



RUTGERS

Edward J. Bloustein School
of Planning and Public Policy

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

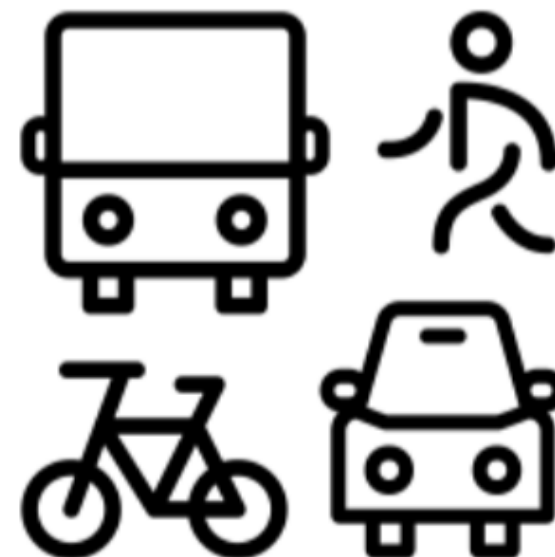
Project Update
February 2022

Existing Work Groups

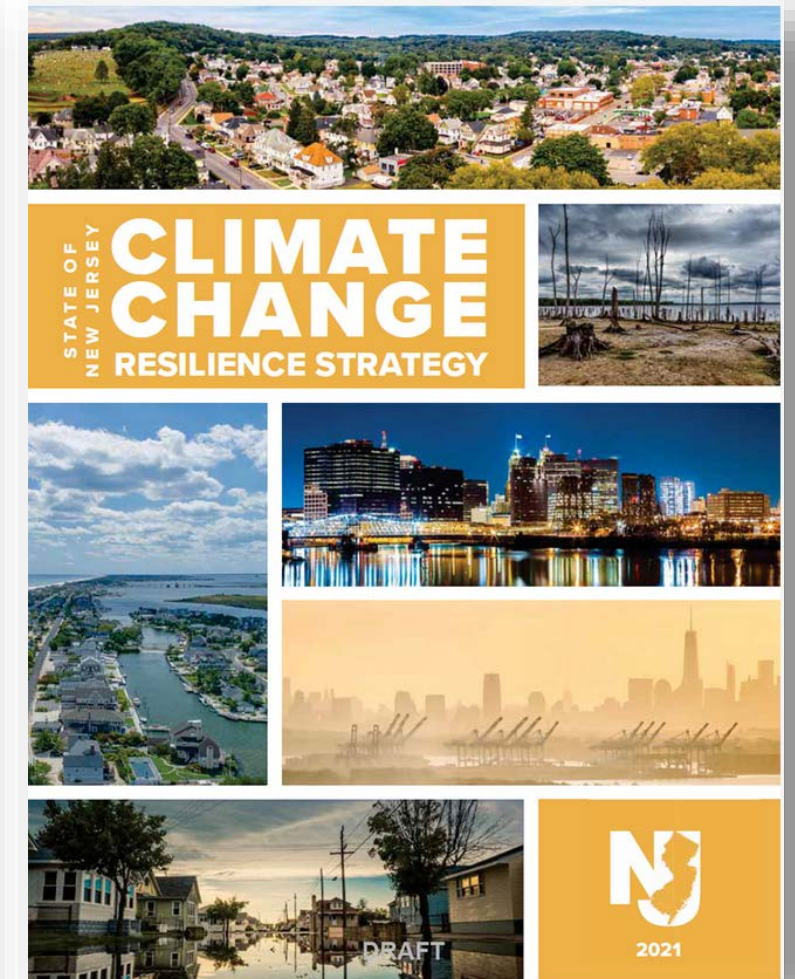
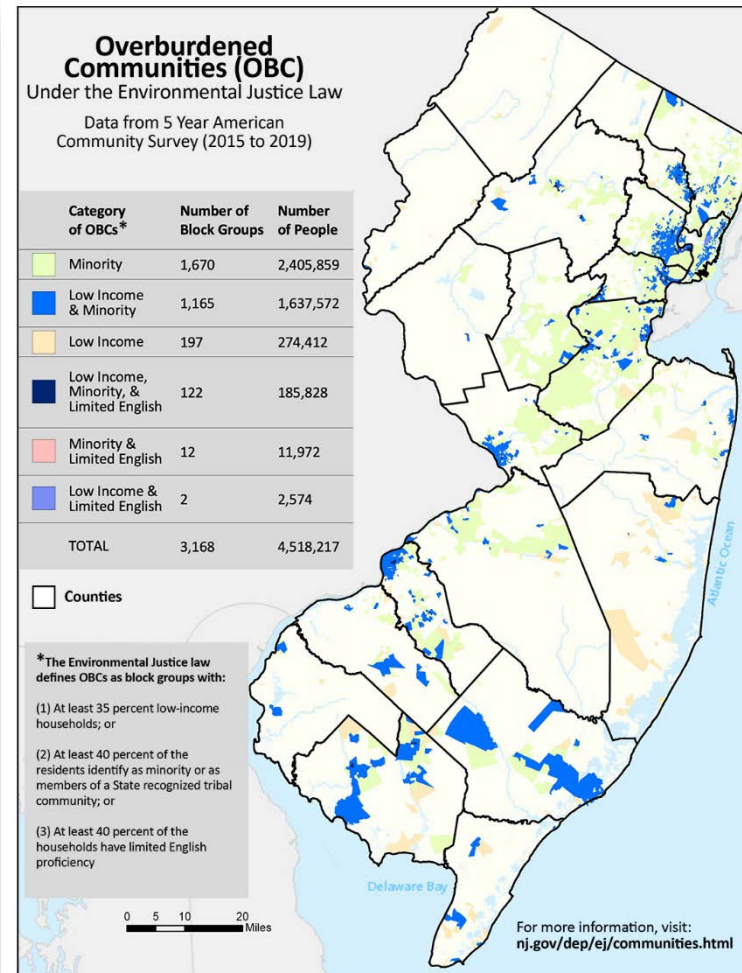
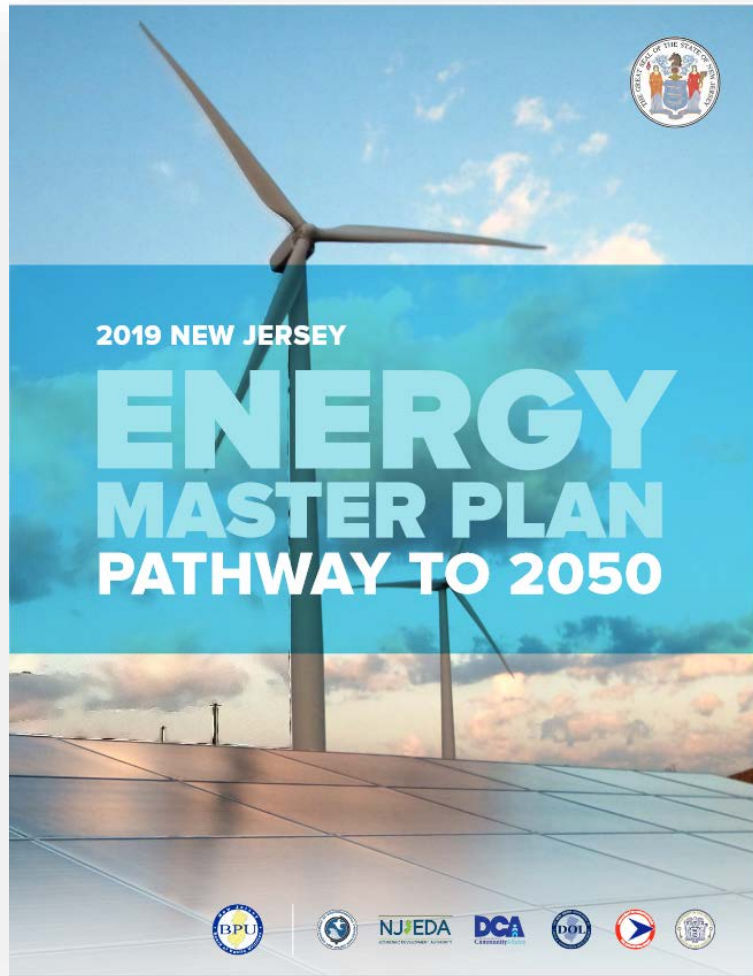
- Long-term Statewide Planning for Climate Change Workgroup
- Natural and Working Lands Workgroup
- Offshore Wind Ecological Monitoring Workgroup
- Public Health Workgroup
- Sustainable Organic Materials Management Workgroup

(NEW)

Transportation Workgroup



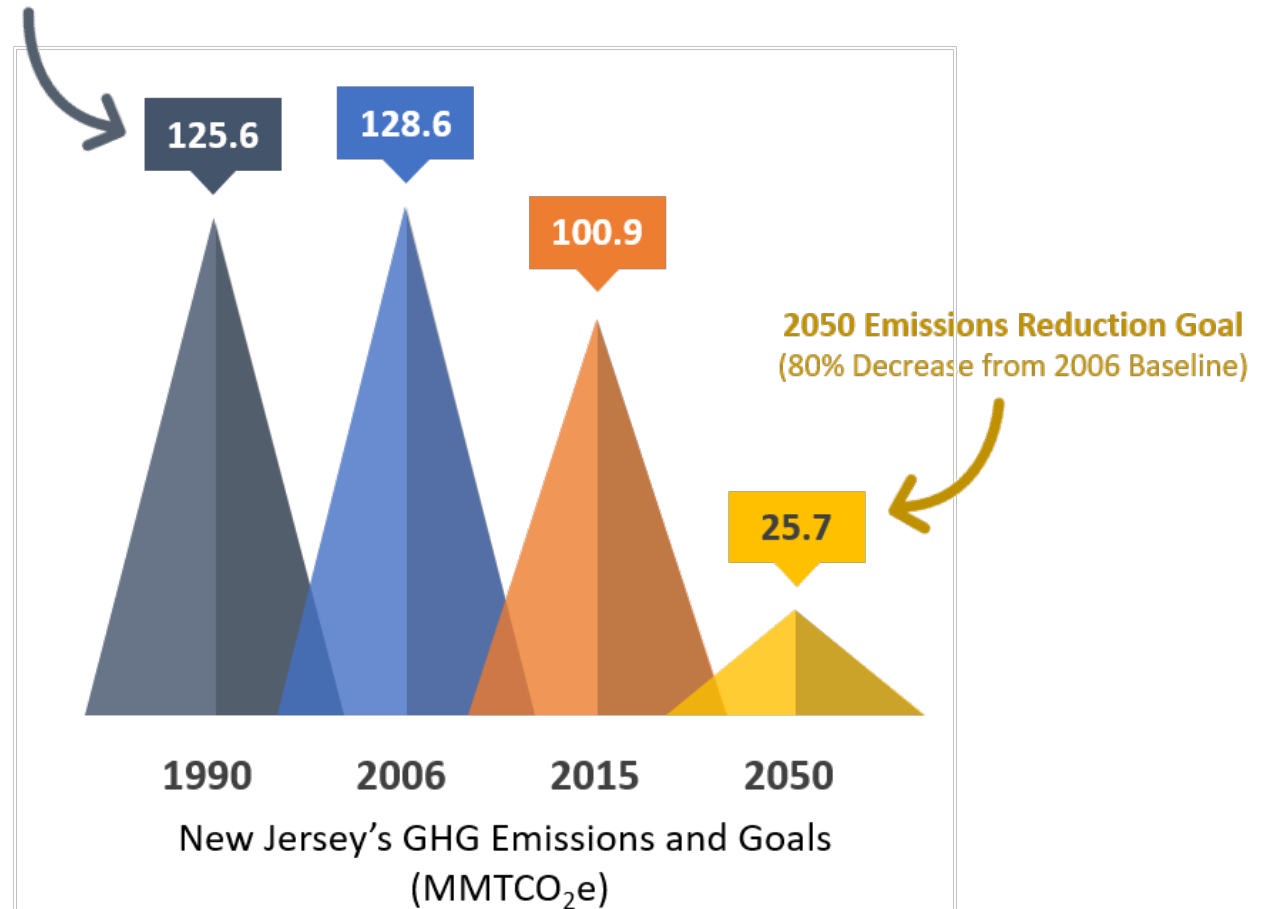
Changing policy dynamics at the State and national levels



New Jersey Emissions Targets

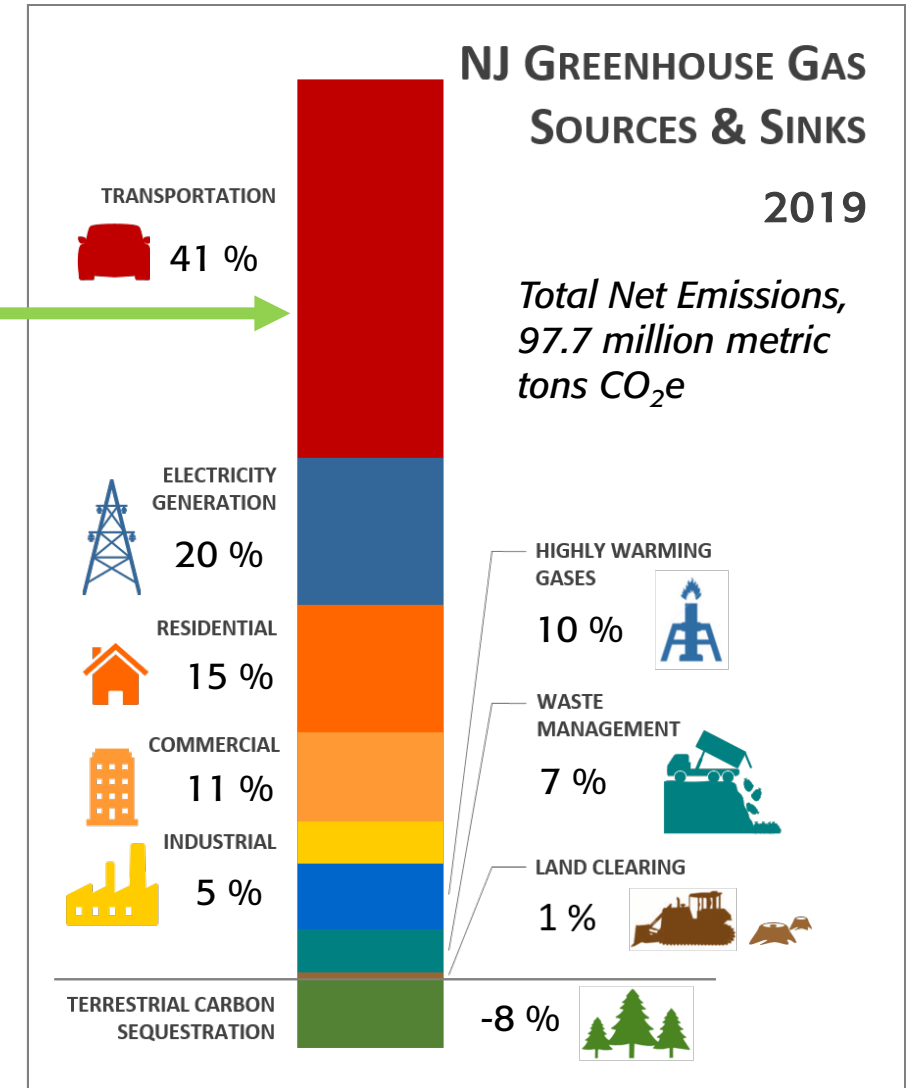
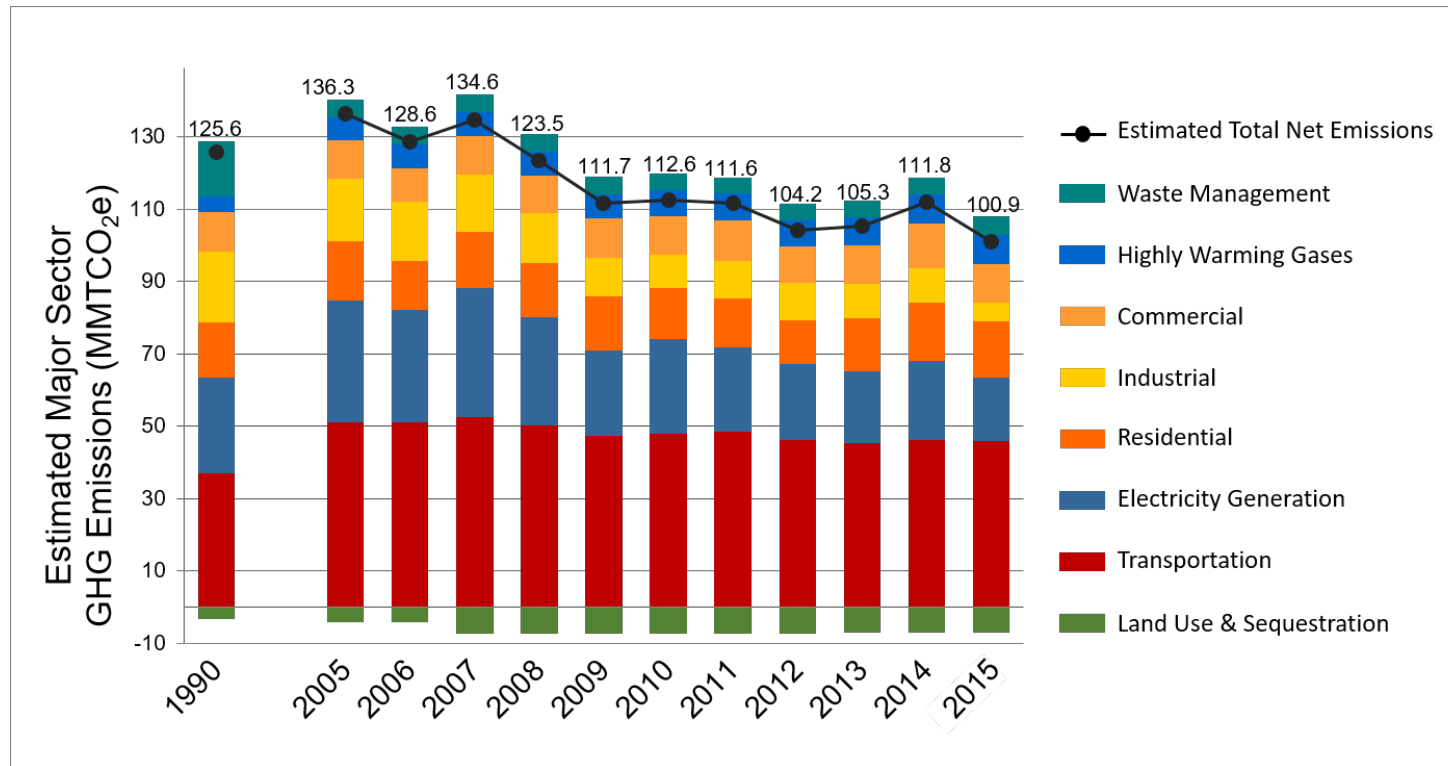


2020 Emissions Reduction Goal
(Equivalent to 1990 GHG Emissions)



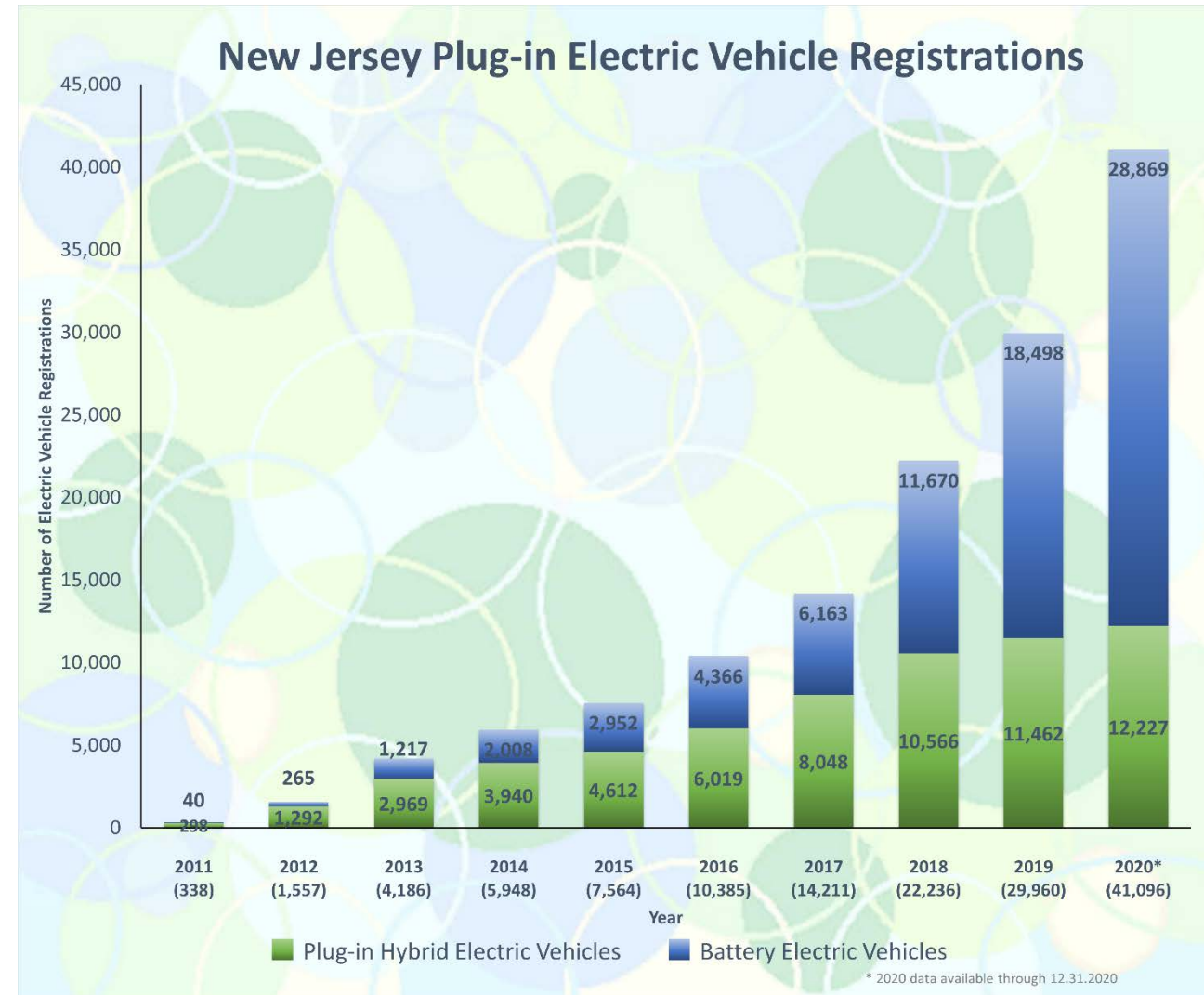
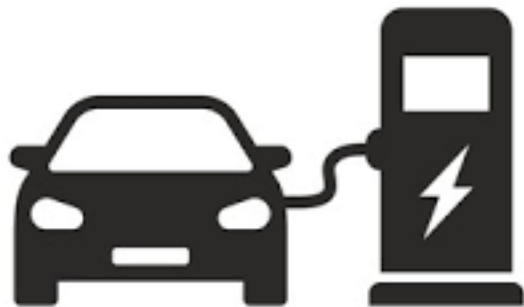
GHG Emissions in New Jersey

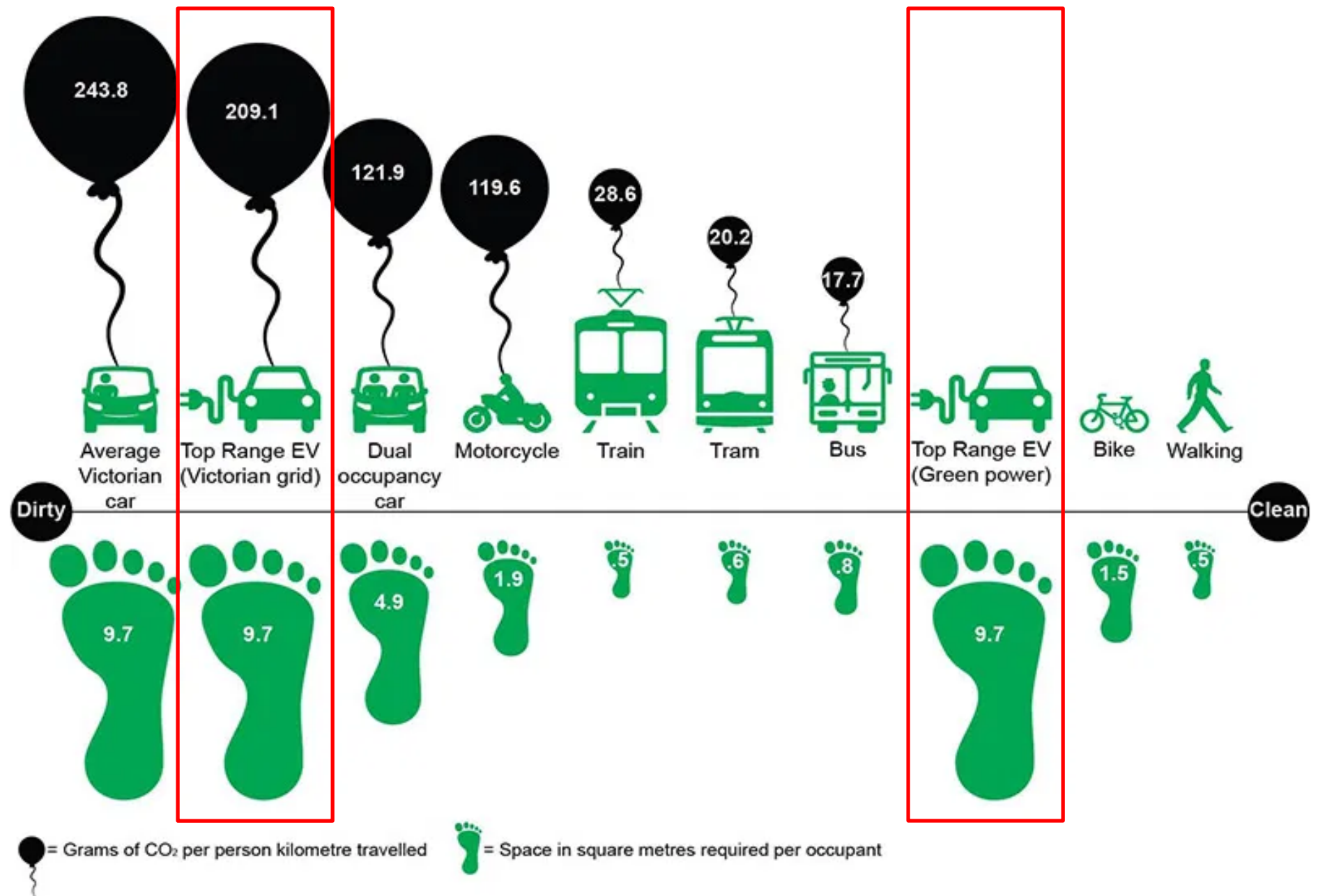
Reductions in the transportation sector will be critical to achieving NJ's emissions target



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.



