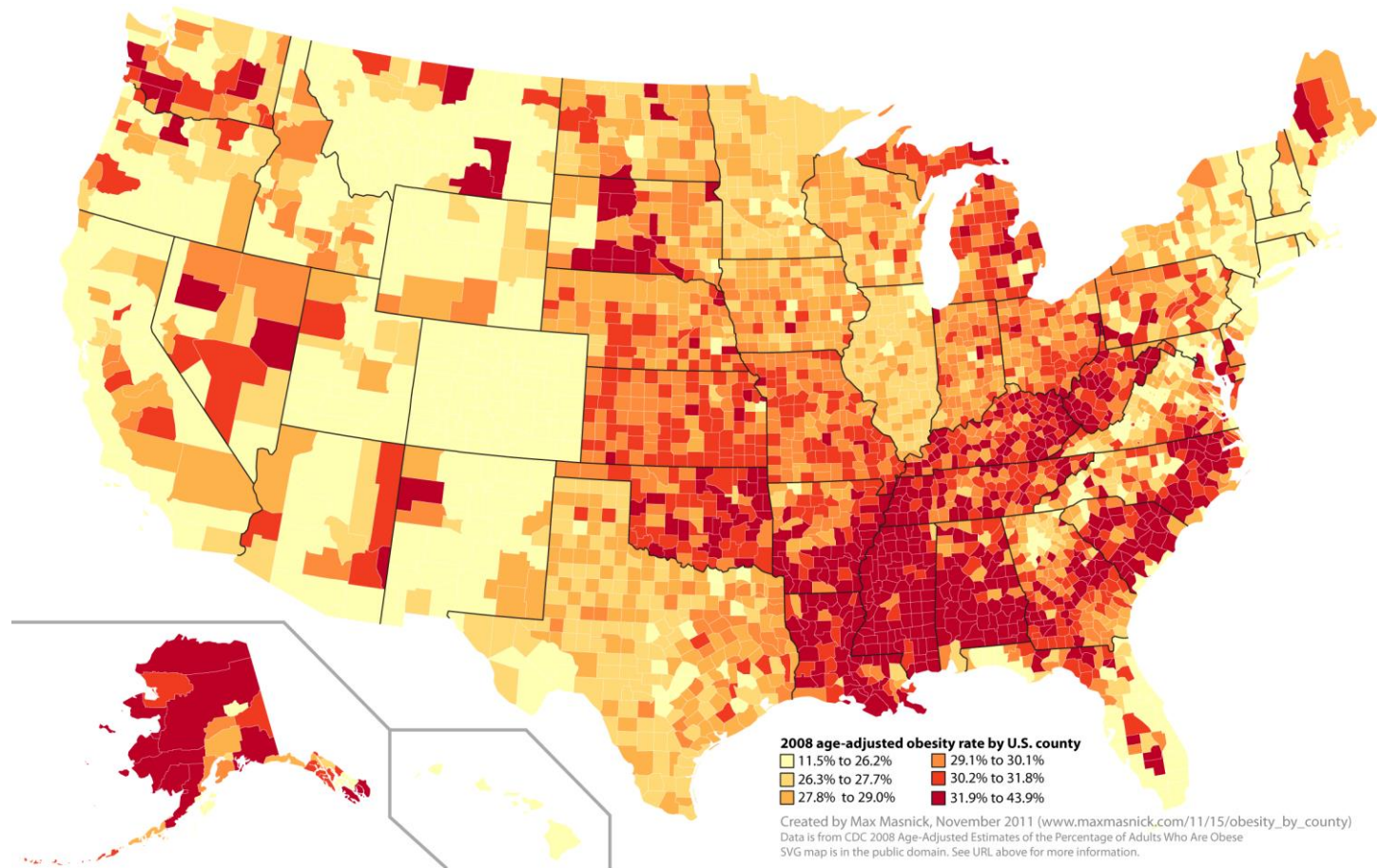# LINKING SUPPLY AND DEMAND FOR OUTDOOR RECREATION IN HIGH-OBESITY COUNTIES OF ALABAMA

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OBESITY IN ALABAMA

- 2nd highest obesity rate in the United States (35.6%)

- 3rd highest hypertension rate (40.4%)

- 3rd highest rate of diabetes (13.5%)

- Health inequalities have been linked to socioeconomic disparities

  - Minority and low-income individuals are disproportionately affected

- Rural residents also experience higher obesity rates than their urban counterparts

2008 age-adjusted obesity rate by U.S. county
- 11.5% to 26.2%
- 26.3% to 27.7%
- 27.8% to 29.0%
- 29.1% to 30.1%
- 30.2% to 31.8%
- 31.9% to 43.9%

Created by Max Masnick, November 2011 (www.maxmasnick.com/11/15/obesity_by_county)
Data is from CDC 2008 Age-Adjusted Estimates of the Percentage of Adults Who Are Obese
SVG map is in the public domain. See URL above for more information.

OBESITY AND COMMUNITY ENVIRONMENTS

- Community (built) environments can play a key role in obesity patterns

- Our surrounding environments can impede or promote a healthy lifestyle

  - Physical activity environment

    - Location and densities of physical activity sites

    - Walkability

  - Food environment

   - Location and densities of food stores

OBESITY AND COMMUNITY ENVIRONMENTS

- Health inequalities are often explained through a **neomaterial** paradigm

  - Focus on exposure to material resources (things!)

- More community resources → healthier population

  - Outdoor recreation (parks, lakes, forests, trails)

  - Food stores (grocery stores, farmers markets)

  - Transportation (sidewalks, bike lanes, public transit)

 - Healthcare (hospitals, clinics, doctors)

ALPROHEALTH: A CDC-FUNDED INITIATIVE

- **ALProHealth**: Alabama Preventing and Reducing Obesity – Helping to Engage Alabamians for Long-Term Health

- 3-year pilot project funded by the Centers for Disease Control and Prevention

  - Recently approved for additional year

- Mandated to work in counties with adult obesity rates greater than 40% (BRFSS 2012)

