

# Assessing Food Vulnerability in Monroe County, IN

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# Introduction

## Food Vulnerability:

- In Bloomington, the top three barriers to food access were high food prices, time to prepare and cook food, and low wages
  - Car accessibility

**Local Food System:** vague term – we defined a local food system as one that provides access to quality, affordable, and culturally appropriate foods grown and/or processed locally.

The US operates in a global food system and lacks creation, operation, and support for local food systems.

- Only 5% of US counties are self-sufficient in terms of fruits and vegetables (mostly in CA).
- Heavy focus on supplemental programs – SNAP/WIC – which aim to address food insecurity, but can persist poor quality diets.

This study aims to evaluate the current local food system in Monroe County, IN.

- Food access support due to socioeconomic or demographic factors has been distributed, but may be limited to the City of Bloomington.

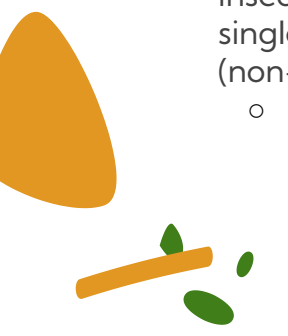
# Background & Research Questions



## USDA Food Access Research Atlas

- Data is from 2015 to 2019 – assesses only supermarket accessibility & doesn't include information about local food options.
- Considers urban low access at 1 mile or below and rural areas at 10 miles or below.

## Indiana Food Insecurity

- In 2022, Indiana had a higher food insecurity rate and higher poverty rate than the national average.
  - Household characteristics coupled with food insecurity – income below the poverty level, single women with children, black (non-hispanic), and hispanic residents
    - Disparities in food vulnerability & lack of accessibility of supplemental government programs.
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## Local Food Systems Inclusivity

- Recent rises in stores selling nutrient rich foods – Fresh Thyme, Whole Foods, Bloomingfoods – that aren't accessible to impoverished or vulnerable populations.

## Research Questions

- How does food access in Monroe County compare to food vulnerability assessments? How can a more detailed vulnerability assessment provide more information?
- What are current barriers to promoting local food systems? How can residents/local governments alleviate those challenges?
- How does food access in Bloomington relate to Monroe County?



# Data Collection & Methods

## Food Vulnerability & Insecurity Index

**Data:** American Community Survey (ACS) 5-year estimates. Collected Census Tract level data for Monroe County.

**GIS Application:** Data was normalized and weighted on a 0–1 scale. This index was mapped onto the Census Tract boundaries for Monroe County.

## Locations & Distance Analysis


**Data:** Locations of organizations supporting the local food system and food vulnerability from various sources with categorization of affordability, seasonality, and type of service.

**GIS Application:** Distance analysis to analyze accessibility of each organization compared to the index.

## Hot Spot Analysis

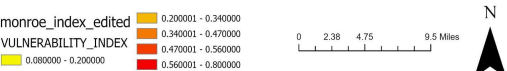
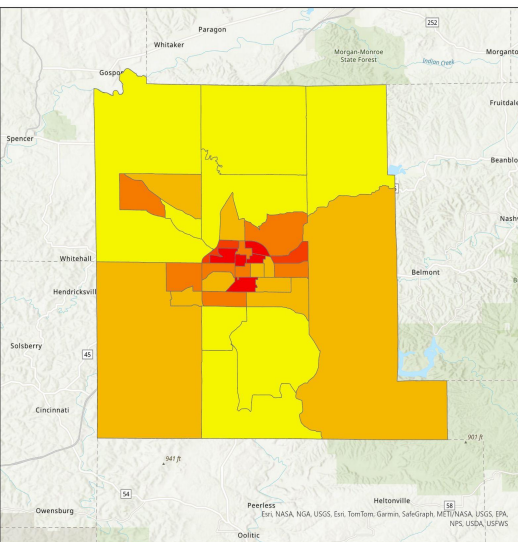
**Data:** Add grocery store data to local food and accessible options.

**GIS Application:** Hot spot analysis to analyze equitable food options with food vulnerability signifiers to show any relevant spatial disparities.