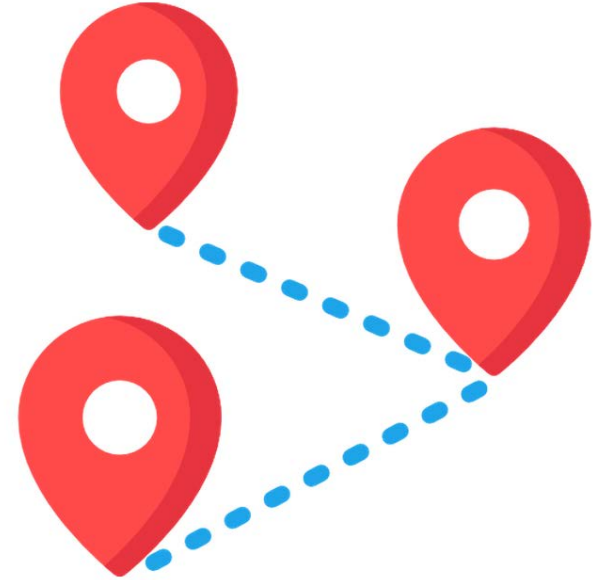
Carbon Neutral. Reduce energy use and emissions of all kinds by facilitating a transition to CO2-neutral transportation.

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

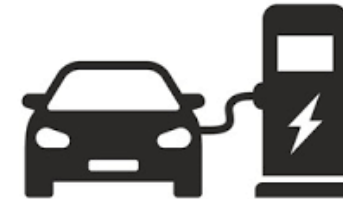
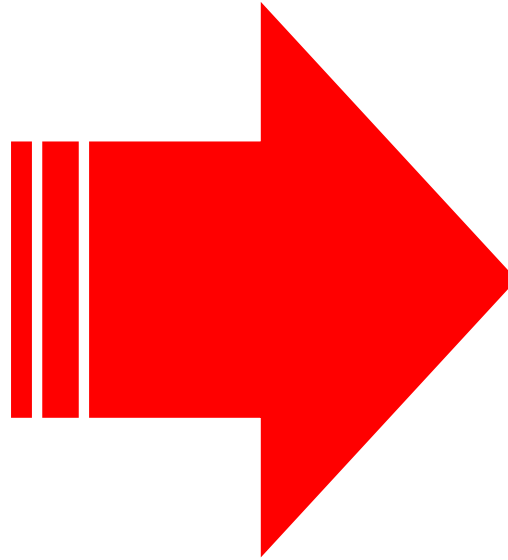
Redundancy

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



© Shutterstock, Getty | Aerial views of Glasgow, Paris and Melbourne

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

5 MINUTE WALK

(3 MPH AVG)



RADIUS - 1/4 MILE

ACRES - ~126

DWELLING UNITS - 1,000 @ 8/AC

POPULATION - 2,600 @ 2.6/UNIT

15 MINUTE WALK

(3 MPH AVG)



RADIUS - 3/4 MILE

ACRES - ~1,130

DWELLING UNITS - 9,040 @ 8/AC

POPULATION - 23,500 @ 2.6/UNIT

5 MINUTE BIKE

(12 MPH AVG)



RADIUS - 1 MILE

ACRES - ~2,010

DWELLING UNITS - 16,100 @ 8/AC

POPULATION - 41,860 @ 2.6/UNIT

5 MINUTE ELEC. VEHICLE

(20 MPH AVG)



RADIUS - 1 2/3 MILE

ACRES - ~5,580

DWELLING UNITS - 44,700 @ 8/AC

POPULATION - 116,200 @ 2.6/UNIT

15 MINUTE BIKE

(12 MPH AVG)

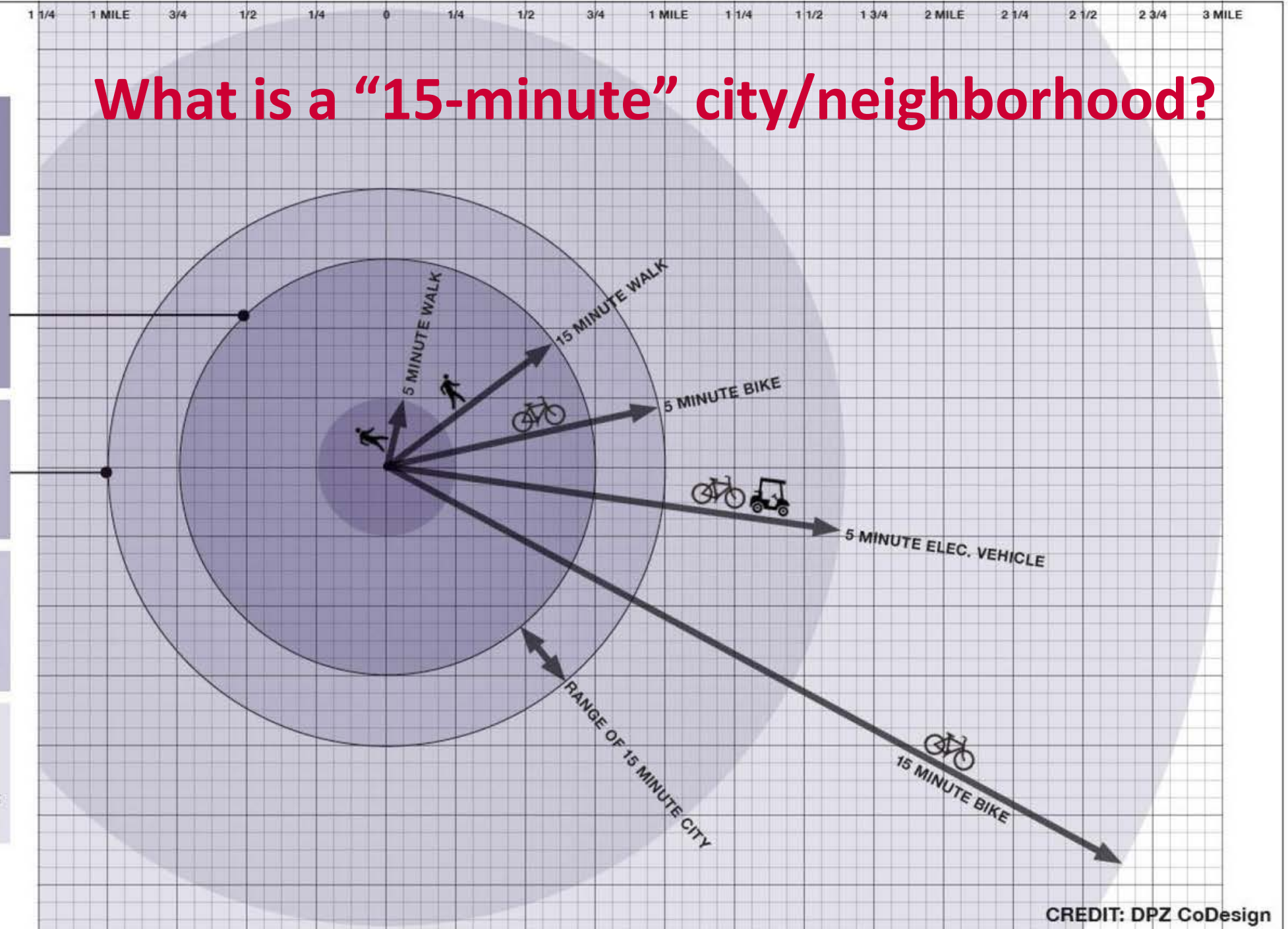


RADIUS - 3 MILE

ACRES - ~18,100

DWELLING UNITS - 144,800 @ 8/AC

POPULATION - 376,480 @ 2.6/UNIT



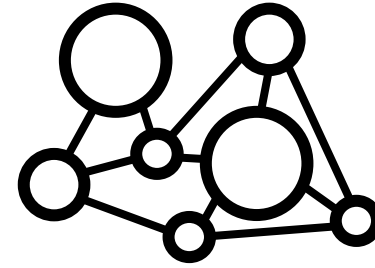
Key relationships



People



Places

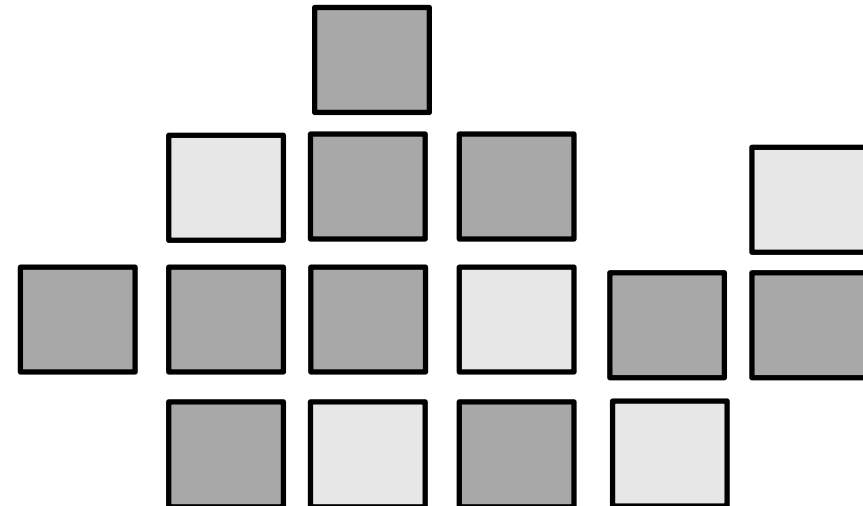
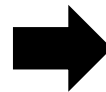
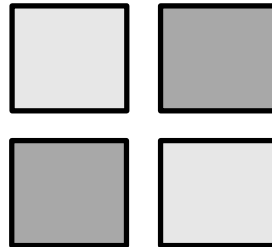


Connections

Neighborhood

Community

Region

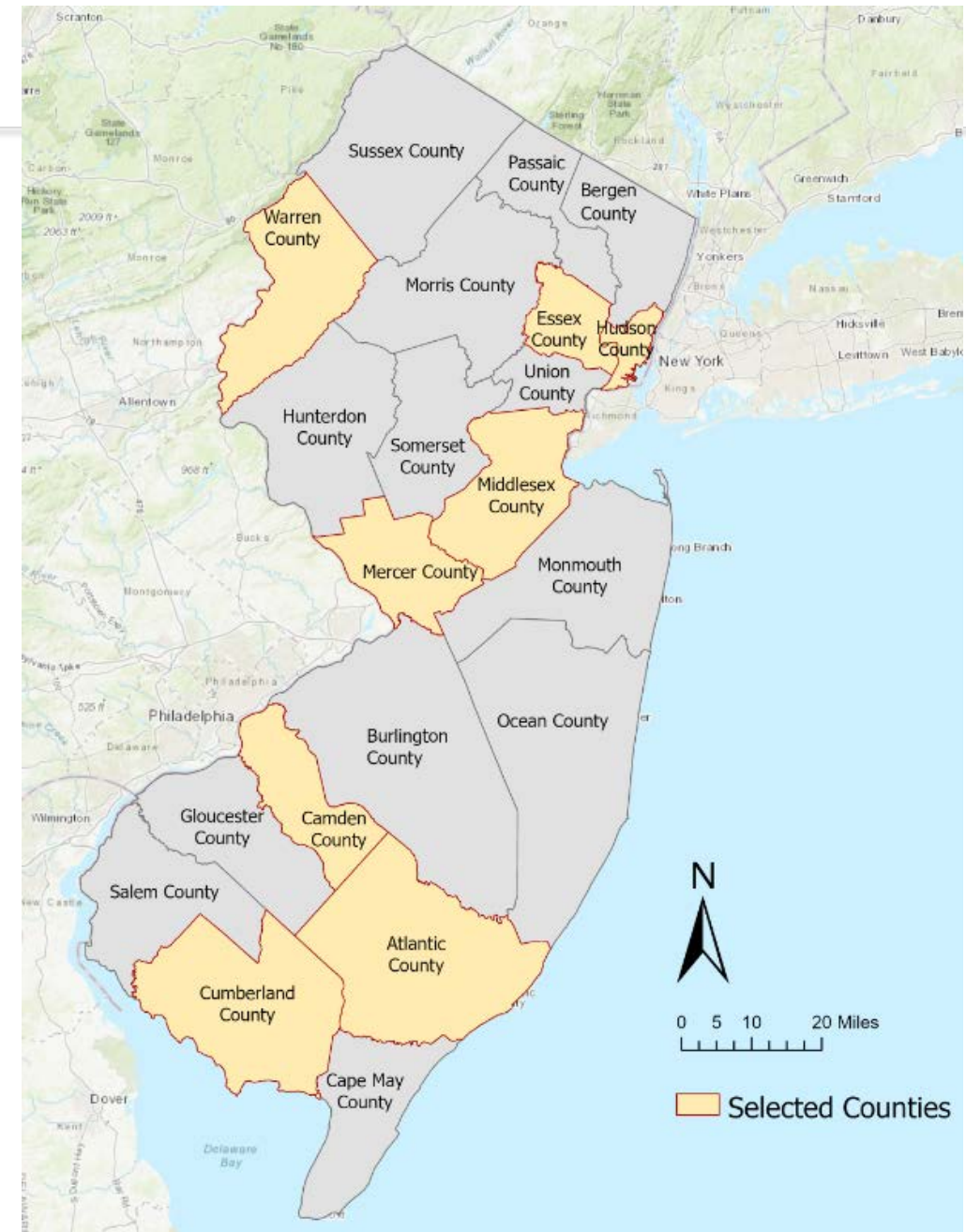


Work Plan

PHASE 1 – Exploring key concepts, desktop analysis, looking toward the future (Mar 2021 to Feb 2022)	<u>Activities:</u> <ul style="list-style-type: none">• 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)	<u>Activities:</u> <ul style="list-style-type: none">• 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?

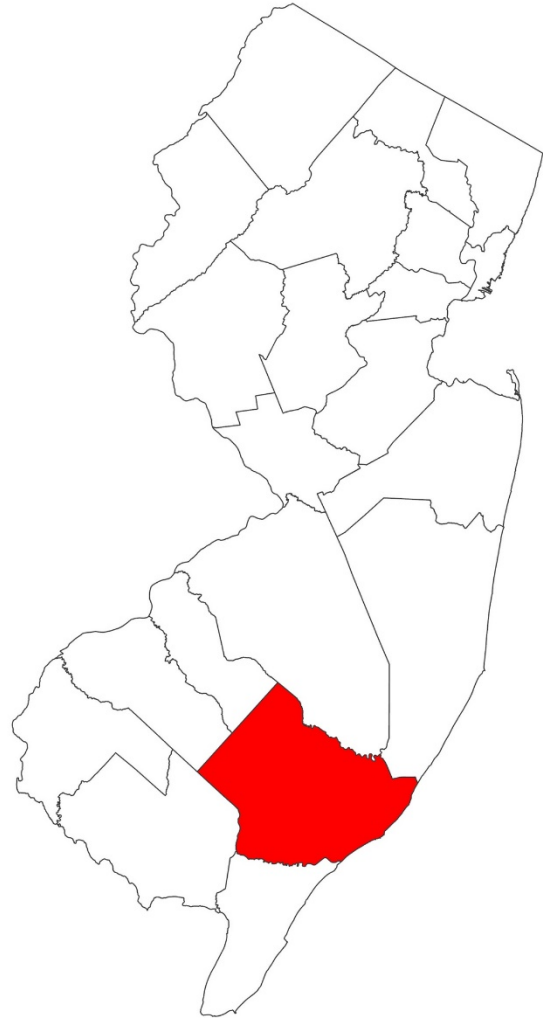
Phase 1 case study locations

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



Exploring the Geography of People, Place, and Connections

ATLANTIC COUNTY



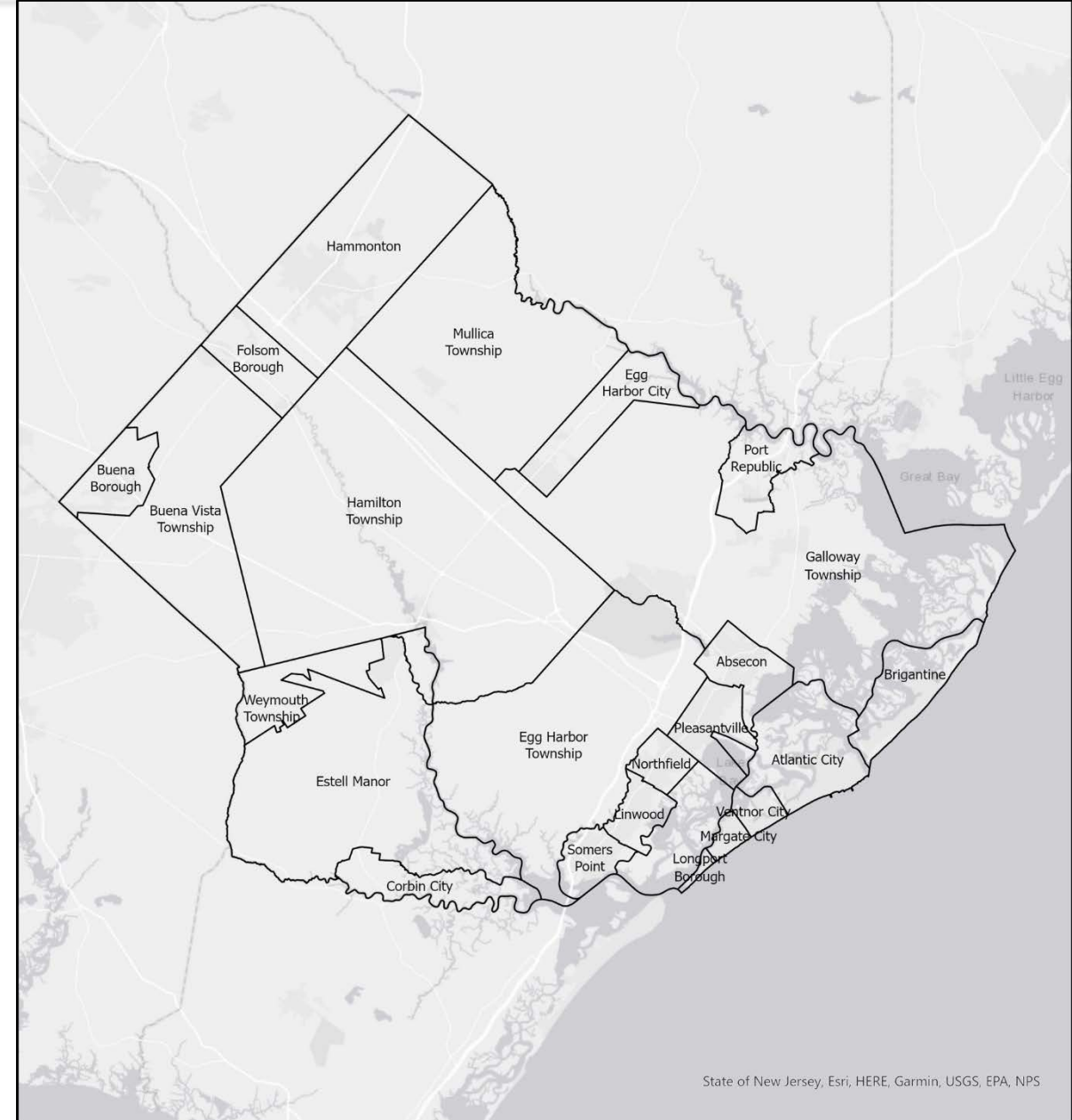
Healthy, Just and CO2-neutral Mobility for All

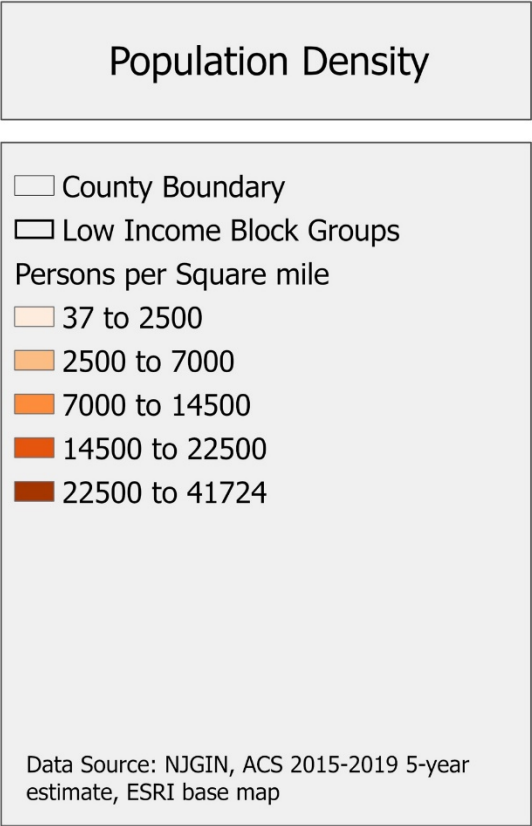
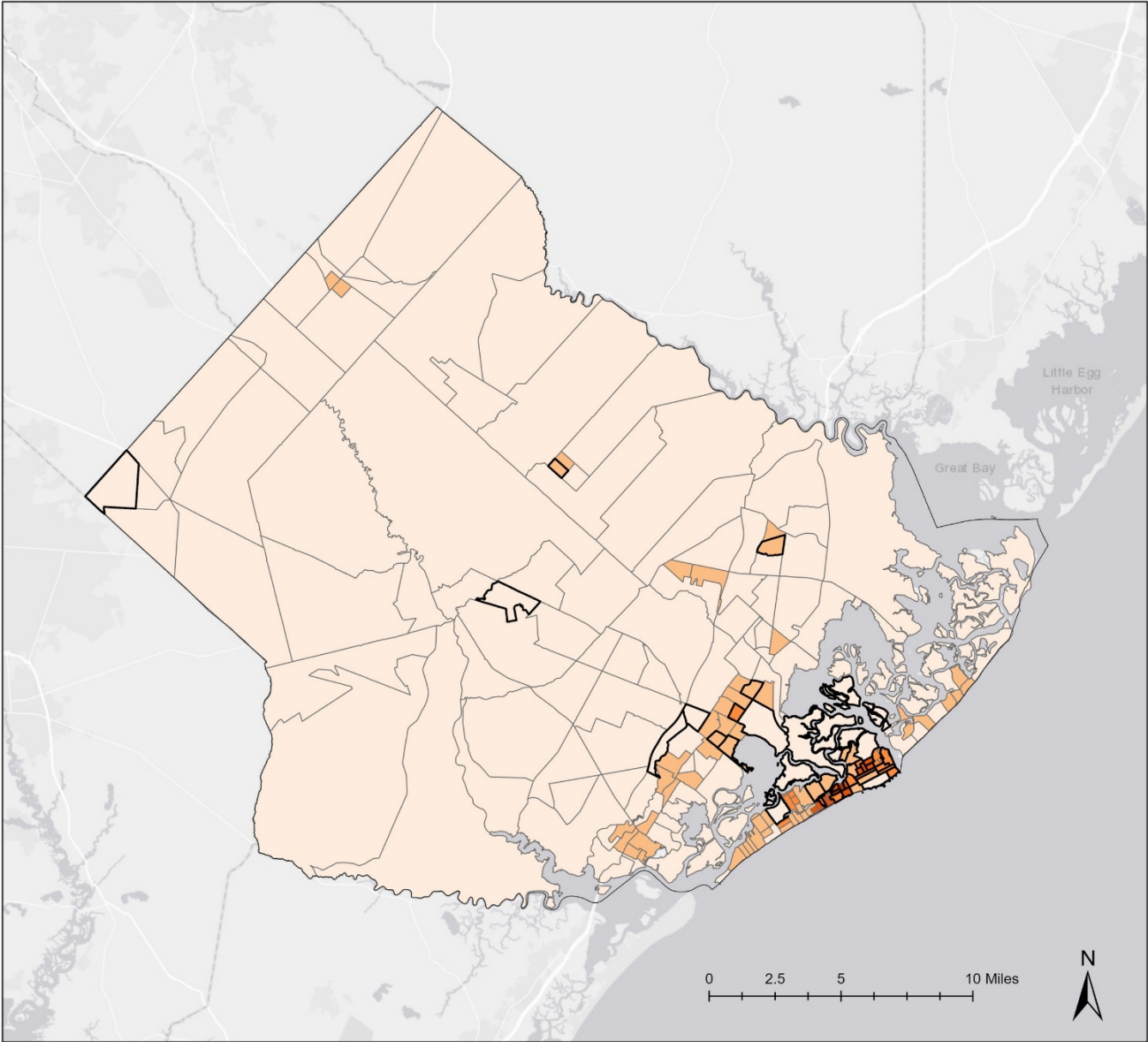
GEOGRAPHY OF PEOPLE

