Seatbelt use was the norm and commonly observed. Speeding and distracted driving were common violations reported.	"So, we have a lot of open space out here, so speeding is going to happen."
Wildlife hazards	Frequent crashes with wildlife, primarily deer and hogs.	"Most of the time there are no injuries involved in those accidents, but the wildlife is frequent on the roadways around here."

Thematic Results

Theme	Summary	Anecdotal Example
Bicycle use is rare	Regular bicycle use was described as a few people who ride around town to get to stores and place to place due to lack of a personal vehicle.	*"There's a few that ride just around town. The ones that don't have cars, that's their means of transportation, but not a whole lot."*
Limited use bicycle lane	A state bike route exists on a major highway and includes a 6-foot paved bicycle lane buffered by a 2-foot rumble strip. This route is considered unsafe due to speed of motorists and lack of separation from vehicle traffic.	*"You rarely see anyone on a bicycle or anything like that, because we may not be congested, but all the roads around here tend to be high speed roads and there aren't a lot of sidewalks, so if you're on a bicycle you're on the roadway."*
Walking in city limits for exercise	Residents walk for exercise in the city limits where sidewalks are available.	*"...around the square, around the downtown area. Basically, where the sidewalks are..."*
Walking for transportation	Walking for transportation was rare and limited to pedestrians walking around the city locations such as the bank, post office, and local dollar store, particularly for people who did not own cars. In some cases, pedestrians walked on the road due to lack of sidewalk and tall grasses on the roadside.	*"There's no sidewalk on this road...and they have a tendency to walk right on the yellow line...it's sort of dangerous."*
Sidewalks are limited and conditions vary	Sidewalks were limited to the cities, and some have been damaged by tree roots.	*"Some of them are cracked and tree roots have grown under them and pushing them up. We try to repair them. Basically most of them are...in good condition."*

Community Survey

- Applied a **convenience sample** (**n=50**) and acquired **descriptive statistics** of the respondents
  - Mean age: 46 years (range 22-78 years)
  - 96% reported driving daily
  - 56% female; 42% male
  - Race distributions
    - 64% White
    - 28% Black or African American
    - 5% Hispanic
    - 3% Other

Driver Education and Learning to Drive

- 52% (n=26) of survey respondents indicated they completed a driver training program.

- Survey respondents reported being taught how to drive in multiple different ways.

Method of Learning to Drive

1.7%
13.3%
13.3%
5.0%
66.7%

- Driver Education Program
- Family member/guardian
- Friend
- I taught myself
- Other

Bicycling and Walking

- 24% reported having a bicycle
- 4 people reported riding their bicycle in the past 30 days
- 26% of respondents reported walking
- 11 people reported walking in the last 30 days

Attitudes Towards Traffic Safety

	Attitudes	Ideal %	Neutral %	Non-ideal %
1	Many traffic rules must be ignored to ensure traffic flow.	68	22	10
2	Traffic rules must be respected regardless of road and weather conditions.	78	16	6
3	Traffic rules are often too complicated to be carried out in practice.	74	16	10
4	It makes sense to exceed speed limits to get ahead of 'Sunday drivers.'	66	20	14
5	Speed limits are exceeded because they are too restrictive.	37	31	32
6	If you are a good driver, it is acceptable to drive a little faster.	18	30	52
7	Punishments for speeding should be more restrictive.	19	46	35
8	I will ride with someone who speeds if that's the only way to get home at night.	27	29	44
9	When road conditions are good and no one is around, driving 100mph is okay.	84	12	4
10	I will ride with someone who speeds if others do.	53	33	14
11	I would never drive after drinking alcohol.	72	12	16
12	I would never ride with someone I knew has been drinking alcohol.	75	15	10
13	Taking chances and breaking a few rules does not necessarily make bad drivers.	34	36	30
14	It is acceptable to take chances when no other people are involved.	58	30	12
15	It is acceptable to drive when traffic lights shift from yellow to red.	64	16	20
16	I don't want to risk my life and health by riding with an irresponsible driver.	90	8	2

Driver behavior

Variable d	Mean	SD	N
Attempt to leave a parking space in the wrong gear.	1.52	1.04	48
Check your speedometer and discover that you are traveling faster than the posted speed limit.	**3.71**	**1.34**	**48**
Drive as fast along country roads at night on low beams as you would on high beams	1.96	1.15	48
Drive especially close to or "flash" the car in front of you to try to get them to go faster or get out of your way.	1.75	1.20	48
Forget where you parked your car.	2.06	1.01	48
Realize the vehicle ahead has slowed, and have to slam on the brakes to avoid a collision because you were distracted or preoccupied	1.81	.86	48
Switch on one thing, such as the headlights, when you meant to turn on something else, such as the wipers.	2.06	1.14	48
Turn left into the path of an oncoming vehicle that you hadn't seen.	1.58	.89	48
Misjudge the space available in a parking lot and nearly (or actually) hit another vehicle	1.44	.76	48
Realize you have no clear recollection of the road along which you have just been traveling.	1.89	1.13	47
Misjudge your exit on a highway and have to make a detour.	2.00	.084	48
Try to pass in risky circumstances when stuck behind a slow-moving vehicle on a two-lane highway.	1.69	1.06	48
Intend to drive to destination A, you realize that you are actually en route to destination B, perhaps because destination B is your more usual destination.	1.72	1.11	47
Take a chance and run a red light.	1.53	1.01	47
Feel angered by another driver's behavior and chase after him/her with the intention of giving him/her a piece of your mind.	1.70	1.44	47
Deliberately disregard the speed limit late at night or very early in the morning.	2.02	1.34	47

