

Mapping Health and Food Access Inequalities in Black Neighborhoods of Charlotte



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Research Question: How does food access affect the health outcomes of Black communities in Charlotte?

Introduction

Urban segregation by race and economics has resulted in many of Charlotte's lower-income, predominantly Black communities having sparse access to essential healthcare and food services. They face a compounding mix of barriers, including their proximity to fresh, preparable produce, inadequate and disproportionate sidewalk infrastructure, and reduced proximities to health services, which enhance the prevalence of chronic ailments like diabetes and obesity. This study applies geographic information systems to spatially analyze these inequities in Charlotte, with particular focus on Black neighborhoods. Through comparisons of mapped food access, health data, levels of income, and infrastructure, this study aims to highlight the structural origins of these disparities and create a data-driven basis for more equal public health and urban planning in the future.

Methodology

Utilized ArcGIS Pro to generate maps visualizing:

- Black populations and their relation to grocery density
- Obesity & Diabetes prevalence
- Black populations and their proximity to health services
- sidewalk availability

Utilized ArcGIS to generate spatially linked charts highlighting:

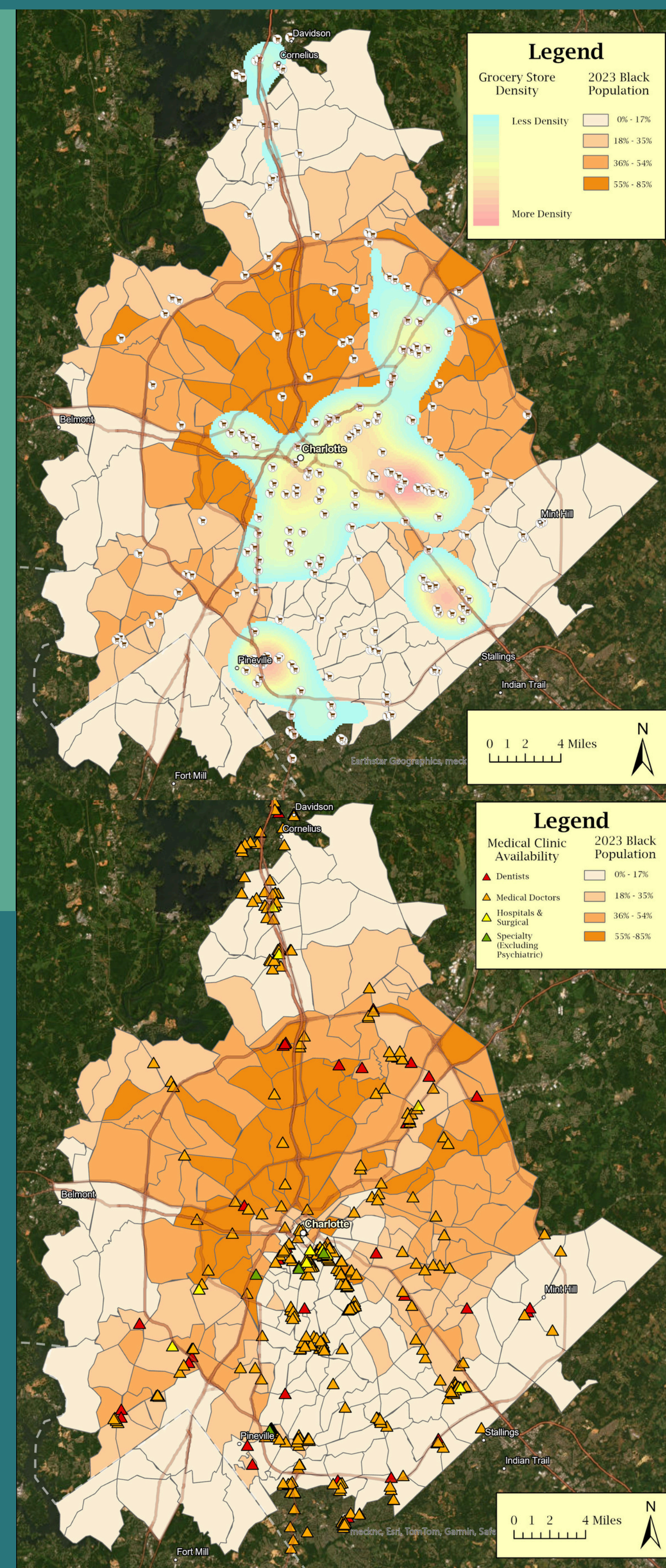
- Median Household Income
- Proximity to grocers by NPA

