RUTGERS
Edward J. Bloustein School
of Planning and Public Policy

Planning for Healthy, Just, Resilient, and CO2-Neutral Mobility in New Jersey

Project Update

February 2022

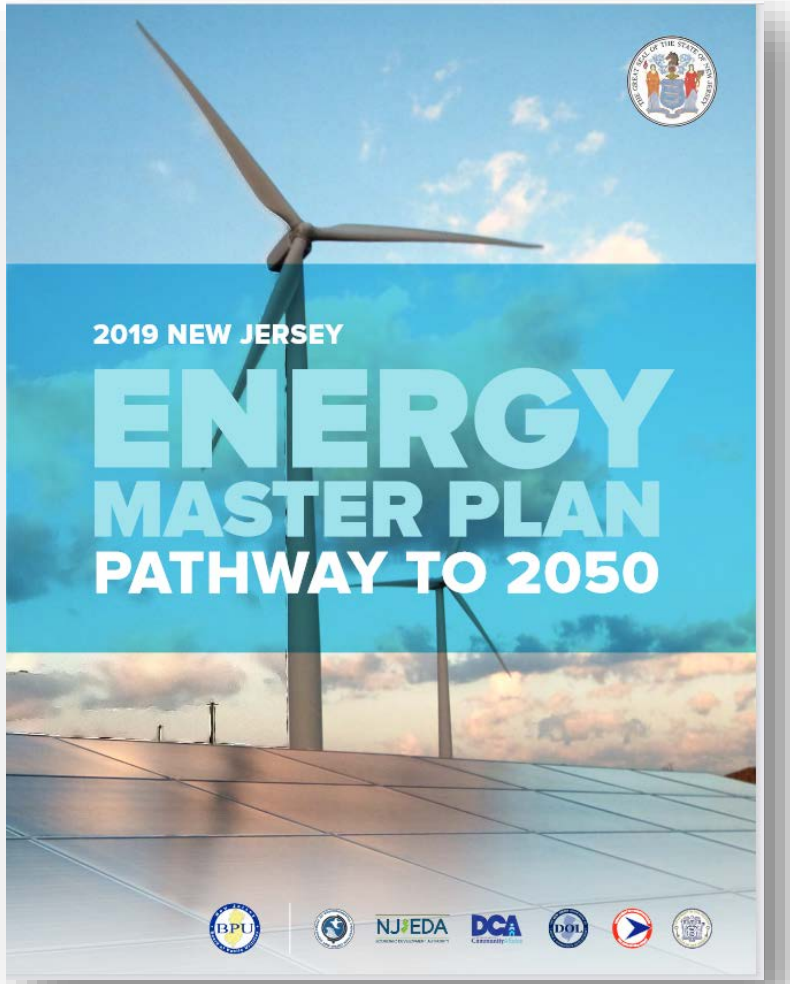
Existing Work Groups

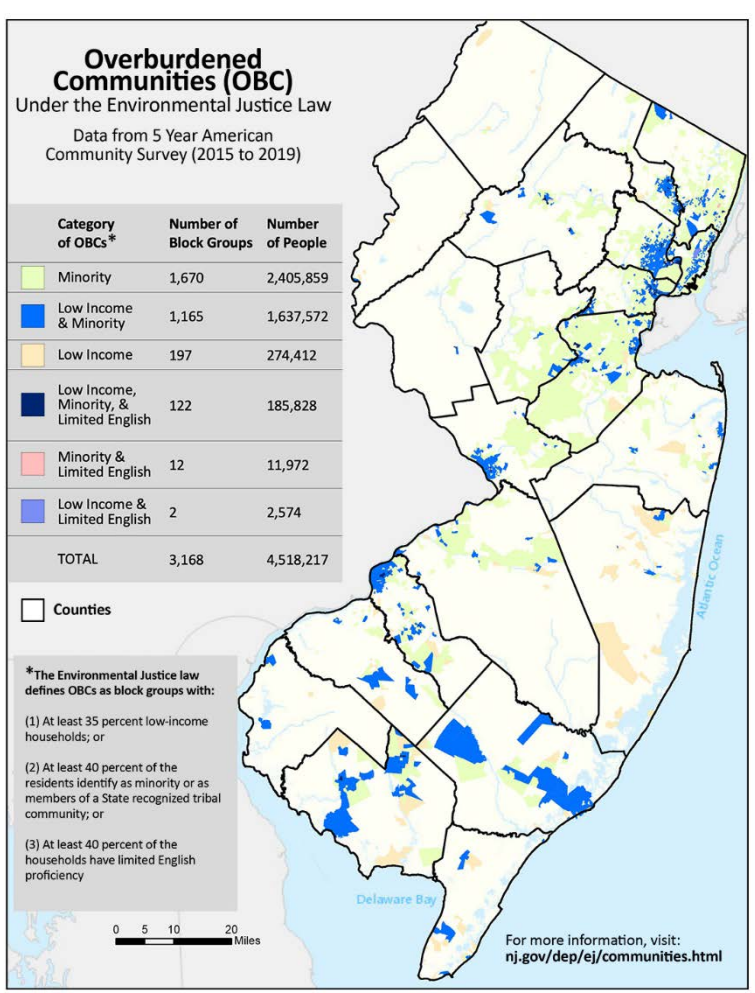
- Long-term Statewide Planning for Climate Change Workgroup
- Natural and Working Lands Workgroup
- Offshore Wind Ecological Monitoring Workgroup
- Public Health Workgroup
- Sustainable Organic Materials Management Workgroup

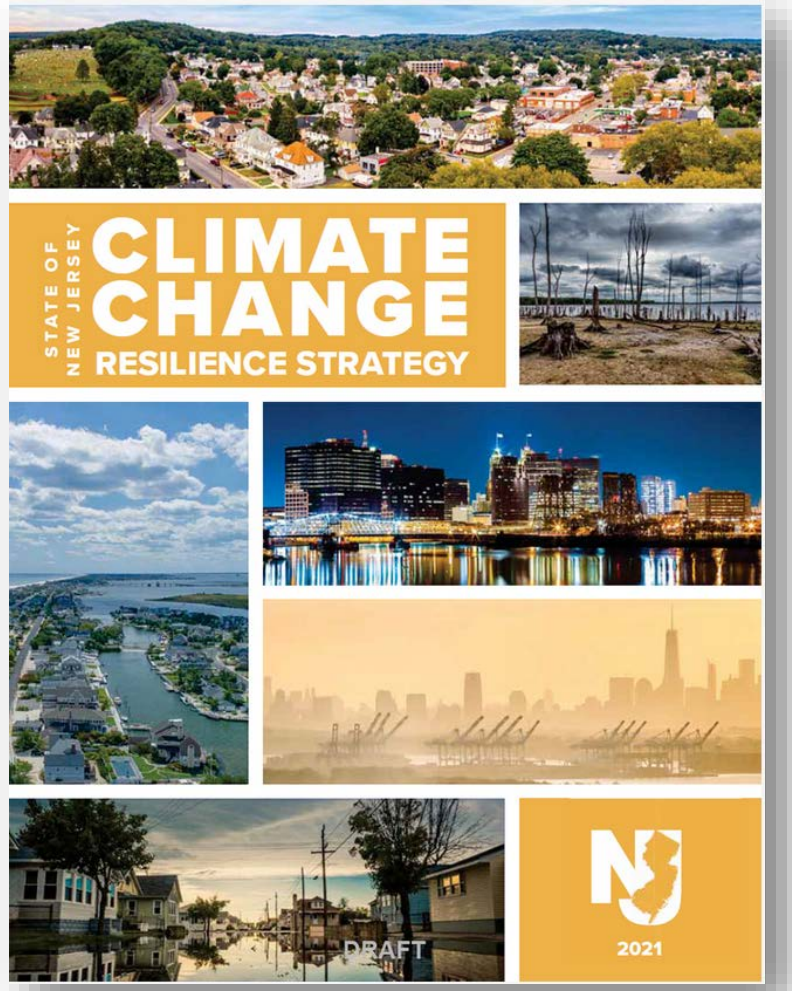
(NEW)

Transportation Workgroup

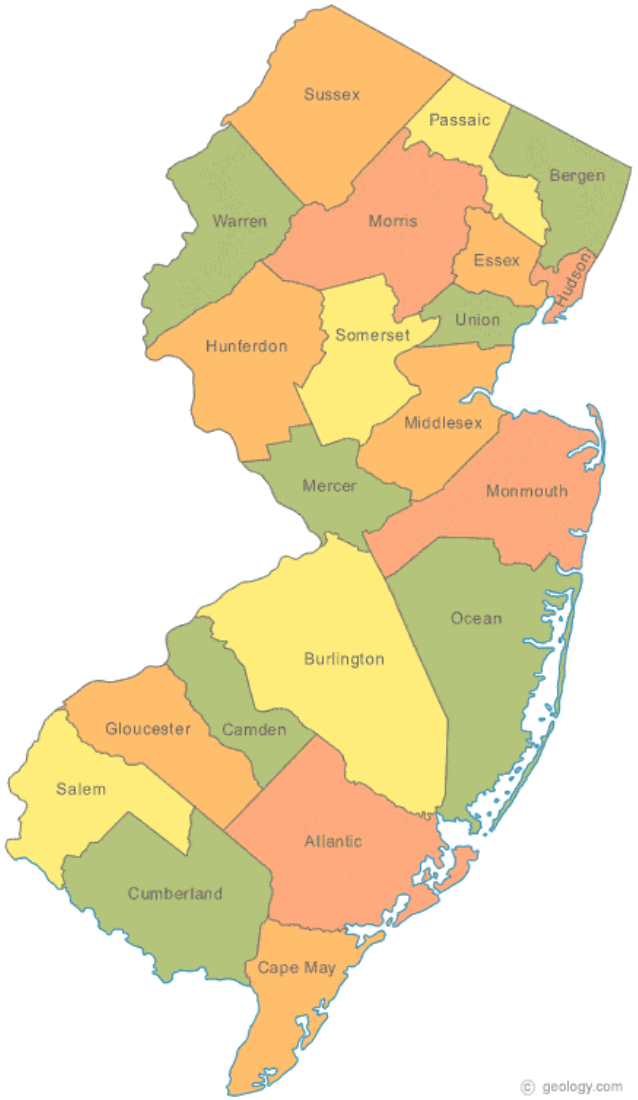
Changing policy dynamics at the State and national levels

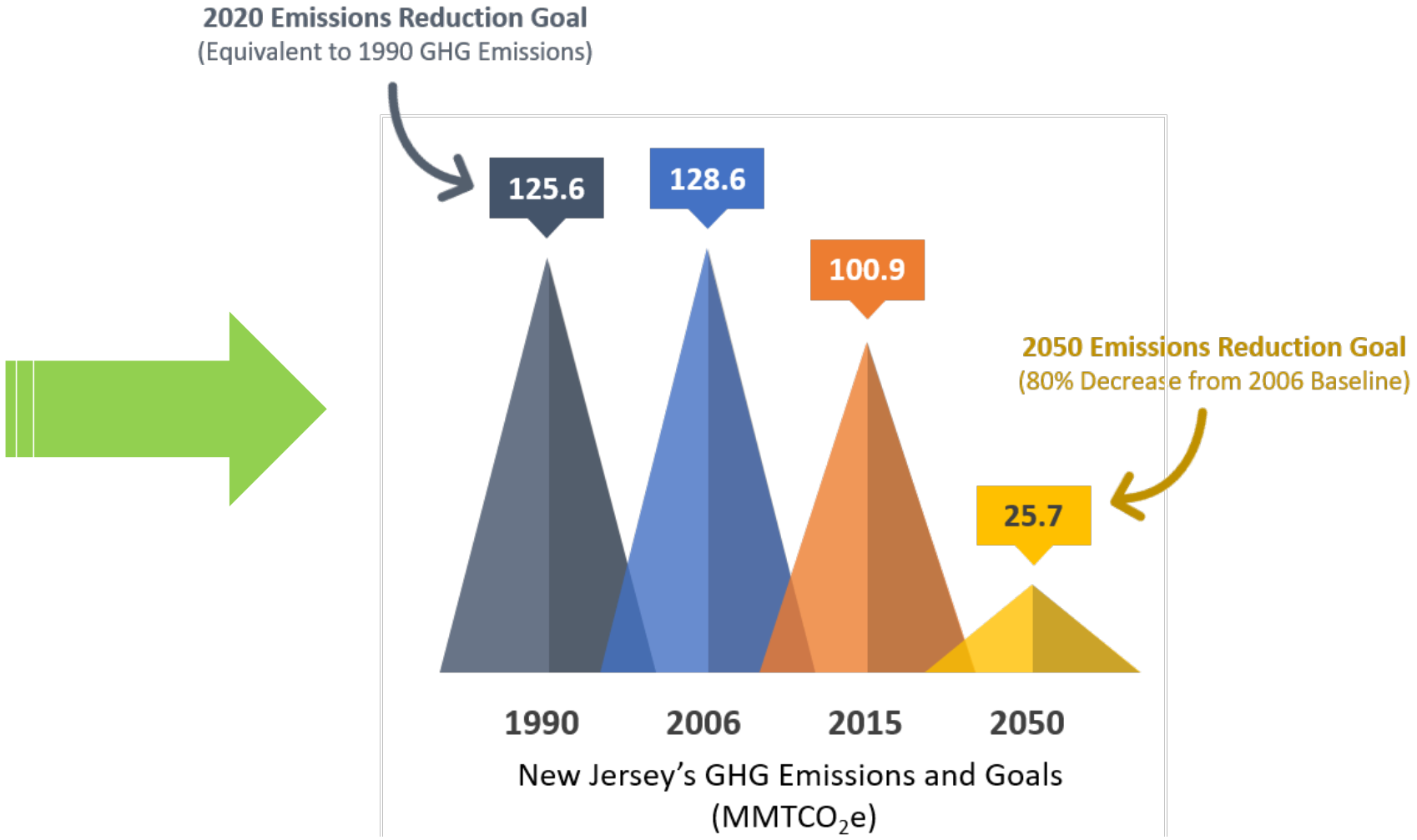






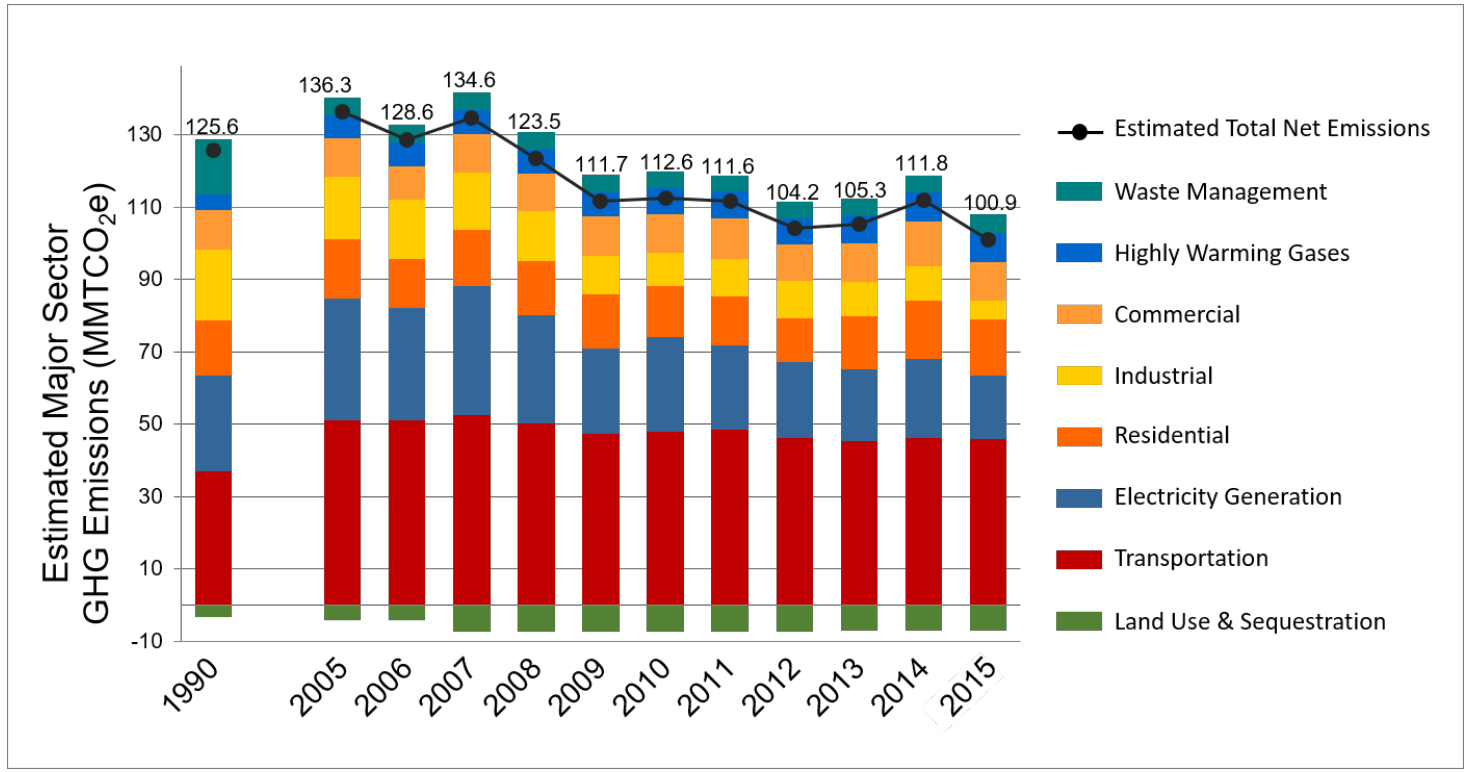
New Jersey Emissions Targets

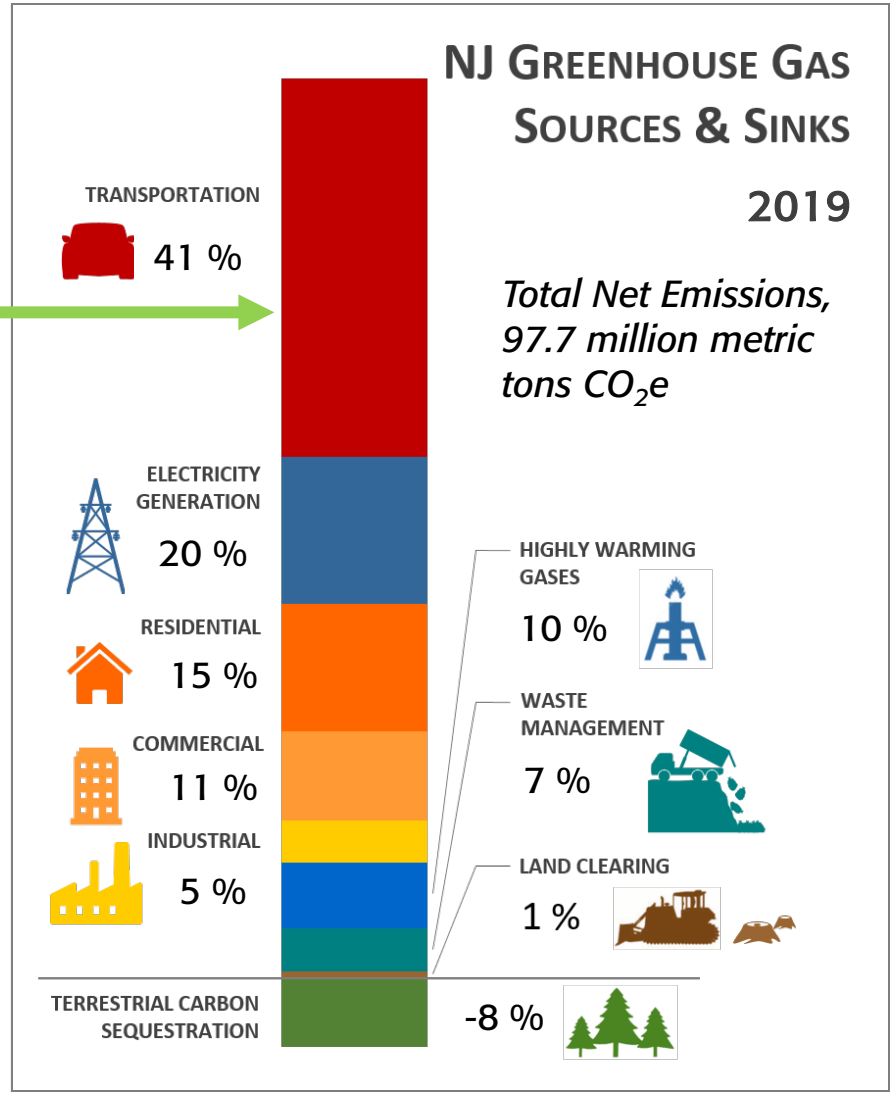




GHG Emissions in New Jersey

Reductions in the transportation sector will be critical to achieving NJ's emissions target