County at a glance

A mix of small towns, urban centers and rural communities

- 671.83 square miles
- 23 Municipalities
- Over 266,105 residents
- County Seat: Mays Landing

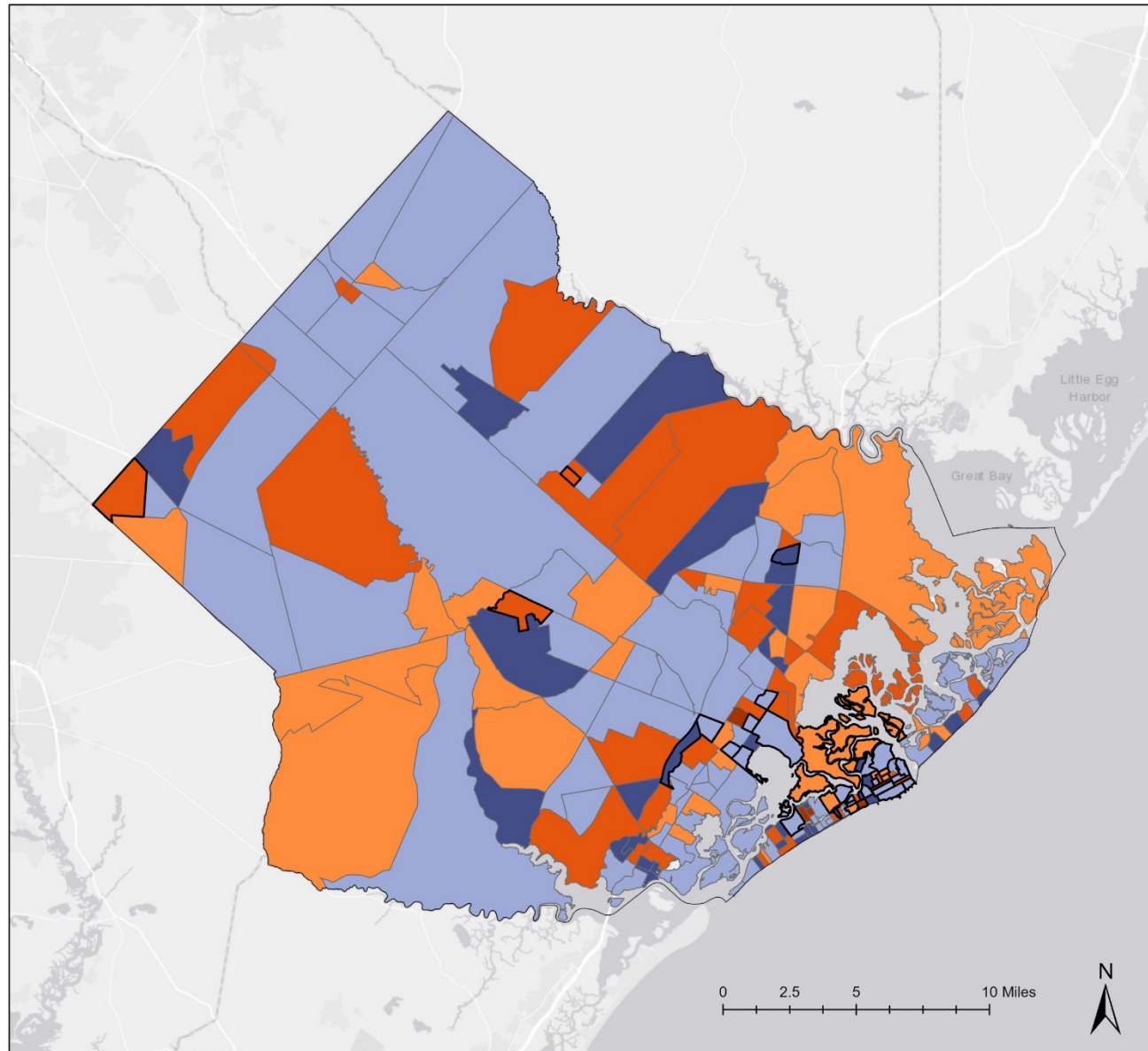




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Population Change 2014-2019

- County Boundary
- Low Income Block Groups

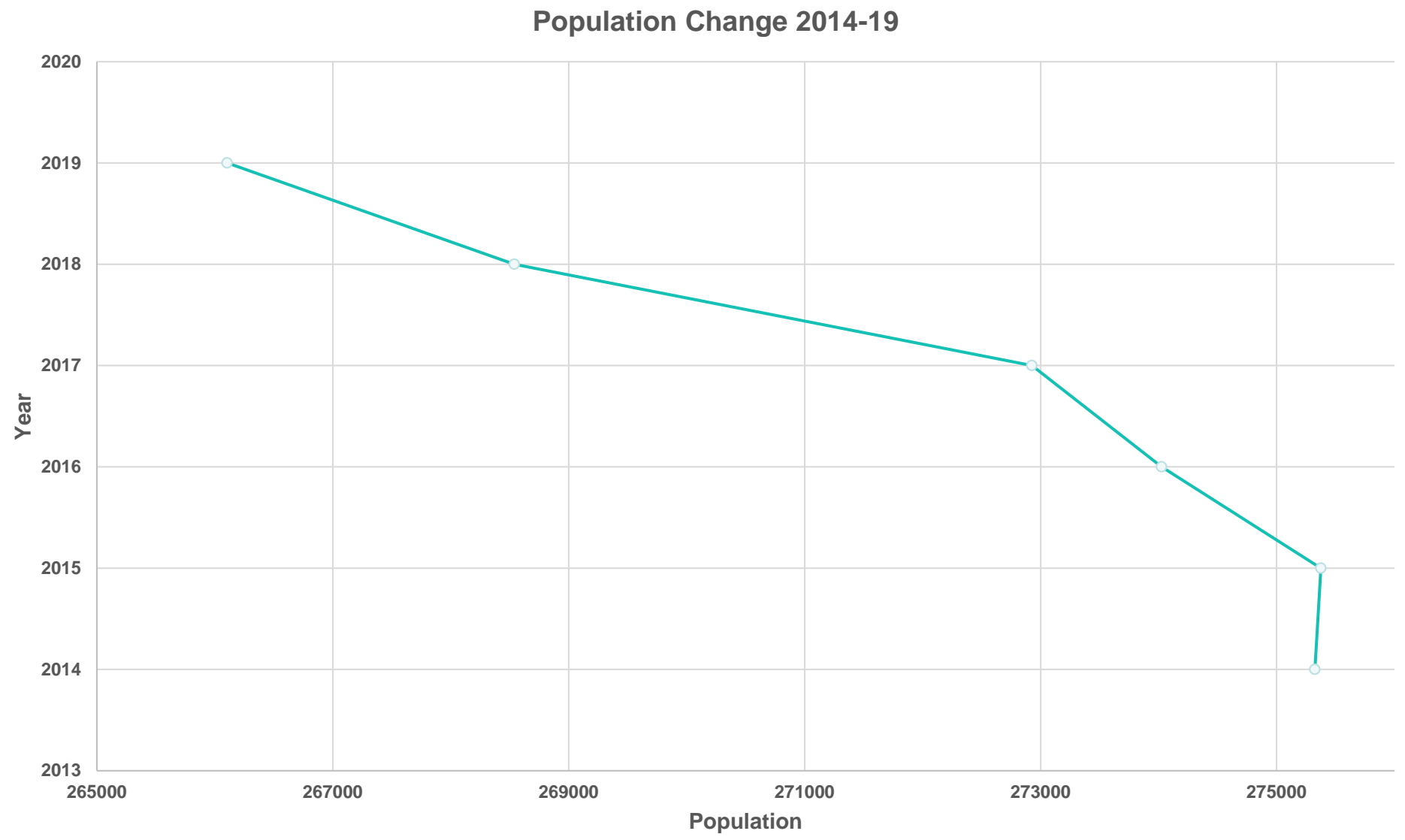
Total Population

- 59% to -25%
- 25% to 0%
- 0% to 15%
- 15% to 60%
- 60% to 162%

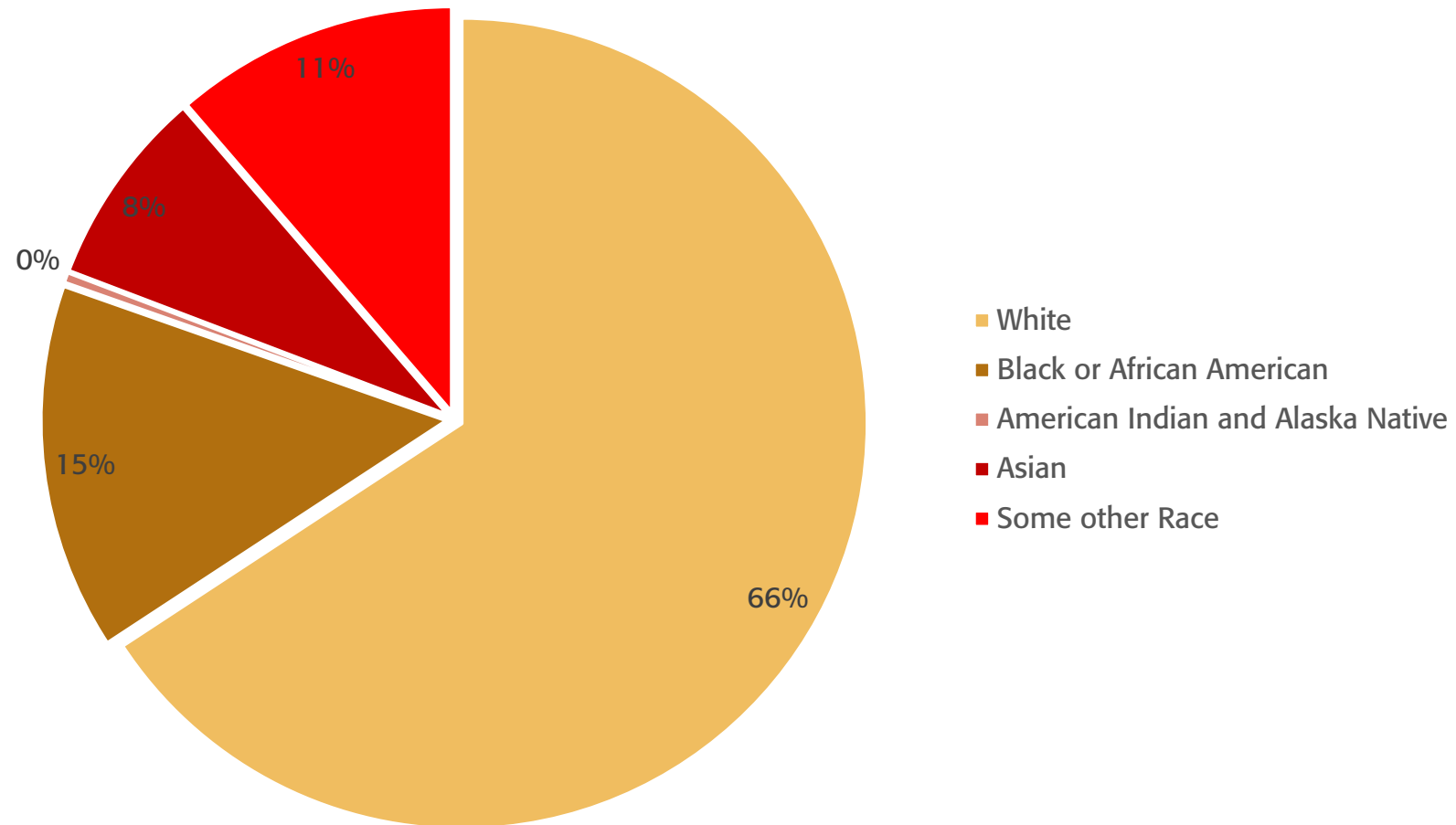
Data Source: NJGIN, ACS 2015-2019 5-year
estimate, ESRI base map

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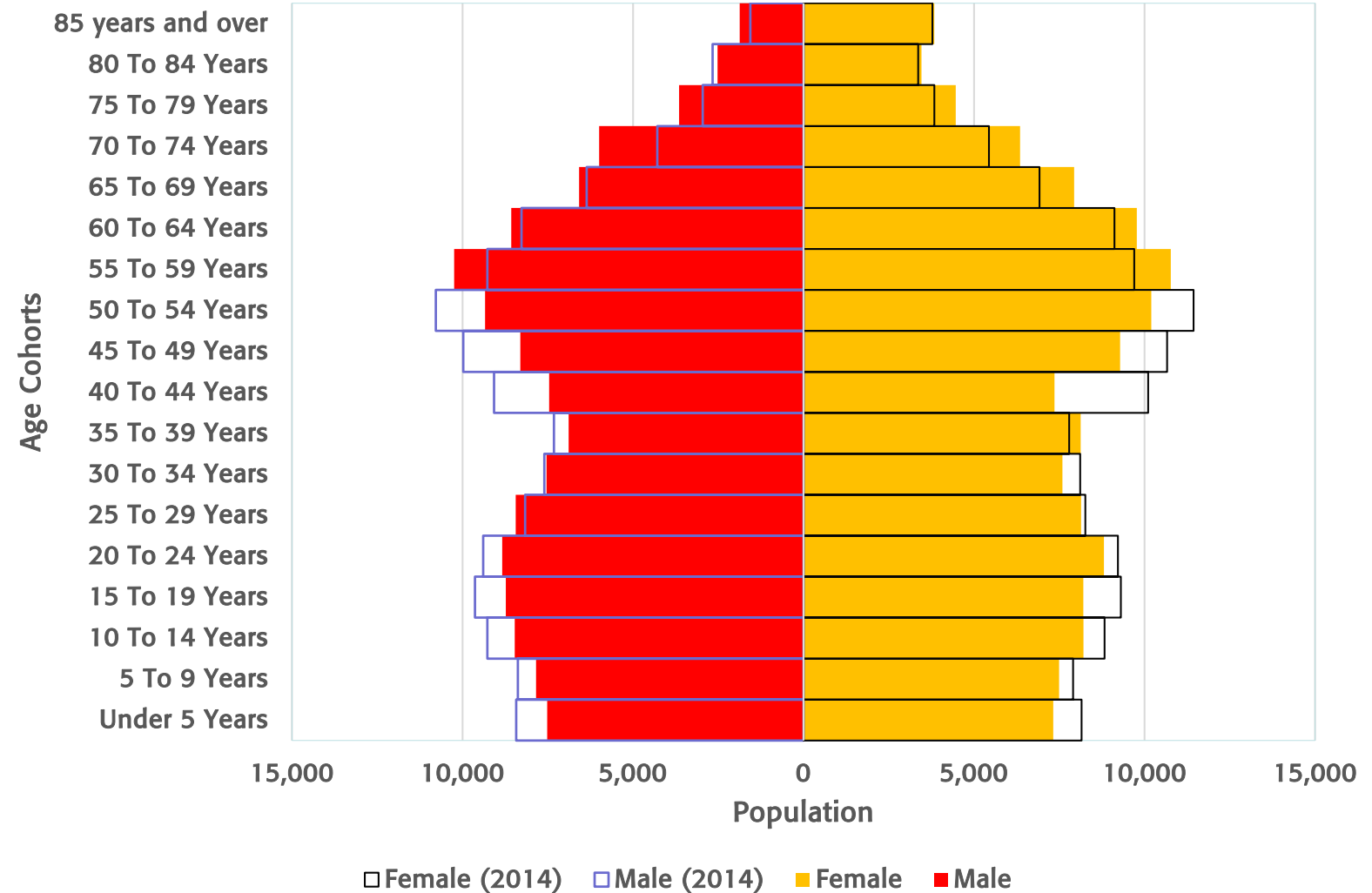


Race and Ethnicity - 2019



Age & Gender

Atlantic County- Population Pyramid 2014-2019



Median Age: 41.7 years old

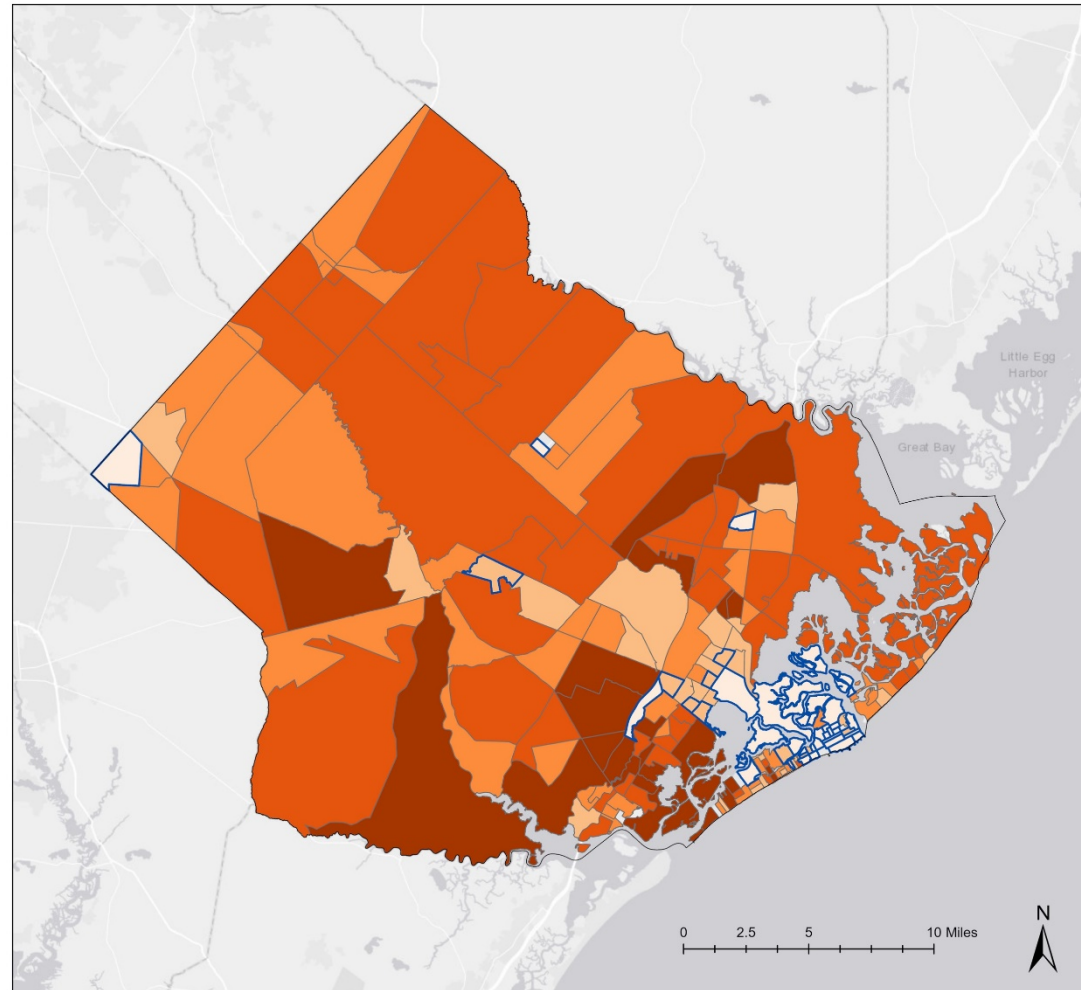
Household Income

**AHPNJ 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

**County Average Median
Household Income: \$62,110**



**Median Household
Income**

- County Boundary
- Low Income Block Groups
- Median Household Income by Block Group
- \$14,034 to \$ 35,000
- \$35,000 to \$55,000
- \$55,000 to \$75,000
- \$75,000 to \$100,000
- \$100,000 to \$194,432

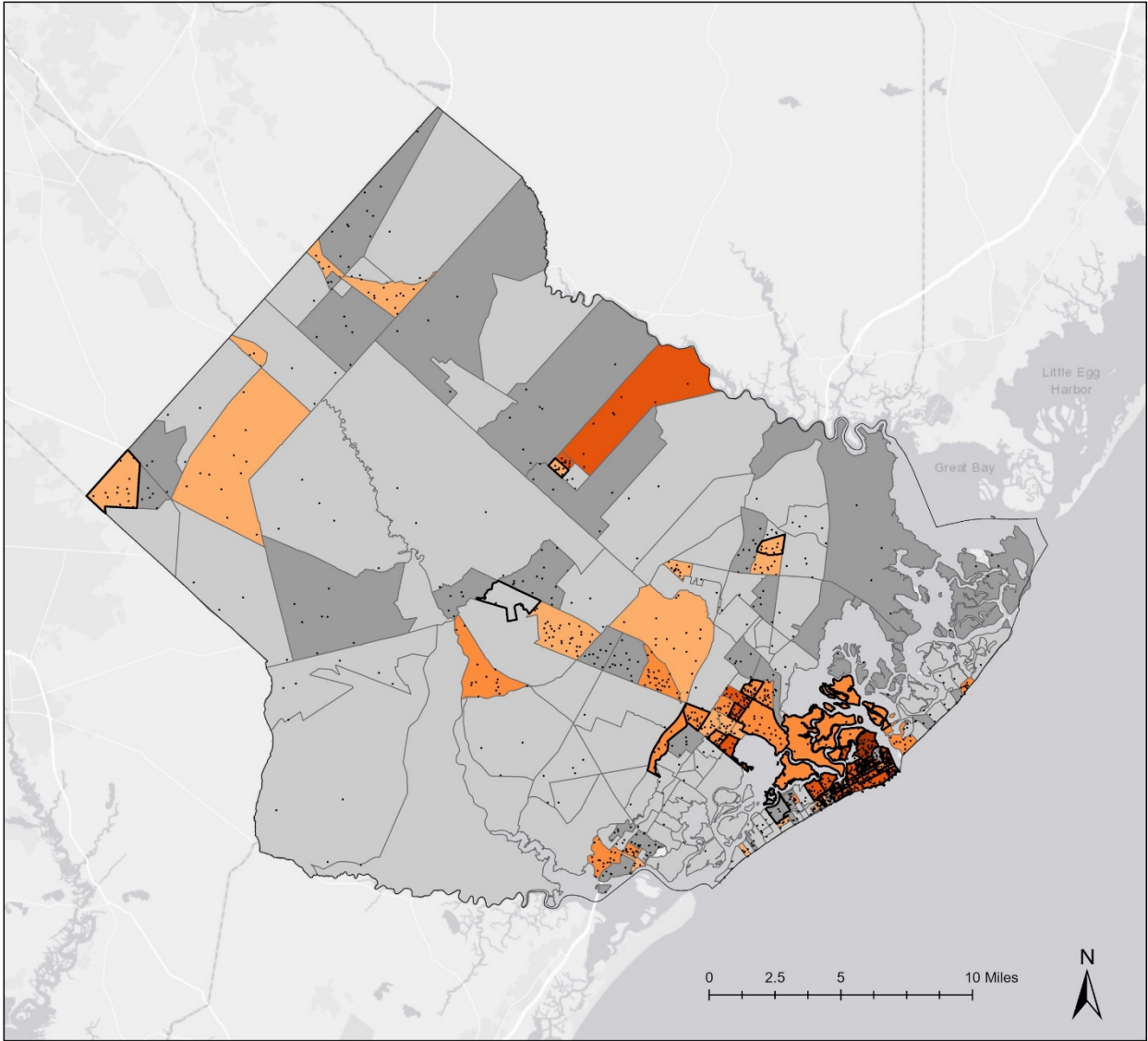
Data Source: NJGIN, ACS 2015-2019 5-year estimate, ESRI base map

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Households living in poverty