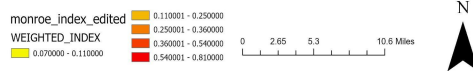
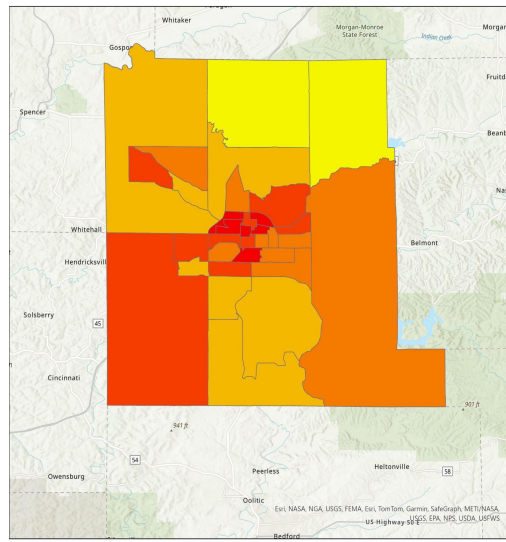


# Food Vulnerability & Insecurity Index

Vulnerability Index by Census Tract in Monroe County, Indiana



Weighted Vulnerability Index of Monroe County, Indiana



To figure out where food insecurity is most likely to occur in Monroe County we picked four variables that could help represent key factors that could contribute to poor food access. We then created an normalized index with those key factors weighted 30% each except Single-Parent Households which we weighted at 10%.

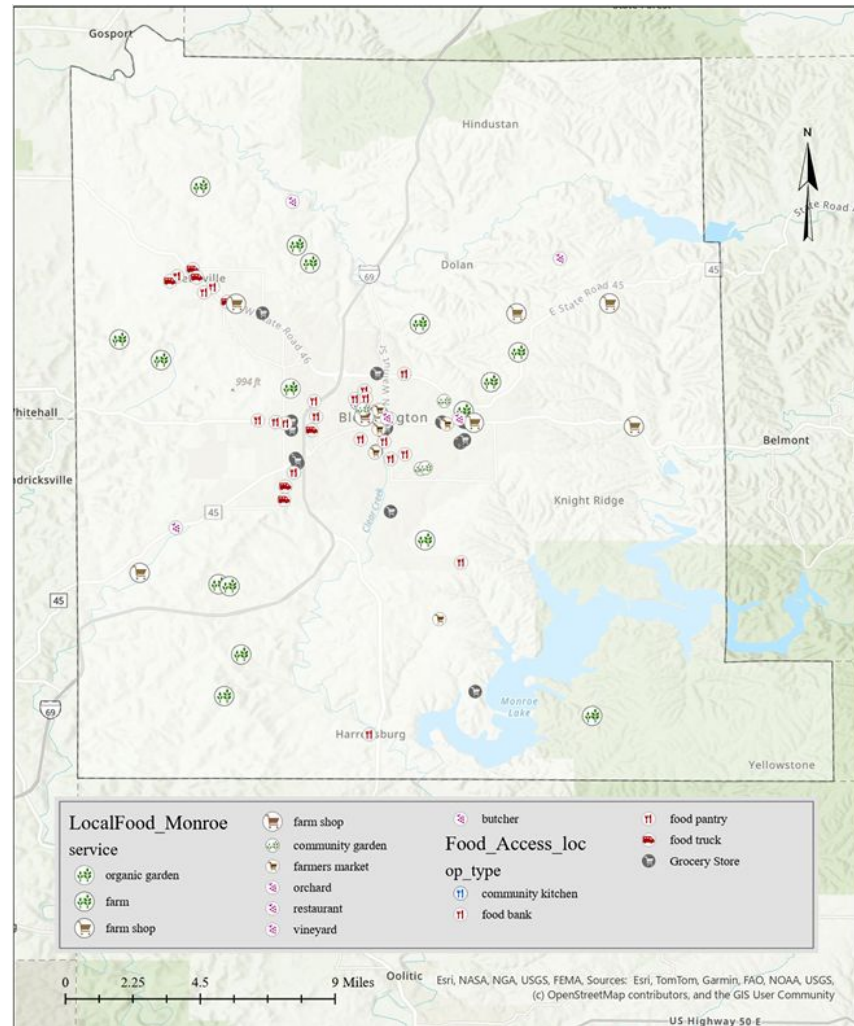
- SNAP Participation
- Vehicle Access
- Single-Parent Households
- Rent Burden (30% or higher)

Mapping this index will help show where people might need help. My index shows that 3 of the top 5 most vulnerable census tracts are areas where students mostly live. It also showed that the most vulnerable census tracts were those within Bloomington's city limits. This shows the food access in Monroe County is likely more related to financial burdens like high rent and tuition cost rather than transportation or food deserts.