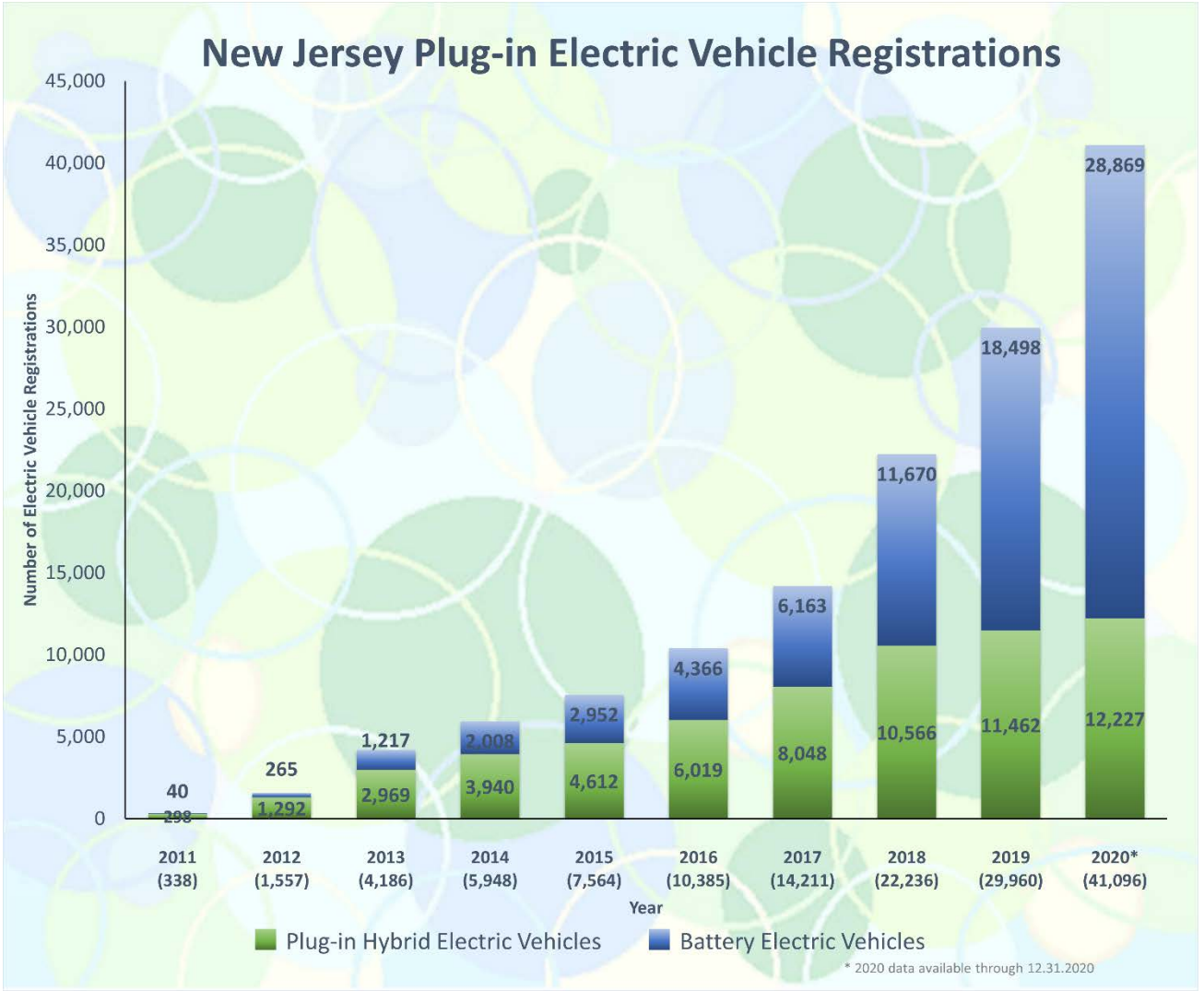


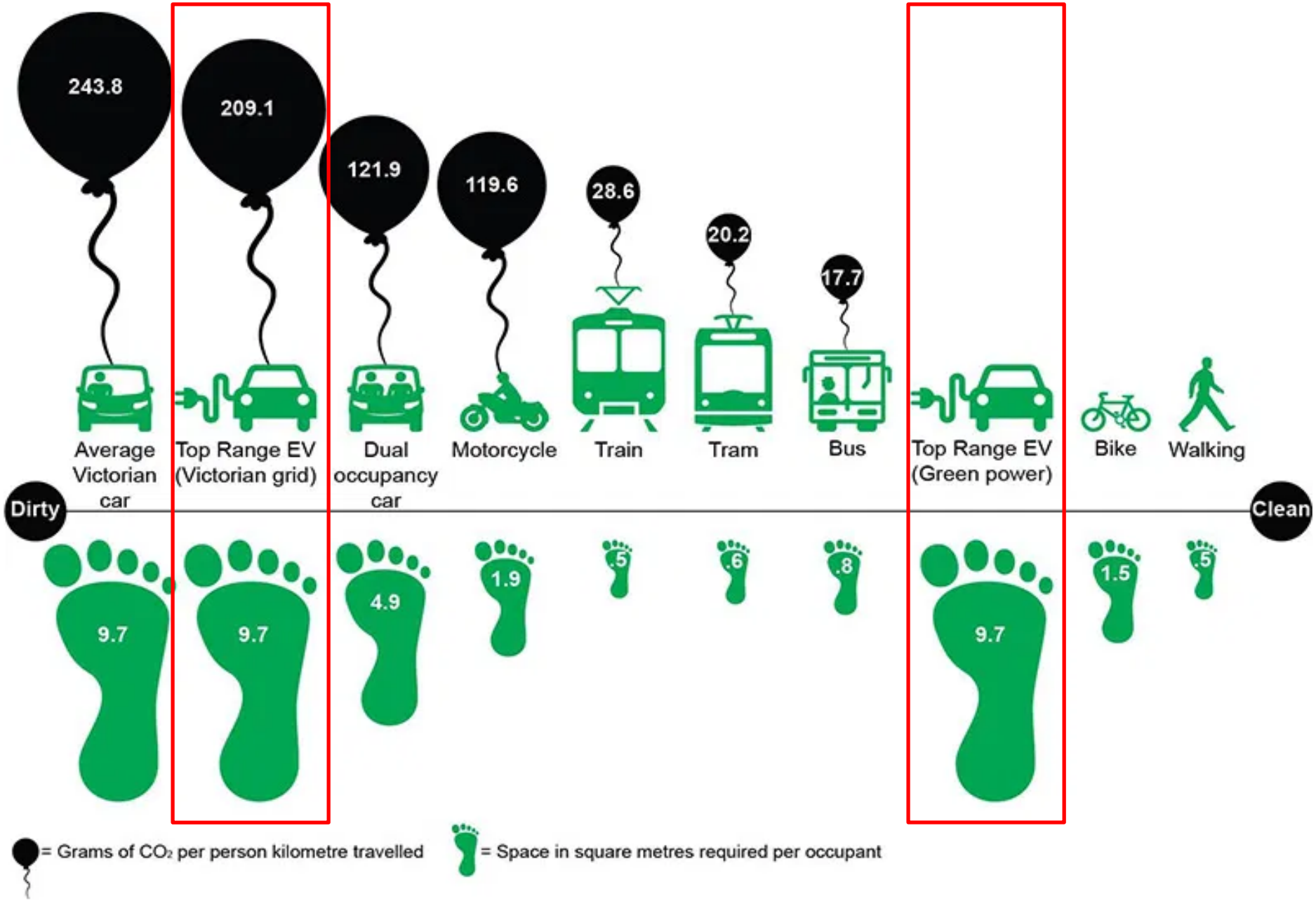


Source: NJDEP

Significant attention being paid to vehicle electrification

- Charging infrastructure investments
- Rebates and tax credits to encourage EV purchases
- EVs can use HOV lanes





This infographic compares emissions and space consumption for different transport modes. Source: Institute for Sensible Transport

What can the working group do?

Multi-Goal Framework

Healthy. Improve health outcomes for people and communities by improving air quality and making it easier and safer to walk and bike.

Just. Promote **equity** by making travel by transit more reliable and convenient and by enhancing access to opportunity for marginalized groups.

Efficient. Increase transportation system efficiency and effectiveness by integrating advanced and emerging transportation technologies and modes.

Resilient. Enhance the resilience of transportation systems by adapting infrastructure to climate hazards.

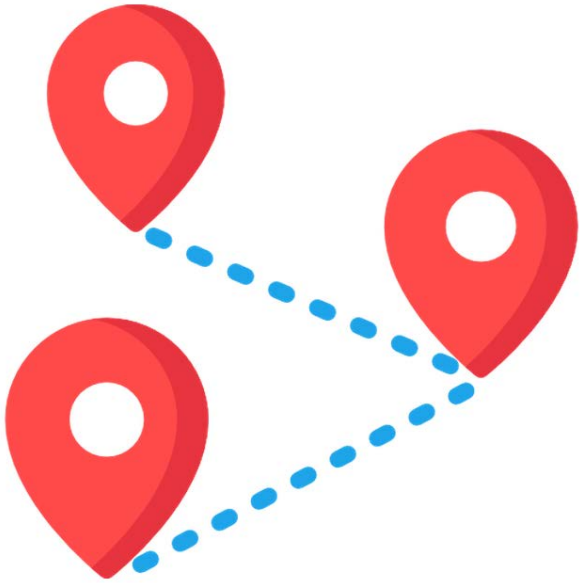
Carbon Neutral. Reduce energy use and emissions of all kinds by facilitating a transition to CO2-neutral transportation.

Toward a healthier, more equitable, and cleaner transport future in New Jersey

HEALTHY, JUST, RESILIENT, AND CO2-NEUTRAL MOBILITY FOR ALL

What is healthy mobility?

- Access
- Safety
- Physical activity
- Mental health
- Air quality
- Noise



What is equitable and just mobility?

An equitable and **just transportation system** provides safe and clean transportation options that are affordable, convenient, and easy to use.

Equitable mobility provides the same opportunity for everyone to move around reliably and sustainably in ways that meet their needs.

Graphic courtesy of Shared-Use Mobility Center

What is resilient mobility?

Robustness

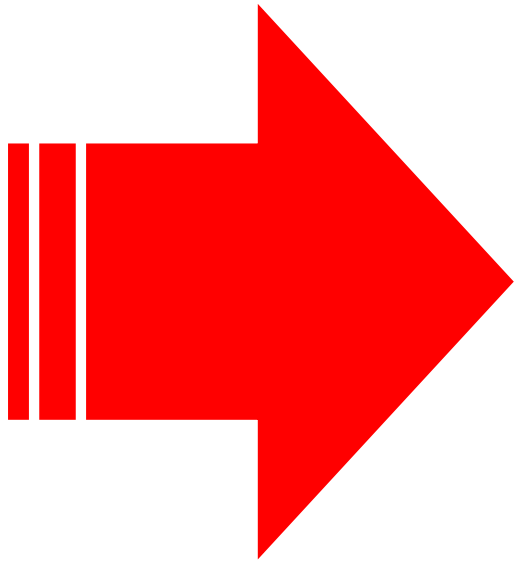
Redundancy

Flexibility

Responsiveness

Coordination

What is carbon-neutral mobility?



Guiding concepts

- **Decarbonize** the transportation sector
- Empower people to **drive less**
- Create a network of **diverse and inclusive neighborhoods that** are well connected to each other
- Think of **mobility as a service** and **reimagine** public transportation
- Embrace **new technologies** but ensure they are affordable and accessible to all
- Make **social justice** a key indicator of transportation performance

Potential Organizing Framework

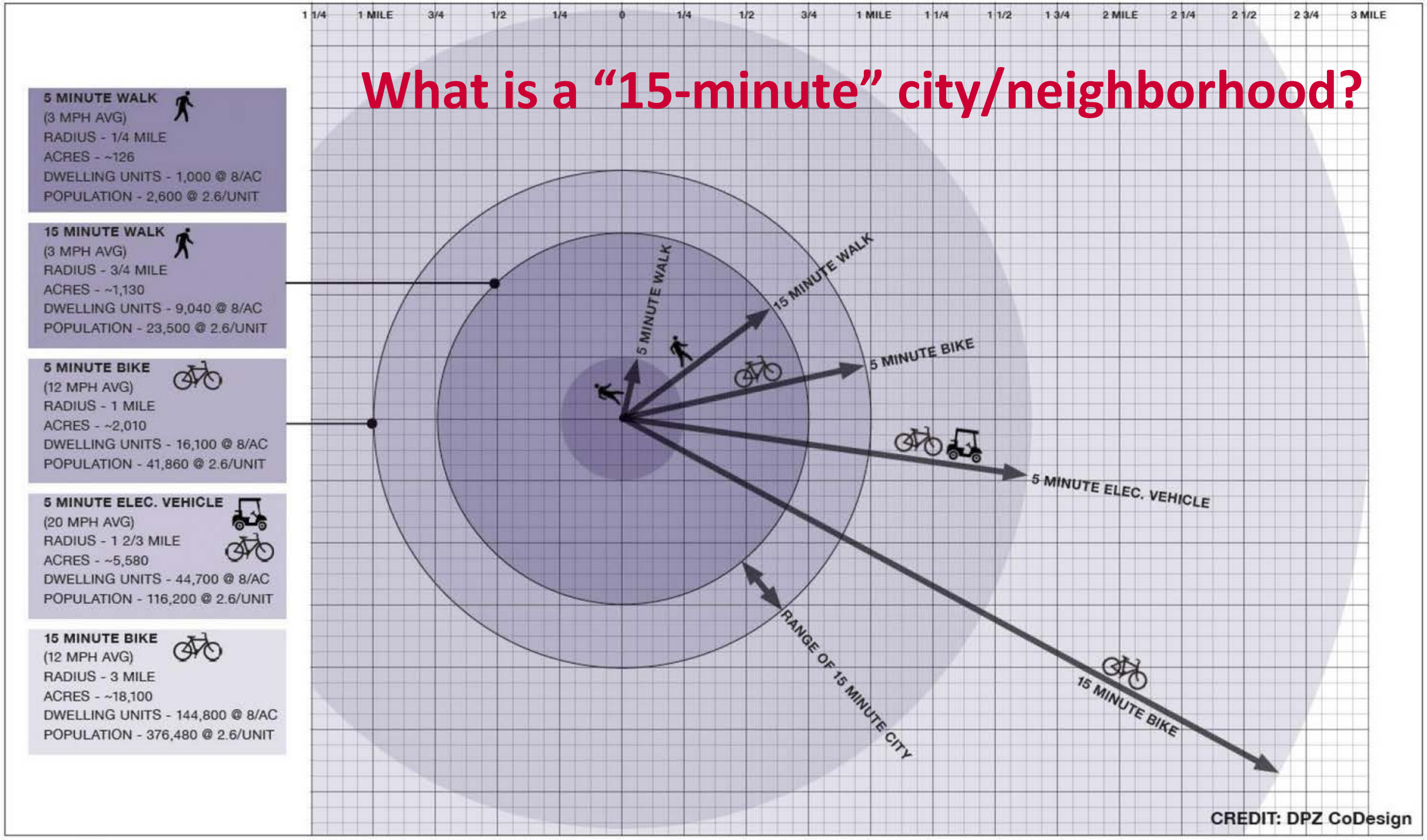
"15-minute" City/Neighborhood

Leading Practice Examples

- Singapore
- Paris
- Portland
- Melbourne
- Ottawa
- Barcelona

Source: https://www.ft.com/content/c1a53744-90d5-4560-9e3f-17ce06aba69a

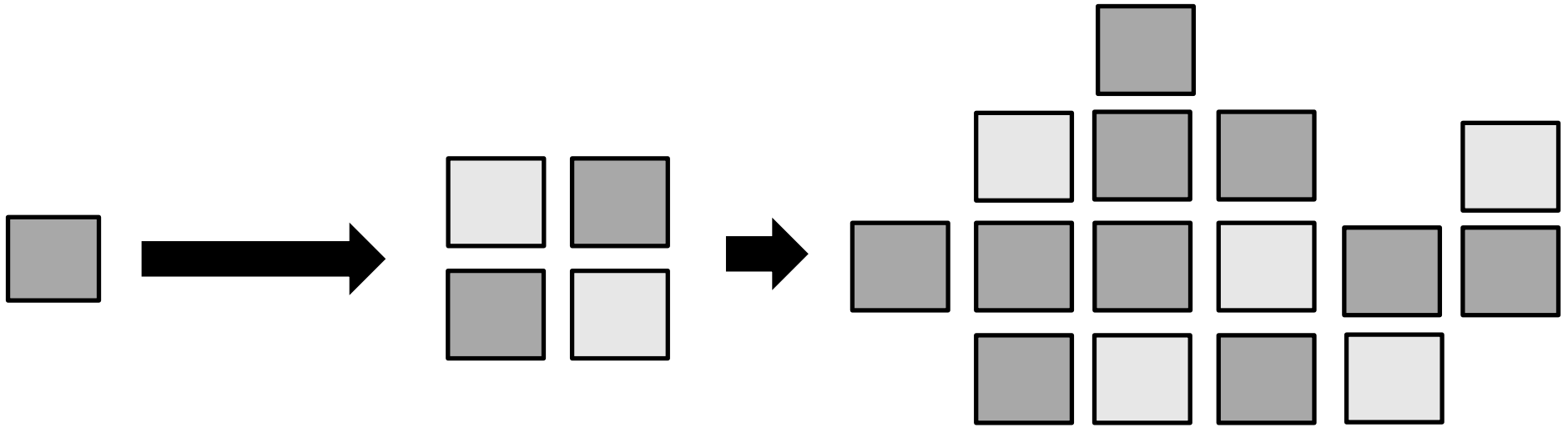
What is a “15-minute” city/neighborhood?



Key relationships

People + Places + Connections

Neighborhood Community Region

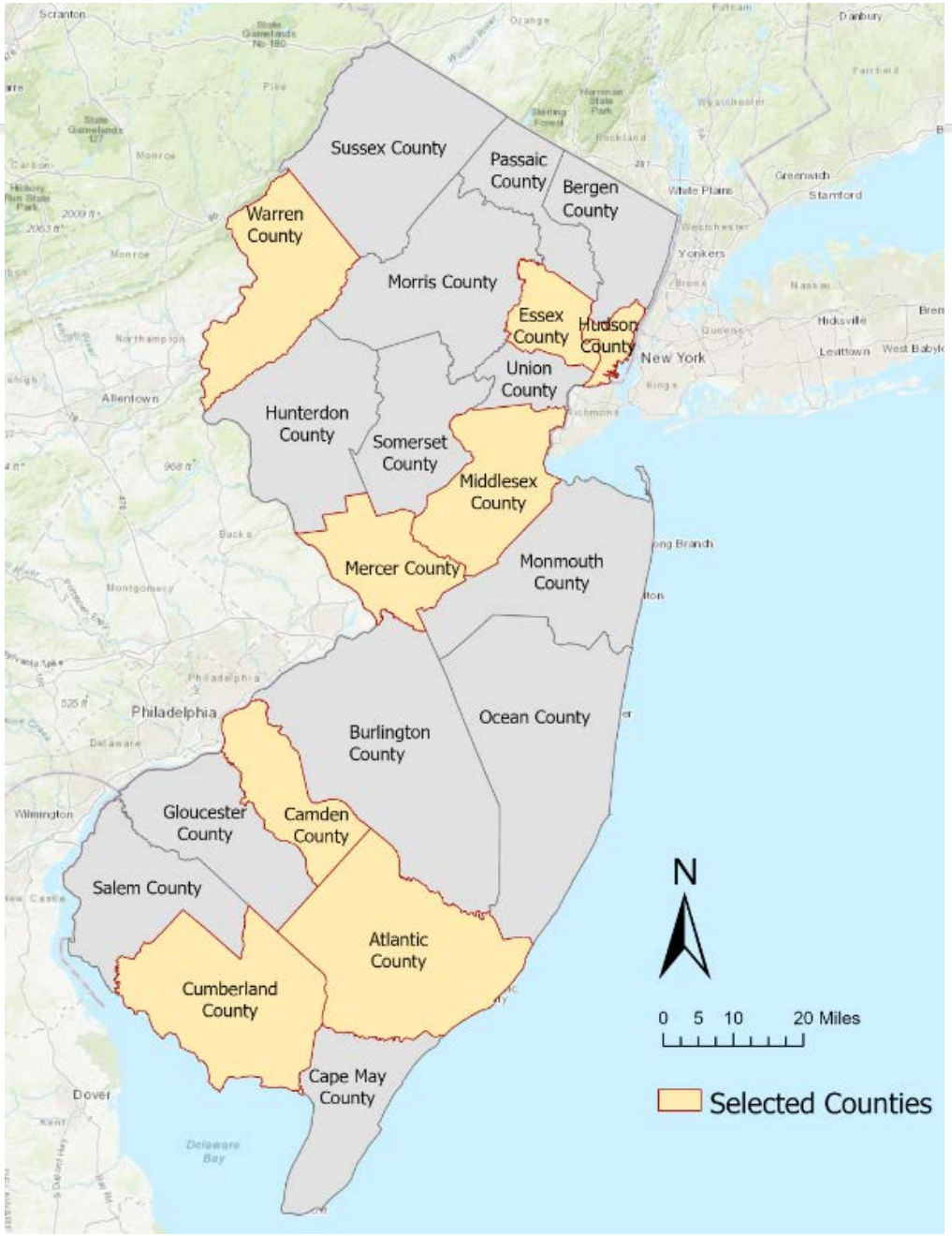


Work Plan

PHASE 1 – Exploring key concepts, desktop analysis, looking toward the future (Mar 2021 to Feb 2022)	Activities: • Conduct leading practice research • Collect, analyze, and map data • Identify of potential community and equity partners • Convene "Thought Leaders" webinar and visioning workshops • Identify vision components • Select locations for neighborhood-scale analysis
PHASE 2 – Field work, community engagement, and developing recommendations (Mar 2022 to Sep 2022)	Activities: • Conduct field visits and interviews to get to know the neighborhoods • Develop and implement community engagement plan • Identify local mobility and other community needs and concerns • Prepare concept plans for retrofitting existing neighborhoods • Identify infrastructure needs • Develop planning and policy recommendations • Prepare comprehensive final report • Convene "Thought Leaders" Forum #2 – How do we get there?

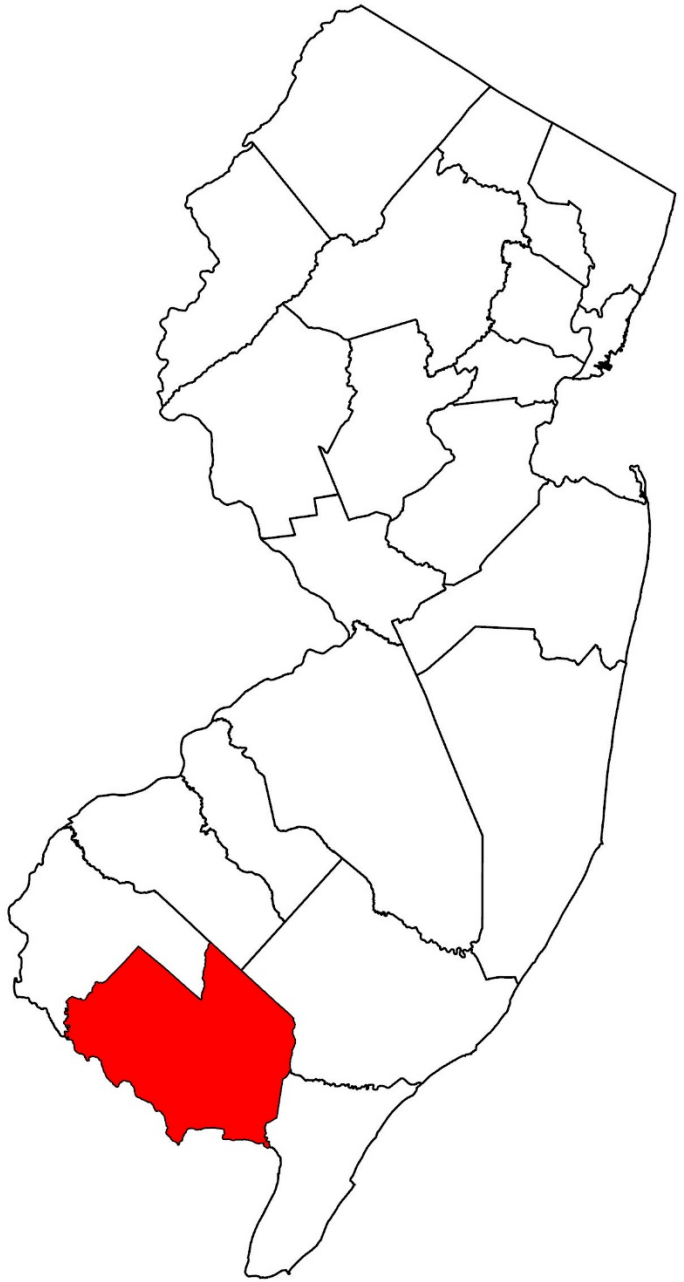
Phase 1 Case Study Locations

1. Atlantic
2. Camden
3. Cumberland
4. Essex
5. Hudson
6. Mercer
7. Middlesex
8. Warren



Exploring the Geography of People, Place, and Connections

CUMBERLAND COUNTY



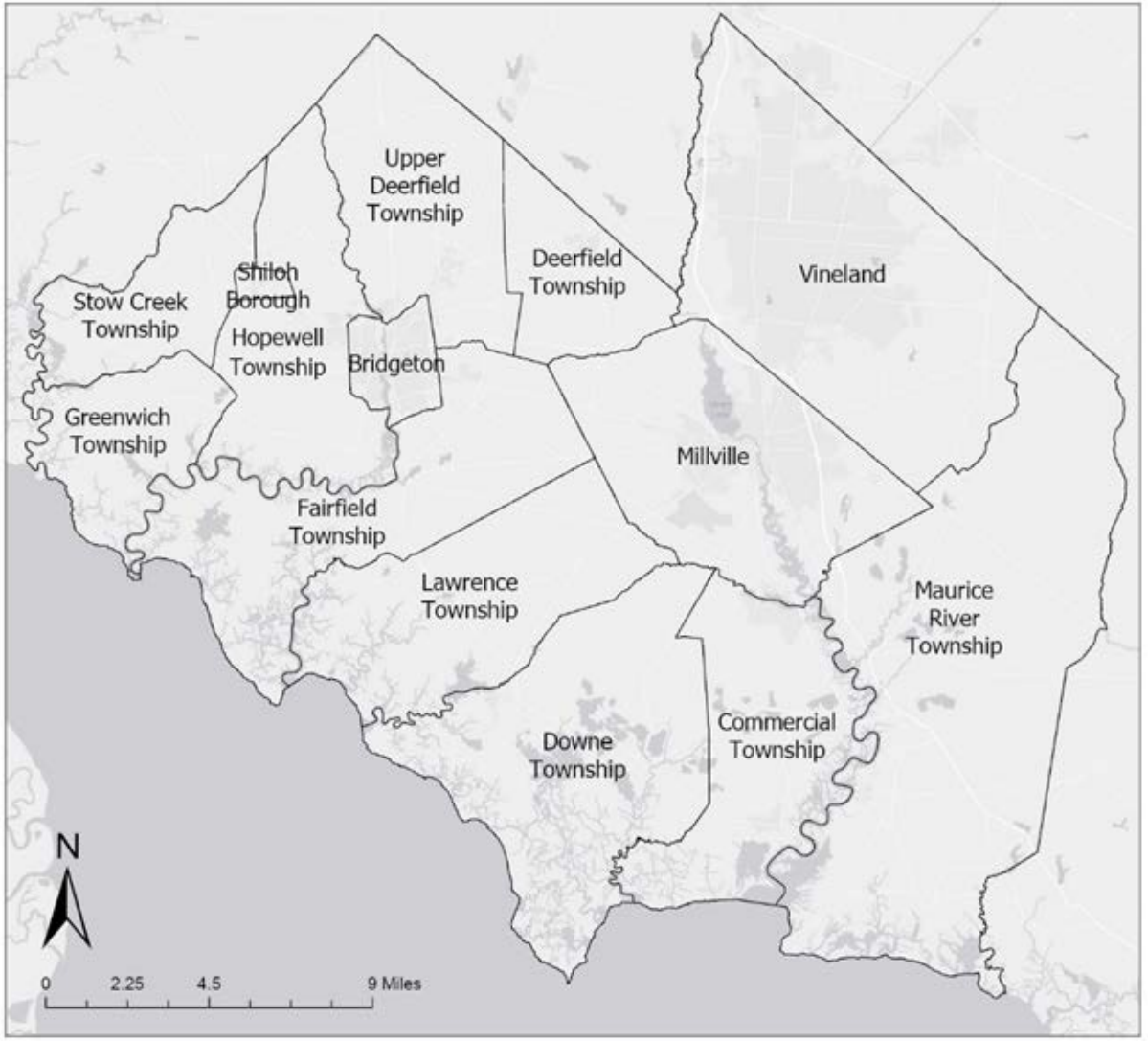
Healthy, Just and CO2-neutral Mobility for All