Low Income Households

County Boundary

Low Income Block Groups

1 Dot = 10

Households under Poverty

Percent of Households within the Poverty Level

0% to 7.5%

7.5% to 13%

13% to 20%

20% to 30%

30% to 60%


60% to 93%

County average
13%

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

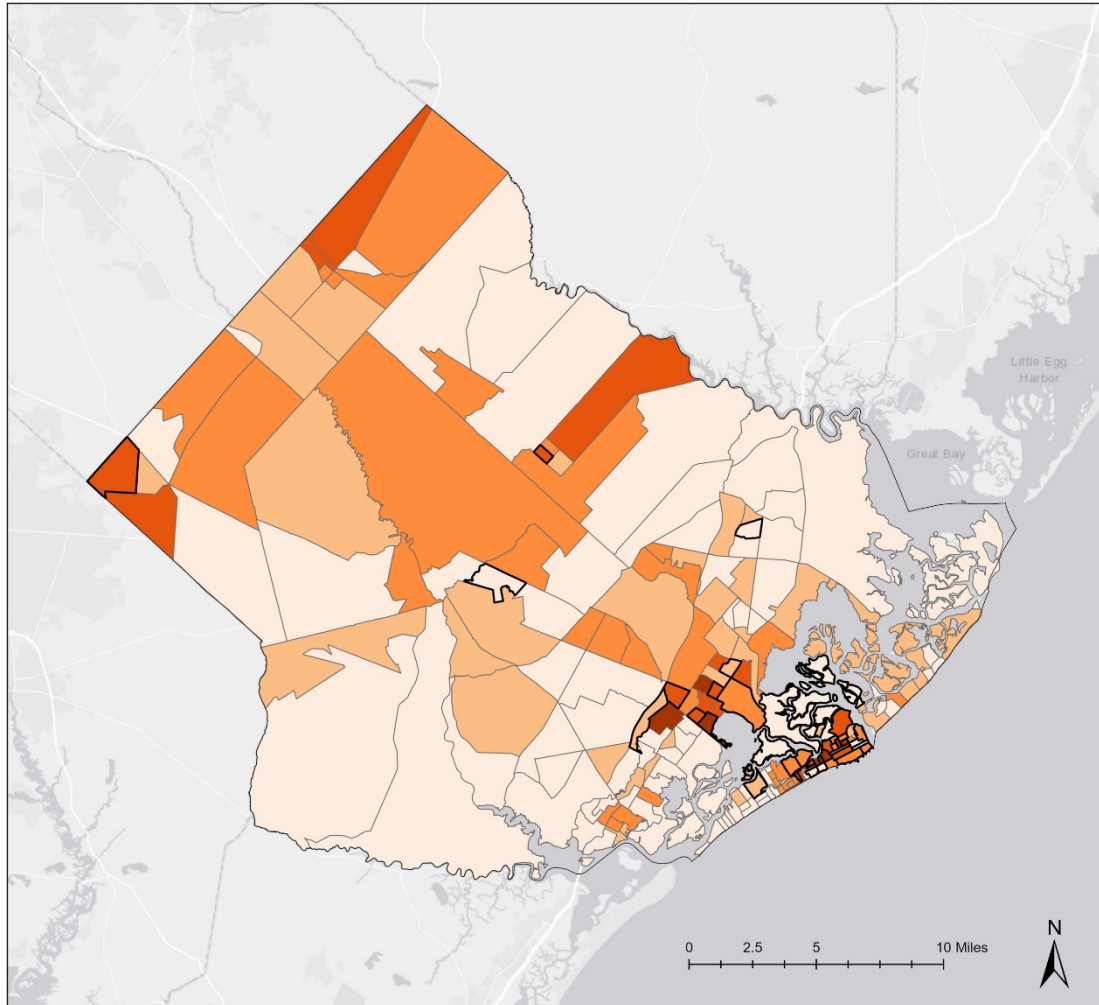
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Educational Attainment- less than H.S Diploma



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

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Educational Attainment Percentage

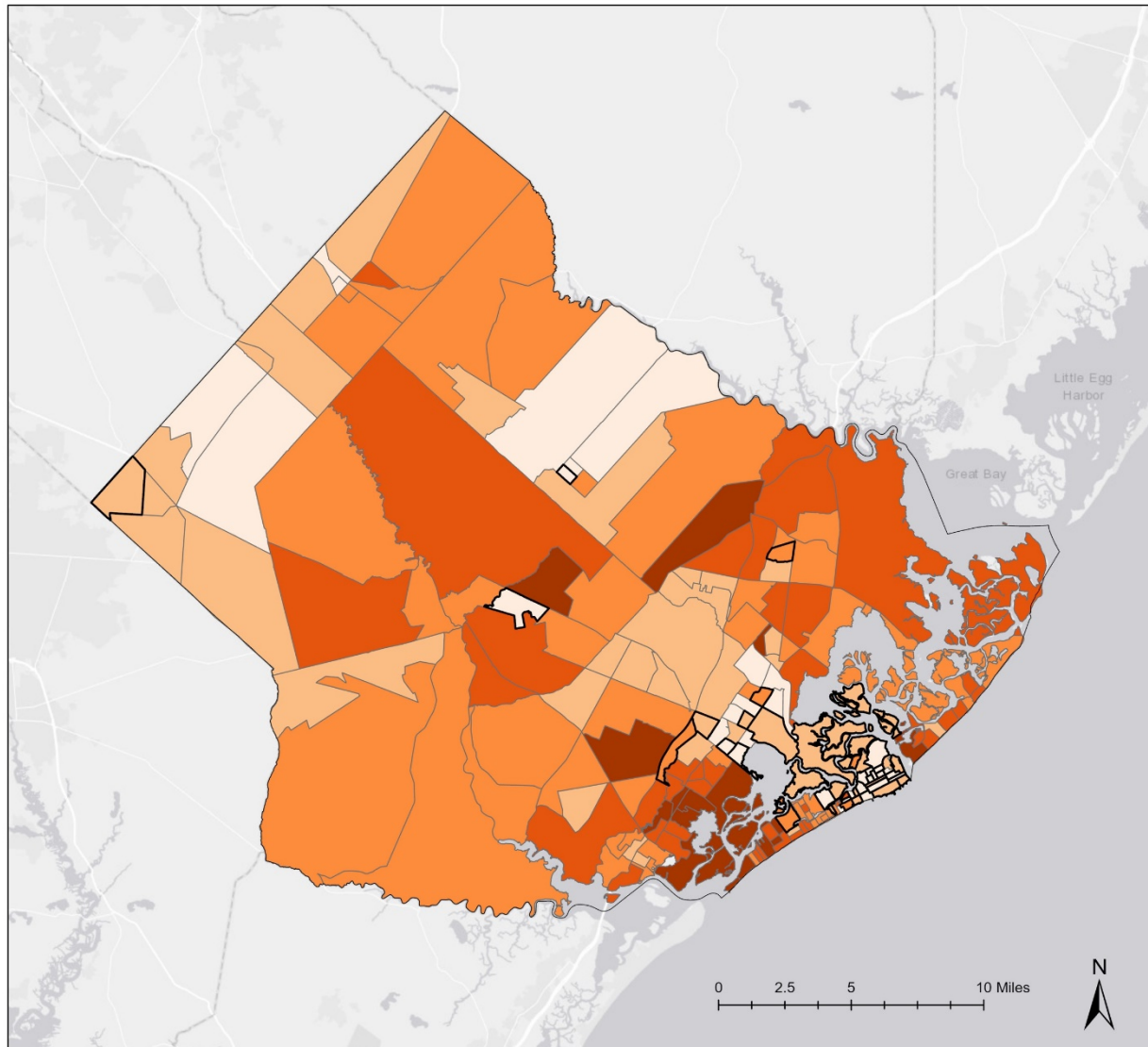
Less than
H.S Diploma 13%

H.S Diploma
or equivalent 32%

Some
College 26.9%

Bachelor's
Degree or
higher 28.1%

Educational Attainment- Bachelor Degree or higher



Educational Attainment Bachelor Degree or Higher

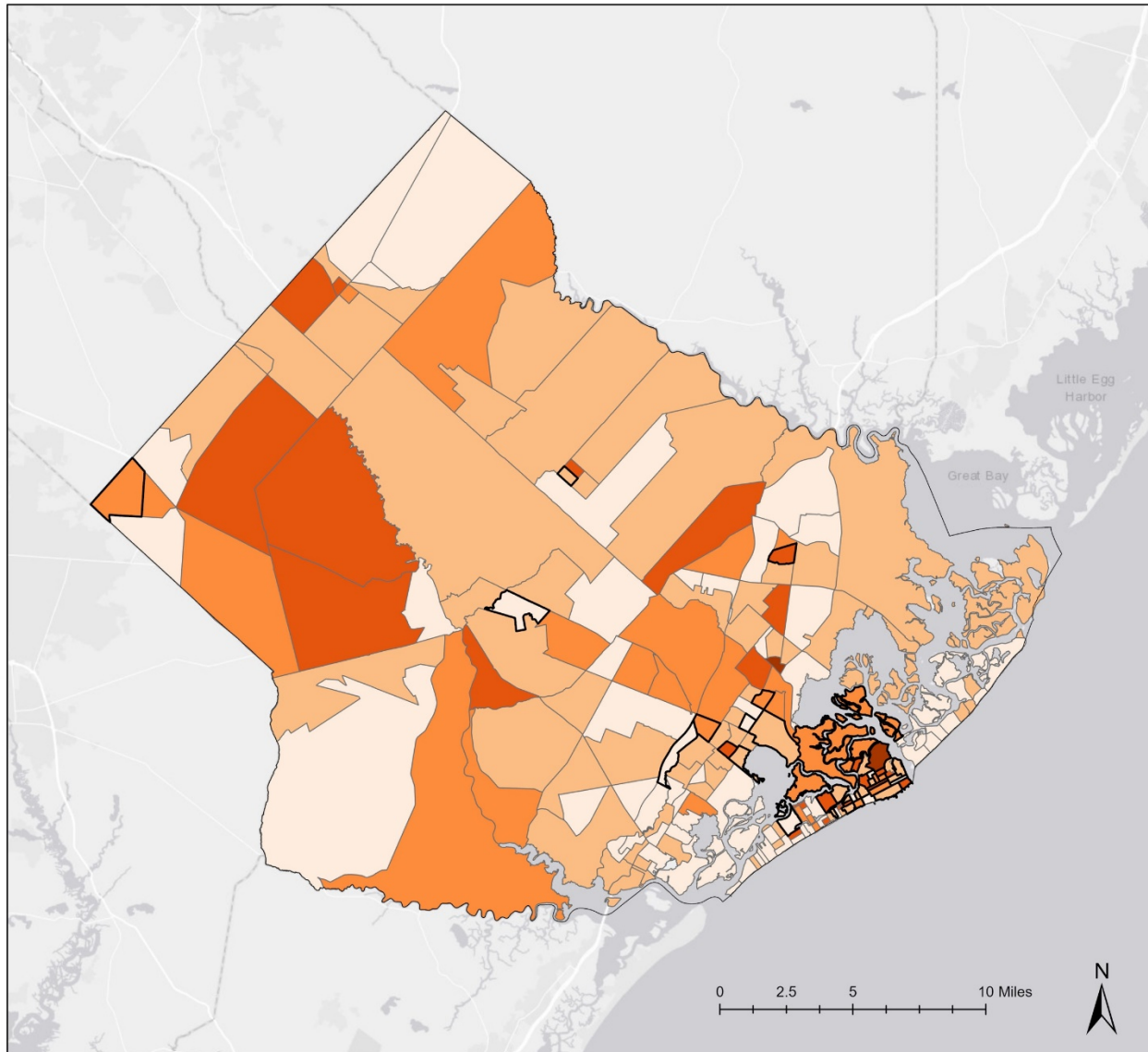
- County Boundary
- Low Income Block Groups
- Population with a Bachelor's Degree or Higher
 - 1.8% to 15%
 - 15% to 25%
 - 25% to 35%
 - 35% to 50%
 - 50% to 71%

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

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Unemployment Status



Employment Status

- County Boundary
- Low Income Block Groups
- Percent of Labor Force Unemployed
 - Upto 3%
 - 3% to 7%
 - 7% to 10%
 - 10% to 20%
 - 20% to 32%

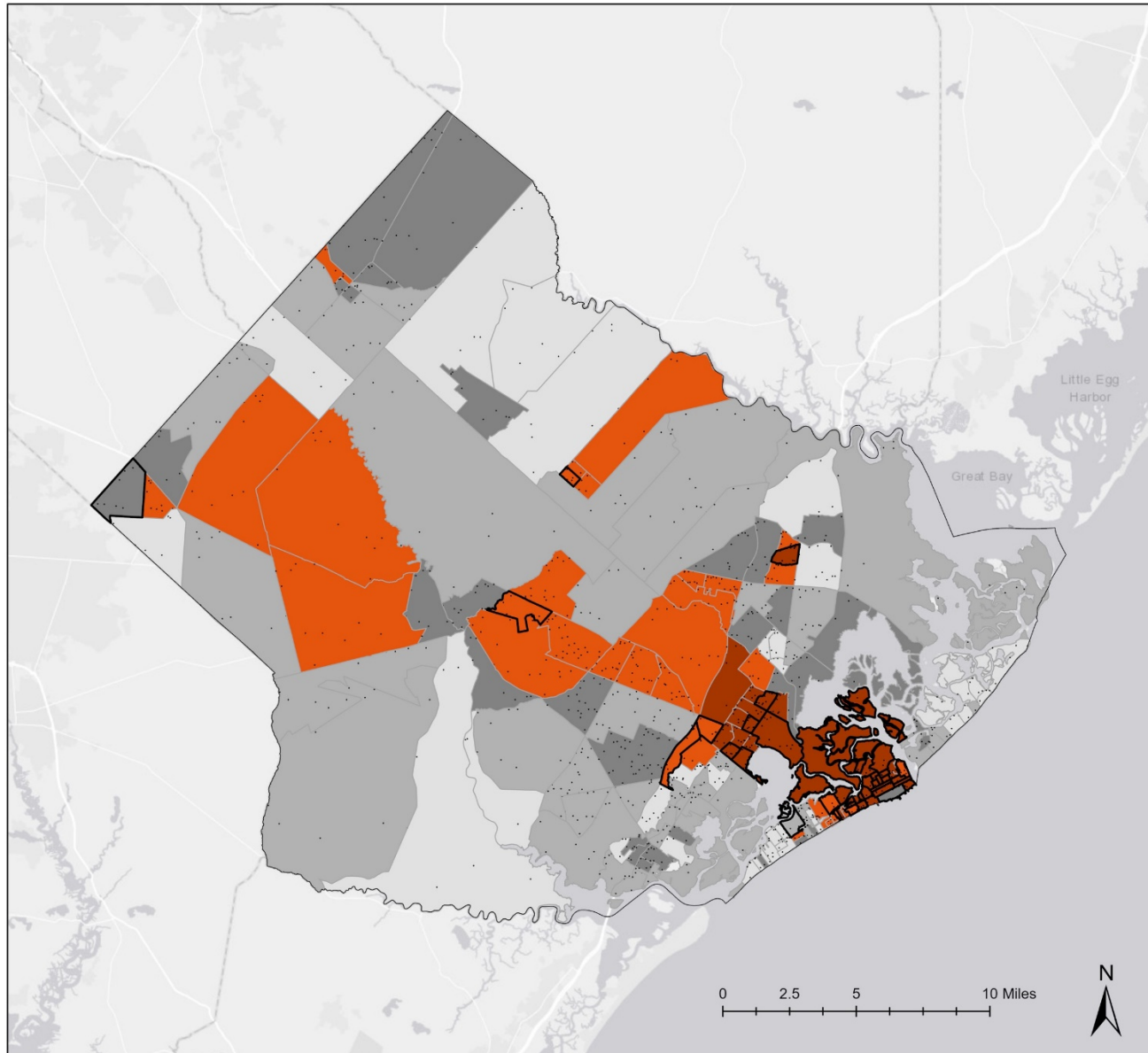
Data Source: NJGIN, ACS 2015-2019 5-year estimate, ESRI base map

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Indicators of Potential Disadvantage

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



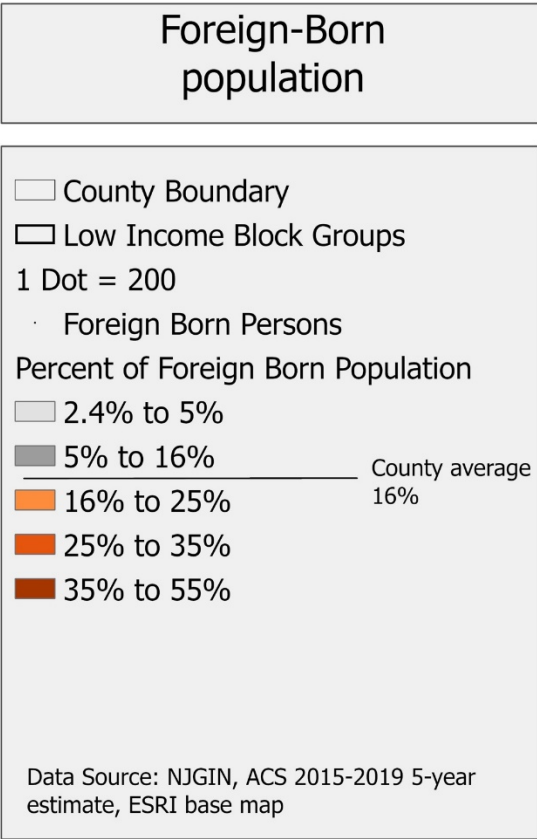
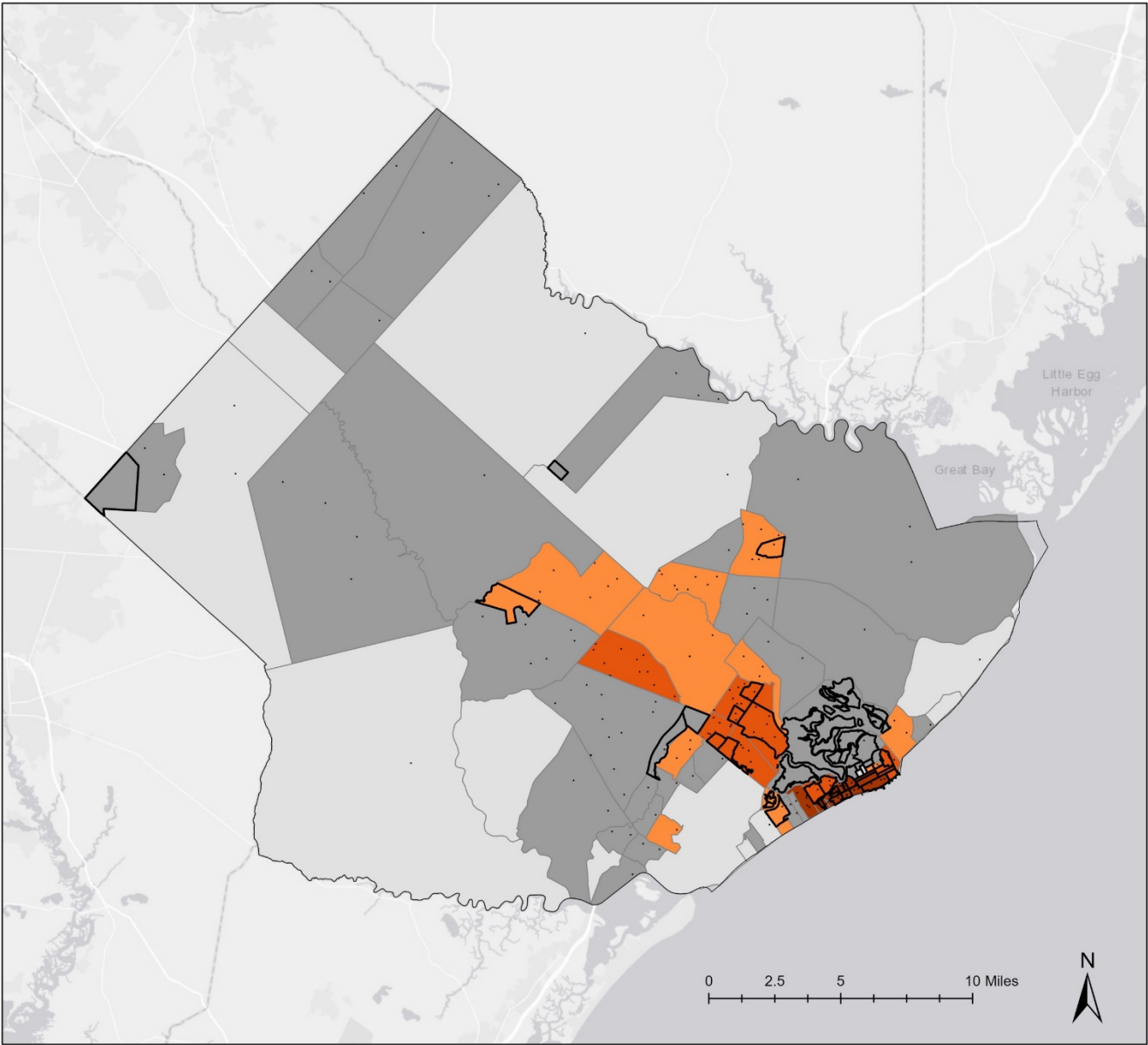
Racial Minority

- County Boundary
 - Low Income Block Groups
 - 1 Dot = 200
Persons of Racial Minority
 - Racial Minority Population by Block Group
 - Upto 10%
 - 10% to 25%
 - 25% to 42%
 - 42% to 75%
 - 75% to 100%
- County average 42%

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

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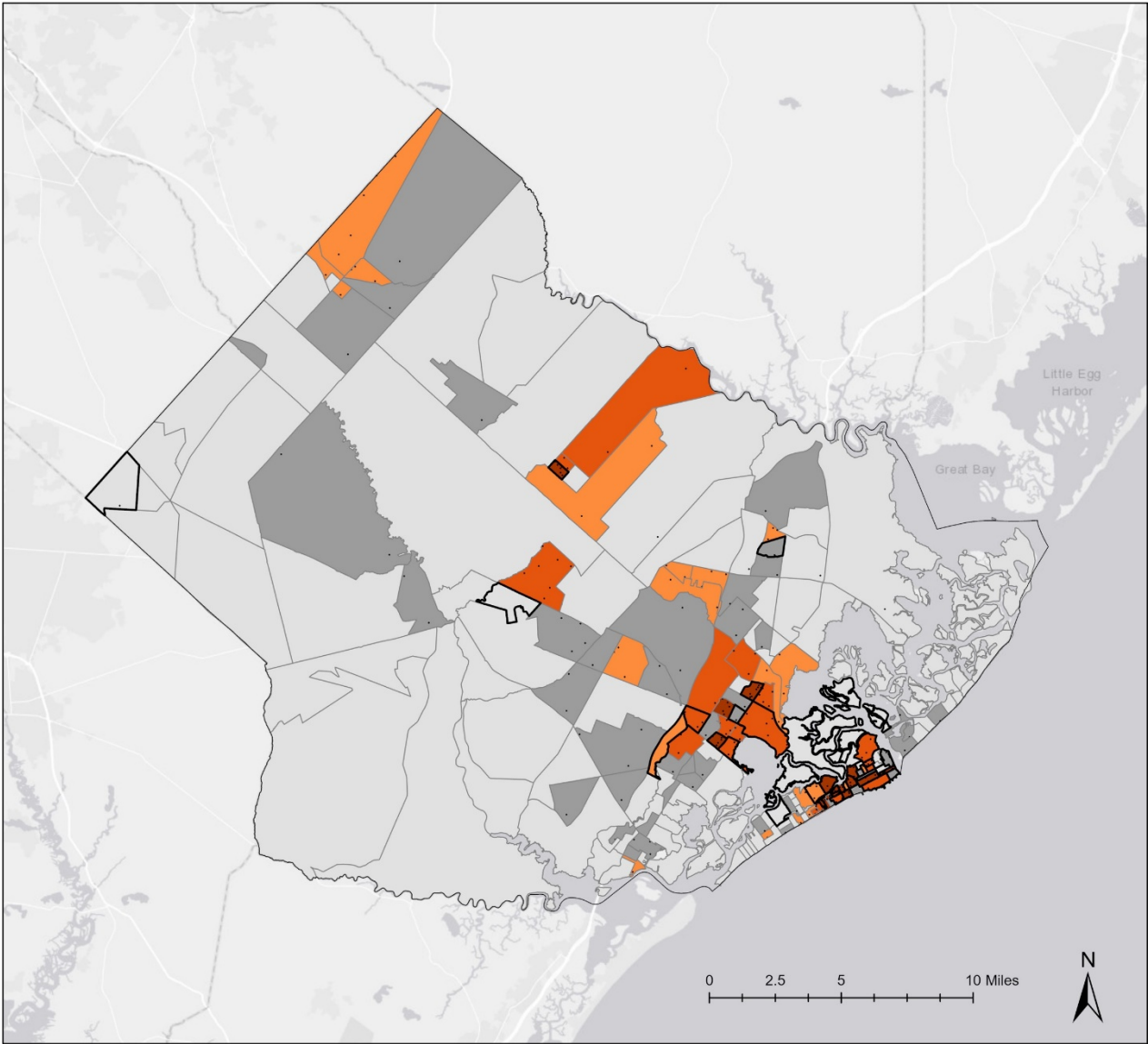
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Limited English proficiency