- Implementing research-based interventions proven to reduce obesity

- 3-prong approach

  - Nutrition Education

  - Food Retail

  - Physical Activity

ALProHealth Counties
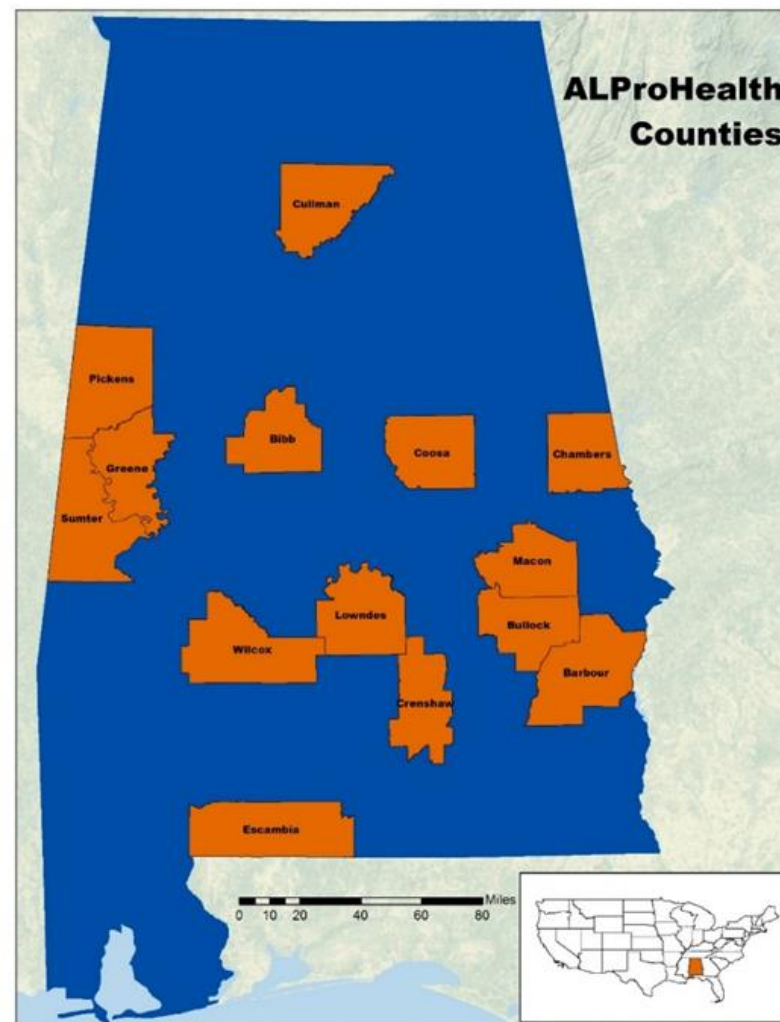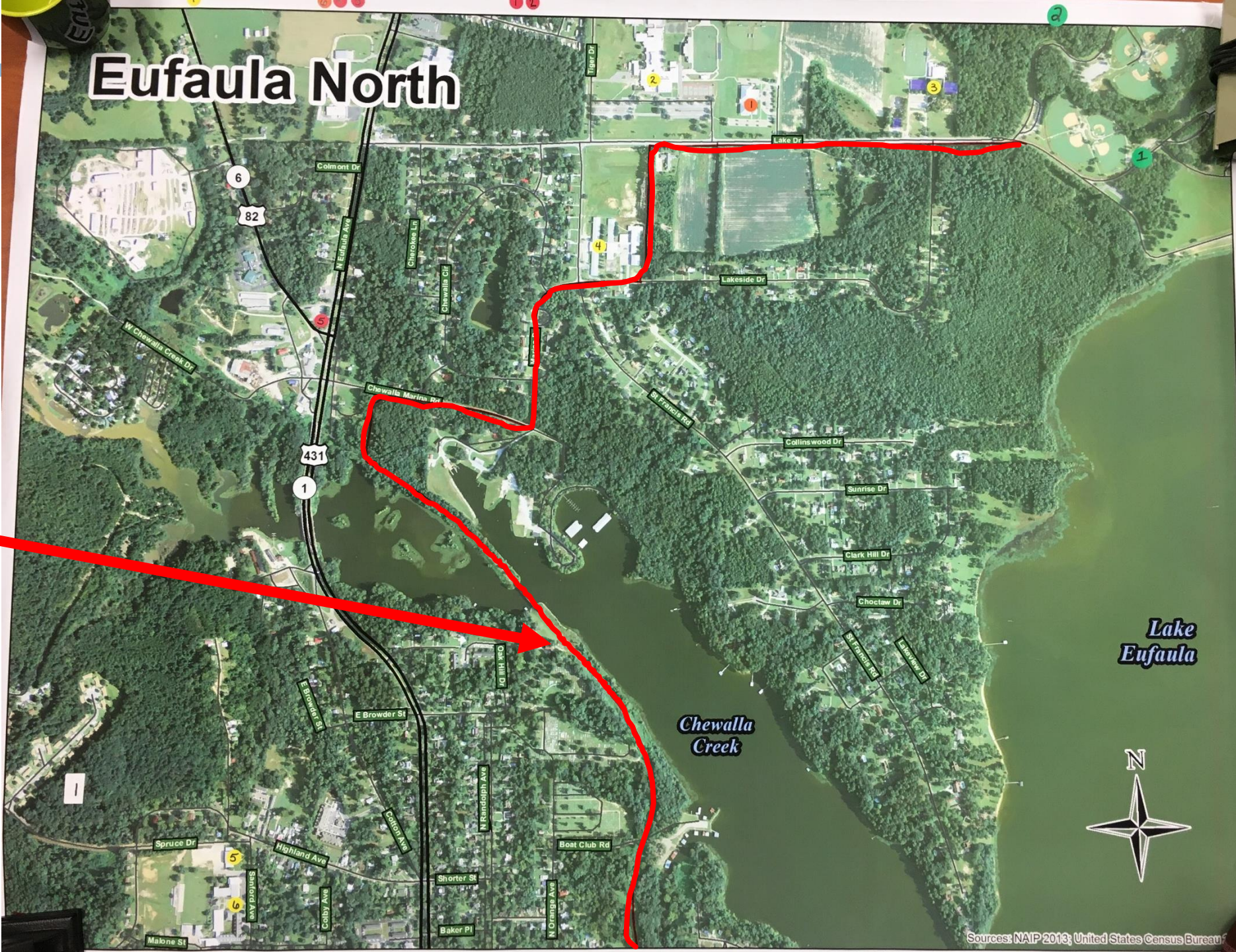
ALPROHEALTH COUNTY COMPARISONS
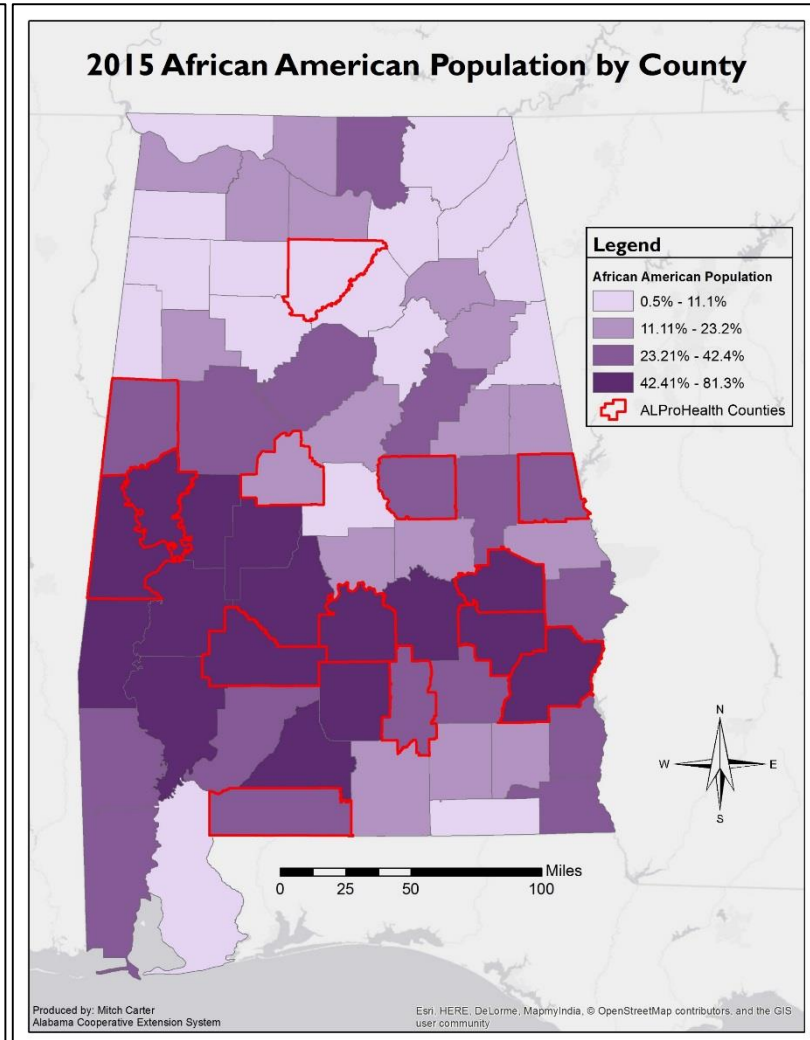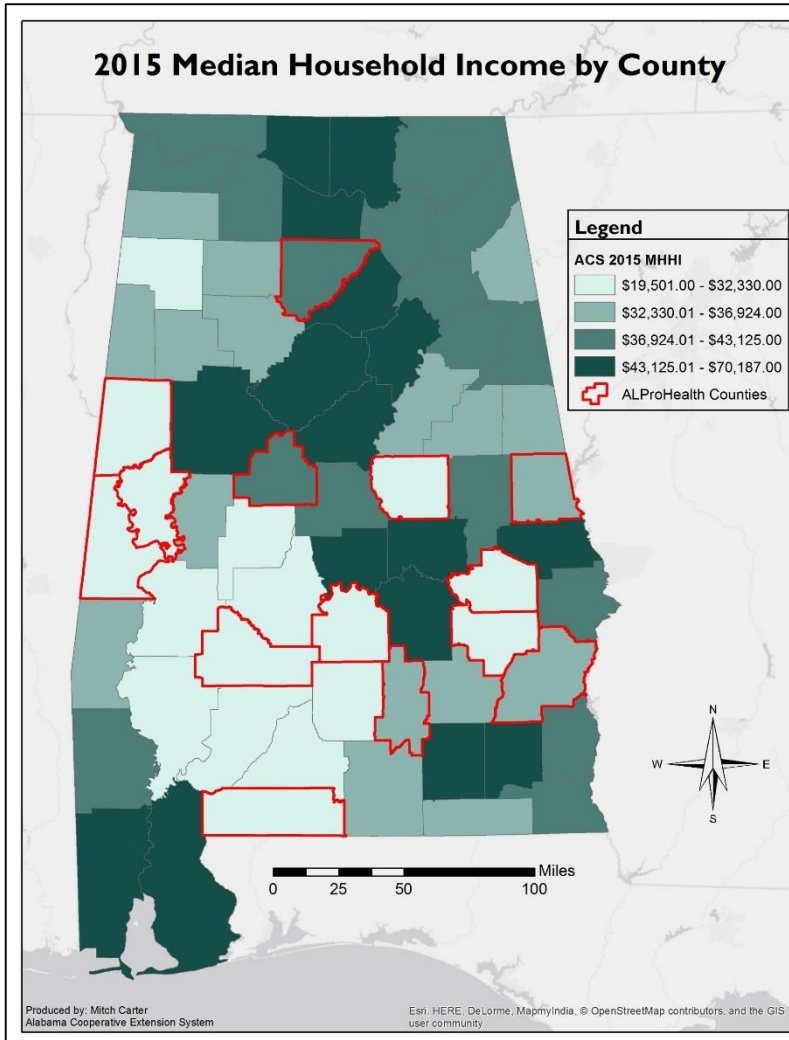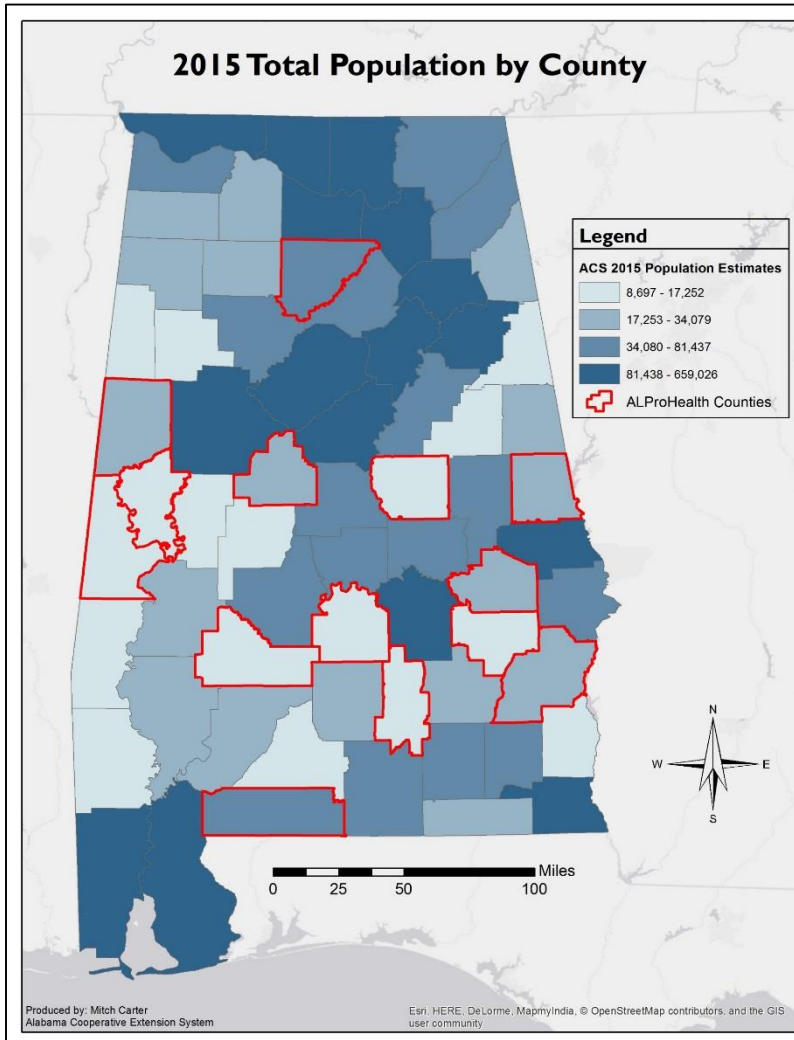
NEEDS ASSESSMENT

