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)

2050 Emissions Reduction Goal
(80% Decrease from 2006 Baseline)

New Jersey’s GHG Emissions and Goals (MMTCO₂e)
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?

**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.
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

HUDSON COUNTY
Healthy, Just and CO2-neutral Mobility for All

GEOGRAPHY OF PEOPLE
A mix of small towns, urban centers and rural communities

- 46.19 square miles
- 12 Municipalities
- Over 670,000 residents
- County Seat: Jersey City
Population Density

Population per sq mile
- 0 - 16,530
- 16,540 - 34,540
- 34,550 - 54,940
- 54,950 - 88,650
- 88,660 - 133,200
- Low income block group

Data Source: NJGIN, ACS 2015-2019 5-year estimate, ESR1 base map

Planning for Healthy, Just, Resilient, and CO2-Neutral Mobility in New Jersey
Prepared: June 10, 2021
by Alan M. Voorhees Transportation Center
Change in Population: 2014-2019

Population Change

Population change
-100% - -32.17%
-32.16% - 0%
0.01% - 18.16%
18.17% - 67.09%
67.1% - 199.57%
Low income block group

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

Planning for Healthy, Just, Resilient, and CO2-Neutral Mobility in New Jersey
Prepared: June 10, 2021
by Alan M. Voorhees Transportation Center

Edward J. Bloustein School of Planning and Public Policy
Race and Ethnicity - 2019

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

Median Age: 35.5 years old
**Household Income**

County Average Median Household Income: $78,808

<table>
<thead>
<tr>
<th>AHPNJ Region 1: 2020 Affordable Housing Income Limits. Region 1: Bergen, Hudson, Passaic, and Sussex</th>
<th>Income Limit (4 person Household)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very Low</td>
<td>$28,786</td>
</tr>
<tr>
<td>Low</td>
<td>$47,976</td>
</tr>
<tr>
<td>Moderate</td>
<td>$76,761</td>
</tr>
<tr>
<td>Median</td>
<td>$95,952</td>
</tr>
</tbody>
</table>

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

Planning for Healthy, Just, Resilient, and CO2-Neutral Mobility in New Jersey
Prepared: June 10, 2021 by Alan M. Voorhees Transportation Center
Households living in poverty

Low Income Households

Percent of households under poverty by block group
- 0% - 5.27%
- 5.28% - 14.99%
- 15% - 19.06%
- 19.07% - 30.09%
- 30.1% - 59.09%

1 Dot = 10
- Households under poverty
- Low income block group

Data Source: NJGIN, ESRI base map, ESRI Business Analyst

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

<table>
<thead>
<tr>
<th>Educational Attainment</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than H.S Diploma</td>
<td>15.2%</td>
</tr>
<tr>
<td>H.S Diploma or equivalent</td>
<td>25.15%</td>
</tr>
<tr>
<td>Some College</td>
<td>12.80%</td>
</tr>
<tr>
<td>Associates Degree</td>
<td>4.58%</td>
</tr>
<tr>
<td>Bachelor’s Degree or higher</td>
<td>42%</td>
</tr>
</tbody>
</table>
Unemployment Status

Employment Status

Unemployment rate
- 0% - 2.14%
- 2.15% - 5.42%
- 5.43% - 9.04%
- 9.05% - 14.29%
- 14.3% - 32.38%

Low income block group

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

Planning for Healthy, Just, Resilient, and CO2-Neutral Mobility in New Jersey
Prepared: June 10, 2021
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Indicators of Potential Disadvantage

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

Racial Minority

Percent of minority population by block group
- 0% - 34.12%
- 34.13% - 71.21%
- 71.22% - 73.81%
- 73.82% - 86.9%
- 86.91% - 100%

1 Dot = 200
- Persons of racial minority
- Low income block group

Data Source: NJGIN, ESRI base map, ESRI Business Analyst

Planning for Healthy, Just, Resilient, and CO2-Neutral Mobility in New Jersey
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Indicators of Potential Disadvantage

Foreign-born Population

Percent of foreign-born population by census tract
- 0% - 22.97%
- 22.98% - 43.17%
- 43.18% - 48.45%
- 48.46% - 58.89%
- 58.9% - 72.65%

1 Dot = 200
- Foreign-born population
- Low income block group

Data Source: NJGIN, ESRI base map, ESRI Business Analyst

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Indicators of Potential Disadvantage

Persons with Disability

Percent of persons with disability by census tract
- 0% - 4.01%
- 4.02% - 9.15%
- 9.16% - 11.2%
- 11.21% - 14.64%
- 14.65% - 20.83%

1 Dot = 30
- Persons with disability
- Low income block group

Data Source: NJGIN, ESRI base map, ESRI Business Analyst

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Indicators of Potential Disadvantage

Older Adults

Percent of older adults (75+) by block group
- 0% - 3.22%
- 3.23% - 5.05%
- 5.06% - 13.24%
- 13.25% - 21.13%
- 21.14% - 42.37%

1 Dot = 20
- Older adults (75+)
- Low income block group

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

Planning for Healthy, Just, Resilient, and CO2-Neutral Mobility in New Jersey
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Indicators of Potential Disadvantage

Single Parent Family

Percent of single parent families by block group
- 0% - 11.22%
- 11.23% - 35.02%
- 35.03% - 45.21%
- 45.22% - 67.24%
- 67.25% - 100%