- County Boundary
- Low Income Block Groups
- 1 Dot = 20
- Households with Limited English Proficiency
- Language Proficiency
 - Less than 1.5%
 - 1.5% to 6%
 - 6% to 10%
 - 10% to 20%
 - 20% to 44%

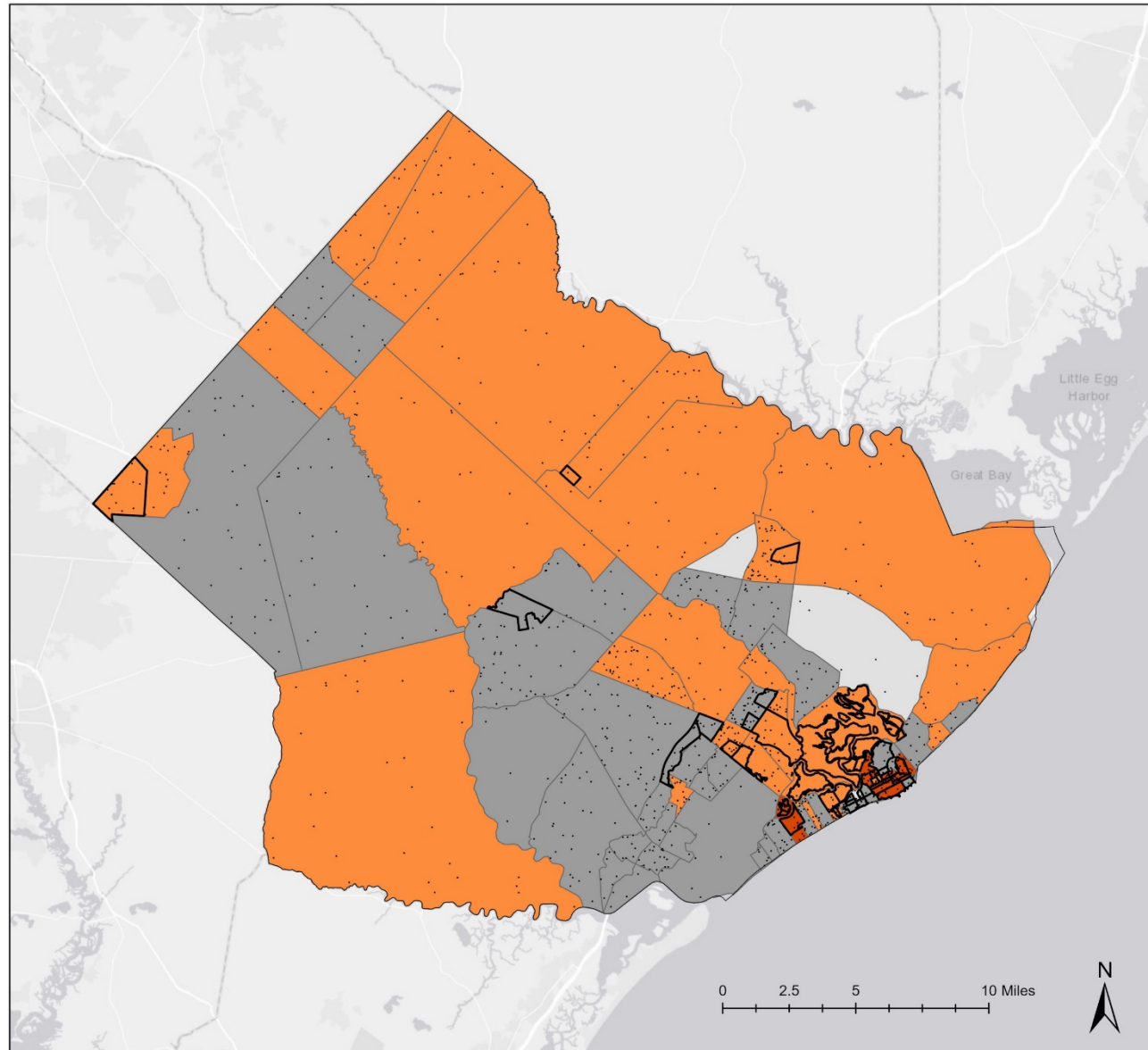
County average
6%

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

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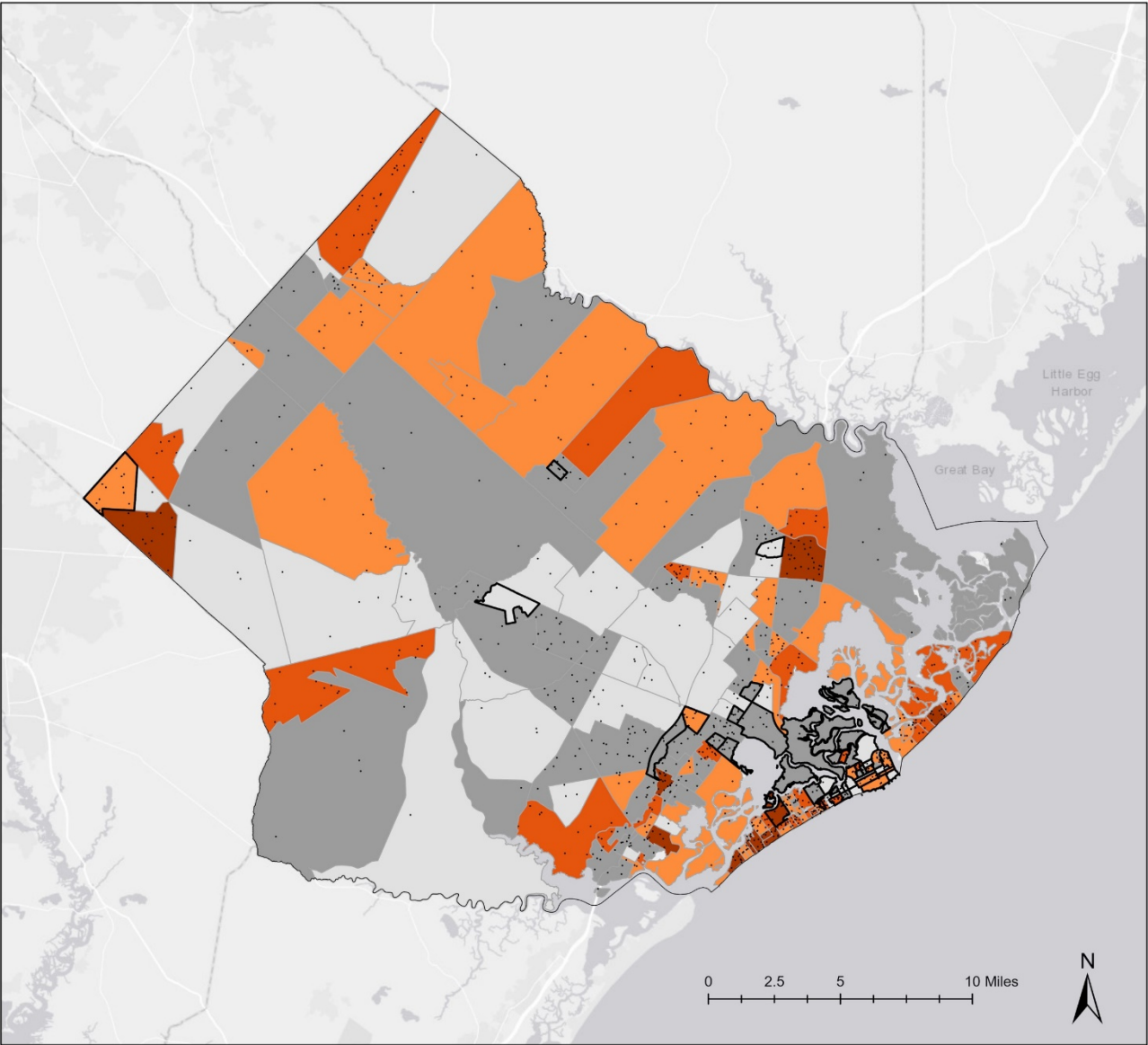
Person with Disability

- County Boundary
- Low Income Block Groups
- 1 Dot = 30
- Person with Disability
- Percent of Population with Disability
- 1.8% to 8%
- 8% to 14%
- 14% to 20%
- 20% to 28%
- County average 14%

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

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Older Adults (75+)

- County Boundary
- Low Income Block Groups
- 1 Dot = 20
- Older Adults (75+)
- Percent of Population Over 75 Years Old
- Less than 4%
- 4% to 8%
- 8% to 12%
- 12% to 20%
- 20% to 33%

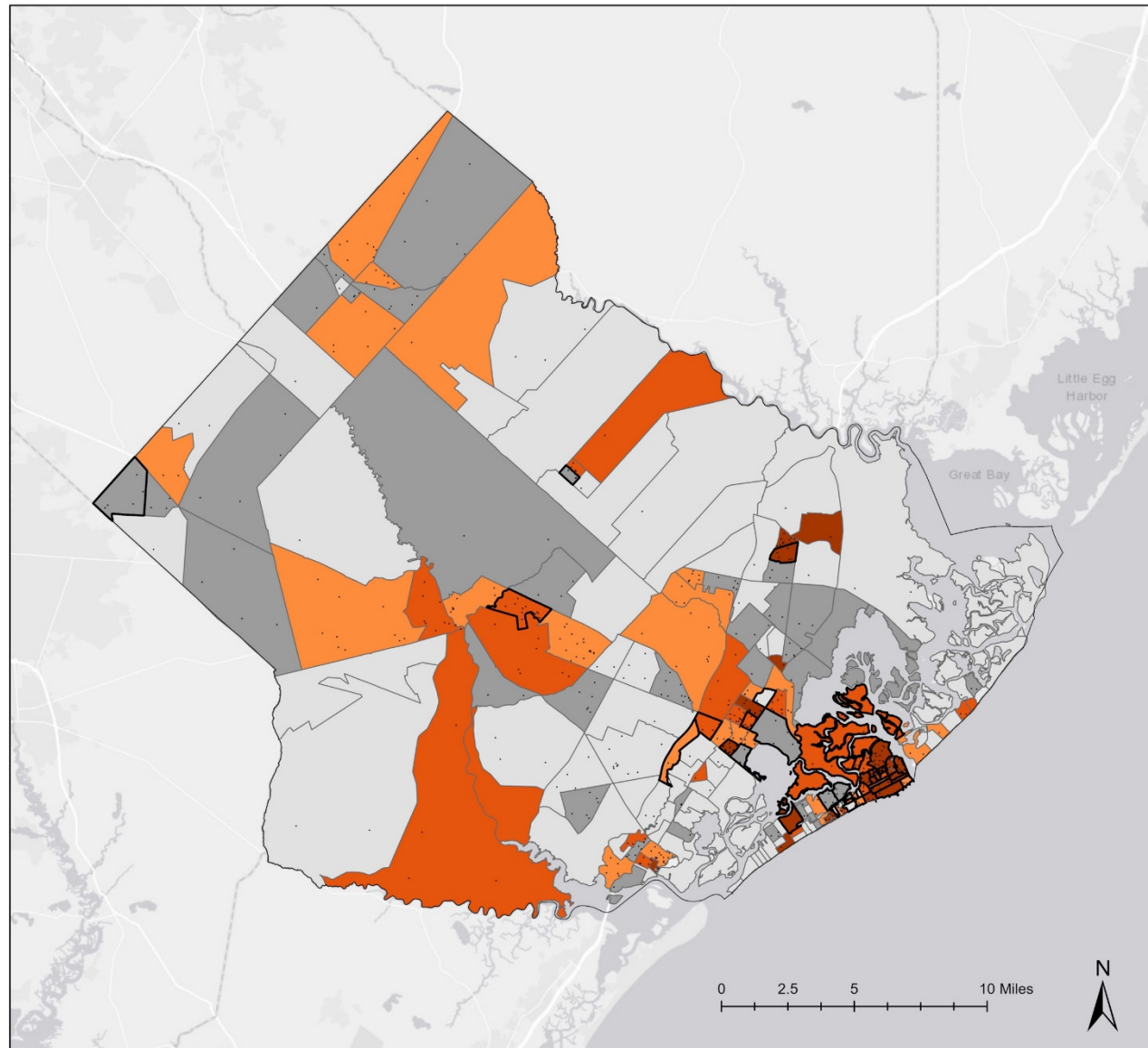
County average
8%

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

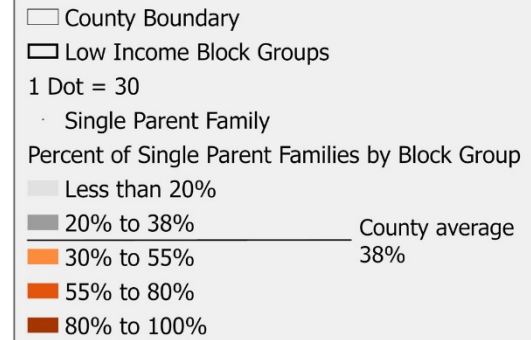
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Single Parent Family



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

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Health Behaviors

Atlantic (AT)



Health Outcomes

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



Health Factors

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

[Download New Jersey Rankings Data](#)

	Mercer (ME) County	Trend	Error Margin	Top U.S. Performers	New Jersey
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Health Outcomes

Length of Life

Premature death	8,900		8,500-9,300	5,400	5,900
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Quality of Life

Poor or fair health	19%	17-21%	14%	16%
Poor physical health days	4.3	4.0-4.6	3.4	3.7
Poor mental health days	4.7	4.4-5.0	3.8	3.8
Low birthweight	8%	8-8%	6%	8%

Health Factors

Health Behaviors

Adult smoking	18%		16-20%	16%	13%
Adult obesity	33%		29-36%	26%	27%
Food environment index	7.8			8.7	9.4
Physical inactivity	32%		30-36%	19%	27%
Access to exercise opportunities	91%			91%	95%
Excessive drinking	17%		17-18%	15%	16%
Alcohol-impaired driving deaths	30%		26-34%	11%	22%
Sexually transmitted infections	488.3			161.2	405.5
Teen births	16		15-17	12	12

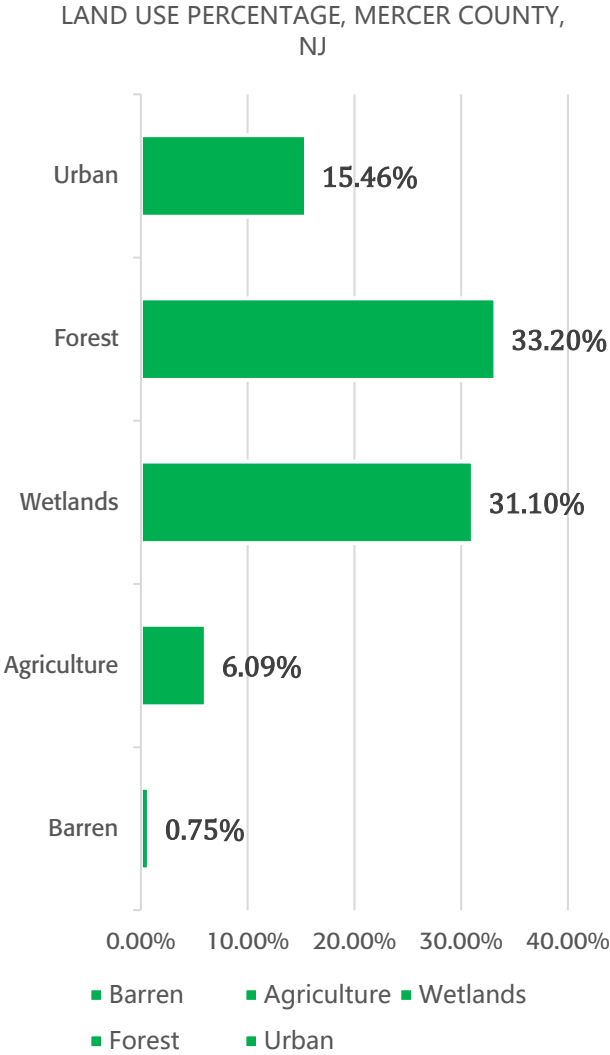
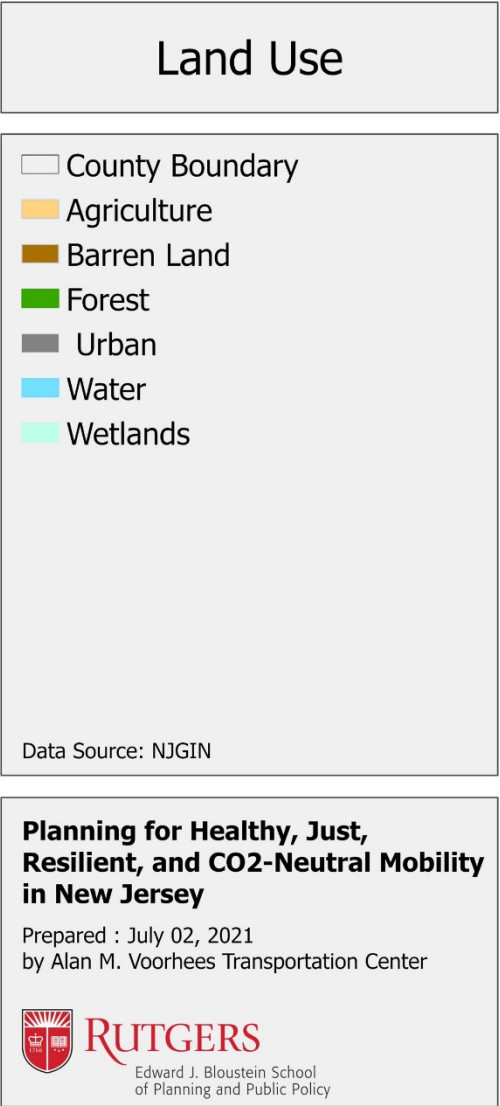
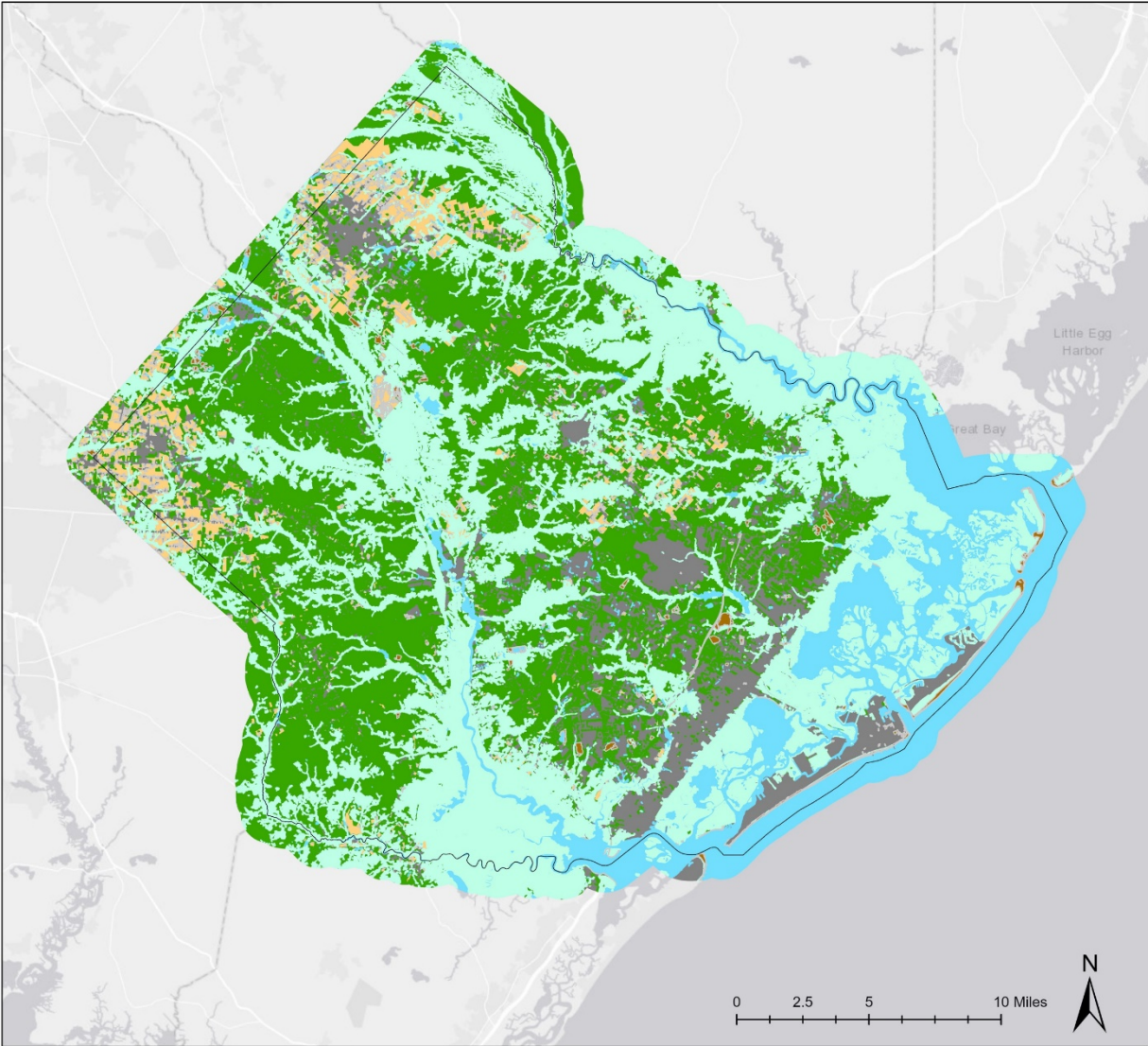
Clinical Care

Uninsured	10%		9-11%	6%	9%
Primary care physicians	1,210:1			1,030:1	1,180:1
Dentists	1,650:1			1,210:1	1,140:1
Mental health providers	580:1			270:1	420:1
Preventable hospital stays	5,384			2,565	4,333
Mammography screening	41%			51%	41%
Flu vaccinations	50%			55%	52%

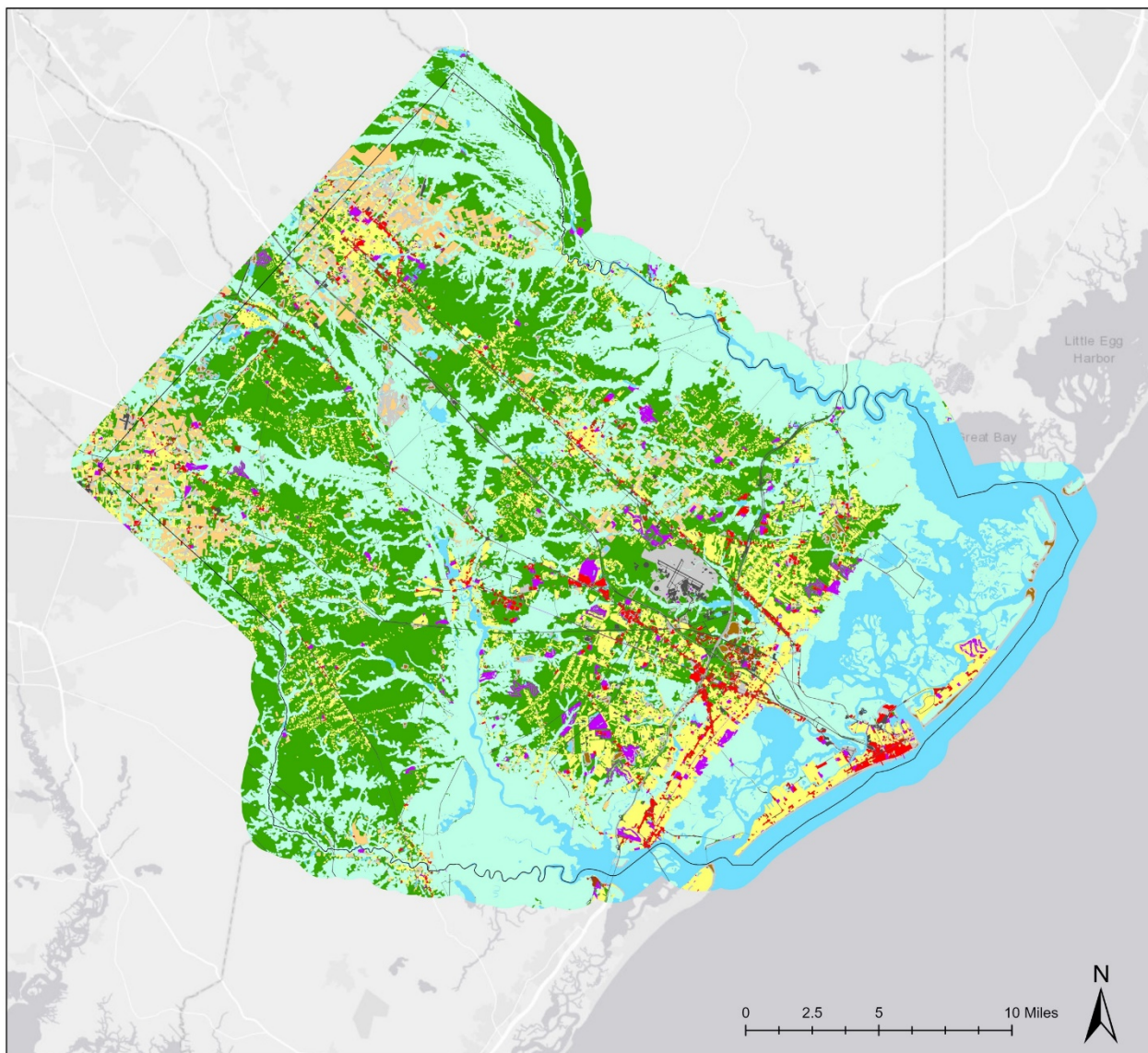
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GEOGRAPHY OF PLACE