- **Focus groups with community coalitions**
    - Community-level first; county-level expansion
    - Coalitions are made up of key players in the community and focus on supporting healthy behaviors in the community
        - Mayors, city planners, faith-based leaders, Extension staff, school administrators, local residents
    - Large areal photos (36" x 48") of the communities
    - Qualities of the community that contribute to (un)healthy citizens
    - Physical locations were marked on the maps
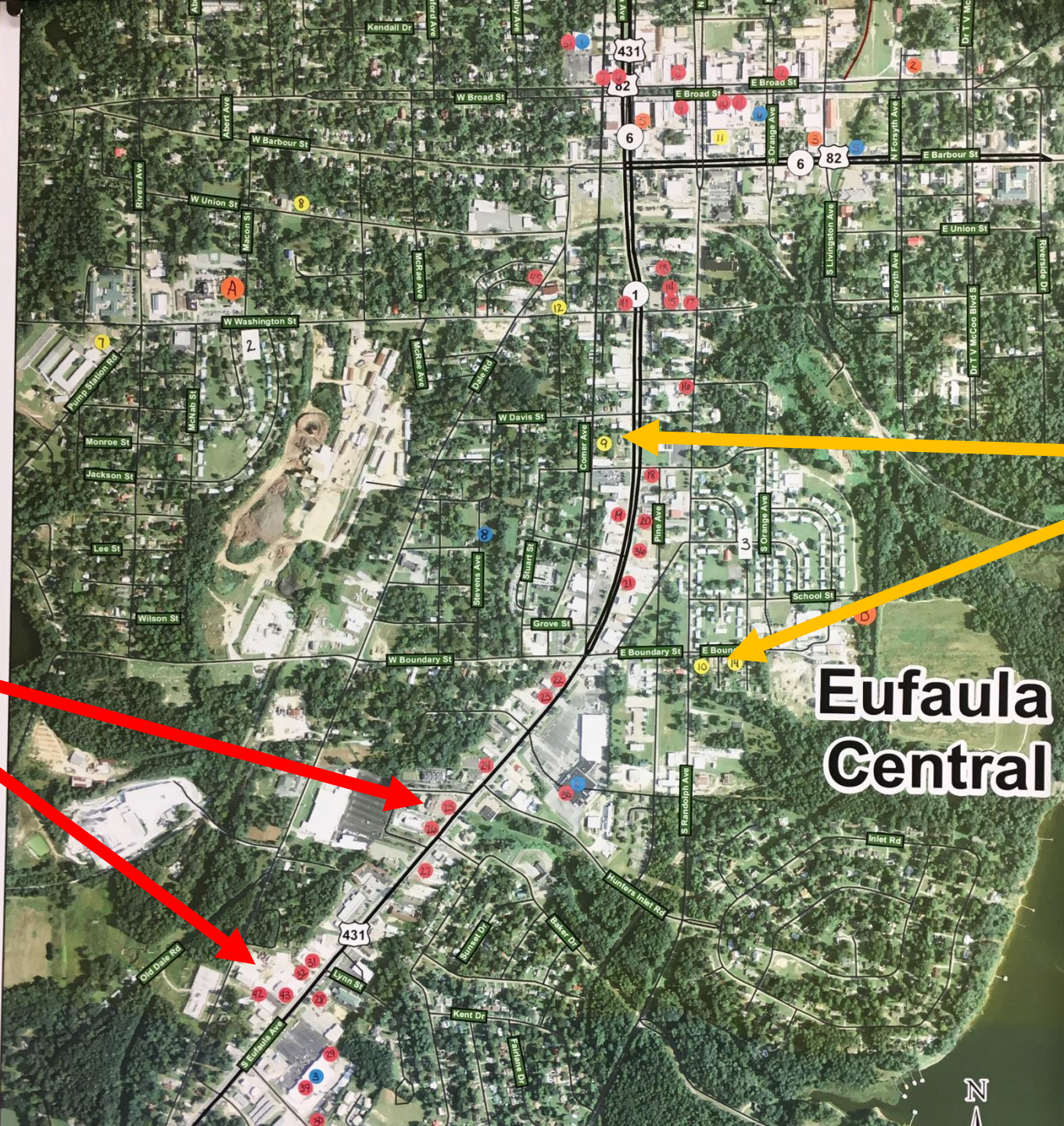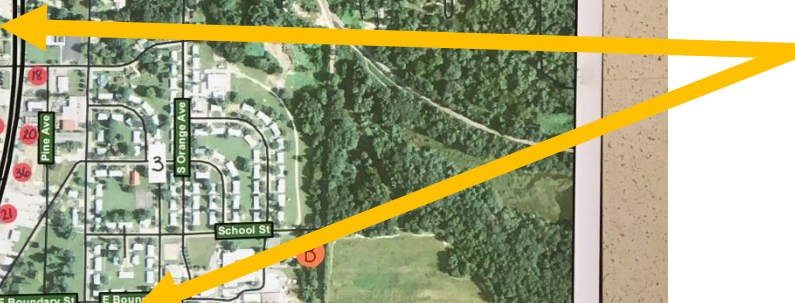
Eufaula North