1 Dot = 30
- Single parent family
- Low income block group

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

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

Hudson is ranked in the lower middle range of counties in New Jersey (Lower 25%-50%)

<table>
<thead>
<tr>
<th>Health Behaviors</th>
<th>Hudson County</th>
<th>NJ</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adult Smoking</td>
<td>15%</td>
<td>13%</td>
</tr>
<tr>
<td>Adult obesity</td>
<td>24%</td>
<td>27%</td>
</tr>
<tr>
<td>Food environment index</td>
<td>8.7</td>
<td>9.4</td>
</tr>
<tr>
<td>Physical inactivity</td>
<td>29%</td>
<td>27%</td>
</tr>
<tr>
<td>Access to exercise opportunities</td>
<td>100%</td>
<td>95%</td>
</tr>
<tr>
<td>Excessive drinking</td>
<td>18%</td>
<td>16%</td>
</tr>
<tr>
<td>Alcohol-impaired driving deaths</td>
<td>15%</td>
<td>22%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Physical Environment</th>
<th>Hudson County</th>
<th>NJ</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air pollution-particulate matter</td>
<td>9.6</td>
<td>98.6</td>
</tr>
<tr>
<td>Drinking water problems</td>
<td>No</td>
<td>-</td>
</tr>
<tr>
<td>Severe housing problems</td>
<td>28%</td>
<td>21%</td>
</tr>
<tr>
<td>Driving alone to work</td>
<td>37%</td>
<td>71%</td>
</tr>
<tr>
<td>Long commute-driving alone</td>
<td>53%</td>
<td>43%</td>
</tr>
</tbody>
</table>

Source: 2020 NJ County Health rankings
### Health Outcomes

Hudson is ranked in the higher middle range of counties in New Jersey (Higher 50%-75%).

<table>
<thead>
<tr>
<th>Quality of Life</th>
<th>Hudson County</th>
<th>NJ</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poor or Fair Health</td>
<td>20%</td>
<td>16%</td>
</tr>
<tr>
<td>Poor Physical Health Days</td>
<td>4.1</td>
<td>3.7</td>
</tr>
<tr>
<td>Poor Mental Health Days</td>
<td>4.3</td>
<td>3.8</td>
</tr>
<tr>
<td>Low Birthweight</td>
<td>9%</td>
<td>8%</td>
</tr>
</tbody>
</table>
Healthy, Just and CO2-neutral Mobility for All

GEOGRAPHY OF PLACE
Natural Land Use

Land Use

- Urban
- Barren Land
- Forest
- Water
- Wetlands

Data Source: NJPIN, ESRI base map

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Urban Land Use
Employment Density

# of employees per sq mile
- 0 - 1,398
- 1,399 - 3,862
- 3,863 - 6,944
- 6,945 - 14,960
- 14,961 - 53,542

Low income block group

Data Source: NJGIN, ESRI base map

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Employment Density by Wage

Number of low/mid/higher wage employees per sq mile by workplace/residence block group
- < 500
- 501 - 1,000
- 1,001 - 2,000
- 2,001 - 5,000
- >5000

Data Source: NJGIN, ESRI base map, Longitudinal Employer-Household Dynamics (LEHD) 2014-2018 5-year estimate
Note: low wage (earnings <$1250/month), mid wage ($1250/month <= earnings <= $3333/month), higher wage (earnings > $3333/month)

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Education Services

Education Facilities

- College and university
- K-12 public school
- Low income block group

Data Source: NJGIN, ESRI base map

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Rutgers
Edward J. Bloustein School of Planning and Public Policy
Other Essential Services

Essential Services

- Postal services
- Commercial Banking & Credit Unions
- Childcare center
- Low income block group

Data Source: NJGIN, ESRI base map, ESRI Business Analyst Safegraph Search

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Climate Vulnerability

Sea Level Rise

5 ft sea level rise depth
Value
- High
- Low
- Low income block group

Data Source: NJGIN, ESRI base map, NOAA

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Climate Vulnerability

Exposure to extreme heat (High-emissions scenario)

Days with Maximum Above 95°F

- <4 days
- 5-10 days
- 11-20 days
- 21-30 days
- 31-40 days
- 41-50 days
- 51-60 days
- 61-70 days
- > 70 days

Source: NJ Forest Adapt
GEOGRAPHY OF MOBILITY AND CONNECTIONS
Transit Service Area

- Railroad station
- Railroad line
- Bus route
- Rail station service area
- Bus route buffer
- Low income block group

Data Source: NJGIN, ESRI base map, NJ Transit GTFS data

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Rutgers
Edward J. Bloustein School of Planning and Public Policy
Alt. Fueling Station

Fuel Type
- Compressed Natural Gas
- Electric
- Liquefied Petroleum Gas
- Low income block group

Data Source: NJGIN, ESRI base map, US Department of Energy's Alternative Fuels Data Center

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Measured Accessibility Analysis
“15-min.” Accessibility

- Low income block group
- Accessibility
- Best Access
- Moderate Access
- Limited Access

Data Source: NJGIN, ESRI base map, ESRI Business Analyst

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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 – Dec 2021- March 2022
Thoughts?
Questions?
Discussion?