Natural Land Use



Urban Land Use



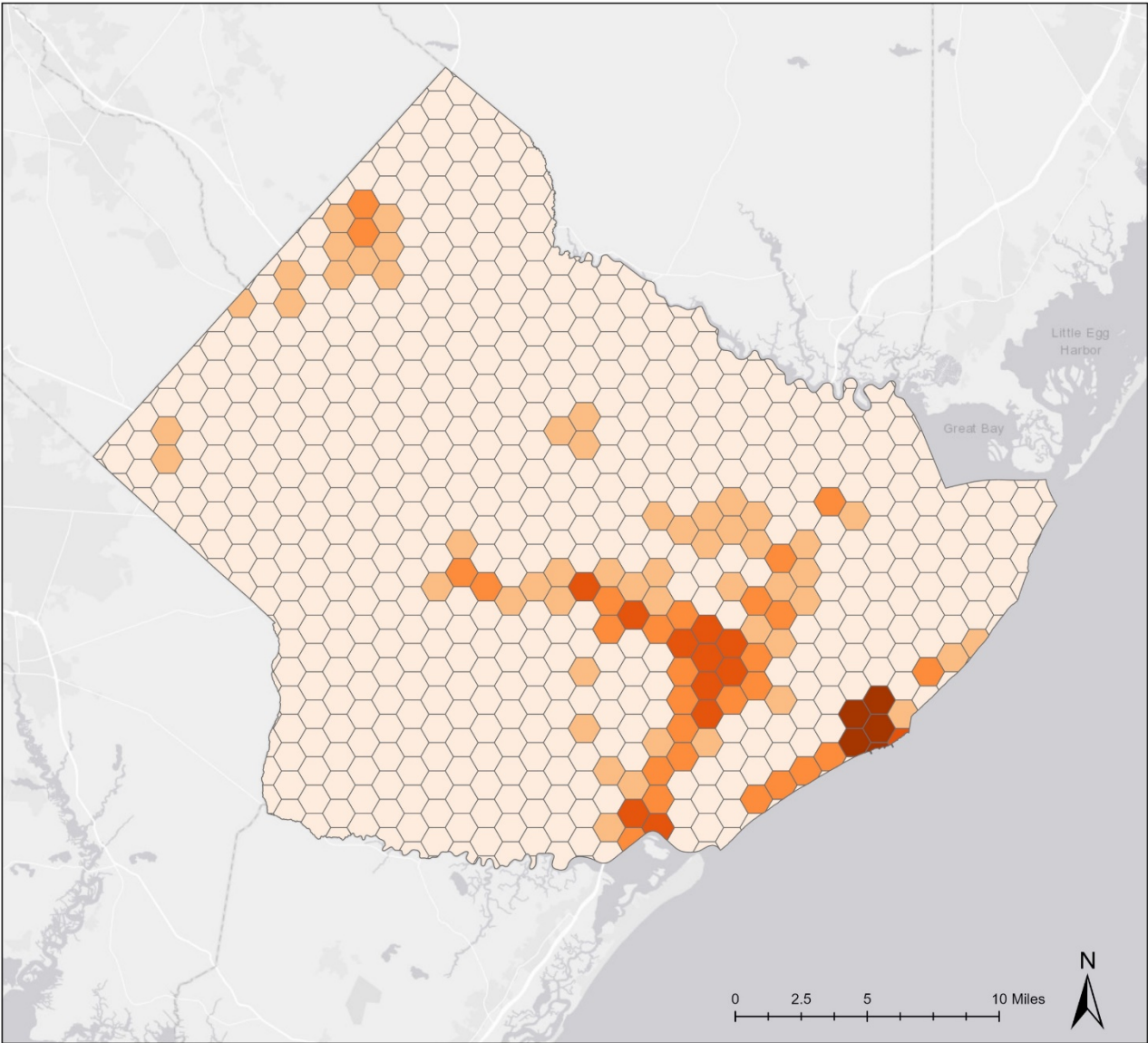
Land Use

- County Boundary
- Residential
- Commercial and Service
- Industrial
- Transportation/Communication/Utilities
- Recreational Land
- Other Urban Land
- Agriculture
- Barren Land
- Forest
- Urban
- Water
- Wetlands

Data Source: NJGIN

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Employee Density

Total Employees

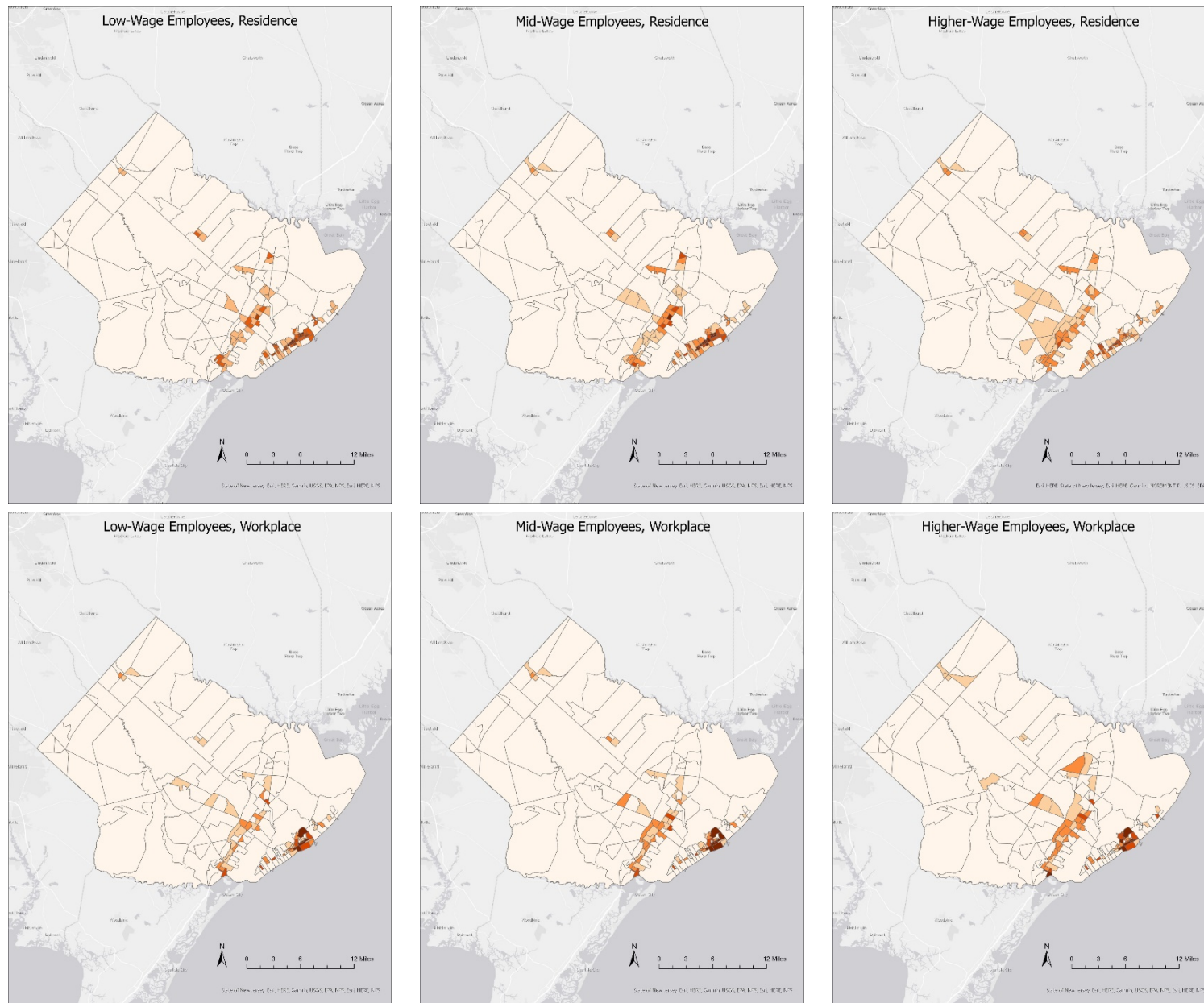
- Less than 200
- 200 to 800
- 800 to 1800
- 1800 to 4200
- 4200 to 19082

Data Source: NJGIN and ESRI Business Search Safegraph

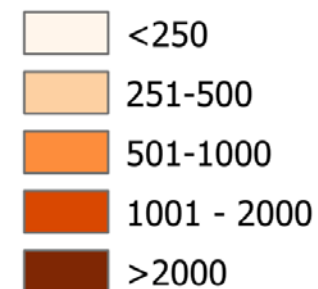
Planning for Healthy, Just, Resilient, and CO2-Neutral Mobility in New Jersey

Prepared : July 02, 2021
by Alan M. Voorhees Transportation Center

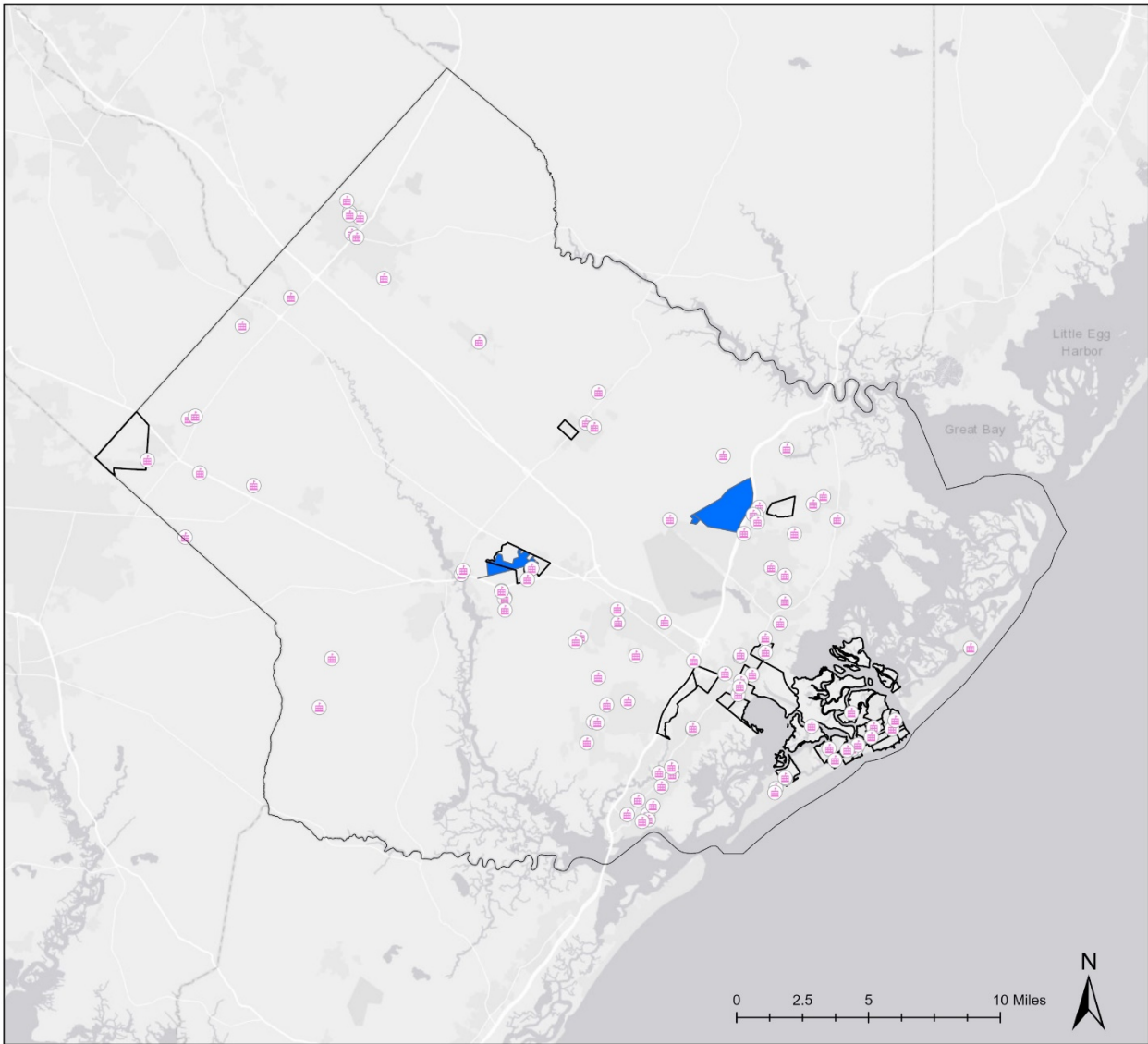
Employee Density by Wage



Number of employees per sq. mile by wage category by place of residence and place of work



Data Source: NJGIN, Longitudinal Employer Household Dynamics (LEHD) , 2014-18



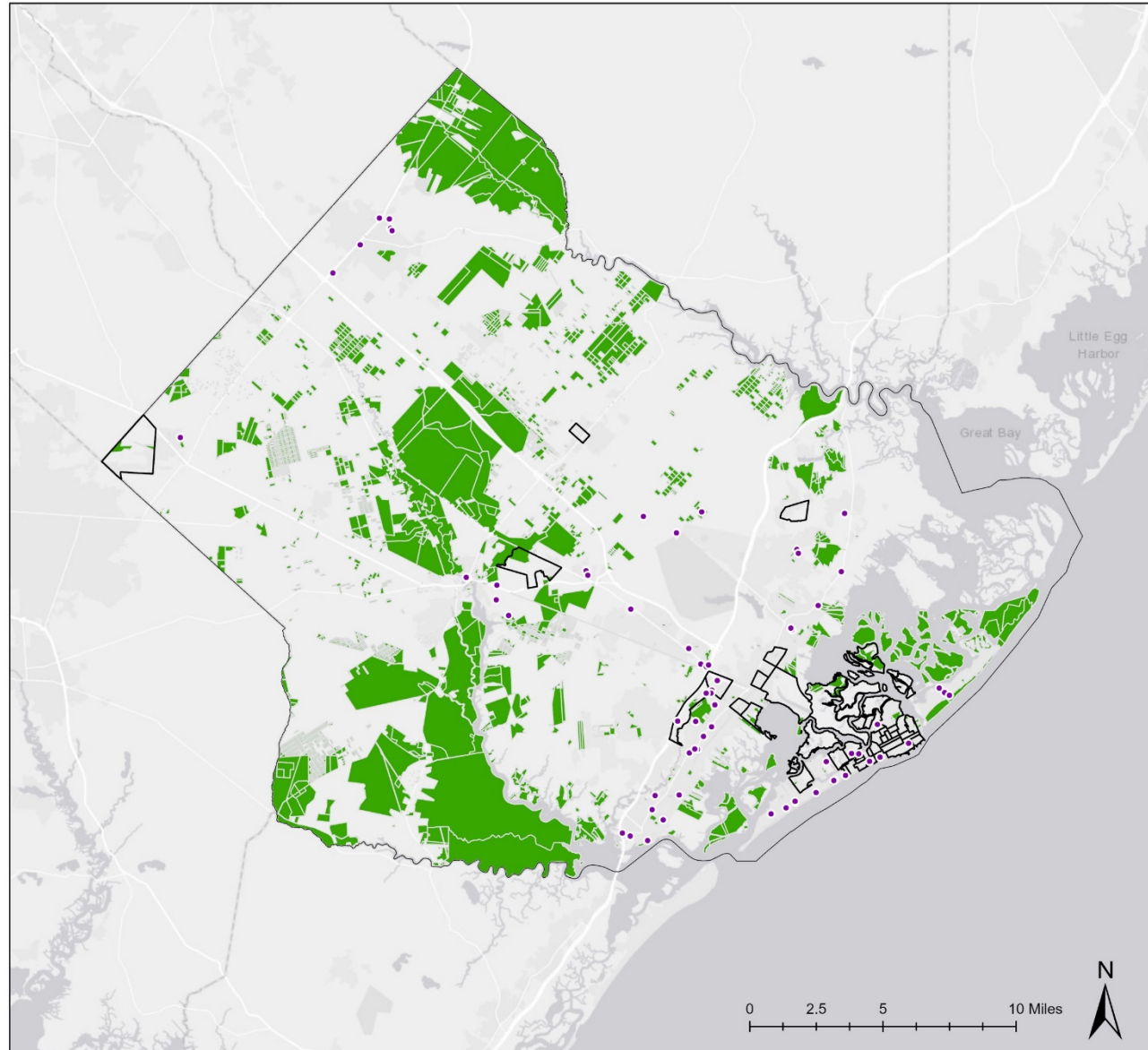
Education

- County Boundary
- Low Income Block Groups
- K-12 Schools
- College and University

Data Source: NJGIN and ESRI Business Search Safegraph

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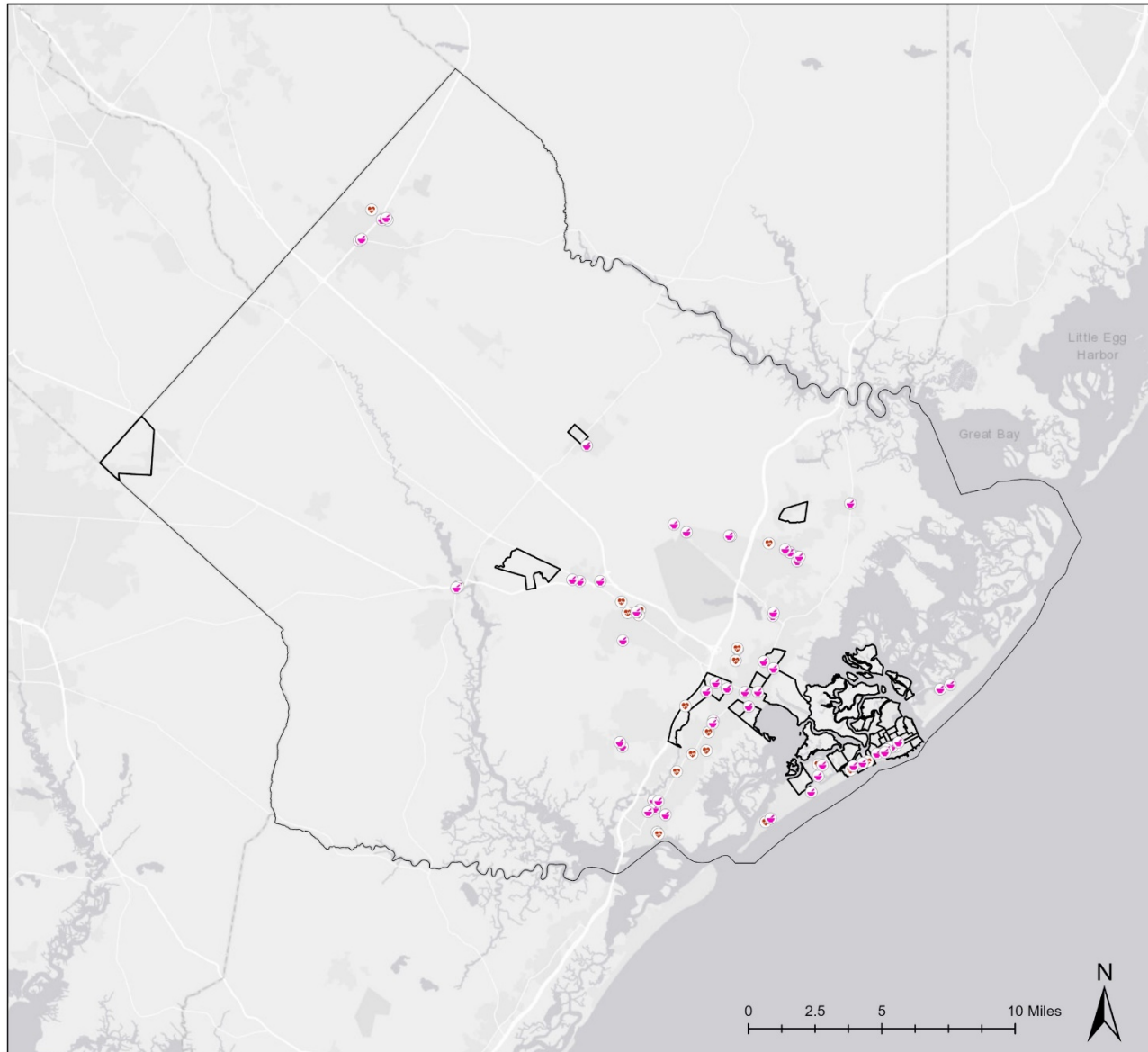
Recreation

- County Boundary
- Low Income Block Groups
- Fitness Centers
- State, Local and Non-profit Open Space

Data Source: NJGIN and ESRI Business Search
Safegraph

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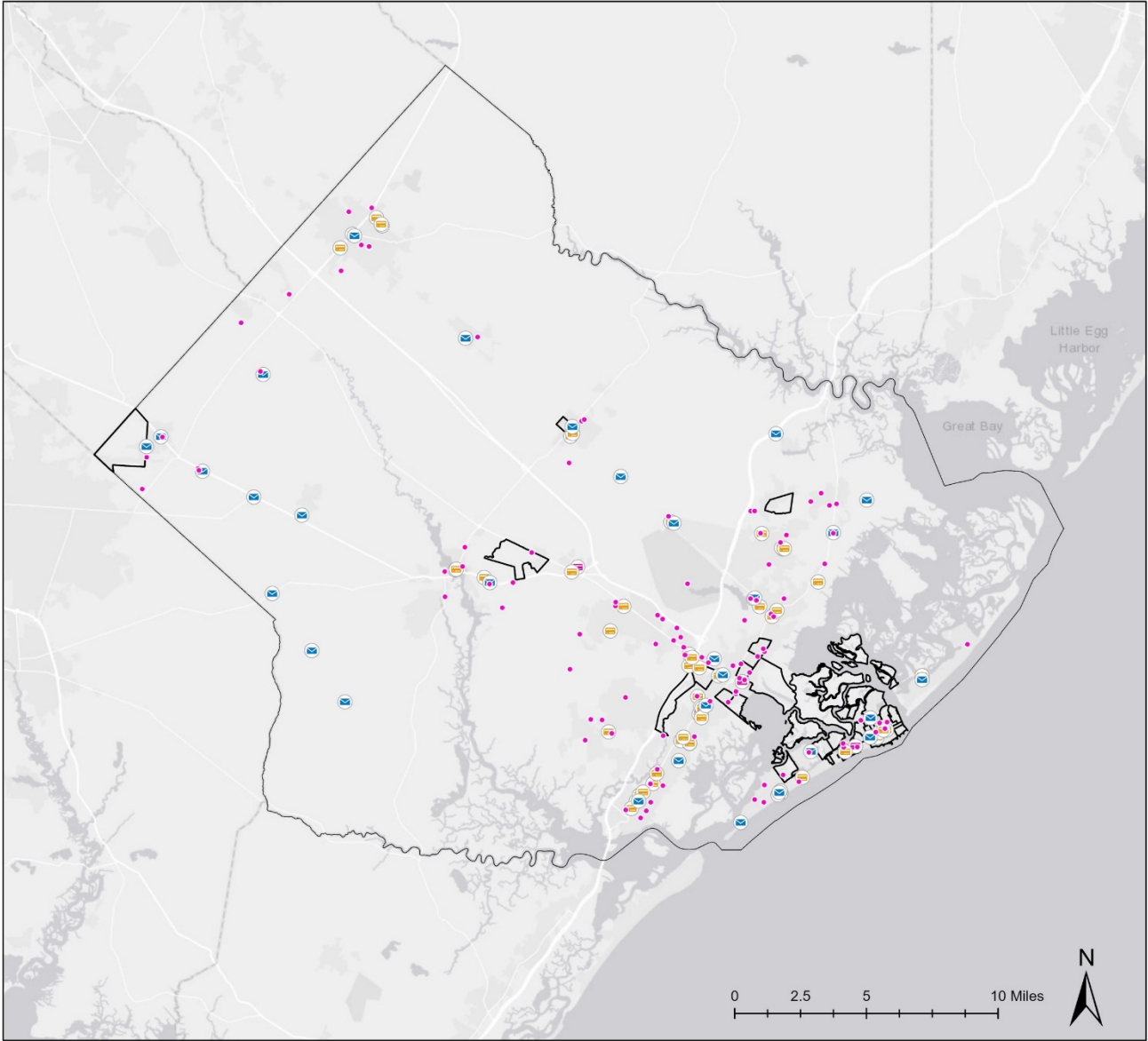
Medical Services

- County Boundary
- Low Income Block Groups
- Medical Facilities
- Hospital and Emergency Center