Walking trail

Schools and daycare centers

Food locations

Eufaula Central

Marked locations

South
LaFayette

Cemetery
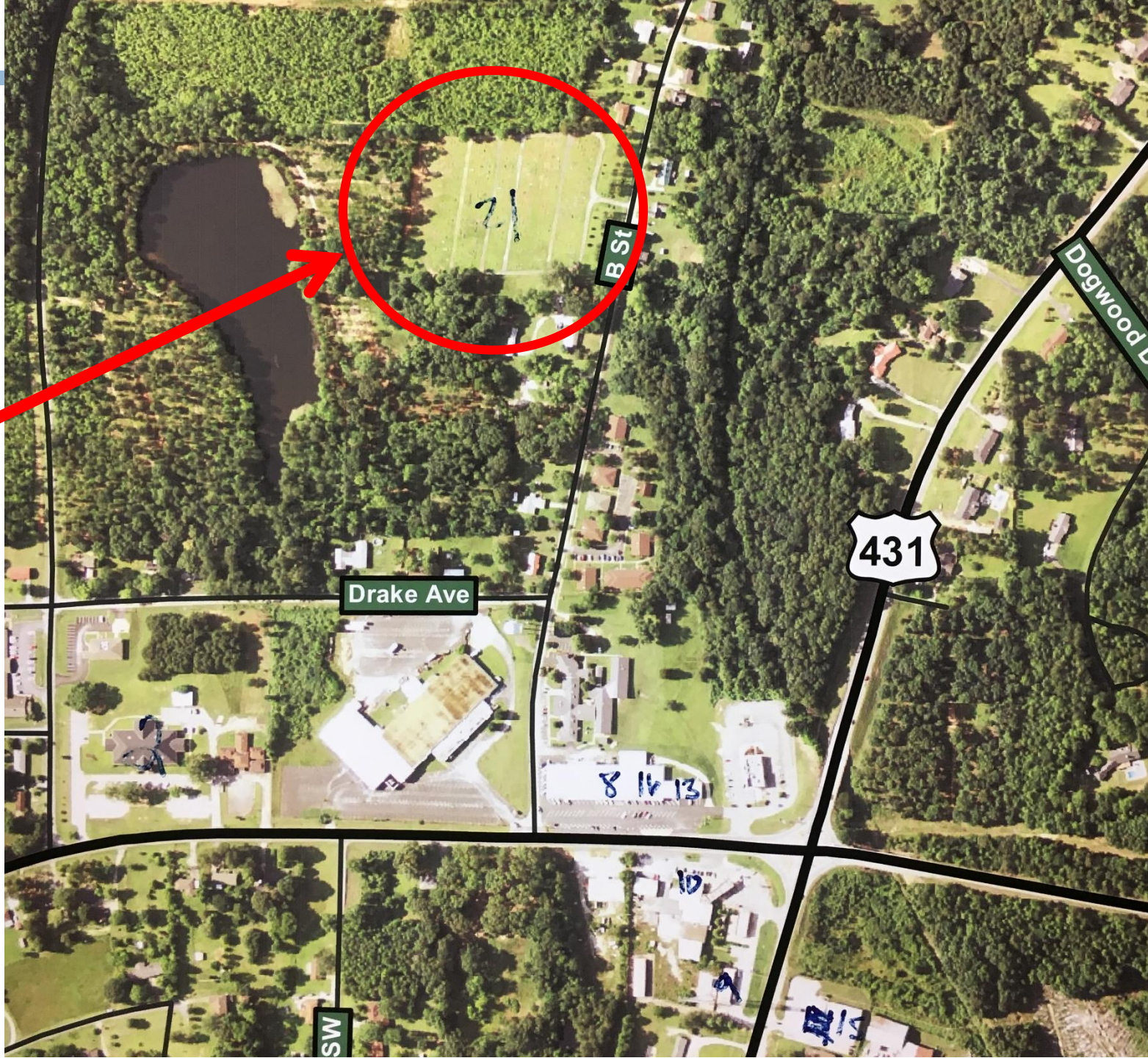
NEEDS ASSESSMENT

- **What about the general population?**
  - Community coalitions are a selective group

- **Mail survey**
  - Survey was developed to elicit responses regarding outdoor recreation and food access (preferences, needs, and barriers)
  - Survey was designed using NSRE and SCORP (Oregon and Alabama) activities and data
  - Outdoor activity participation
  - Constraints to outdoor recreation (Likert)
  - Potential projects (Likert)
  - Dietary information
  - GIS techniques can be applied to highlight **spatial patterns of use and needs**