GEOGRAPHY OF PEOPLE

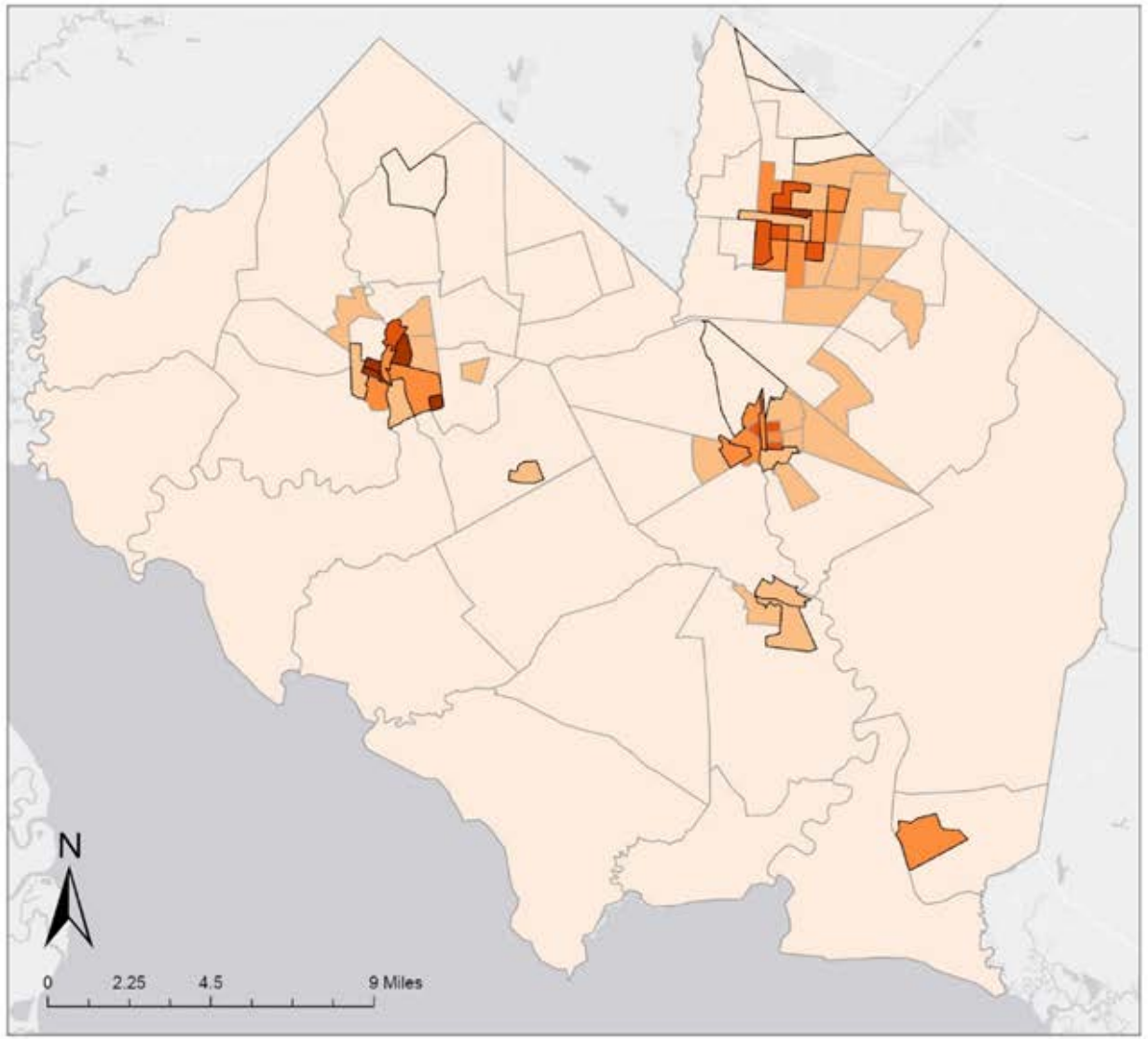
County at a glance

A mix of small towns, urban centers and rural communities

- 484 square miles
- 14 Municipalities
- Over 150,000 residents
- County Seat: The City of Bridgeton



Population



Population Density

Low Income Block Group

Persons per square mile

- 14 - 1083
- 1084 - 2769
- 2770 - 5378
- 5379 - 9095
- 9096 - 13960

Data Source: NJGIN, ACS 2015-2019 5-year estimate, ESRI base map

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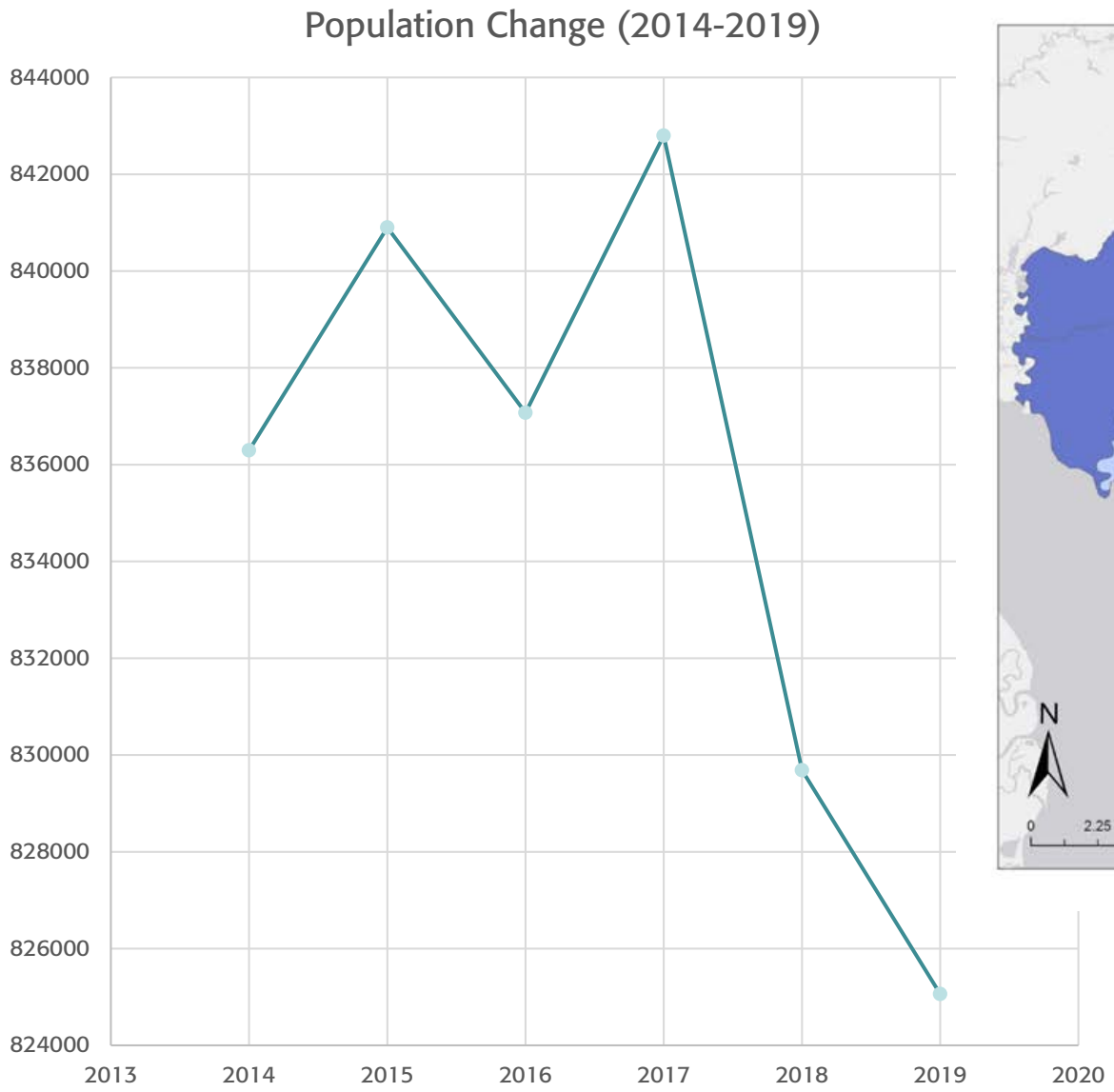
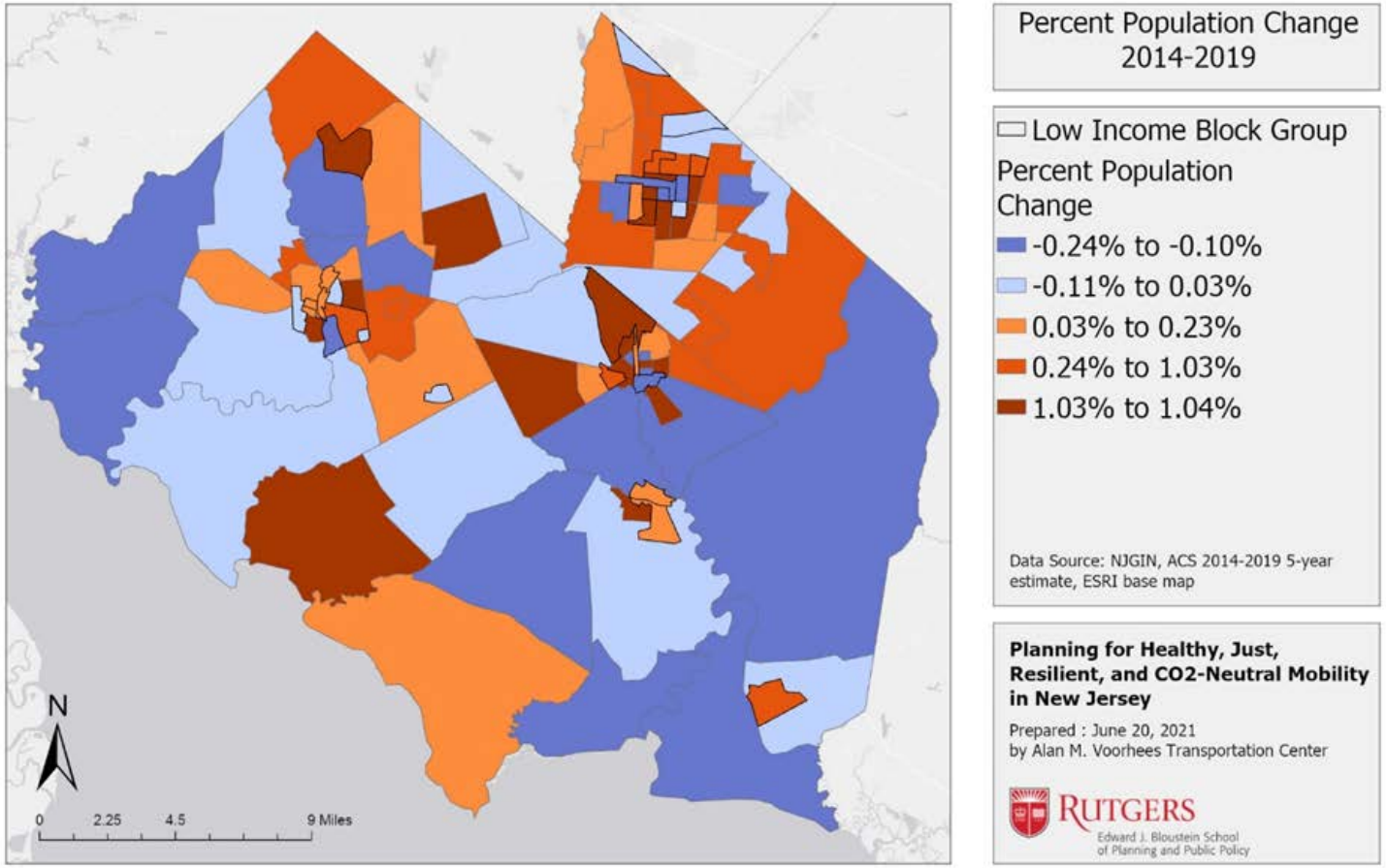
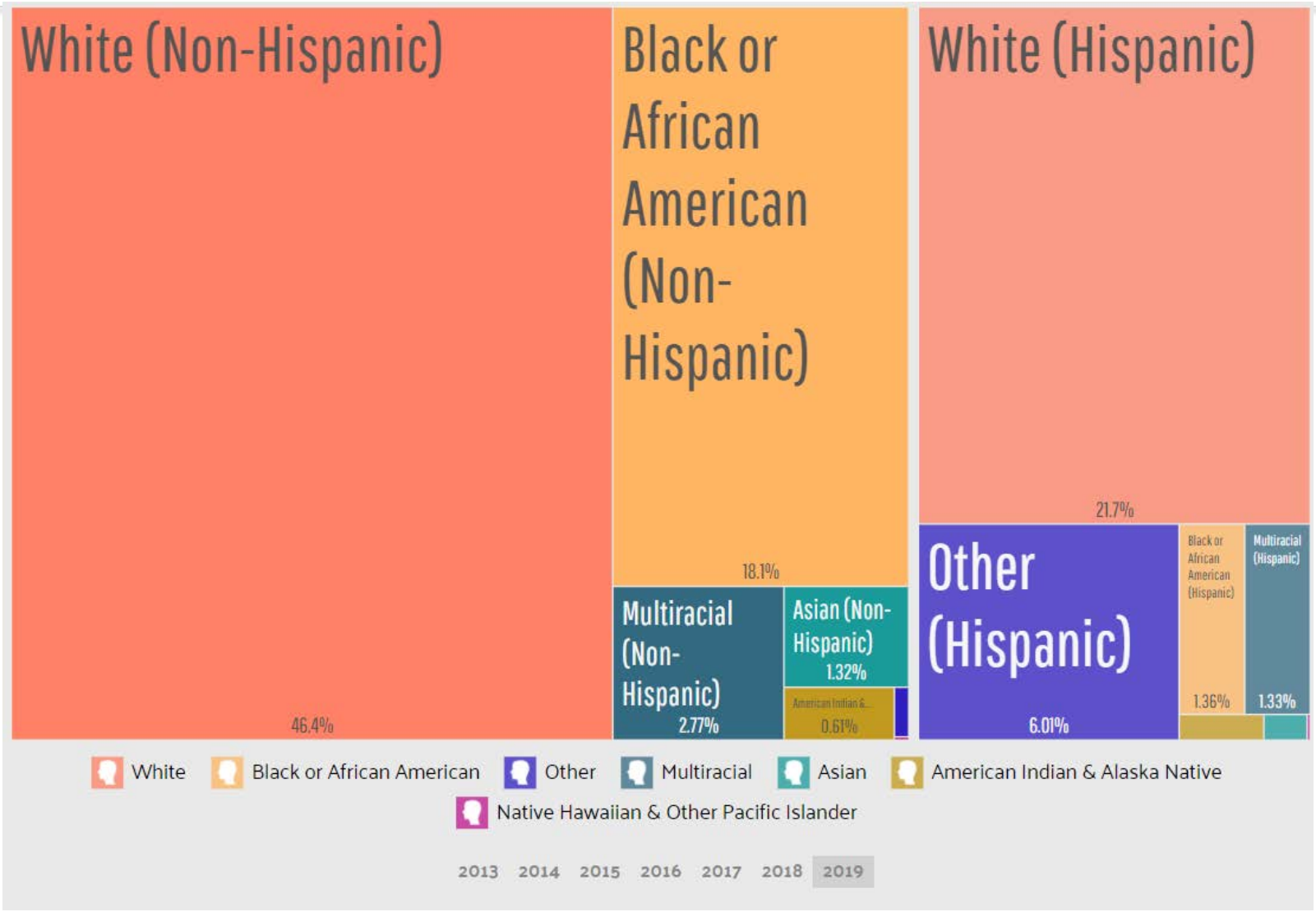
Change in Population : 2014-2019



