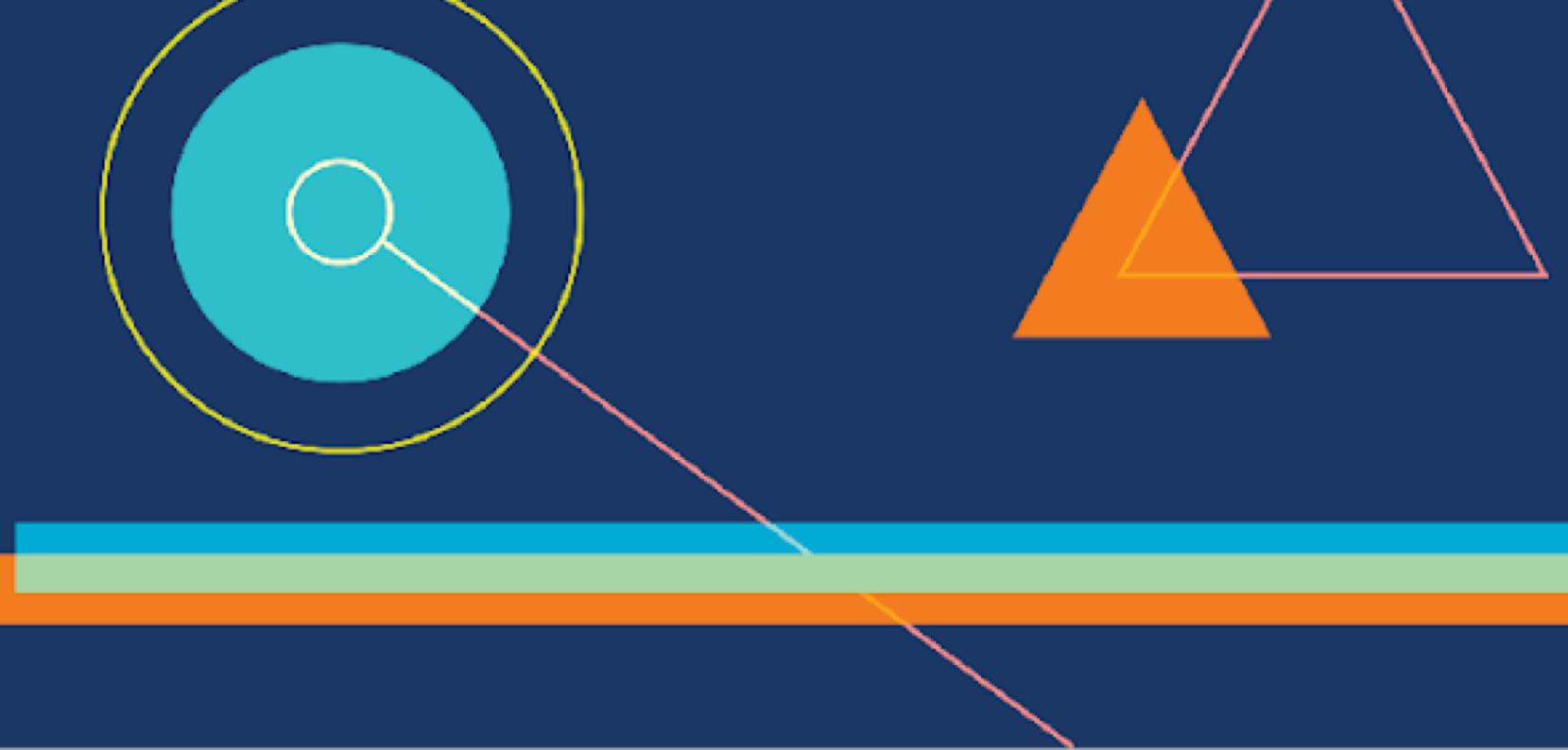


FAIRFAX COUNTY COMMUNITYSCAPE: OBESOGENIC ENVIRONMENTS

DSPG Team: Cong Cong and Victoria Halewicz (University of Illinois at Urbana-Champaign), Quinton Neville (Columbia University), Eliza Tobin (University of Virginia)

SDAD Team: Teja Pristavec, Josh Goldstein, Brandon Kramer

Sponsor: Fairfax County and INOVA



Project Introduction

Project Description: Social determinants of health contribute to inequities across Fairfax County. This project aims to identify where vulnerable populations live, offering health officials and policymakers an actionable resource for resource allocation.

