

# ACRE-Duke Partnership to Improve Sanitation Access in Lowndes County, AL



**BASS CONNECTIONS**

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Bass Connections  
in Energy & Environment

This Bass Connections project aims to understand the reasons for the lack of proper sanitation in Lowndes County, improve sanitation access in the county and explore racial and economic justice in rural America.

Environmental Protection Agency Forms  
1970

First Environmental Justice Text book  
1990

Environmental Justice Executive Order  
1994

UN Recognizes Human Rights to Water and Sanitation  
2010

Warren County Protests  
1982

First National People of Color Environmental Leadership Summit  
1991

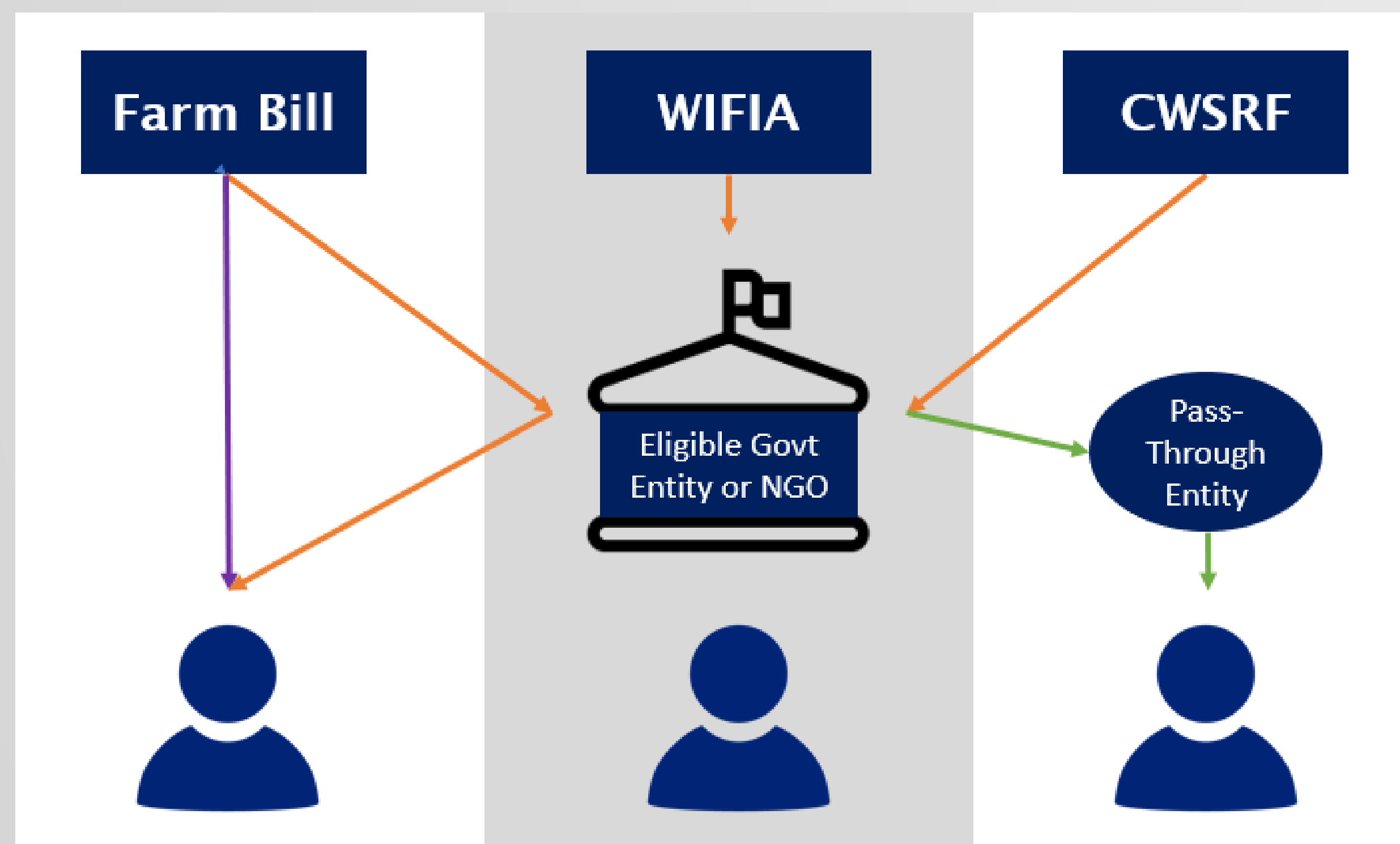
Alabama Center For Rural Enterprise Forms  
2002