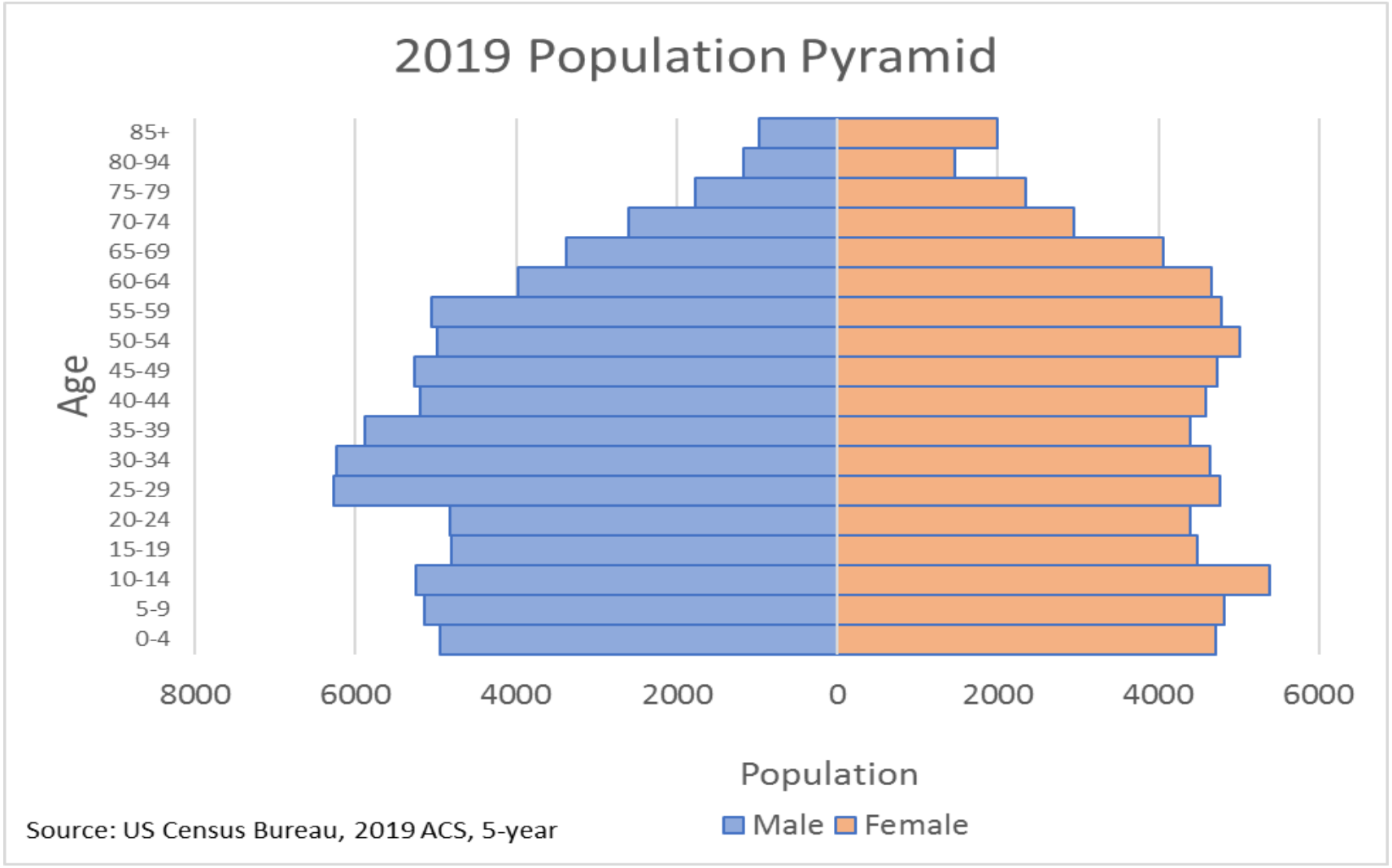


Race and Ethnicity - 2019



Data source: US Census Bureau ACS 1-year Estimate. Graphic credit: Data USA

Age & Gender

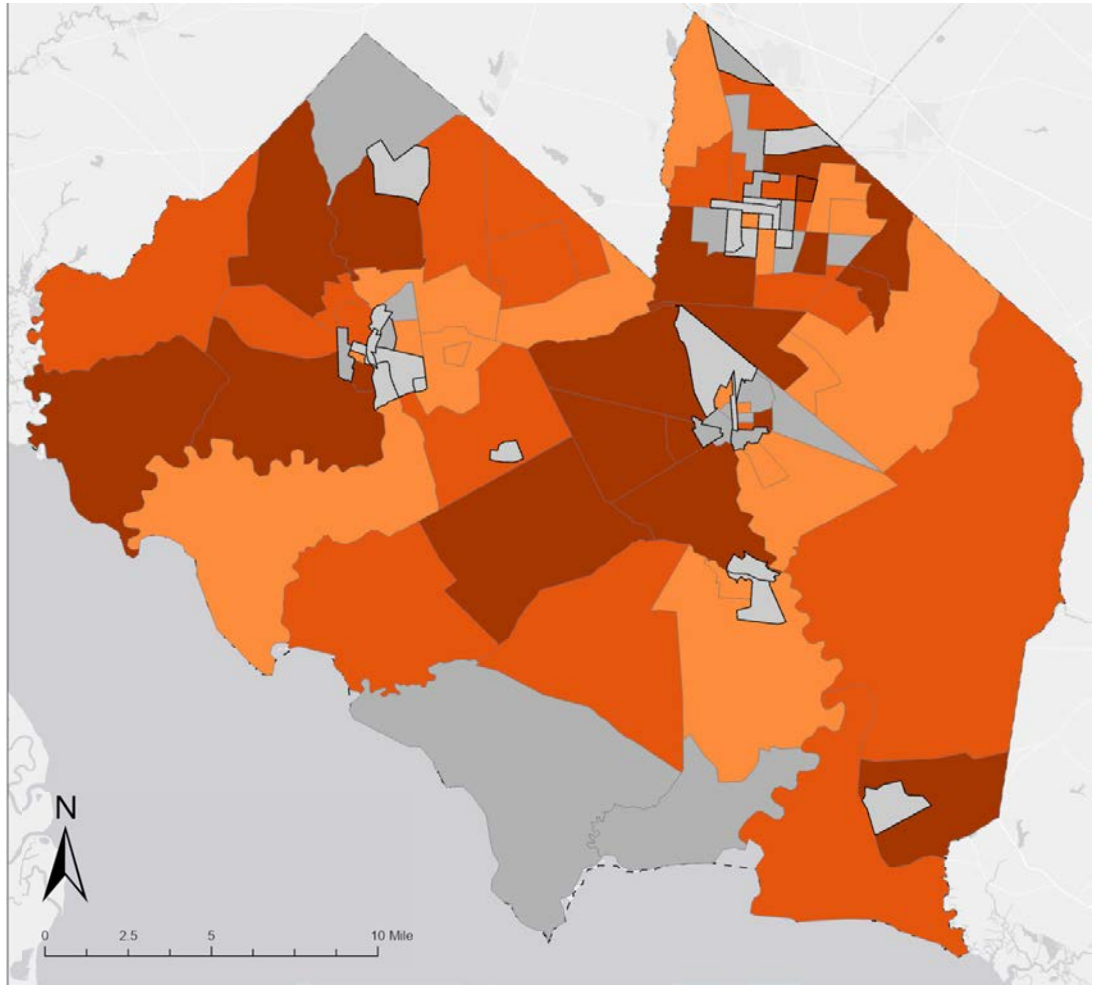


Median Age: 37.6 years old

Household Income

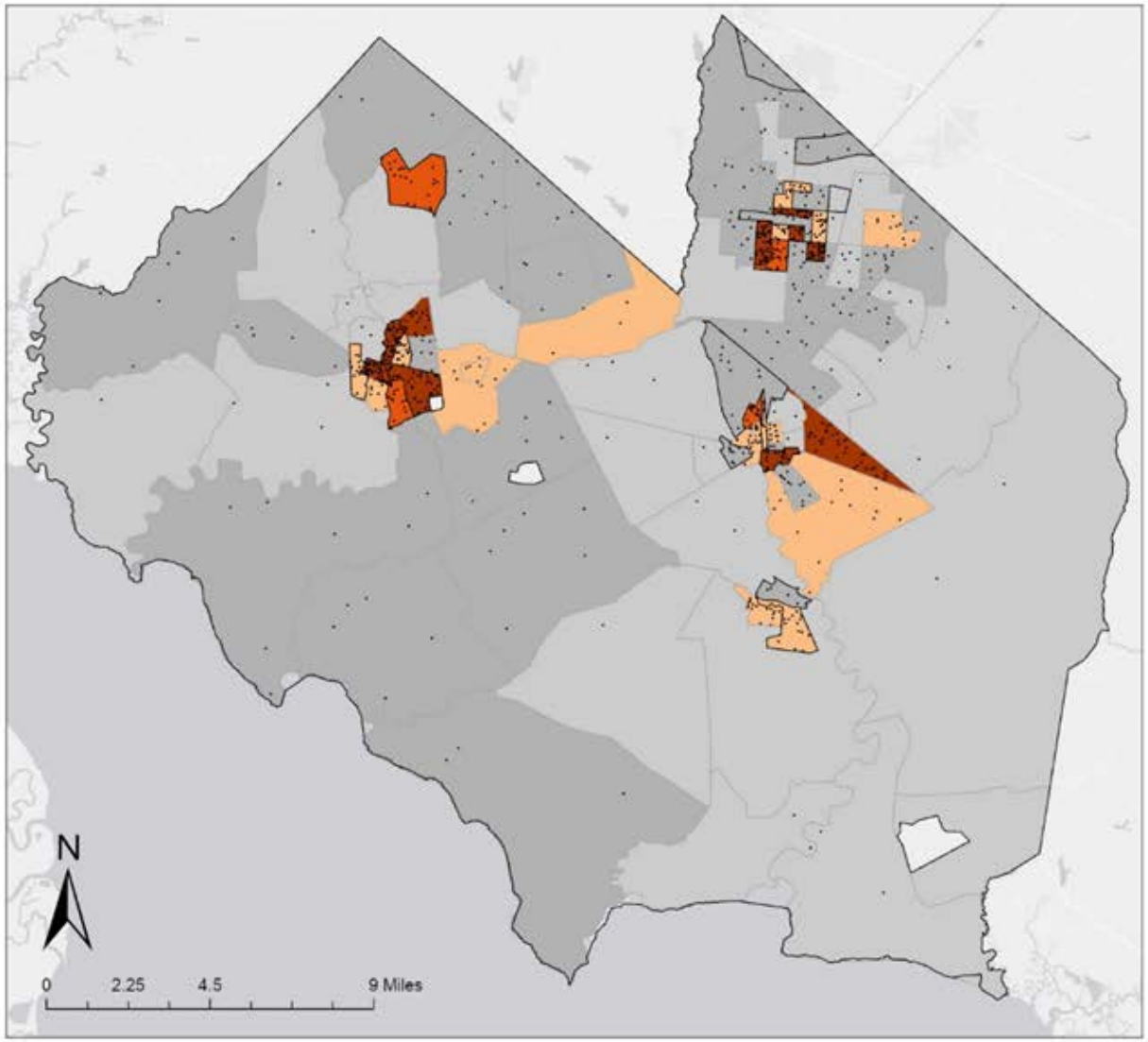
County Average Median Household Income: $54,149

AHPNJ Region 3: 2020 Affordable Housing Income Limits. Region 6: Atlantic, Cape May, Cumberland, and Salem	Income Limit (4 person Household)	
	Very Low	$24,625
	Low	$41,041
	Moderate	$65,666
	Median	$82,083



Low Income Block Group
Layer
Median Household Income
$0 - $36,700
$36,700.01 - $48,389.00
$48,389.01 - $62,262.00
$62,262.01 - $75,815.00
$75,815.01 - $111,358.00

Households living in poverty



Households in Poverty

Low Income Block Group

1 Dot = 10 Households in Poverty

Percent of Total Households in Poverty

0% - 8%

8% - 16%

16% - 26%

26% - 34%

34% - 58%

County average 15.96%

Data Source: NJGIN, ACS 2015-2019 5-year estimate, ESRI base map

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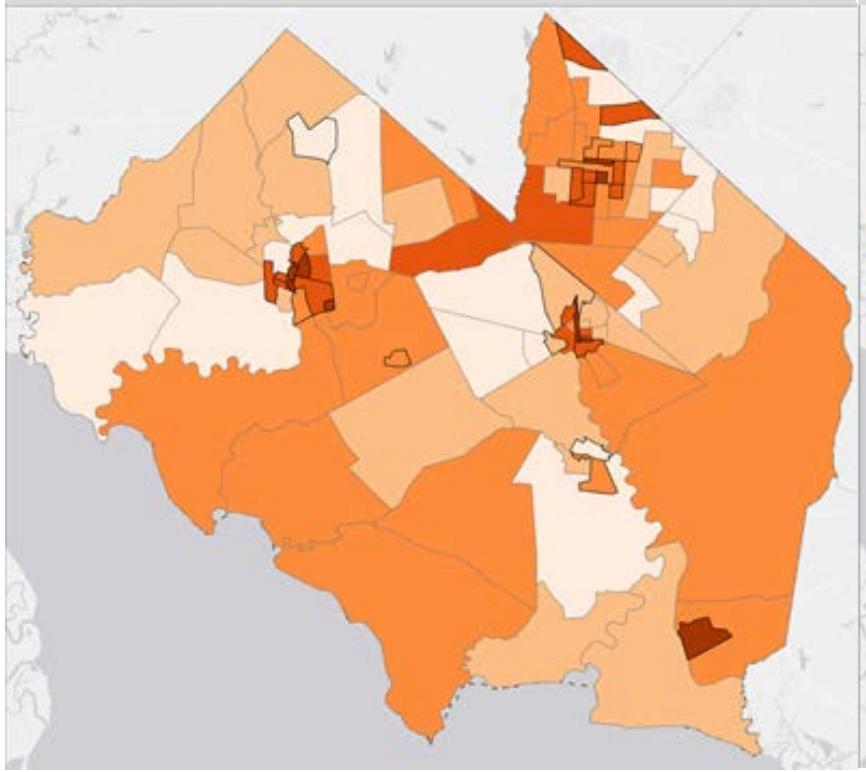
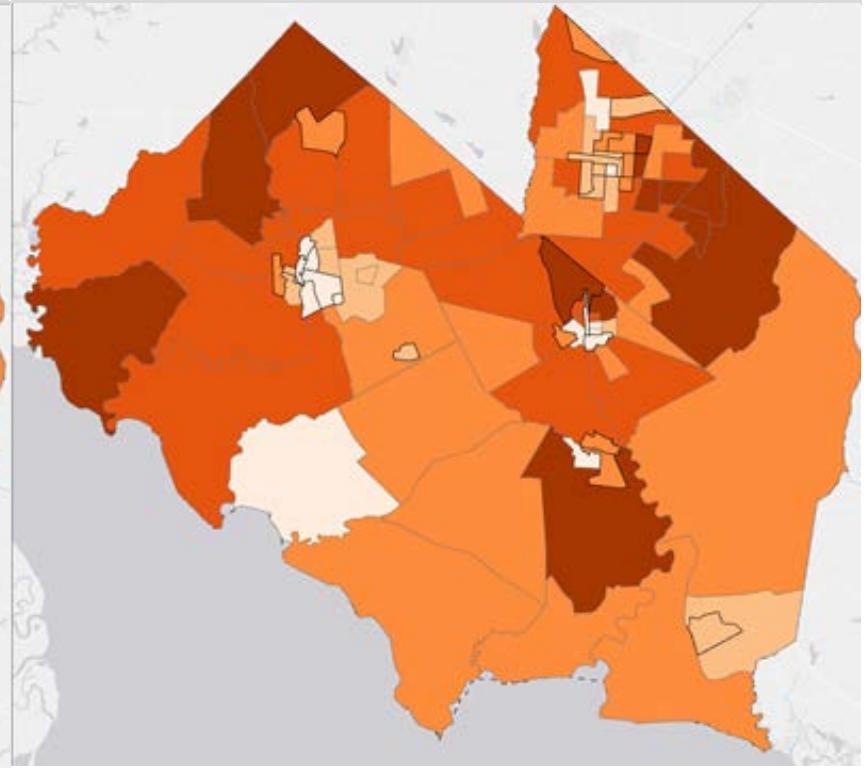
Educational Attainment

25 years and older w/ less than Bachelor's Degree	25 years and older w/ Bachelor's Degree or higher
84%	16%



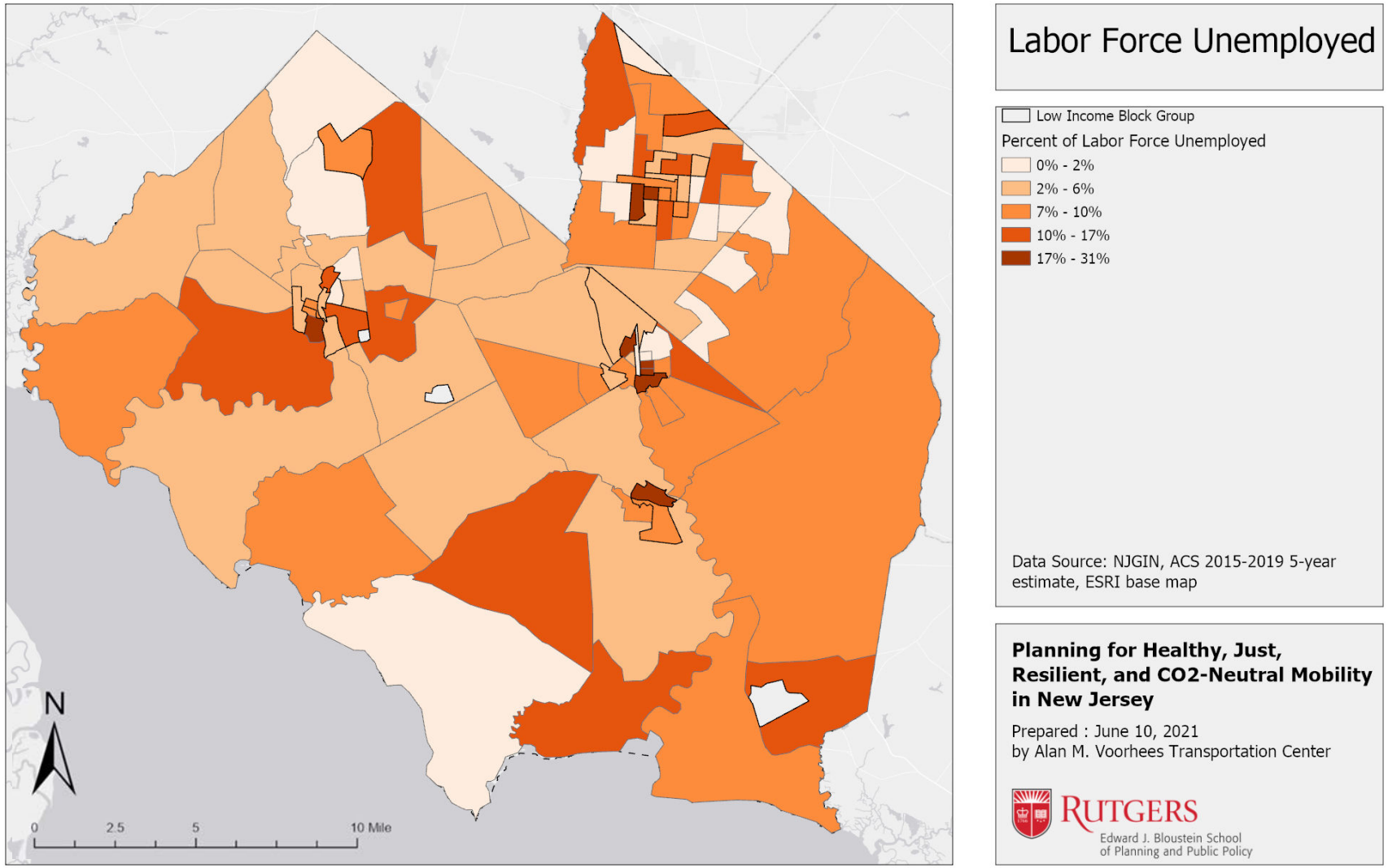
Low Income Block Group
Percent of Total Population
Less than 4%
4% - 9%
9% - 15%
15% - 22%
22% - 31%



Low Income Block Group
Percent of Total Population
Less than 3%
3% - 7%
7% - 12%
12% - 19%
19% - 32%

Educational Attainment	Percentage
Less than H.S Diploma	21%
H.S Diploma or equivalent	39%
Some College	24%
Professional School Degree	1%
Bachelor's Degree or higher	16%

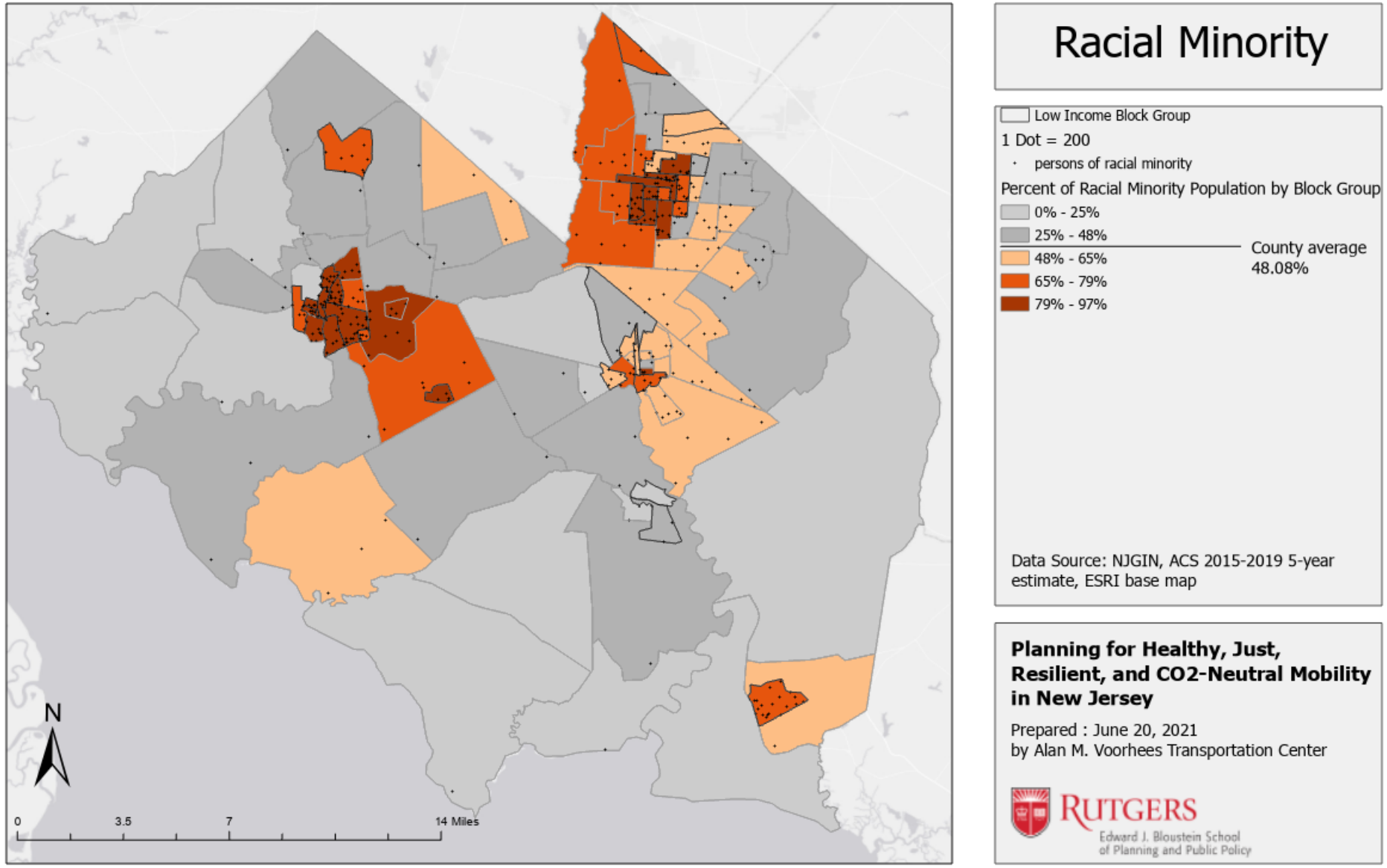
Employment Status



Indicators of Potential Disadvantage

- Racial Minority
- Foreign Born status
- Limited English Proficiency
- Disability status
- Older Adults (75+)
- Single Parent households

Indicators of Potential Disadvantage



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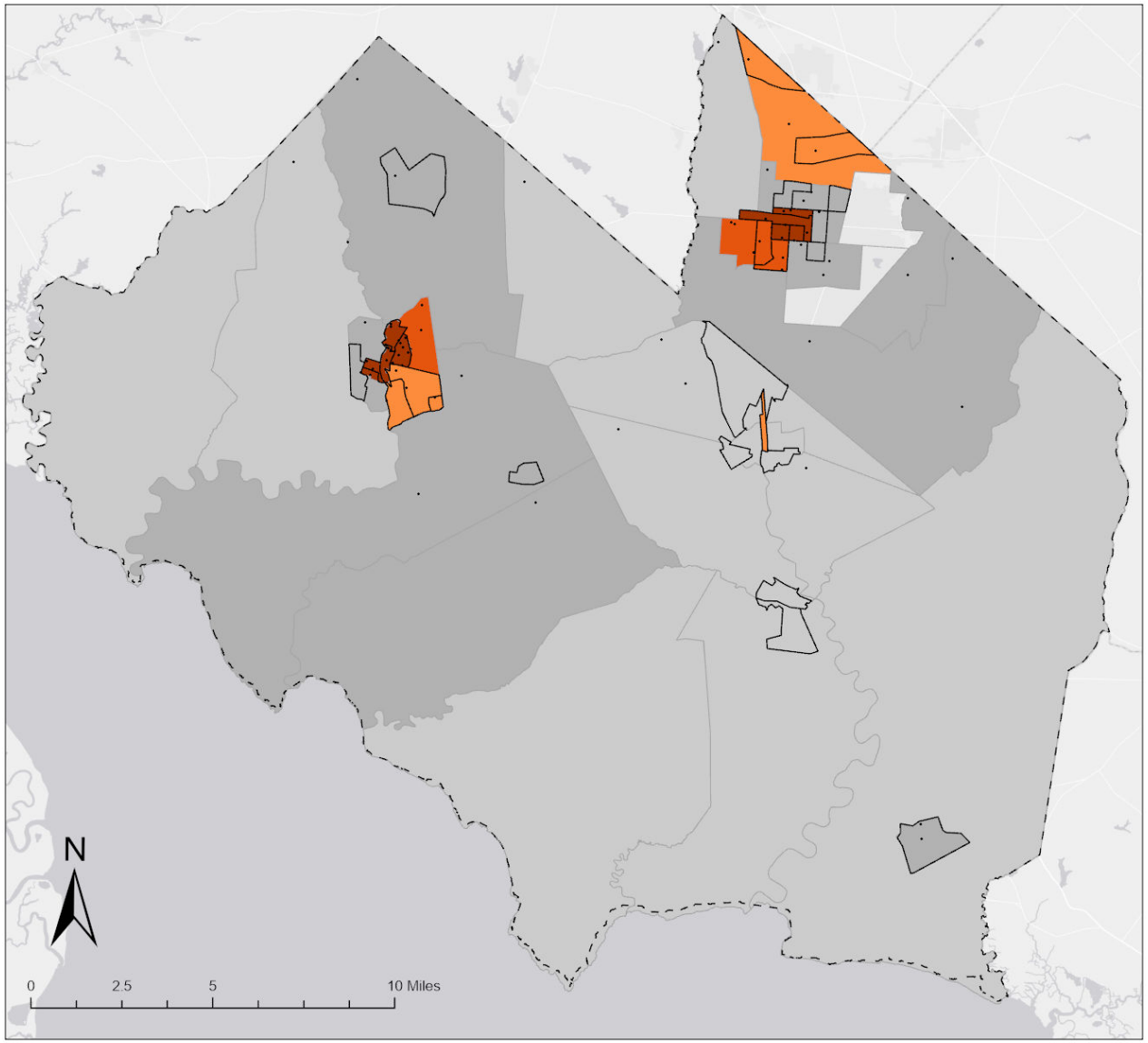

Foreign-born Population

Low Income Block Group

1 Dot = 200

Foreign Born Persons

Percent of Foreign-born Population by Census Tract

0% - 6%

6% - 10%

10% - 16%

16% - 22%

22% - 37%

County average 10.09%

Data Source: NJGIN, ACS 2015-2019 5-year estimate, ESRI base map

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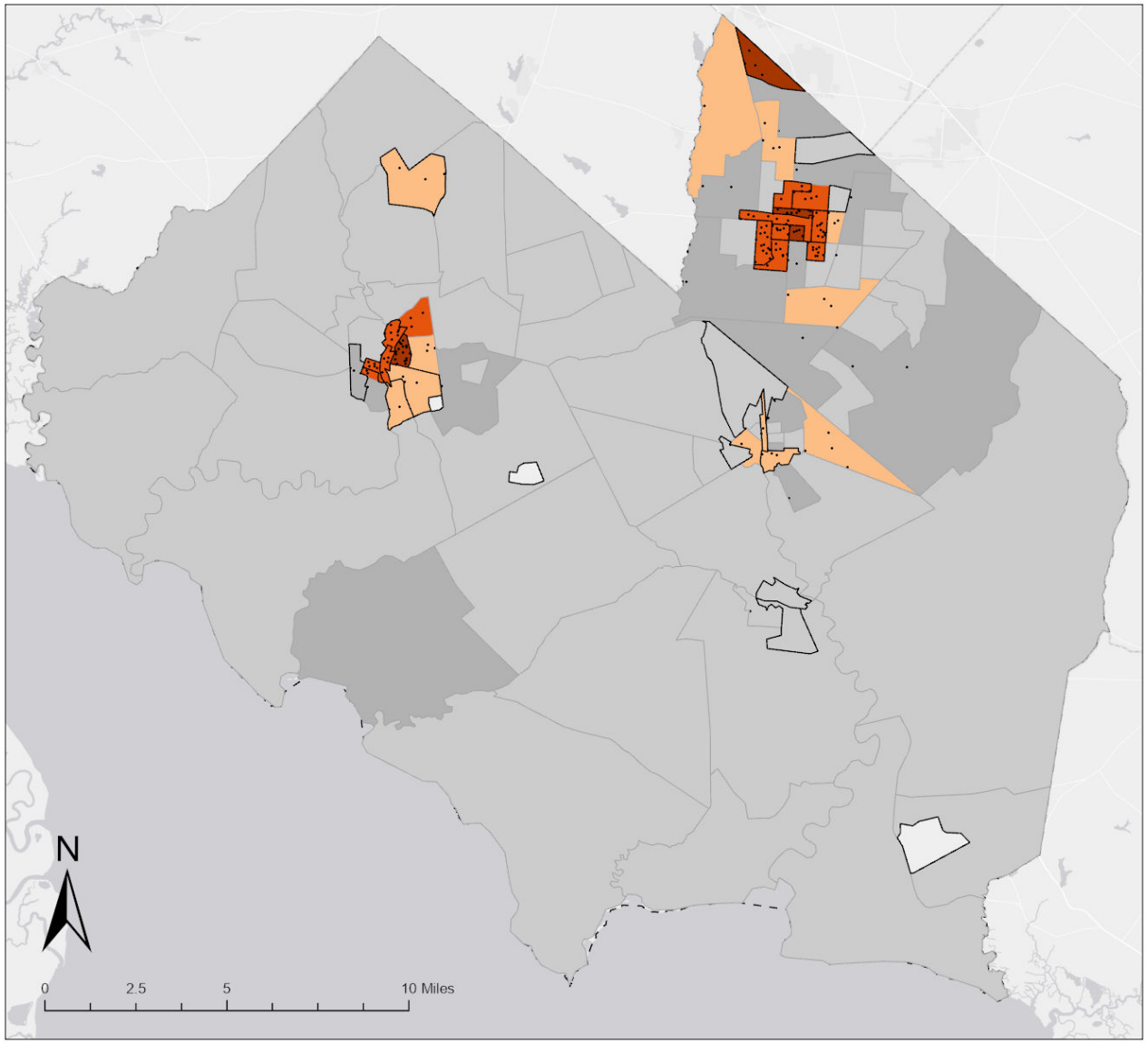