2016 OUTDOOR RECREATION AND FOOD ACCESS SURVEY

UNDERSTANDING YOUR PARTICIPATION IN OUTDOOR RECREATION ACTIVITIES AND YOUR ACCESS TO FOOD
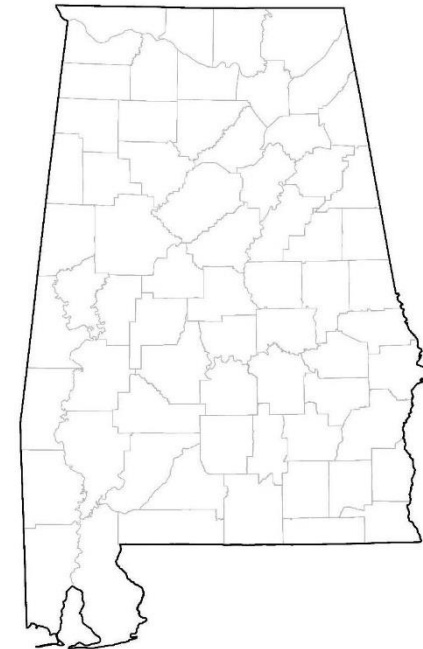
A STUDY BY:
ALABAMA COOPERATIVE EXTENSION SYSTEM
AND
THE SCHOOL OF FORESTRY AND WILDLIFE SCIENCES AT AUBURN UNIVERSITY

RESPONSE RATE

- Sent to 500 random households in 16 counties

- 8,000 total surveys mailed

- Response rate

  - **1,448 total returned**

  - 1,397 returned questionnaires

  - 51 online responses

  - 605 non-deliverable addresses

  - $\dfrac{1{,}448\ (usable\ responses)}{7{,}395\ (deliverable\ addresses)} \times 100 = \textbf{19.6\%}$ **response rate**

✦DIRECTIONS✦

In the following tables, approximate the number of times you or anyone in your household participated in any of the following outdoor recreation activities in the past 12 months.

Most people will not have participated in many of the following activities, so you will likely skip many of the following sections.

- The first column identifies a specific activity.
- Please use the 2nd column to indicate how many times you or anyone in your household participated in the listed activity less than a 1-hour drive from your home.
- Please use the 3rd column to indicate how many times you drove more than 1 hour for the listed activity.

7. Did you or anyone in your household participate in any of the common outdoor activities listed in the table below in the past 12 months?

○ Yes   ○ No (if no, skip to question #8)

Outdoor activities	Approximate # of times less than 1 hour from home	Approximate # of times more than 1 hour from home
Walking/jogging on sidewalks or streets for pleasure or exercise		
Sightseeing or driving for pleasure		
Picnicking		
Gathering with family or friends in a park or other outdoor venue		
Gardening or landscaping		
Attending outdoor concerts, fairs, or festivals		
Dog walking or visiting a dog park		
General play at a park or playground		
Skateboarding, inline skating, or roller skating		
Visiting historic sites or other historic parks		
Swimming in an outdoor pool		

4

RESPONSE RATE BY COUNTY

County	Number of Responses
Barbour	92
Bibb	66
Bullock	91
Chambers	88
Coosa	101
Crenshaw	100
Cullman	112
Escambia	93
Greene	80
Lowndes	74
Macon	89
Pickens	83
Sumter	87
Wilcox	87
Jefferson (non-ALProHealth)	76
Shelby (non-ALProHealth)	130

Average responses per county = 91

Respondents to Outdoor Recreation Survey

Legend
• Respondents
County Boundary
ALProHealth Counties

Produced by: Mitch Carter
Alabama Cooperative Extension System

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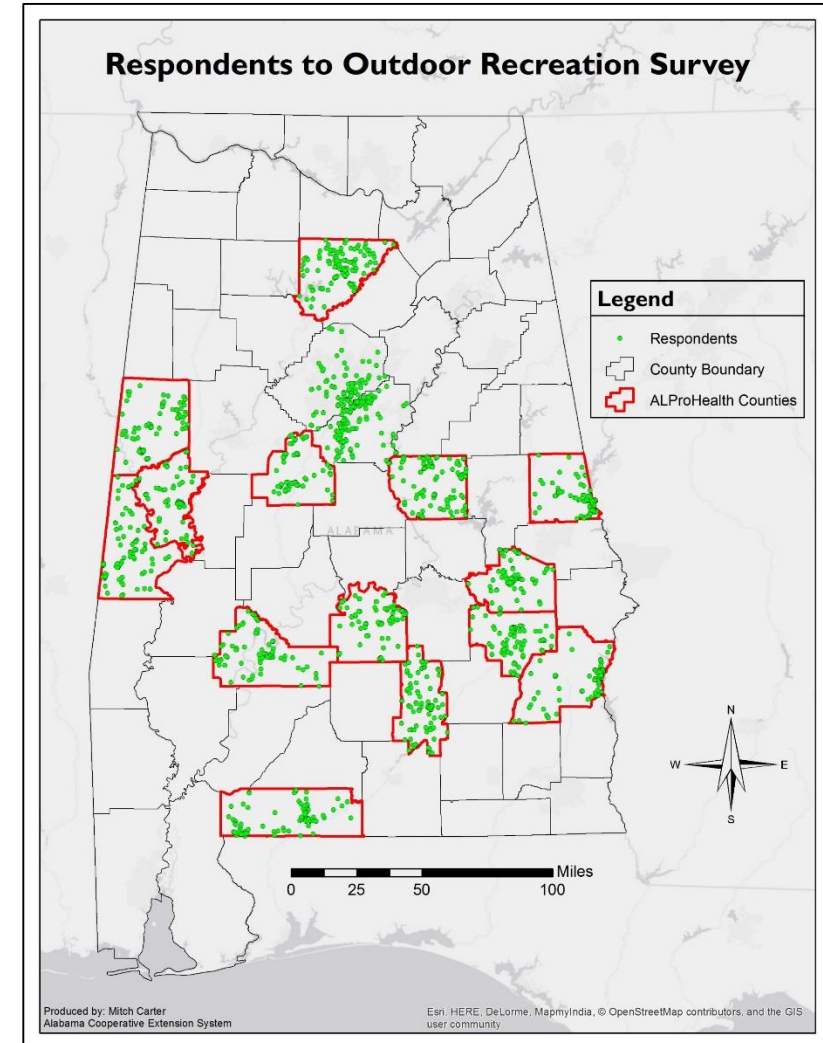
RESULTS: ACTIVITY PARTICIPATION

Top 10 outdoor recreation activities by participation in the last 12 months:

Activity	Percent Participation
Walking on sidewalks or streets for pleasure	57.8%
Gardening or landscaping	56.7%
Gathering with family or friends at a park	54.2%
Freshwater fishing	49.1%
Visiting an ocean or beach	44.5%

RESULTS: DEMAND FOR FUTURE PROJECTS

Top 10 demands for potential community projects to see in the future:

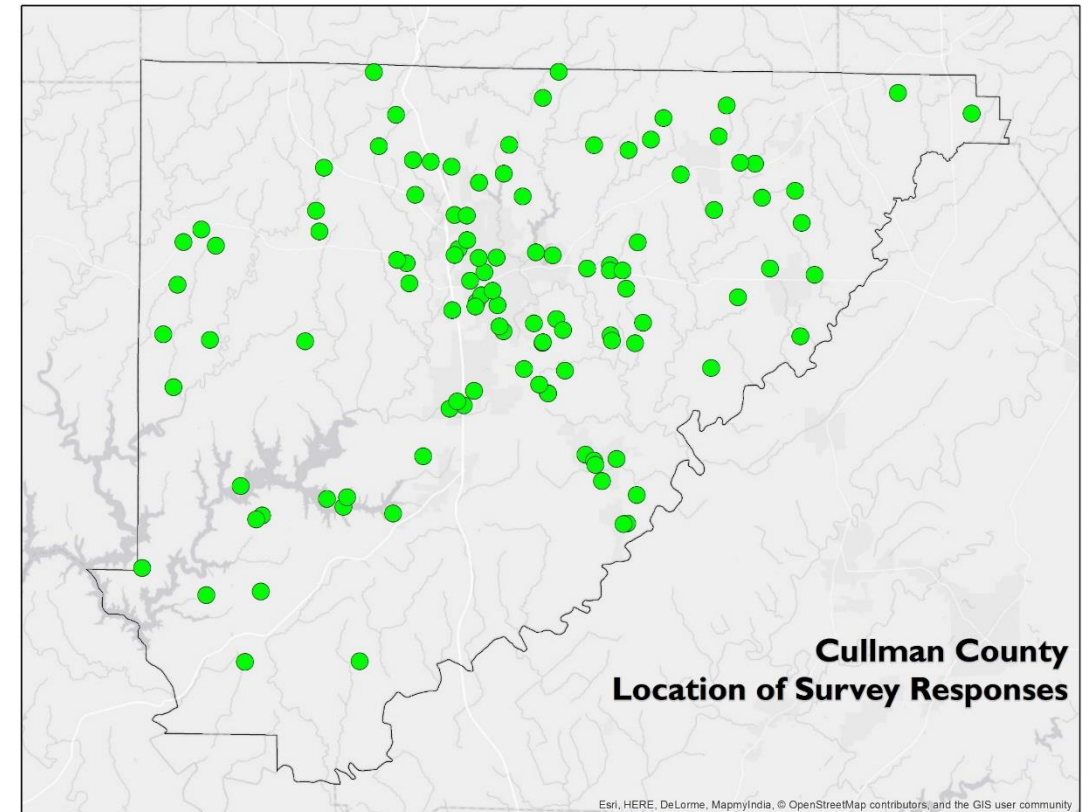| Project	Average [1(low) – 5(high)]
Maintenance of existing park and recreation facilities	3.94
Playgrounds for children	3.85
Paved walking trails and paths	3.63
Natural surface walking/hiking trails and paths	3.6
Picnic areas and pavilions/shelters	3.58

RESULTS: CONSTRAINTS TO OUTDOOR RECREATION

Top 10 reasons for limiting participation in outdoor recreation:

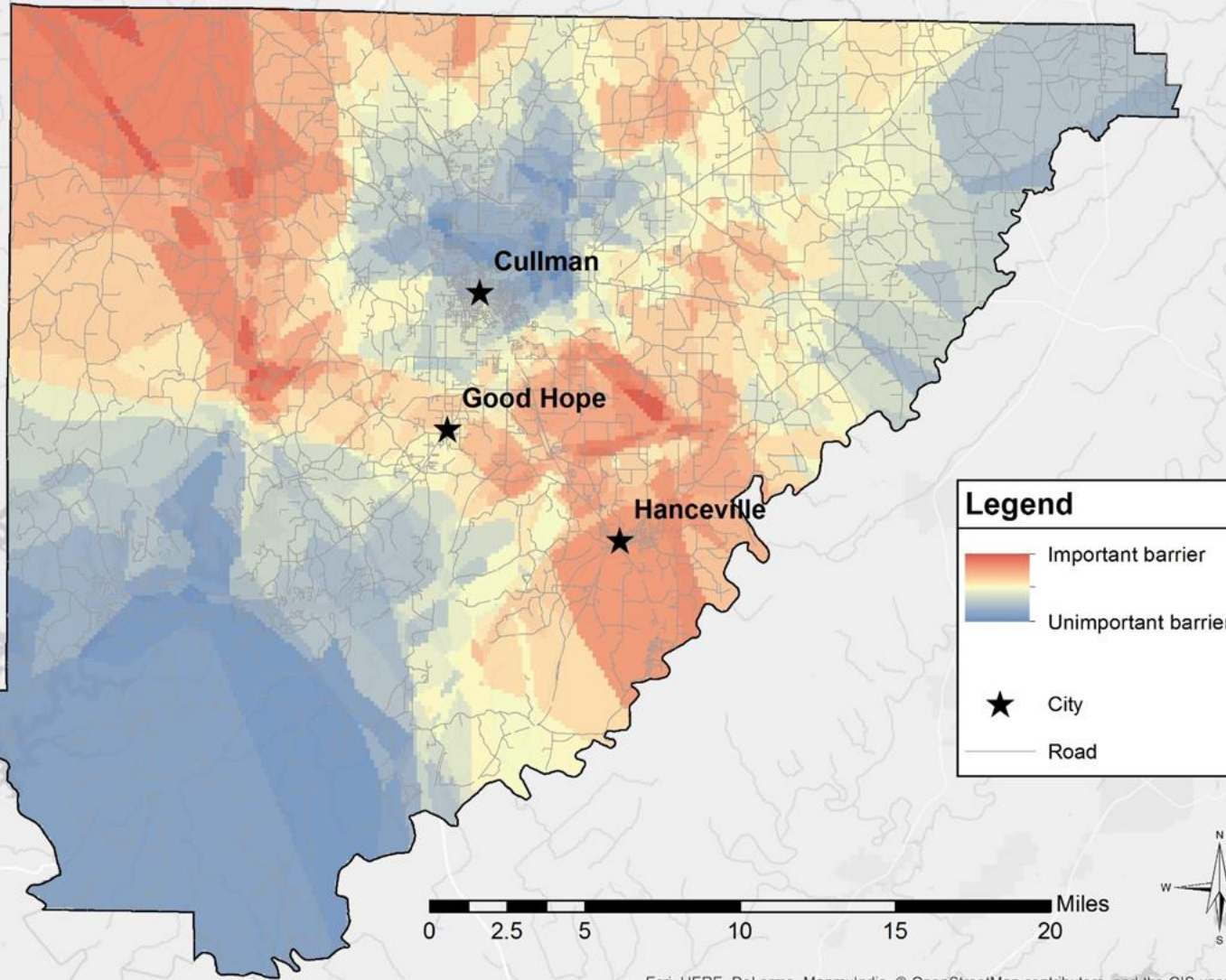| Barrier	Average [1(low) – 5(high)]
Not enough time; too busy with family, work, or other duties	3.38
Travel distance; not enough nearby facilities	3.18
High fees	2.87
Health concerns	2.76
Overcrowding	2.59

RESULTS

- How can spatial analysis help?

  - Each survey is tied to a geographic location (home address)

  - Large enough samples allow for generalizations to be made based on survey responses

  - We can:

    - Identify which barriers to PA are strongest in an area

    - Identify potential PA projects that would be most strongly supported in an area

    - Identify trends in participation of certain activities to promote those in a particular area