NPA: Neighborhood Profile Areas (Based on Census Data).

Results/Findings

Maps reveal significant overlap between predominantly Black Neighborhoods and:

- Low proximity to grocery stores providing preparable produce and health services
- Higher rates of Obesity and Diabetes
- Disproportional sidewalk/walkability infrastructure
- In over 160 NPAs, fewer than 10% of residents live within a ½ mile of a grocery store.
- The largest number of households have incomes concentrated in the \$25k-\$75k range



For the Future of Charlotte

Charlotte is expected to grow by 50% by 2050, raising concerns about low-income housing, nutrition and health.

In the future this study, once expanded, could be used in :
POLICY PLANNING

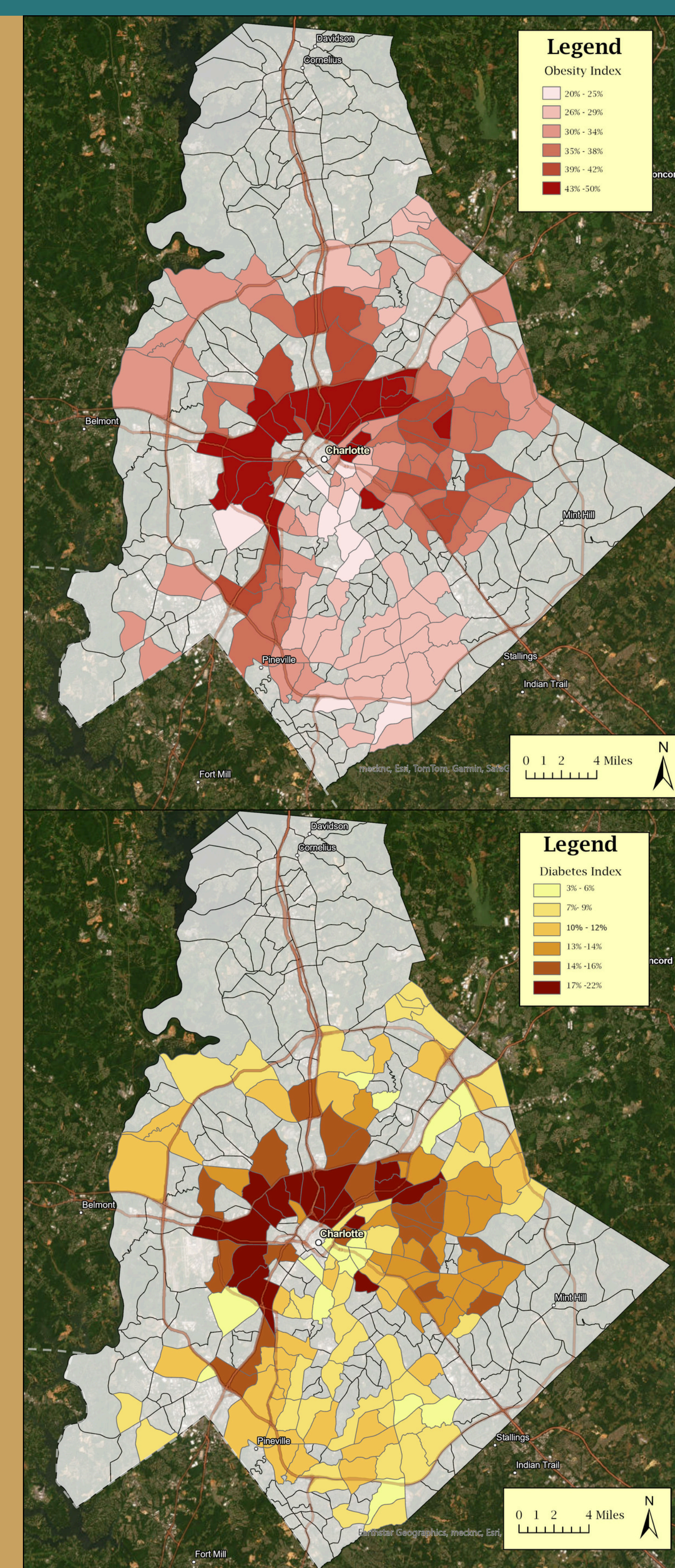
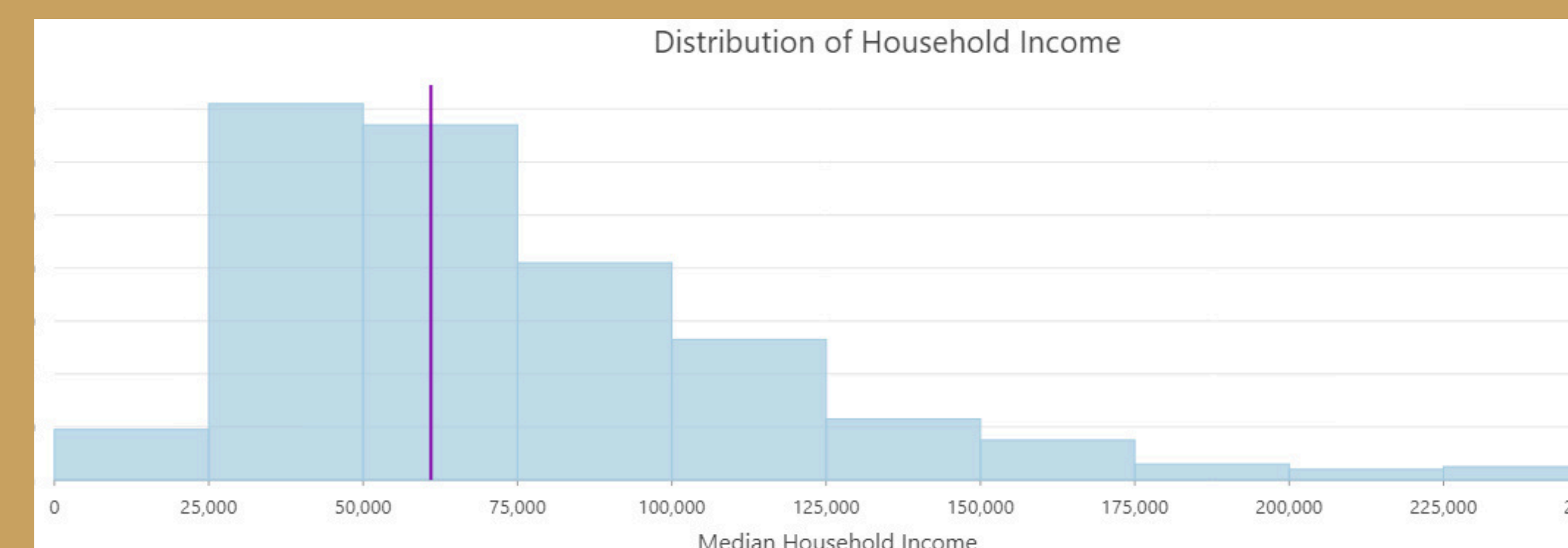
- Target high-need zones for grocery store incentives, community health clinics, and walkability projects.
- Use GIS data to inform racial equity-focused urban development.

COMMUNITY ENGAGEMENT

- Include resident voices in planning processes to ensure culturally competent solutions like community gardens and volunteer healthcare clinics or programs

RESEARCH

- Longitudinal tracking of health outcomes post-intervention.
- Combine with qualitative interviews to humanize spatial data.



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