Limited English Proficiency

Low Income Block Group
1 Dot = 20
households with limited English proficiency
Percent of Limted English Proficiency Households by Block Group
0% - 2%
2% - 7%
7% - 14%
14% - 29%
29% - 42%
County average 7%

Data Source: NJGIN, ACS 2015-2019 5-year estimate, ESRI base map

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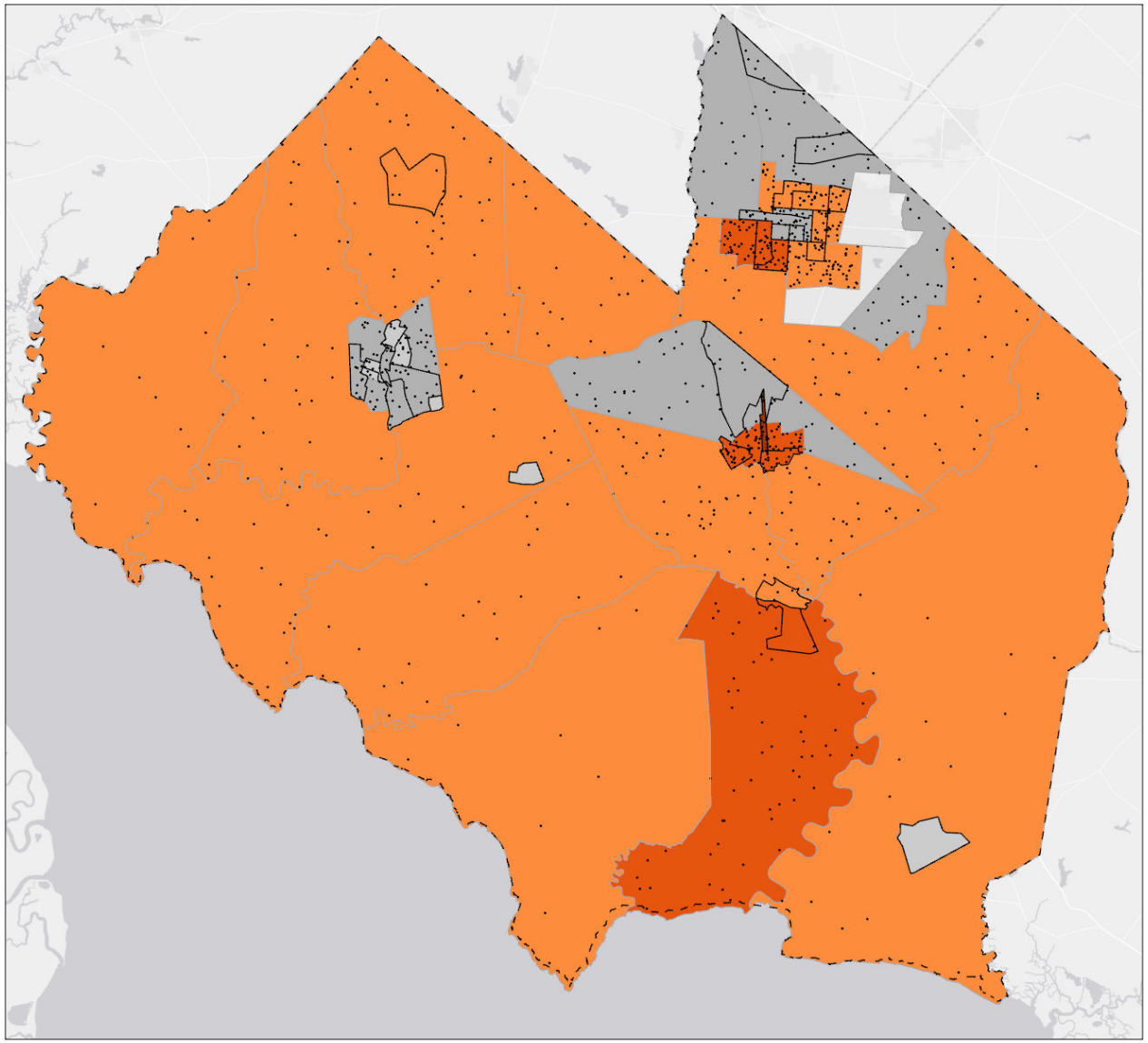

Disability Status

Low Income Block Group

1 Dot = 20

· Persons with a disability

Percent With Disability

0% - 6%

6% - 13%

13% - 18%

18% - 23%

23% - 33%

County average 13.29%

Data Source: NJGIN, ACS 2015-2019 5-year estimate, ESRI base map

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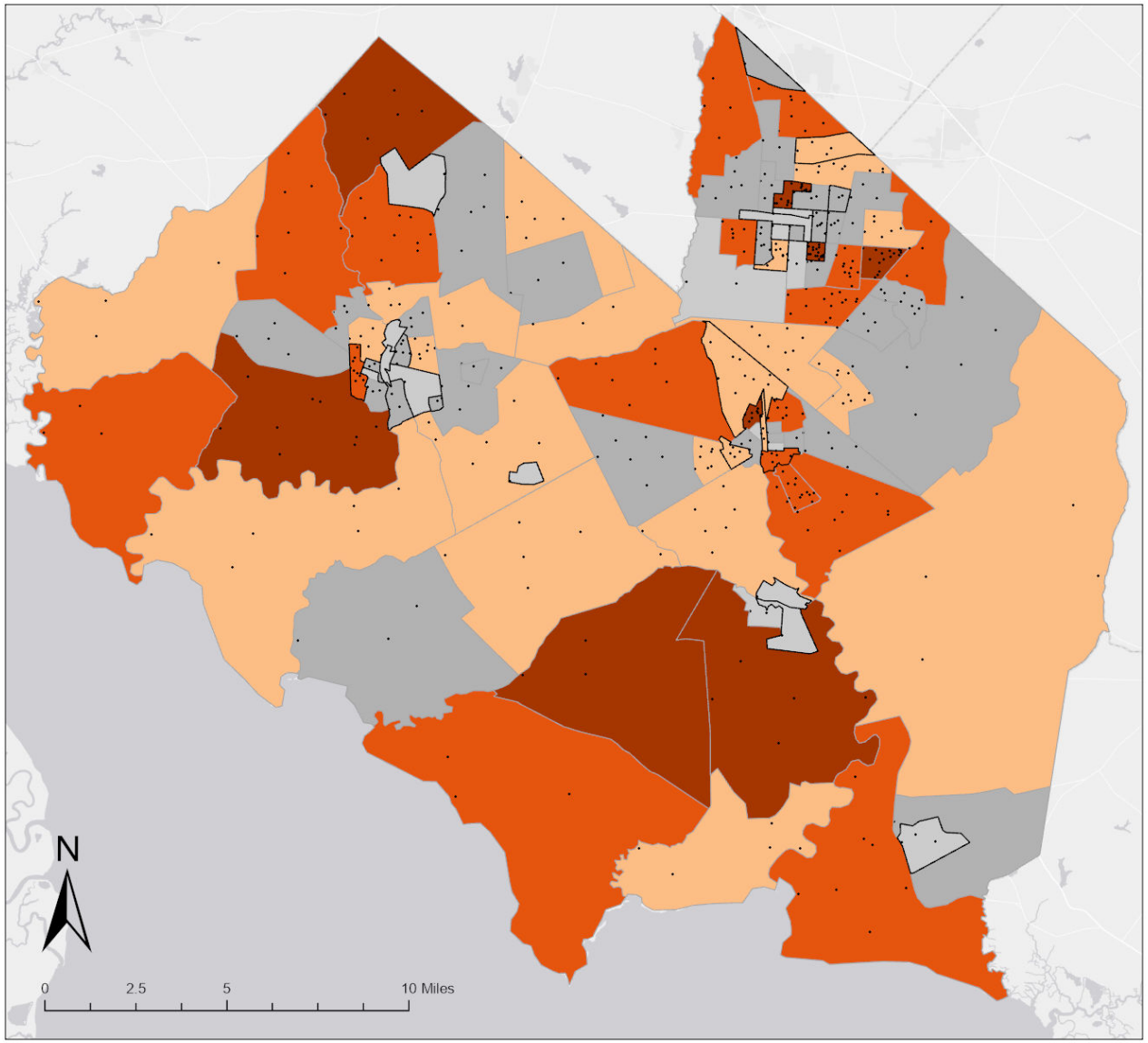
Indicators of Potential Disadvantage



Older Adults (75+)

Low Income Block Group

1 Dot = 20

· older adults (75+)

Percent of Older Adults (75+) by Block Group

0% - 2%

2% - 7%

7% - 10%

10% - 13%

13% - 21%

County average 6.9%

Data Source: NJGIN, ACS 2015-2019 5-year estimate, ESRI base map

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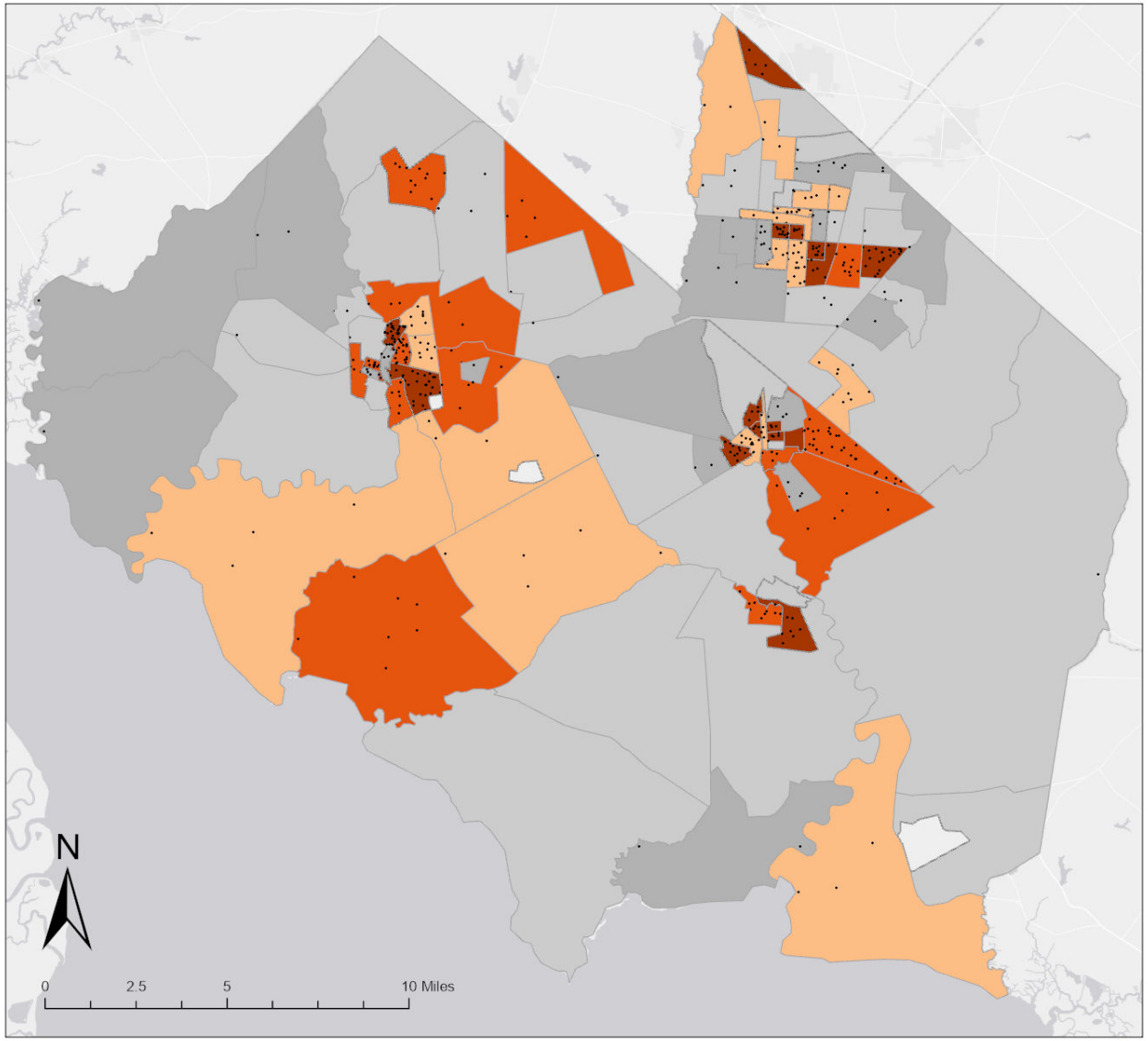
Indicators of Potential Disadvantage



Single Parent Family

Low Income Block Group
1 Dot = 30
single parent family
Percent of Single Parent Families by Block Group
0% - 21%
21% - 41%
41% - 58%
58% - 73%
73% - 100%
County average 41.23%

Data Source: NJGIN, ACS 2015-2019 5-year estimate, ESRI base map

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Health Behaviors

Middlesex is ranked among the least healthy counties in New Jersey (Lowest 0%-25%)

Source: 2020 NJ County Health rankings

Health Behaviors	Cumberland County	NJ
Adult Smoking	23%	14%
Adult obesity	37%	26%
Food environment index	7.5	9.3
Physical inactivity	32%	26%
Access to exercise opportunities	79%	95%
Excessive drinking	18%	18%
Alcohol-impaired driving deaths	30%	22%

Physical Environment	Middlesex County	NJ
Air pollution-particulate matter	7.8	9.9
Drinking water problems	Yes	-
Severe housing problems	24%	22%
Driving alone to work	81%	71%
Long commute-driving alone	31%	43%

Health Behaviors

Middlesex is ranked among the least healthy counties in New Jersey (Lowest 0%-25%) regarding Health Outcomes

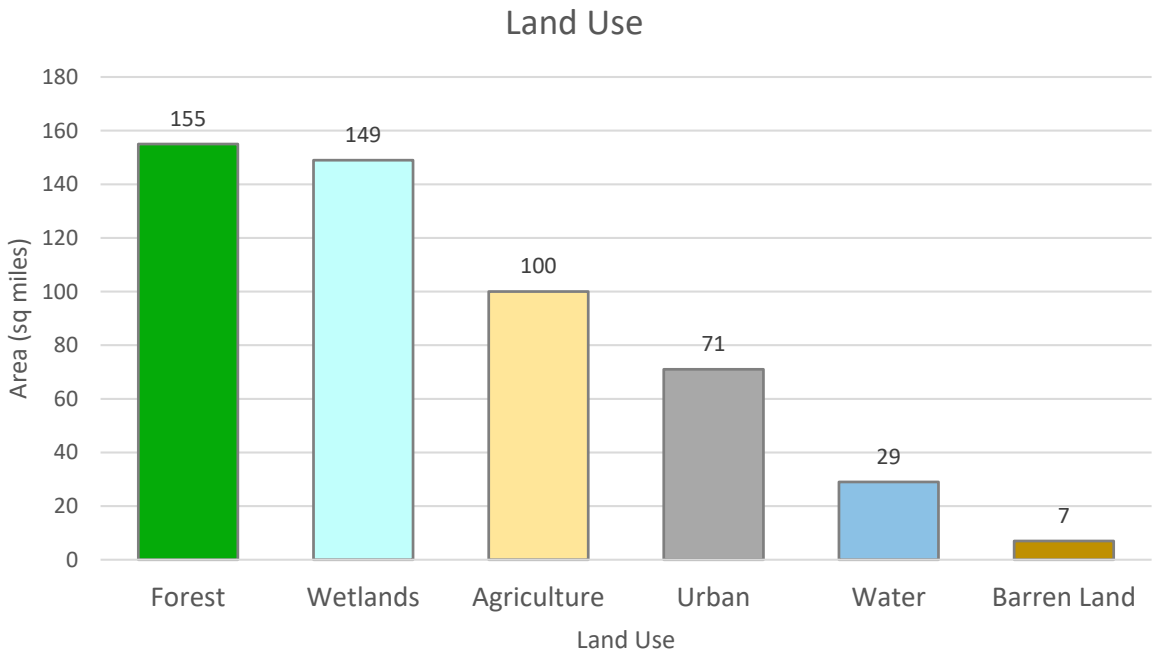
Quality of Life	Cumberland County	NJ
Poor or fair health	25%	18%
Poor physical health days	5.3	3.7
Poor mental health days	4.9	3.9
Low birthweight	10%	8%
Life expectancy	75.3	80.4 years
Diabetes prevalence	13%	10%
Frequent physical distress	16%	11%

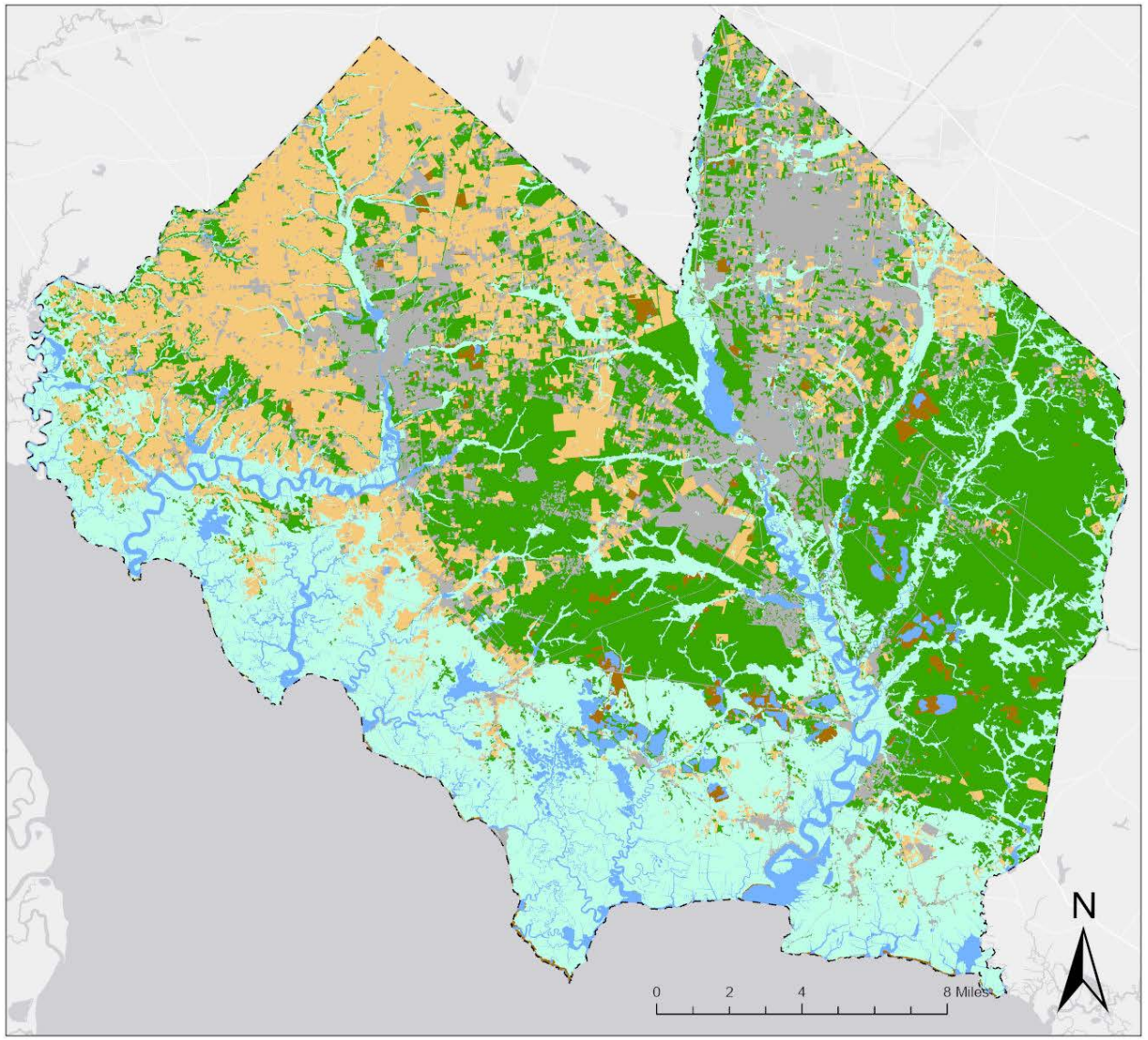
Leading Causes of Death Under age 75 in Cumberland County	Deaths
Malignant neoplasms	589
Diseases of heart	464
Accidents	359
Diabetes mellitus	99
Cerebrovascular diseases	73

Healthy, Just and CO2-neutral Mobility for All

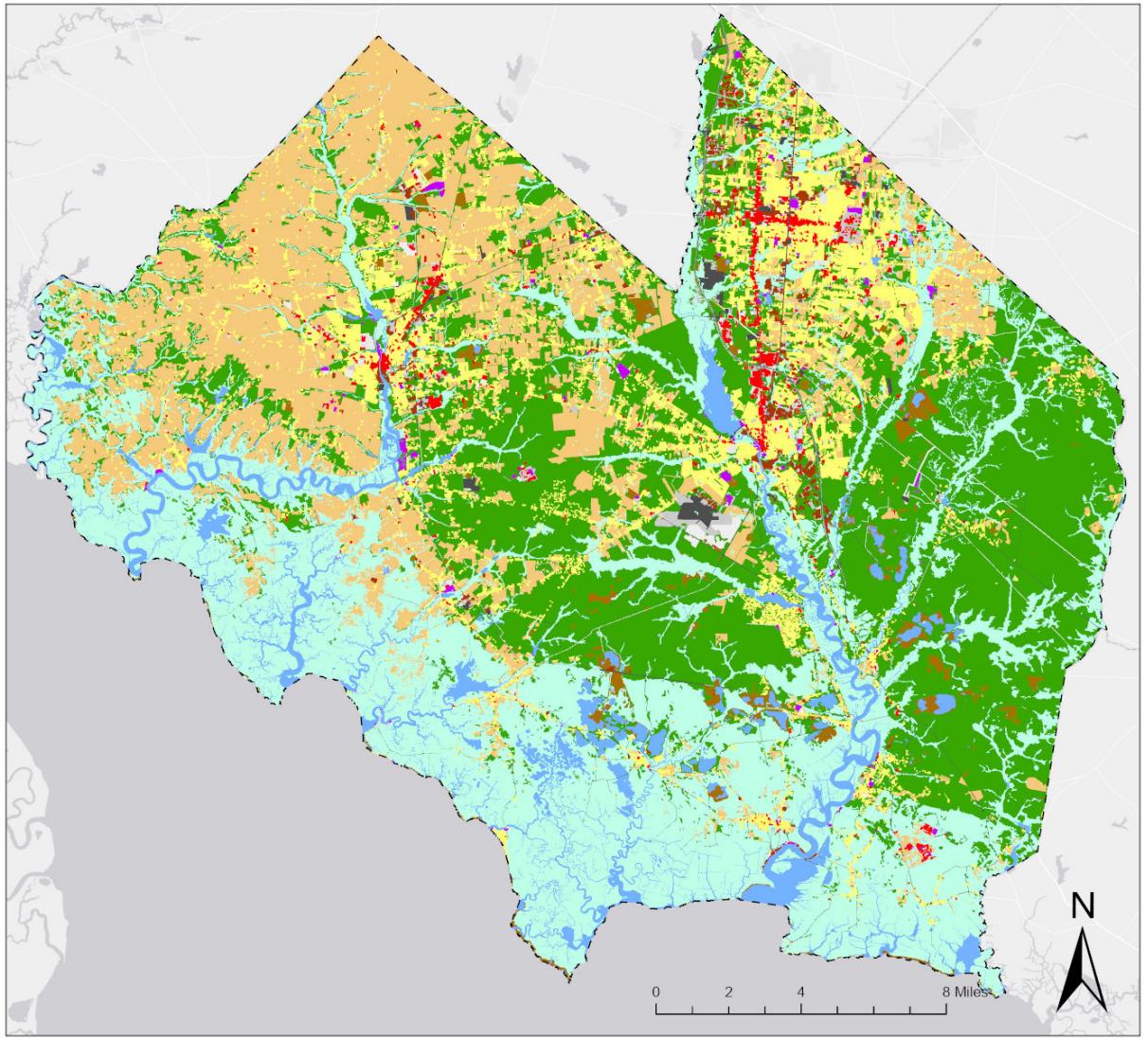
GEOGRAPHY OF PLACE

Natural Land Use





Urban Land Use



Land Use 2015

Urban Land Use
- Transportation/Commercial/Utilities
- Commercial and Services
- Industrial
- Other Urban Land
- Recreational Land
- Residential