Objective: Create two composite indices—economic vulnerability and obesogenic environments—to quantitatively characterize the social determinants of health in Fairfax County.



Data Sources



OpenStreetMap (OSM): Geospatial locations of physical features



American Community Survey (ACS):

Demographics, Financial Conditions, Employment Status, Transportation, Synthetic Population.



Fairfax County Housing Stock: Domicile Locations, Housing Conditions

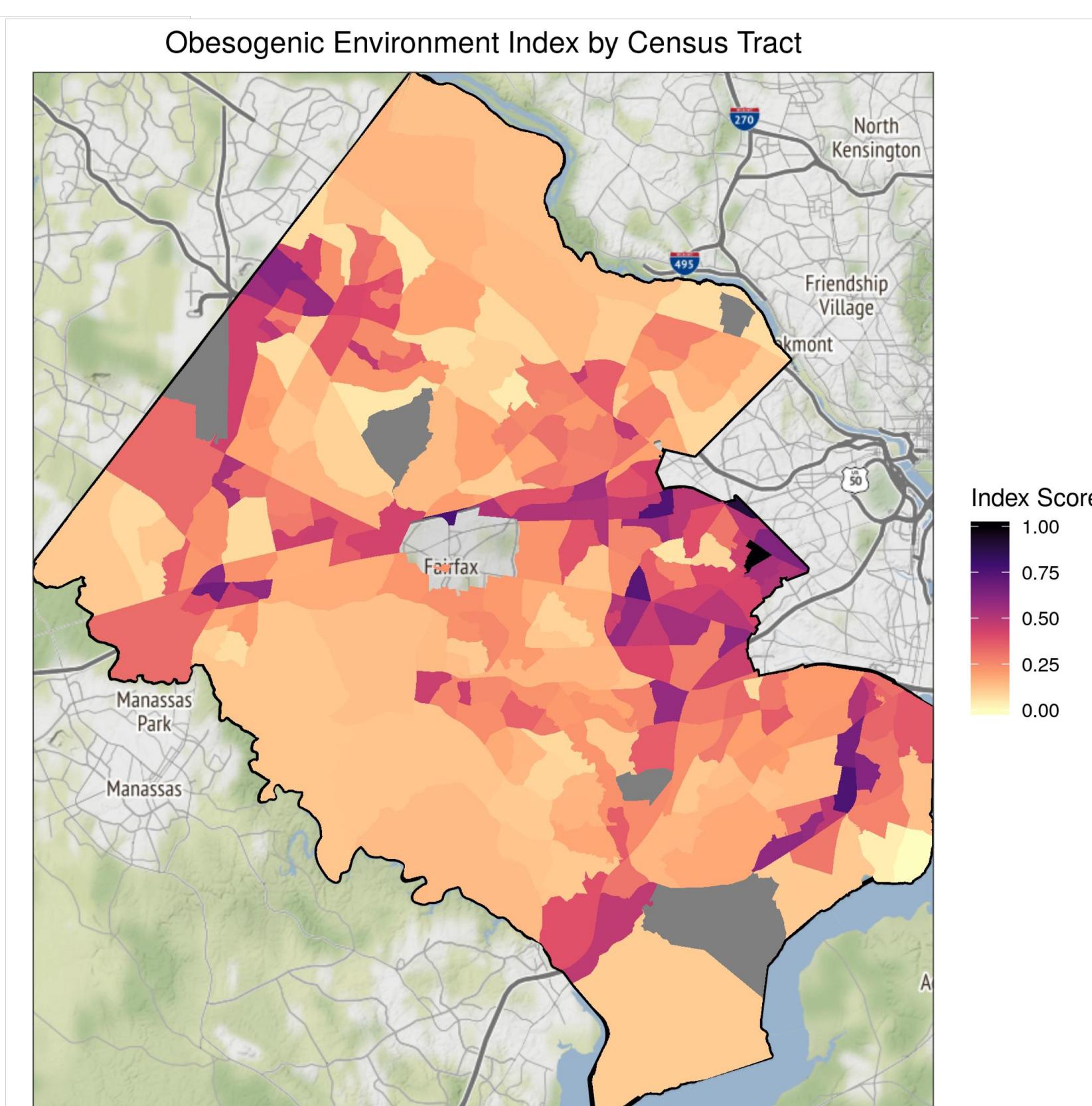
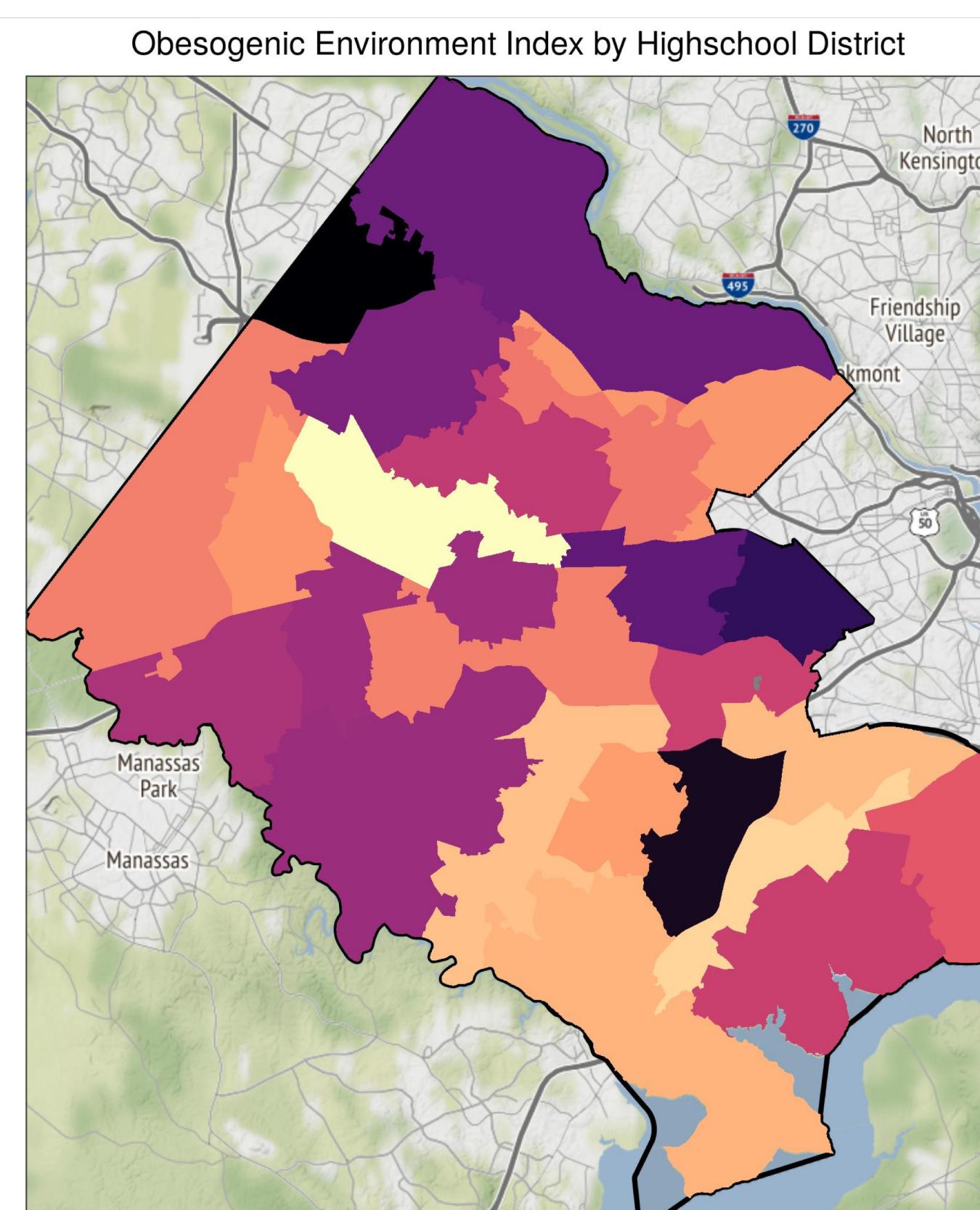
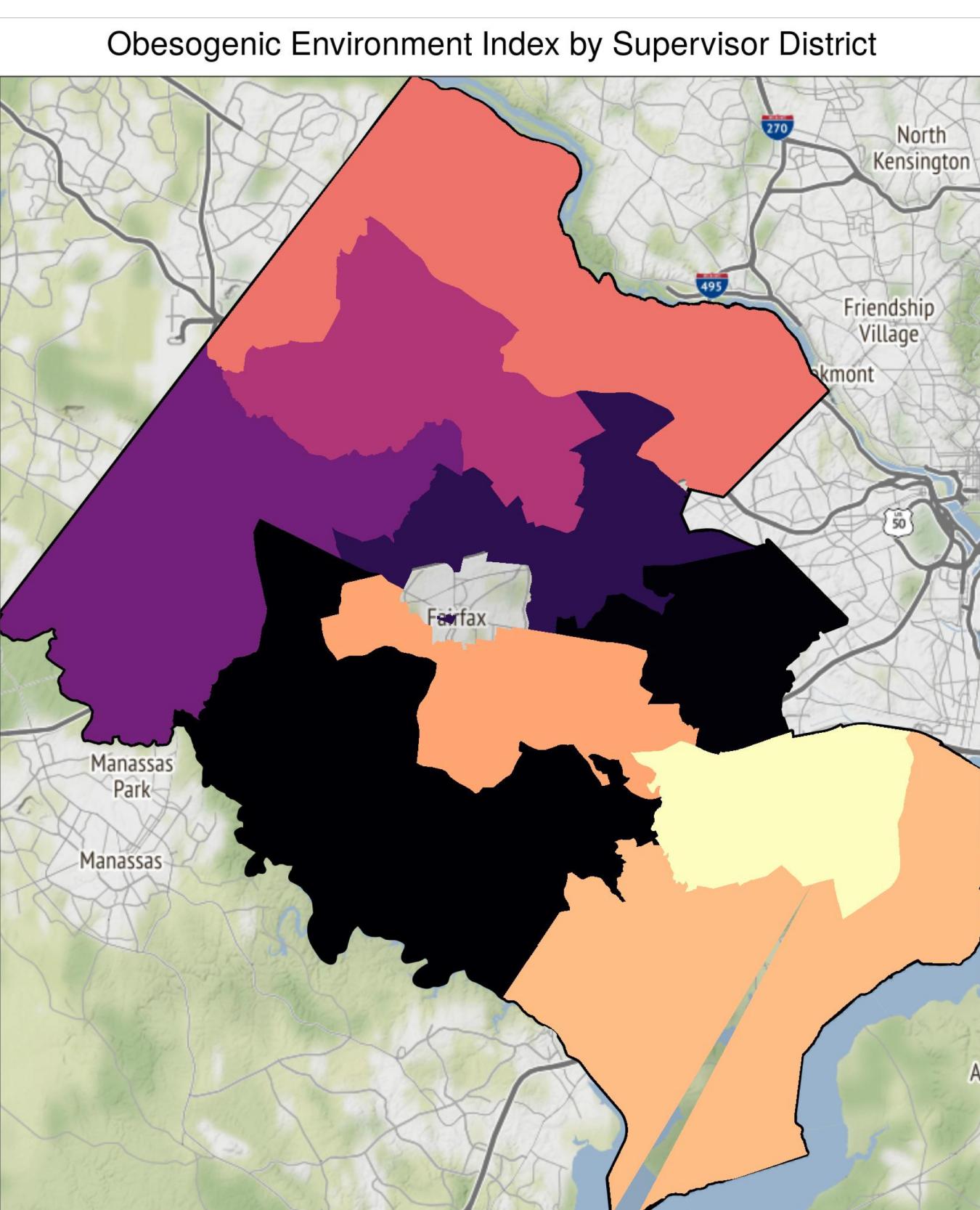
Results