    - Explore environmental injustices based on census data

Cullman County
Location of Survey Responses

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Cullman County

Potential community project: Maintenance of existing facilities

Legend

Important project

Unimportant project

★ City

Road

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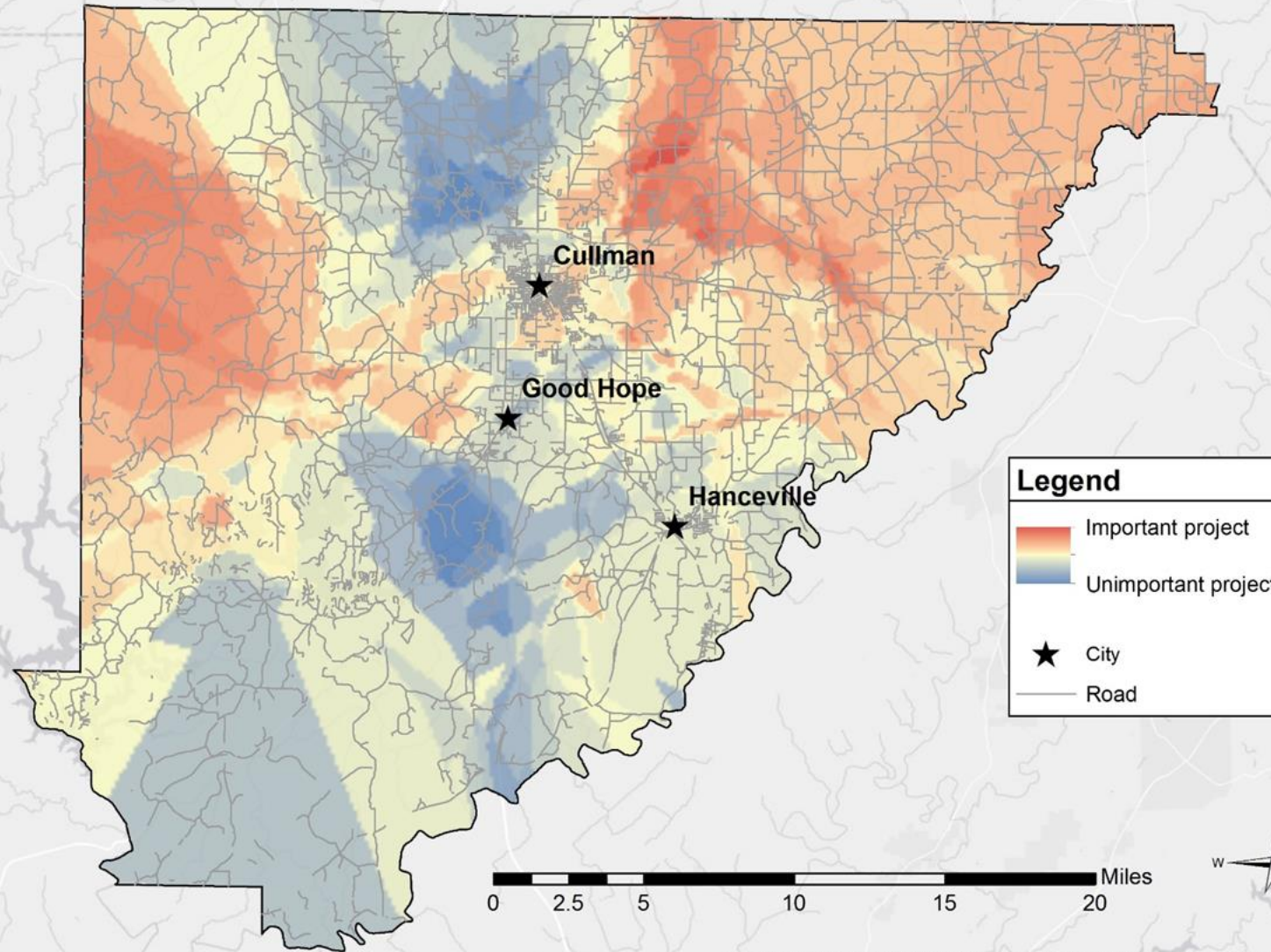
Cullman County
Level of Use: General play at a park or playground

Legend
No Use
Low Use
Medium Use
High Use

Cullman
Good Hope
Hanceville

Miles
0   2.5   5   10   15   20

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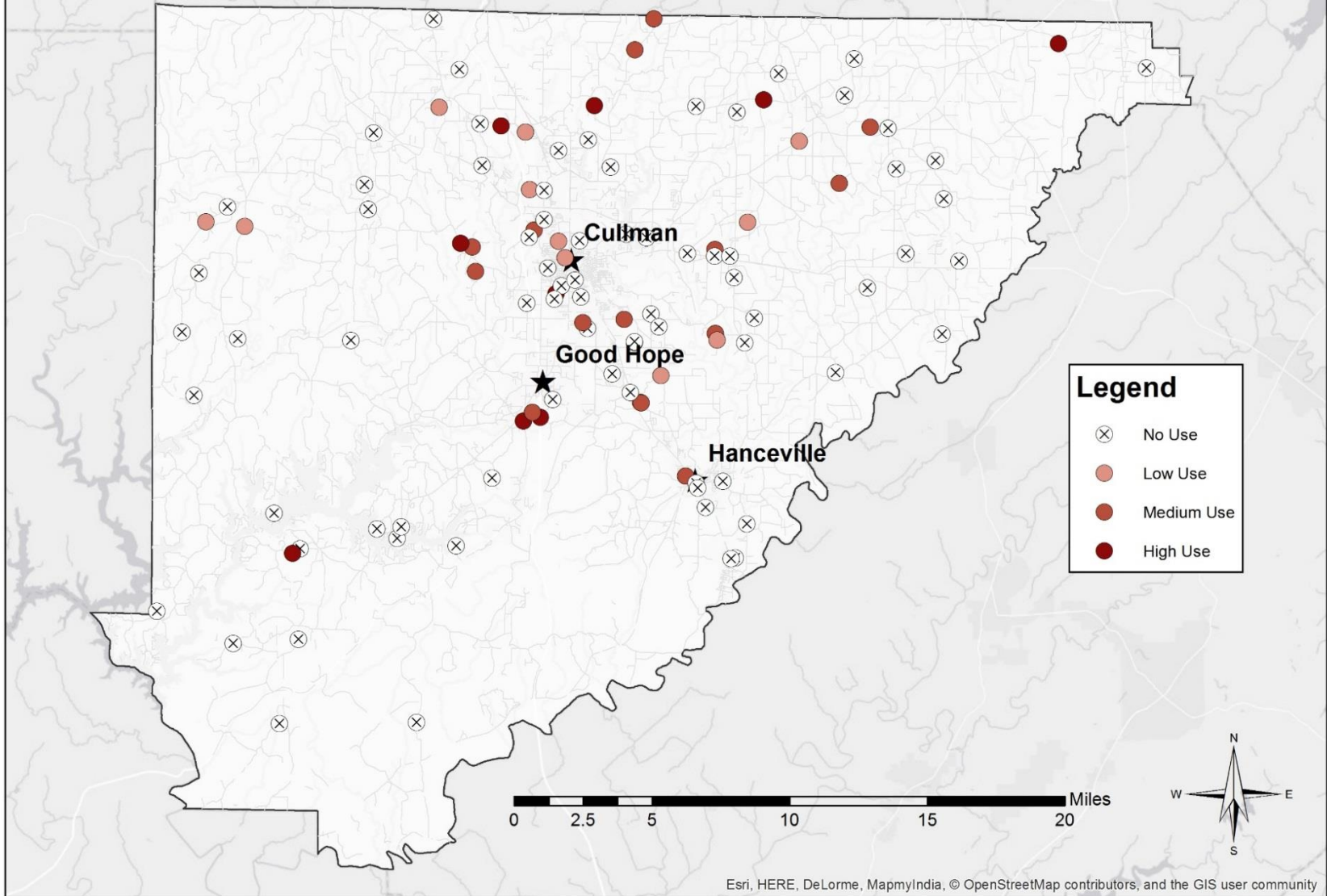
Cullman County
Level of Use vs. Median Household Income