Other Land Use
- Agriculture
- Barren Land
- Forest
- Water
- Wetlands

Data Source: NJGIN, ESRI base map

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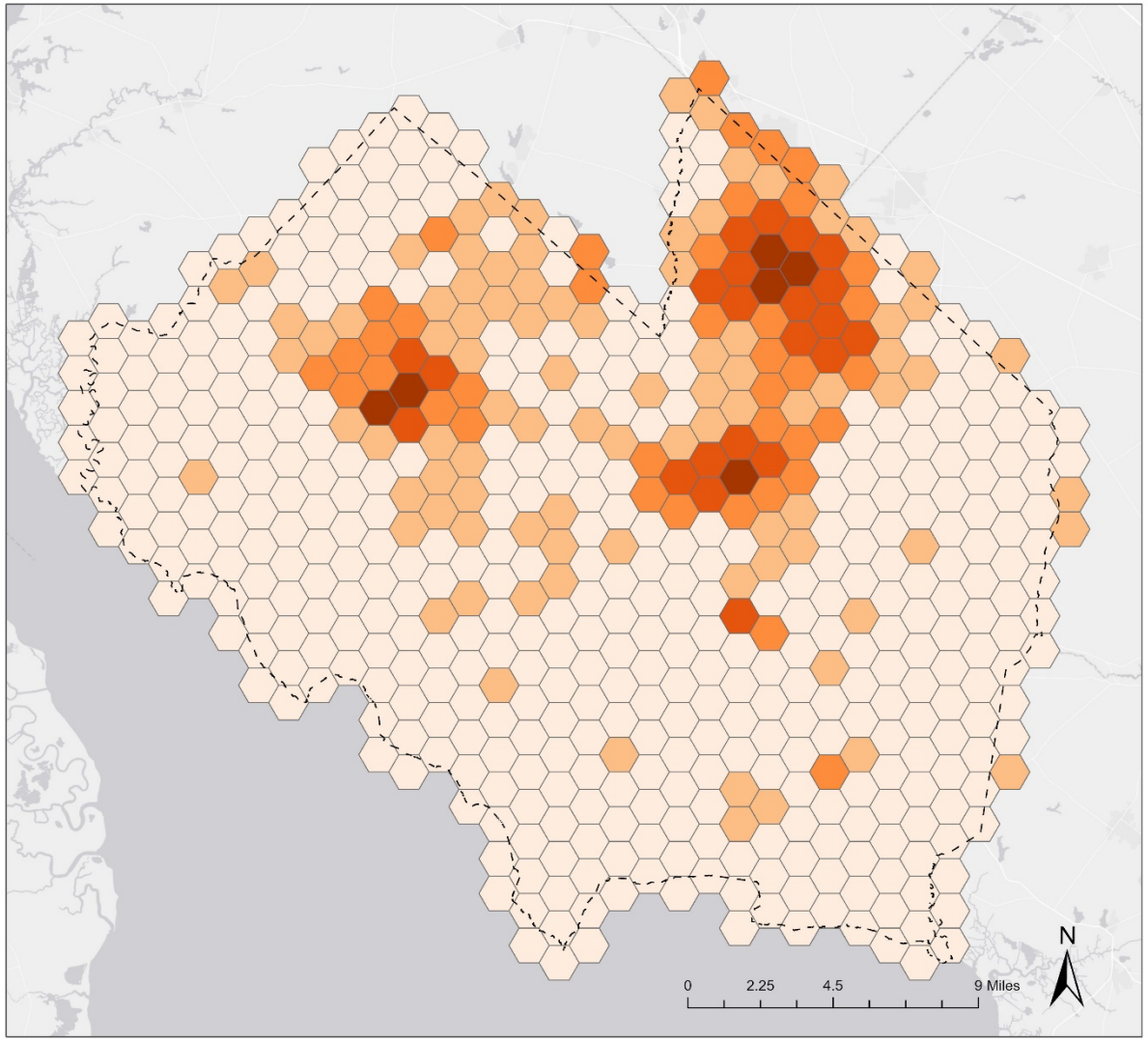
Employment Density



Employment Density

Number of employees per sq mile

- 0 - 67
- 67 - 230
- 230 - 552
- 552 - 1328
- 1328 - 3300

Data Source: NJGIN, Esri Business Analyst (2020 data)

Note: The area of a hexagon is 1 sq mile

Planning for Healthy, Just, Resilient, and CO2-Neutral Mobility in New Jersey

Prepared : June 10, 2021
by Alan M. Voorhees Transportation Center

RUTGERS
Edward J. Bloustein School of Planning and Public Policy

Employment Density by Wage

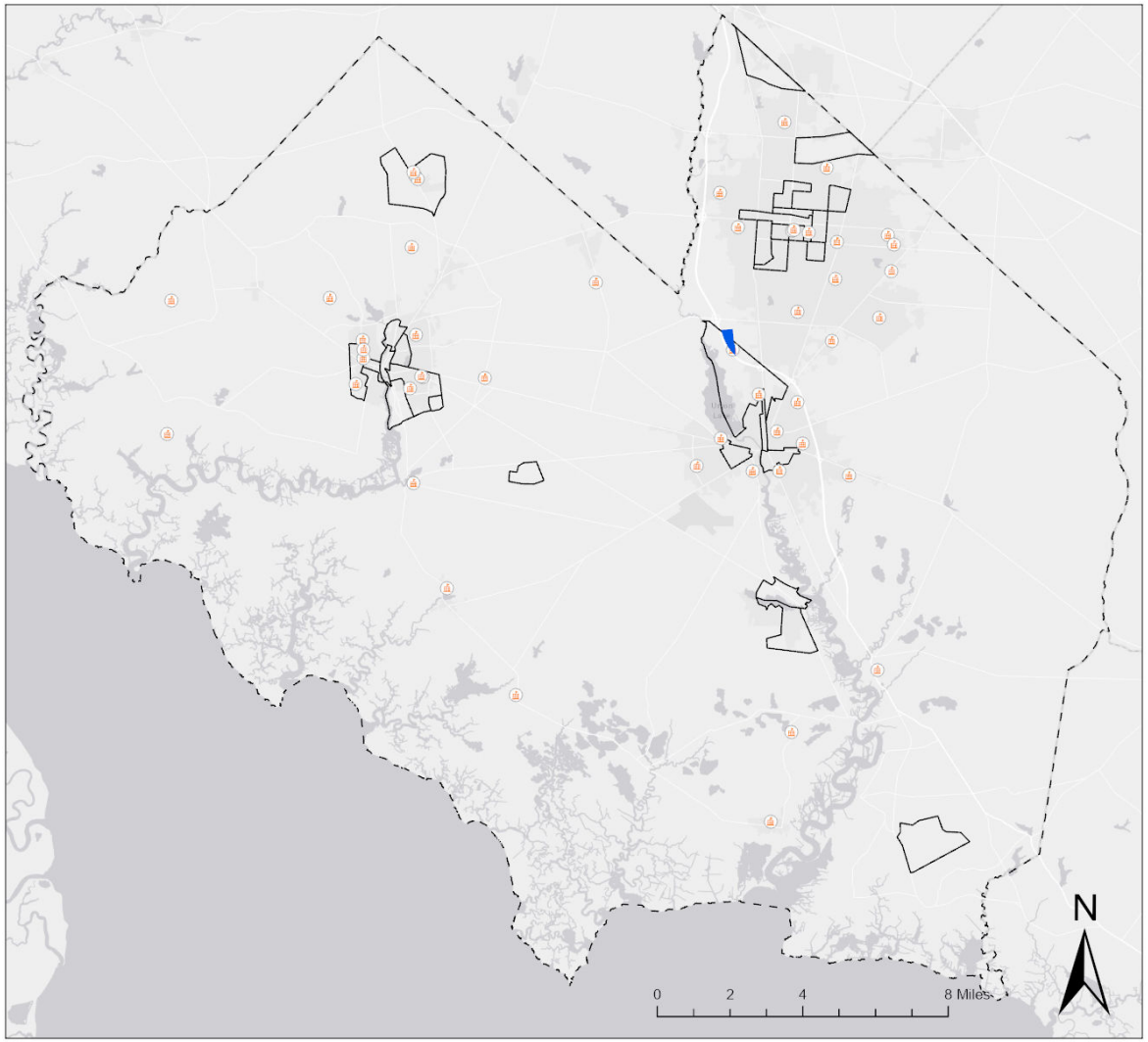
Number of low/mid/high wage employees per sq mile by residence/workplace block group

- <400
- 401 - 800
- 801 - 1200
- 1201 - 1600
- >1600

Education Services

Type 1: Colleges and universities

Type 2: K-12 public schools



Education

Low Income Block Group
K-12 Public School
Rowan College of South Jersey Cumberland Campus

Data Source: NJGIN, 2015-2019 ACS, 5-year estimate, ESRI Business Search Safegraph, ESRI base map

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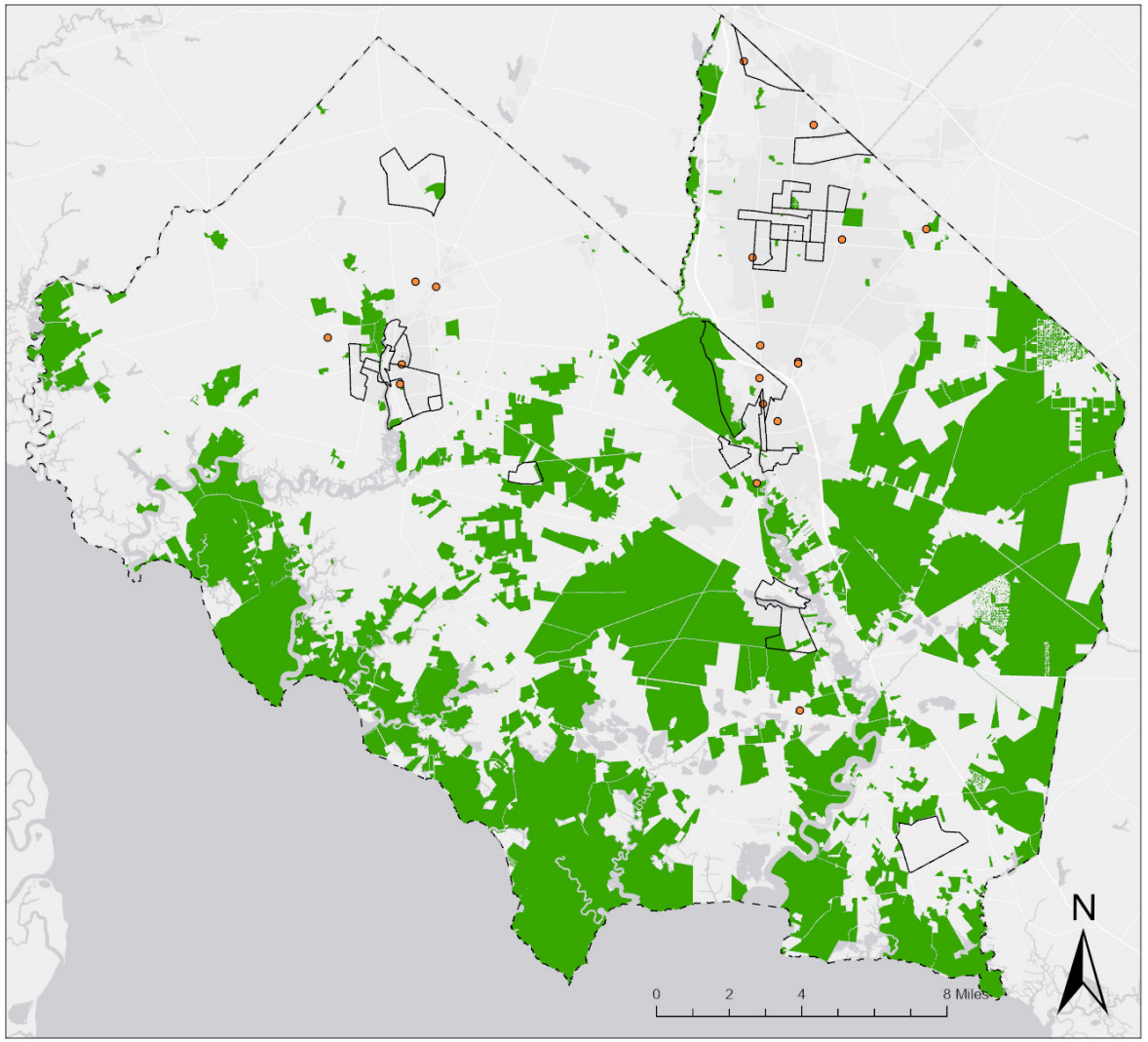
Recreation

Type 1: State, local and nonprofit Open Space

Type 2: Fitness centers



Recreation

State, Local, and Nonprofit Open Space
Low Income Block Group
Fitness Center

Data Source: NJGIN, 2015-2019 ACS, 5-year estimate, ESRI Business Search Safegraph, ESRI base map

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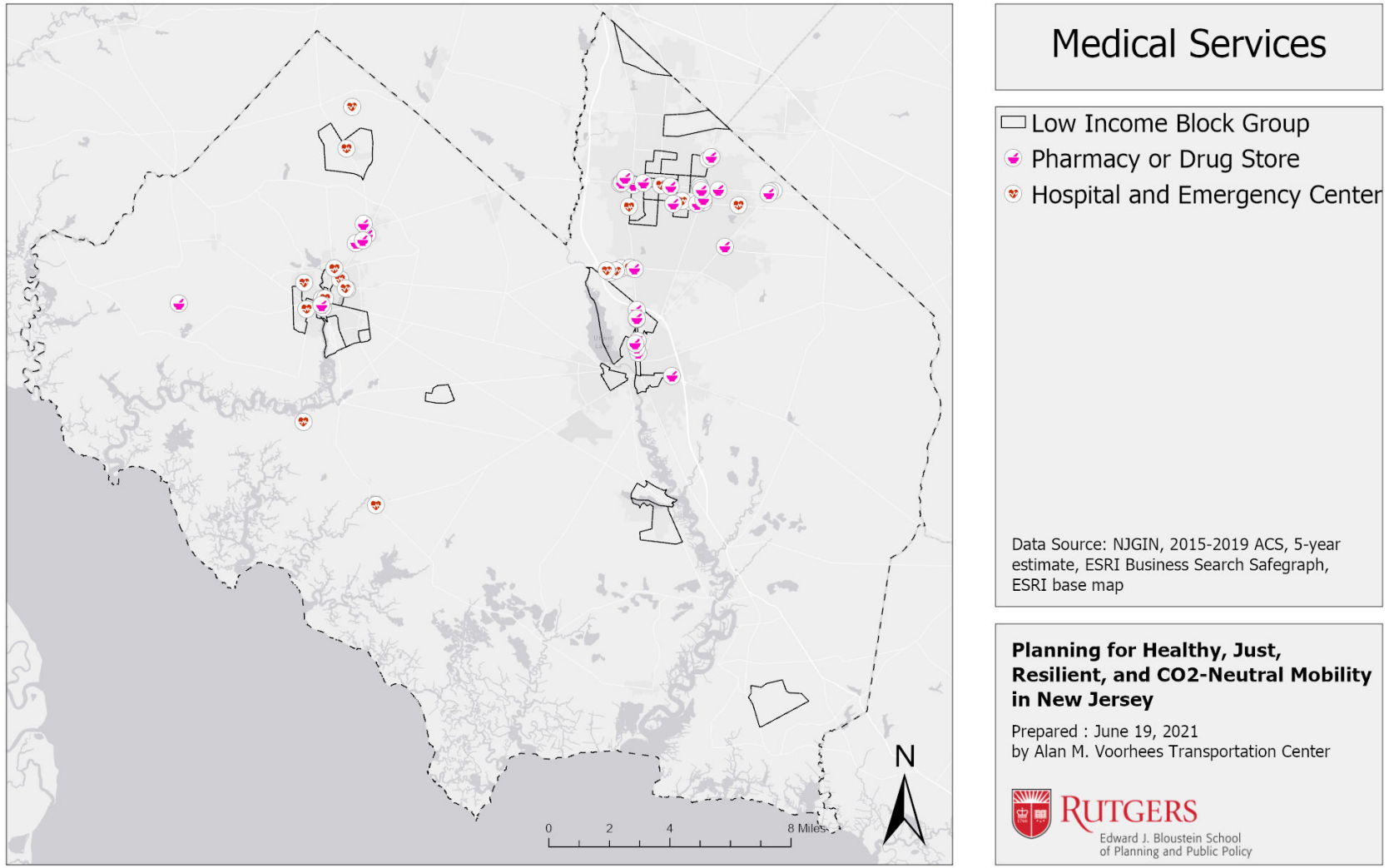
Medical Services

Type 1: Hospitals and emergency centers

Type 2: Pharmacies

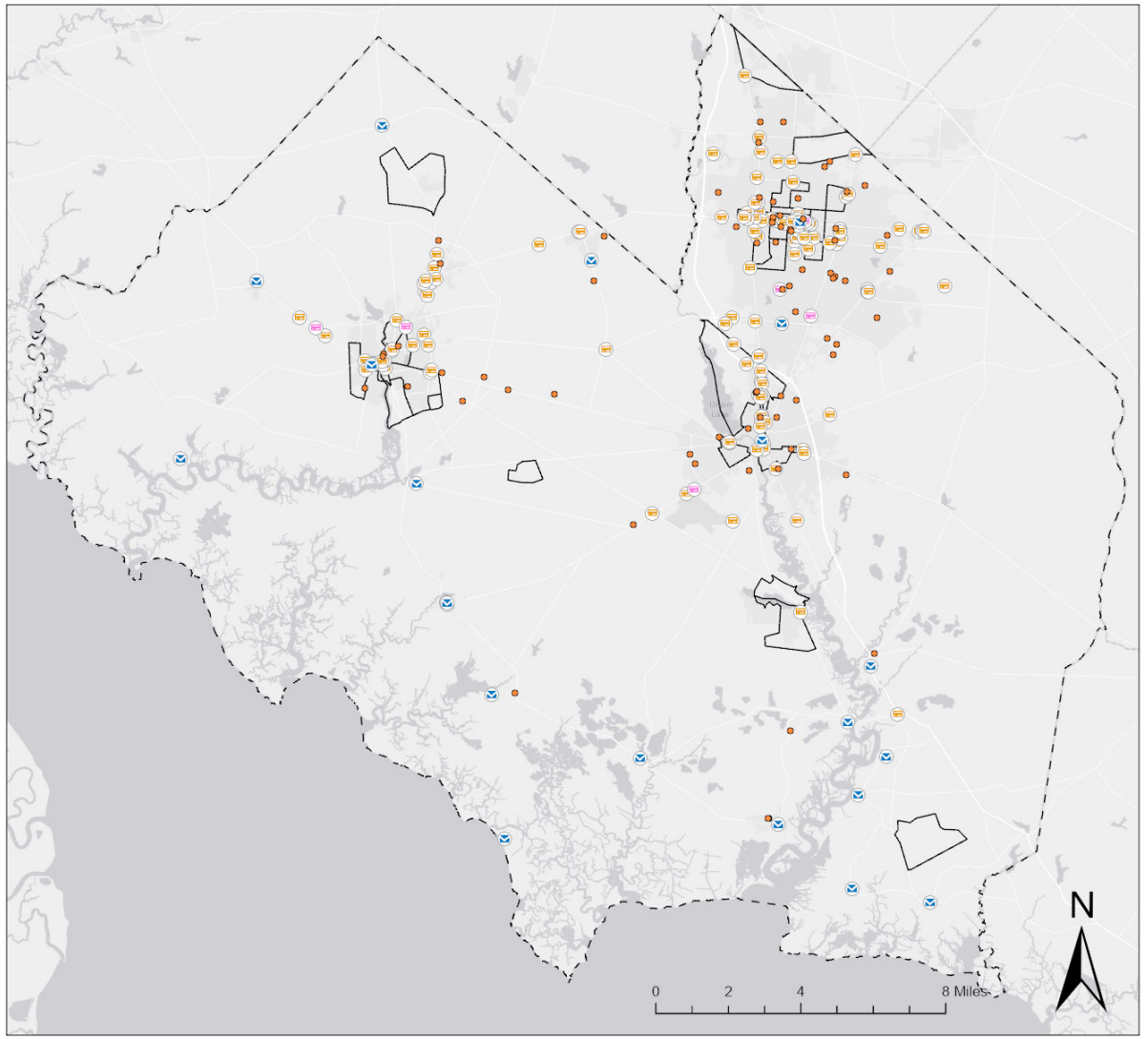


Other Essential Services

Type 1: Commercial Banks and Credit Unions

Type 2: Postal Services

Type 3: Childcare Centers



Essential Services

- Low Income Block Group
- Child Care Center
- Postal Service
- Credit Union
- Commercial Banking

Data Source: NJGIN, 2015-2019 ACS, 5-year estimate, ESRI Business Search Safegraph, ESRI base map