Regions at high risk (darker color) of exposure to obesogenic environments:

Supervisor Districts: Springfield and Mason.

High School Districts: Herndon and Lee.

Census Tracts: Arlington and Dulles Airport adjacent.



Limitations

1. Quality of OSM data
2. Quality of TravelTime API
3. Citizenship unaccounted for in ACS
4. Index Weights
5. Index Validation

Resources

1. Centers for Disease Control (2019). Social determinants of health. Available at <https://www.cdc.gov/socialdeterminants/index.htm> (7/31/2019).

2. Swinburn, B., Egger, G., & Raza, F. (1999). Dissecting Obesogenic Environments: The Development and Application of a Framework for Identifying and Prioritizing Environmental Interventions for Obesity. *Preventive Medicine*, 29, 563-70. doi:10.1006/pmed.1999.0585

Conclusions

1. Interdisciplinary method for index construction provides new measurement for health inequities
2. Poor racial and ethnic minority groups have the highest risk, especially Hispanics
3. Policy intervention and resource allocation requires analysis at multiple geographic units

Next Steps

1. Overlaying findings with INOVA healthcare data
2. Addition of INOVA 1000 Days of Life data
3. Sensitivity analysis (robustness of index)
4. Compare current policy initiatives with maps to enhance existing measures and to create effective, evidence-based policy