Legend

⊗ No Use

○ Low Use

● Medium Use

● High Use

2015 MHHI

■ < $30,982.00

■ $30,982.01 - $37,279.00

■ $37,279.01 - $40,734.00

■ $40,734.01 - $49,550.00

■ $49,550.01 - $65,134.00

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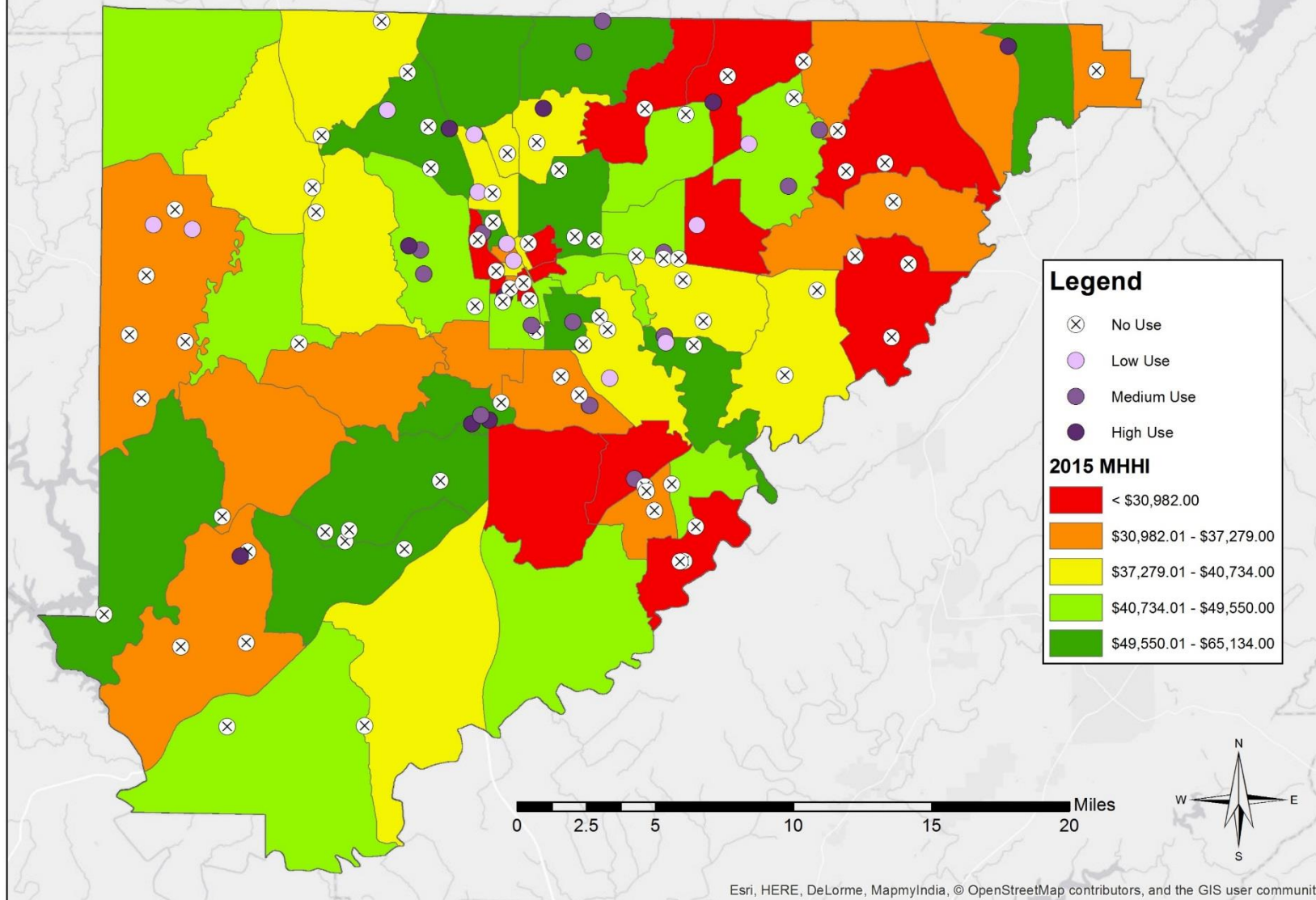
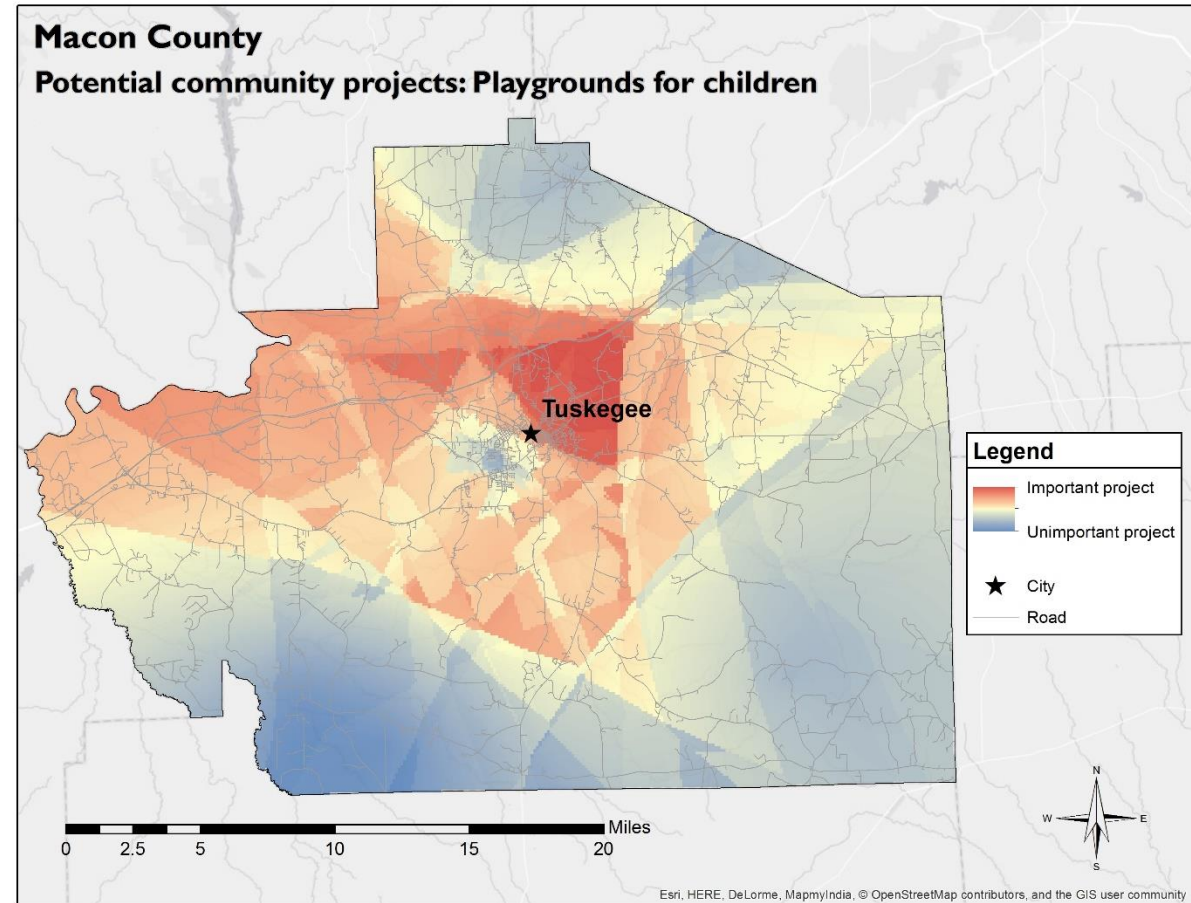| Level of playground or local park use	Average Block Group MHHI
High use	$45,255
Medium use	$41,586
Low use	$41,769
No use	$39,317

DISCUSSION

- How can this method benefit health and outdoor recreation research in a rural setting?

  - Focus groups allow for collection of specific data that will only be known to local residents (cemetery as a location for physical activity; paved surface much like a walking trail)

  - Survey allows for random sampling of residents; complementary to the data provided by the health coalitions

  - Methodology needs verification of accuracy; currently it can be seen as a supplemental tool for coalitions

  - How can these methods be more effectively combined?

DISCUSSION

- Interpolation of social data

  - Not perfect (does not follow the pattern of rainfall, temperature, or soil composition data)

  - Need verification of methods

  - Kriging vs. IDW vs. Spline vs. Natural Neighbor

- "Spatial weighting" of data

  - Activity use specifically. If one person is counted 3 times, their participation in an activity does not triple.

  - Assign the same data to two other random points that fit the demographics of the respondent?

Macon County
Potential community projects: Playgrounds for children

Tuskegee

Legend
- Important project
- Unimportant project
- ★ City
- Road

Miles
0   2.5   5   10   15   20

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ACKNOWLEDGEMENTS

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