Data Source: NJGIN and ESRI Business Search Safegraph

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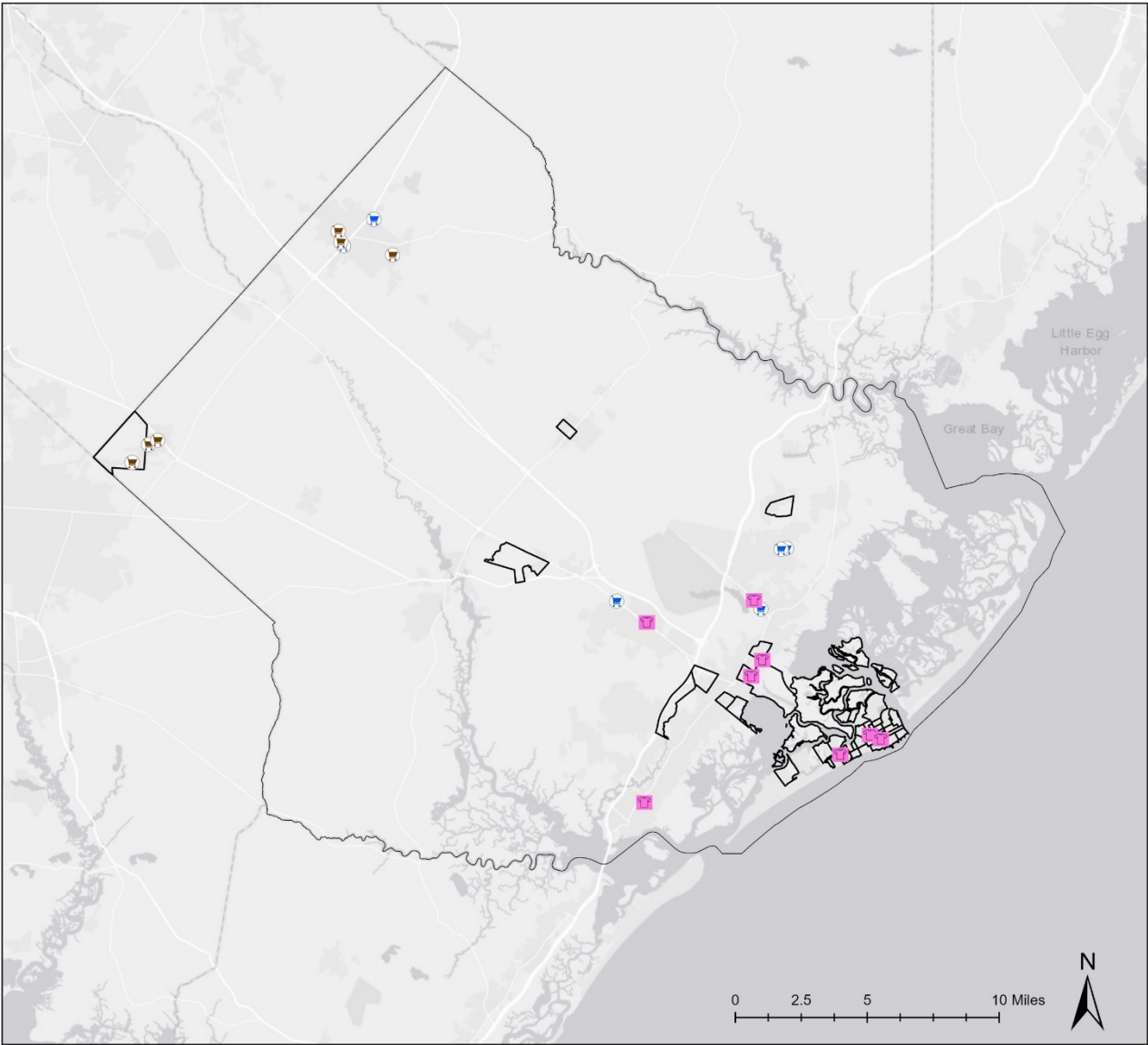
Essential Services

- County Boundary
- Low Income Block Groups
- Childcare Facilities
- ✉ Postal
- 🏦 Commercial Banking
- 🏦 Credit Unions

Data Source: NJGIN and ESRI Business Search Safegraph

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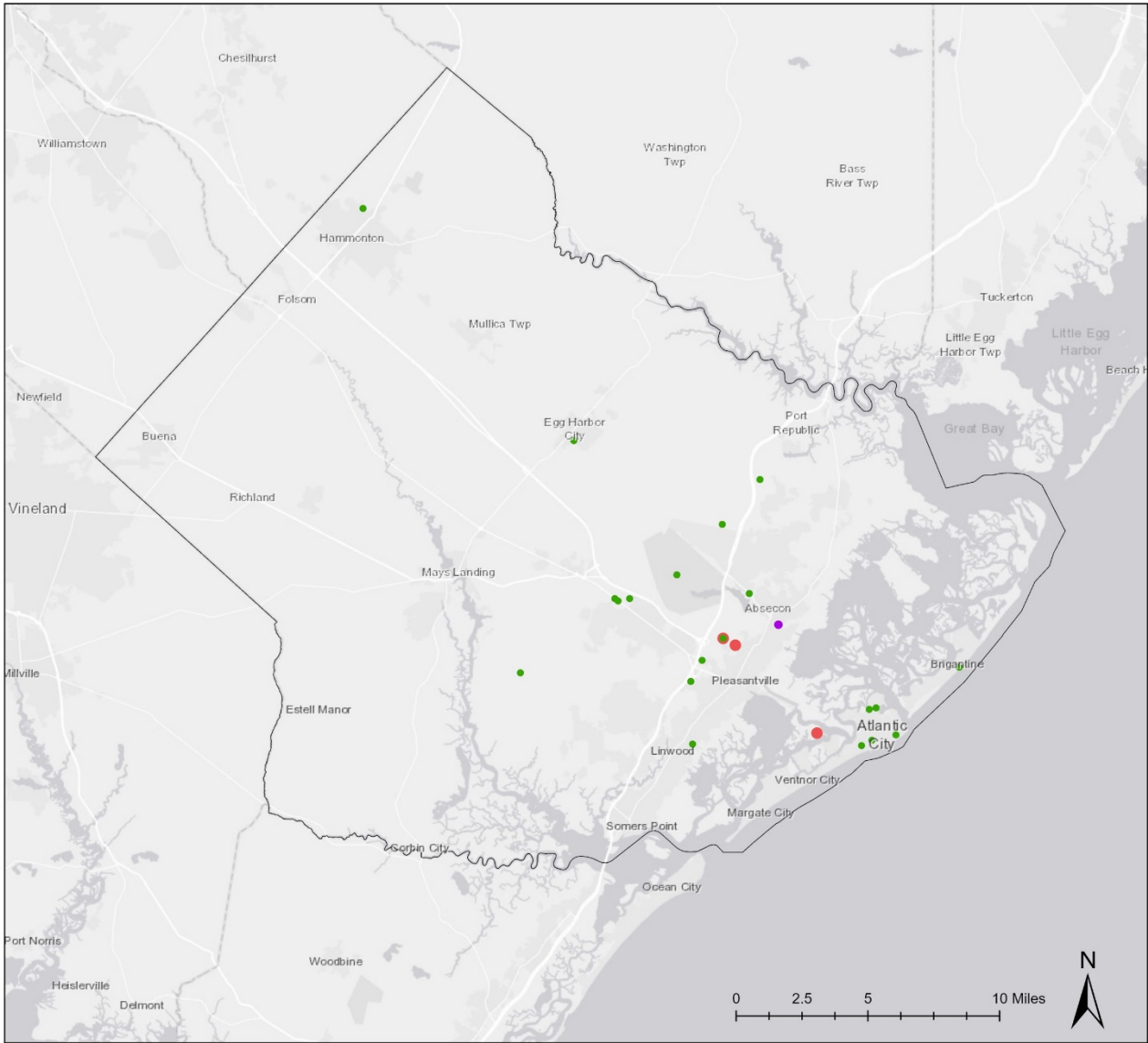
Commercial Amenities

- County Boundary
- Low Income Block Groups
- Laundry Self-Service
- Convenience/ Specialty Store
- Full-service Grocery Store

Data Source: NJGIN and ESRI Business Search Safegraph

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Alt. Fueling Station

County Boundary

Fuel Type

Compressed Natural Gas

Electric

Liquefied Petroleum Gas

Data Source: NJGIN,,ESRI Base Map, US Department of Energy

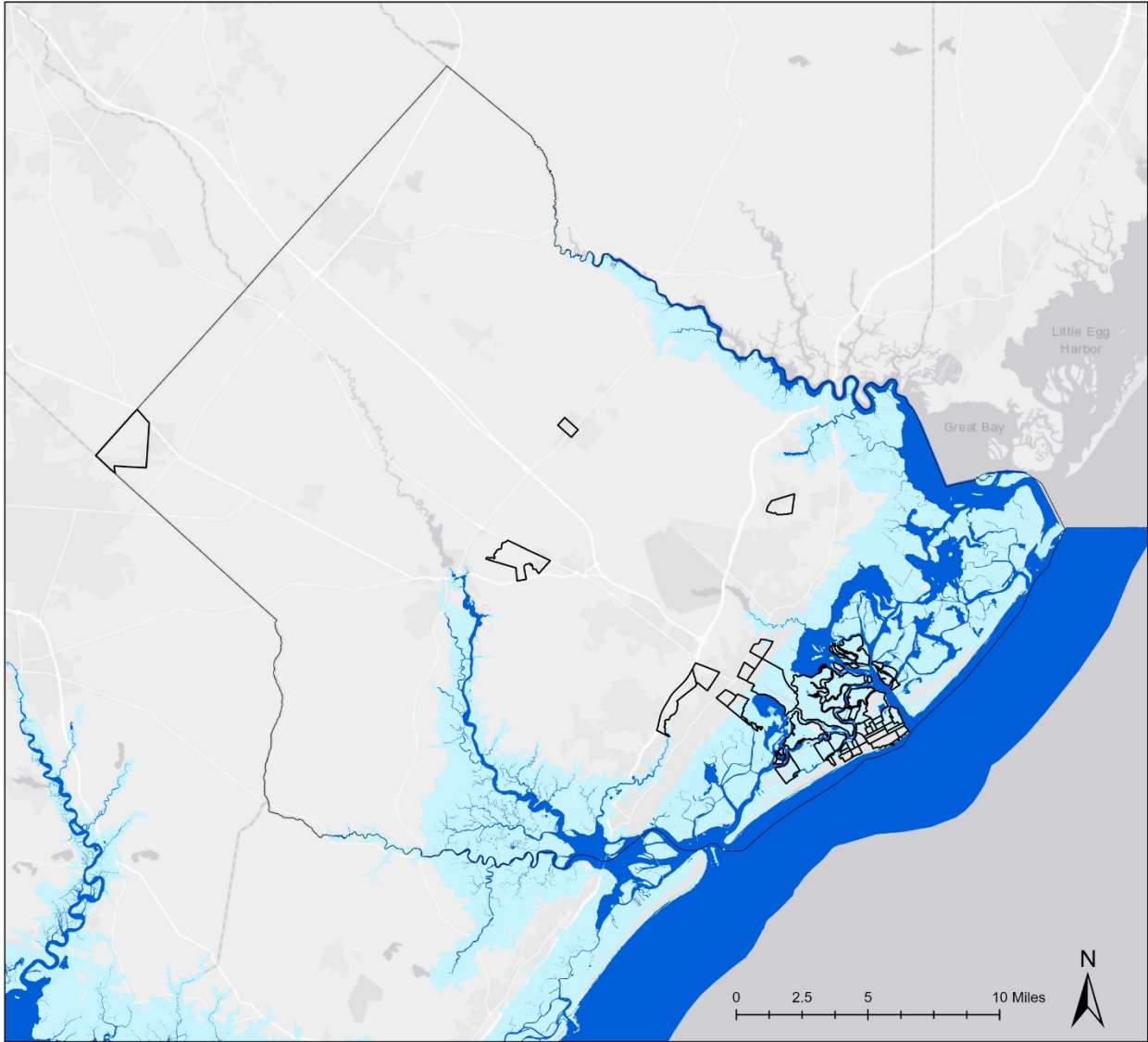
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RUTGER

Edward J. Bloust
of Planning and

Climate Vulnerability



Sea Level Rise (5ft)

- County Boundary
- Low Income Block Groups
- 5 ft Sea Level Rise Depth Value
- High
- Low

Data Source: NJGIN, ACS 2015-2019 5-year Estimate, ESRI Base Map, NOAA

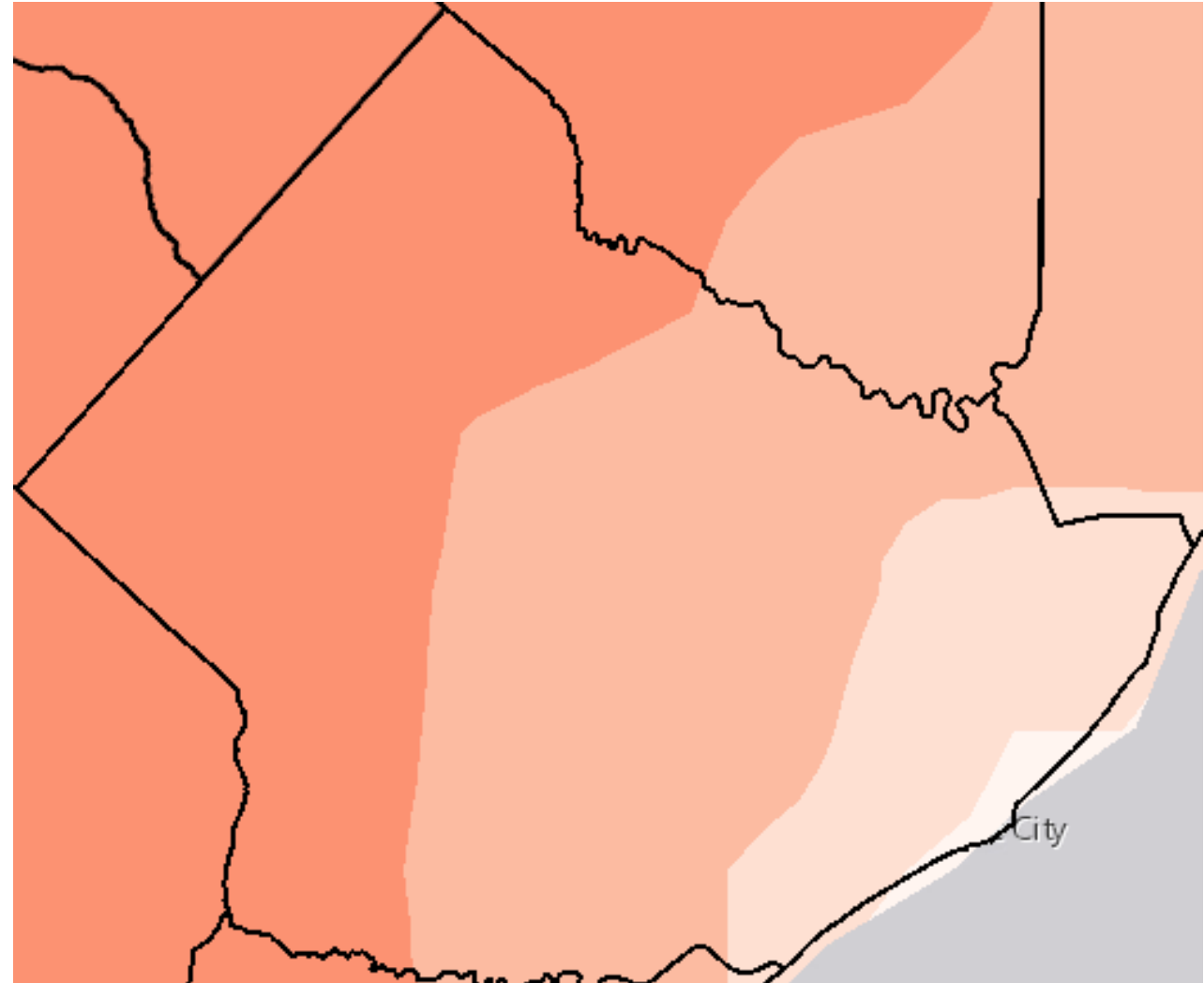
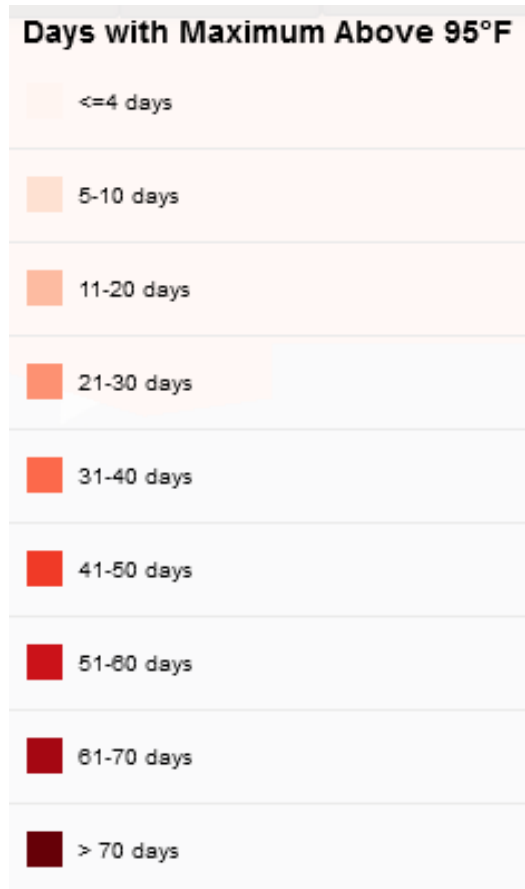
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Climate Vulnerability

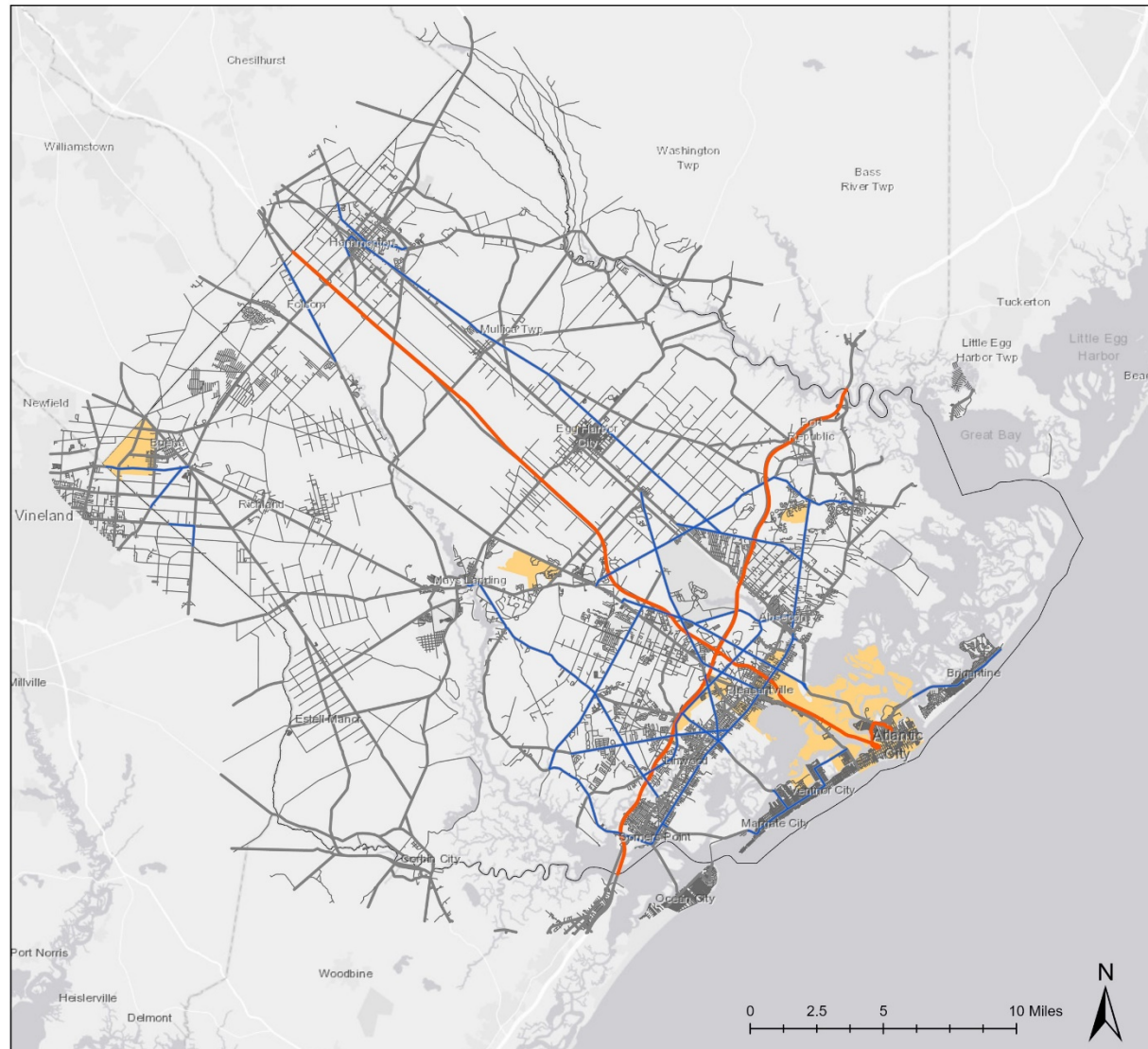
Exposure to extreme heat (High-emissions scenario)



Source: NJ Forest Adapt

Healthy, Just and CO2-neutral Mobility for All

GEOGRAPHY OF MOBILITY AND CONNECTIONS



Road Network

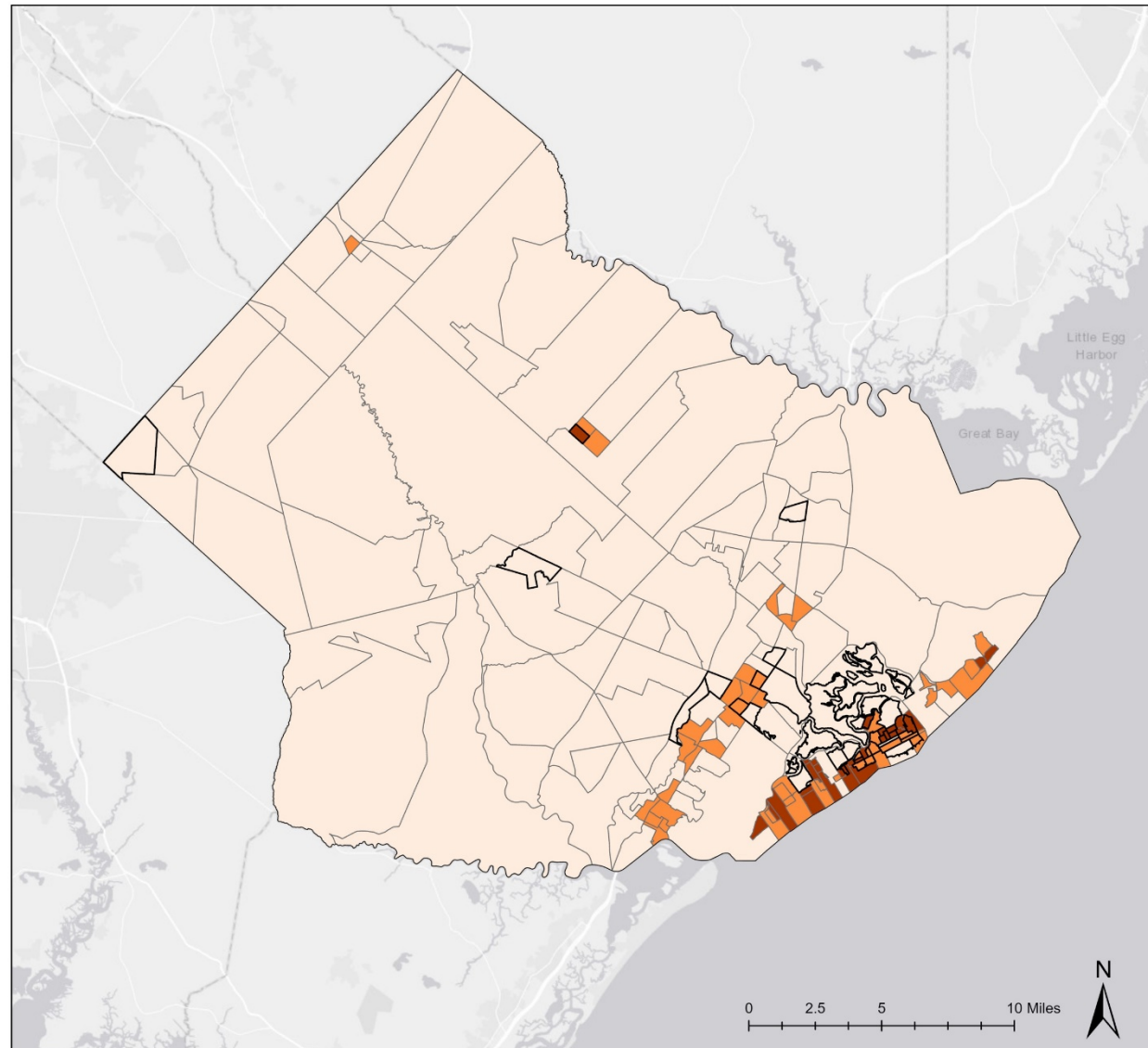
Type

- Principal Arterial- Expressways
- County Route
- Major Roads
- Local Roads
- Low Income Block Groups
- County Boundary