UN Special Rapporteur visits Lowndes County, AL  
2017

## Federal Funding Team

Federal funding allocated to states and municipalities for wastewater improvements often do not reach rural residents that are disconnected from centralized sewer. Our team researched the federal programs that may make funding available for decentralized wastewater systems, like individual septic units, to improve sanitation in rural communities. Specifically, we looked at the **Farm Bill amendment**, the **Water Infrastructure Finance and Innovation Act (WIFIA)**, and the **Clean Water State Revolving Fund (CWSRF)**.

## AVAILABILITY OF FEDERAL WASTEWATER FUNDS TO HOUSEHOLDS



## BARRIERS TO ACCESSING FEDERAL WASTEWATER FUNDS FOR HOUSEHOLDS

Program	Funding Type	Can individuals apply?	Maximum Amount	% caps	Income cutoff	Access to information	Heir property system
CWSRF	Loans	No*	none	none	none	Medium/Low	Issue across the board
WIFIA	Loans	No	none	49%	none	Low	
Farm Bill	Sec. 6409 Loans & Grants	Yes	\$15,000	none	60% non-metropolitan median family income	TBD	
	Sec. 6403 Grants	No	\$200,000	75%	Variable	Low	

## Environmental Justice Timeline Team

The Environmental Justice Timeline shows the history of environmental justice across the United States in an interactive format to give context to the Lowndes County struggle for justice. The Timeline includes interviews from environmental justice advocates about their work. Below are some of the best quotes from the interviews:

"We have to work on strategies and get the research done and policy done that will directly empower our communities so that we're not waiting for outsiders to ride in and save us."  
- Robert Bullard, Father of Environmental Justice



"We have to make sure that communities are not an afterthought as we move forward and make real change."  
- Mustafa Ali, Former Director of the EPA Office of EJ

"You know, people talk about trauma and how trauma is passed down from generation to generation and it's in your blood. But that resistance is in your blood too."  
- Cherri Foytlin, Indigenous Environmental Network Activist



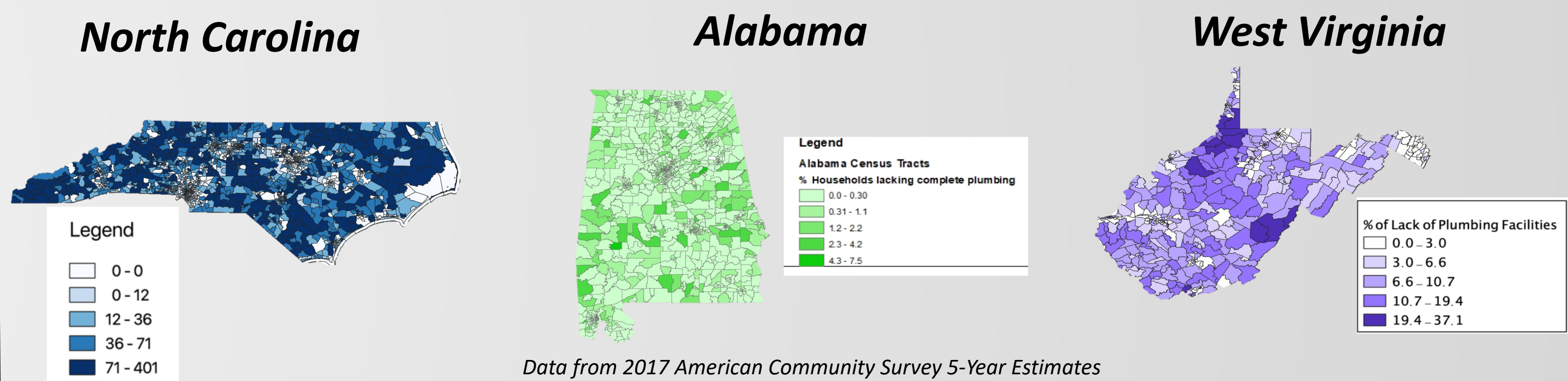
The group also cataloged and collected a record of Duke University research and education about environmental justice in a central location so that this information could be easily found and used as a resource in the future. The following is a summary of the information collected thus far:

- 21 Duke institutions / projects with Environmental Justice themes including:
  - Kenan Institute for Ethics
  - Duke University Superfund Research Center
  - Duke Environmental Justice Workshop (2012-2013)
- 30+ Duke courses (from Fall 2013 - Spring 2019) including:
  - Environment 274: People, Plants, and Pollution - Introduction to Urban Environments
  - Global Health 340: Social Determinants of U.S. Health Disparities
  - History 345: North American Environmental History
- 30+ Duke faculty, staff, and students involved in environmental justice projects

## Engineering Team

- Census data, government resources, and physical features and topography of the state were examined to find factors that affect septic system functionality in Alabama.
- North Carolina and West Virginia were also studied and juxtaposed against Alabama to explore commonalities in sanitation issues.

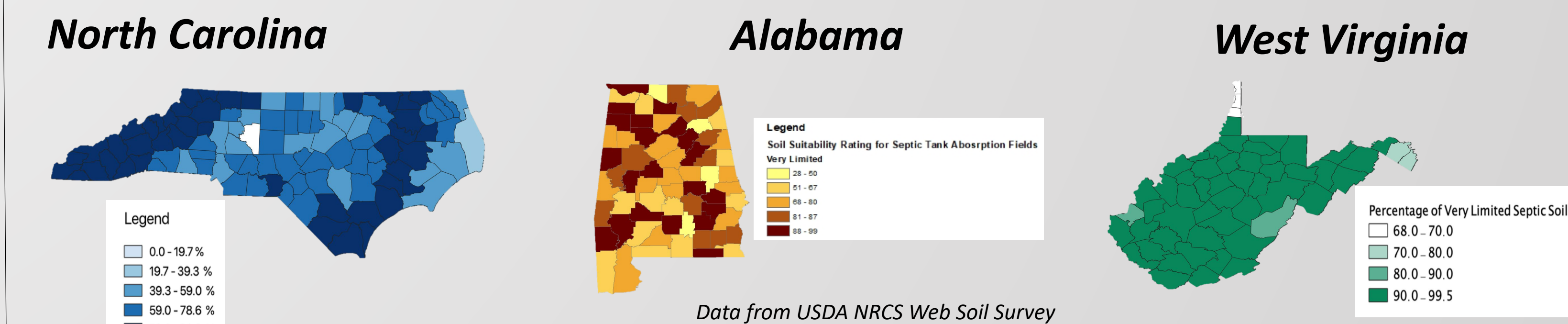
### Residents Lacking Complete Plumbing (Census Tract)



### Where do the highest rates of plumbing inadequacy occur?

- NC : Western mountain region and eastern coastal plain
- AL : Black Belt region – a group of counties across central Alabama
- WV : Clustered in the northern part (labelled as distressed region)

### Degree of 'Very Limited Suitability' for Septic Absorption Fields as Onsite Wastewater Treatment System



### Overlay of Physical Features & Census Data - Lowndes County, AL

Red indicates poorly-draining soils with low hydraulic conductivity, while green indicates soils that drain well and may be better suited to onsite wastewater treatment systems.

Locations of three municipalities and their lagoon treatment reservoirs are displayed, overlaid with the topography of the county. Red represents low elevations, while green represents high elevations.

13,194 identified tax parcels in Lowndes County are marked with green dots and associated with elevation, soil, and land value data. Also combined with information about the distance of the parcel to the nearest municipal treatment system.

Data from Natural Resource Conservation Service | Data from Google Earth | Data from Flagship GIS

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