Utilized a Likert-Scale where 1 = never and 6 = always

Driver behavior

Variable	Mean	SD	N
Forget you have high beams on until "flashed by other motorists."	2.27	.88	48
When turning right, nearly hit a cyclist who has come up beside you.	1.33	.94	48
In a line of cars turning left onto a main road, pay such close attention to the mainstream of traffic that you nearly hit the car in front.	1.49	.99	47
Drive even though you realize that you may be over the legal blood-alcohol limit.	1.45	1.05	47
Fail to notice someone waiting at a crosswalk.	1.54	.76	48
Underestimate the speed of an oncoming vehicle when passing on a two-lane highway.	1.88	1.13	48
Hit something when backing up that you did not see.	1.58	1.02	48
Fail to notice someone stepping out from behind a bus or parked vehicle until is it nearly too late.	1.46	1.06	48
Get into the wrong lane when approaching an intersection or roundabout.	1.85	1.04	48
Fail to yield right-of-way to a bus that is signaling its intention to pull out.	1.52	1.17	48
Ignore a yield sign and almost collide with traffic having the right-of-way.	1.33	.96	48
Fail to check your mirrors pulling out, changing lanes, turning, etc.	1.52	1.02	48
On a two-lane road, attempt to pass a vehicle that you hadn't noticed was signaling its intention to turn left.	1.44	.91	48
Drive the wrong direction down a deserted one-way street.	1.58	1.08	48
Disregard red lights or stop signs when driving late at night along empty roads.	1.46	.93	48
Drive while looking at a map or GPS device, changing the radio station, etc.	**2.79**	**1.59**	**48**
Fail to notice pedestrian crossing when turning into a side-street from a main road.	1.58	.95	48
Get involved in unofficial "races" with other drivers.	1.56	1.15	48
Brake too hard on a slippery road or steer the wrong way on a skid.	1.58	.95	48
Misjudge the distance between oncoming vehicles when turning left and narrowly miss a collision.	1.52	.79	48

Utilized a Likert-Scale where 1 = never and 6 = always

Observational Traffic Counts

- **2 researchers** recorded the number of <u>vehicles</u>, <u>pedestrians</u>, and <u>cyclists</u> at **2 intersections** in the county
  - **Site 1:** intersection of 2 major highways
    - 4-lane divided highway (GA State Route)
    - 2-lane highway (U.S. Highway)
  - **Site 2:** intersection at city square
    - 2-lane highway (U.S. Highway)
    - 2-lane road (County Road)

- Sites were identified in interviews as having **high traffic volume** and an **increased risk for crashes**

- **15-minute increments** totaling **1 hour**/site

Site 1:
555 motor vehicles, 0 pedestrians, and 0 bicycles

Observation time	Motor vehicles	Pedestrians	Bicycles
1630-1645	160	0	0
1700-1715	132	0	0
1735-1750	154	0	0
1800-1815	109	0	0

Site 2:
163 motor vehicles, 10 pedestrians, and 2 bicycles

Observation time	Motor vehicles	Pedestrians	Bicycles
0740-0755	40	1	0
0800-0815	45	4	0
0820-0835	34	3	2
0840-0855	44	2	0

Conclusions

- **Personal cars** were deemed **essential to travel** due to the **geographic spread** of the county and the subsequent long **commutes**
- **Few** people were observed using **bikes or walking** to get to their destinations
- There is a **gap in driver education** among the community members
- There were **heavy volumes of commercial vehicle traffic**
- The most reported **traffic violation** was **speeding**

Next steps

- Recommend increasing access to driver education in the county

- Increase enforcement

- Review and revise stakeholder interview questions and community survey

- Adjust observational data collection methods

- Expand current Rural Roads Evaluation to include 4 additional counties in Georgia by 2027

UNIVERSITY OF **GEORGIA**

College of Public Health

Health Promotion & Behavior

Traffic Safety Research and Evaluation Group

Our Website

Thank you for listening!

Heather Padilla - hmpadilla@uga.edu
Ansley Kasha - ansley.kasha25@uga.edu