Data Source: NJGIN, ACS 2015-2019 5-year
Estimate, ESRI Base Map, NJDOT-SLD Database

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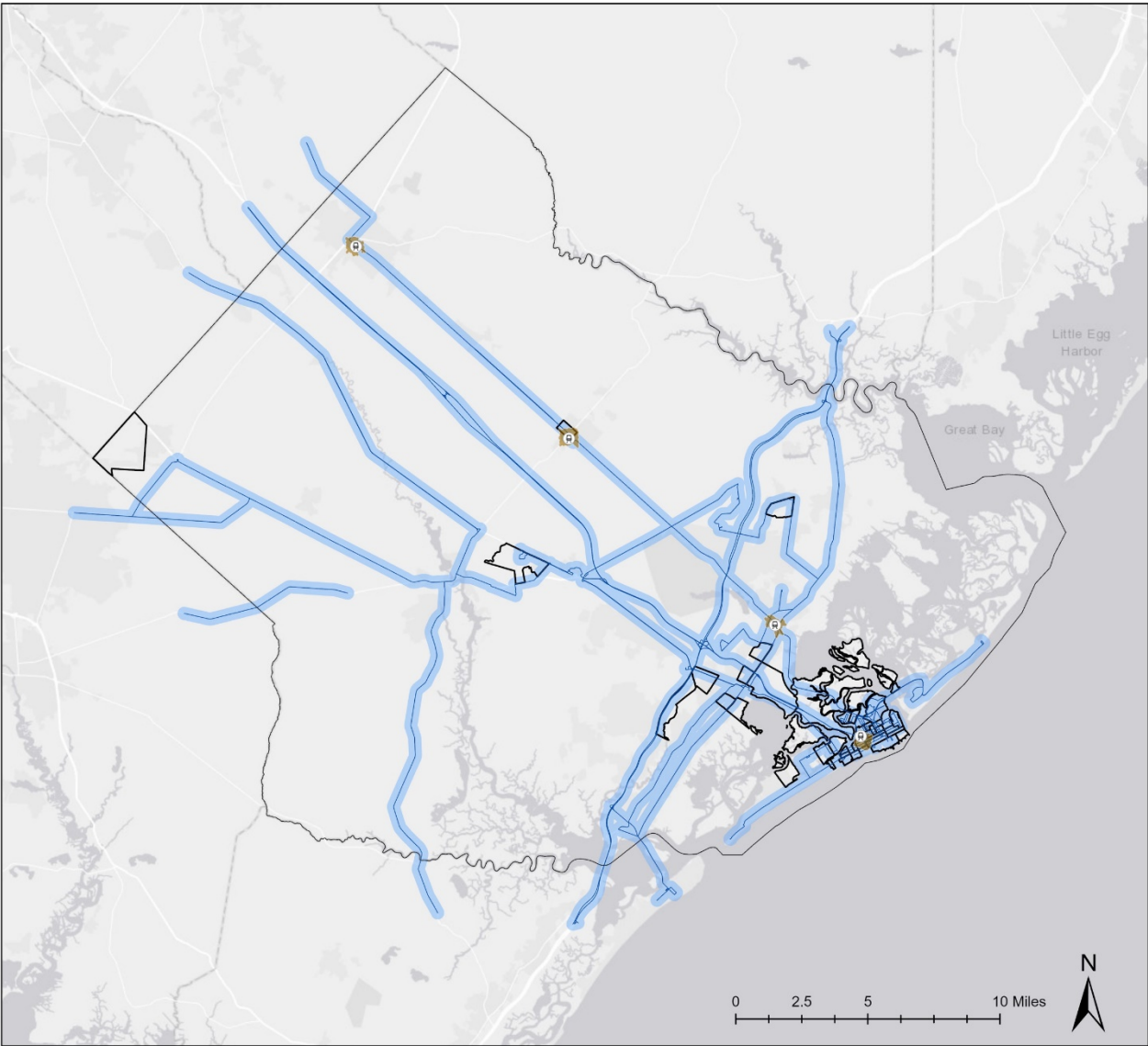
Intersection Density

- County Boundary
- Low Income Block Groups
- Number of Intersections per acre
 - 1 - 70
 - 70 - 160
 - 160 - 325

Data Source: NJGIN, ACS 2015-2019 5-year Estimate, National walkability Index-EPA and ESRI Base map

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Transit Service Area

- County Boundary
- Low Income Block Groups
- Rail Station
- Railway Station Service area- 0.5 mile
- Buffer Bus Route- 0.25 mile
- Bus Route

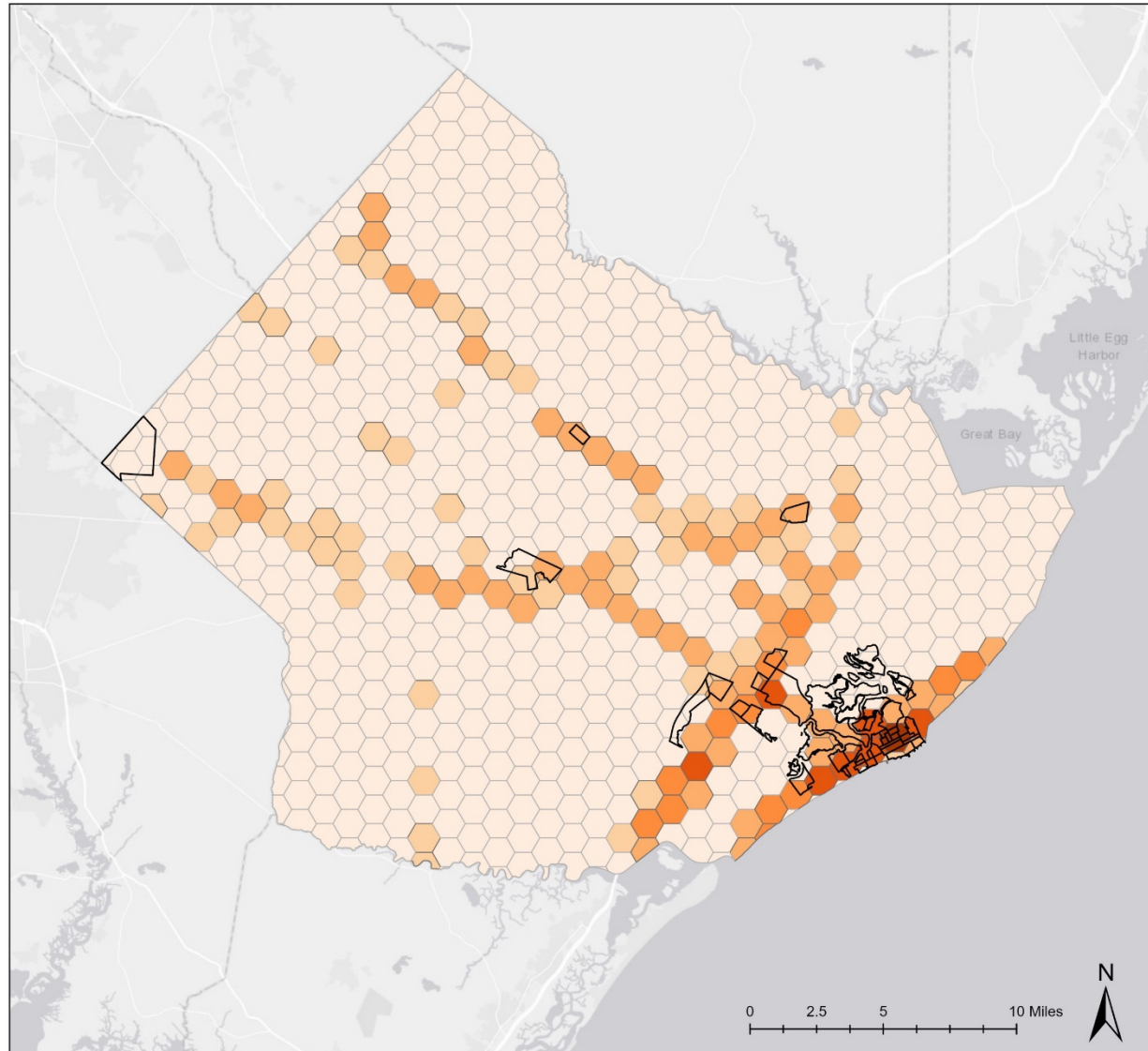
Total Transit Service Area= 120.43 sq. miles
Bus Route Service Area= 119.09 sq. miles
Railway Station Service Area= 1.34 sq. miles

Data Source: NJGIN, ACS 2015-2019 5-year
Estimate, NJT Transit GTFS data and ESRI Base
map

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Bus Stop Density



Bus Stop Density

□ Low Income Block Groups

Bus stop density

Count of Points

0

1 - 2

3 - 10

11 - 20

21 - 42

43 - 75

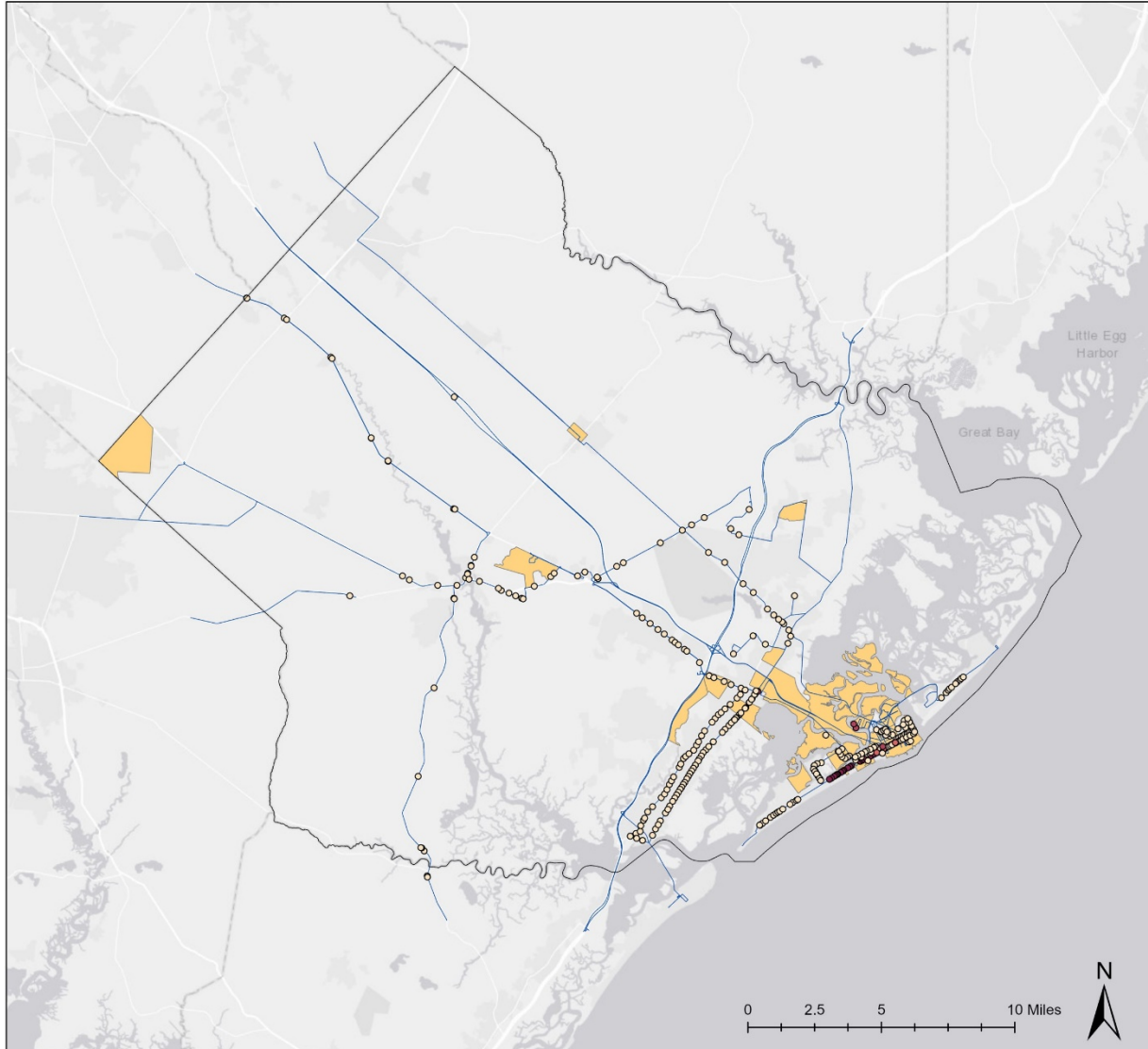
Note: Area of unit hexagon= 1 sq. mile

Data Source: NJGIN, ACS 2015-2019 5-year Estimate, ESRI Base Map, NJDEP

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Bus Service Frequency



Bus Service Frequency

- County Boundary
- Low Income Block Groups
- Bus Route

Max Wait time

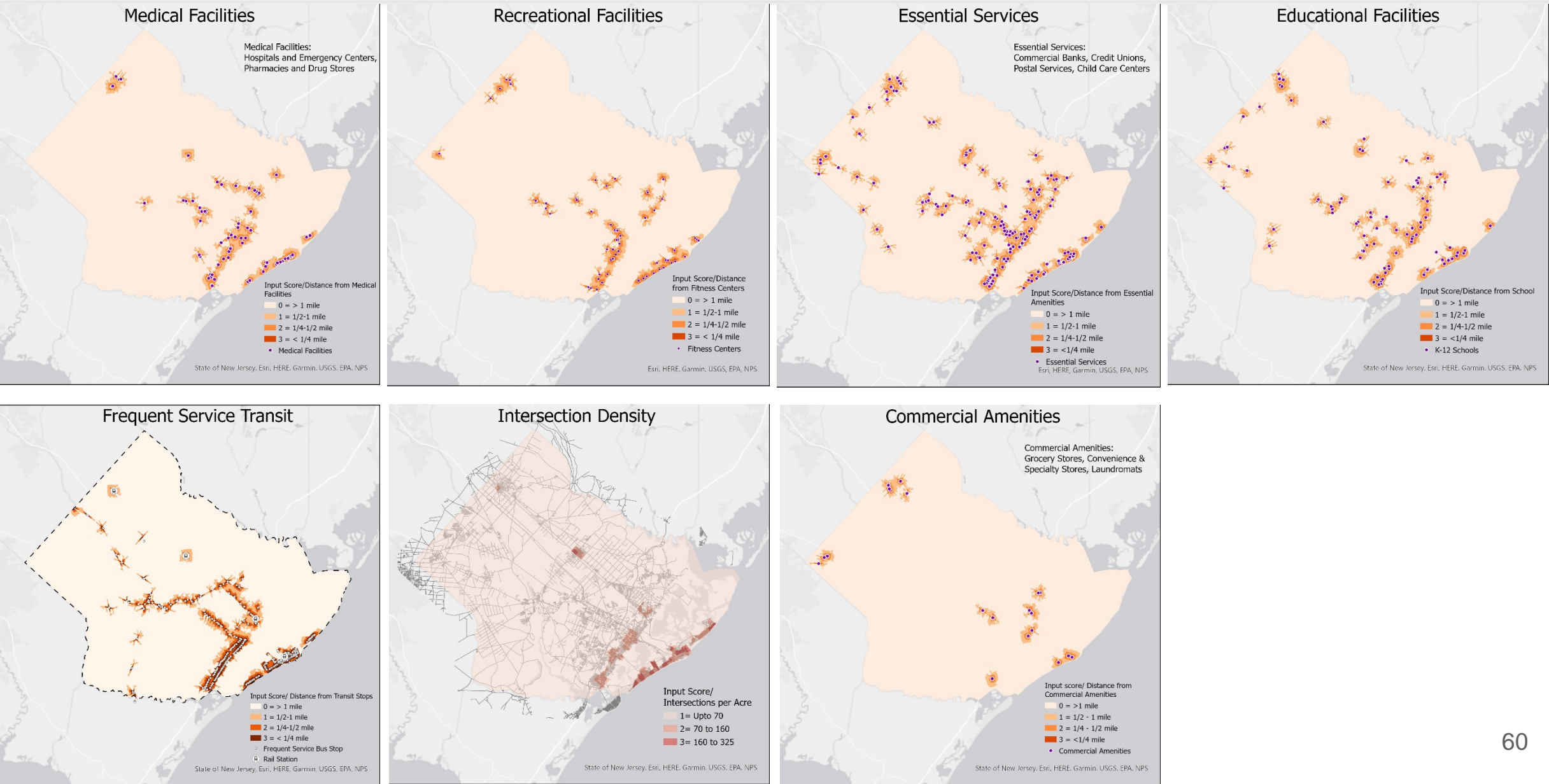
- 0 - 10 min
- 11 - 15 min
- 16 - 20 min
- 21 - 25 min
- 26 - 29 min

Data Source: NJGIN, ACS 2015-2019 5-year Estimate, NJT Transit GTFS data and ESRI Base map

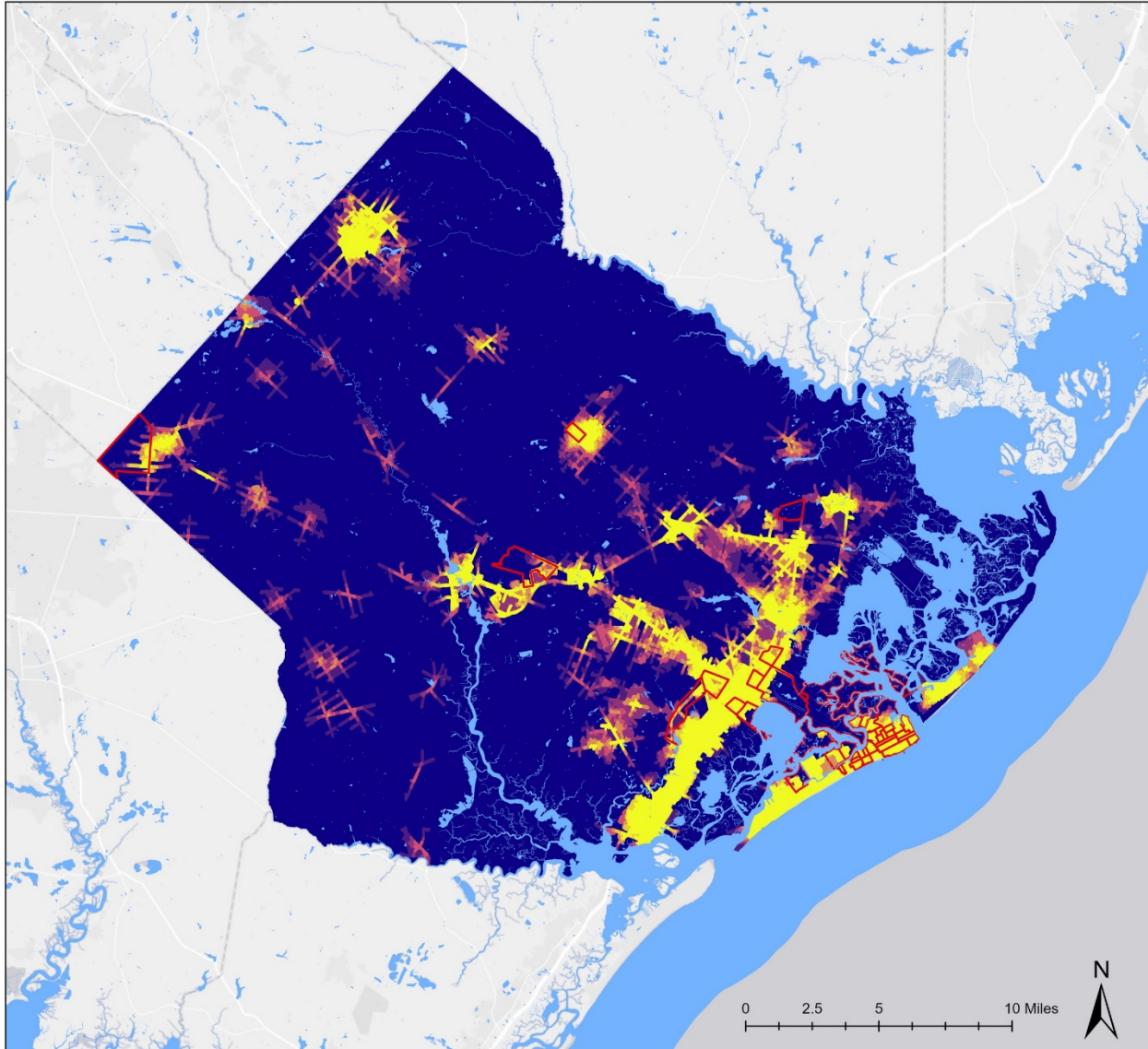
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Measured Accessibility Analysis



15-min Accessibility



Accessibility

Accessibility

- Best Access
- Moderate Access
- Limited Access
- Low Income Block Groups

Data Source: NJGIN, ACS 2015-2019 5-year Estimate, ERSI Business Analyst, NJ Transit GTFS Data and ESRI Base map

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Issues Forum #1

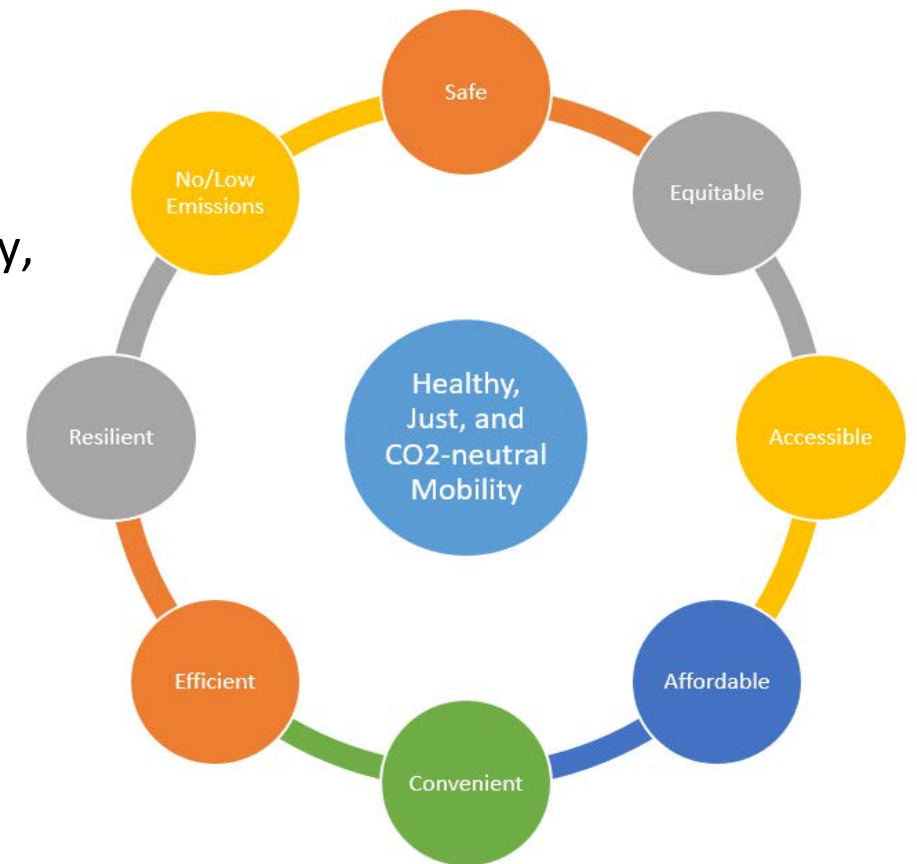
- **Objectives**

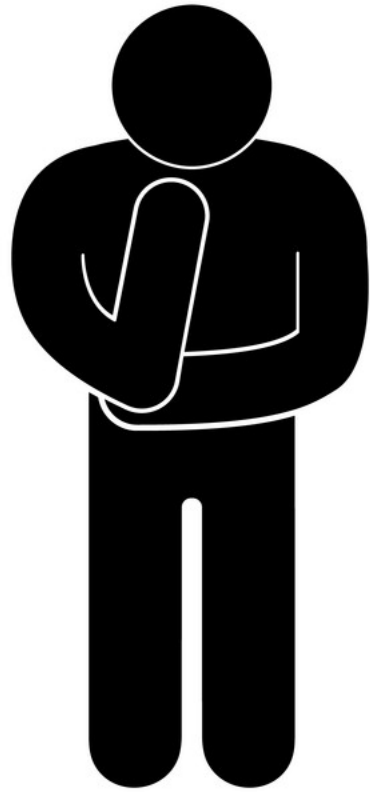
- Explore the components of the multi-goal framework
- Identify
 - Needs, concerns, and desired long-term outcomes
 - Performance measures
 - Potential obstacles and impediments to achieving healthy, just, resilient, and carbon-neutral mobility for all

- **Format**

- Plenary + breakouts
- Virtual or in-person depending on conditions

- **Timing** – December 2021-March 2022





Thoughts?
Questions?
Comments?