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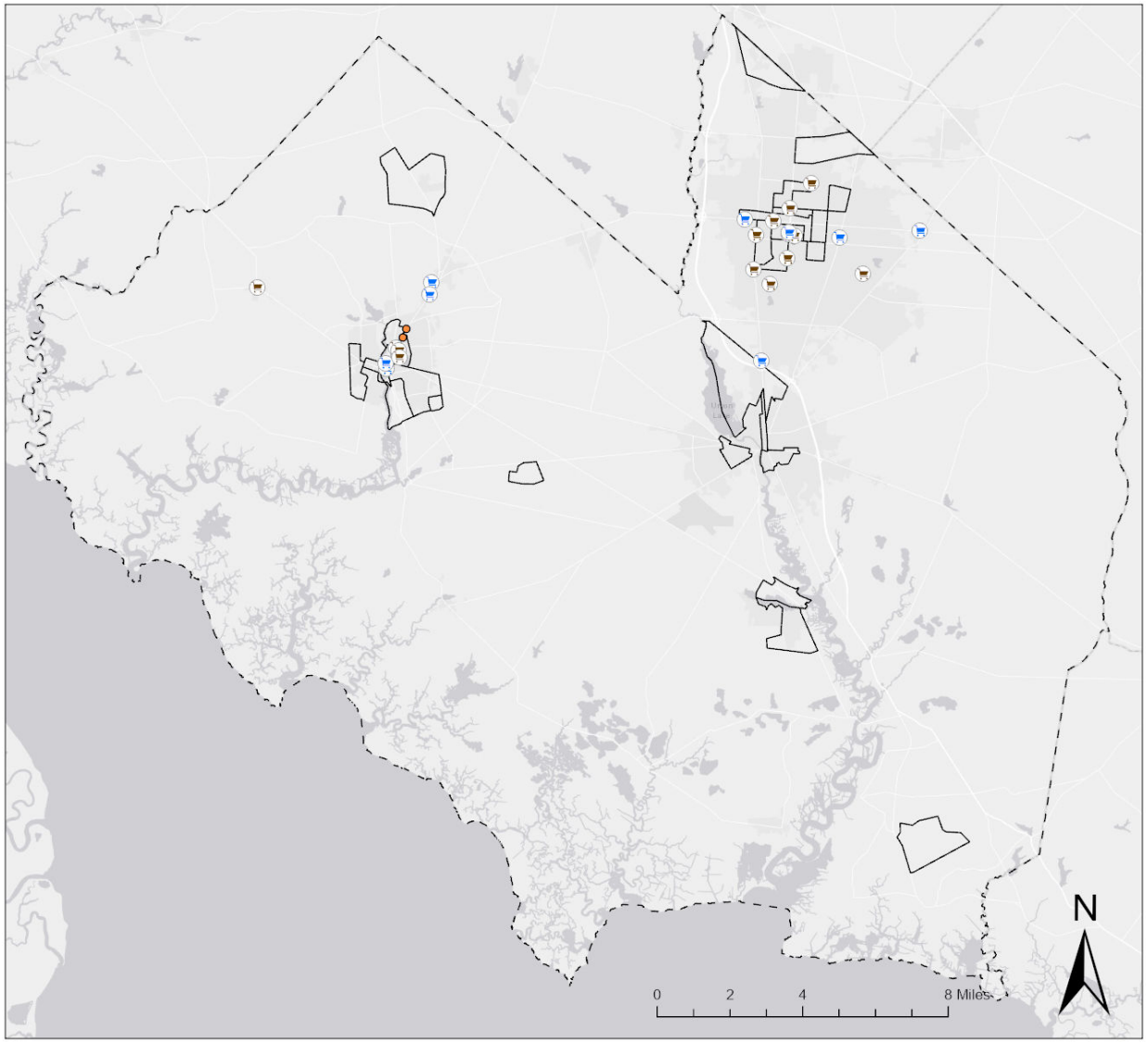
Commercial Amenities

Type 1: Full-service grocery stores

Type 2: Convenience/Specialty stores

Type 3: Laundromats



Commercial Amenities

- Low Income Block Group
- Convenience/ Specialty Store
- Full-service Grocery Store
- Laundromat

Data Source: NJGIN, 2015-2019 ACS, 5-year estimate, ESRI Business Search Safegraph, ESRI base map

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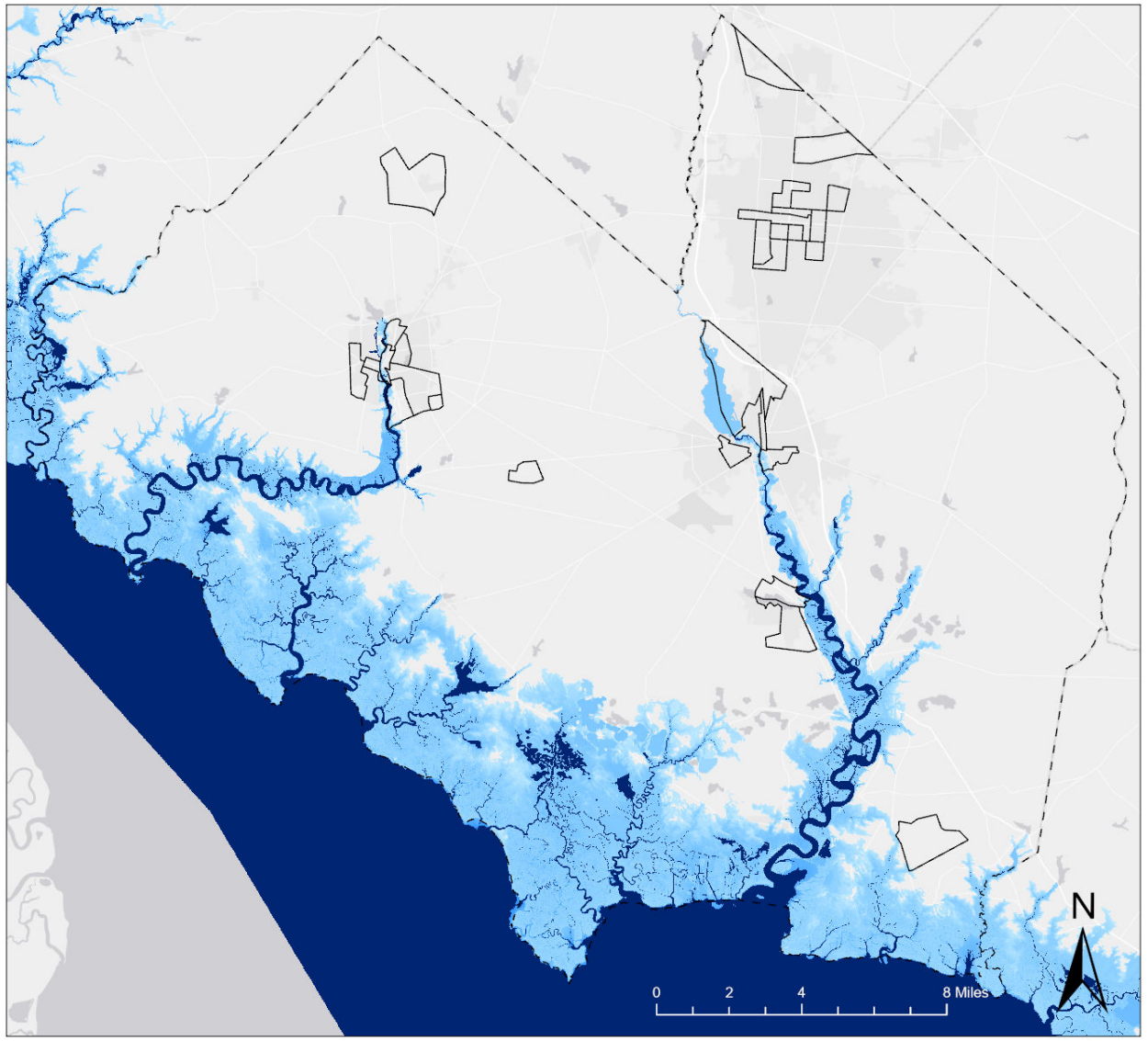
Climate Vulnerability

Sea-level rise



Sea Level Rise (5 ft)

Low Income Block Group
High
Low

Data Source: NJGIN, ACS 2015-2019 5-year estimate, ESRI base map, NOAA

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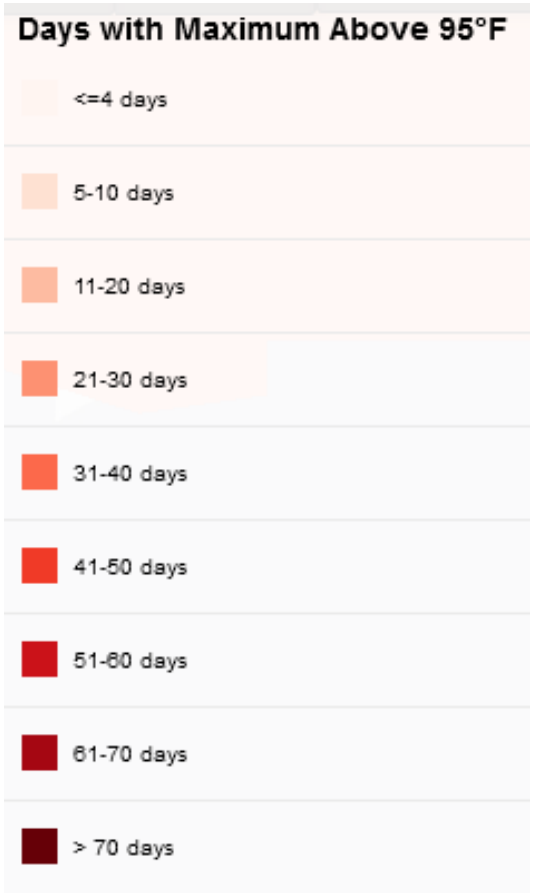
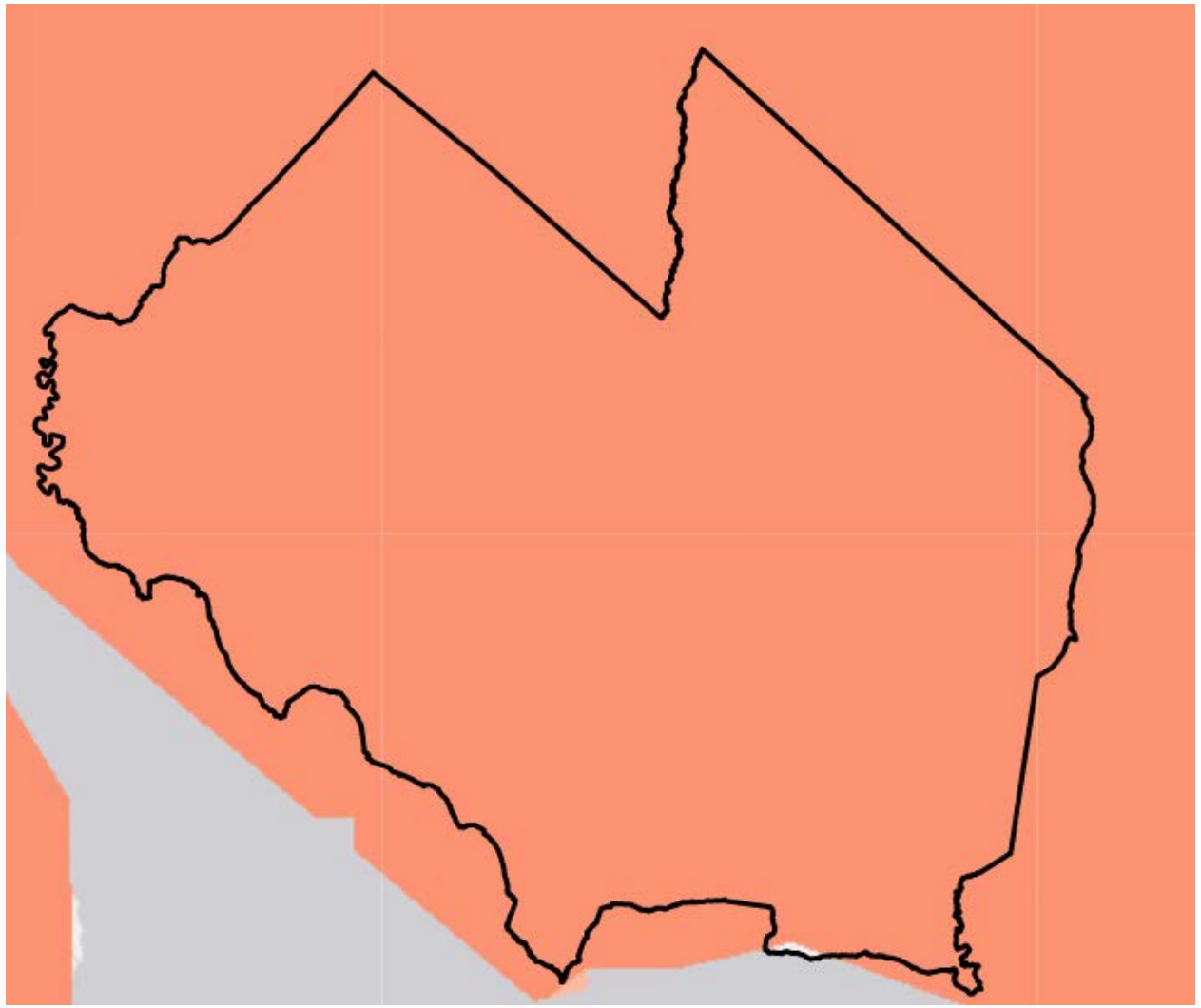
Climate Vulnerability

Exposure to extreme heat (High-emissions scenario)

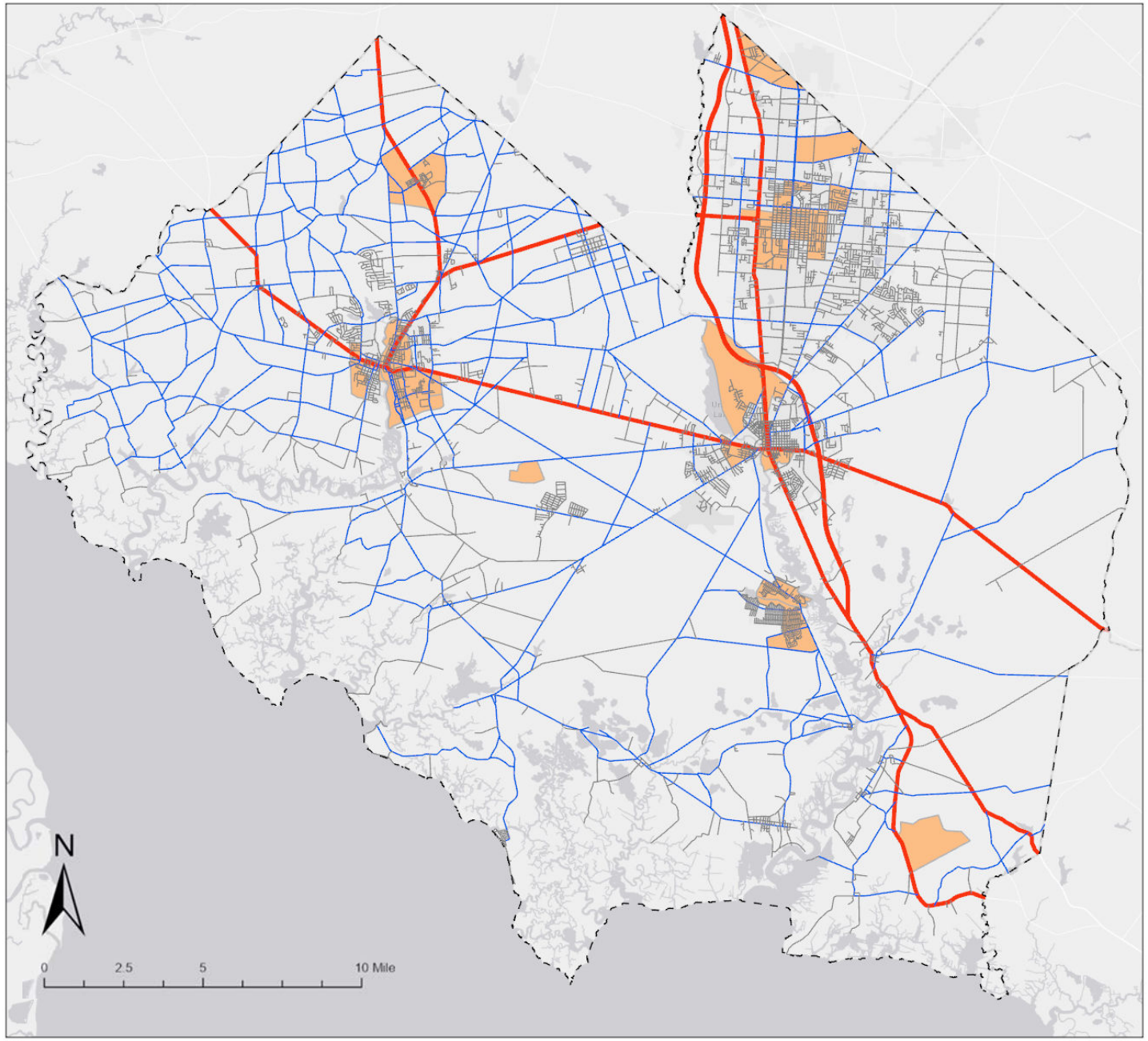




Source: NJ Forest Adapt

Healthy, Just and CO2-neutral Mobility for All

GEOGRAPHY OF MOBILITY AND CONNECTIONS



Road Network

Type
- Interstate/US/State highway
- County Route
- Local Road
- Low Income Block Group

Data Source: NJGIN, ACS 2015-2019 5-year estimate, ESRI base map

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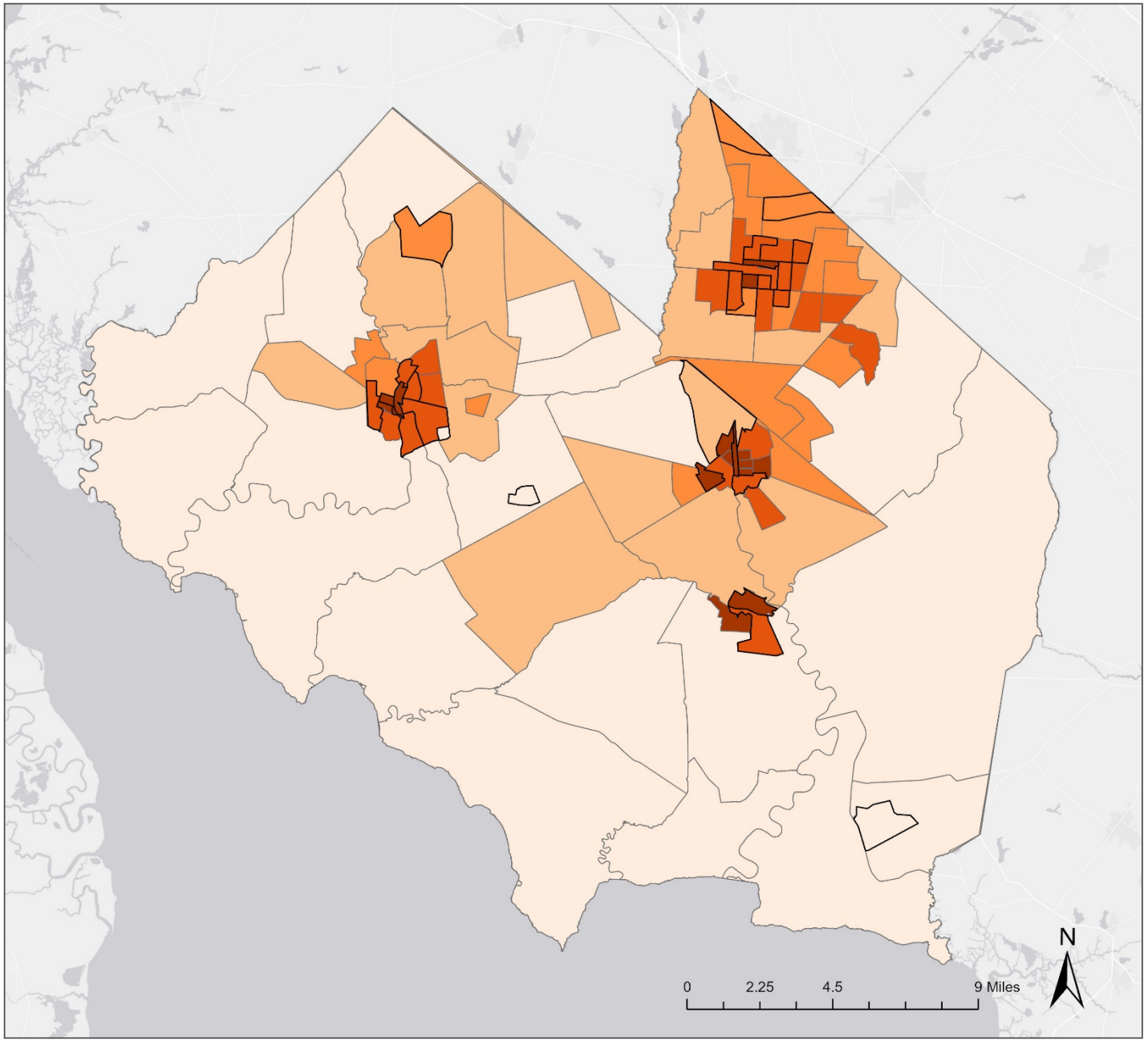

Intersection Density

Number of intersections per acre

- 0 - 4
- 4 - 14
- 14 - 35
- 35 - 79
- 79 - 176
- Low income block group

Data Source: NJGIN, Esri Business Analyst (2020 data)

Note: The area of a hexagon is 1 sq mile

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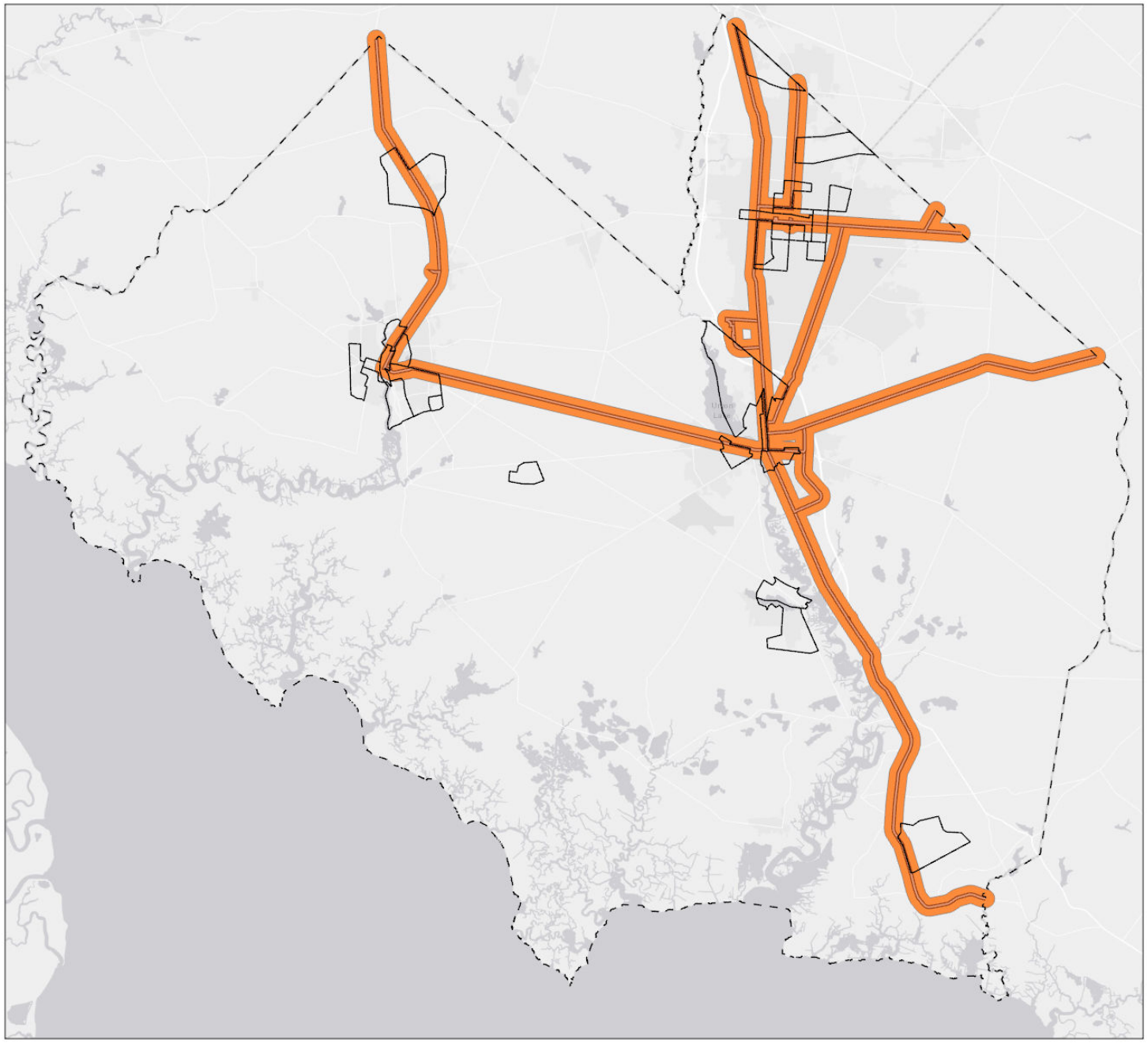