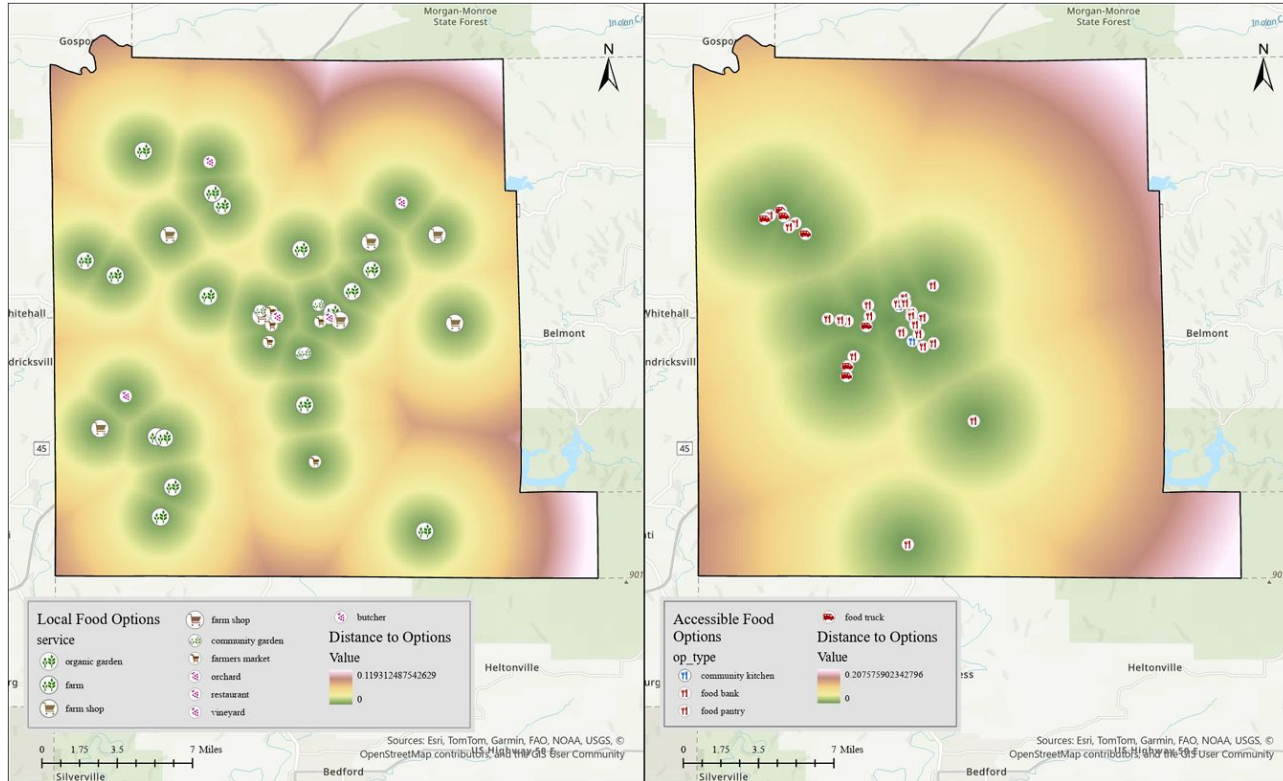
# Locations of Local Food Options, Accessible Food Options, & Grocery Stores

## Food Data & Research:

- Bloomington City Food System
- Hoosier Hills FB: Finding Food in Monroe County
- LocalHarvest.org (CSA's, Farms, Markets)
  - IndianaGrown.org
- Urban Green Infrastructure Maps Food Stores shapefile (grocery stores)




# Distance Analysis of Local Food & Accessible Food Options



# Limitations




Limitations: Due to time constraints, we were unable to spatially represent cultural relevance, seasonality, and affordability of the different food access options

- Markets only open seasonally
  - Food banks or trucks only operating few days during the week with limited hours
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# Conclusions



- Based on the results of the vulnerability index, we recommend solutions that focus on addressing the high financial burdens in the county rather than solutions that focus on transportation or distribution of food. Our maps show how the areas with higher vulnerability also have plenty of local food options leading us to believe that food insecurity in Monroe County is more an issue of cost rather than availability.
  - We would also recommend that more attention be placed on the local food options as they are more spread throughout the county. Coupled with that, accessibility to food through food pantries and such should aim to distribute more evenly among the county as a whole rather than focusing on the densely populated areas of Bloomington.
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# References

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