Transit Service Area

Low Income Block Group
Bus Route
Transit Service Area

Data Source: NJGIN, ACS 2015-2019 5-year estimate, ESRI base map

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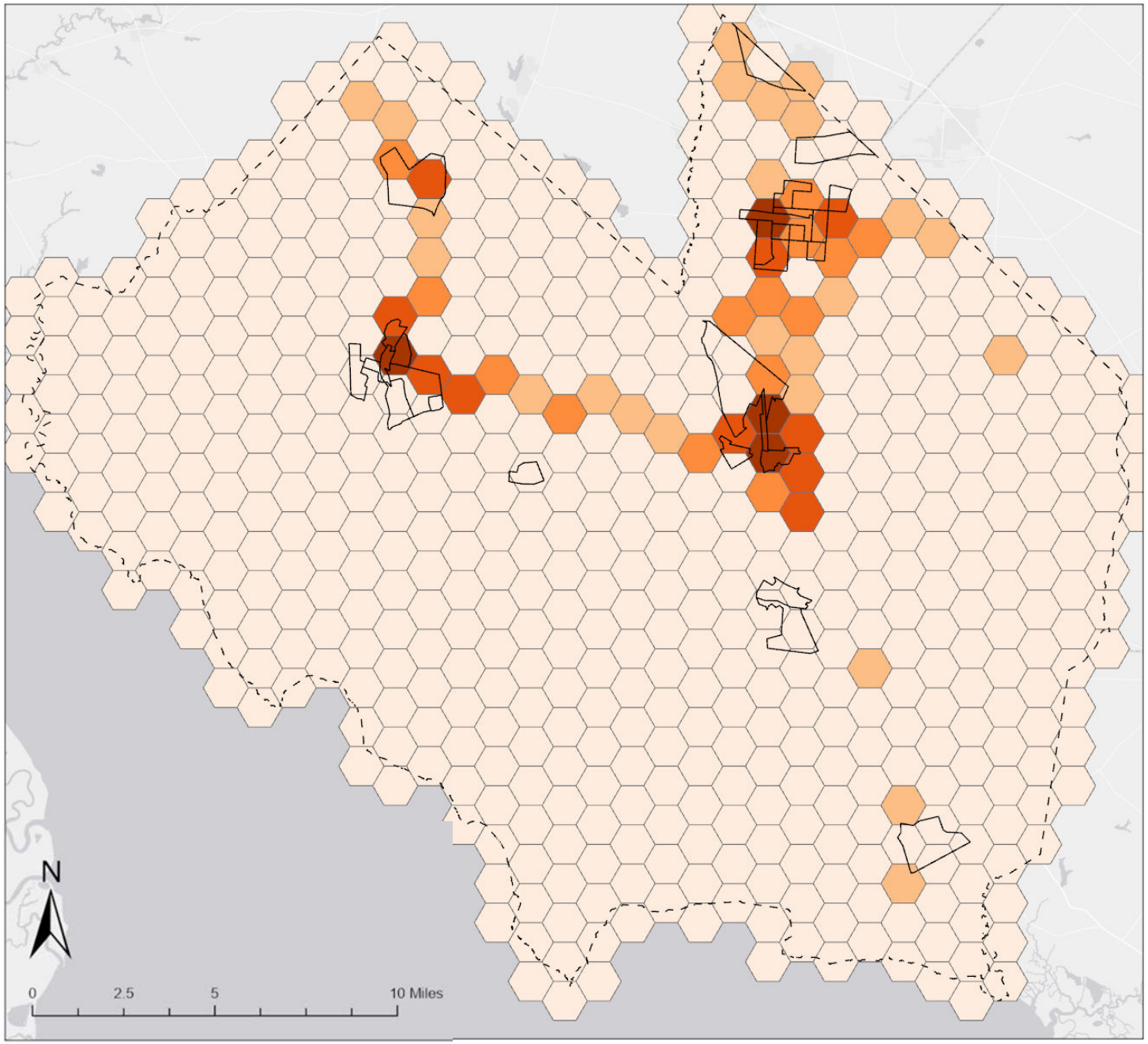

Bus Stop Density

Low Income Block Group

Stops per sq mile

- 0 to 1
- 2 to 3
- 4 to 5
- 6 to 9
- 10 to 14

Note: Area of a hexagon is 1 sq mile

Data Source: NJGIN, ACS 2015-2019 5-year estimate, ESRI base map

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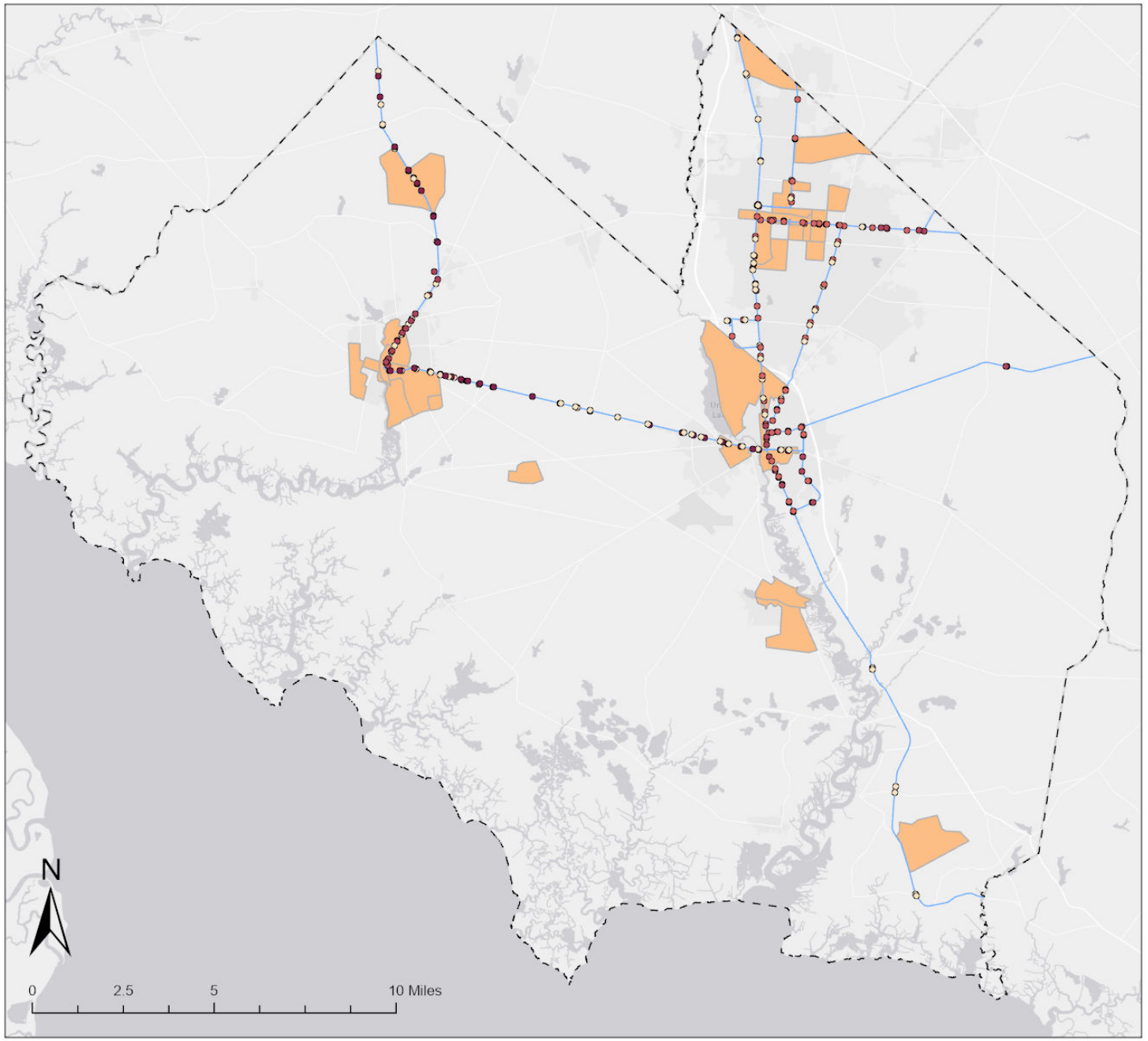

Bus Service Frequency

Max Wait TIme

- 0 - 15 min
- 16 - 50 min
- 51 - 78 min
- 79 - 107 min
- 108 - 152 min
- Bus Route
- Low Income Block Group

Data Source: NJGIN, ACS 2015-2019 5-year estimate, NJ Transit GTFS data, ESRI base map

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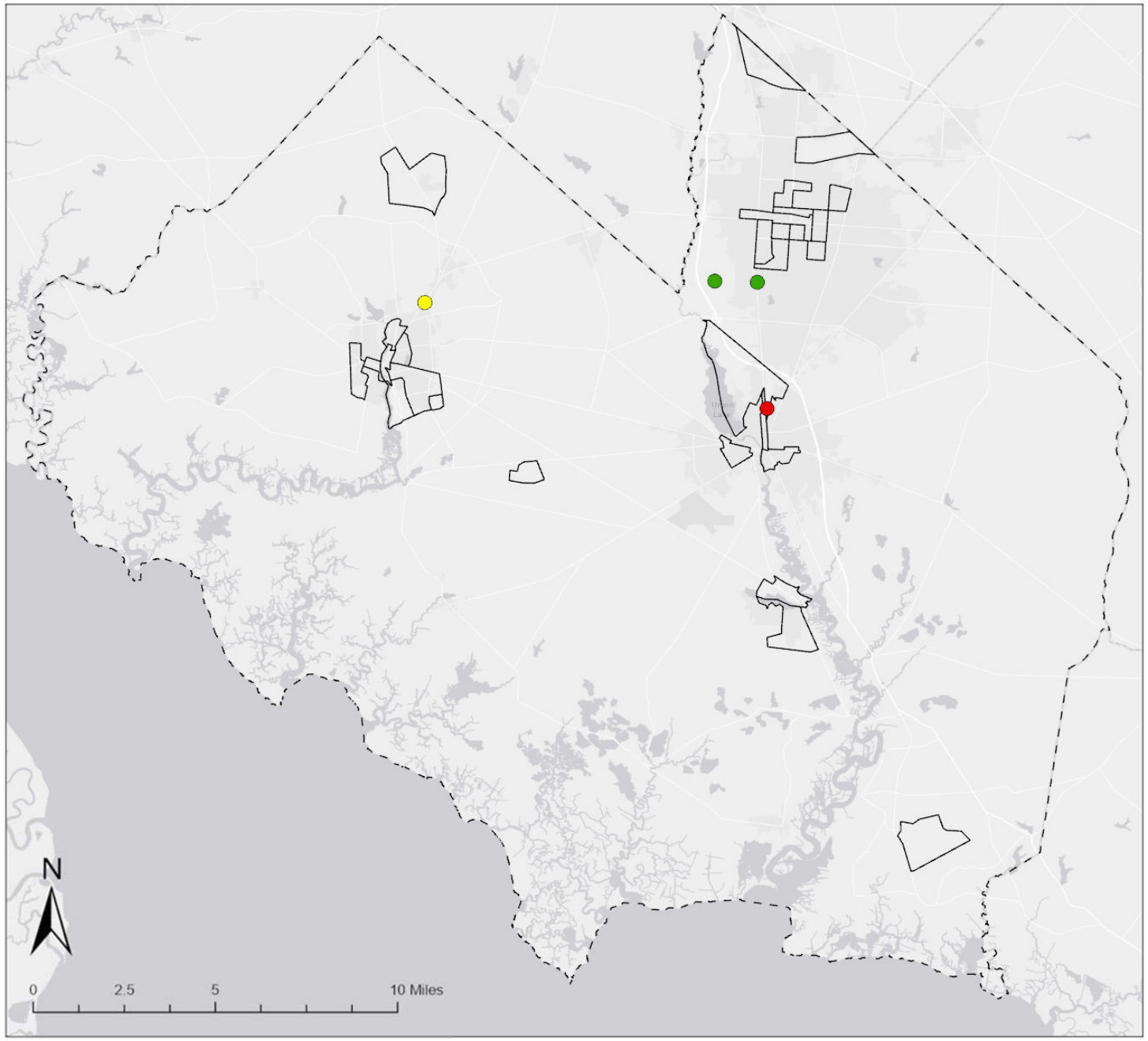

Alt. Fueling Station

Low Income Block Group

Fuel Type

- Compressed Natural Gas
- Electric
- Liquified Petroleum Gas

Data Source: NJGIN, ACS 2015-2019 5-year estimate, ESRI base map, AFDC

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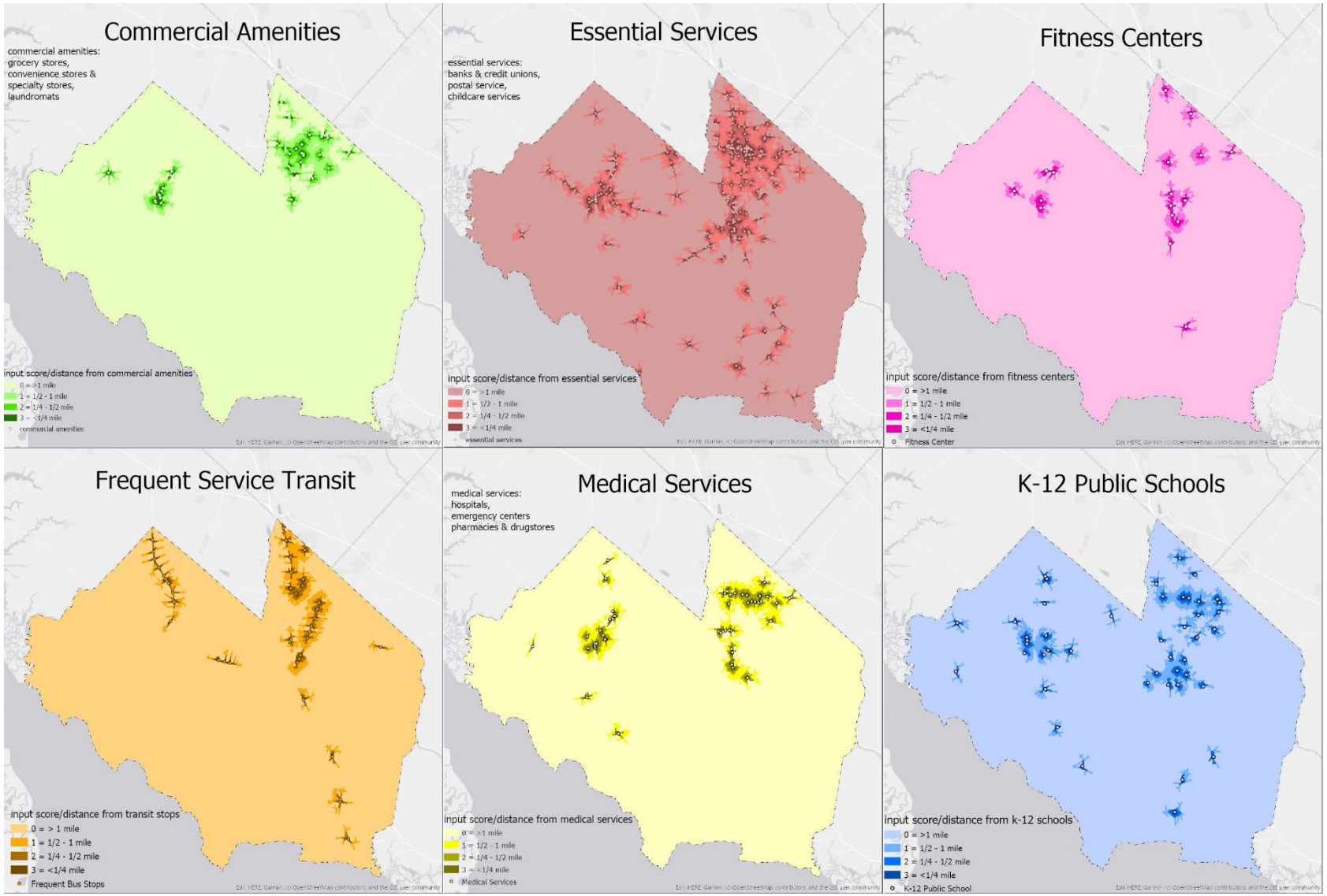
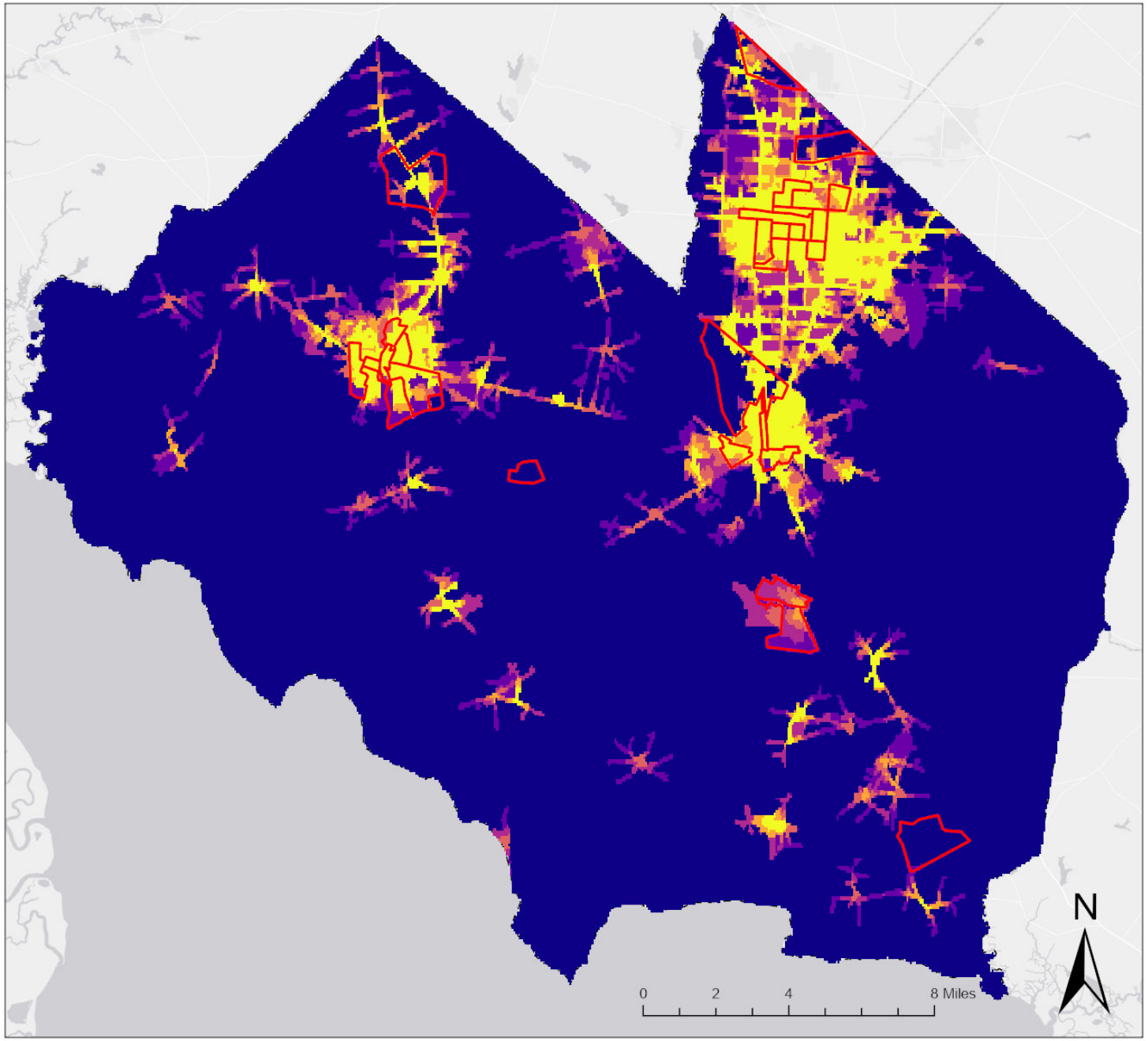
Measured Accessibility Analysis





"15-min." Accessibility

Accessibility

Best Access
Least Access

Low Income Block Group

Data Source: NJGIN, 2015-2019 ACS, 5-year estimate, ESRI Business Search Safegraph, ESRI base map

Planning for Healthy, Just, Resilient, and CO2-Neutral Mobility in New Jersey

Prepared : June 25, 2021
by Alan M. Voorhees Transportation Center

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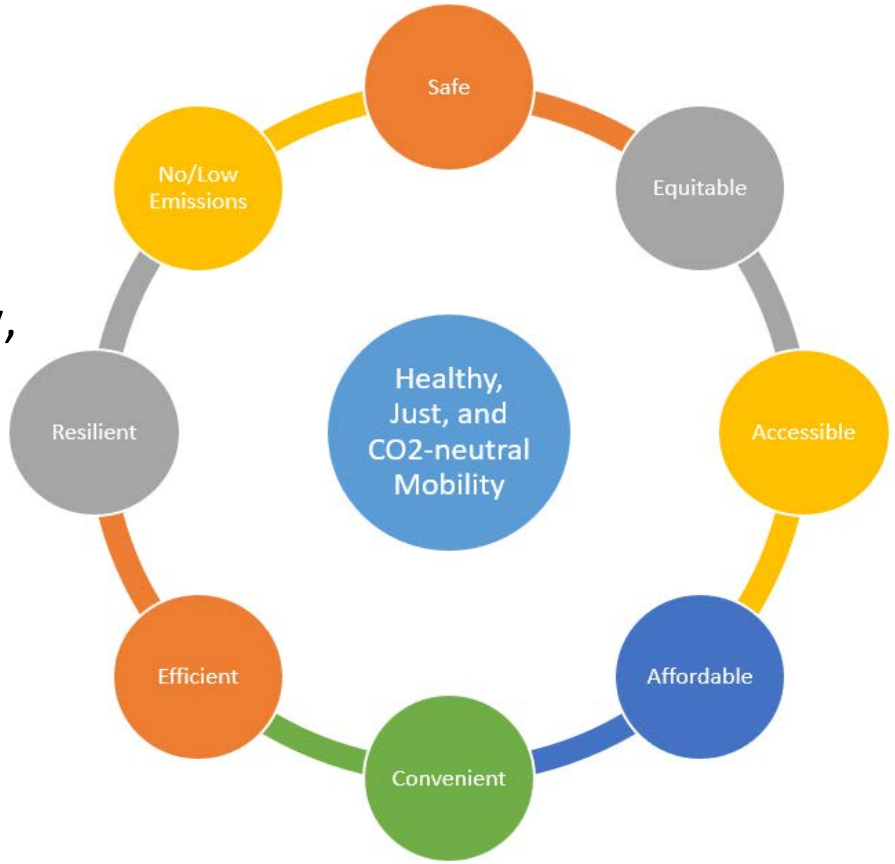
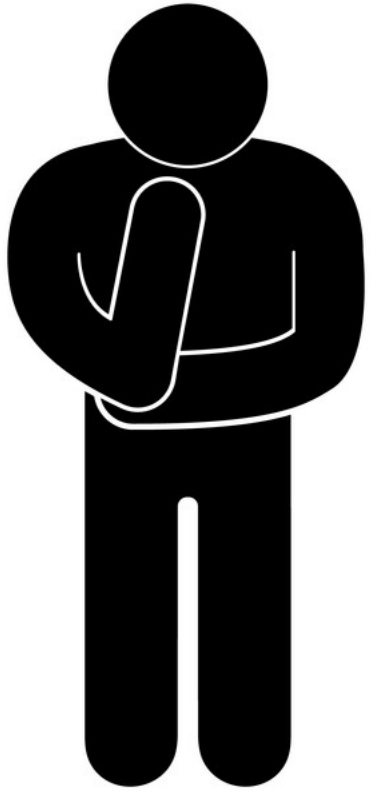
Issues Forum #1

- **Objectives**
  - Explore the components of the multi-goal framework
  - Identify
    - Needs, concerns, and desired long-term outcomes
    - Performance measures
    - What needs to change
    - Potential obstacles and impediments to achieving healthy, just, resilient, and carbon-neutral mobility for all
- **Format**
  - Plenary + breakouts
  - Virtual or in-person depending on conditions
- **Timing** – December 2021-March 2022





Thoughts?
Questions?
Discussion?